



Sensor Actuator Interface

Catalogue

Sensor Actuator Interface

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Fieldbus, data cables and accessories

Plug in connector and protective caps

IP67 Remote I/O system SAI Active

JACKPAC® (IP67)

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M23 Connectors and cables

n

Housings for signal transmission



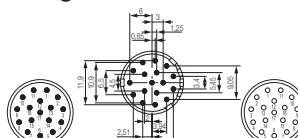
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Built-in connectors for signal transmission



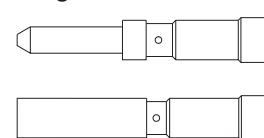
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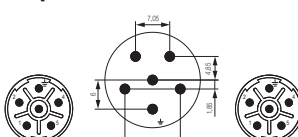
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Built-in connectors for power transmission



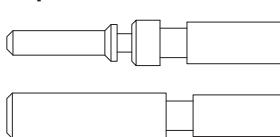
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Tools and markers

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Sensor Actuator Interface

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Technology is Priority One

A

We would like to give some details about the many interesting innovations that have appeared since the release of the last SAI Catalogue. These pages describe solutions that are designed to make your work easier.

M23 connectors

In addition to the SAI distributors and the moulded cables, Weidmüller now offers a wide line of M23 connectors. A distinction is made between connectors for power and connectors for signals. There are also a variety of housing types such as the plug housing, coupling housing and add-on flange. Crimp versions are typical whereby the individual components can be ordered separately. Sets or inserts with contacts are also available on request.



M12 with plastic nuts

Plastic nuts are not used as a cost savings measure. The cost that nuts contribute to the entire expense is simply too small to be a factor. Instead, plastic is used because it has better resistance when compared to nickel-plated metals. In certain applications, the standard metal nuts can oxidise and degrade. For such uses, nuts made from plastic can help to increase the lifespan. M8 cables fitted with plastic nuts are also available on request.



M12 with stainless-steel nut

The stainless steel nuts can be used in cases when the plastic nuts do not meet your mechanical requirements. Weidmüller also offers moulded versions in addition to the customisable M12 connectors. Our stainless steel nuts are made from a special high quality stainless steel. A small selection of these types are shown in our catalogue. Other variations can also be produced on request.



M8 and M12 lines with yellow cable

In a trend towards machine standardisation, sensor cables with yellow cladding are often routed in machines. Weidmüller also offers these sensor cables in our standard line. Since such cables are typically used in tooling machines, they are designed only as halogen free PUR cables in this colour.



Profibus Sub-D connector with M12 outlet

Market research indicates that the connection to the Sub-D connector is a common source of error during machine malfunctions. It is also a fairly complex task to install a Sub-D connector on a Profibus cable. We sought to find a solution that would solve both of these problems. So we introduced a Sub-D connector with an M12 outlet. This ensures "Plug & Play" functionality for this connection. The M12 cable only needs to be screwed on. All components are completely tested so that they will deliver a safe, reliable connection.



Are you already a Weidmüller customer?

A

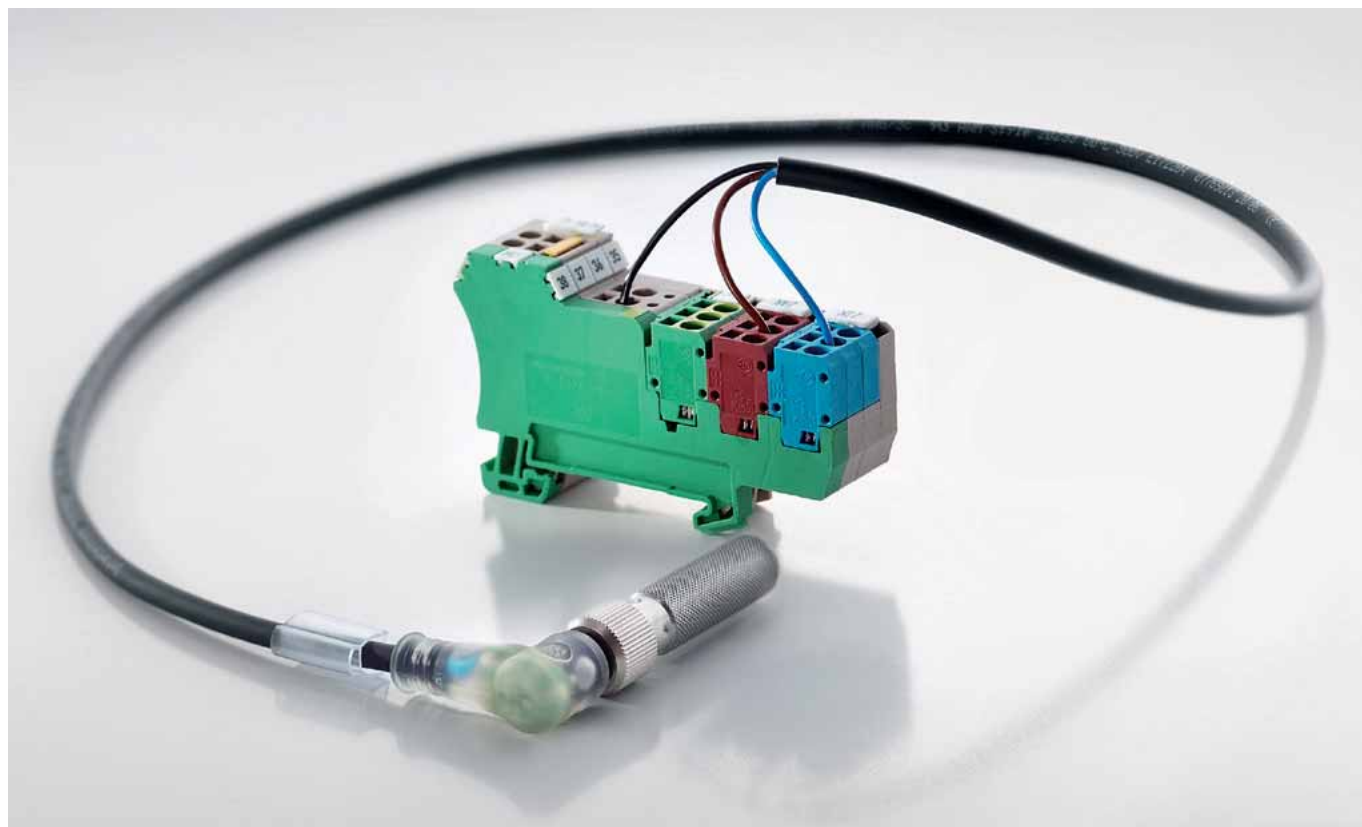
Then why not order your M12 or M8 cables from us!

Weidmüller supplies an extremely wide range of M12 and M8 cables, naturally with proven Weidmüller quality.

To answer as many demands as possible, we offer:

- PVC cables
- PUR/PVC cables
- PUR/halogen-free cables

Of course, with very short delivery times and favourable conditions. Please do not hesitate to contact us and ask for an offer or any additional information.



Sensor and actuator cables

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SAI cable

B Weidmüller manufactures its own SAI cable. This ensures optimal versatility. We do not use fully automatic machines which are difficult to adapt. That is why Weidmüller is well known for delivering promptly with quick turnaround times despite our wide variety of available options. We can also develop and produce solutions for specific customer requirements. We regularly produce cables, for example, with customer specific labels and logos.

But naturally it is the cost of this increased flexibility that is the decisive factor. In order to meet your cost requirements, an additional production line has been specially designed for keeping costs down. The line produces top selling products that are marketed for their economical cost factors.



Sensor cables from Weidmüller: shown here with yellow and black cables, together with bus cables



Easy to identify

The EAN number on each label can be scanned in.



Resistant to vibration

M8 with vibration resistance



High quality

Compatible for use with robots;
recyclable, halogen-free cables



Versatile

Customised cables



One end without connector



Connecting cables



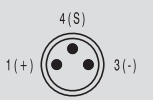
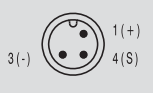
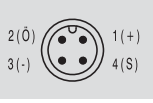
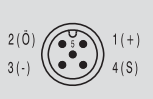
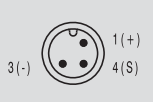
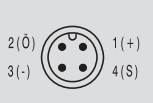
Valve cables



Connection cables / bus cables

Overview of sensor cables

B

		No. of poles		Cable material	One end free			M8 socket straight			
					PUR	PUR halogen-free	PVC	PUR	PUR halogen-free	PVC	
One end free				1.5 m					9457450150	1926980150	1927240150
				3.0 m					9457450300	1926980300	1927240300
				5.0 m					9457450500	1926980500	1927240500
				10.0 m					9457451000	1926981000	1927241000
				variable					9457450000	1926980000	1927240000
M8 plug	straight			1.5 m	1824590150	1926970150	1927230150	1824570150	1926890150	1927150150	
				3.0 m	1824590300	1926970300	1927230300	1824570300	1926890300	1927150300	
				5.0 m	1824590500	1926970500	1927230500	1824570500	1926890500	1927150500	
				10.0 m	1824591000	1926971000	1927231000	1824571000	1926891000	1927151000	
				variable	1824590000	1926970000	1927230000	1824570000	1926890000	1927150000	
	90°			1.5 m	1906270150	1926990150	1927250150	***	***	***	
				3.0 m	1906270300	1926990300	1927250300				
				5.0 m	1906270500	1926990500	1927250500				
				10.0 m	1906271000	1926991000	1927251000				
				variable	1906270000	1926990000	1927250000				
	90°			1.5 m	1857550150	1927050150	1927310150	On request	On request	On request	
				3.0 m	1857550300	1927050300	1927310300				
				5.0 m	1857550500	1927050500	1927310500				
				10.0 m	1857551000	1927051000	1927311000				
				variable	1857550000	1927050000	1927310000				
M12 plug	straight			1.5 m	1857560150	1927070150	1927330150	1824570150	1926890150	1927150150	
				3.0 m	1857560300	1927070300	1927330300	1824570300	1926890300	1927150300	
				5.0 m	1857560500	1927070500	1927330500	1824570500	1926890500	1927150500	
				10.0 m	1857561000	1927071000	1927331000	1824571000	1926891000	1927151000	
				variable	1857560000	1927070000	1927330000	1824570000	1926890000	1927150000	
	90°			1.5 m	9457810150	1926620150	1925430150	1824570150	1926890150	1927150150	
				3.0 m	9457810300	1926620300	1925430300	1824570300	1926890300	1927150300	
				5.0 m	9457810500	1926620500	1925430500	1824570500	1926890500	1927150500	
				10.0 m	9457811000	1926621000	1925431000	1824571000	1926891000	1927151000	
				variable	9457810000	1926620000	1925430000	1824570000	1926890000	1927150000	
	90°			1.5 m	9456100150	1926630150	1925440150	***	***	***	
				3.0 m	9456100300	1926630300	1925440300				
				5.0 m	9456100500	1926630500	1925440500				
				10.0 m	9456101000	1926631000	1925441000				
				variable	9456100000	1926630000	1925440000				
90°			1.5 m	9457610150	1926640150	1925450150	1824570150	1926890150	1927150150		
			3.0 m	9457610300	1926640300	1925450300	1824570300	1926890300	1927150300		
			5.0 m	9457610500	1926640500	1925450500	1824570500	1926890500	1927150500		
			10.0 m	9457611000	1926641000	1925451000	1824571000	1926891000	1927151000		
			variable	9457610000	1926640000	1925450000	1824570000	1926890000	1927150000		
M12 plug	straight			1.5 m	9456690150	1926700150	1925510150	On request	On request	On request	
				3.0 m	9456690300	1926700300	1925510300				
				5.0 m	9456690500	1926700500	1925510500				
				10.0 m	9456691000	1926701000	1925511000				
				variable	9456690000	1926700000	1925510000				
	90°			1.5 m	1906260150	1926710150	1925520150	1824570150	1926890150	1927150150	
				3.0 m	1906260300	1926710300	1925520300	1824570300	1926890300	1927150300	
				5.0 m	1906260500	1926710500	1925520500	1824570500	1926890500	1927150500	
				10.0 m	1906261000	1926711000	1925521000	1824571000	1926891000	1927151000	
				variable	1906260000	1926710000	1925520000	1824570000	1926890000	1927150000	
90°			1.5 m	9457670150	1926720150	1925530150	1824570150	1926890150	1927150150		
			3.0 m	9457670300	1926720300	1925530300	1824570300	1926890300	1927150300		
			5.0 m	9457670500	1926720500	1925530500	1824570500	1926890500	1927150500		
			10.0 m	9457671000	1926721000	1925531000	1824571000	1926891000	1927151000		
			variable	9457670000	1926720000	1925530000	1824570000	1926890000	1927150000		

Preferred types / extracted from the complete line. Please make a separate inquiry for information about the M8 snap-on version, twin cabling and others.

M8 socket

straight



PUR

PUR
halogen-free

PVC

9457850150	1927000150	1927260150
9457850300	1927000300	1927260300
9457850500	1927000500	1927260500
9457851000	1927001000	1927261000
9457850000	1927000000	1927260000

90°



PUR

PUR
halogen-free

PVC

9457380150	1927060150	1927320150
9457380300	1927060300	1927320300
9457380500	1927060500	1927320500
9457381000	1927061000	1927321000
9457380000	1927060000	1927320000

1824580150	1926910150	1927170150
1824580300	1926910300	1927170300
1824580500	1926910500	1927170500
1824581000	1926911000	1927171000
1824580000	1926910000	1927170000

***	***	***
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1857670150	1926950150	1927210150
1857670300	1926950300	1927210300
1857670500	1926950500	1927210500
1857671000	1926951000	1927211000
1857670000	1926950000	1927210000

***	***	***
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9457980150	1938050150	1938180150
9457980300	1938050300	1938180300
9457980500	1938050500	1938180500
9457981000	1938051000	1938181000
9457980000	1938050000	1938180000

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***	***	***
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1906330150	1938060150	1938190150
1906330300	1938060300	1938190300
1906330500	1938060500	1938190500
1906331000	1938061000	1938191000
1906330000	1938060000	1938190000

***	***	***
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***	***	***
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90° angle with 2 LEDs



PUR

PUR
halogen-free

PVC

9457460150	1927090150	1927350150
9457460300	1927090300	1927350300
9457460500	1927090500	1927350500
9457461000	1927091000	1927351000
9457460000	1927090000	1927350000

1877250150	1926930150	1927190150
1877250300	1926930300	1927190300
1877250500	1926930500	1927190500
1877251000	1926931000	1927191000
1877250000	1926930000	1927190000

***	***	***
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On request	On request	On request
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***	***	***
-----	-----	-----

9457760150		
9457760300		
9457760500	***	***
9457761000		
9457760000		

***	***	***
-----	-----	-----

***	***	***
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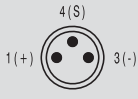
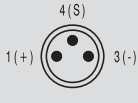
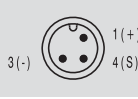
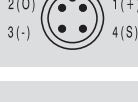
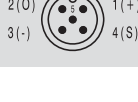
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***	***	***
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B

Overview of sensor cables

B

		M12 socket					
		straight					
							
							
							
							
No. of poles							
One end free							
M8 plug	straight			1.5 m	1937950150	1938100150	1938230150
				3.0 m	1937950300	1938100300	1938230300
				5.0 m	1937950500	1938100500	1938230500
				10.0 m	1937951000	1938101000	1938231000
				variable	1937950000	1938100000	1938230000
	90°			1.5 m	On request	On request	On request
				3.0 m			
				5.0 m			
				10.0 m			
				variable			
M12 plug	straight			1.5 m	9457230150	1926490150	1925300150
				3.0 m	9457230300	1926490300	1925300300
				5.0 m	9457230500	1926490500	1925300500
				10.0 m	9457231000	1926491000	1925301000
				variable	9457230000	1926490000	1925300000
	90°			1.5 m	1821050150	On request	On request
				3.0 m			
				5.0 m			
				10.0 m			
				variable			
	straight			1.5 m	***	***	***
				3.0 m			
				5.0 m			
				10.0 m			
				variable			
	90°			1.5 m	***	***	***
				3.0 m			
				5.0 m			
				10.0 m			
				variable			

M12 socket

straight



PUR

PUR
halogen-free

PVC

9457910150	1926780150	1925590150
9457910300	1926780300	1925590300
9457910500	1926780500	1925590500
9457911000	1926781000	1925591000
9457910000	1926780000	1925590000

90°



PUR

PUR
halogen-free

PVC

9457320150	1926820150	1925630150
9457320300	1926820300	1925630300
9457320500	1926820500	1925630500
9457321000	1926821000	1925631000
9457320000	1926820000	1925630000



PUR

PUR
halogen-free

PVC

9457740150	1926830150	1925640150
9457740300	1926830300	1925640300
9457740500	1926830500	1925640500
9457741000	1926831000	1925641000
9457740000	1926830000	1925640000



PUR

PUR
halogen-free

PVC

9457690150	1926840150	1925650150
9457690300	1926840300	1925650300
9457690500	1926840500	1925650500
9457691000	1926841000	1925651000
9457690000	1926840000	1925650000

B

1937960150	1938110150	1938240150
1937960300	1938110300	1938240300
1937960500	1938110500	1938240500
1937961000	1938111000	1938241000
1937960000	1938110000	1938240000

1937990150	1938140150	1938270150
1937990300	1938140300	1938270300
1937990500	1938140500	1938270500
1937991000	1938141000	1938271000
1937990000	1938140000	1938270000

1937970150	1938120150	1938250150
1937970300	1938120300	1938250300
1937970500	1938120500	1938250500
1937971000	1938121000	1938251000
1937970000	1938120000	1938250000

1938000150	1938150150	1938280150
1938000300	1938150300	1938280300
1938000500	1938150500	1938280500
1938001000	1938151000	1938281000
1938000000	1938150000	1938280000

9457390150	1926530150	1925340150
9457390300	1926530300	1925340300
9457390500	1926530500	1925340500
9457391000	1926531000	1925341000
9457390000	1926530000	1925340000

9457310150	1926540150	1925350150
9457310300	1926540300	1925350300
9457310500	1926540500	1925350500
9457311000	1926541000	1925351000
9457310000	1926540000	1925350000

9457340150	1926510150	1925320150
9457340300	1926510300	1925320300
9457340500	1926510500	1925320500
9457341000	1926511000	1925321000
9457340000	1926510000	1925320000

9457270150	1926550150	1925360150
9457270300	1926550300	1925360300
9457270500	1926550500	1925360500
9457271000	1926551000	1925361000
9457270000	1926550000	1925360000

1815670150	1926570150	1925380150
1815670300	1926570300	1925380300
1815670500	1926570500	1925380500
1815671000	1926571000	1925381000
1815670000	1926570000	1925380000

1906310150	1926580150	1925390150
1906310300	1926580300	1925390300
1906310500	1926580500	1925390500
1906311000	1926581000	1925391000
1906310000	1926580000	1925390000

9456500150		
9456500300		
9456500500	On request	On request
9456501000		
9456500000		

9457900150	1926590150	1925400150
9457900300	1926590300	1925400300
9457900500	1926590500	1925400500
9457901000	1926591000	1925401000
9457900000	1926590000	1925400000

Overview of sensor cables

B

				M12 socket				
				90° angle with 2 LEDs				
One end free		No. of poles						
				Cable material				
				PUR	PUR halogen-free	PVC		
				1.5 m	9457800150	1926650150		1925460150
				3.0 m	9457800300	1926650300		1925460300
5.0 m	9457800500	1926650500	1925460500					
10.0 m	9457801000	1926651000	1925461000					
variable	9457800000	1926650000	1925460000					
M8 plug	straight		1 (+) 4 (S) 3 (-)	***			***	
				***			***	
				***			***	
				***			***	
				***			***	
	90°		2 (0) 1 (+) 4 (S) 3 (-)	***			***	
				***			***	
				***			***	
				***			***	
				***			***	
M12 plug	straight		1 (+) 4 (S) 3 (-)	***			***	
				***			***	
				***			***	
				***			***	
				***			***	
	90°		2 (0) 1 (+) 4 (S) 3 (-)	***			***	
				***			***	
				***			***	
				***			***	
				***			***	

Sensor cables with plug at one end only

M12



M8



M8 Snap connection



Twin cabling



M5



Sensor/actuator cable pre-assembled with M8/M12 plug-in connector at one end

Machine designers frequently require individual cable lengths. Sensor cables with a connector fitted at one end only can be easily adapted to the corresponding situation. The cables are available in many different versions: straight, 90° and with all common pole numbers (3, 4 and 5). Male plugs and Female sockets can be assembled to suit individual customer requirements for connecting cables. The cable sheathing is of PUR (polyurethane) and is suitable for use with cable carrier systems. Plugs and cables are in neutral black.

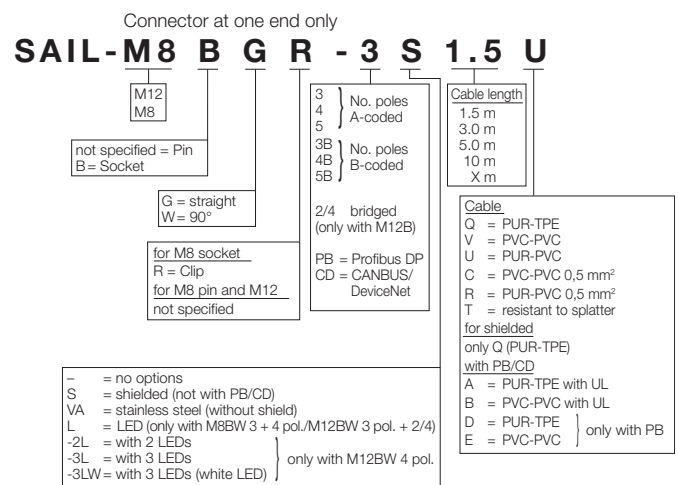
Sensor cables

Weidmüller can supply various cable lengths as indicated in the following table:

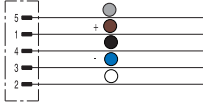
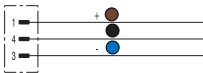
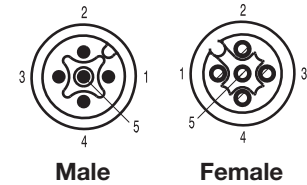
Typical cable lengths are:

- 1.5 m
- 3.0 m
- 5.0 m
- 10.0 m

Example of designation



M12 one end without connector
A-coded



Ordering data

Male, straight	
PVC	1.5 m
PUR	1.5 m
PUR halogen-free	1.5 m
PUR halogen-free yellow	1.5 m
Resistant to welding beads	1.5 m
Male, angled	
PVC	1.5 m
PUR	1.5 m
PUR halogen-free	1.5 m
PUR halogen-free yellow	1.5 m
Resistant to welding beads	1.5 m
Female, straight	
PVC	1.5 m
PUR	1.5 m
PUR halogen-free	1.5 m
PUR halogen-free yellow	1.5 m
Resistant to welding beads	1.5 m
Female, angled	
PVC	1.5 m
PUR	1.5 m
PUR halogen-free	1.5 m
PUR halogen-free yellow	1.5 m
Resistant to welding beads	1.5 m
Note	

3-pole

Type	Order No.
SAIL-M12G-3-1.5V	1925430150
SAIL-M12G-3-1.5U	9457810150
SAIL-M12G-3-1.5Q	1926620150
SAIL-M12G-3-1.5QGE	1092980150
SAIL-M12G-3-1.5T	1021750150
SAIL-M12W-3-1.5V	1925510150
SAIL-M12W-3-1.5U	9456690150
SAIL-M12W-3-1.5Q	1926700150
SAIL-M12W-3-1.5QGE	1093160150
SAIL-M12W-3-1.5T	1021760150
SAIL-M12BG-3-1.5V	1925570150
SAIL-M12BG-3-1.5U	9457820150
SAIL-M12BG-3-1.5Q	1926760150
SAIL-M12BG-3-1.5QGE	1092910150
SAIL-M12BG-3-1.5T	1968590150
SAIL-M12BW-3-1.5V	1925630150
SAIL-M12BW-3-1.5U	9457320150
SAIL-M12BW-3-1.5Q	1926820150
SAIL-M12BW-3-1.5QGE	1092940150
SAIL-M12BW-3-1.5T	1968560150
Other versions on request	

4-pole

Type	Order No.
SAIL-M12G-4-1.5V	1925440150
SAIL-M12G-4-1.5U	9456100150
SAIL-M12G-4-1.5Q	1926630150
SAIL-M12G-4-1.5QGE	1077750150
SAIL-M12G-4-1.5T	1021770150
SAIL-M12W-4-1.5V	1925520150
SAIL-M12W-4-1.5U	1906260150
SAIL-M12W-4-1.5Q	1926710150
SAIL-M12W-4-1.5QGE	1093170150
SAIL-M12W-4-1.5T	1021790150
SAIL-M12BG-4-1.5V	1925580150
SAIL-M12BG-4-1.5U	9457730150
SAIL-M12BG-4-1.5Q	1926770150
SAIL-M12BG-4-1.5QGE	1092920150
SAIL-M12BG-4-1.5T	1968580150
SAIL-M12BW-4-1.5V	1925640150
SAIL-M12BW-4-1.5U	9457740150
SAIL-M12BW-4-1.5Q	1926830150
SAIL-M12BW-4-1.5QGE	1092960150
SAIL-M12BW-4-1.5T	1968570150
Other versions on request	

5-pole

Type	Order No.
SAIL-M12G-5-1.5V	1925450150
SAIL-M12G-5-1.5U	9457610150
SAIL-M12G-5-1.5Q	1926640150
SAIL-M12G-5-1.5QGE	1092990150
SAIL-M12G-5-1.5T	1021650150
SAIL-M12W-5-1.5V	1925530150
SAIL-M12W-5-1.5U	9457670150
SAIL-M12W-5-1.5Q	1926720150
SAIL-M12W-5-1.5QGE	1093180150
SAIL-M12W-5-1.5T	1021660150
SAIL-M12BG-5-1.5V	1925590150
SAIL-M12BG-5-1.5U	9457910150
SAIL-M12BG-5-1.5Q	1926780150
SAIL-M12BG-5-1.5QGE	1092930150
SAIL-M12BG-5-1.5T	1021670150
SAIL-M12BW-5-1.5V	1925650150
SAIL-M12BW-5-1.5U	9457690150
SAIL-M12BW-5-1.5Q	1926840150
SAIL-M12BW-5-1.5QGE	1092970150
SAIL-M12BW-5-1.5T	1021690150
Other versions on request	

Standard cable lengths

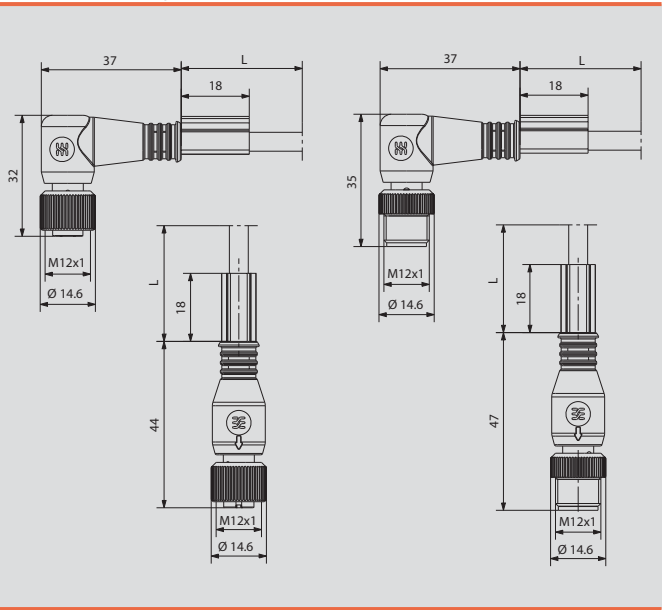
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Rated current	4 A
Protection class	IP 67
Core cross-section	0.34 mm ²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	250 V (3- and 4-pole) / 125 V (5-pole)
(acc. to VDE standard 0110 ISO group C)	

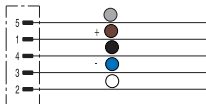
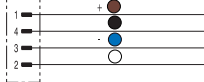
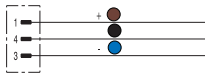
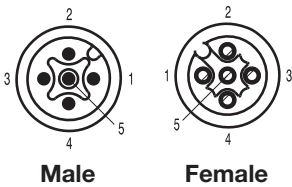
Chapter W includes additional technical specifications for the cable

Dimensioned drawing



Sensor cables

M12 one end without connector
A-coded
with plastic threaded ring



Ordering data

Male, straight		
PUR	1.5 m	
Male, angled		
PUR	1.5 m	
Female, straight		
PUR	1.5 m	
Female, angled		
PUR	1.5 m	
Note		

3-pole

Type	Order No.
SAIP-M12G-3-1.5U	1108800150
SAIP-M12W-3-1.5U	1108670150
SAIP-M12BG-3-1.5U	1108730150
SAIP-M12BW-3-1.5U	1108770150

4-pole

Type	Order No.
SAIP-M12G-4-1.5U	1108810150
SAIP-M12W-4-1.5U	1108680150
SAIP-M12BG-4-1.5U	1108740150
SAIP-M12BW-4-1.5U	1108780150

5-pole

Type	Order No.
SAIP-M12G-5-1.5U	1108820150
SAIP-M12W-5-1.5U	1108690150
SAIP-M12BG-5-1.5U	1108750150
SAIP-M12BW-5-1.5U	1108790150

Standard cable lengths

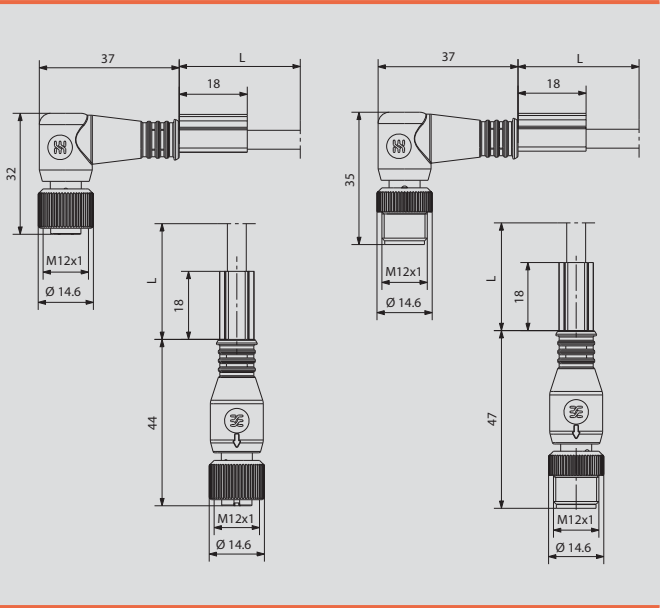
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

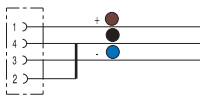
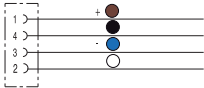
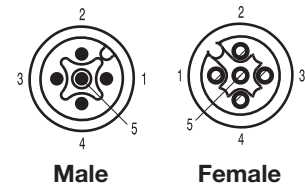
Rated current	4 A
Protection class	IP 67
Core cross-section	0.34 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	250 V (3- and 4-pole) / 125 V (5-pole)
(acc. to VDE standard 0110 ISO group C)	

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



M12 one end without connector
A-coded
with stainless-steel threaded ring
1.4404/316L



Ordering data

Female, straight	
PUR	1.5 m
Female, angled	
PUR	1.5 m
Note	

4-pole	
Type	Order No.
SAIL-M12BG-VA-4-1,5U	9457950150
SAIL-M12BW-VA-4-1,5U	9457960150

4-pole	
Type	Order No.
SAIL-M12BG-VA-2/4-1.5U	1939410150
SAIL-M12BW-VA-2/4-1.5U	1939370150

Standard cable lengths

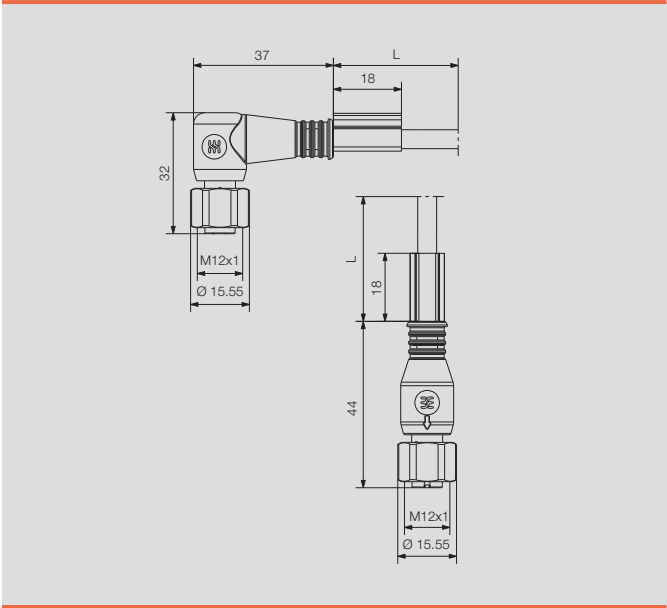
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Rated current	4 A
Protection class	IP 67
Core cross-section	0.34 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	250 V (3- and 4-pole) / 125 V (5-pole)
(acc. to VDE standard 0110 ISO group C)	

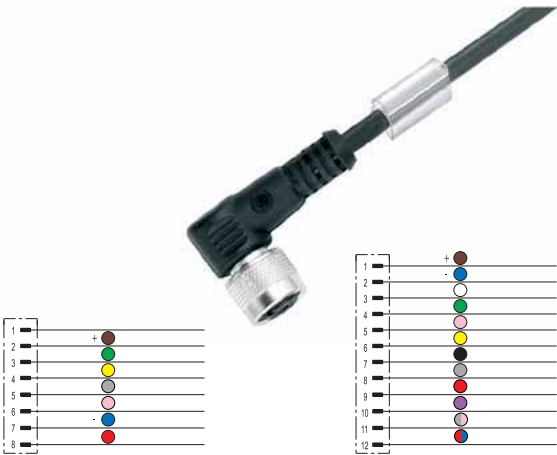
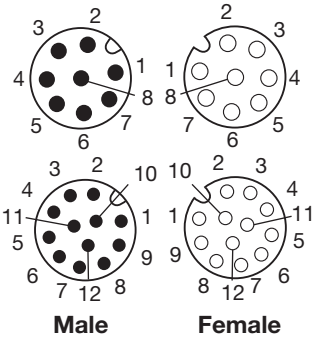
Chapter W includes additional technical specifications for the cable

Dimensioned drawing



Sensor cables

M12 one end without connector
high-pole 8 / 12-pole
A-coded



Ordering data

Female, straight, shielded	
1.5 m	
3.0 m	
5.0 m	
10.0 m	
Female, straight	
1.5 m	
3.0 m	
5.0 m	
10.0 m	
Female, angled	
5.0 m	
10.0 m	
Note	

8-pole	
Type	Order No.
SAIL-M12BG-8-(S)-1.5U	1890520150
SAIL-M12BG-8-(S)-3.0U	1890520300
SAIL-M12BG-8-(S)-5.0U	1890520500
SAIL-M12BG-8-(S)-10U	1890521000
SAIL-M12BG-8-1.5U	1865870150
SAIL-M12BG-8-3.0U	1865870300
SAIL-M12BG-8-5.0U	1865870500
SAIL-M12BG-8-10U	1865871000
SAIL-M12BW-8-5.0U	1883460500
SAIL-M12BW-8-10U	1883461000
Other versions on request	

12-pole	
Type	Order No.
SAIL-M12BG-12-5.0U	1879710500
SAIL-M12BG-12-10U	1879711000
SAIL-M12BW-12-5.0U	1898240500
SAIL-M12BW-12-10U	1898241000
Other versions on request	

Standard cable lengths

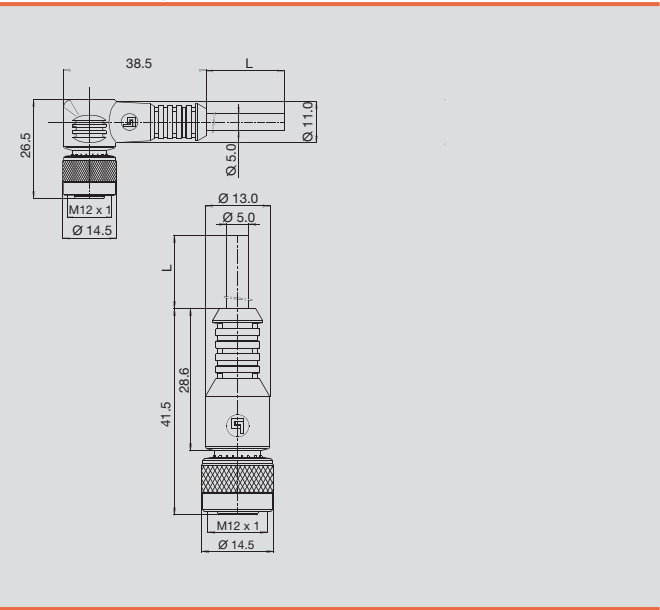
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

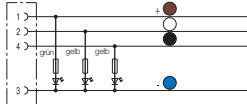
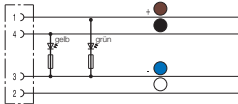
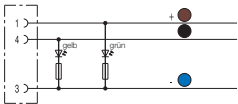
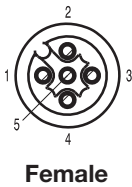
Rated current	1 A
Protection class	IP 67
Core cross-section	0.25 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	
(acc. to VDE standard 0110 ISO group C)	

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



M12 one end without connector with LED A-coded female, angled



Ordering data

Female, angled	
PVC	1.5 m
PUR	1.5 m
PUR halogen-free	1.5 m
PUR halogen-free yellow	1.5 m
Resistant to welding beads	1.5 m
Note	

2 LEDs

3-pole

Type	Order No.
SAIL-M12BW-3L1.5V	1925460150
SAIL-M12BW-3L1.5U	9457800150
SAIL-M12BW-3L1.5Q	1926650150
SAIL-M12BW-3L1.5QGE	1114880150
SAIL-M12BW-3L1.5T	1004330150
Other versions on request	

2 LEDs

4-pole

Type	Order No.
SAIL-M12BW-4-2L1.5V	1925470150
SAIL-M12BW-4-2L1.5U	9456380150
SAIL-M12BW-4-2L1.5Q	1926660150
SAIL-M12BW-4-2L1.5QGE	1092950150
SAIL-M12BW-4-2L1.5T	1007000150
Other versions on request	

3 LEDs

4-pole

Type	Order No.
SAIL-M12BW-4-3L1.5V	1963960150
SAIL-M12BW-4-3L1.5U	1963940150
SAIL-M12BW-4-3L1.5Q	1963950150
Other versions on request	

Standard cable lengths

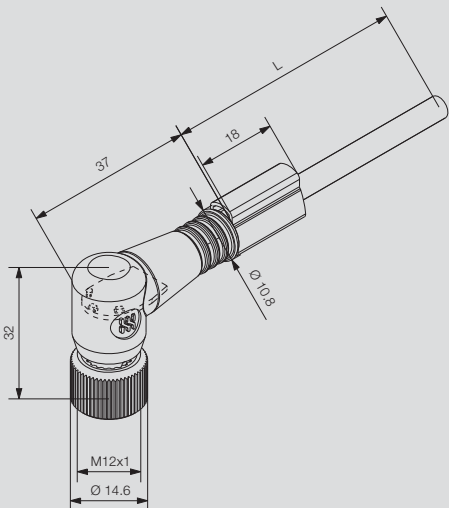
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Rated current	4 A
Protection class	IP 67
Core cross-section	0.34 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	250 V (3- and 4-pole) / 125 V (5-pole)
(acc. to VDE standard 0110 ISO group C)	

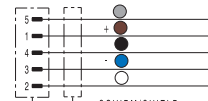
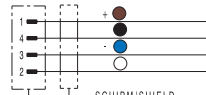
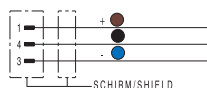
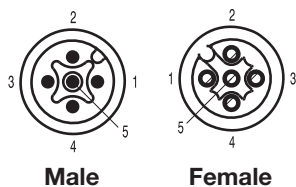
Chapter W includes additional technical specifications for the cable

Dimensioned drawing



Sensor cables

**M12 one end without
connector
shielded
A-coded**



Ordering data

Male, straight	
PUR halogen-free	1.5 m
Male, angled	
PUR halogen-free	1.5 m
Female, straight	
PUR halogen-free	1.5 m
Female, angled	
PUR halogen-free	1.5 m
Note	

3-pole

Type	Order No.
SAIL-M12G-3S1.5Q	1906470150
SAIL-M12W-3S1.5Q	1906500150
SAIL-M12BG-3S1.5Q	1867410150
SAIL-M12BW-3S1.5Q	1906950150
Other versions on request	

4-pole

Type	Order No.
SAIL-M12G-4S1.5Q	1906480150
SAIL-M12W-4S1.5Q	1059650150
SAIL-M12BG-4S1.5Q	1812540150
SAIL-M12BW-4S1.5Q	1808970150
Other versions on request	

5-pole

Type	Order No.
SAIL-M12G-5S1.5Q	1926690150
SAIL-M12W-5S1.5Q	1906520150
SAIL-M12BG-5S1.5Q	9456140150
SAIL-M12BW-5S1.5Q	1906540150
Other versions on request	

Standard cable lengths

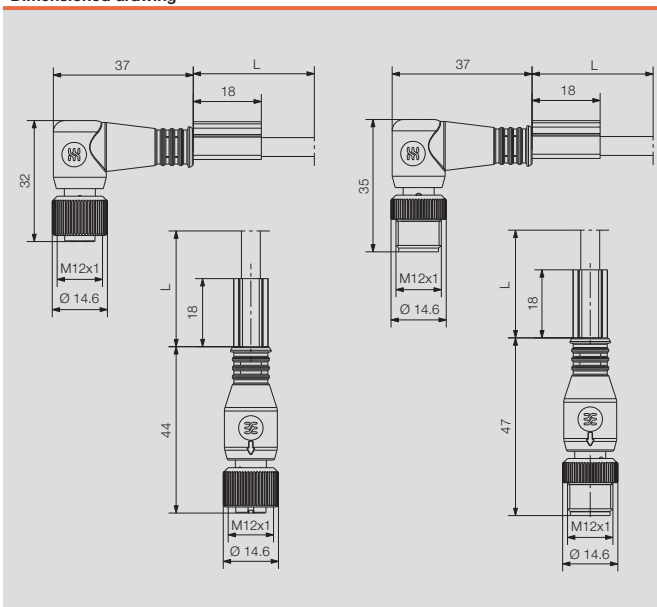
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

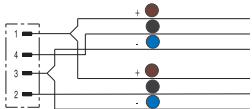
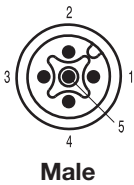
Rated current	4 A
Protection class	IP 67
Core cross-section	0.34 mm ²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	250 V (3- and 4-pole) / 125 V (5-pole)
(acc. to VDE standard 0110 ISO group C)	

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



Twin cabling
M12 one end without
connector



Ordering data

Male straight - open ended	
PUR	1.5 m
Note	

3-pole	
Type	Order No.
SAIL-ZW-3-1.5U	1964310150

Standard cable lengths

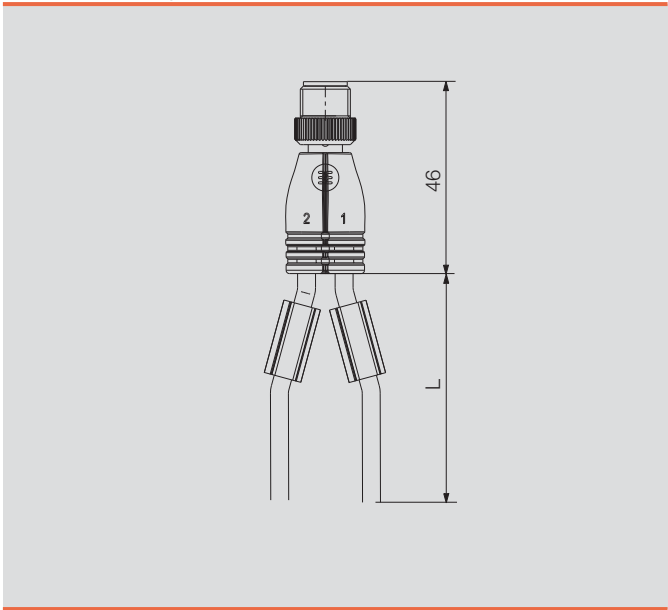
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.		
1.5 m	xxxxxx0150	
3.0 m	xxxxxx0300	
5.0 m	xxxxxx0500	
10.0 m	xxxxxx1000	

Technical data

Rated current		4 A
Protection class		IP 67
Core cross-section		0.34 mm²
Contact surface		gold-plated
Temperature range of housing		-25...+85 °C
Rated voltage		250 V (3- and 4-pole) / 125 V (5-pole)
(acc. to VDE standard 0110 ISO group C)		

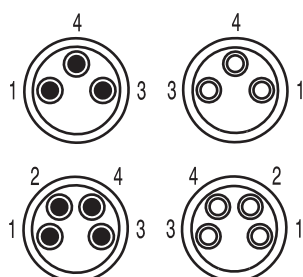
Chapter W includes additional technical specifications for the cable

Dimensioned drawing



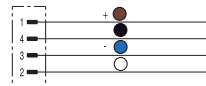
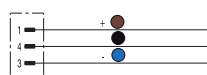
Sensor cables

M8 one end without connector



Male

Female



Ordering data

Male, straight		
PVC	1.5 m	
PUR	1.5 m	
PUR halogen-free	1.5 m	
Male, angled		
PVC	1.5 m	
PUR	1.5 m	
PUR halogen-free	1.5 m	
Female, straight		
PVC	1.5 m	
PUR	1.5 m	
PUR halogen-free	1.5 m	
PUR halogen-free yellow	1.5 m	
Female, angled		
PVC	1.5 m	
PUR	1.5 m	
PUR halogen-free	1.5 m	
PUR halogen-free yellow	1.5 m	
Note		

3-pole

Type	Order No.
SAIL-M8G-3-1.5V	1927230150
SAIL-M8G-3-1.5U	1824590150
SAIL-M8G-3-1.5Q	1926970150
SAIL-M8W-3-1.5V	1927310150
SAIL-M8W-3-1.5U	1857550150
SAIL-M8W-3-1.5Q	1927050150
SAIL-M8BG-3-1.5V	1927240150
SAIL-M8BG-3-1.5U	9457450150
SAIL-M8BG-3-1.5Q	1926980150
SAIL-M8BG-3-1.5QGE	1093190150
SAIL-M8BW-3-1.5V	1927320150
SAIL-M8BW-3-1.5U	9457380150
SAIL-M8BW-3-1.5Q	1927060150
SAIL-M8BW-3-1.5QGE	1093220150
Other versions on request	

4-pole

Type	Order No.
SAIL-M8G-4-1.5V	1927250150
SAIL-M8G-4-1.5U	1906270150
SAIL-M8G-4-1.5Q	1926990150
SAIL-M8W-4-1.5V	1927330150
SAIL-M8W-4-1.5U	1857560150
SAIL-M8W-4-1.5Q	1927070150
SAIL-M8BG-4-1.5V	1927260150
SAIL-M8BG-4-1.5U	9457850150
SAIL-M8BG-4-1.5Q	1927000150
SAIL-M8BG-4-1.5QGE	1093200150
SAIL-M8BW-4-1.5V	1927340150
SAIL-M8BW-4-1.5U	9456150150
SAIL-M8BW-4-1.5Q	1927080150
SAIL-M8BW-4-1.5QGE	1093240150
Other versions on request	

Standard cable lengths

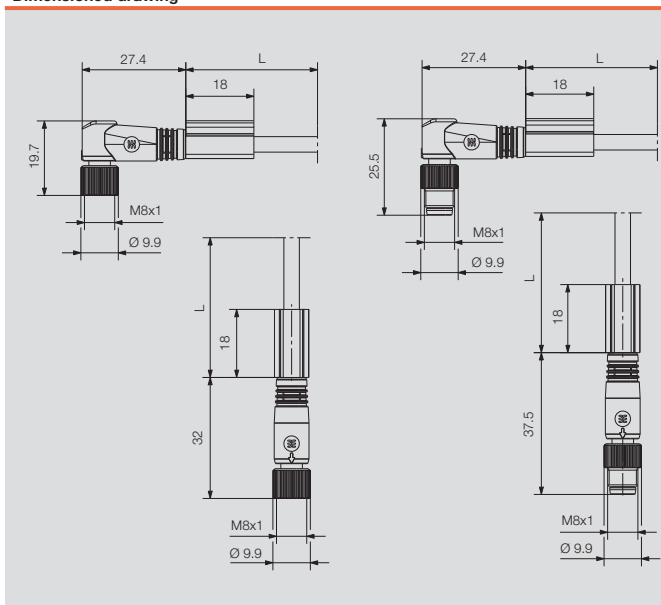
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

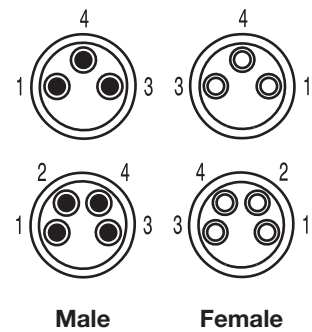
Rated current	4 A
Protection class	IP 67
Core cross-section	0.25 mm ²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	60 V (3-pole) / 30 V (4-pole)
(acc. to VDE standard 0110 ISO group C)	

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



M8 one end without connector snap-on connection



Ordering data

Female, straight	
PVC	1.5 m
PUR	1.5 m
PUR halogen-free	1.5 m
Female, angled	
PVC	1.5 m
PUR	1.5 m
PUR halogen-free	1.5 m
Note	

3-pole	
Type	Order No.
SAIL-M8BGR-3-1.5V	1948710150
SAIL-M8BGR-3-1.5U	1827020150
SAIL-M8BGR-3-1.5Q	1948610150
SAIL-M8BWR-3-1.5V	1948720150
SAIL-M8BWR-3-1.5U	1827010150
SAIL-M8BWR-3-1.5Q	1948620150
Other versions on request	

4-pole	
Type	Order No.
SAIL-M8BGR-4-1.5V	1948730150
SAIL-M8BGR-4-1.5U	1948530150
SAIL-M8BGR-4-1.5Q	1948630150
SAIL-M8BWR-4-1.5V	1948740150
SAIL-M8BWR-4-1.5U	1948540150
SAIL-M8BWR-4-1.5Q	1948640150
Other versions on request	

Standard cable lengths

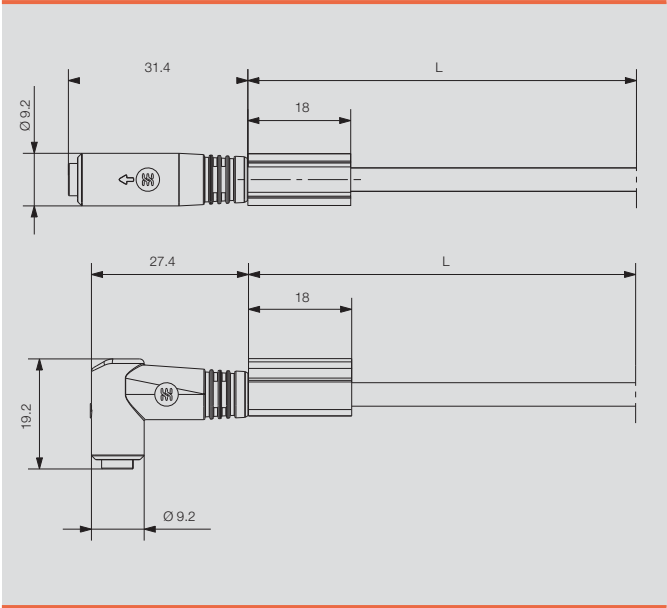
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Rated current	4 A
Protection class	IP 65
Core cross-section	0.25 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	60 V (3-pole) / 30 V (4-pole)
(acc. to VDE standard 0110 ISO group C)	

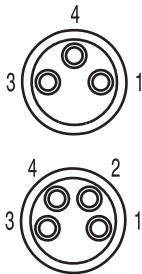
Chapter W includes additional technical specifications for the cable

Dimensioned drawing

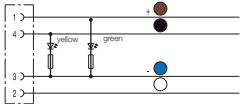
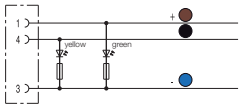


Sensor cables

M8 one end without connector with LED



Female



Ordering data

Female, angled	
PVC	1.5 m
PUR	1.5 m
PUR halogen-free	1.5 m
PUR halogen-free yellow	1.5 m
Note	

2 LEDs

Type	Order No.
SAIL-M8BW-3L1.5V	1927350150
SAIL-M8BW-3L1.5U	9457460150
SAIL-M8BW-3L1.5Q	1927090150
SAIL-M8BW-3L1.5QGE	1093210150
Other versions on request	

3-pole

2 LEDs

Type	Order No.
SAIL-M8BW-4L1.5V	1927360150
SAIL-M8BW-4L1.5U	1906400150
SAIL-M8BW-4L1.5Q	1927100150
SAIL-M8BW-4L1.5QGE	1093230150
Other versions on request	

4-pole

Standard cable lengths

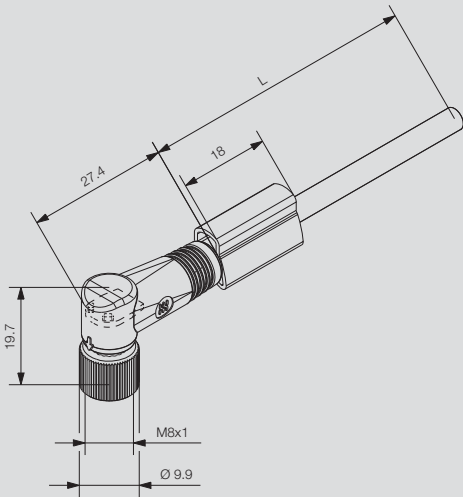
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

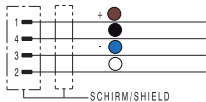
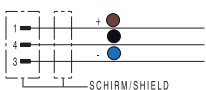
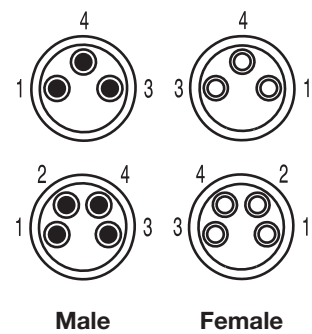
Rated current	4 A
Protection class	IP 67
Core cross-section	0.25 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	60 V (3-pole) / 30 V (4-pole)
(acc. to VDE standard 0110 ISO group C)	

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



M8 one end without connector shielded



Ordering data

Male, straight	
PUR	1.5 m
Male, angled	
PUR	1.5 m
Female, straight	
PUR	1.5 m
Female, angled	
PUR	1.5 m
Note	

3-pole	
Type	Order No.
SAIL-M8G-3S1.5U	1906560150
SAIL-M8W-3S1.5U	1906580150
SAIL-M8BG-3S1.5U	1906600150
SAIL-M8BW-3S1.5U	1906620150
Other versions on request	

4-pole	
Type	Order No.
SAIL-M8G-4S1.5U	1906570150
SAIL-M8W-4S1.5U	1906590150
SAIL-M8BG-4S1.5U	1906610150
SAIL-M8BW-4S1.5U	1906630150
Other versions on request	

Standard cable lengths

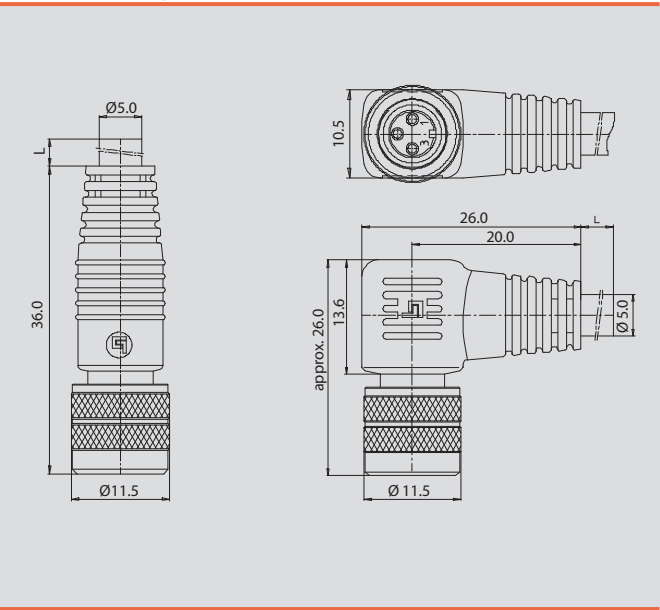
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Rated current	4 A
Protection class	IP 67
Core cross-section	0.25 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	60 V (3-pole) / 30 V (4-pole)
(acc. to VDE standard 0110 ISO group C)	

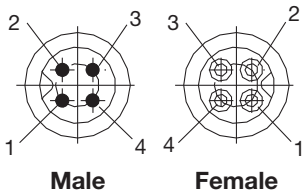
Chapter W includes additional technical specifications for the cable

Dimensioned drawing



Sensor cables

M5 one end without connector



Ordering data

Male, straight	
PUR	1.5 m
Male, angled	
PUR	1.5 m
Female, straight	
PUR	1.5 m
Female, angled	
PUR	1.5 m
Note	

3-pole

Type	Order No.
SAIL-M5G-3P-1.5U	1854060150
SAIL-M5W-3P-1.5U	1873280150
SAIL-M5BG-3P-1.5U	1873290150
SAIL-M5BW-3P-1.5U	1873260150
Other versions on request	

4-pole

Type	Order No.
SAIL-M5G-4P-1.5U	1871700150
SAIL-M5W-4P-1.5U	1873240150
SAIL-M5BG-4P-1.5U	1873250150
SAIL-M5BW-4P-1.5U	1873270150
Other versions on request	

Standard cable lengths

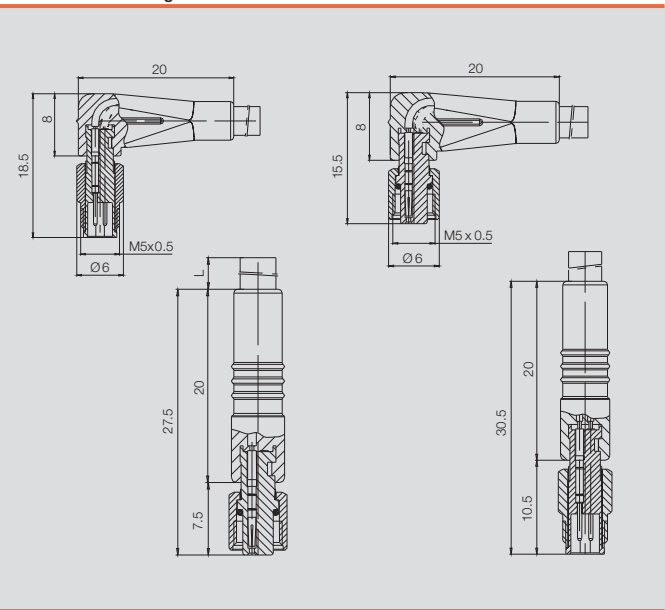
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Rated current	1 A
Protection class	IP 67
Core cross-section	0.25 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	60 V
(acc. to VDE standard 0110 ISO group C)	

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



Connecting cables

M12



M8



M8 Snap connection



Twin cabling



Many applications with sensors require suitable connecting cables. The connecting cables are available in different designs. The M12/M8 plug-in connectors are available in straight and 90° versions and also with LEDs.

- When plugged in, the M12 connecting cables comply with IP68 ingress protection class.
- The cable sheathing is black and made of polyurethane (PUR or PVC).
- The connecting cables are supplied with two marking sleeves. Corresponding tags TM-I 18 for the marking sleeves can be found in chapter I.

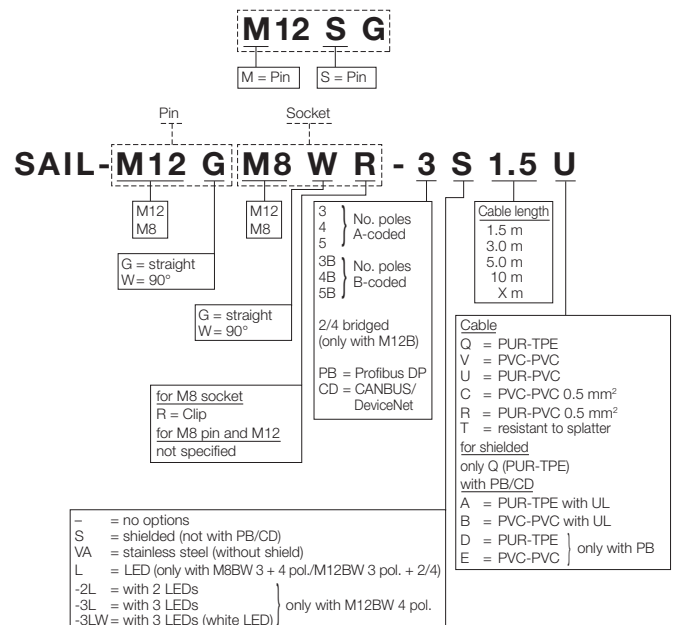
Sensor cables

Weidmüller can supply various cable lengths as indicated in the following table:

Typical cable lengths are:

- | | | | |
|---------|---------|---------|----------|
| • 1.5 m | • 3.0 m | • 5.0 m | • 10.0 m |
|---------|---------|---------|----------|

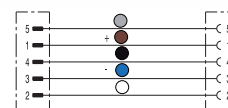
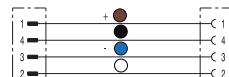
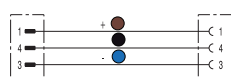
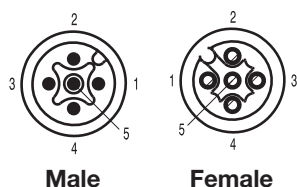
Example of designation



Connecting cables

M12 to M12

A-coded



Ordering data

Male, straight - Female, straight	
PVC	1.5 m
PUR	1.5 m
PUR halogen-free	1.5 m
PUR halogen-free yellow	1.5 m
Resistant to welding beads	1.5 m
Male, straight - Female, angled	
PVC	1.5 m
PUR	1.5 m
PUR halogen-free	1.5 m
PUR halogen-free yellow	1.5 m
Resistant to welding beads	1.5 m
Male, angled - Female, angled	
PVC	1.5 m
PUR	1.5 m
PUR halogen-free	1.5 m
Note	

3-pole

Type	Order No.
SAIL-M12GM12G-3-1.5V	1925300150
SAIL-M12GM12G-3-1.5U	9457230150
SAIL-M12GM12G-3-1.5Q	1926490150
SAIL-M12GM12G-3-1.5QGE	1093010150
SAIL-M12GM12G-3-1.5T	1021710150
Note	
SAIL-M12GM12W-3-1.5V	1925340150
SAIL-M12GM12W-3-1.5U	9457390150
SAIL-M12GM12W-3-1.5Q	1926530150
SAIL-M12GM12W-3-1.5QGE	1093050150
SAIL-M12GM12W-3-1.5T	1021720150
Note	
SAIL-M12WM12W-3-1.5V	1925380150
SAIL-M12WM12W-3-1.5U	1815670150
SAIL-M12WM12W-3-1.5Q	1926570150
Other versions on request	

4-pole

Type	Order No.
SAIL-M12GM12G-4-1.5V	1925310150
SAIL-M12GM12G-4-1.5U	1906300150
SAIL-M12GM12G-4-1.5Q	1926500150
SAIL-M12GM12G-4-1.5QGE	1093020150
SAIL-M12GM12G-4-1.5T	1021730150
Note	
SAIL-M12GM12W-4-1.5V	1925350150
SAIL-M12GM12W-4-1.5U	9457310150
SAIL-M12GM12W-4-1.5Q	1926540150
SAIL-M12GM12W-4-1.5QGE	1093070150
SAIL-M12GM12W-4-1.5T	1021740150
Note	
SAIL-M12WM12W-4-1.5V	1925390150
SAIL-M12WM12W-4-1.5U	1906310150
SAIL-M12WM12W-4-1.5Q	1926580150
Other versions on request	

5-pole

Type	Order No.
SAIL-M12GM12G-5-1.5V	1925320150
SAIL-M12GM12G-5-1.5U	9457340150
SAIL-M12GM12G-5-1.5Q	1926510150
SAIL-M12GM12G-5-1.5QGE	1093030150
SAIL-M12GM12G-5-1.5T	1011970150
Note	
SAIL-M12GM12W-5-1.5V	1925360150
SAIL-M12GM12W-5-1.5U	9457270150
SAIL-M12GM12W-5-1.5Q	1926550150
SAIL-M12GM12W-5-1.5QGE	1093080150
SAIL-M12GM12W-5-1.5T	1011990150
Note	
SAIL-M12WM12W-5-1.5V	1925400150
SAIL-M12WM12W-5-1.5U	9457900150
SAIL-M12WM12W-5-1.5Q	1926590150
Other versions on request	

Standard cable lengths

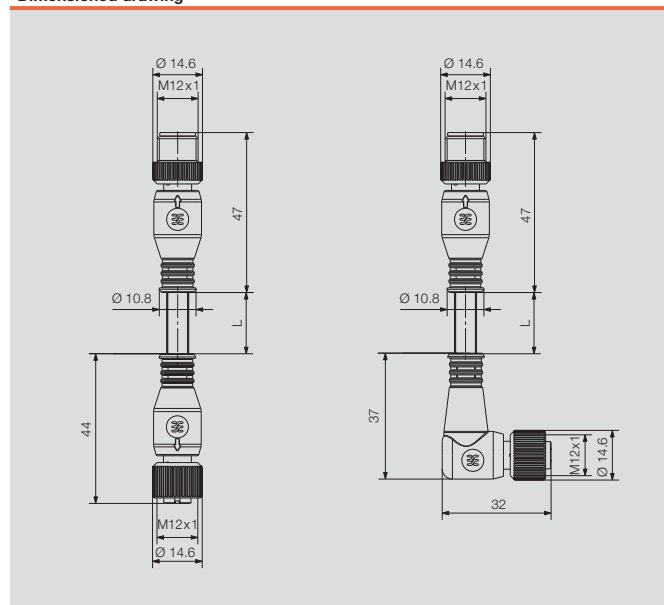
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Rated current	4 A
Protection class	IP 67
Core cross-section	0.34 mm ²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	250 V (3- and 4-pole) / 125 V (5-pole)
(acc. to VDE standard 0110 ISO group C)	

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



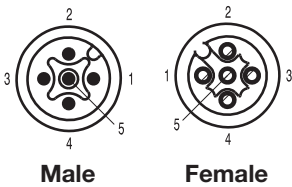
Sensor cables

Connecting cables

M12 to M12

A-coded

Bridged between
pins 2 and 4



Ordering data

Male, straight - Female, straight	
PVC	1.5 m
PUR	1.5 m
PUR halogen-free	1.5 m
PUR halogen-free yellow	1.5 m
Male, straight - Female, angled	
PVC	1.5 m
PUR	1.5 m
PUR halogen-free	1.5 m
PUR halogen-free yellow	1.5 m
Note	

3-pole

Type	Order No.
SAIL-M12GM12G-2/4-1.5V	1925330150
SAIL-M12GM12G-2/4-1.5U	9456990150
SAIL-M12GM12G-2/4-1.5Q	1926520150
SAIL-M12GM12G-2/4-1.5QGE	1093000150
SAIL-M12GM12W-2/4-1.5V	1925370150
SAIL-M12GM12W-2/4-1.5U	9457890150
SAIL-M12GM12W-2/4-1.5Q	1926560150
SAIL-M12GM12W-2/4-1.5QGE	1093040150
Other versions on request	

Standard cable lengths

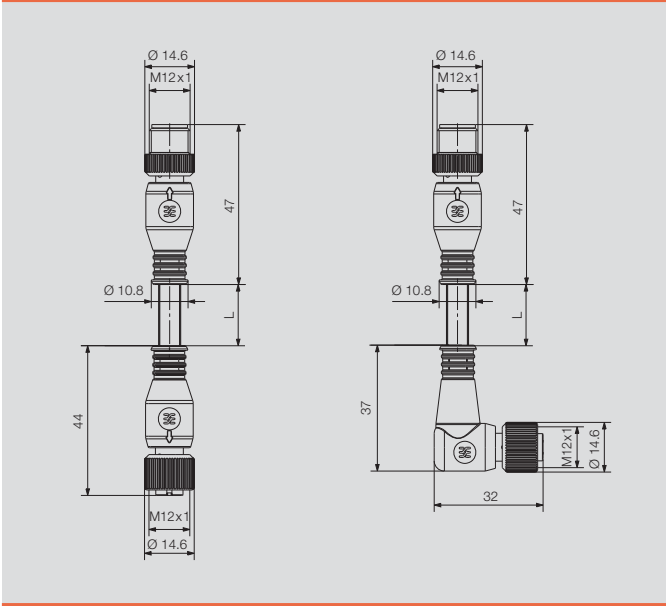
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

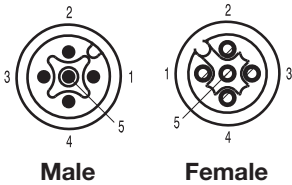
Rated current	4 A
Protection class	IP 67
Core cross-section	0.34 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	250 V (3- and 4-pole) / 125 V (5-pole)
(acc. to VDE standard 0110 ISO group C)	

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



Connecting cables
M12 to M12, LED
A-coded
male, straight -
female, angled



Ordering data

Male, straight - Female, angled	
PVC	1.5 m
PUR	1.5 m
PUR halogen-free	1.5 m
PUR halogen-free yellow	1.5 m
Resistant to welding beads	1.5 m
Note	

2 LEDs

3-pole

Type	Order No.
SAIL-M12GM12W-3L1.5V	1925410150
SAIL-M12GM12W-3L1.5U	9457790150
SAIL-M12GM12W-3L1.5Q	1926600150
SAIL-M12GM12W-3L1.5T	1004320150
Other versions on request	

2 LEDs

4-pole

Type	Order No.
SAIL-M12GM12W-4-2L1.5V	1925420150
SAIL-M12GM12W-4-2L1.5U	1906410150
SAIL-M12GM12W-4-2L1.5Q	1926610150
SAIL-M12GM12W-4-2L1.5T	1004310150
Other versions on request	

3 LEDs

4-pole

Type	Order No.
SAIL-M12GM12W-4-3L1.5V	1963930150
SAIL-M12GM12W-4-3L1.5U	1963910150
SAIL-M12GM12W-4-3L1.5Q	1232810150
SAIL-M12GM12W-4-3LW1.5QGE	1093060150
SAIL-M12GM12W-4-3LW1.5T	1020930150
Other versions on request	

Standard cable lengths

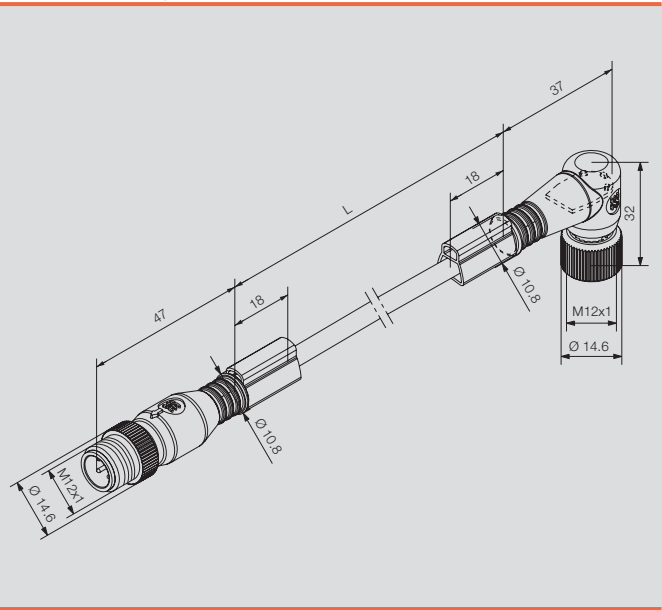
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

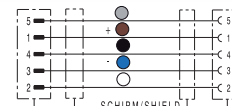
Rated current	4 A
Protection class	IP 67
Core cross-section	0.34 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	250 V (3- and 4-pole) / 125 V (5-pole)
(acc. to VDE standard 0110 ISO group C)	

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



shielded

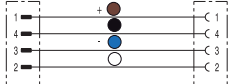
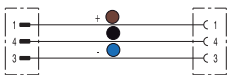
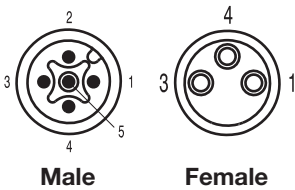


5-pole

Type	Order No.
SAIL-M12GM12G-5S1.5Q	1058510150
SAIL-M12GM12W-5S1.5Q	1059540150
SAIL-M12WM12W-5S1.5Q	1059740150
Other versions on request	

Weidmüller

Connecting cables
M12 to M8



Ordering data

Male, straight - Female, straight		
PVC	1.5 m	
PUR	1.5 m	
PUR halogen-free	1.5 m	
Male, straight - Female, angled		
PVC	1.5 m	
PUR	1.5 m	
PUR halogen-free	1.5 m	
Male, angled - Female, angled		
PVC	1.5 m	
PUR	1.5 m	
PUR halogen-free	1.5 m	
Note		

3-pole	
Type	Order No.
SAIL-M12GM8G-3-1.5V	1938170150
SAIL-M12GM8G-3-1.5U	9457770150
SAIL-M12GM8G-3-1.5Q	1938040150
SAIL-M12GM8W-3-1.5V	1938180150
SAIL-M12GM8W-3-1.5U	9457980150
SAIL-M12GM8W-3-1.5Q	1938050150
SAIL-M12WM8W-3-1.5V	1938190150
SAIL-M12WM8W-3-1.5U	1906330150
SAIL-M12WM8W-3-1.5Q	1938060150
Other versions on request	

4-pole	
Type	Order No.
SAIL-M12GM8G-4-1.5V	1938200150
SAIL-M12GM8G-4-1.5U	9456660150
SAIL-M12GM8G-4-1.5Q	1938070150
SAIL-M12GM8W-4-1.5V	1938210150
SAIL-M12GM8W-4-1.5U	9456670150
SAIL-M12GM8W-4-1.5Q	1938080150
SAIL-M12WM8W-4-1.5V	1938220150
SAIL-M12WM8W-4-1.5U	1906340150
SAIL-M12WM8W-4-1.5Q	1938090150
Other versions on request	

Standard cable lengths

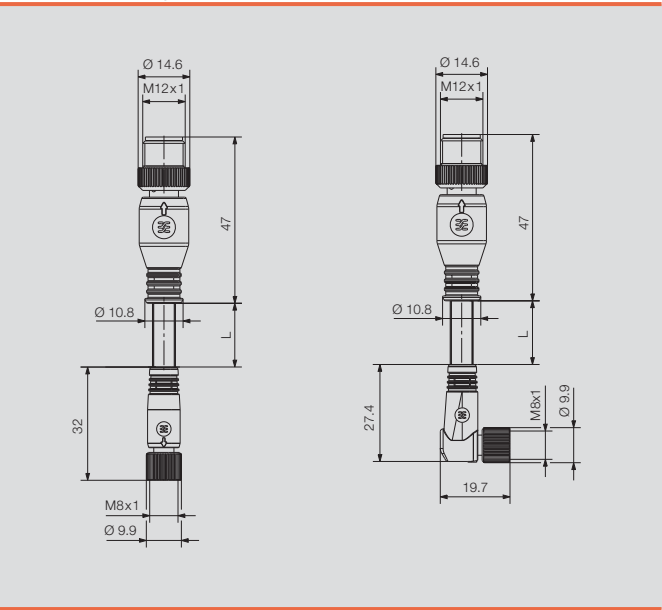
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Rated current	4 A
Protection class	IP 67
Core cross-section	0.25 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	60 V (3-pole) / 30 V (4-pole)
(acc. to VDE standard 0110 ISO group C)	

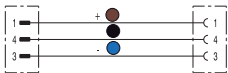
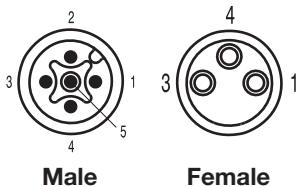
Chapter W includes additional technical specifications for the cable

Dimensioned drawing



Sensor cables

Connecting cables
M12 to M8
snap-on connection



Ordering data

Male, straight - Female, straight	
PUR	1.5 m
Male, straight - Female, angled	
PUR	1.5 m
PUR halogen-free yellow	1.5 m
Note	

3-pole

Type	Order No.
SAIL-M12GM8GR-3-1.5U	1984530150
SAIL-M12GM8WR-3-1.5U	9457570150
SAIL-M12GM8WR-3-1.5QGE	1093150150
Other versions on request	

Standard cable lengths

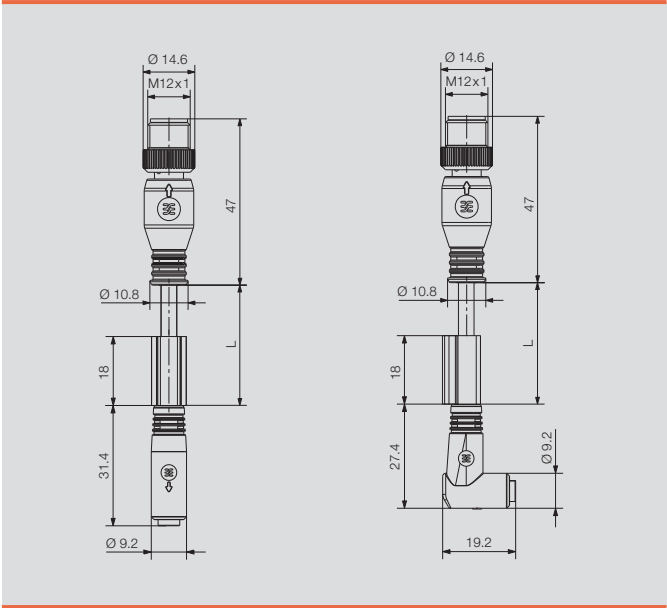
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

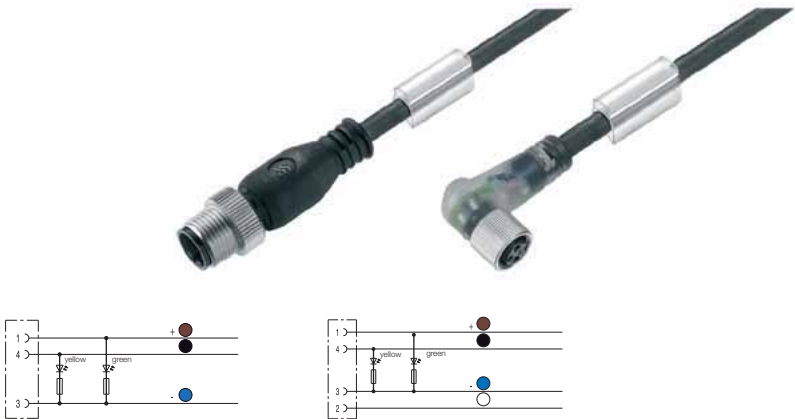
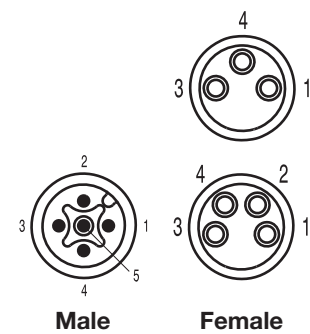
Rated current	4 A
Protection class	IP 65
Core cross-section	0.25 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	60 V (3-pole) / 30 V (4-pole)
(acc. to VDE standard 0110 ISO group C)	

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



Connecting cables
M12 to M8 LED



Ordering data

Male, straight - Female, angled	
PVC	1.5 m
PUR	1.5 m
PUR halogen-free	1.5 m
PUR halogen-free yellow	1.5 m
Note	

2 LEDs

3-pole

Type	Order No.
SAIL-M12GM8W-3L1.5V	1962290150
SAIL-M12GM8W-3L1.5U	9457760150
SAIL-M12GM8W-3L1.5Q	1962270150
SAIL-M12GM8W-3L1.5QGE	1093110150
Other versions on request	

2 LEDs

4-pole

Type	Order No.
SAIL-M12GM8W-4L1.5V	1962300150
SAIL-M12GM8W-4L1.5U	1906430150
SAIL-M12GM8W-4L1.5Q	1962280150
SAIL-M12GM8W-4L1.5QGE	1093130150
Other versions on request	

Standard cable lengths

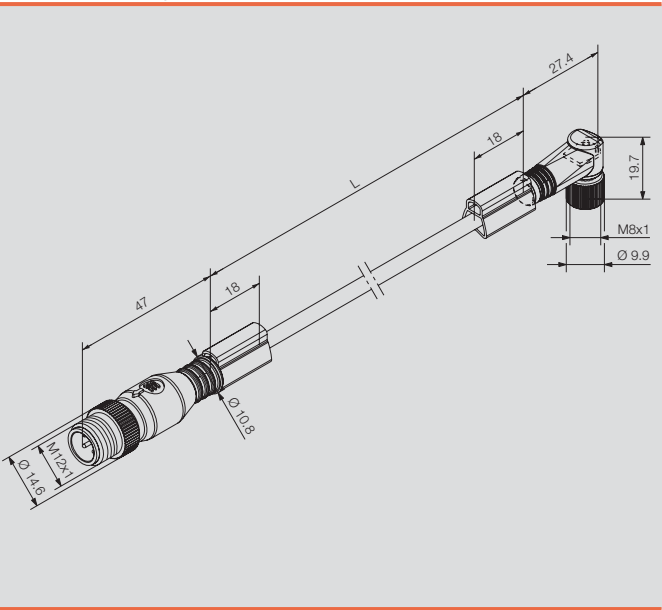
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

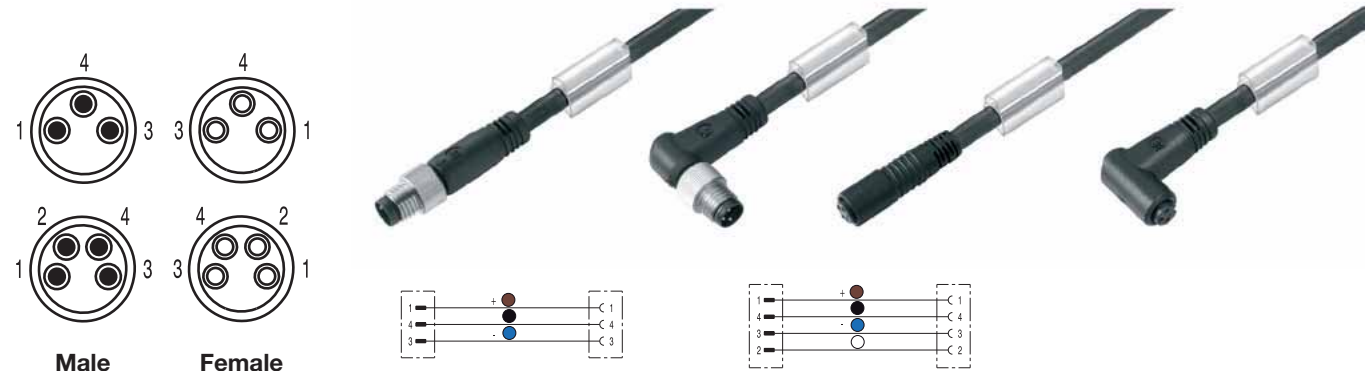
Rated current	4 A
Protection class	IP 67
Core cross-section	0.25 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	60 V (3-pole) / 30 V (4-pole)
(acc. to VDE standard 0110 ISO group C)	

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



Connecting cables
M8 to M8
snap-on connection



Ordering data

Male, straight - Female, straight		
PVC	1.5 m	
PUR	1.5 m	
PUR halogen-free	1.5 m	
Male, straight - Female, angled		
PVC	1.5 m	
PUR	1.5 m	
PUR halogen-free	1.5 m	
Male, angled - Female, angled		
PVC	1.5 m	
PUR	1.5 m	
PUR halogen-free	1.5 m	
Note		

3-pole	
Type	Order No.
SAIL-M8GM8GR-3-1.5V	1948650150
SAIL-M8GM8GR-3-1.5U	1948470150
SAIL-M8GM8GR-3-1.5Q	1948550150
SAIL-M8GM8WR-3-1.5V	1948660150
SAIL-M8GM8WR-3-1.5U	1948480150
SAIL-M8GM8WR-3-1.5Q	1948560150
SAIL-M8WM8WR-3-1.5V	1948670150
SAIL-M8WM8WR-3-1.5U	1948490150
SAIL-M8WM8WR-3-1.5Q	1948570150
Other versions on request	

4-pole	
Type	Order No.
SAIL-M8GM8GR-4-1.5V	1948680150
SAIL-M8GM8GR-4-1.5U	1948500150
SAIL-M8GM8GR-4-1.5Q	1948580150
SAIL-M8GM8WR-4-1.5V	1948690150
SAIL-M8GM8WR-4-1.5U	1948510150
SAIL-M8GM8WR-4-1.5Q	1948590150
SAIL-M8WM8WR-4-1.5V	1948700150
SAIL-M8WM8WR-4-1.5U	1948520150
SAIL-M8WM8WR-4-1.5Q	1948600150
Other versions on request	

Standard cable lengths

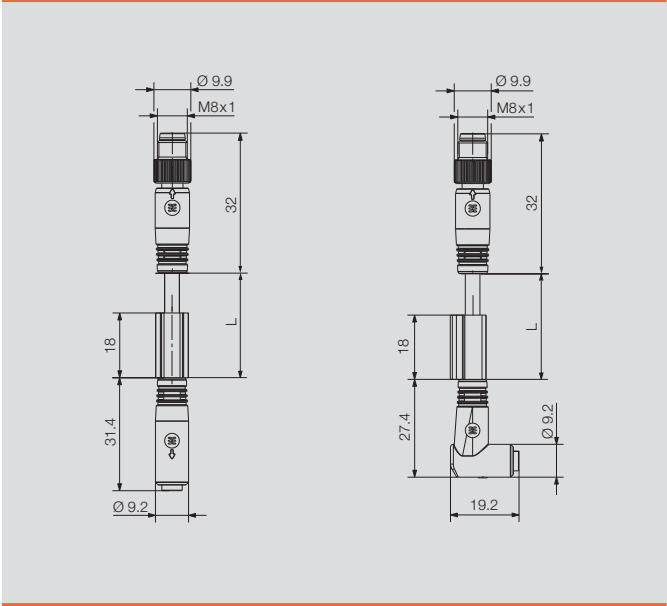
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Rated current	4 A
Protection class	IP 65
Core cross-section	0.25 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	60 V (3-pole) / 30 V (4-pole)
(acc. to VDE standard 0110 ISO group C)	

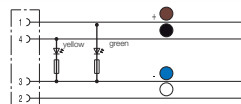
Chapter W includes additional technical specifications for the cable

Dimensioned drawing



Connecting cables

M8 to M8 LED



Type	Order No.
SAIL-M8GM8W-4L1.5V	1927200150
SAIL-M8GM8W-4L1.5U	1906450150
SAIL-M8GM8W-4L1.5Q	1926940150
Other versions on request	

Twin sensor cables with three plug-in connectors: M12/M8

Twin sensor cables



In general, two sensor cables can be fed with a M12 connector to the distributor. A wide variety of wiring arrangements are possible with these cables. All M12 and M8 connections can be implemented.

Weidmüller has all the necessary components ready. With mechanical engineering, this type of application is an exception.

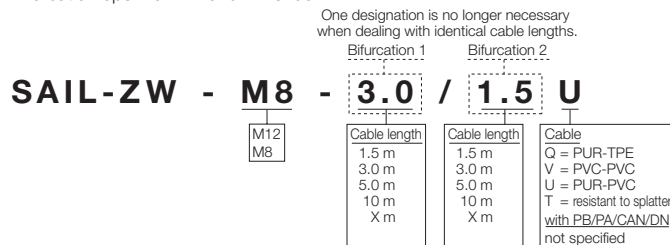
4-pole connection

In the SAI distributor, the 4 pole socket is fitted with pins 1, 3, 4 and 5. The 4 pole SAI plug is fitted with pins 1, 2, 3 and 4. This corresponds to market standards.

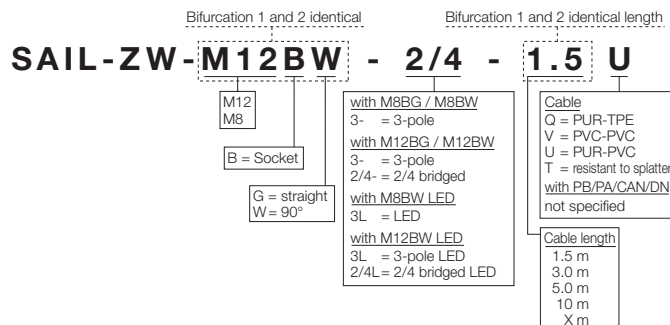
Special care must be taken when wiring combinations of 4-pole plugs and distributors.

Designation

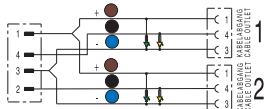
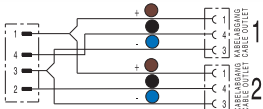
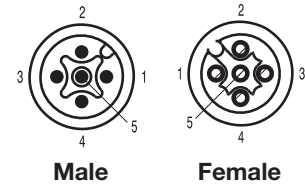
Twin plug
Bifurcation open for "1" and "2" ends



Twin plug
Connecting cable



Twin cabling
M12 to M12



Ordering data

Male straight - 2 females straight	
PUR	1.5 m
Male straight - 2 females angled	
PUR	1.5 m
Note	

Type	Order No.
SAIL-ZW-M12BG-3-1.5U	1005460150
SAIL-ZW-M12BW-3-1.5U	1005270150

Type	Order No.
SAIL-ZW-M12BW-3L1.5U	1912110150

Type	Order No.

Standard cable lengths

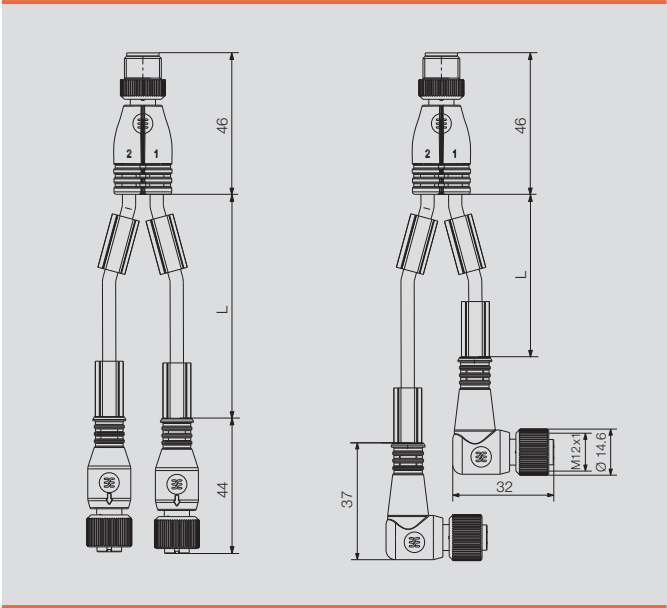
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Rated current	4 A
Protection class	IP 67
Core cross-section	0.34 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	250 V (3- and 4-pole) / 125 V (5-pole)
(acc. to VDE standard 0110 ISO group C)	

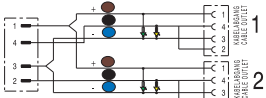
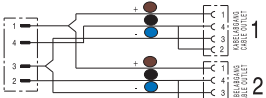
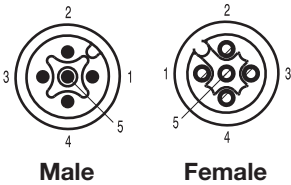
Chapter W includes additional technical specifications for the cable

Dimensioned drawing



Sensor cables

Twin cabling
M12 to M12
bridge between
pins 2 and 4



Ordering data

Male straight - 2 females straight		
PUR	1.5 m	
Male straight - 2 females angled		
PUR	1.5 m	
Note		

3-pole

Type	Order No.
SAIL-ZW-M12BG-2/4-1.5U	1812550150
SAIL-ZW-M12BW-2/4-1.5U	1964280150

2 LEDs

3-pole

Type	Order No.
SAIL-ZW-M12BW-2/4L1.5U	1964290150

Standard cable lengths

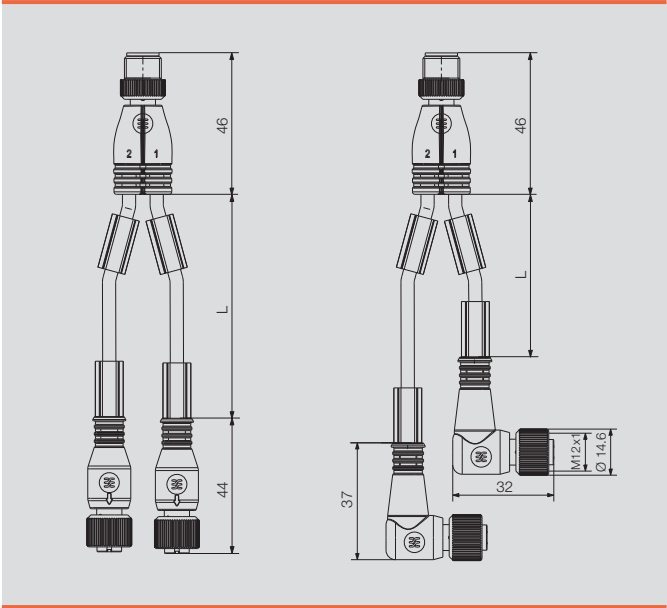
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

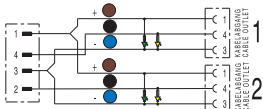
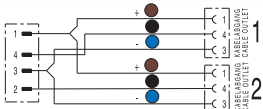
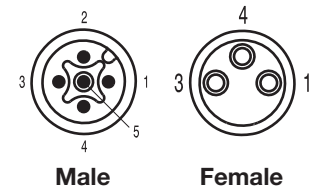
Rated current	4 A
Protection class	IP 67
Core cross-section	0.34 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	250 V (3- and 4-pole) / 125 V (5-pole)
(acc. to VDE standard 0110 ISO group C)	

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



Twin cabling
M12 to M8



Ordering data

Male straight - 2 females straight	
PUR	1.5 m
PUR halogen-free yellow	1.5 m
Male straight - 2 females angled	
PUR	1.5 m
PUR halogen-free yellow	1.5 m
Note	

3-pole	
Type	Order No.
SAIL-ZW-M8BG-3-1.5U	9457490150
SAIL-ZW-M8BG-3-1.5QGE	1093250150
Other versions on request	

2 LEDs 3-pole	
Type	Order No.
SAIL-ZW-M8BW-3L1.5U	9457410150
Other versions on request	

Standard cable lengths

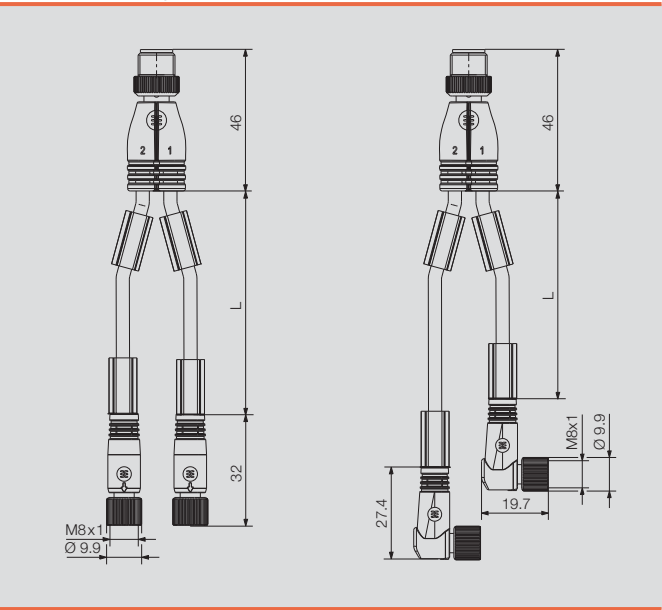
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Rated current	4 A
Protection class	IP 67
Core cross-section	0.25 mm ²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	60 V (3-pole) / 30 V (4-pole)
(acc. to VDE standard 0110 ISO group C)	

Chapter W includes additional technical specifications for the cable

Dimensioned drawing

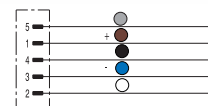
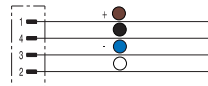
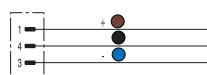
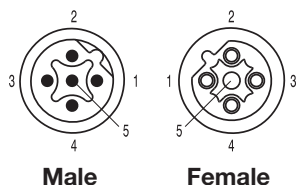


B-coded M12 cables



Connector coding is very important whenever the potential for damage exists when connectors are incorrectly plugged together. This risk is particularly high when you are working with different voltages in your facility and these voltages must be plugged in. For example, it is not unusual to connect 110 or 230 V with a M12 plug-in connector. However if a 24 V electric potential is connected with a 110 or 230 V line, it will inevitably lead to destructive results. B-coding has been introduced for such cases. B-coded connectors are shaped so that they can not be fitted together unless extreme force is used. This coding makes it safe to use the standard M12 connector system in a single machine for different voltages which may exceeding 24 V. For the SAI Active Universal System, the power plug is A-coded since it only provides 24 V. The Profibus DP also takes advantage of this coding scheme. It is currently the only bus system using B-coded M12 plugs for IP67-protected connections. In this case, special approved bulk stock cable is used instead of the power cables.

M12 one end without connector unshielded B-coded



Ordering data

Male, straight	
PUR halogen-free	1.5 m
Male, angled	
PUR halogen-free	1.5 m
Female, straight	
PUR halogen-free	1.5 m
Female, angled	
PUR halogen-free	1.5 m
Note	

3-pole

Type	Order No.
SAIL-M12G-3B-1.5Q	1057770150
SAIL-M12W-3B-1.5Q	1057800150
SAIL-M12BG-3B-1.5Q	1057740150
SAIL-M12BW-3B-1.5Q	1061890150

4-pole

Type	Order No.
SAIL-M12G-4B-1.5Q	1057780150
SAIL-M12W-4B-1.5Q	1057810150
SAIL-M12BG-4B-1.5Q	1057750150
SAIL-M12BW-4B-1.5Q	1061900150

5-pole

Type	Order No.
SAIL-M12G-5B-1.5Q	1057790150
SAIL-M12W-5B-1.5Q	1057820150
SAIL-M12BG-5B-1.5Q	1061880150
SAIL-M12BW-5B-1.5Q	1057760150

Standard cable lengths

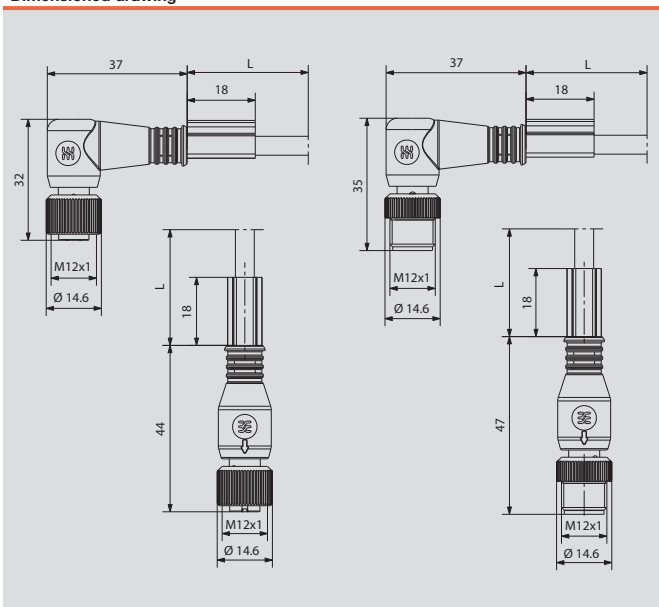
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Rated current	4 A
Protection class	IP 67
Core cross-section	0.34 mm ²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	250 V (3- and 4-pole) / 125 V (5-pole)
(acc. to VDE standard 0110 ISO group C)	

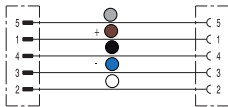
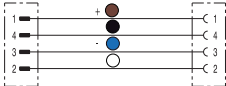
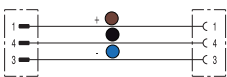
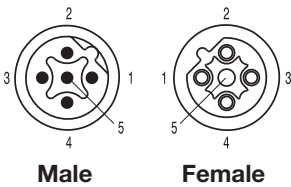
Chapter W includes additional technical specifications for the cable

Dimensioned drawing



Power cables

M12 connecting cable
unshielded
B-coded



Ordering data

Male, straight - Female, straight	
PUR halogen-free	1.5 m
Male, straight - Female, angled	
PUR halogen-free	1.5 m
Male, angled - Female, angled	
PUR halogen-free	1.5 m
Male, angled - Female, straight	
PUR halogen-free	1.5 m
Note	

3-pole

Type	Order No.
SAIL-M12GM12G-3B-1.5Q	1057830150
SAIL-M12GM12W-3B-1.5Q	1057900150
SAIL-M12WM12W-3B-1.5Q	1061910150
SAIL-M12WM12G-3B-1.5Q	1057870150
Other versions on request	

4-pole

Type	Order No.
SAIL-M12GM12G-4B-1.5Q	1057840150
SAIL-M12GM12W-4B-1.5Q	1057910150
SAIL-M12WM12W-4B-1.5Q	1061920150
SAIL-M12WM12G-4B-1.5Q	1057880150
Other versions on request	

5-pole

Type	Order No.
SAIL-M12GM12G-5B-1.5Q	1057850150
SAIL-M12GM12W-5B-1.5Q	1057920150
SAIL-M12WM12W-5B-1.5Q	1061930150
SAIL-M12WM12G-5B-1.5Q	1057890150
Other versions on request	

Standard cable lengths

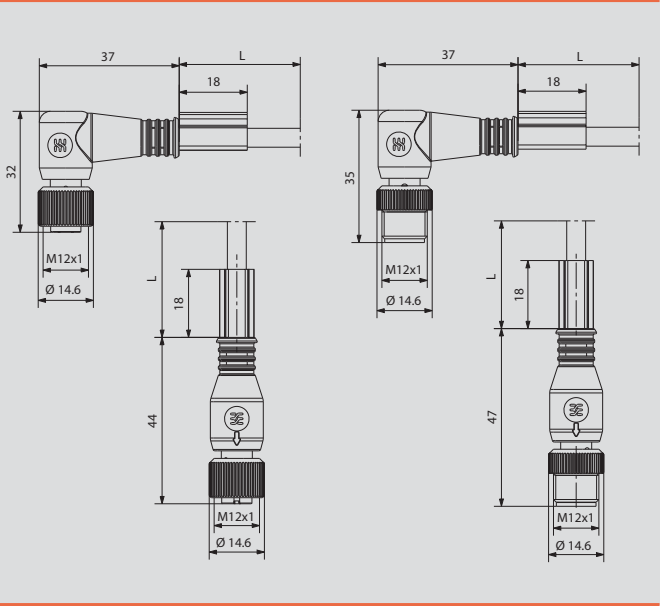
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Rated current	4 A
Protection class	IP 67
Core cross-section	0.34 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	250 V (3- and 4-pole) / 125 V (5-pole)
(acc. to VDE standard 0110 ISO group C)	

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



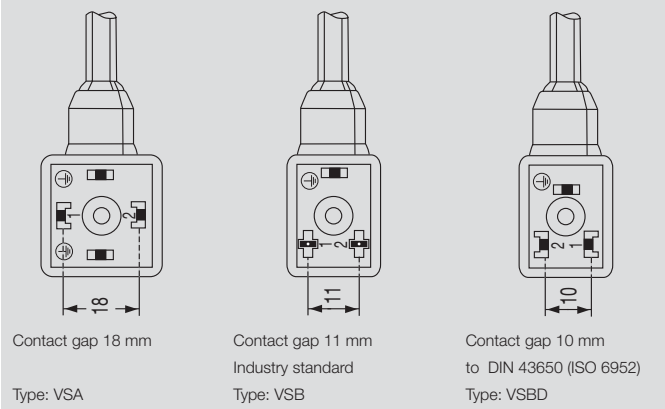
Valve plugs

Valve plug, ISO 4400

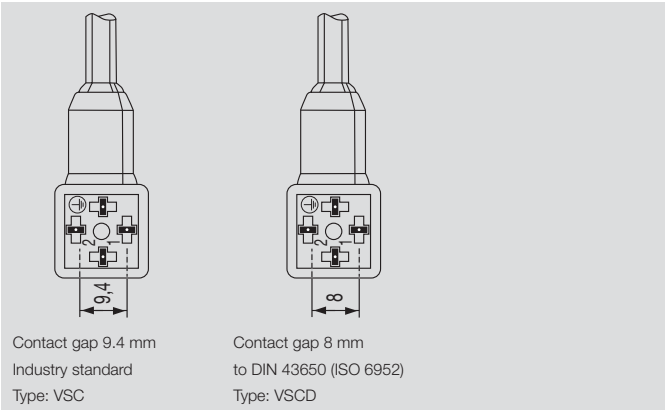


Valve plug
Type A

Valve plug
Type B



Valve plug
Type C



Machine builders frequently need different cable lengths for valve plugs. Valve plugs with free cable ends can be used to adjust the cable exactly to the lengths required.

Weidmüller can of course also supply valve plugs as connecting cables with M12 plugs.

The status of the valve plug is shown by an LED. Every valve plug is fitted with a protective circuit.

The Weidmüller range includes valve plugs of type A, B and C to DIN and industry standards.

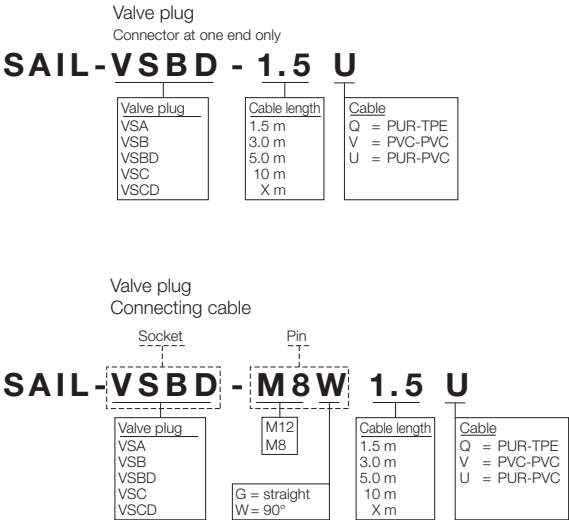
Weidmüller plugs comply with IP67 ingress protection class when plugged in.

The outgoing direction is also crucial. Weidmüller can supply 0° versions, i.e. the outgoing direction of the cable is at the PE contact.

Types

Type	Contact gap
Type A	18 mm
Type B industry standard	11 mm
Type B DIN	10 mm
Type C industry standard	9.4 mm
Type C DIN	8.0 mm

Example of designation



Design A



B

Ordering data

Open cable end - valve plug	1.5 m
Male straight - valve plug	1.5 m
Male angled - valve plug	1.5 m
Note	

A	
Type	Order No.
SAIL-VSA-1.5U	9457710150
SAIL-VSA-M12G-1.5U	9457040000
SAIL-VSA-M12W-1.5U	1857690150
Other versions on request	

Standard cable lengths

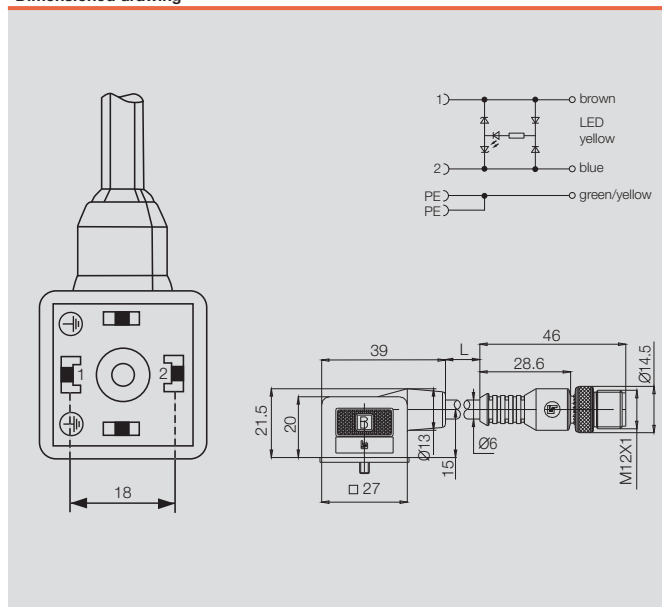
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed to order other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Sheathing colour	grey
Sheath material	PUR
Rated current	4 A
Protection class	IP 67
Core cross-section	0.75 mm ²
Contact surface	tinned
Temperature range of housing	-25...+85 °C
Rated voltage	24 V
(acc. to VDE standard 0110 ISO group C)	

L in the drawing is the cable length

Dimensioned drawing



Valve cables

Design B/BD

B = Industrial standard
BD = DIN Standard



Ordering data

Open cable end - valve plug	1.5 m
Male straight - valve plug	1.5 m
Male angled - valve plug	1.5 m
Note	

B

Type	Order No.
SAIL-VSB-1.5U	9457930150
SAIL-VSB-M12G-1.5U	9457680150
SAIL-VSB-M12W-1.5U	1857700150
Other versions on request	

BD

Type	Order No.
SAIL-VSBD-1,5U	9456070150
SAIL-VSBD-M12G-1.5U	9457780150
SAIL-VSBD-M12W-1.5U	1857710150
Other versions on request	

Standard cable lengths

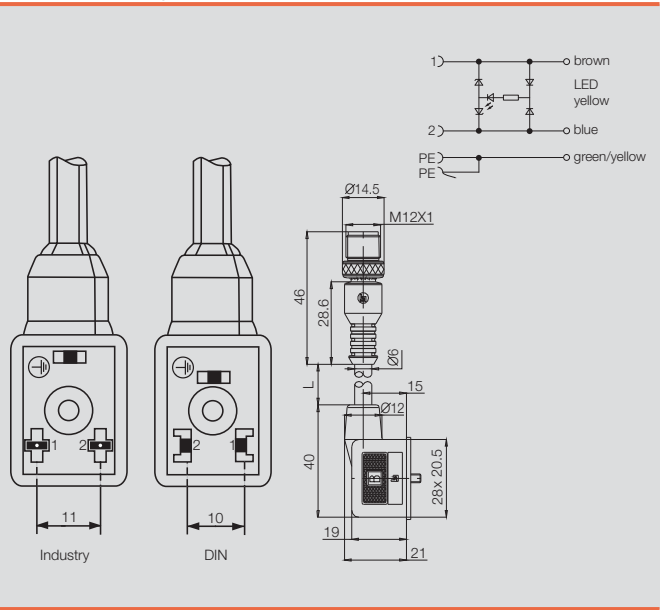
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed to order other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Sheathing colour	grey
Sheath material	PUR
Rated current	4 A
Protection class	IP 67
Core cross-section	0.75 mm²
Contact surface	tinned
Temperature range of housing	-25...+85 °C
Rated voltage	24 V
(acc. to VDE standard 0110 ISO group C)	

L in the drawing is the cable length

Dimensioned drawing



Design C/CD

C = Industrial standard
CD = DIN Standard



Ordering data

Open cable end - valve plug	1.5 m
Male straight - valve plug	1.5 m
Male angled - valve plug	1.5 m
Note	

C

Type	Order No.
SAIL-VSC-1.5U	9457920150
SAIL-VSC-M12G-1.5U	9457400150
SAIL-VSC-M12W-1.5U	1857720150
Other versions on request	

CD

Type	Order No.
SAIL-VSCD-1.5U	9456240150
SAIL-VSCD-M12G-1.5U	9456170150
SAIL-VSCD-M12W-1.5U	1857730150
Other versions on request	

Standard cable lengths

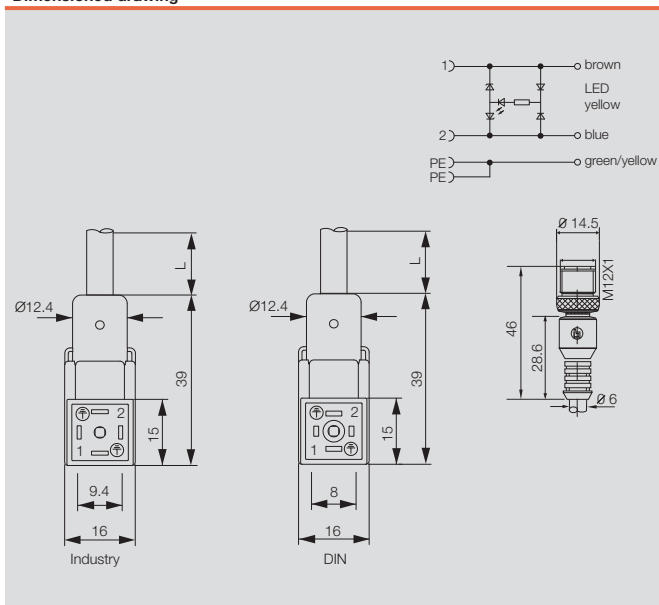
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed to order other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Sheathing colour	grey
Sheath material	PUR
Rated current	4 A
Protection class	IP 67
Core cross-section	0.5 mm ²
Contact surface	tinned
Temperature range of housing	-25...+85 °C
Rated voltage	24 V
(acc. to VDE standard 0110 ISO group C)	

L in the drawing is the cable length

Dimensioned drawing



Introduction

Type A



When building special machines, individual cable lengths are frequently required which are then joined directly to Weidmüller's IDC distributors. Our product portfolio of course contains a corresponding valve plug for such applications.

Type B



This valve plug has a transparent enclosure with integral seal. In addition, a protective sleeve can be slipped over the cable to protect the connected line. The connection cross-section is 0.5 mm² for direct connection to our SAI IDC distributor. The status of the valve plug is indicated by an LED. All valve plugs are fitted with protective circuits.

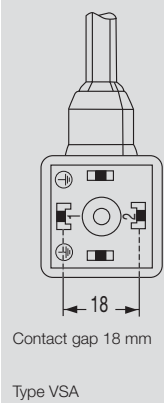
Type C



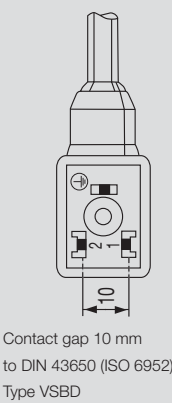
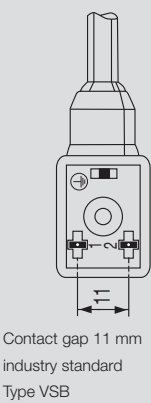
The Weidmüller range includes valve plug forms A, B and C to DIN and industry standards. The plug conforms to ingress protection class IP 67 when plugged in.

Type	
Type	Contact gap
Type A	18 mm
Type B industry standard	11 mm
Type B DIN	10 mm
Type C industry standard	9.4 mm
Type C DIN	8.0 mm

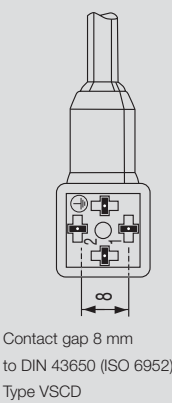
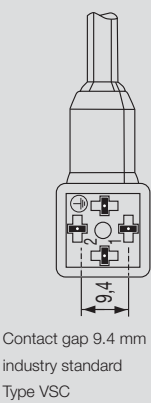
Valve plug
Type A



Valve plug
Type B



Valve plug
Type C



Design A

Suitable for IDC plug-in connectors and protective hose connection



B

Ordering data

Open cable end - valve plug	1.5 m
Note	

A	
Type	Order No.
SAIL-VSA-1.5U(0.5)	1845120150
Supplied without protective hose	

Standard cable lengths

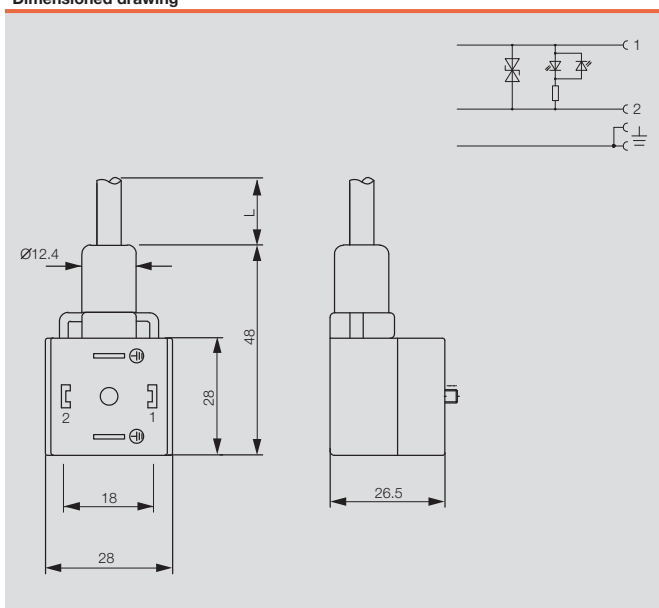
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed to order other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Sheathing colour	black
Sheath material	PUR
Rated current	4 A
Protection class	IP 67
Core cross-section	0.5 mm ²
Contact surface	tinned
Temperature range of housing	-25...+85 °C
Rated voltage	24 V
(acc. to VDE standard 0110 ISO group C)	

L in the drawing is the cable length

Dimensioned drawing



Valve cables

Design B/BD

B = industry standard
BD = DIN standard

Suitable for IDC
plug-in connectors and protective
hose connection



Ordering data

Open cable end - valve plug	1.5 m
Note	

B

Type	Order No.
SAIL-VSB-1.5U(0.5)	1845140150
Supplied without protective hose	

BD

Type	Order No.
SAIL-VSBD-1.5U(0.5)	1845160150
Supplied without protective hose	

Standard cable lengths

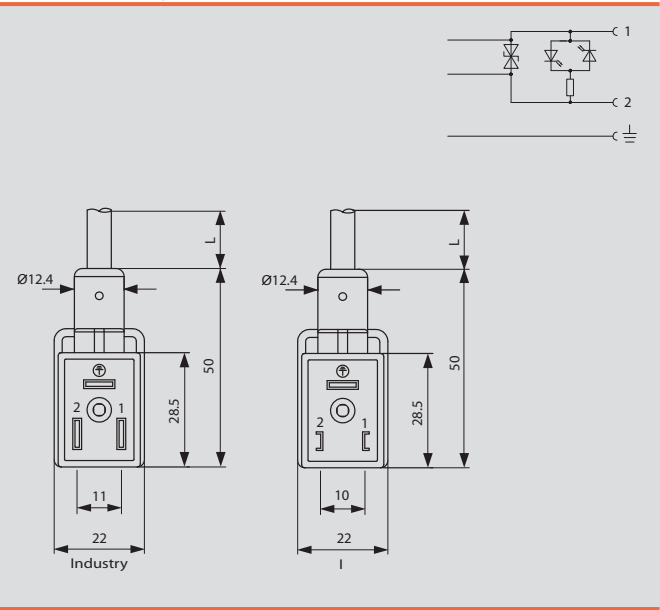
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed to order other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Sheathing colour	black
Sheath material	PUR
Rated current	4 A
Protection class	IP 67
Core cross-section	0.5 mm²
Contact surface	tinned
Temperature range of housing	-25...+85 °C
Rated voltage	24 V
(acc. to VDE standard 0110 ISO group C)	

L in the drawing is the cable length

Dimensioned drawing



Cables 3, 4, 5 poles



- Weidmüller can provide the following types of cables for connecting sensors and actuators:
- The outer sheathing of the cables is made from polyurethane and the inner stranded wires have PVC insulation.
 - They are available with 3, 4 and 5 poles.
 - In addition, the cables are also available with PVC outer sheathing and PVC insulation internally.

B

Ordering data

PUR	Qty.	Order No.
SAIH-SLL-3x0.34mm ² (PUR)	100 m	1902110000
SAIH-SLL-4x0.25mm ² (PUR)	100 m	1902120000
SAIH-SLL-4x0.34mm ² (PUR)	100 m	1902130000
SAIH-SLL-3x0.25mm ² (PUR)	100 m	1902140000
SAIH-SLL-5x0.25mm ² (PUR)	100 m	1902100000
PUR halogen-free		
SAIH-SLL-3x0.34mm ² (TPE)	100 m	1022940000
SAIH-SLL-4x0.34mm ² (TPE)	100 m	1022950000
SAIH-SLL-5x0.34mm ² (TPE)	100 m	1022960000
SAIH-SLL-3x0.25mm ² (TPE)	100 m	1022970000
SAIH-SLL-4x0.25mm ² (TPE)	100 m	1022980000
PVC		
SAIH-SLL-3x0.34mm ² (PVC)	100 m	1902160000
SAIH-SLL-4x0.25mm ² (PVC)	100 m	1902170000
SAIH-SLL-4x0.34mm ² (PVC)	100 m	1902180000
SAIH-SLL-3x0.25mm ² (PVC)	100 m	1902190000
SAIH-SLL-5x0.25mm ² (PVC)	100 m	1902150000
Information		

Technical data

Colour		black
Cross-section	mm ²	0.25 ... 0.34
Qty.		100 Meter
Information		

Bus cables



Owing to their easy assembly and adaptability, Weidmüller distributors have become very popular among machine manufacturers. For such applications, Weidmüller can also supply corresponding bus cables for custom assembly.

The bus cables are available in three different versions. All bus cables are suitable for moving cable carriers and are available by the metre. All three trunk cables can be ordered in individual lengths. A typical order quantity is a 500 metre drum. The colour coding of wires conforms to the standard in mechanical engineering.

The connection hoods of the M12 SAI distributors are always fitted with the same terminals so that only one type of cable is required.

Advantages of bus cables supplied by the metre:

- Special lengths for bus cables
- No cable waste
- No storage space required for different cable lengths
- Bulk stock will be cut to desired length.

Ordering data

Type	Qty.	Order No.
SAIH-SLL 3 x 0.75 – 16 x 0.34	1 m	9457560000
SAIH-SLL 5 x 0.75 – 16 x 0.34	1 m	9457970000
SAIH-SLL 3 x 0.75 – 8 x 0.34	1 m	9457420000

Fieldbus, data cables and accessories

Fieldbus, data cables and accessories

Introduction	C.2
Fieldbus distributor - Overview	C.4
PROFIBUS-DP - cables	C.6
PROFIBUS-DP - connectors (M12, Sub-D)	C. 10
PROFIBUS-DP - FBCon T-distributor	C. 22
PROFIBUS-PA - cables	C. 26
PROFIBUS PA - connectors	C. 31
PROFIBUS-PA - FBCon T-distributor	C. 34
PROFIBUS-PA - FBCon T-distributor with surge protection	C. 40
PROFIBUS-PA - FBCon T-distributor ATEX Ex(ia)	C. 50
CANopen & DeviceNet™ - cables (M12, M8)	C. 58
CANopen & DeviceNet™ - connectors	C. 63
ASI - Cables	C. 64
ASI - T-piece	C. 65
Ethernet cables	C. 66
Ethernet plug-in connector	C. 70
FOUNDATION Fieldbus - connector (7/8")	C. 72
Accessories cable glands	C. 73

Bus cables

The bus system lies at the heart of automation engineering. High quality products are essential here if you hope to achieve long term, smooth functionality.

It's not only the slaves and controllers that play a significant role; the type of cables and connection mechanisms in use are also very important. The Weidmüller bus cables are the perfect solution here. The products which we manufacture ourselves (used, for example, in the Profibus, industrial Ethernet and CANopen/DeviceNet sectors) have a 360 degree shielding

within the moulding. This provides effective protection for signal and data transmission.

Delivery times are another decisive factor. Our special production strategy allows us to quickly manufacture parts that are customised to a specific order. We have a dedicated department that is focussed on this strategy and located near the Detmold central warehouse in order to keep delivery times to a minimum.



Bus cables: shown here in the standard colours:

blue (Profibus-PA Ex i), black (CANopen/DeviceNet or Profibus-PA), magenta (Profibus-DP) and green (industrial Ethernet) together with the sensor cables

**Cables****M12 plug-in connector****Sub-D connector****FBCon T-distributor**

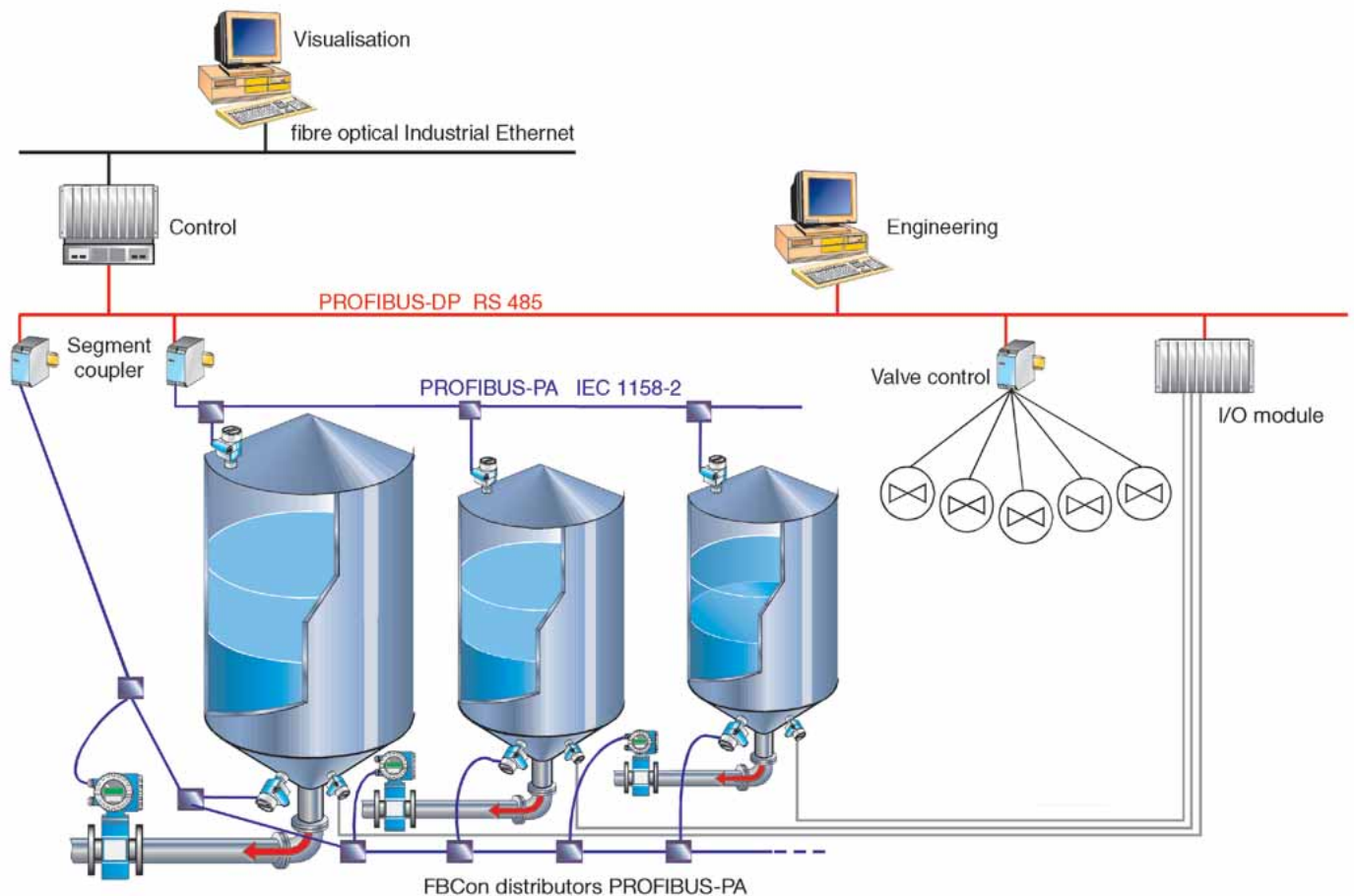
System description, fieldbus components

FBCon fieldbus distributors are available in industrial and Ex(ia) versions. They are used for coupling 1 - 8 field devices or sensors. The connection is made via spur. The spur is connected by an M12 plug in connector or directly via an EMC cable gland. The communication and device powering is handled by a common 2-core wire.

The distributors offer the following features irrespective of the version:

- Tension clamp connection technology
- Surge protection for the main line
- Current limiter for each stub line
- EMC cable gland
- M12 plug in connectors
- External earth stud
- Interruption-free bus operation
- Industrial specification
- Bus termination integrated (non EX)
- ⚡ ATEX version
- Pressure equalising element
- IP65, IP66, IP67 Ingress protection class
- Stainless steel versions
- PROFIBUS-PA compatible

Typical PROFIBUS system layout



Product coding

The FBCon family of distributors includes various forms.
The product name indicates the respective features as follows:

FBCon	Field Bus Connection
PA	PROFIBUS-PA Process Automation
DP	PROFIBUS-DP Decentralised Periphery
SS	Stainless Steel
CG	Stainless steel cable gland on stainless steel housing. On standard aluminium housings, the cable gland is nickel-plated brass.
PCG	Plastic Cable Gland
CG/M12	M12 plug-in connector for the stub cables and cable gland for the trunk cable
1way	Number of outgoing stub lines
Limiter	Current limiter: protects the PROFIBUS-PA network in the event of an overload in the stub line
OVP	Surge protection: protects the system in the event of a voltage surge
EX	Approved for potentially explosive areas
ATEX	For explosive atmospheres

The standard distributors are grey. The Ex approved distributors are painted blue.

PROFIBUS-PA distributors are generally equipped with a switch in terminating resistor. In potentially explosive areas, the terminating resistor is manufactured with a separate box. This must be used instead of the right-hand cable gland. In the case of PROFIBUS-DP, an additional external 24 V DC power supply is required. This makes the terminator independent of the last station in the network.

C



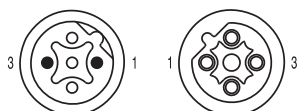
FBCon PA CG/M12 1way Limiter



FBCon SS PCG 1way



FBCon PA CG 1way Ex



Female



2-pole

Type	Order No.
SAIL-M12G-PB-1.5D	1873300150
SAIL-M12G-PB-1.5E	1058530150
SAIL-M12W-PB-1.5D	1061970150
SAIL-M12W-PB-1.5E	1062340150
SAIL-M12BG-PB-1.5D	1873320150
SAIL-M12BG-PB-1.5E	1058540150
SAIL-M12BW-PB-1.5D	1062300150
SAIL-M12BW-PB-1.5E	1062370150
Other versions on request	

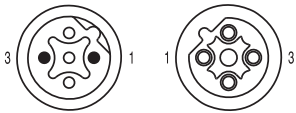
Dimensioned drawing

[illegible]

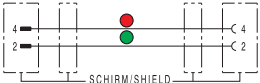
Sheathing colour	magenta (RAL 4008)
Protection class	IP 67
Core cross-section	0.34 mm ²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C

C.6

PROFIBUS-DP cables
Connecting cables



Male Female



Ordering data

Male, straight - Female, straight	
PUR/TPE	1.5 m
PVC/PVC	1.5 m
Male, straight - Female, angled	
PUR/TPE	1.5 m
PVC/PVC	1.5 m
Male, angled - Female, angled	
PUR/TPE	1.5 m
PVC/PVC	1.5 m
Note	

2-pole

Type	Order No.
SAIL-M12GM12G-PB-1.5D	1873310150
SAIL-M12GM12G-PB-1.5E	1058570150
SAIL-M12GM12W-PB-1.5D	1062310150
SAIL-M12GM12W-PB-1.5E	1062380150
SAIL-M12WM12W-PB-1.5D	1062330150
SAIL-M12WM12W-PB-1.5E	1062400150
Other versions on request	

Standard cable lengths

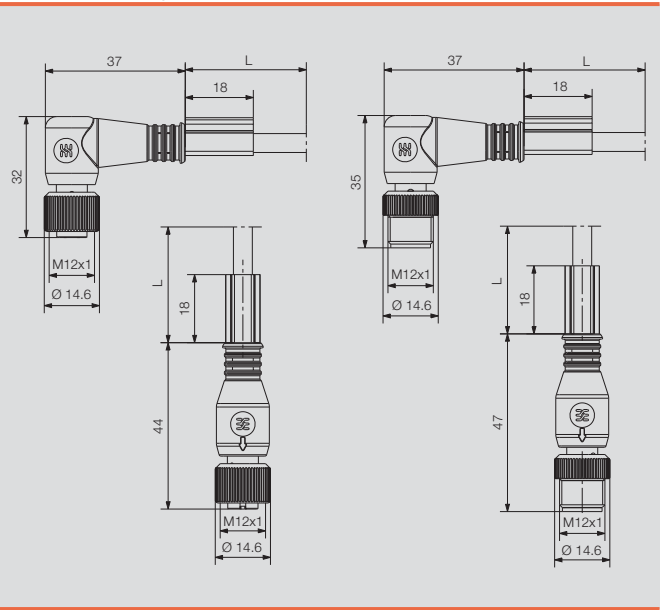
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Sheathing colour	magenta (RAL 4008)
Protection class	IP 67
Core cross-section	0.34 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C

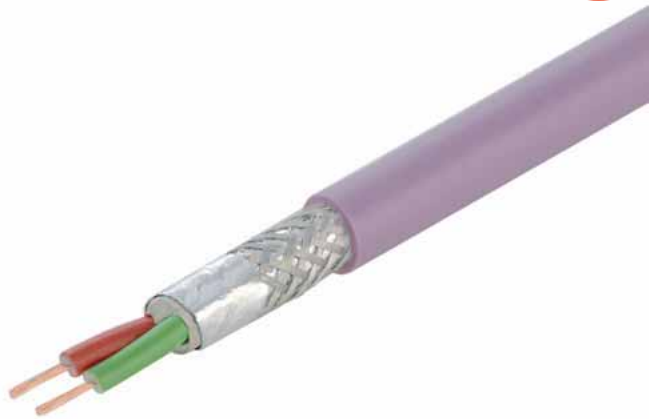
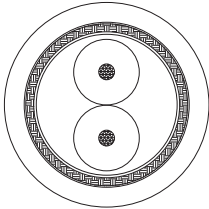
Chapter W includes additional technical specifications for the cable

Dimensioned drawing



PROFIBUS-DP - cables

PROFIBUS-DP bulk lengths



PROFIBUS-DP bulk lengths

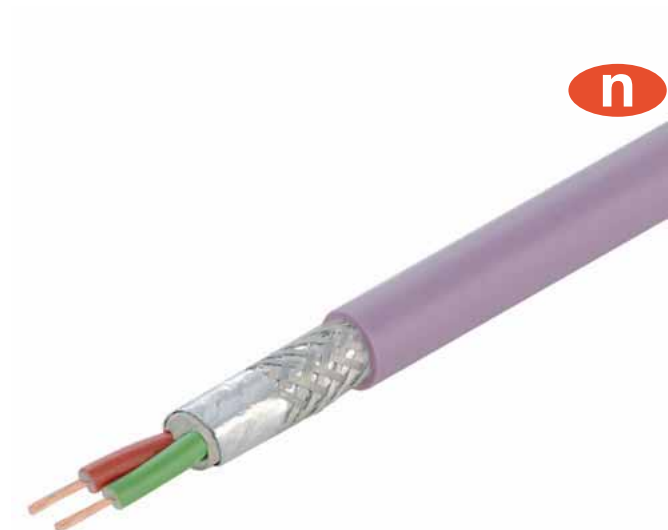
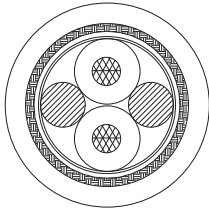
Ordering data

	Type	Order No.
Metre goods	SAIH-PB-2X0.24-PUR	1232620000

Technical data

Electrical characteristics at 20 °C		Requirement	Test specifications
Conductor resistance			EN 50 289 Parts 1-2
AWG 24		≤ 84.0 Ω/km	
Insulation resistance		≥ 1 GΩ • km	EN 50 289 Parts 1-4
Operational capacity		A/A	EN 50 289 Parts 1-5
at 800 Hz		≤ 35 nF/km	
Capacitive earth coupling			EN 50 289 Parts 1-5
at 800 Hz		< 1500 pF/km	
Characteristic impedance			EN 50 289 Parts 1-11
at 9.6 kHz		300 Ω (RW)	
at 38.4 kHz		(185 ± 20) Ω	
at 3-20 MHz		(150 ± 15) Ω	
Conductor attenuation (nominal values)			EN 50 289 Parts 1-8
AWG 24			
	at 9.6 kHz	3 dB/km	
	at 38.4 kHz	5 dB/km	
	at 4 MHz	26 dB/km	
	at 16 MHz	55 dB/km	
Test voltage (U _{test}) (50 Hz, 1 min.)			EN 50 289 Parts 1-3
Wire/wire		500 V	
Wire/shield		500 V	
Thermal characteristics		Requirement	
Permitted operating temperature range			
Static usage:			
TPE-U sheathing		-40°C to +70°C	
Dynamic usage (routing/installation):			
TPE-U sheathing		-20 °C to +60 °C	
Mechanical characteristics		Requirement	
Max. permitted strain load:			
Static		50 N/mm²	
Dynamic		20 N/mm²	
Bending radius *)		Stranded Litz conductor (AWG 24)	
simple		7.5 x d	
multiple		15 x d	

PROFIBUS-DP bulk lengths



PROFIBUS-DP bulk lengths

Ordering data

	Type	Order No.
Metre goods	SAIH-PB-2X0.34-PVC DE	1933640000

Technical data

Assembly		
Wire	Conductor: copper wire, without insulation, AWG 22, 0.64 mm Ø nominal Insulation: PE foam, 2.55 mm Ø nominal	
Pair	2 wires according to 4.1 (red, green) to pair stranded, 5.1 mm Ø nominal	
Wrapping	Plastic foil, 5.2 mm Ø nominal	
Shield	a) AL foil, 5.4 mm Ø nominal b) Braiding tin-plated copper, coverage approx. 60 %, 6.0 mm Ø nominal	
Outer cladding	PVC YM, 7.8 ±0.2 mm Ø nominal	
Electrical characteristics at 20 °C		
Conductor resistance	≤ 55 Ω/km	
Insulation resistance	≥ 1 GΩ • km	
Operational capacity	30 pF/m nominal	
Characteristic impedance	9.6 KHz (RW)	270 Ω
	38.4 KHz (RW)	185 Ω
	3 – 20 MHz	150 ± 15 Ω
Attenuation	9.6 KHz	2.2 dB/Km
	38.4 KHz	3.4 dB/Km
	100 KHz	4.5 dB/Km
	1 MHz	11.5 dB/Km
	3 MHz	18.2 dB/Km
	10 MHz	33.2 dB/Km
Test voltage (50 Hz, 1 min.)	Wire/wire	1.5 kVeff
	Wire/shield	1.5 kVeff
Mechanical and thermal characteristics		
Temperature range	Stationary moving	-40 °C to +70 °C
Min. permitted bending radius	Once	1.5 kVeff
	Multiple	1.5 kVeff
Max. tensile load resistance	Static	1.5 kVeff
	Dynamic	1.5 kVeff
Thermal fire load (guideline value) good		

PROFIBUS-DP - connectors (M12, SubD)

Tension clamp connection M12,
stainless steel
B-coded



SAIS / SAIB VA
straight



Ordering data

Male	5-pole, PG 9
Socket	5-pole, PG 9
Note	

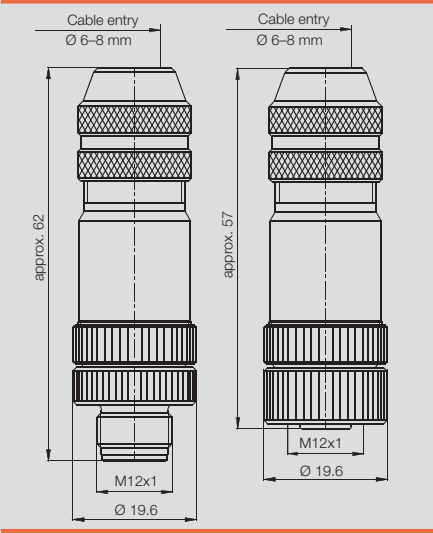
Type	Qty.	Order No.
SAIS 5/9-VA-B-COD	1	1920720000
SAIB 5/9-VA-B-COD	1	1920730000

Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

Tension clamp connection
1.4404/316L
M12
6...8 mm
0.25 - 0.5 mm²
4 A
125 V
-25...+85 °C
IP 69 k
gold-plated
PB = PROFIBUS (B-COD)

Dimensioned drawing



PB = PROFIBUS (B-COD)

Screw connection M12, metal (EMC)
B-coded



SAISM / SAIBM

straight



SAISW / SAIBW

Angled



Ordering data

Male	5-pole, PG 9
Socket	5-pole, PG 9
Note	

Type	Qty.	Order No.
SAISM 5/8S M12 5P B-COD	1	1784790000
SAIBM 5/8S M12 5P B-COD	1	1784780000

Type	Qty.	Order No.
SAISW-M-5/8 M12 B-COD	1	1944570000
SAIBW-M-5/8 M12 B-COD	1	1944580000

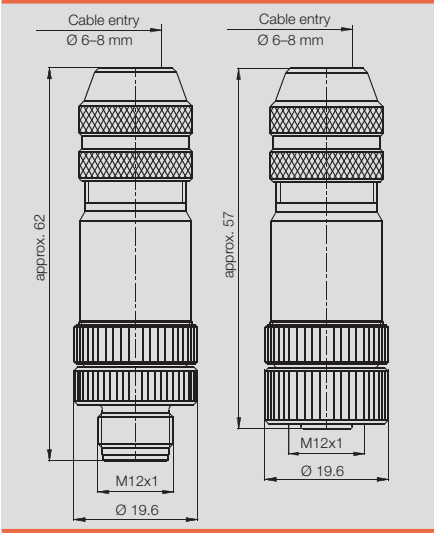
Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

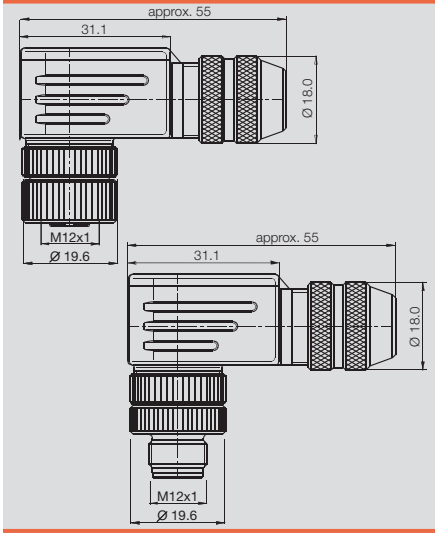
Screw connection
CuZn
M12
6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
125 V
-25...+85 °C
IP 67
gold-plated

Screw connection
CuZn
M12
6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
125 V
-25...+85 °C
IP 67
gold-plated

Dimensioned drawing



Dimensioned drawing



PROFIBUS-DP - connectors (M12, SubD)

IDC connection
B-coded



SAIS / SAIB

straight



Ordering data

Male	3-pole, PG 9
Socket	3-pole, PG 9
Note	

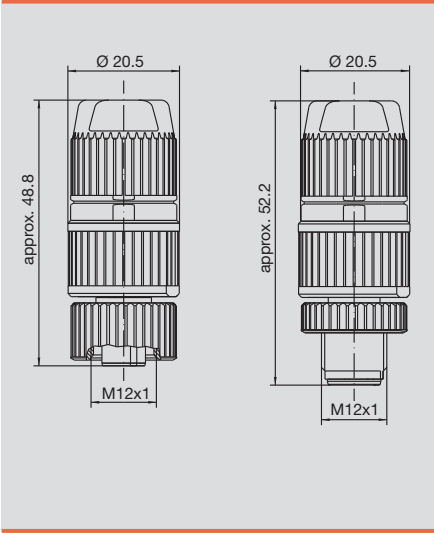
Type	Qty.	Order No.
SAIS-3-IDC-M12B-COD	1	1864730000
SAIB-3-IDC-M12B-COD	1	1864740000

Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

Insulation displacement connection
CuZn
M12
7...8.8 mm
0.34 - 0.75 mm²
4 A
32 V
-25...+85 °C
IP 67
tinned
PB = PROFIBUS (B-COD)
IE = Industrial Ethernet (D-COD)

Dimensioned drawing



PB = PROFIBUS (B-COD)
IE = Industrial Ethernet (D-COD)

Sub-D



This compact connector provides a convenient bus connection for all standardised PROFIBUS-DP devices. A data transmission rate of max. 12 Mbps is possible. An additional Sub-D connector on top of the plug enables analysis/programming devices to be connected without modifying the wiring.

The 9-pin sub-D connector is available in four versions:

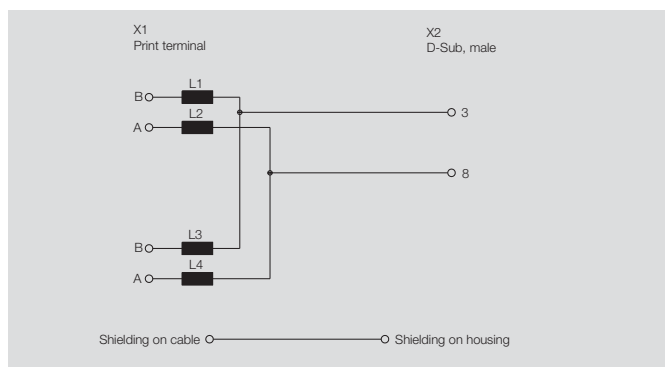
1. without terminating resistor
2. with built in terminating resistor
3. with switch in terminating resistor and connection for programming unit via IDC connection
4. with switch in terminating resistor and connection for programming unit via tension clamp connection.

- T-piece functions
- Good shield contact
- Ample space for connecting the bus cable
- Cable entry can be closed off with blanking panel
- Fully insulated housing
- Reliable strain relief

Technical data

Data transmission rate		max. 12 Mbps
ESD		protection to IEC 801-2
Operating temperature	°C	0 ... 60
Storage temperature	°C	-25 ... +80
Ingress protection class		IP 40
Dimensions (LxWxH)	mm	64.6 x 47.5 x 16
Housing material		PC UL 94 V-1
Plug-in connector		sub-D 9-pin
Cable connection		2 No. horizontal
Cable diameter	mm	4.5 ... 8
Single conductor cross-section	mm²	rigid max. 1.5
		flexible max. 1.0
Type of connection	Screw	8395500000 and 8460860000
	IDC	1916980000
	Tension clamp	1934200000
Note		

PB-DP SUB-D



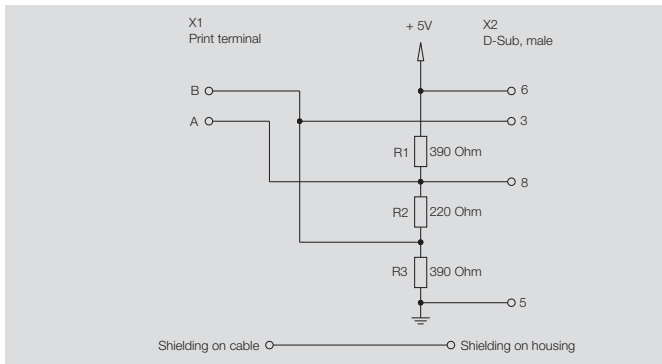
Ordering data

Type	Qty.	Order No.
PB-DP SUB-D	1	8395500000

Sub-D



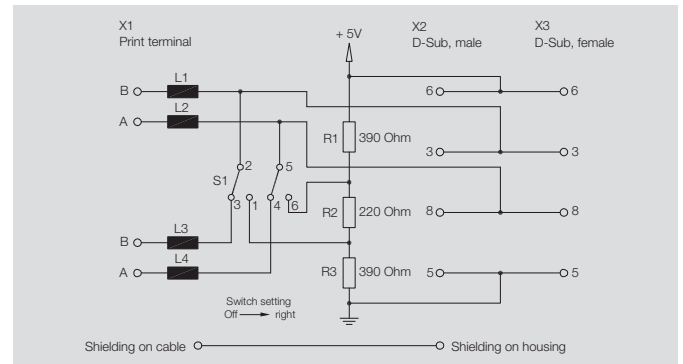
PB-DP SUB-D TERM



Ordering data

Type	Qty.	Order No.
PB-DP SUB-D TERM	1	8460860000

PB-DP SUB-D IDC/ZF TERM PS



Ordering data

Type	Qty.	Order No.
PB-DP SUB-D IDC TERM PS	1	1919680000
PB-DP SUB-D ZF TERM PS	1	1934200000

PROFIBUS-DP - connectors (M12, Sub-D)

PROFIBUS Sub-D connector with M12 (90°)

Weidmüller's new Sub-D product line features fully shielded connector variants that enable direct tapping with M12 cables. This allows you to avoid the types or errors that often occur when installing similar connectors with screw connections. The increased contact reliability of the Sub-D connectors more than compensates for the cost of the extra M12 connectors.

Special features:

- Complete shielded housing
- Compact housing for small places
- Connection without any mistake because of the M12 connector
- 100% certified components

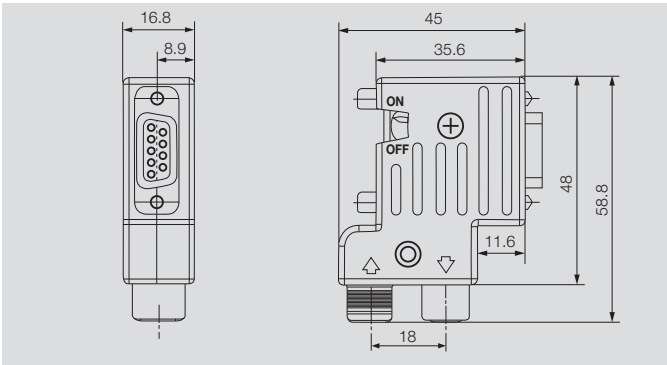
Technical data

Data rate	acc. to PROFIBUS Specification, 12Mbit/s
Connector pinning	acc. to PROFIBUS Specification
PROFIBUS DP connector	D-Sub 9-polig, male
PROFIBUS DP program connector	D-Sub 9-polig, female
PROFIBUS cable connector	M12 B coded, male + female, Pin 2 and 4, connected, Cable output: M12 female, Cable entry: M12 male
Mechanical lifetime	200 connections
Temperature range	-20 °C to +70 °C
Humidity	Max. 75 % at +25 °C, non condensing
Ingress protection class	IP30
Housing material	ZnAl
D-Sub screw connection	UNC 4-40

Note

PB-DP SUB-D M12 TERM

PROFIBUS-Connector 90° M12 with switch, without programming connector



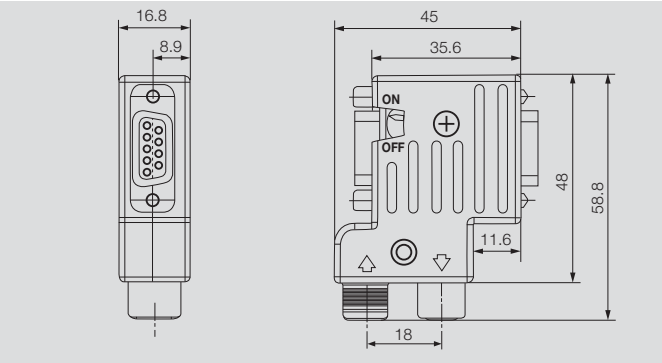
Ordering data

Type	Qty.	Order No.
PB-DP SUB-D M12 TERM	1	1140650000

PROFIBUS Sub-D connector with M12 (90°)

PB-DP SUB-D M12 TERM PS

PROFIBUS-Connector 90° M12 with switch, with programming connector



Ordering data

Type	Qty.	Order No.
PB-DP SUB-D M12 TERM PS	1	1140640000

PROFIBUS-DP - connectors (M12, Sub-D)

PROFIBUS Sub-D Connector with tension clamp connection (35°)

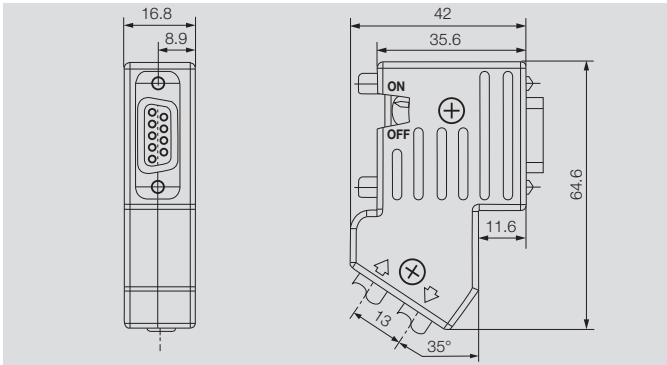
The new Sub-D Family from Weidmüller offers a fully shielded version.

Special features:

- Completely shielded housing
- Compact design for use in small spaces

PB-DP SUB-D ZF35TERM

PROFIBUS-Connector 35° with switch, without programming connector



Technical data

Data rate	acc. to PROFIBUS Specification, 12Mbit/s
Connector pinning	acc. to PROFIBUS Specification
PROFIBUS DP connector	D-Sub 9-polig, male
PROFIBUS DP program connector	D-Sub 9-polig, female
PROFIBUS cable connector	Tension clamp
Mechanical lifetime	200 mating cycles
Temperature range	-20 °C to +70 °C
Humidity	Max. 75 % at +25 °C, non condensing
Ingress protection class	IP30
Housing material	ZnAl
D-Sub screw connection	UNC 4-40

Note

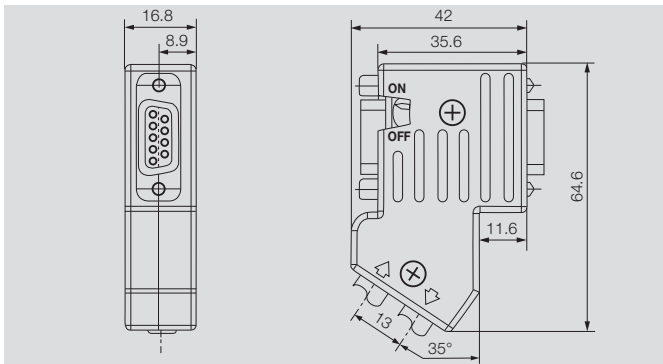
Ordering data

Type	Qty.	Order No.
PB-DP SUB-D ZF35TERM	1	1173220000

PROFIBUS Sub-D Connector with tension clamp connection (35°)

PB-DP SUB-D ZF35TERM PS

PROFIBUS-Connector 35° with switch, with programming connector



Ordering data

Type	Qty.	Order No.
PB-DP SUB-D ZF35TERM PS	1	1173240000

PROFIBUS Sub-D Connector with tension clamp connection (90°)

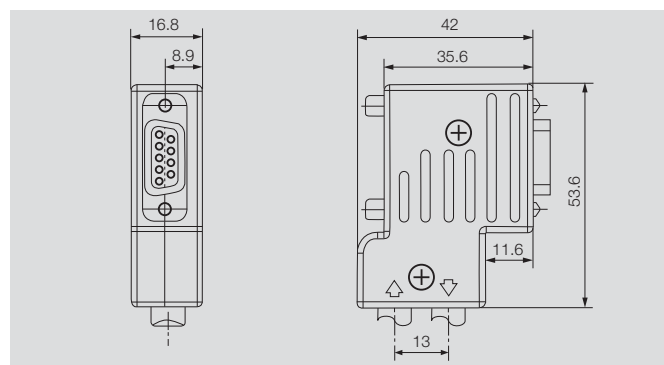
The new Sub-D Family from Weidmüller offers a fully shielded Version.

Special features:

- Completely shielded housing
- Compact design for use in small spaces

PB-DP SUB-D ZF

PROFIBUS-Connector 90° without switch, without programming connector



Technical data

Data rate	acc. to PROFIBUS Specification, 12Mbit/s
Connector pinning	acc. to PROFIBUS Specification
PROFIBUS DP connector	D-Sub 9-polig, male
PROFIBUS DP program connector	D-Sub 9-polig, female
PROFIBUS cable connector	Tension clamp
Mechanical lifetime	200 mating cycles
Temperature range	-20 °C to +70 °C
Humidity	Max. 75 % at +25 °C, non condensing
Ingress protection class	IP30
Housing material	ZnAl
D Sub screw connection	UNC 4-40

Note

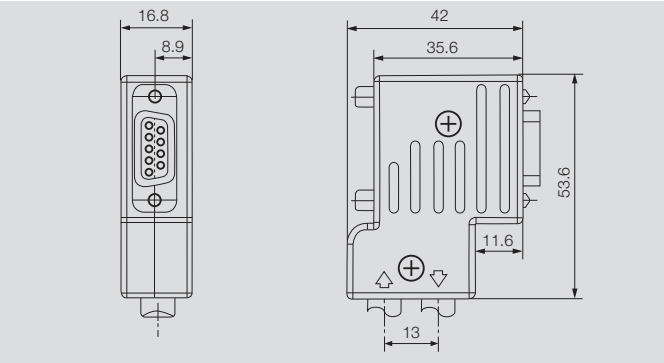
Ordering data

Type	Qty.	Order No.
PB-DP SUB-D ZF	1	1161890000

PROFIBUS Sub-D Connector with tension clamp connection (90°)

PB-DP SUB-D ZF TERM

PROFIBUS-Connector 90° with switch, without programming connector

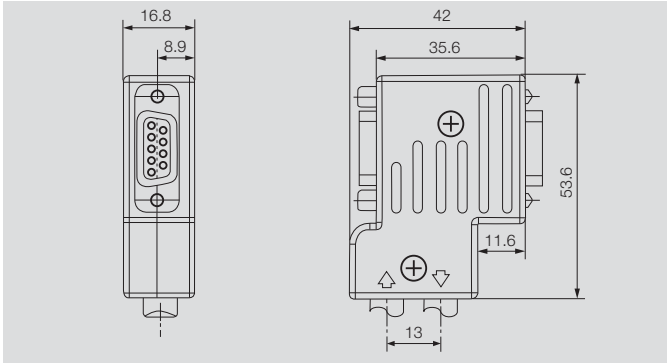


Ordering data

Type	Qty.	Order No.
PB-DP SUB-D ZF TERM	1	1161870000

PB-DP SUB-D ZF TERM PS

PROFIBUS-Connector 90° with switch, with programming connector



Ordering data

Type	Qty.	Order No.
PB-DP SUB-D ZF TERM PS	1	1161880000

PROFIBUS-DP distributors



PROFIBUS-DP distributor

The PROFIBUS-DP topology is a line structure. The spur (T-distributor) connects the individual field devices or remote I/Os to the bus cable. The length of the spur cable depends on the transmission rate and should be as short as possible. The total of all spur lengths for transmission rates up to 1.5 MBaud may not exceed max. 6.6 m. The trunk cable passes through an EMC cable gland into an aluminium or stainless steel enclosure where it is connected to a tension clamp terminal. The spur line to the device is connected using a B-coded M12 socket or an EMC cable gland. Terminating resistors must be wired onto the start and end of the PROFIBUS-DP network. The Terminator modules can take care of this task. The electrically isolated 24-VDC power supply for the bus terminator is routed into the cable gland on the right side. The housing features a pressure-compensation mechanism that counters the effects of climatic fluctuations. The guidelines issued by the PROFIBUS user organisation must be observed.

PROFIBUS-DP

Technical data

Operating temperature	-25 °C to 55 °C
Ingress protection class	IP 66
Enclosure material	High grade aluminium alloy (AL – SI 12)
Finish	Painted RAL 7001
PROFIBUS-DP connection	Tension clamp terminals 0.5 – 1.5 mm ²
Cable entry	Cable gland M16
Cable gland clamping range	5.5 – 9.5 mm
Contact surface	M12 plug/socket CuZnAu
Transmission rate	Max. 1.5 MBaud
Power supply bus connection	Bus terminator 24 VDC +/-10 %
Trunk cable via cable gland	

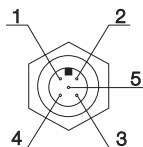
Installation advice

Torques	
M16 cable gland at enclosure	6.0 Nm
Union nut, M16 cable gland	4.0 Nm
Enclosure cover	1.8 – 2.0 N
External earthing cable	1.8 – 2.0 Nm
Adaptor/stud cable	0.5 Nm

Pin assignment

Pin no.	Connection	Wire colour
Pin 1	unassigned	
Pin 2	RxDx/TxD-N / A-wire	green
Pin 3	unassigned	
Pin 4	RxDx/TxD-N / B-wire	red
Pin 5	shield	
Cable gland	shield	

Socket B-coded



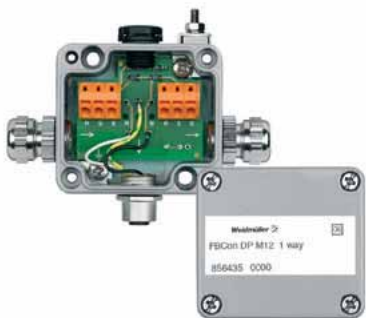
1-channel distributor

Cable gland



1-channel distributor

M12 connection



Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon DP CG 1way	branch line CG	1	8564340000
Stainless steel enclosure			
FBCon SS DP PCG 1way	all connections PCG	1	8714260000

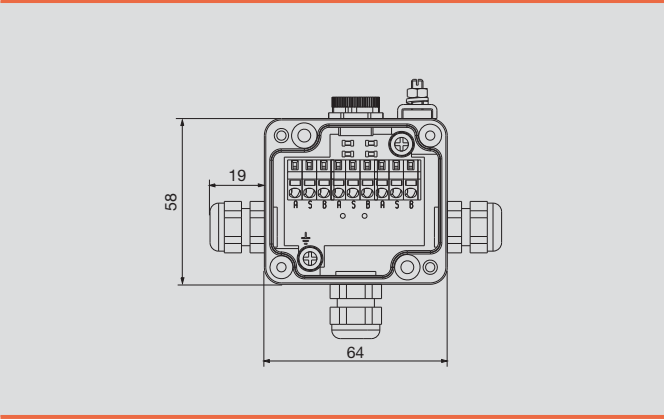
Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon DP M12 1way	branch line M12	1	8564350000
Stainless steel enclosure			
FBCon SS DP M12 1way	branch line M12	1	8714270000

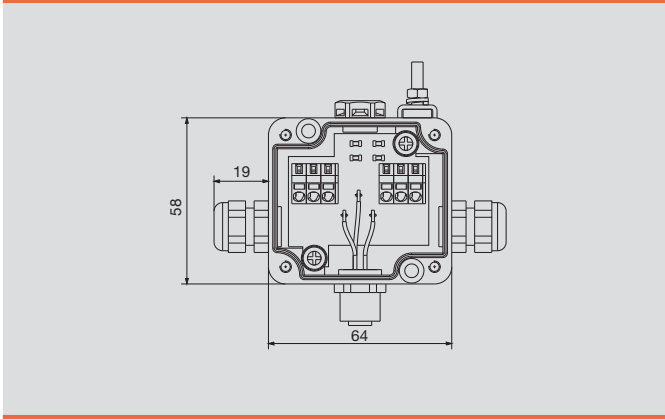
CG = brass cable gland
PCG = plastic cable gland

CG = brass cable gland
PCG = plastic cable gland

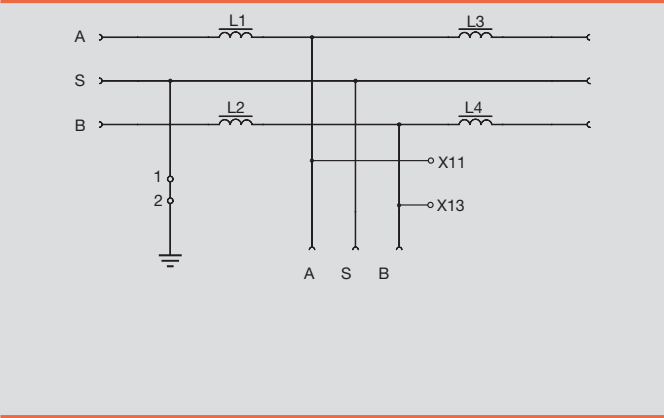
Dimensioned drawing



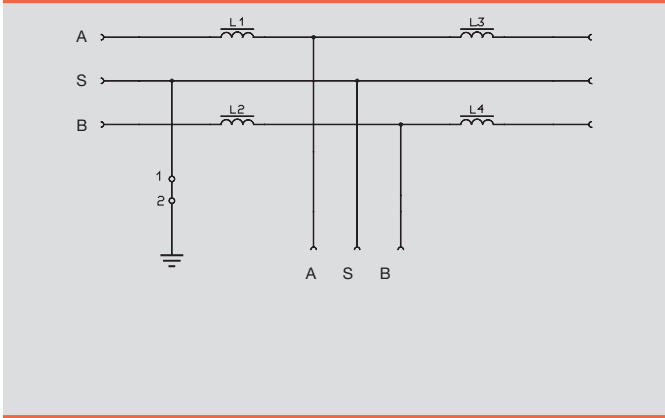
Dimensioned drawing



Wiring diagram



Wiring diagram



PROFIBUS-DP - FBCon T-distributor

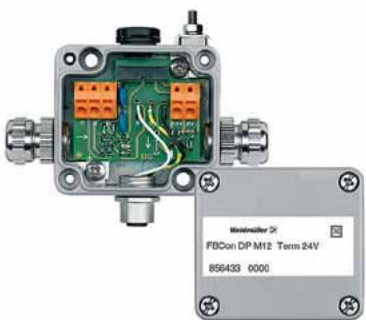
Terminator

Cable gland



Terminator

M12 connection



Ordering data

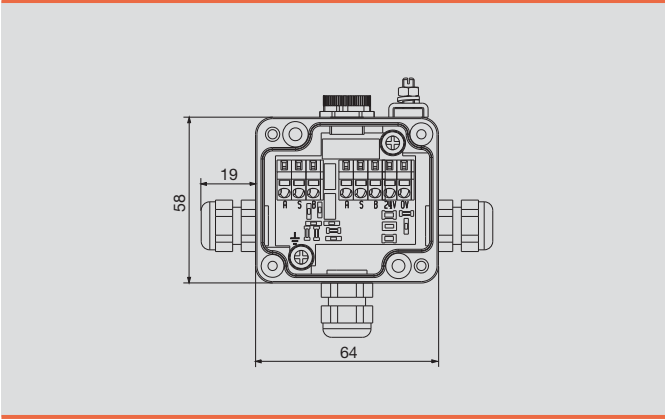
Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon DP CG Term 24V	branch line CG	1	8564290000
Stainless steel enclosure			
FBCon SS DP PCG Term 24V	all connections PCG	1	8714240000

Ordering data

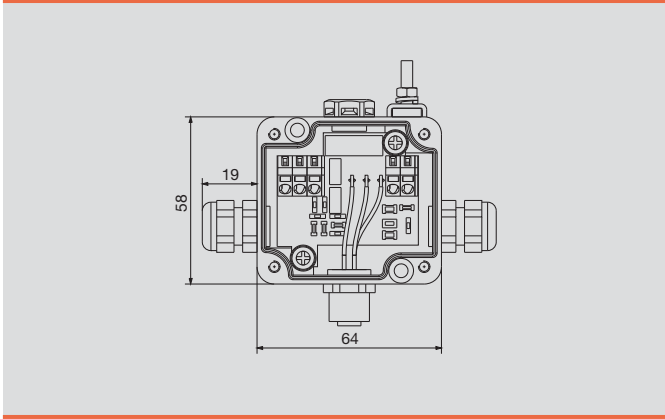
Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon DP M12 Term 24V	branch line M12	1	8564330000
FBCon DP M12 Term 5V	branch line M12	1	8564320000
Stainless steel enclosure			
FBCon SS DP M12 Term 24V	branch line M12	1	8714250000

CG = brass cable gland
PCG = plastic cable gland

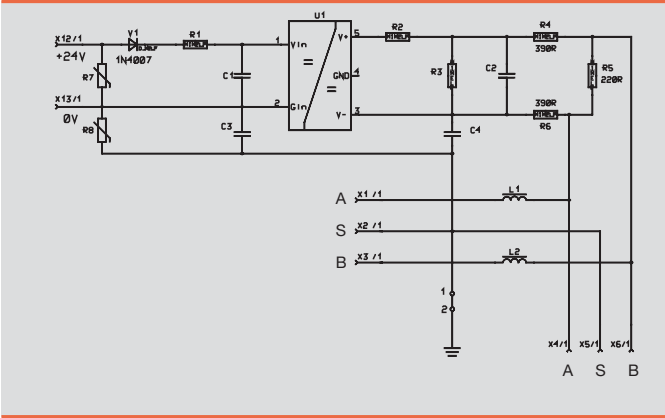
Dimensioned drawing



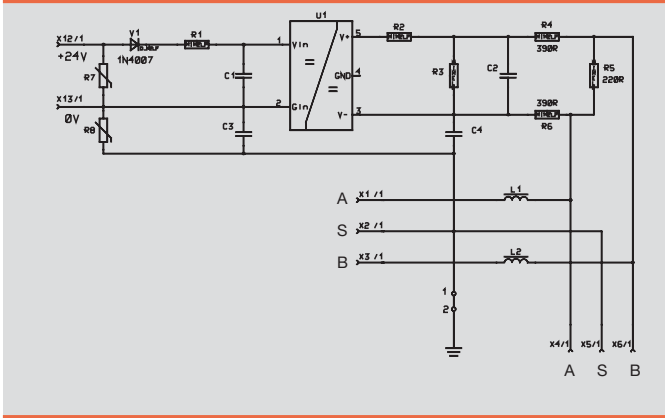
Dimensioned drawing



Wiring diagram



Wiring diagram



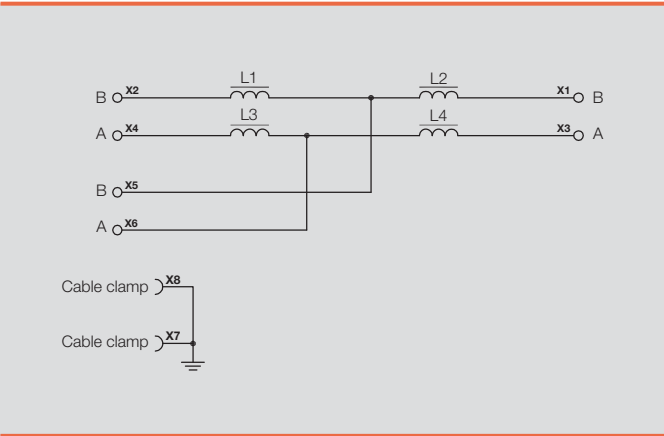
PROFIBUS-DP IP 20 T-distributor



The distributor for PROFIBUS-DP enables the user to connect it conveniently in the electrical cabinet.
They can be mounted on TS32/35 rails and used to connect standardised PROFIBUS-DP lines. Spur cables can also be connected. Please note that spur cables should be kept as short as possible. Part No. 8788580000 has a 9-pin sub-D socket for connecting analysis/programming devices.

- T-piece functions
- Good shield contact
- Ample space for connecting the bus cable
- TS 32/35 terminal rail mounting
- Standardised Sub-D connection for PROFIBUS-DP

RS PB-DP T



Technical data

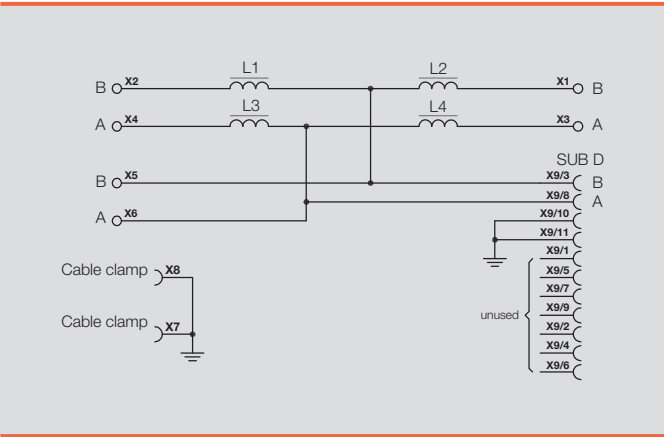
Data transmission rate		max. 1.5 Mbps (with max. 6.6 m spur line) max. 12 Mbps (no spur lines)
Operating temperature	°C	0 ... 55
Storage temperature	°C	-25 ... +70
Ingress protection class		IP 20
Dimensions (LxWxH)	mm	70 x 45 x 42
Plug-in connector		sub-D 9-pin
Cable diameter	mm	4.5 ... 8
Single conductor cross-section	mm²	0.5 ... 2.5
Type of connection		screw

Information

Ordering data

Type	Qty.	Order No.
RS PB-DP T	1	8800040000
RS PB-DP T SUB-D	1	8788580000

RS PB-DP T SUB-D





The PROFIBUS-PA

is an open fieldbus standard (EN 50170, IEC 1158-2, DIN 19245). It was specifically designed for the requirements of process engineering, such as remote powering and intrinsic safety. The PROFIBUS-PA enables operation of several PA sensors and actuators on one bus line.

The devices are powered using twin cable technology, and the transmission of process data is digital.

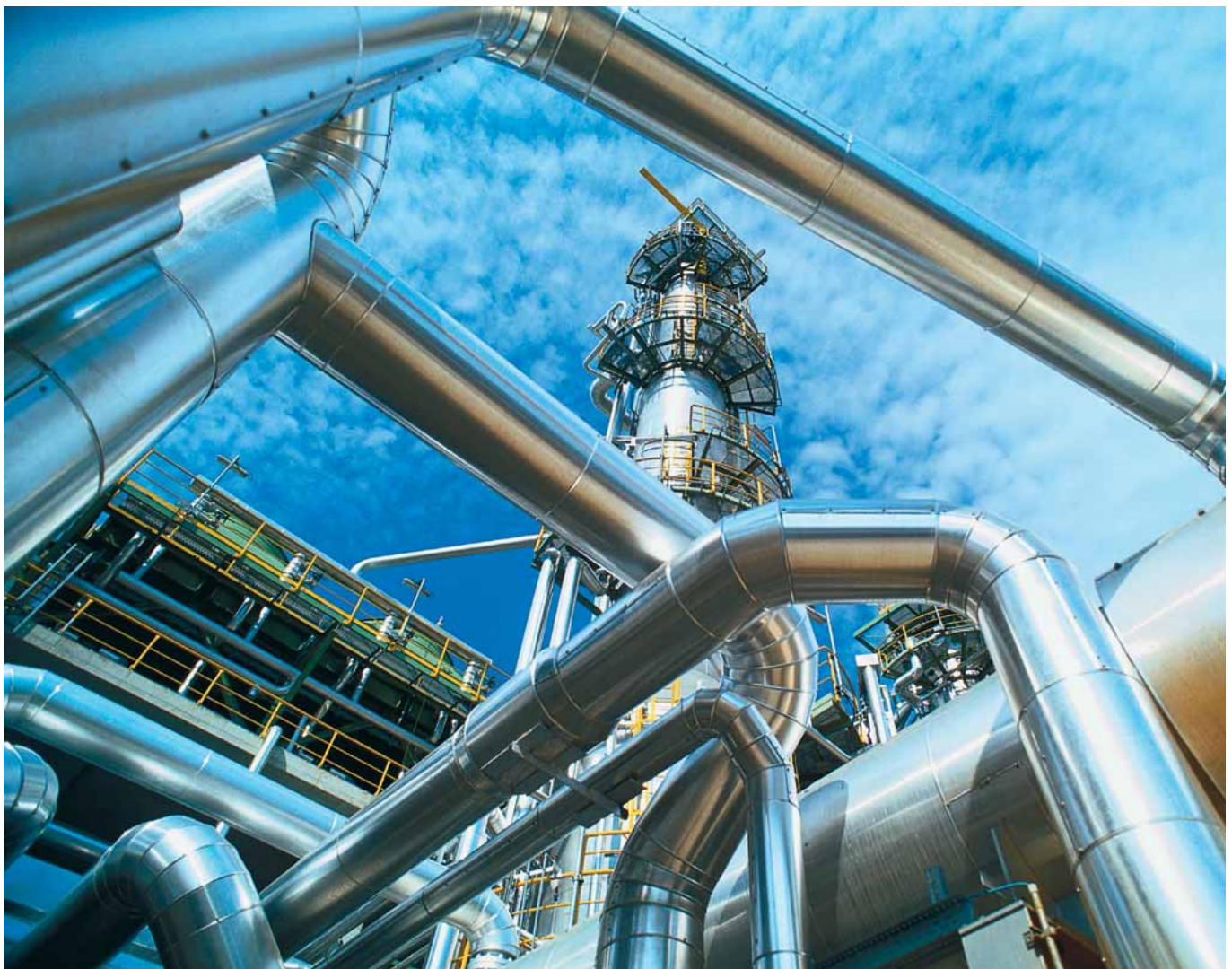
Integration in the PROFIBUS-DP network is done by means of a segment coupler.

Specific advantages of PROFIBUS-PA:

- Low wiring costs
- Minimal planning costs for the process control system
- Remote interrogation or programming of the field device
- Further development and support by the PROFIBUS User Organisation

Whether for servicing or system modification, the PROFIBUS-PA FB connectors from Weidmüller enable connection or replacement of field devices without interrupting the bus system.

An extensive range of accessories such as pre-assembled cables and plug connectors rounds off the programme.





PROFIBUS-PA cables



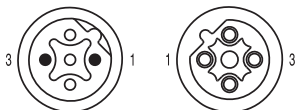
PROFIBUS-PA connectors



Profibus PA distributors

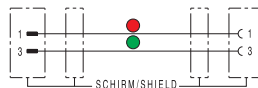
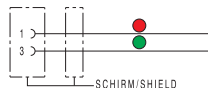
PROFIBUS-PA - cables

Cables



Male

Female



Ordering data

Designation	
Industrial zone	
One side without connector, male	
M12 EMV/black/1M	1 m
M12 EMV/black/2M	2 m
M12 EMV/black/5M	5 m
M12 EMV/black/10M	10 m
One side without connector, female	
M12 EMV/black/1M	1 m
M12 EMV/black/2M	2 m
M12 EMV/black/5M	5 m
M12 EMV/black/10M	10 m
Connecting cables, male - female	
M12 EMV/black/1M	1 m
M12 EMV/black/2M	2 m
M12 EMV/black/5M	5 m
M12 EMV/black/10M	10 m
Note	

Type	Order No.
PROFIBUS-PA cable	
FBC PA M12 M 1M	1785120100
FBC PA M12 M 2M	1785120200
FBC PA M12 M 5M	1785120500
FBC PA M12 M 10M	1785121000
FBC PA M12 FM 1M	1785110100
FBC PA M12 FM 2M	1785110200
FBC PA M12 FM 5M	1785110500
FBC PA M12 FM 10M	1785111000
FBC PA M12 M-FM 1M	1785100100
FBC PA M12 M-FM 2M	1785100200
FBC PA M12 M-FM 5M	1785100500
FBC PA M12 M-FM 10M	1785101000
Other lengths available on request	

Wall bushing



Ordering data

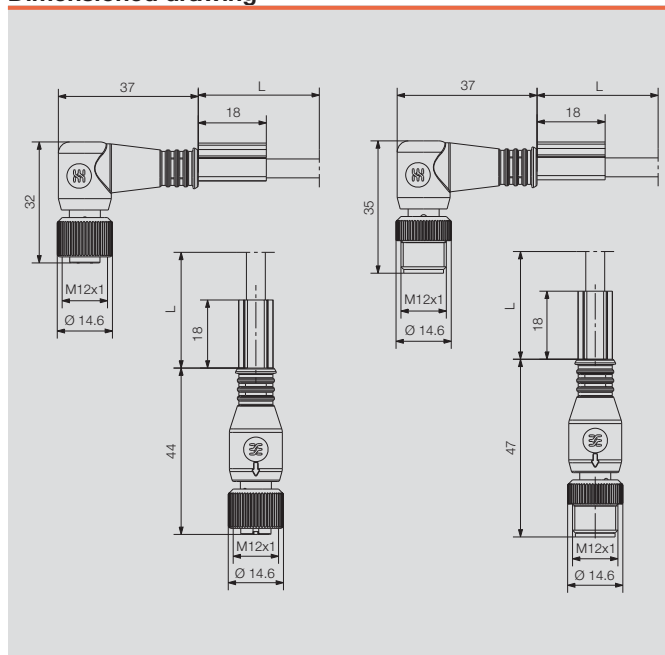
Type	Length	Qty.	Order No.
SAI-WDF-5P M12 60 mm	60 mm	1	1819450000

Customisable male and female connectors are still required for use with cables that have a connector on only one end.

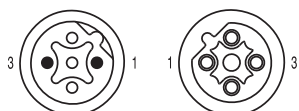
Technical data

Wire resistance (loop)	max. Ω /km	44
Insulation resistance	min. $G\Omega \times km$	5
Working capacity at 800 Hz	nom. nF/km	52
Inductance 800 Hz	mH/km	ca. 0.4
Characteristic impedance at 31.25 kHz	Ω	100 $\pm$ 20 %
at ≥ 1 MHz	nom. Ω	80
Wave attenuation		
– at 39 kHz	max. d/B 100 m	0.3
– at 100 kHz	nom. d/B 100 m	0.35
– at 1 MHz	nom. d/B 100 m	1.2
Signal dispersion speed		
	nom. [%]	79
Coupling resistance up to 30 MHz		
	max. mOhm/m	250
Operating voltage		
(not for three-phase use)		
	Peak value V	100
Test voltage	Wire/wire	U_{eff} V 1500
	Wire/shield	U_{eff} V 1500
Mechanical specifications		
Stationary bending radius	mm	65
Temperature range		
Stationary	$^{\circ}C$	-5 ... 60
moving	$^{\circ}C$	-30 ... 80
Note		

Dimensioned drawing

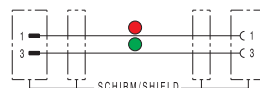
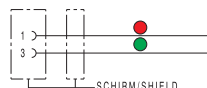


Ex i-cables



Male

Female



Ordering data

Designation	
Intrinsically safe zone Exi	
One side without connector, male	
M12 EMV/blue/1M	1 m
M12 EMV/blue/2M	2 m
M12 EMV/blue/5M	5 m
M12 EMV/blue/10M	10 m
One side without connector, female	
M12 EMV/blue/1M	1 m
M12 EMV/blue/2M	2 m
M12 EMV/blue/5M	5 m
M12 EMV/blue/10M	10 m
Connecting cables, male - female	
M12 EMV/blue/1M	1 m
M12 EMV/blue/2M	2 m
M12 EMV/blue/5M	5 m
M12 EMV/blue/10M	10 m
Note	

Type	Order No.
PROFIBUS-PA cable	
FBCEX PA M12 M 1M	1785150100
FBCEX PA M12 M 2M	1785150200
FBCEX PA M12 M 5M	1785150500
FBCEX PA M12 M 10M	1785151000
FBCEX PA M12 FM 1M	1785140100
FBCEX PA M12 FM 2M	1785140200
FBCEX PA M12 FM 5M	1785140500
FBCEX PA M12 FM 10M	1785141000
FBCEX PA M12 M-FM 1M	1785130100
FBCEX PA M12 M-FM 2M	1785130200
FBCEX PA M12 M-FM 5M	1785130500
FBCEX PA M12 M-FM 10M	1785131000
Other lengths available on request	

Wall bushing



Ordering data

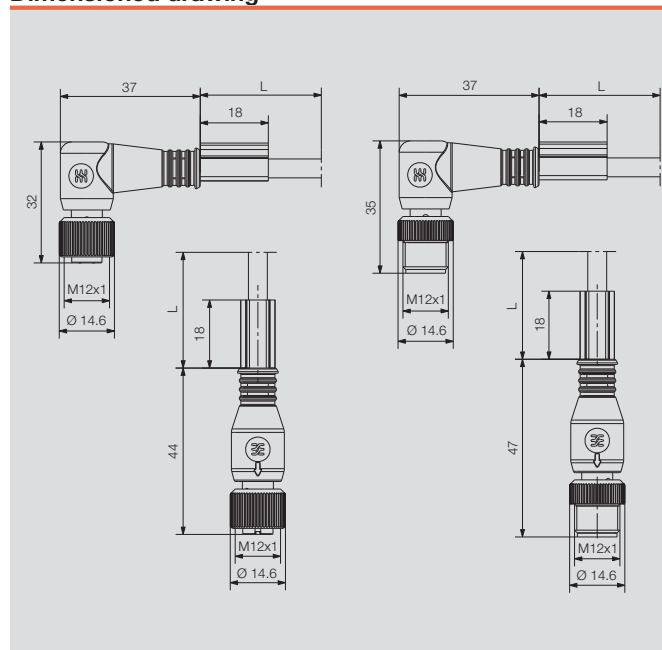
Type	Length	Qty.	Order No.
SAI-WDF-5P M12 60 mm	60 mm	1	1819450000

Customisable male and female connectors are still required for use with cables that have a connector on only one end.

Technical data

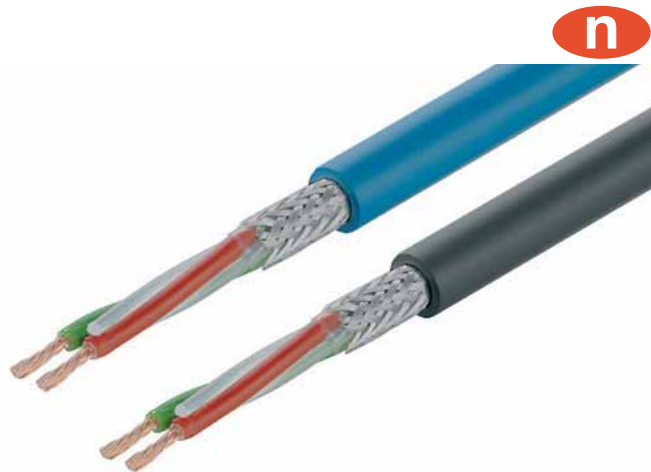
Wire resistance (loop)	max. Ω/km	44
Insulation resistance	min. $G\Omega \times \text{km}$	5
Working capacity at 800 Hz	nom. nF/km	52
Inductance 800 Hz	mH/km	ca. 0.4
Characteristic impedance at 31.25 kHz	Ω	100 $\pm$ 20 %
at ≥ 1 MHz	nom. Ω	80
Wave attenuation		
- at 39 kHz	max. d/B 100 m	0.3
- at 100 kHz	nom. d/B 100 m	0.35
- at 1 MHz	nom. d/B 100 m	1.2
Signal dispersion speed		
	nom. [%]	79
Coupling resistance up to 30 MHz		
	max. mOhm/m	250
Operating voltage		
(not for three-phase use)		
	Peak value V	100
Test voltage	Wire/wire	U_{eff} V 1500
	Wire/shield	U_{eff} V 1500
Mechanical specifications		
Stationary bending radius	mm	65
Temperature range		
Stationary	$^{\circ}\text{C}$	-5 ... 60
moving	$^{\circ}\text{C}$	-30 ... 80
Note		

Dimensioned drawing



PROFIBUS-PA - cables

PROFIBUS-PA bulk lengths



PROFIBUS-PA bulk lengths

Application:

Fieldbus cable for PROFIBUS-PA field networks in accordance with IEC 1158-2

The cable is suitable for installation in both dry and humid spaces. When used with the black, UV-resistant cladding, it can also be installed outdoors.

General characteristics:

None of the materials used for the cables and during their production contain materials which are detrimental to paint adhesion **(they are LBS-free)**.

LBS = Materials detrimental to paint adhesion

Ordering data

Type	Order No.
SAIH-PB-PA-2X1.0-PVC-BL	1232630000
SAIH-PB-PA-2X1.0-PVC-SW	1232640000

Technical data

Assembly			
Conductor	Copper wire, without insulation, 1.0 mm ² , finely stranded		
Insulating sleeve	Foam skin (O2YS), wire Ø approx. 2.55 mm Wire colours: red and green		
Stranding	2 wires with 2 drain wires approx. 1.0 mm Ø stranded		
Wrapping	1 layer insulation foil		
Shield	Braiding made from tin-plated copper wire, Coverage 85 % ± 5		
Outer cladding	PVC, blue RAL 5015 or black Outer diameter: 8.0 mm ± 0.4		
Electrical characteristics at 20 °C			
Wire resistance (loop)	max. Ω/km	44	
Insulation resistance	min. GΩ x km	5	
Working capacity			
at 800 Hz	nom. nF/km	52	
Inductance			
at 800	Hz mH/km	ca. 0.4	
Characteristic impedance			
at 31.25 kHz	Ω	100 ± 20 %	
at ≥ 1 MHz	nom. Ω	80	
Wave attenuation			
at 39 kHz	max. dB/100 m	0.3	
at 100 kHz	nom. dB/100 m	0.35	
at 1 MHz	nom. dB/100 m	1.2	
Signal dispersion speed	nom. [%]	79	
Coupling resistance			
at 30 MHz	max. mOhm/m	250	
Operating voltage			
(not for three-phase use)	Peak value V	100	
Test voltage			
Wire/wire	U _{eff} V	1500	
Wire/shield	U _{eff} V	1500	
Mechanical and thermal characteristics			
Min. bending radius stationary installed / during installation	mm	65	
Temperature range during installation	°C	-5 to +60	
Temperature range stationary installed	°C	-30 to +80	
Flammability	Flame retardant in accordance with VDE 0482, part 265-2-1 / IEC 60 332-1		

Screw connection M12, metal (EMC)
A-coded



FBCon / SAIS
straight



SAISW / SAIBW
Angled



Ordering data

Male	
	4-pole, PG 9
	5-pole, PG 9
Socket	
	4-pole, PG 9
	5-pole, PG 9
Note	

Type	Qty.	Order No.
FBCon M12 4P M EMC	1	9455640000
SAIS-M-5/8S M12 5P A-COD	1	1784740000
FBCon M12 4P FM EMC	1	8426220000
SAIB-M-5/8S M12 5P A-COD	1	1784750000
Other versions on request		

Type	Qty.	Order No.
SAISW-M-4/8 M12	1	1803930000
SAISW-M-5/8 M12	1	1803940000
SAIBW-M-4/8 M12	1	1803910000
SAIBW-M-5/8 M12	1	1803920000
Other versions on request		

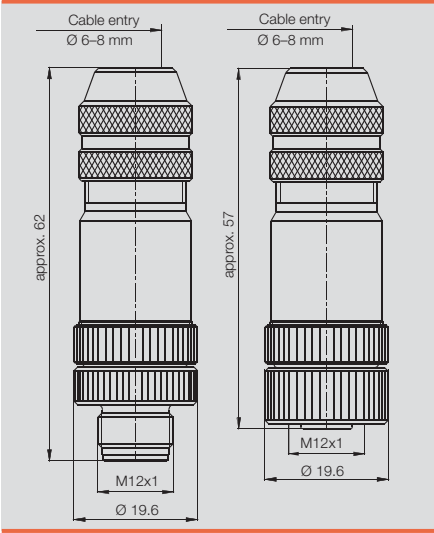
Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

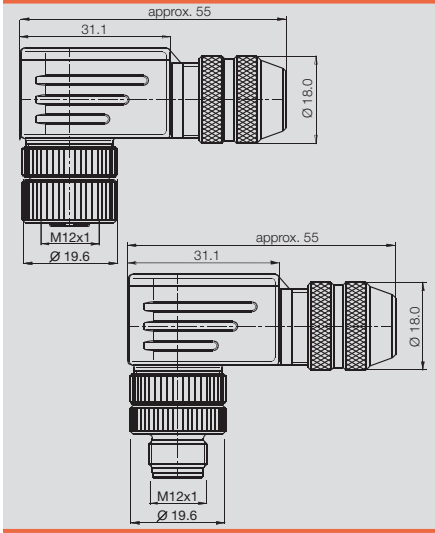
Screw connection
CuZn
M12
6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
125 V
-25...+85 °C
IP 67
gold-plated

Screw connection
CuZn
M12
6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
125 V
-25...+85 °C
IP 67
gold-plated

Dimensioned drawing



Dimensioned drawing



PROFIBUS-PA - connectors

Tension clamp connection M12,
stainless steel
A-coded



SAIS / SAIB VA

straight



Ordering data

Male	5-pole, PG 9
Socket	5-pole, PG 9
Note	

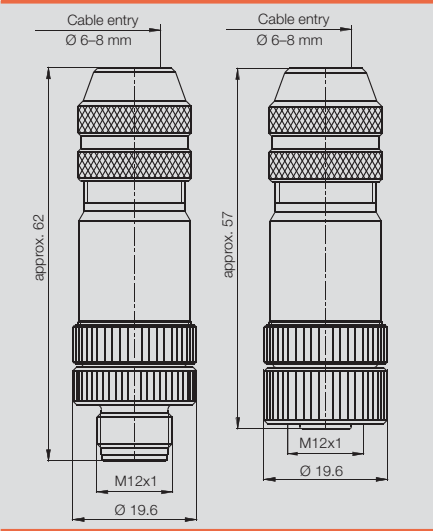
Type	Qty.	Order No.
SAIS 5/9-VA	1	1920700000
SAIB 5/9-VA	1	1920710000

Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

Tension clamp connection
1.4404/316L
M12
6...8 mm
0.25 - 0.5 mm²
4 A
125 V
-25...+85 °C
IP 69 k
gold-plated
PB = PROFIBUS (B-COD)

Dimensioned drawing



PB = PROFIBUS (B-COD)

Positioning plug connector



Positioning plug connector PG9 500 mm
Adapter PG9 / M20
Positioning plug connector PG 13.5 150 mm
Positioning plug connector PG 13.5 300 mm
Positioning plug connector M 20 150 mm
Positioning plug connector M 20 300 mm
Positioning plug connector M 20 300 mm

Note

Type	Qty.	Order No.
SAIE-M12S-4-0.5U-AEH-VA	1	1861220001
SAIE-EW-M20/PG9-SW24-VA	1	1950270000

No. of poles	
Version	
Temperature range	°C
Housing material	
Connection thread	
Plug thread	
Strand cross-section	mm ²
Housing class of protection to DIN 40050 IEC 529	
Strand length (fitted with wire-end ferrules)	mm
Nominal current per contact	A
Rated voltage	V
Contact surface	
Type of connection	
Flammability class to UL-94	
Nominal voltage to VDE standard 0110/ISO Group C	V
Resistance to creepage	
Contact resistance to IEC 512 Part 2	mΩ
Insulation resistance to IEC 512 Part 2	

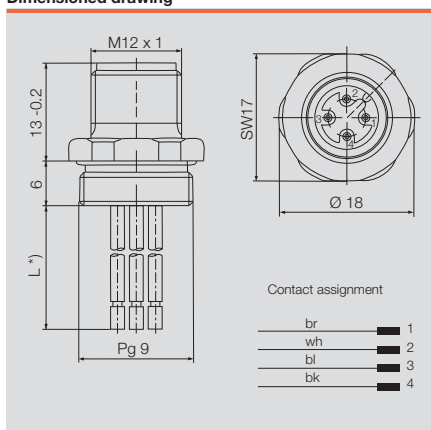
4
pin
-40 ... 85
stainless steel (VA)
PG 9
M12
0.34
IP 67
500
4
250
gold-plated
screw

Note

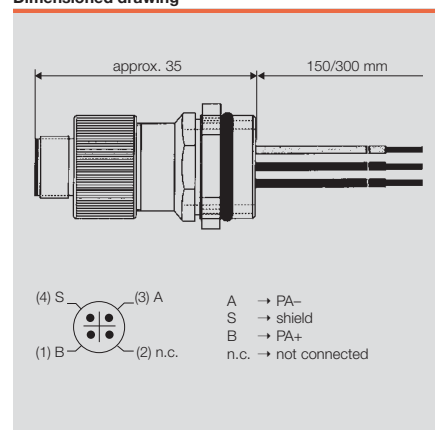
	Torque settings
Set screw	1.8 - 2.0 Nm
Knurled ring	hand-tight
Lock-nut	6.25 Nm

If the device is exposed to vibration, we recommend using a stub cable to isolate the device from the vibration.

Dimensioned drawing



Dimensioned drawing



FBCon distributors for the industrial segment



PROFIBUS-PA T-connector

- for industrial applications
- standard

The **PROFIBUS-PA** installation products are increasingly used in the:

- food and beverage industry
- Process industries and
- chemical industry.

The product range offers a wide choice of customer solutions also for use in harsh conditions. This includes standard and EX versions of single and multi-way design with M12 plug-in connection or cable gland. Weidmüller offers a solution for almost every application. If you cannot find your solution here, please contact the branch / sales office responsible for you.

PROFIBUS-PA T-connector

standard

- 1, 2, 4, 8-way with EMC cable gland Industrial + EX / ATEX
- Surge protection optional

The **PROFIBUS-PA T-connector** is intended for direct coupling of measuring devices, sensors, actuators, etc.

- IP 66 Ingress protection class
- Modular design
- Uninterruptible bus operation for service situations
- Simple handling
- Low installation costs
- External earth stud
- Pressure equalising element
- EMC cable gland



FBCon Fieldbus distributor

PROFIBUS-PA Fieldbus distributor: sturdy and well-tested

FBCon fieldbus distributors are available in industrial and Ex(ia) versions. They are used for coupling 1- 8field devices or sensors. The connection is made via spur. The spur is connected by an M12 plug-in connector or directly via an EMC cable gland. The communication and device powering is handled by a common 2-core wire.

The PROFIBUS-PA distributors normally feature a switchable terminating resistor. For the Ex zone, the terminating resistor is made with a separate box. Current limiting variants help to ensure that the facility can operate smoothly.

Weidmüller offers a comprehensive line of accessories including pre-assembled PROFIBUS-PA cables in the standard lengths, and plug in connectors for a wide variety of applications.

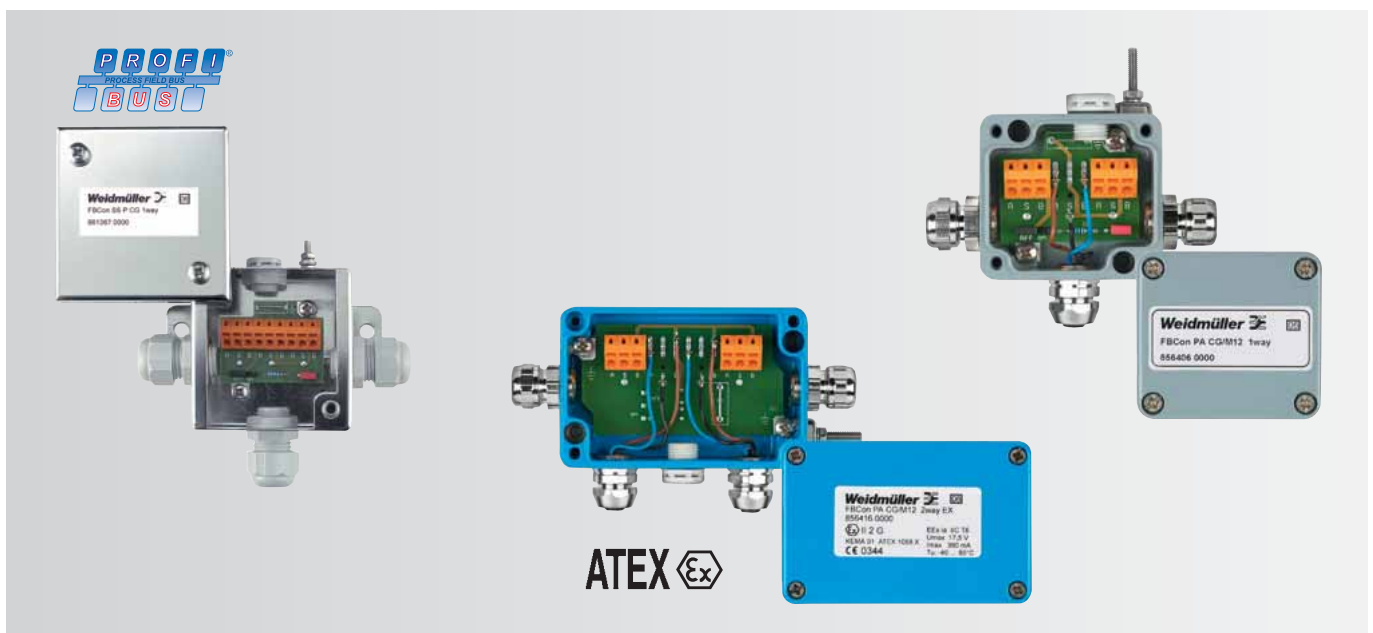
- Fieldbus distributor for PROFIBUS-PA and PROFIBUS-DP
- Standard distributor for use in the safe zone Aluminium housing for connecting from 1 to 8 field devices
- Stainless steel distributor for applications in the food processing industry, for connecting from 1 to 8 field devices
- Intrinsically safe (ia) Ex version in aluminium housing for connecting from 1 to 8 field devices
- EMC cable gland for a secure contact with the shielding

Technical data for PROFIBUS-PA standard distributors

Temperature range	
Operating temperature	from -40 °C to 85 °C
Ingress protection class	IP 66
Housing material	High-quality aluminium alloy (AL-Si 12)
Surface	Stove-enamelled RAL 7001
PROFIBUS-PA connection	Tension clamp connection 0.5 - 1.5 mm ²
Cable entry	Cable gland M16
Clamping range	5.5 - 9.5 mm
Measuring device connector M12 x 14-pin	Contacts MS, surface CUZnAu
Information	

Handling information

Torques	
M16 gland to housing	6.25 Nm
M16 union nut on cable gland	4.5 Nm
Housing cover	1.8 - 2.0 Nm
External earth stud	1.8 - 2.0 Nm



PROFIBUS-PA - FBCon T-distributor

1-channel distributor

Cable gland

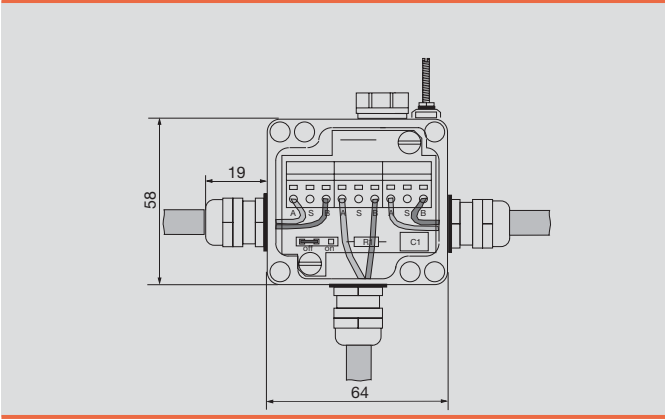


Ordering data

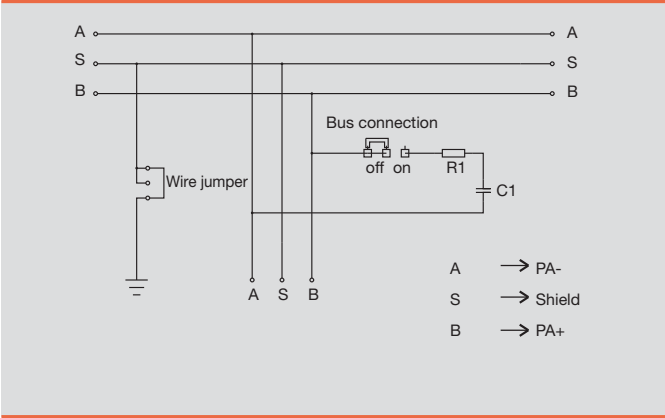
Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG 1way	branch line CG	1	8564090000
Stainless steel enclosure			
FBCon SS CG 1way	branch line CG	1	8703430000
FBCon SS PCG 1way	all connections PCG	1	8613670000

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing

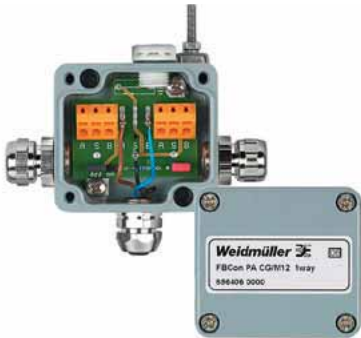


Wiring diagram



1-channel distributor

M12 connection

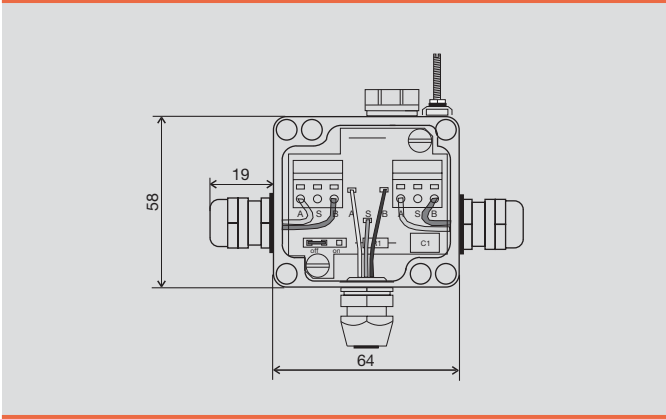


Ordering data

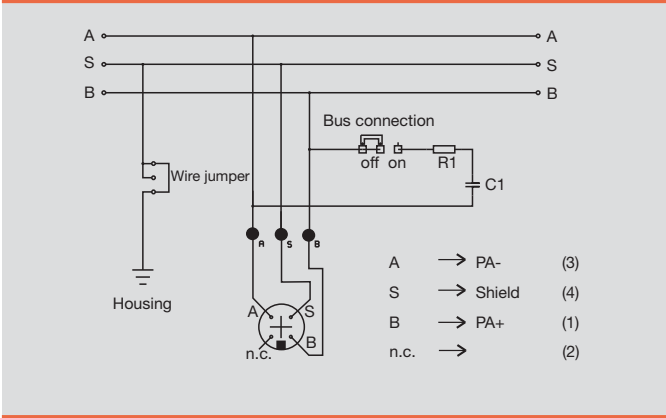
Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG/M12 1way	branch line M12	1	8564060000
Stainless steel enclosure			
FBCon SS CG/M12 1way	branch line M12	1	8726020000

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



2-channel distributor

Cable gland



2-channel distributor

M12 connection



Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG 2way	branch line CG	1	8564100000
Stainless steel enclosure			

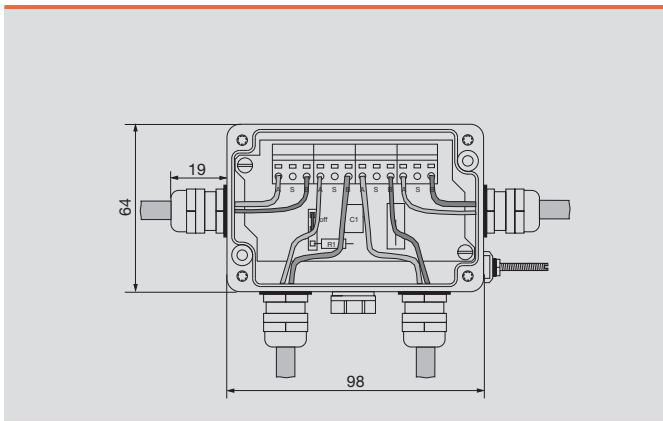
Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG/M12 2way	branch line M12	1	8564070000
Stainless steel enclosure			

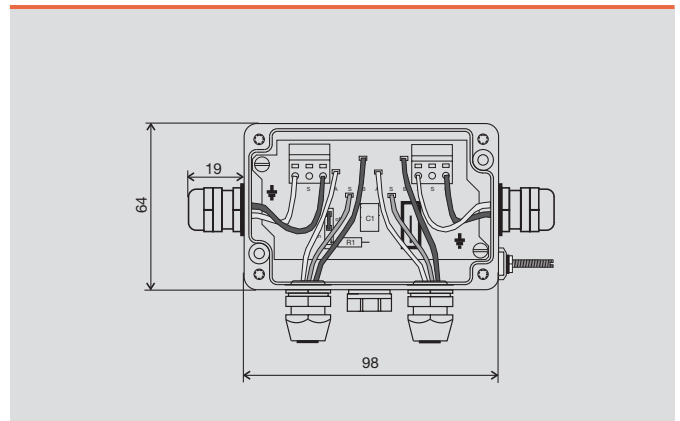
CG = brass cable gland
PCG = plastic cable gland

CG = brass cable gland
PCG = plastic cable gland

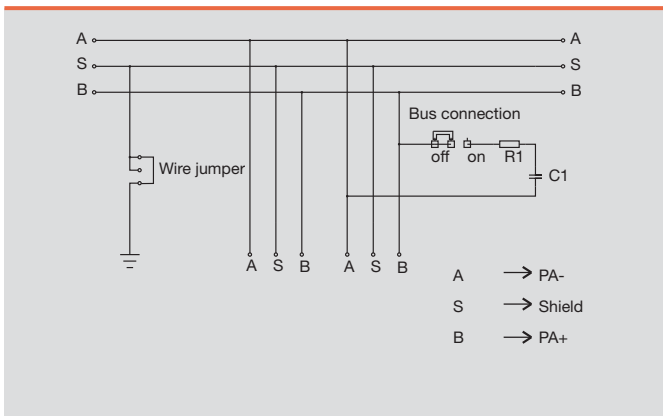
Dimensioned drawing



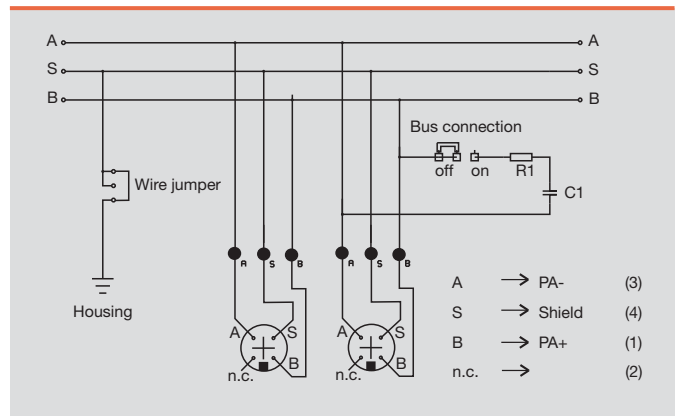
Dimensioned drawing



Wiring diagram



Wiring diagram



PROFIBUS-PA - FBCon T-distributor

4-channel distributor

Cable gland



4-channel distributor

M12 connection



Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG 4way	branch line CG	1	8564110000
Stainless steel enclosure			
FBCon SS CG 4way	branch line CG	1	8703450000
FBCon SS PCG 4way	all connections PCG	1	8613680000

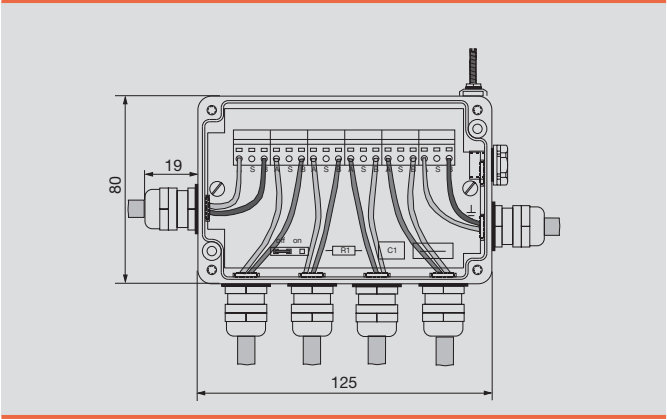
Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG/M12 4way	branch line M12	1	8564080000
Stainless steel enclosure			
FBCon SS CG/M12 4way	branch line M12	1	8726040000

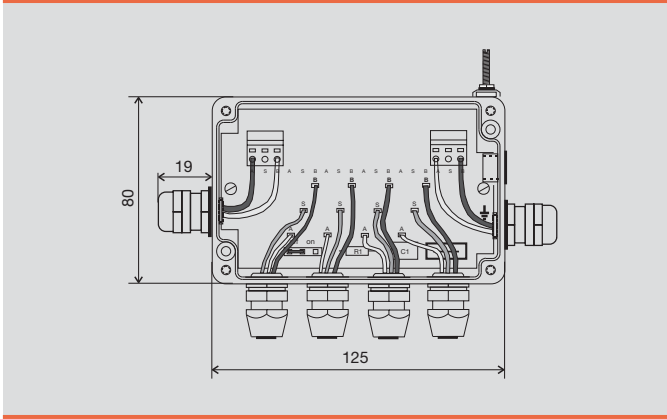
CG = brass cable gland
PCG = plastic cable gland

CG = brass cable gland
PCG = plastic cable gland

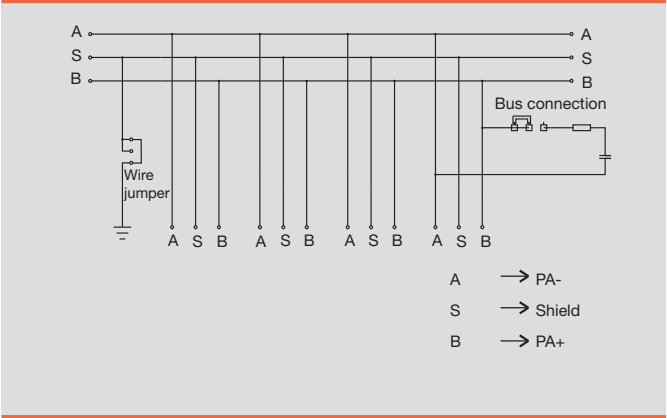
Dimensioned drawing



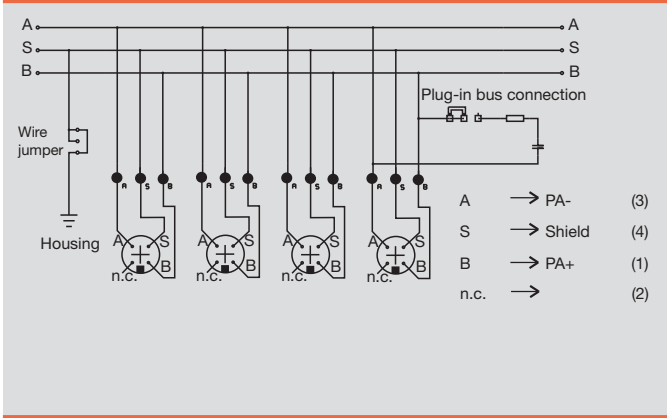
Dimensioned drawing



Wiring diagram



Wiring diagram



8-channel distributor

Cable gland



8-channel distributor

M12 connection



Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG 8way	branch line CG	1	8564300000
Stainless steel enclosure			
FBCon SS CG 8way	branch line CG	1	8703470000
FBCon SS PCG 8way	all connections PCG	1	8640720000

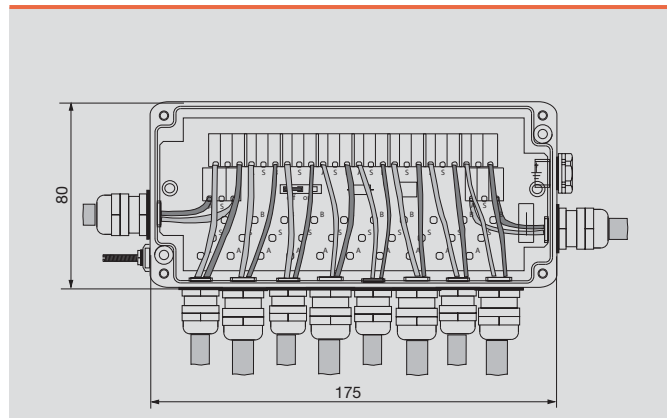
Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG/M12 8way	branch line M12	1	8564310000
Stainless steel enclosure			
FBCon SS CG/M12 8way	branch line M12	1	8726050000

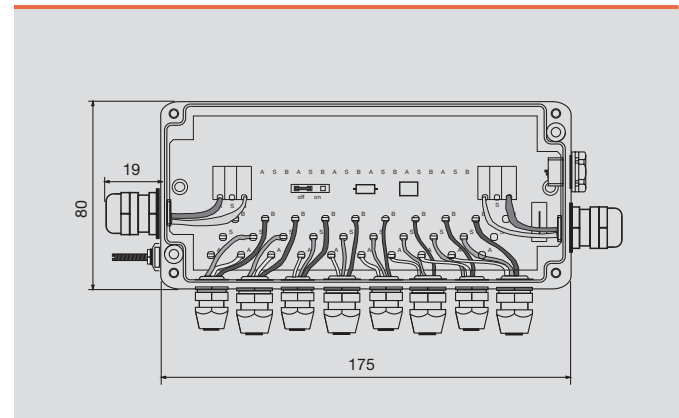
CG = brass cable gland
PCG = plastic cable gland

CG = brass cable gland
PCG = plastic cable gland

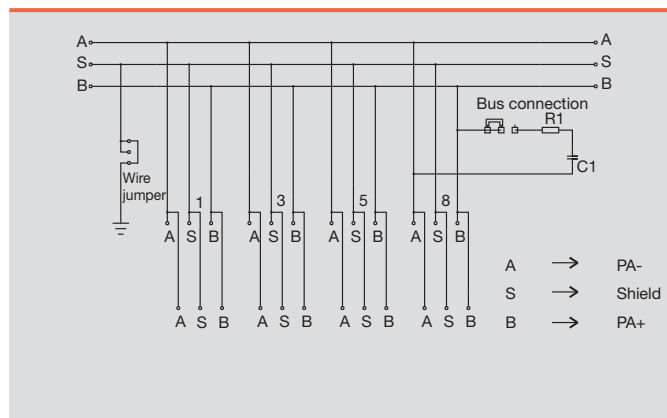
Dimensioned drawing



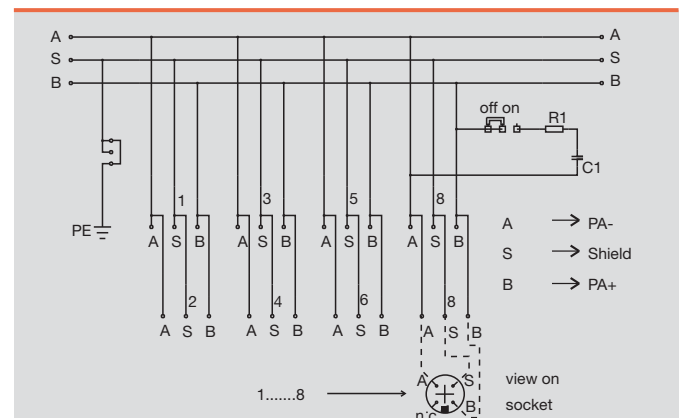
Dimensioned drawing



Wiring diagram

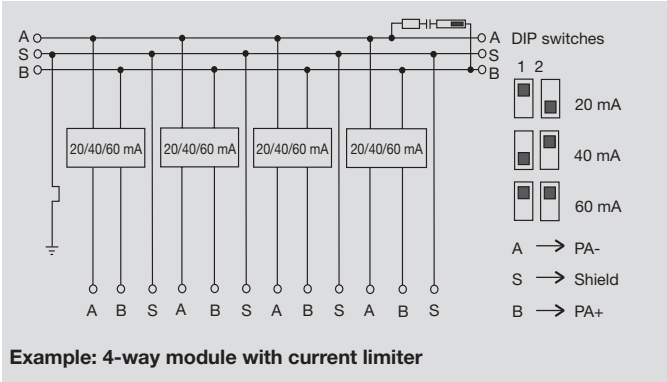
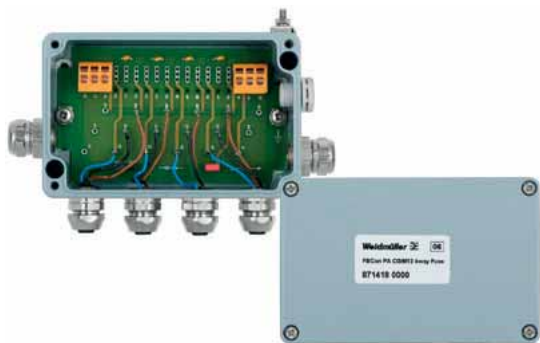


Wiring diagram



PROFIBUS-PA - FBCon T-distributor with surge protection

Fieldbus components for industrial applications with surge protection or current limiter



PROFIBUS-PA T-connectors

Fine surge protection or integrated current limiting mechanisms are designed for protecting connected measuring devices, sensors or actuators from surge voltages. Gas-discharge tubes and suppressor diodes are voltage-limiting protection mechanisms. If a rapidly rising voltage pulse reaches the input of a T-connector with surge protection, the gas discharge tube ignites and discharges a high current. The residual pulse is limited by a suppressor diode. In the case of a slow rise in voltage, the pulse is processed by

the diode alone. The housing is connected to the protective earth via an external earth stud. When using the connectors for current limiting, the PROFIBUS-PA network is protected against short circuits with protective circuitry. The current can be set to either 20 mA, 40 mA or 60 mA by means of two DIP switches.

Surge protection
Technical data

Operating temperature	–40 °C to 85 °C
Ingress protection class	IP 67
Enclosure material	High grade aluminium alloy (AL – SI 12)
Finish	Painted RAL 7001
PROFIBUS-PA connection	Tension clamp terminals 0.5 – 1.5 mm ²
Cable entry	Cable gland M16
Branch	M12 socket (4-pin)
Cable gland clamping range	5.5 – 9.5 mm
Nominal voltage DC/AC	U _N = 24 V DC/18 V AC
Max. permissible operating voltage	U _C = 30 V DC/21 V AC
Rated current at 30 °C	I _N = 500 mA
Trip surge voltage (1 kV/μs)	< 600 V
Rated discharge surge current (8/20 μs)	I _{SN} = 10 kA (wire-wire, wire-PE)
Output voltage limit (8/20 μs)	U _p = 65 V
PROFIBUS-PA bus terminator	Via jumper

Installation advice

Torques	
Screw terminals	0.4 Nm
M16 cable gland at enclosure	6.0 Nm
Union nut M16 cable gland	4.0 Nm
Enclosure cover	1.8 – 2.0 Nm
External earthing cable	1.8 – 2.0 Nm

Limiter
Technical data

Operating temperature	–40 °C to 85 °C
Ingress protection class	IP 67
Enclosure material	High grade aluminium alloy (AL – SI 12)
Finish	Painted RAL 7001
PROFIBUS-PA connection	Tension clamp terminals 0.5 – 1.5 mm ²
Cable entry	Cable gland M16
Branch	M12 socket (4-pin)
Cable gland clamping range	5.5 – 9.5 mm
Short-circuit protection per station	20, 40, 60 mA settings
PROFIBUS-PA bus terminator	Via jumper

Installation advice

Torques	
Screw terminals	0.4 Nm
M16 cable gland at enclosure	6.0 Nm
Union nut M16 cable gland	4.0 Nm
Enclosure cover	1.8 – 2.0 Nm
External earthing cable	1.8 – 2.0 Nm

1-channel distributor (OVP)

Cable gland



1-channel distributor (OVP)

M12 connection



Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG 1way OVP	branch line CG	1	8714120000
Stainless steel enclosure			
FBCon SS PCG 1way OVP	all connections PCG	1	8715270000

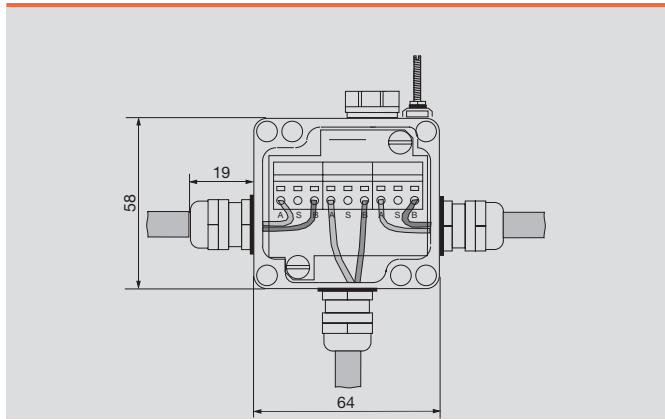
Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG/M12 1way OVP	branch line M12	1	8714080000
Stainless steel enclosure			

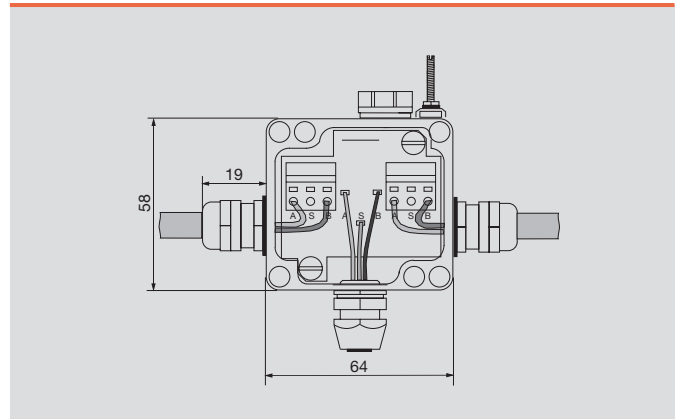
CG = brass cable gland
PCG = plastic cable gland

CG = brass cable gland
PCG = plastic cable gland

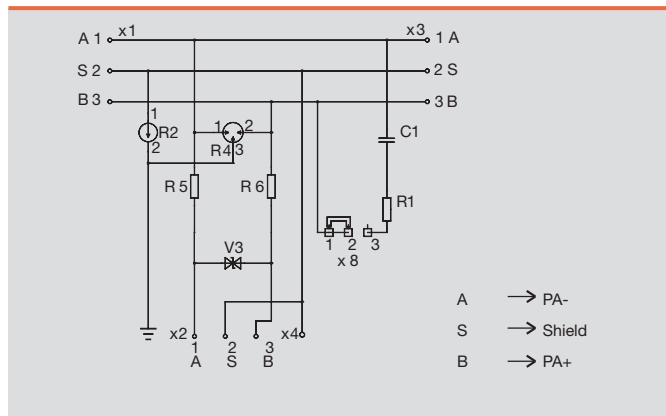
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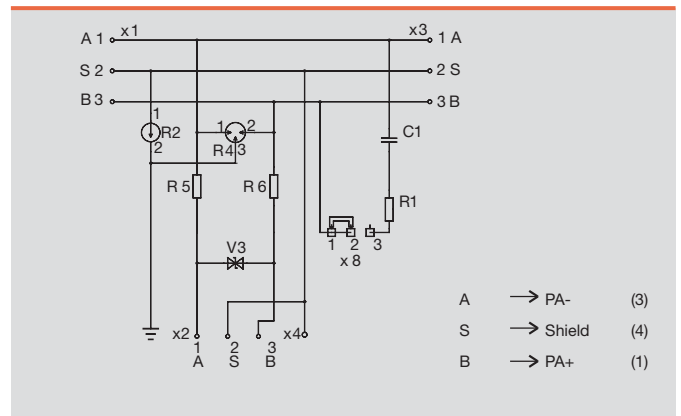
Dimensioned drawing



Wiring diagram



Wiring diagram



PROFIBUS-PA - FBCon T-distributor with surge protection

2-channel distributor (OVP)

Cable gland



2-channel distributor (OVP)

M12 connection



Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG 2way OVP	branch line CG	1	8714130000
Stainless steel enclosure			

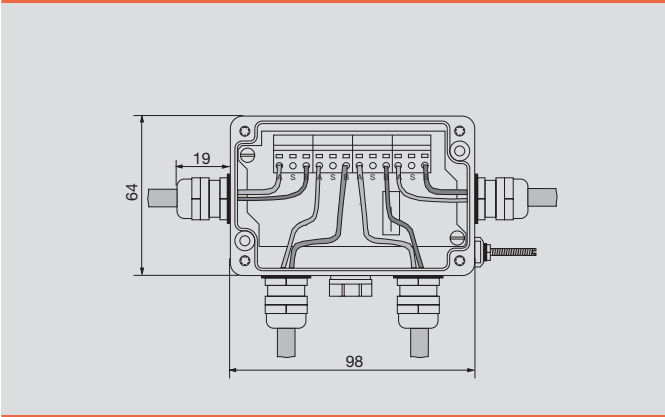
Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG/M12 2way OVP	branch line M12	1	8714090000
Stainless steel enclosure			

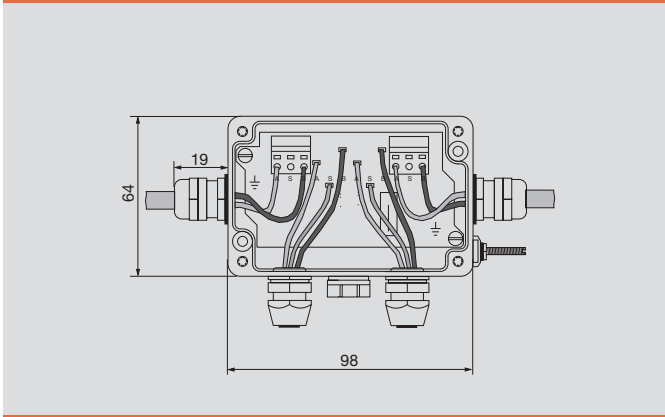
CG = brass cable gland
PCG = plastic cable gland

CG = brass cable gland
PCG = plastic cable gland

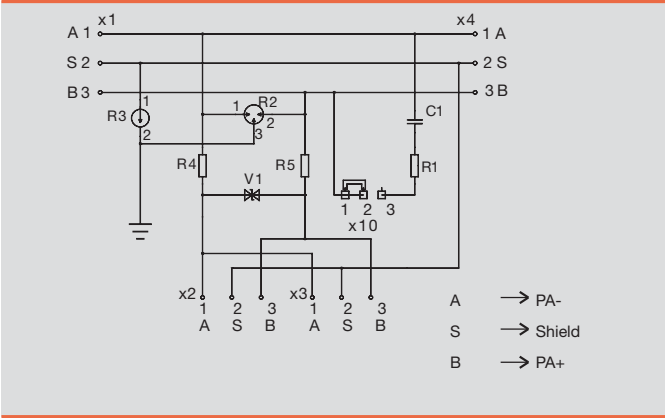
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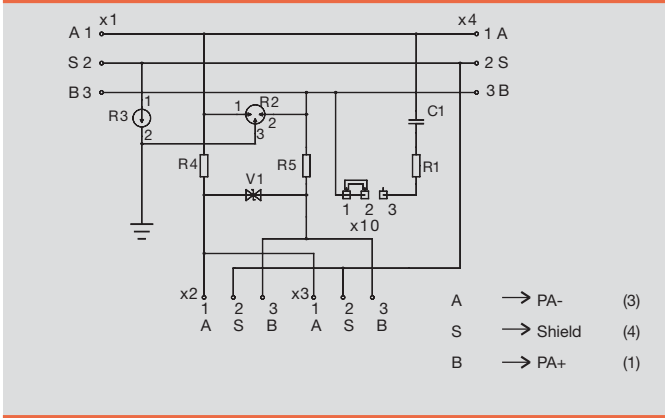
Dimensioned drawing



Wiring diagram



Wiring diagram



4-channel distributor (OVP)

Cable gland



4-channel distributor (OVP)

M12 connection



Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG 4way OVP	branch line CG	1	8714140000
Stainless steel enclosure			
FBCon SS PCG 4way OVP	all connections PCG	1	8726080000

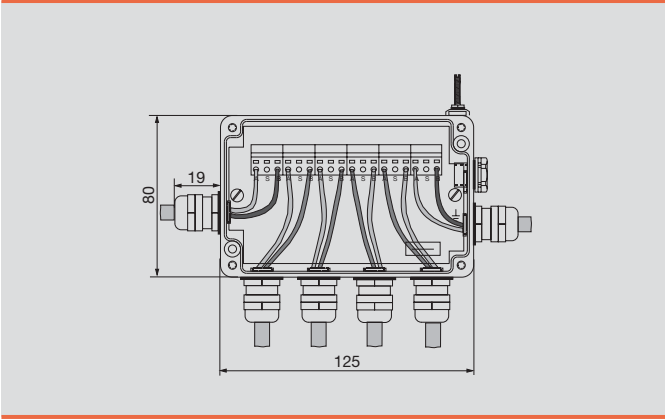
Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG/M12 4way OVP	branch line M12	1	8714100000
Stainless steel enclosure			

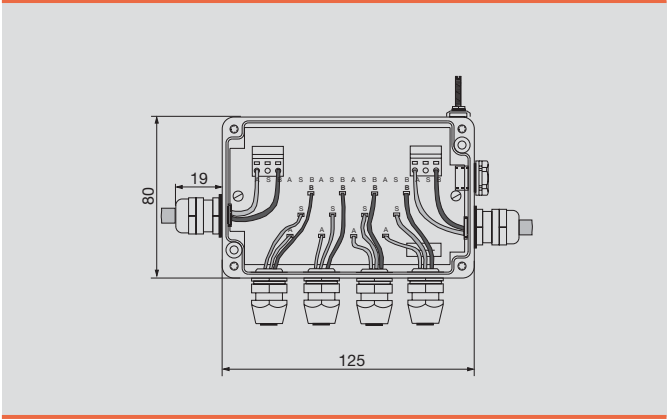
CG = brass cable gland
PCG = plastic cable gland

CG = brass cable gland
PCG = plastic cable gland

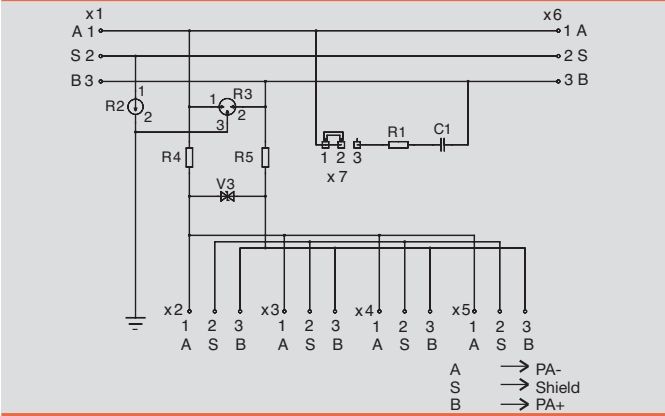
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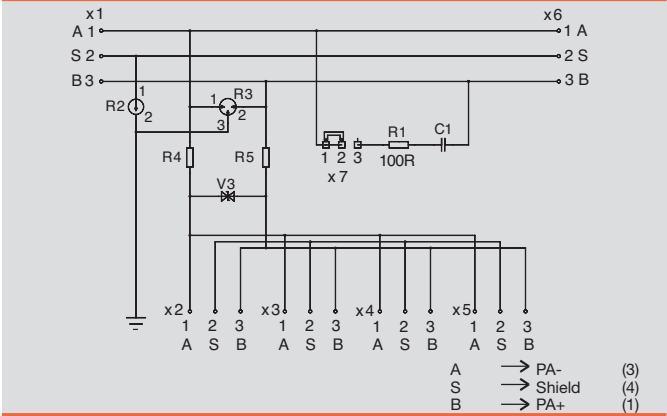
Dimensioned drawing



Wiring diagram



Wiring diagram



PROFIBUS-PA - FBCon T-distributor with surge protection

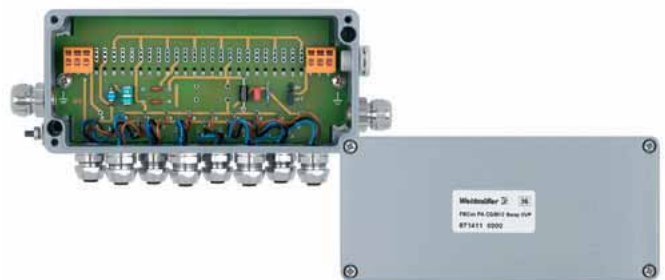
8-channel distributor (OVP)

Cable gland



8-channel distributor (OVP)

M12 connection



Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG 8way OVP	branch line CG	1	8714150000
Stainless steel enclosure			
FBCon SS PCG 8way OVP	all connections PCG	1	8726090000

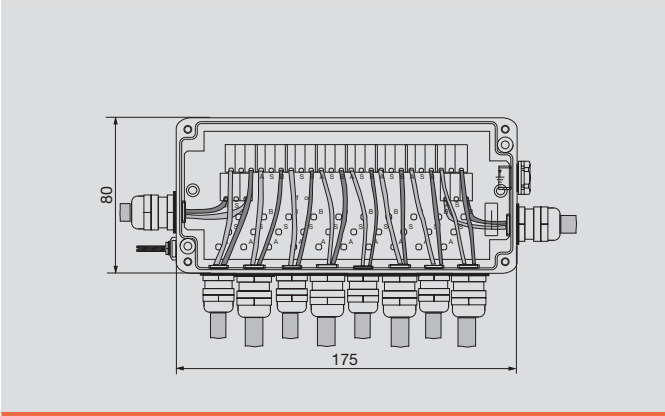
CG = brass cable gland
PCG = plastic cable gland

Ordering data

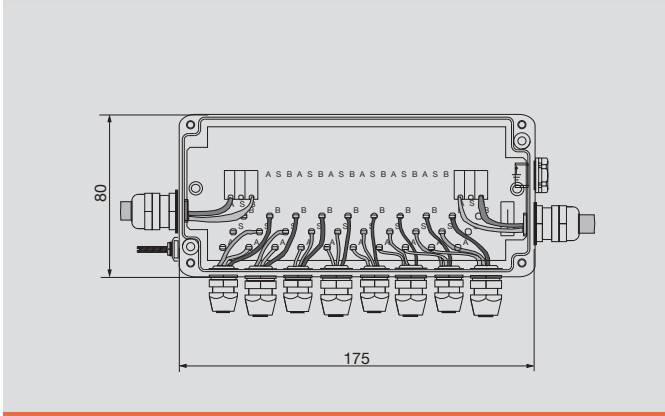
Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG/M12 8way OVP	branch line M12	1	8714110000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

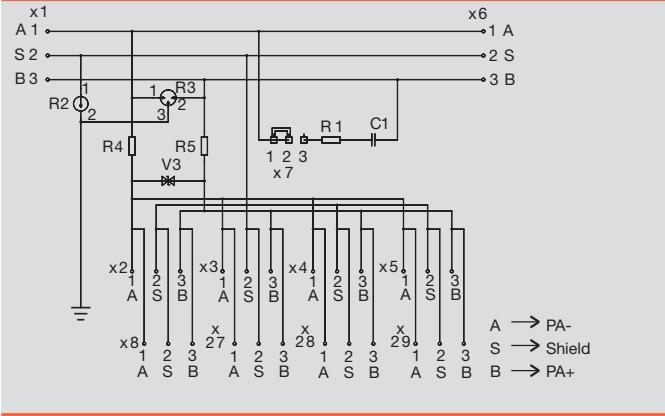
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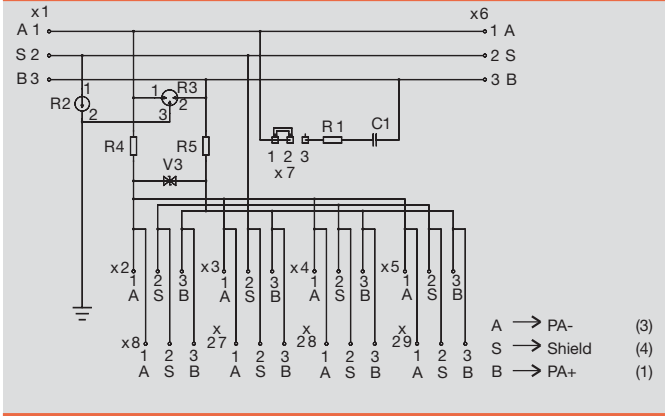
Dimensioned drawing



Wiring diagram



Wiring diagram



1-channel distributor (limiter)

Cable gland



1-channel distributor (limiter)

M12 connection



Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG 1way Limiter	branch line CG	1	8714200000
Stainless steel enclosure			
FBCon SS PCG 1way Limiter	all connections PCG	1	8726110000

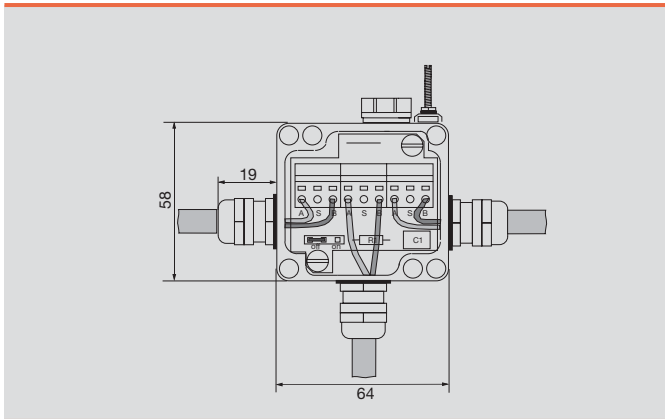
Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG/M12 1way Limiter	branch line M12	1	8714160000
Stainless steel enclosure			

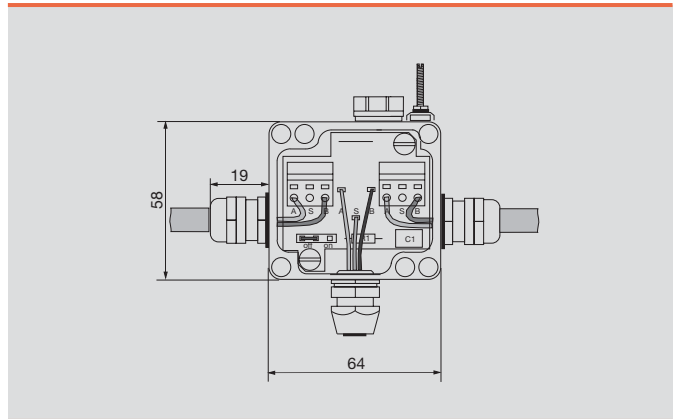
CG = brass cable gland
PCG = plastic cable gland

CG = brass cable gland
PCG = plastic cable gland

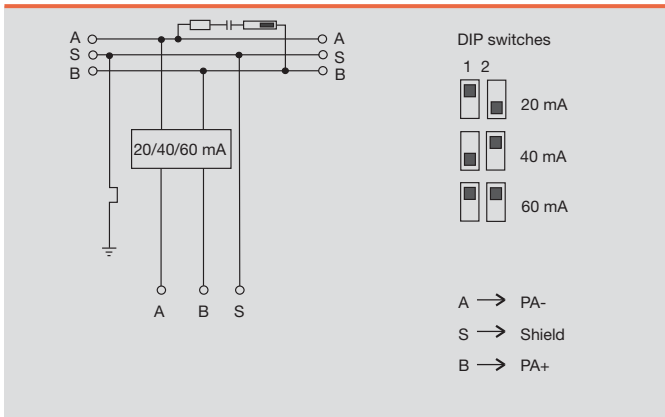
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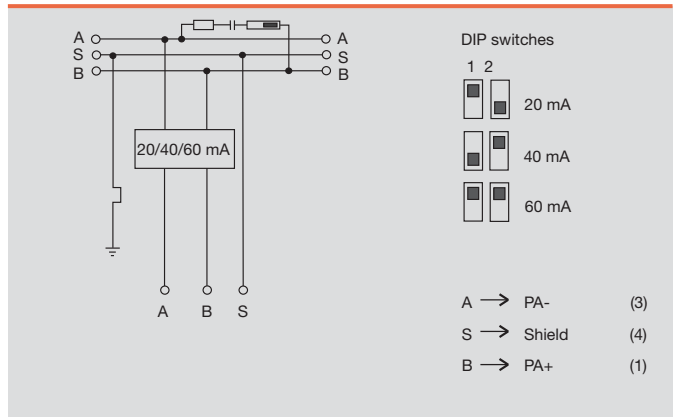
Dimensioned drawing



Wiring diagram



Wiring diagram



PROFIBUS-PA - FBCon T-distributor with surge protection

2-channel distributor (limiter)

Cable gland



2-channel distributor (limiter)

M12 connection



Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG 2way Limiter	branch line CG	1	8714210000
Stainless steel enclosure			

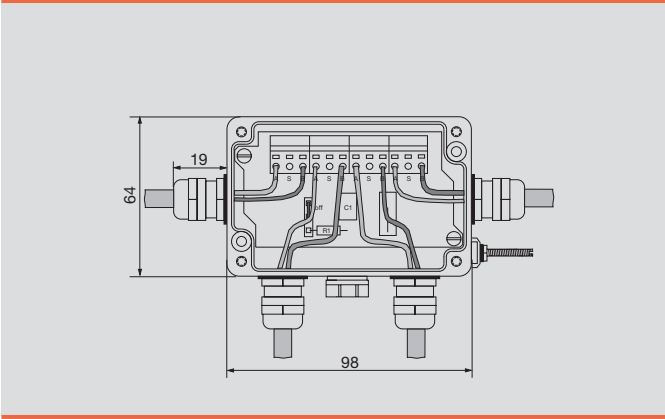
Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG/M12 2way Limiter	branch line M12	1	8714170000
Stainless steel enclosure			

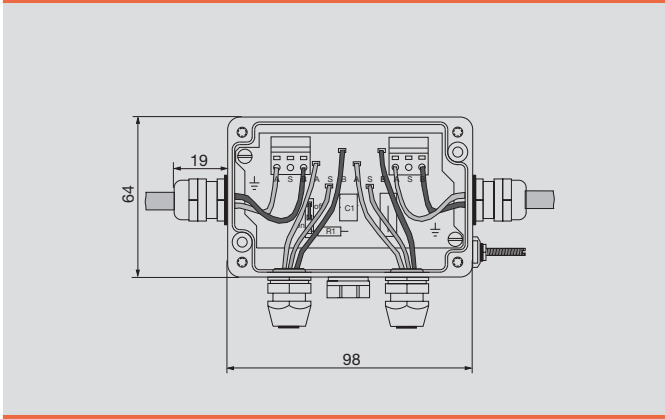
CG = brass cable gland
PCG = plastic cable gland

CG = brass cable gland
PCG = plastic cable gland

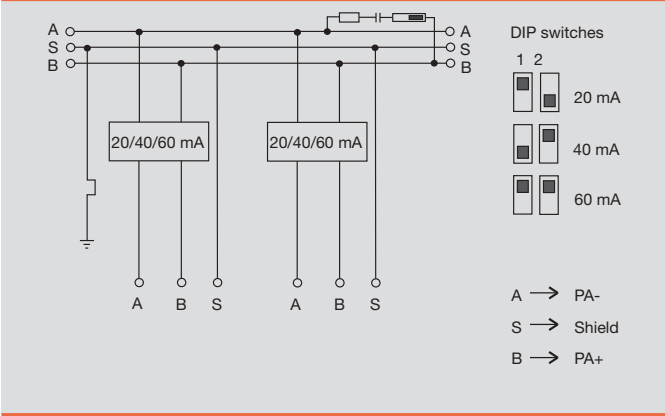
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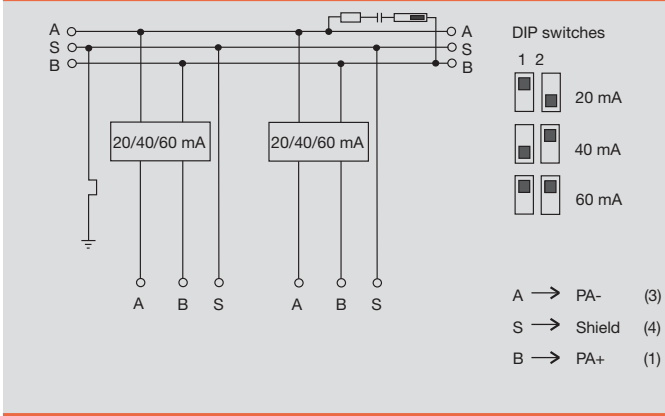
Dimensioned drawing



Wiring diagram



Wiring diagram



4-channel distributor (limiter)

Cable gland



4-channel distributor (limiter)

M12 connection



Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG 4way Limiter	branch line CG	1	8714220000
Stainless steel enclosure			
FBCon SS PCG 4way Limiter	all connections PCG	1	8715260000

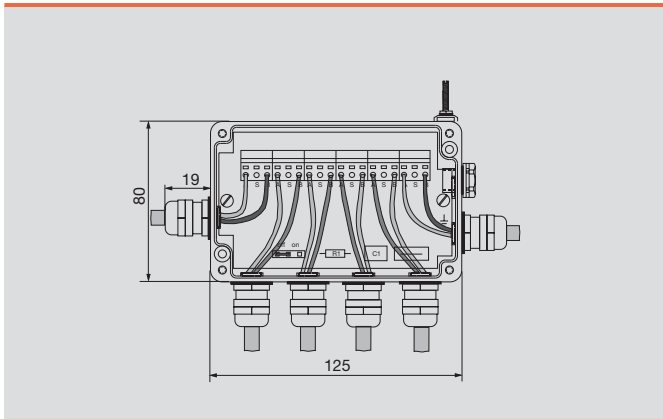
Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG/M12 4way Limiter	branch line M12	1	8714180000
Stainless steel enclosure			

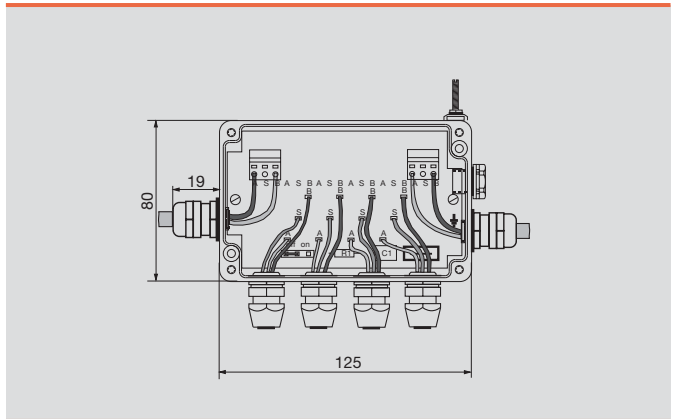
CG = brass cable gland
PCG = plastic cable gland

CG = brass cable gland
PCG = plastic cable gland

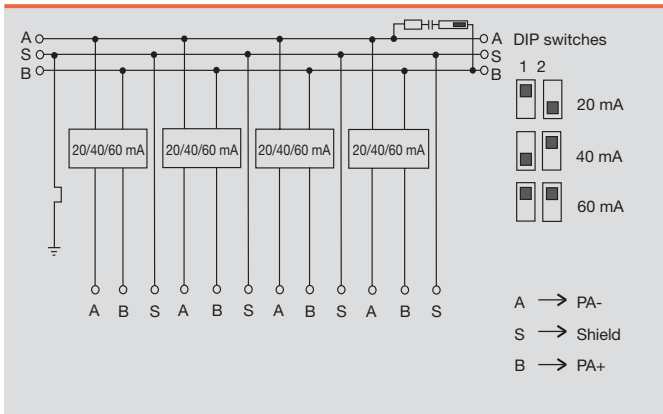
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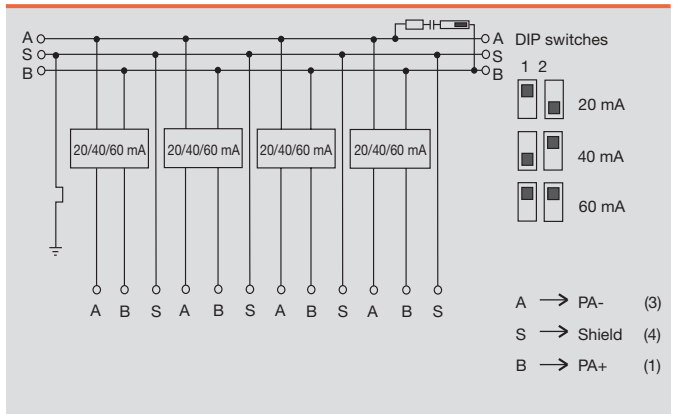
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Wiring diagram



Wiring diagram



PROFIBUS-PA - FBCon T-distributor with surge protection

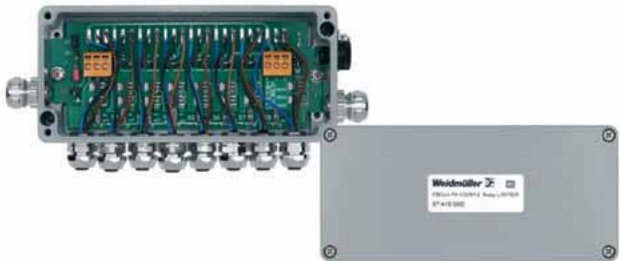
8-channel distributor (limiter)

Cable gland



8-channel distributor (limiter)

M12 connection



Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG 8way Limiter	branch line CG	1	8714230000
Stainless steel enclosure			
FBCon SS PCG 8way Limiter	all connections PCG	1	8726160000

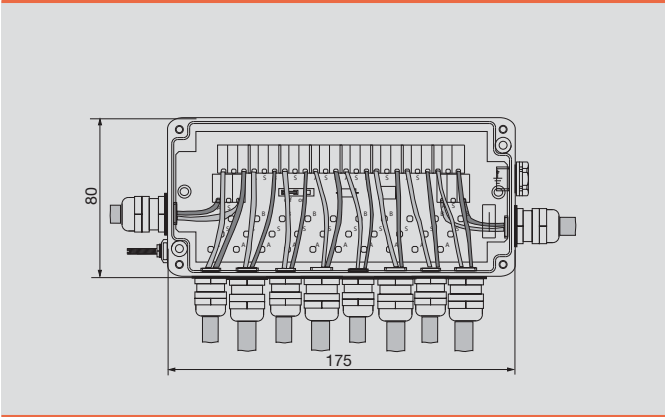
CG = brass cable gland
PCG = plastic cable gland

Ordering data

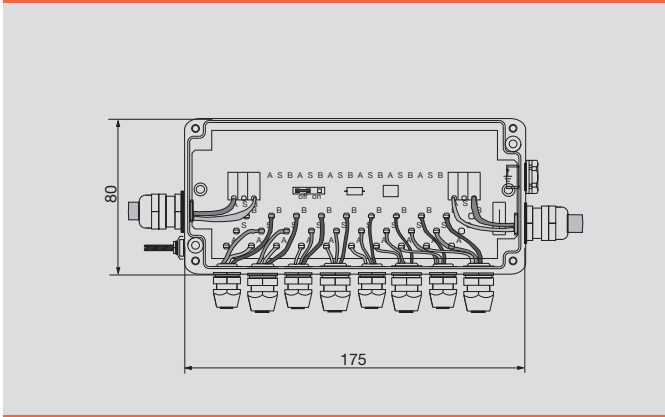
Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG/M12 8way Limiter	branch line M12	1	8714190000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

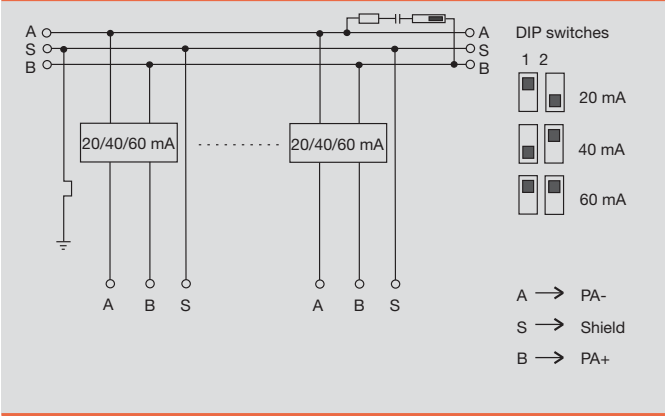
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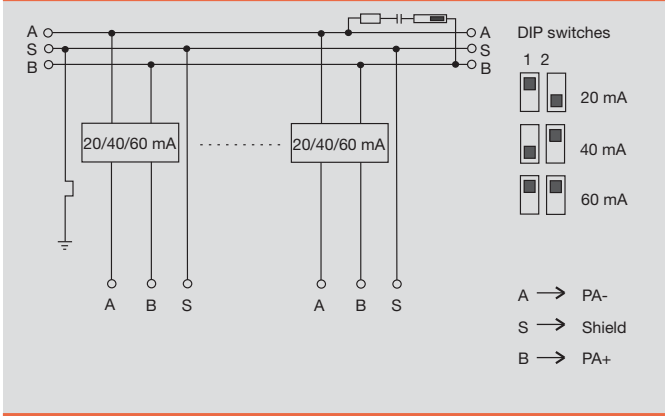
Dimensioned drawing



Wiring diagram



Wiring diagram



FBCon distributors for Ex areas



PROFIBUS-PA T-connector

• Ex(ia)

The PROFIBUS-PA installation products are increasingly used in

- food industry
- basic industries and
- chemical industry.

The product range offers a wide choice of customer solutions also for use in harsh conditions. This includes standard and EX versions of single and multi-way design with M12 plug in connection or cable gland. Weidmüller offers a solution for almost every application. If you cannot find your solution here, please contact the branch / sales office responsible for you.

PROFIBUS-PA T-connector

- Ex(ia)

- 1-way
- 2-way
- 4-way
- 8-way

The PROFIBUS-PA T connector in Ex(ia) specification is intended for direct coupling of measuring devices, sensors, actuators, etc. in potentially explosive areas.

- Approval for intrinsically safe use ATEX approval
- IP 66 Ingress Protection Class
- Modular design
- Uninterruptible bus operation
- Simple handling
- External earth terminal
- External bus terminator



C

Weidmüller

Bus Terminator 8556460000

Datum: 27.11.00, Seite 2/2

Speziell soll die FBCon Bus Terminator 8556460000 für den eigensicheren Bereich EEx ia und den Bereich EEx m eingesetzt werden. Der Bus Terminator darf in Verbindung mit einem für die Zündschutzarten EEx e und EEx d zugelassenen Gehäuse innerhalb einer EEx e / EEx d Applikation verwendet werden (EEx d nur in entsprechendem Gehäuse). Bei Anwendung mit / in einem Kunststoffgehäuse wird der Bus Terminator mit einem zusätzlichen Erdschluss versehen (Zeichnung 855646 Blatt 7).

Anwendungsbeispiel für ein Kommunikationssystem mit Bus Terminator

Das Diagramm zeigt ein Kommunikationssystem mit einem Bus Terminator. Ein PC-System ist über ein PROFIBUS DP-AB an einen 4-kanaligen RS-485-Adapter angeschlossen. Dieser Adapter ist an ein 24V-Netz angeschlossen. Der Adapter ist über eine 120 Ohm-Lastimpedanz mit einem Bus Terminator 8556460000 verbunden. Der Bus Terminator ist an ein 24V-Netz angeschlossen und ist über eine 120 Ohm-Lastimpedanz mit einem Bus-System verbunden. Das Bus-System besteht aus einem PR-OF-BUS (4-kanalig, 120 Ohm Lastimpedanz) und einem Bus-System mit einem Bus Terminator 8556460000. Das Bus-System ist an ein 24V-Netz angeschlossen und ist über eine 120 Ohm-Lastimpedanz mit einem Bus-System verbunden. Das Bus-System ist an ein 24V-Netz angeschlossen und ist über eine 120 Ohm-Lastimpedanz mit einem Bus-System verbunden.

Techn. Zeichnung 2 von 2



AMENDMENT 1

to EC-Type Examination Certificate KEMA 01ATEX1058 X

Manufacturer: Weidinger Industrie GmbH & Co.

Address: Klingenbergstraße 16, 32788 Detmold, Germany

Description

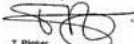
In future, the range of Fieldbus Components is extended with a Bus Termination Module with an alternative mechanical construction and with the intrinsically safe Fieldbus Distribution Modules Type FBCon PA Q01 way Ex, 2 way Ex, 4 way Ex and 4 way Ex Ex, and Type FBCon PA C04M12 1 way Ex, 2 way Ex and 4 way Ex.

The following non-certified connectors and couplers may be used for the connection of intrinsically safe fieldbus systems:

Connectors, male Type 945064 and female Type 842322 and locating plug-in connectors Type 945065, 842591, 842593 and 842594.

The distribution modules, connectors and couplers are passive components, which do not influence the properties of the intrinsically safe fieldbus system.

All other data remain unchanged.

Test documentation	dated
1. Drawing No. 855049, rev. 2 (sheets 2, 3, 4, 5 and 6))	
860018, rev. 0 (sheets 2, 3, 4, 5 and 6))	
860019, rev. 0 (sheets 2, 3, 4, 5 and 6))	
860020, rev. 0 (sheets 2, 3, 4, 5 and 6))	
850415, rev. 0 (sheets 2, 3, 4 and 5))	17.09.2001
850416, rev. 0 (sheets 2, 3, 4 and 5))	
850417, rev. 0 (sheets 2, 3, 4 and 5))	
850418, rev. 0 (sheets 2, 3, 4 and 5))	
850419, rev. 0 (sheets 2, 3, 4 and 5))	
850420, rev. 0 (sheets 2, 3, 4 and 5))	
4-22084, rev. 1 (sheet 2))	
945054, rev. 1 (sheets 2 and 3))	
842322, rev. 1 (sheets 2 and 3))	
945055, rev. 1 (sheet 2))	07.06.2001
945056, rev. 2 (sheet 3))	
842591, rev. 2 (sheet 2))	
842591, rev. 1 (sheet 3))	
945508, rev. 1 (sheet 2)	23.12.1997
2. Technical delivery condition No. 5203	23.02.2001
Arnhem, 9 October 2001 KEMA Quality B.V.  T. Pijper Certification Manager	
Code:  020 EEK is EC TS and EEK in A TS	

© 2001. Amendments may only be agreed upon in the authority and without any charge.

[0201714]

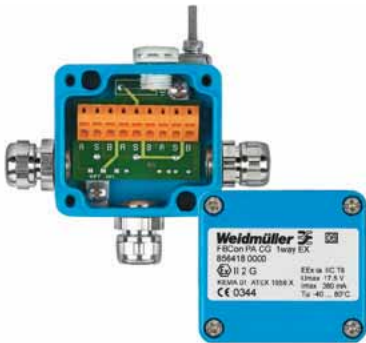
Page 1/1



PROFIBUS-PA - FBCon T-distributor ATEX Ex(ia)

1-channel distributor Ex

Cable gland

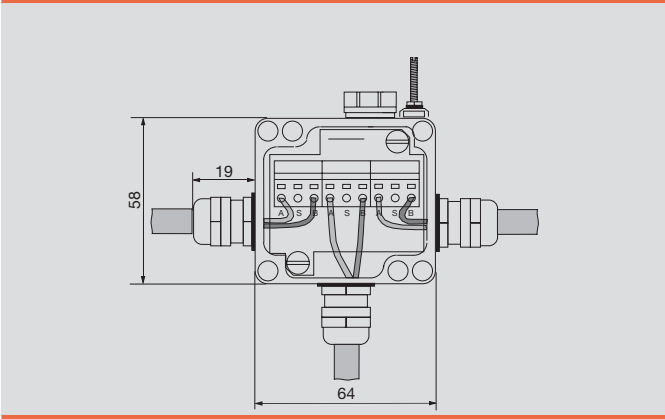


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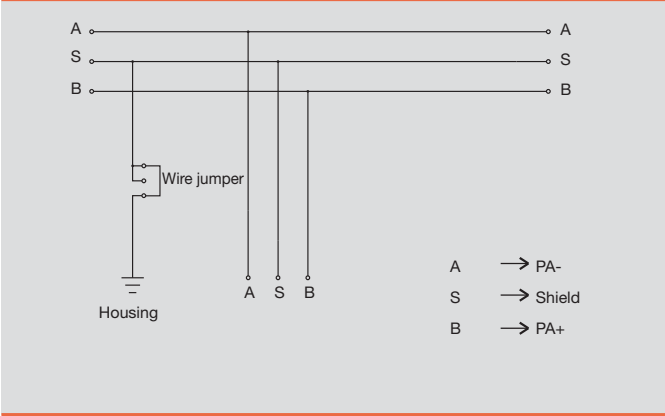
Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG 1way Ex	branch line CG	1	8564180000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



1-channel distributor Ex

M12 connection

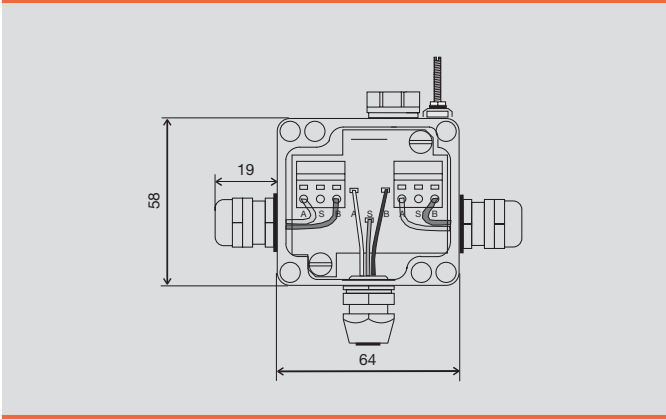


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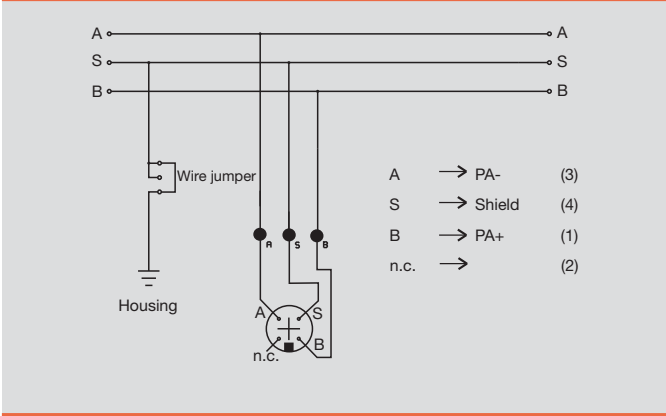
Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG/M12 1way Ex	branch line M12	1	8564150000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



2-channel distributor Ex

Cable gland

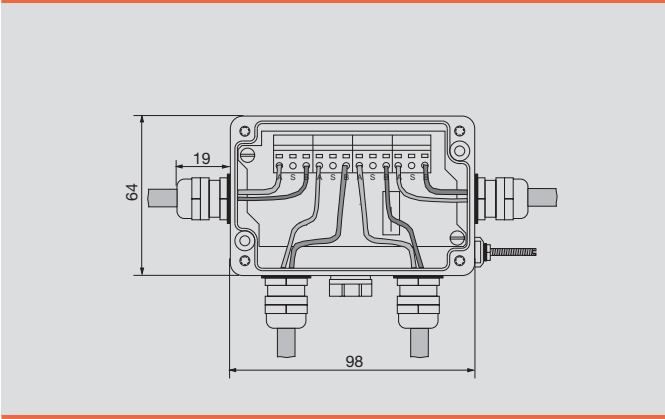


Ordering data

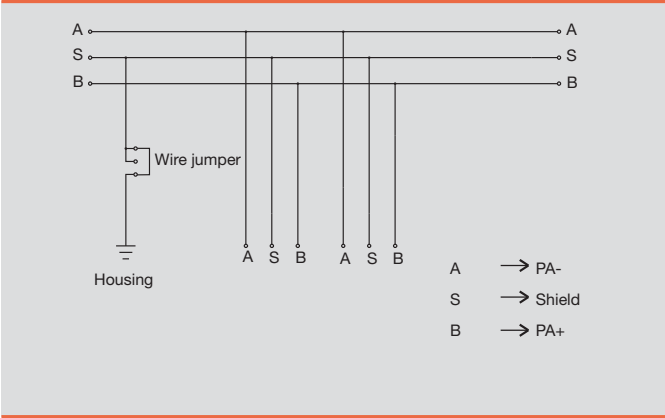
Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG 2way Ex	branch line CG	1	8564190000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



2-channel distributor Ex

M12 connection

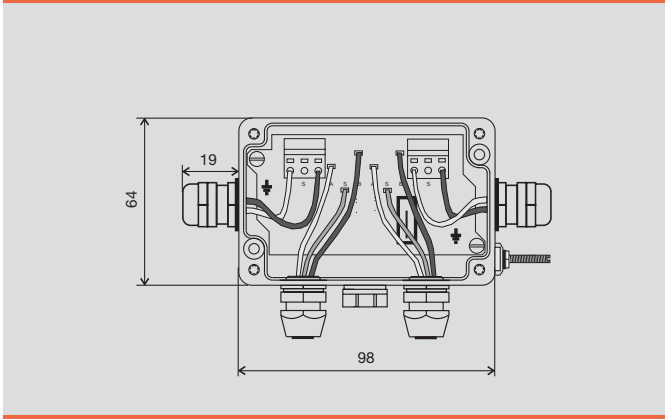


Ordering data

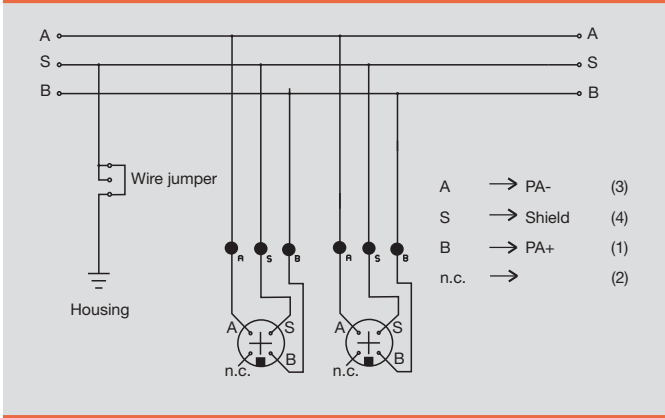
Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG/M12 2way Ex	branch line M12	1	8564160000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



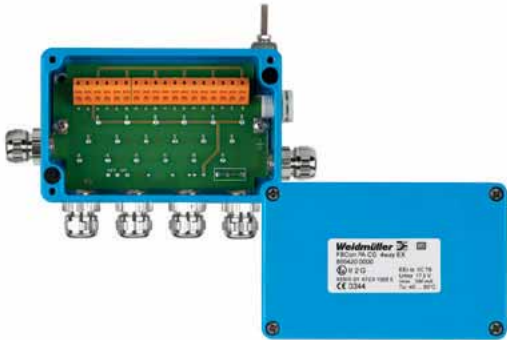
Wiring diagram



PROFIBUS-PA - FBCon T-distributor ATEX Ex(ia)

4-channel distributor Ex

Cable gland

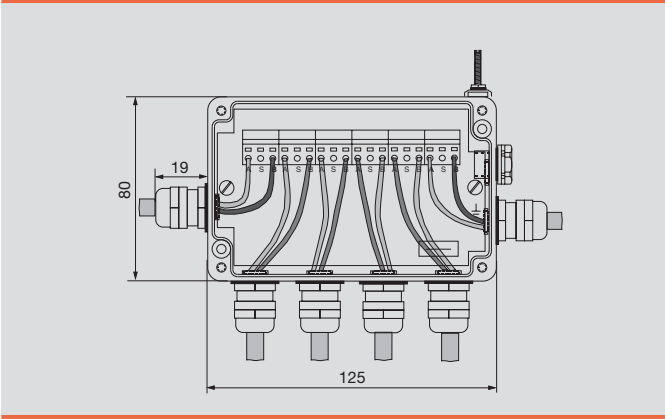


Ordering data

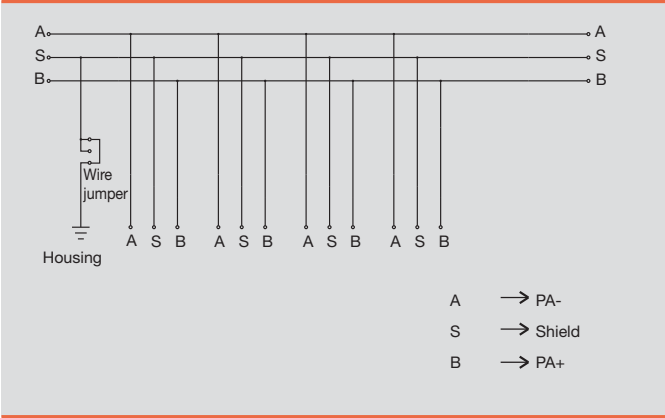
Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG 4way Ex	branch line CG	1	8564200000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing

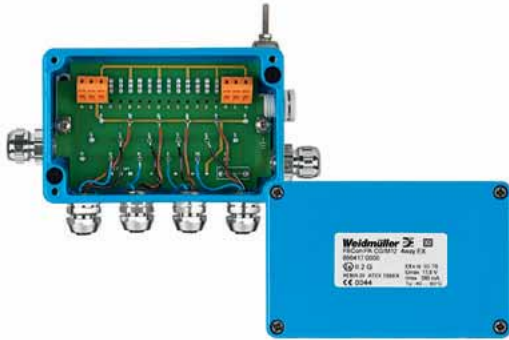


Wiring diagram



4-channel distributor Ex

M12 connection

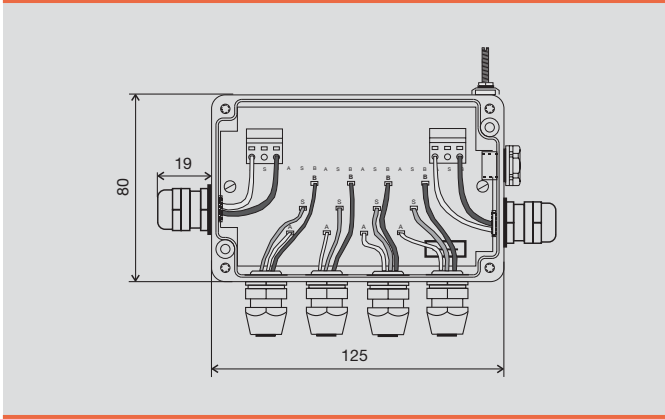


Ordering data

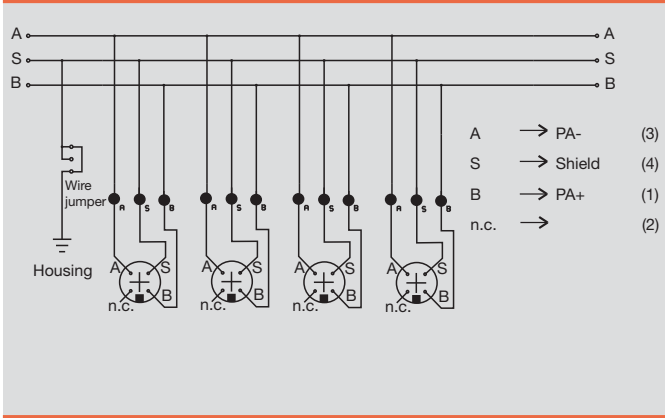
Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG/M12 4way Ex	branch line M12	1	8564170000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



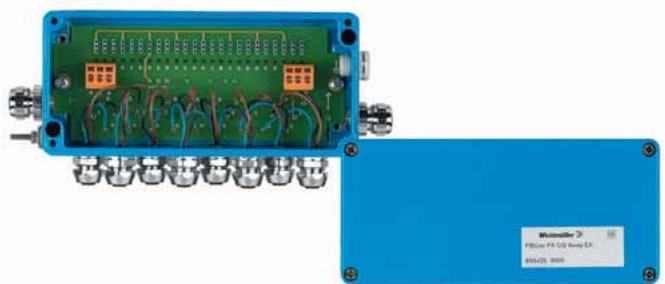
8-channel distributor Ex

Cable gland



8-channel distributor Ex

M12 connection



Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG 8way Ex	branch line CG	1	8564240000
Stainless steel enclosure			

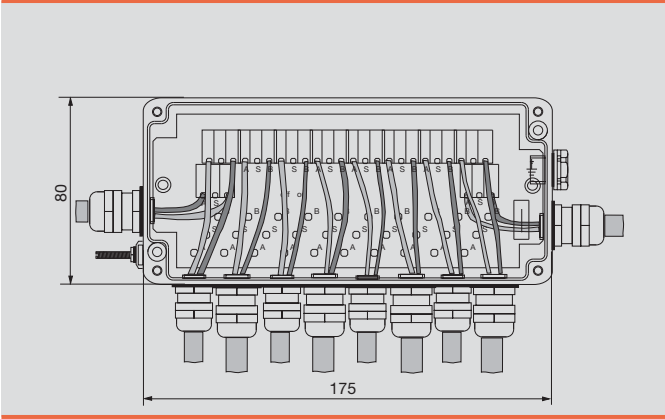
Ordering data

Type	Type of connection	Qty.	Order No.
Aluminium housing			
FBCon PA CG/M12 8way Ex	branch line M12	1	8564250000
Stainless steel enclosure			

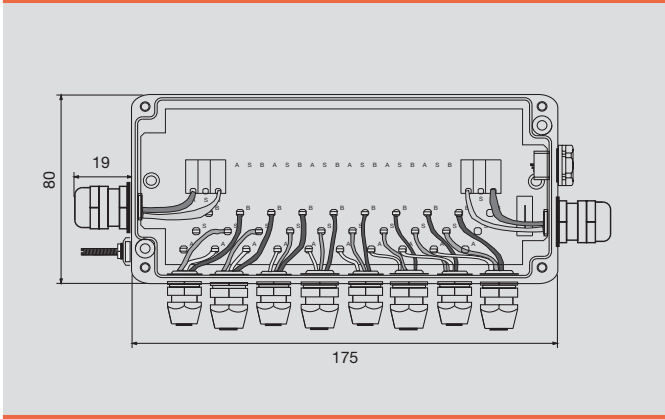
CG = brass cable gland
PCG = plastic cable gland

CG = brass cable gland
PCG = plastic cable gland

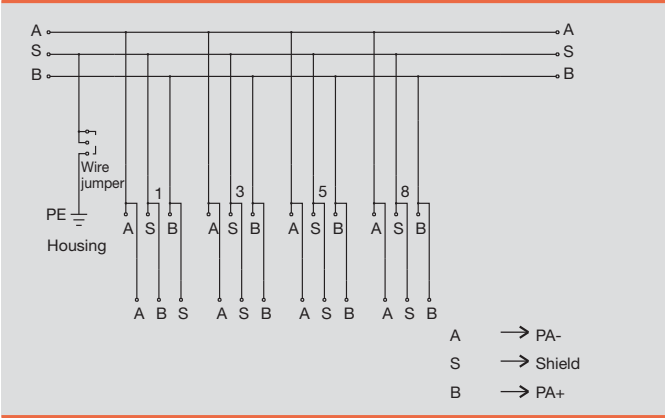
Dimensioned drawing



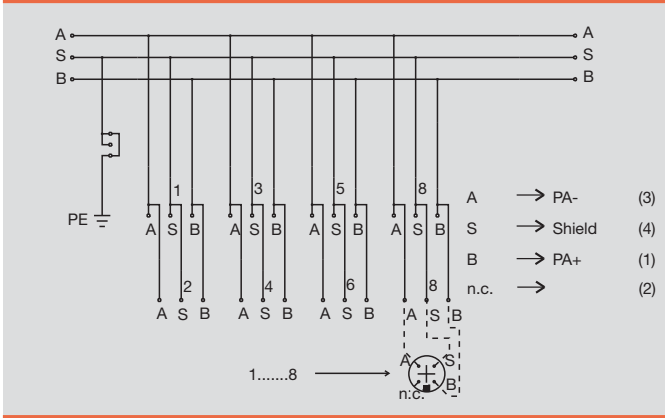
Dimensioned drawing



Wiring diagram

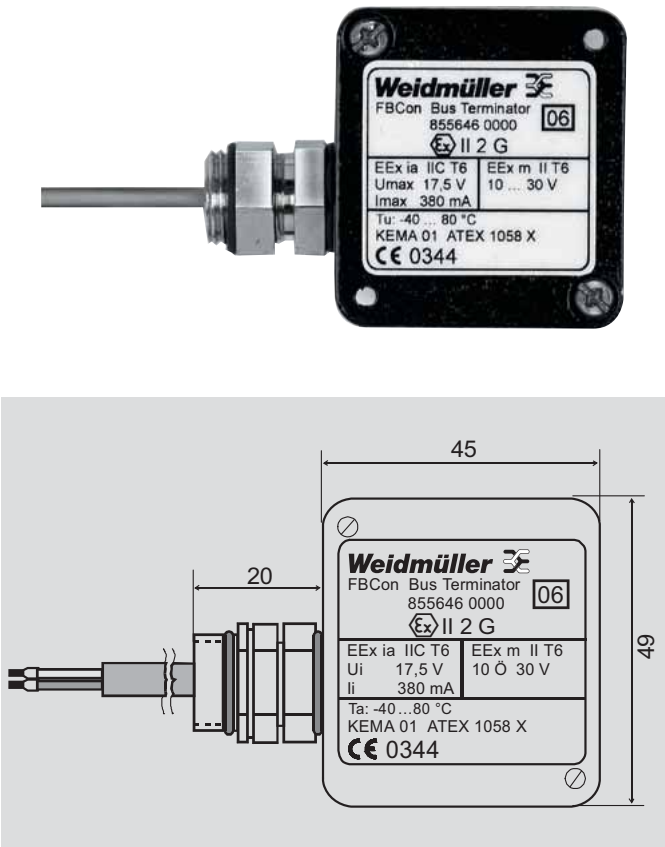


Wiring diagram



PROFIBUS-PA - FBCon T-distributor ATEX Ex(ia)

FBCon bus terminator
FBCon bus terminator without earth connection



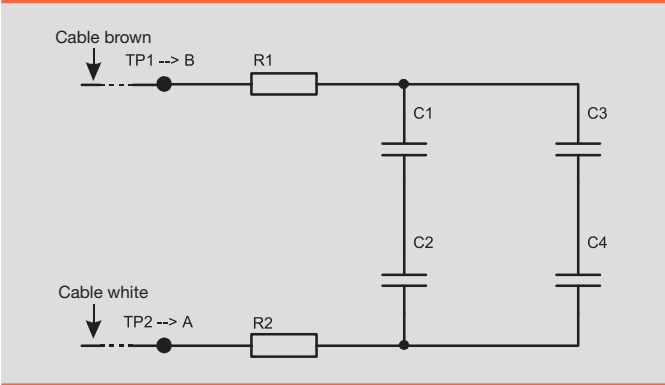
Ordering data

Typee	Qty.	Order No.
FBCon bus terminator EEx with locking clip, without earth connection	1	8556460000
FBCon bus terminator EEx without locking clip, without earth connection	1	8606190000

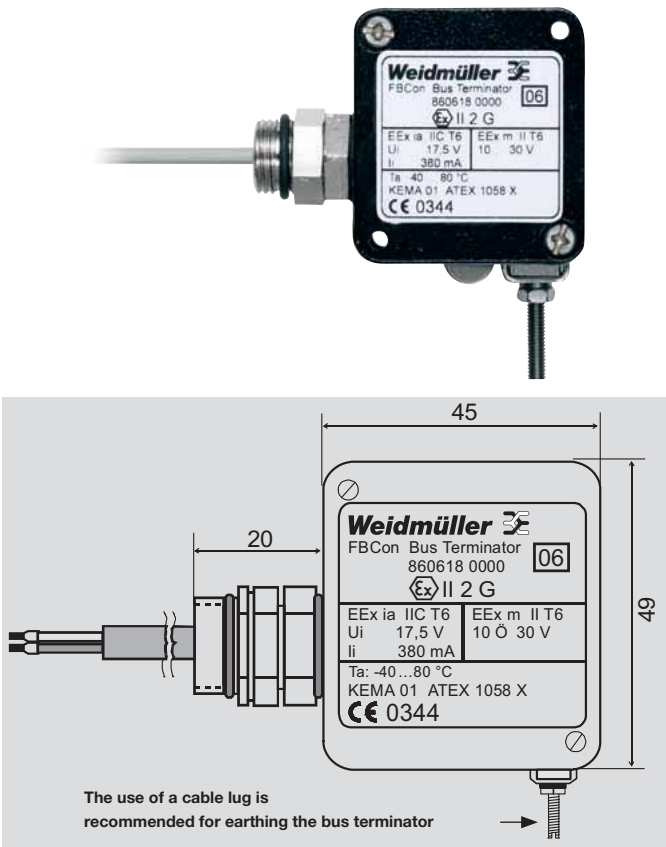
Technical data

Operating temperature	-40 °C to 80 °C
Ingress protection class	IP 66
Enclosure material	High grade aluminium alloy (Al - Si 12)
Finish	Black powder-coated
Connection lead	2 x 0.14 mm ²
Cable entry	Bus adapter M16

Wiring diagram



FBCon Bus Terminator with earth connection



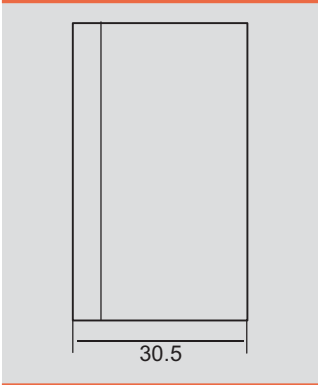
Ordering data

Typee	Qty.	Order No.
FBCon Bus Terminator EEx mit Rastfuß + mit Erdschluss	1	8606180000
FBCon Bus Terminator EEx ohne Rastfuß + mit Erdschluss	1	8606200000

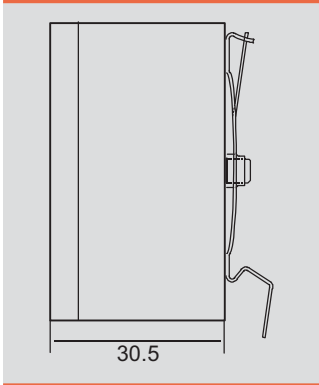
Technical data

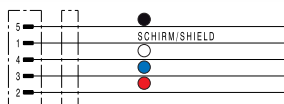
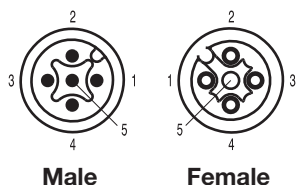
Operating temperature	-40 °C to 80 °C
Ingress protection class	IP 66
Enclosure material	High grade aluminium alloy (Al - Si 12)
Finish	Black powder-coated
Connection lead	2 x 0.14 mm ²
Cable entry	Bus adapter M16

Housing cover
without clip-on foot



Housing cover
with clip-on foot





Ordering data

Drawing data	
Male, straight	
PUR/TPE	1.5 m
PVC/PVC	1.5 m
Male, angled	
PUR/TPE	1.5 m
PVC/PVC	1.5 m
Female, straight	
PUR/TPE	1.5 m
PVC/PVC	1.5 m
Female, angled	
PUR/TPE	1.5 m
PVC/PVC	1.5 m
Note	

5-pole

Type	Order No.
SAIL-M12G-CD-1.5A	1964700150
SAIL-M12G-CD-1.5B	1060110150
SAIL-M12W-CD-1.5A	1062220150
SAIL-M12W-CD-1.5B	1062170150
SAIL-M12BG-CD-1.5A	1964690150
SAIL-M12BG-CD-1.5B	1060120150
SAIL-M12BW-CD-1.5A	1061980150
SAIL-M12BW-CD-1.5B	1062180150
Other versions on request	

Standard cable lengths

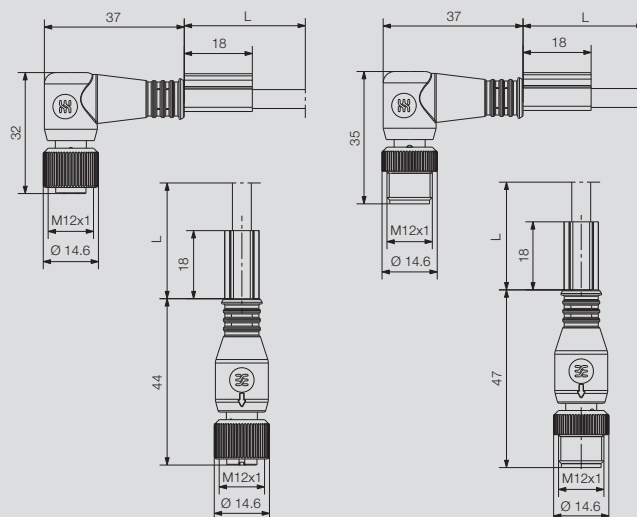
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

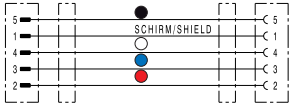
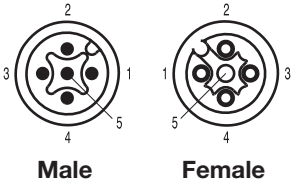
Sheathing colour	black
Protection class	IP 67
Core cross-section	2x 0.34 + 2x 0.22 mm ²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



CAN/DeviceNet cables™
connecting cables



Ordering data

Male, straight - Female, straight		
PUR/TPE	1.5 m	
PVC/PVC	1.5 m	
Male, straight - Female, angled		
PUR/TPE	1.5 m	
PVC/PVC	1.5 m	
Male, angled - Female, angled		
PUR/TPE	1.5 m	
PVC/PVC	1.5 m	
Note		

5-pole

Type	Order No.
SAIL-M12GM12G-CD-1.5A	1964710150
SAIL-M12GM12G-CD-1.5B	1060130150
SAIL-M12GM12W-CD-1.5A	1061990150
SAIL-M12GM12W-CD-1.5B	1062190150
SAIL-M12WM12W-CD-1.5A	1062150150
SAIL-M12WM12W-CD-1.5B	1062210150
Other versions on request	

Standard cable lengths

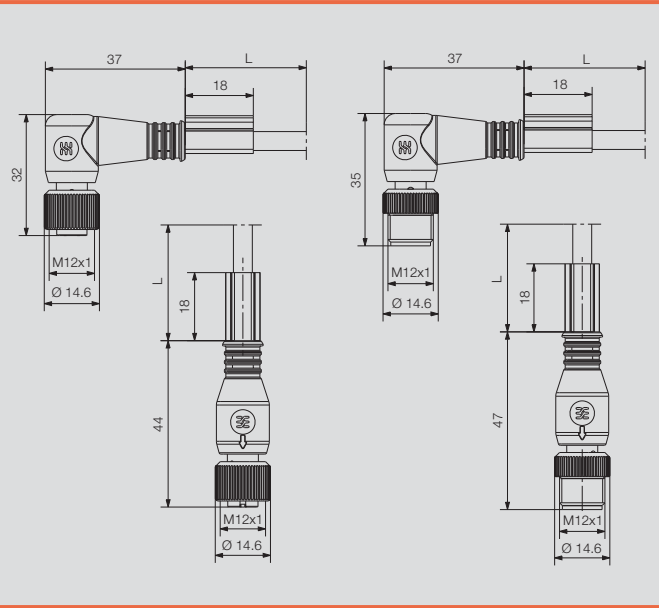
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Sheathing colour	black
Protection class	IP 67
Core cross-section	2x 0.34 + 2x 0.22 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C

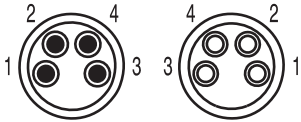
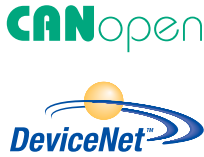
Chapter W includes additional technical specifications for the cable

Dimensioned drawing



CAN/DeviceNet cables™ - cables (M12, M8)

CAN/DeviceNet cables™
Connecting cables



Male Female

Ordering data

		2-pole	
		Type	Order No.
0.2 m		SAIL-M8GM8G-4S-0.2-CAN	1216820020
0.25 m		SAIL-M8GM8G-4S-0.25-CAN	1216820025
0.3 m		SAIL-M8GM8G-4S-0.3-CAN	1216820030
0.5 m		SAIL-M8GM8G-4S-0.5-CAN	1216820050
0.8 m		SAIL-M8GM8G-4S-0.8-CAN	1216820080
1.0 m		SAIL-M8GM8G-4S-1.0-CAN	1216820100
1.5 m		SAIL-M8GM8G-4S-1.5-CAN	1216820150
3.0 m		SAIL-M8GM8G-4S-3.0-CAN	1216820300
3.5 m		SAIL-M8GM8G-4S-3.5-CAN	1216820350
5.0 m		SAIL-M8GM8G-4S-5.0-CAN	1216820500
7.0 m		SAIL-M8GM8G-4S-7.0-CAN	1216820700
10.0 m		SAIL-M8GM8G-4S-10-CAN	1216821000

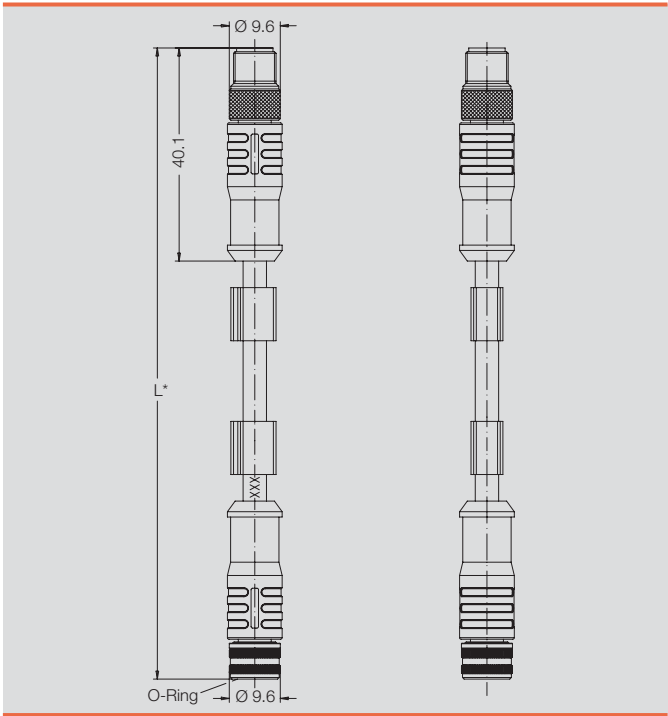
Type	Order No.

Type	Order No.

Technical data

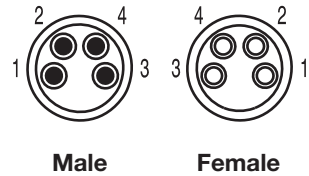
Operating voltage		Max. 300 V peak
Wire	Conductor: copper wire, without insulation, AWG 24, 7-wire Insulation: PE 2Y	
Quad	4 wires according to 3.1 are stranded in group of four	
Stranding sequence		Brown, green, white, yellow
Wrapping		Plastic foil
Shield	Braiding tin-plated copper, opt. Coverage ≥ 85 %	
Outer cladding		PVC, YM
Electrical properties		
Conductor resistance (at 20 °C)		≤ 87 Ω/km
Insulation resistance		≤ 1 GΩ x km
Dielectric strength (50 Hz 1 min.)		Wire/wire1000 V
Characteristic impedance 1-1000 KHz		nom. 100-120 Ω
Operational capacity		nom. 56 pF/m
Mechanical characteristics		
Min. permitted bending radius		One time: 7.5 x cable diameter Multiple times: 15 x cable diameter
Max. permitted tensile load resistance		Static: 50 N/mm² Dynamic: 20 N/mm²
Weight		Approx. 78 kg/km
Thermal characteristics		
moving		-20 °C to 70 °C
Stationary		-40 °C to 70 °C
L in the drawing is the cable length		

Dimensions



Universal Pro cables

The four-pole Standard M8 sensor cables are especially well suited for the Universal Pro system. With their diameter of 0.34 mm², these cables allow a system to be expanded up to 50 meters. The 360° shielding guarantees that signal transmission is error-free.



Technical data

Cable construction	
No. of poles	4
Sheathing colour	grey
Material	PUR/PUR
Core cross-section	0.34 mm ²
Contact surface	Gold-plated
Nominal voltage	30 V
Rated current	4 A
Protection class	IP 67
Ambient temperature, min.	-30 °C
Ambient temperature, max.	90 °C

Note	L in the drawing is the cable length
------	--------------------------------------

Ordering data

Male, straight - female, straight		Type	(Qty. = 1)	Order No.
	0.3 m	SAIL-M8GM8G-4S-0.3Q-SB		1981900030
	1.0 m	SAIL-M8GM8G-4S-1.0Q-SB		1981900100
	1.5 m	SAIL-M8GM8G-4S-1.5Q-SB		1981900150
	3.0 m	SAIL-M8GM8G-4S-3.0Q-SB		1981900300
	5.0 m	SAIL-M8GM8G-4S-5.0Q-SB		1981900500
	10.0 m	SAIL-M8GM8G-4S-10Q-SB		1981901000
	15.0 m	SAIL-M8GM8G-4S-15Q-SB		1981901500
	20.0 m	SAIL-M8GM8G-4S-20Q-SB		1981902000

Female, straight - open end		Type	(Qty. = 1)	Order No.
	1.5 m	SAIL-M8BG-4S-1.5Q-SB		1981910150
	3.0 m	SAIL-M8BG-4S-3.0Q-SB		1981910300
	5.0 m	SAIL-M8BG-4S-5.0Q-SB		1981910500
	10.0 m	SAIL-M8BG-4S-10Q-SB		1981911000

Note	Other versions on request
------	---------------------------

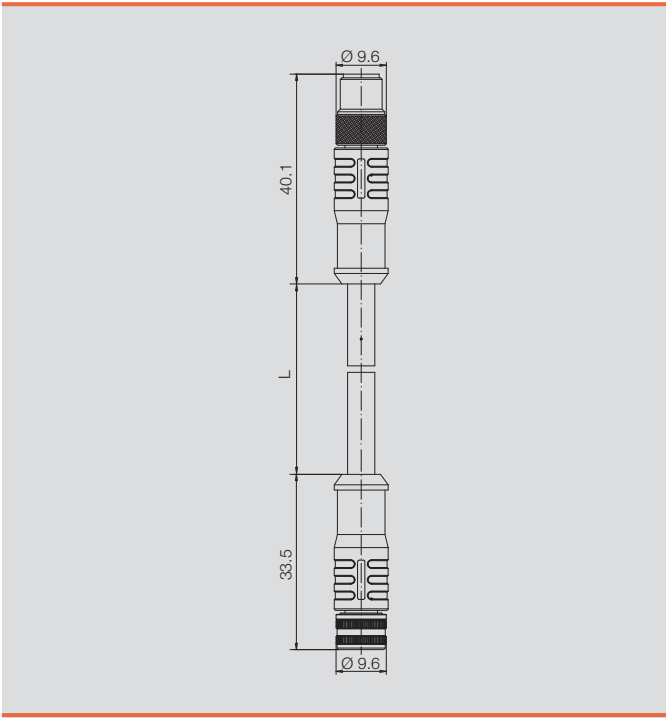
Terminating resistor



Ordering data

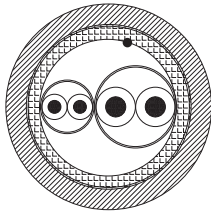
Type	Qty.	Order No.
SAI END CAN M8 4P	1	1955340000

Dimensions



CANopen & DeviceNet™ - cables (M12, M8)

CAN/DeviceNet™ bulk lengths



CAN/DeviceNet bulk lengths

Ordering data

Male	Type	Order No.
4-pole	SAIH-CD-2x0.34/2x0.22-PURs	1058630000

Technical data

Component A (1x2x0.34) ST	
Conductor	Tin-plated copper 0.34 mm ² (19 wires) according to UL 1581 Tab 20.1
Insulation	Polyolefine mixture according to UL Style 80 °C 30 V colour code: 2 conductor red/black Diameter: 1.6 ±0.1 mm
Assembly	Two twisted conductors + aluminium-polyester band (Ai exterior)
Element B (1x2x0.22) ST	
Conductor	Tin-plated copper 0.22 mm ² (19 wires) according to UL 1581 Tab 20.1
Insulation	Polyethylene foam skin Colour code: 2 conductors white/blue Diameter: approx. 2.0 mm
Assembly	Two twisted conductors + aluminium-polyester band (Ai exterior)
Complete assembly	Element A + Element B drilled
Drain wire	Tin-plated copper 0.34 mm ² (19 wires) according to UL 1581 Tab 20.1
Shield	Tin-plated copper braiding, coverage 85 ± 5 %
Band	Fibre band
Outer cladding	Polyurethane mixture according to UL Style 80 °C 30 V Colour code: black RAL 9005
Marking	Not required
General characteristics:	
Nom. impedance 0.3-20 MHz	(pair 2 x 0.22 mm ²) - 120 ±10 % Ω
Nominal power rating 800 Hz	(pair 2 x 0.22 mm ²) - 39 pF/mt
Operating voltage	Low-voltage computer cable
Test voltage	1000 V
Conductor resistance	Conductor A: max. 55 Ω/km at 20 °C Conductor B: max. 90 Ω/km at 20 °C
Min. bending radius	5 x D (during installation) 10 x D (during operations)
Temperature range	-40 °C...+80 °C (during installation) -10 °C ... +80 °C (during operations)
Reference	UL 1581
Attenuation (max.)	0,5 MHz ... 1,64 db/100mt
(pair 0.22 mm ²)	1,0 MHz ... 2,30 db/100mt
Max. speed	180 mt/min
Max. acceleration	5 mt/s ²
Copper weight	33,6 kg/km (ca.)
Total weight	79 kg/km (ca.)

Note

Screw connection M12, metal (EMC)



SAISM / SAIBM

straight



SAISW / SAIBW

Angled



Ordering data

Male	5-pole, PG 9
Socket	5-pole, PG 9
Note	

Type	Qty.	Order No.
SAIS-M-5/8S M12 5P A-COD	1	1784740000
SAIB-M-5/8S M12 5P A-COD	1	1784750000
Other versions on request		

Type	Qty.	Order No.
SAISW-M-5/8 M12	1	1803940000
SAIBW-M-5/8 M12	1	1803920000
Other versions on request		

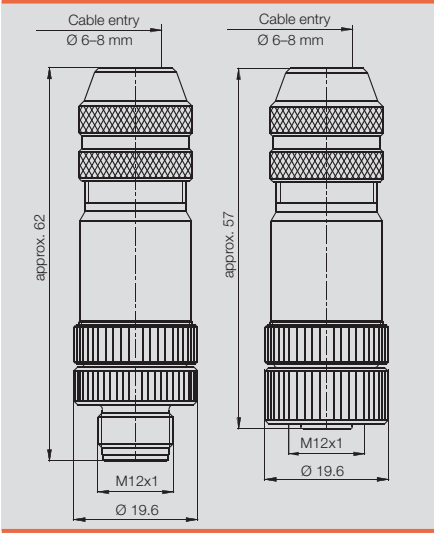
Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

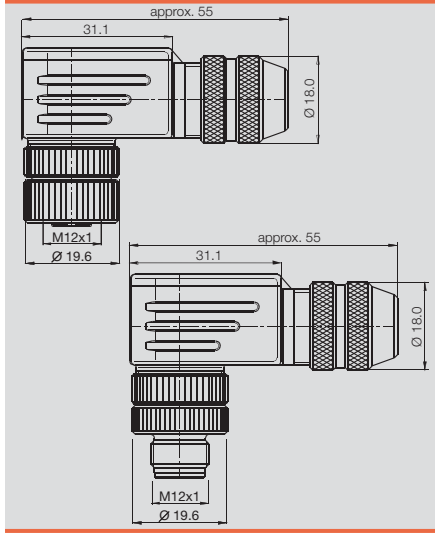
Screw connection
CuZn
M12
6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
125 V
-25...+85 °C
IP 67
gold-plated

Screw connection
CuZn
M12
6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
125 V
-25...+85 °C
IP 67
gold-plated

Dimensioned drawing



Dimensioned drawing



C

Coupling module single from ribbon cable to round cable



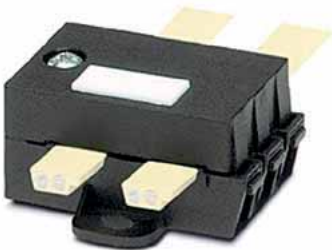
Technical data

[illegible]

Ordering data

Type	Qty.	Order No.
SAI-ASI T FR	1	1925010000

Bridge module ribbon cable



Technical data

Connection AS-Interface	ribbon cable
No. connectable cables	2
Type of cable	ribbon cable, yellow + black
Flexible lead cross-section	1.5 mm²
Connection type	piercing technology
Type of cable	PUR solid
Conductor cross-section	0.34 mm²
Cable length	2 m
Operating voltage	≤ 40 V
Operating current	≤ 4 A
General data	
Pollution severity DIN EN 0110	3
Ambient temperature	-25 °C ... +75 °C
Storage temperature	-40 °C ... +85 °C
Housing material	PA 6-GF-FR
Shock resistance	30 g/11 ms
Vibration resistance	10 ... 55 Hz; 1.0 mm amplitude
Specific data	
Ingress protection class DIN 40050	IP 65
Weight	20 g without cable
Pin assignment	
Pin 1:	AS-Interface "+"
Pin 2:	ext. power supply "-"
Pin 3:	AS-Interface "-"
Pin 4:	ext. power supply "+"

Ordering data

Type	Qty.	Order No.
SAI-ASI T FF small	1	1026090000

Coupling module ribbon cable
to round cable / yellow + black (2 m)



Technical data

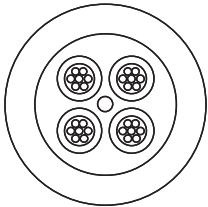
Connection AS-Interface	ribbon cable
No. connectable cables	2
Type of cable	ribbon cable, yellow + black
Flexible lead cross-section	1.5 mm²
Connection type	piercing technology
Type of cable	PUR solid
Conductor cross-section	0.34 mm²
Cable length	2 m
Operating voltage	≤ 40 V
Operating current	≤ 4 A
General data	
Pollution severity DIN EN 0110	3
Ambient temperature	-25 °C ... +75 °C
Storage temperature	-40 °C ... +85 °C
Housing material	PA 6-GF-FR
Shock resistance	30 g/11 ms
Vibration resistance	10 ... 55 Hz; 1.0 mm amplitude
Specific data	
Ingress protection class DIN 40050	IP 65 / IP 67
Weight	50 g without cable
Pin assignment	
Pin 1:	AS-Interface "+"
Pin 2:	ext. power supply "-"
Pin 3:	AS-Interface "-"
Pin 4:	ext. power supply "+"

Ordering data

Type	Qty.	Order No.
SAI-ASI T FFR	1	1924980000

Ethernet cables

Assembled cable - dragline cable M12 straight



Assembled cable - dragline cable M12 straight

Note

Application:
Weidmüller's dragline cable can be used wherever lines are subjected to frequent or constant movement in industrial environments - and not only in dragline applications. They are:

- Sturdy
- Flexible
- Pre-assembled with D-coded M12 connectors

Ordering data

Cat.5 PROFINET, PUR, M12-M12	
1.5 m	
3.0 m	
5.0 m	
10.0 m	
Cat.5 PROFINET, PUR, M12-open	
1.5 m	
3.0 m	
5.0 m	
10.0 m	
Cat.5 PROFINET, PUR, M12-RJ45	
1.5 m	
3.0 m	
5.0 m	
10.0 m	
Cat.5 PROFINET, PUR, M12-M12 female	
1.5 m	
3.0 m	
5.0 m	
10.0 m	
Note	

Type	Order No.
IE-C5DD4UG0015MCSMCS-E	1025950015
IE-C5DD4UG0030MCSMCS-E	1025950030
IE-C5DD4UG0050MCSMCS-E	1025950050
IE-C5DD4UG0100MCSMCS-E	1025950100
IE-C5DD4UG0015MCSXXX-X	1025940015
IE-C5DD4UG0030MCSXXX-X	1025940030
IE-C5DD4UG0050MCSXXX-X	1025940050
IE-C5DD4UG0100MCSXXX-X	1025940100
IE-C5DD4UG0015MCSA20-E	1044470015
IE-C5DD4UG0030MCSA20-E	1044470030
IE-C5DD4UG0050MCSA20-E	1044470050
IE-C5DD4UG0100MCSA20-E	1044470100
IE-C5DD4UG0015MSSMCS-E	1059330015
IE-C5DD4UG0030MSSMCS-E	1059330030
IE-C5DD4UG0050MSSMCS-E	1059330050
IE-C5DD4UG0100MSSMCS-E	1059330100

Accessories

Transparent sleeves, 12-mm length
Transparent sleeves, 18-mm length
Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm
Note

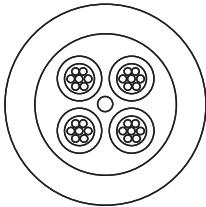
Type	Order No.
TM 4/12 HF/HB	1719840000
TM 4/18 HF/HB	1719850000
TM-I 12 NEUTRAL GE	1718411687
TM-I 18 NEUTRAL GE	1718431687

Technical data

Category	Cat.5 (IEC 11801) / Cat.5e (TIA 568-B)
Cross-section	4*AWG 22/7 - 0.36 mm²
Sheath diameter	6.3-6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation cross-section	1.5 mm
Min. bending radius, repetitive	8 x conductor cross-section
Ambient temperature (operational)	-40 °C...+70 °C
Abrasion resistance	very good
Halogen	to IEC 60754-2
Resistance to spread of flame	acc. to IEC 60332-1
Resistance to oils	acc. to IEC 60811-2-1

Note:

Assembled cable - dragline cable
M12 angled



Assembled cable - dragline cable M12 angled

Note

Application:
Weidmüller's dragline cable can be used wherever lines are subjected to frequent or constant movement in industrial environments - and not only in dragline applications. They are:

- Sturdy
- Flexible
- Pre-assembled with D-coded M12 connectors

Ordering data

Cat.5 PROFINET, PUR, M12 straight-M12 angled	
	1.5 m
	3.0 m
	5.0 m
	10.0 m
Cat.5 PROFINET, PUR, M12 angled-M12 angled	
	1.5 m
	3.0 m
	5.0 m
	10.0 m
Cat.5, PUR, M12 angled-open	
	1.5 m
	3.0 m
	5.0 m
	10.0 m

Note

Type	Order No.
IE-C5DD4UG0015MCSMCA-E	1059770015
IE-C5DD4UG0030MCSMCA-E	1059770030
IE-C5DD4UG0050MCSMCA-E	1059770050
IE-C5DD4UG0100MCSMCA-E	1059770100
IE-C5DD4UG0015MCAMCA-E	1059890015
IE-C5DD4UG0030MCAMCA-E	1059890030
IE-C5DD4UG0050MCAMCA-E	1059890050
IE-C5DD4UG0100MCAMCA-E	1059890100
IE-C5DD4UG0015MCAXXX-X	1059750015
IE-C5DD4UG0030MCAXXX-X	1059750030
IE-C5DD4UG0050MCAXXX-X	1059750050
IE-C5DD4UG0100MCAXXX-X	1059750100

Accessories

Transparent sleeves, 12-mm length
Transparent sleeves, 18-mm length
Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm

Note

Type	Order No.
TM 4/12 HF/HB	1719840000
TM 4/18 HF/HB	1719850000
TM-I 12 NEUTRAL GE	1718411687
TM-I 18 NEUTRAL GE	1718431687

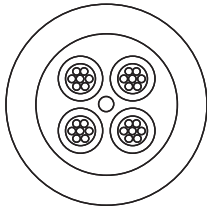
Technical data

Category	Cat.5 (IEC 11801) / Cat.5e (TIA 568-B)
Cross-section	4*AWG 22/7 - 0.36 mm²
Sheath diameter	6.3-6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation cross-section	1.5 mm
Min. bending radius, repetitive	8 x conductor cross-section
Ambient temperature (operational)	-40 °C...+70 °C
Abrasion resistance	very good
Halogen	to IEC 60754-2
Resistance to spread of flame	acc. to IEC 60332-1
Resistance to oils	acc. to IEC 60811-2-1

Note:

Ethernet cables

Assembled cable - railway cable M12 straight



Assembled cable - railway cable M12 straight

Note
Description Weidmüller's industrial Ethernet rail cables are used on railway vehicles for both interior and exterior installations. They can connect parts which are fixed or which are occasionally in motion. In compliance with EN 50155 specifications.

Ordering data

Cat.5 PUR, M12-M12	Type	Order No.
1.5 m	IE-C5DB4RE0015MCSMCS-E	1010850015
3.0 m	IE-C5DB4RE0030MCSMCS-E	1010850030
5.0 m	IE-C5DB4RE0050MCSMCS-E	1010850050
10.0 m	IE-C5DB4RE0100MCSMCS-E	1010850100
Cat.5, PUR, M12-open		
1.5 m	IE-C5DB4RE0015MCSXXX-X	1010840015
3.0 m	IE-C5DB4RE0030MCSXXX-X	1010840030
5.0 m	IE-C5DB4RE0050MCSXXX-X	1010840050
10.0 m	IE-C5DB4RE0100MCSXXX-X	1010840100
Cat.5 PUR, M12-M12 female		
1.5 m	IE-C5DB4RE0015MSSMCS-E	1059340015
3.0 m	IE-C5DB4RE0030MSSMCS-E	1059340030
5.0 m	IE-C5DB4RE0050MSSMCS-E	1059340050
10.0 m	IE-C5DB4RE0100MSSMCS-E	1059340100
Note		

Accessories

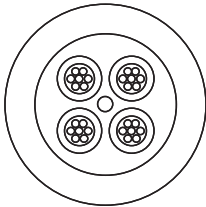
Type	Order No.
Transparent sleeves, 12-mm length	TM 4/12 HF/HB 1719840000
Transparent sleeves, 18-mm length	TM 4/18 HF/HB 1719850000
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE 1718411687
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE 1718431687
Note	

Technical data

Category	Cat.5 (IEC 11801) / Cat.5e (TIA 568-B)
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm²
Sheath diameter	6.95-7.55 mm
Material sheath	Radox GKW S
Sheathing colour	black
Insulation cross-section	1.95 mm
Min. bending radius, repetitive	6.0 x conductor cross-section
Ambient temperature (operational)	-40 °C...+90 °C
Abrasion resistance	very good
Halogen	to IEC 60754-2
Resistance to spread of flame	to IEC 60332-1
Resistance to oils	acc. EN 50306-3

Note:

Assembled cable - rail cable M12, angled



Assembled cable - railway cable M12 angled

Note

Description
Weidmüller's industrial Ethernet rail cables are used on railway vehicles for both interior and exterior installations. They can connect parts which are fixed or which are occasionally in motion. In compliance with EN 50155 specifications.

Ordering data

Cat.5 PUR, M12 straight-M12 angled		Type	Order No.
1.5 m	IE-C5DB4RE0015MCSMCA-E	1059940015	
3.0 m	IE-C5DB4RE0030MCSMCA-E	1059940030	
5.0 m	IE-C5DB4RE0050MCSMCA-E	1059940050	
10.0 m	IE-C5DB4RE0100MCSMCA-E	1059940100	
Cat.5, PUR, M12 angled-open			
1.5 m	IE-C5DB4RE0015MCAXXX-X	1059900015	
3.0 m	IE-C5DB4RE0030MCAXXX-X	1059900030	
5.0 m	IE-C5DB4RE0050MCAXXX-X	1059900050	
10.0 m	IE-C5DB4RE0100MCAXXX-X	1059900100	
Cat.5 PUR, M12 angled-M12 angled			
1.5 m	IE-C5DB4RE0015MCAMCA-E	1059970015	
3.0 m	IE-C5DB4RE0030MCAMCA-E	1059970030	
5.0 m	IE-C5DB4RE0050MCAMCA-E	1059970050	
10.0 m	IE-C5DB4RE0100MCAMCA-E	1059970100	
Note			

Accessories

Type	Order No.
Transparent sleeves, 12-mm length	TM 4/12 HF/HB 1719840000
Transparent sleeves, 18-mm length	TM 4/18 HF/HB 1719850000
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE 1718411687
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE 1718431687
Note	

Technical data

Category	Cat.5 (IEC 11801) / Cat.5e (TIA 568-B)
Cross-section	2*2*AWG 22/7 - 2*2*0.36 mm²
Sheath diameter	6.95-7.55 mm
Material sheath	Radox GKW S
Sheathing colour	black
Insulation cross-section	1.95 mm
Min. bending radius, repetitive	6.0 x conductor cross-section
Ambient temperature (operational)	-40 °C...+90 °C
Abrasion resistance	very good
Halogen	to IEC 60754-2
Resistance to spread of flame	to IEC 60332-1
Resistance to oils	acc. EN 50306-3

Note:

Ethernet plug-in connector

Tension clamp connection M12,
metal (EMC)
D-coded

Industrial Ethernet

SAISM / SAIBM

straight



SAISW / SAIBW

angled



Ordering data

Male	4-pole, PG 9
Socket	4-pole, PG 9
Note	

Type	Qty.	Order No.
SAISM-4/8S-M12-4P D-COD	1	1892120000
SAIBM-4/8S-M12-4P D-COD	1	1892130000

Type	Qty.	Order No.
SAISW-4/8S-M12 4P D-ZF	1	1803930001
SAIBW-4/8S-M12 4P D-ZF	1	1139330000

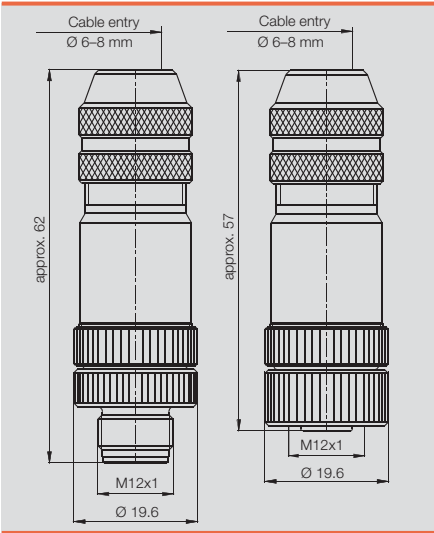
Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

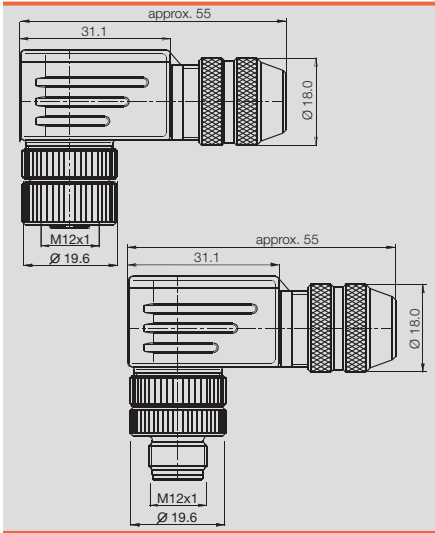
Screw connection
CuZn
M12
6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
250 V
-25...+85 °C
IP 67
gold-plated

Tension clamp connection
PA
M12
4...6 mm
0.25 - 0.5 mm²
4 A
250 V
-25...+85 °C
IP 67
gold-plated

Dimensioned drawing



Dimensioned drawing



Screw connection M12, metal (EMC)
D-coded

Industrial Ethernet

SAISM / SAIBM
straight



SAISW
angled



Ordering data

Male	4-pole, PG 9
Socket	4-pole, PG 9
Note	

Type	Qty.	Order No.
SAISM-4/8S-M12-4P D-COD	1	1892120000
SAIBM-4/8S-M12-4P D-COD	1	1892130000

Type	Qty.	Order No.
SAISW-4/8S-M12-4P D-COD	1	1160550000

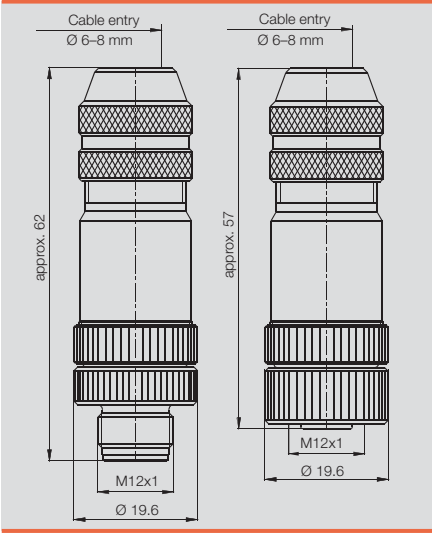
Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

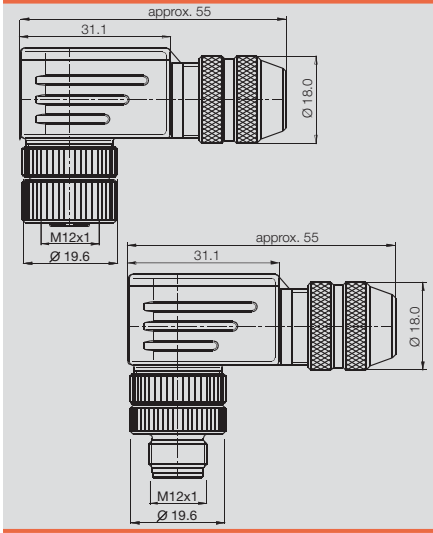
Screw connection
CuZn
M12
6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
250 V
-25...+85 °C
IP 67
gold-plated

Screw connection
CuZn
M12
6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
250 V
-25...+85 °C
IP 67
gold-plated

Dimensioned drawing



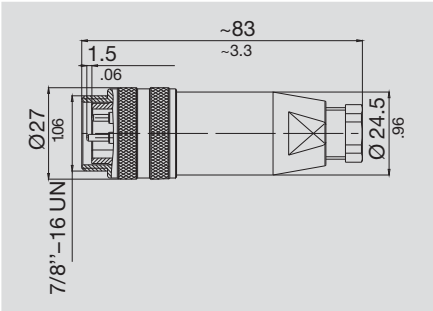
Dimensioned drawing



FOUNDATION Fieldbus - connector (7/8")

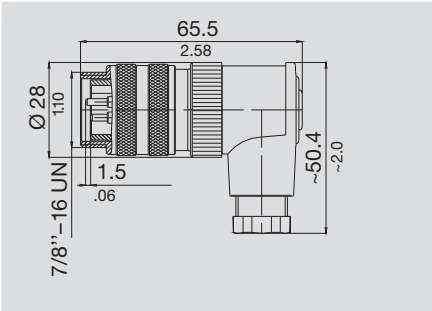
Plug-in connector FBCon 7/8"

Plug-in connector straight (plug)



Ordering data		4-pole
Type	Qty.	Order No.
FBCon 7/8" 4P M	1	1808840000

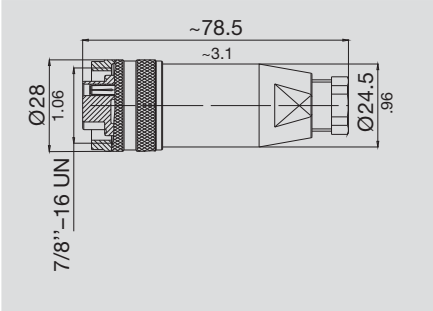
Plug-in connector 90° (plug)



Ordering data		4-pole
Type	Qty.	Order No.
FBCon 7/8" 4P M (A)	1	1808830000

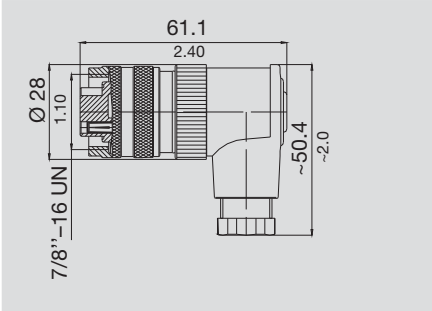
Technical data	
No. of poles	4
Lock	Screw 7/8" UNF
Cable gland	PG 9
Connection	Screw
Connection cross-section	max. 1,5 mm²
Connection cross-section	16 AWG
Enclosure protection class	IP 67
Mechanical service life	>500 plugging cycles
Upper limit temperature	+ 85 °C
Lower limit temperature	- 40 °C

Plug-in connector straight (socket)



Ordering data		4-pole
Type	Qty.	Order No.
FBCon 7/8" 4P FM	1	1812480000

Plug-in connector 90° (socket)



Ordering data		4-pole
Type	Qty.	Order No.
FBCon 7/8" 4P FM (A)	1	1812470000

Electrical data	
Rated voltage	250 V
Rated surge voltage	4000 V
Polution severity	3
Surge category	II
Insulation material group	III
Test surge voltage	4800 V
Rated current	9 A (40°)
Volume resistivity	≤ 5 mΩ
Insulation resistance	> 10 ¹⁰ Ω

Materials		
Contact pins	CuZn	(brass)
Contact surface	Au	(gold)
Socket body	PUR/PA	(UL 94 HB)
Enclosure cable plug	PBT	(UL 94 V-0)
Threaded ring	Anodised aluminium	

Accessories for fieldbus distributors

Cable glands – plastic – IP68



Ordering data

Type	Qty.	Order No.
VG M16-1/K68	50	1909860000

Cable glands – brass – IP68



Ordering data

Type	Qty.	Order No.
VG M16-1/MS68	50	1909910000

Cable glands – brass – 1/EMC



Ordering data

Type	Qty.	Order No.
VG M16-MS 1/EMV	50	1909500000

Cable glands – brass – EEx e, IP68



Ordering data

Type	Qty.	Order No.
VG M16-EXE MS	50	1737210000

Sealing rings – 9005



Ordering data

Type	Qty.	Order No.
GWDR M16-NP	50	1736230000

Blanking plugs – brass



Ordering data

Type	Qty.	Order No.
VP M16-MS65	100	1777730000

Blanking plugs – plastic - EEx e



Ordering data

Type	Qty.	Order No.
VG M16-EXE SW	50	1737070000

Pressure compensation element – plastic – DAE



Ordering data

Type	Qty.	Order No.
DAE M12 PA short	10	1868560000

For technical data, refer to Catalogue 5 – Enclosures and Cable Glands

Plug in connector and protective caps

Plug in connector and protective caps	SAI connectors	D.2
	Customisable connectors	D.4
	Connectors – accessories	D.25
	Built in plugs	D.28
	Valve plugs for custom assembly	D.32
	Protective sleeve adapter	D.34

SAI connectors

Self assembled M8 and M12 connectors are integral and essential connectivity components. They are available with a wide variety of different wire connection methods. Weidmüller offers all of the secure connection methods, which include screw, tension clamp, IDC or solder connection mechanisms. One highlight in this line are the shielded, D-coded M-12 connectors. They are available in male and female versions also with the tension-clamp connection.

D

The eight pole screw connection connectors are a special favourite. These are available in shielded or unshielded versions.





Fast

The M12 connectors also come with the tension clamp conductor connection method, in either shielded or unshielded.



Versatile

Eight pole M12 connectors, shielded, with screw connection and a cable outer insulation diameter of 8 – 10 mm.



Proven

M8 connectors with screw connections for the conductor are much easier to assemble compared to connectors which require soldering.



Safe

M8 connectors with shield connections are in increasing demand as the trend towards miniaturization continues.



M12 connectors

Screw and tension clamp connection



M8 connectors

Screw and solder connection



M8 and M12 connectors

Insulation displacement connection (IDC)



M8 and M12 connectors

T distributor



Protective caps for SAI distributors



M12/M8/M5

Built in connectors



Customisable valve connectors

Overview of M8 and M12 screw connections

M8



Plugs and sockets (screw connection) for custom assembly to make up M8 and M12 connections.

Machine builders frequently need individual cable lengths. To meet this demand, Weidmüller can supply M8 and M12 plug in connectors for custom assembly.

The plug in connectors are available with different cable gland diameters. In the 90° versions, the outgoing direction of the cable can be changed in 90° steps. The connected plug in connectors comply with IP 67 ingress protection classification. There are also plug in connectors available for double assignment of distributors.

M12



M12 Metal



Screwty



This is the perfect tool for all common cable glands on sensor and actuator cables.

The Screwty fits M12 and M8 round plugs. Both types can be used for the plugs and sockets on custom cables.

The handle of every Screwty has a conventional 1/4 inch fitting and can be used for all sizes. Simply turn the tool to tighten or release a round plug.

Of course, the Screwty is also available with a torque fitting. This adjustable attachment can be used for all sizes. The torque can be infinitely adjusted between 0.5 and 1.7 Nm.

IDC-Tool



Weidmüller offers various products with insulation displacement connection for M12 connectors. These include the IDC connection elements, which can be directly screwed to a distributor, such as part nos. 9457720000 and 1766810000. In addition, there are two M12 IDC adapters with part nos. 1781550001 and 1781540001. All four elements can be fitted by hand with no additional tools. When there are many connections to be made in a day, however, use of the copyright protected IDC tool is recommended. This tool works like a knurled screw on the terminal.

Overview of SAI connector M12

Plastic

Screw connection	straight			angled		
	3-pole	4-pole	5-pole	3-pole	4-pole	5-pole
PG7 Male	1871710000	9457550000	9456940000	1021280000	9457290000	9456950000
PG7 Female	1924940000	9457240000	9457250000	1021310000	9457700000	9457260000
Screw connection						
PG9 Male	1021480000	1807340000	1807350000			
PG9 Female	1021510000	1807230000	1807250000			
Screw connection	8-pole	12-pole (Solder connection)				
PG 9 Male	1836970000	1924950000				
PG9 Female	1836960000	1924960000				
IDC connection	(0.14 - 0.34 mm ²)	(0.34 - 0.75 mm ²)				
	4-pole	4-pole				
Male	1781550001	1852740000				
Female	1781540001	1852730000				
Tension clamp connection			5-pole			
Male			1906390000			
Female			1924970000			

Metal

A-coded	straight			angled		
	3-pole	4-pole	5-pole	3-pole	4-pole	5-pole
Screw connection						
PG7 Male			1191030000			
PG7 Female			1191020000			
PG9 Male		9455640000	1784740000		1803930000	1803940000
PG9 Female		8426220000	1784750000		1803910000	1803920000
Tension clamp connection						
PG9 Male						
PG9 Female		1784740002				
B-coded						
Screw connection						
PG9 Male			1784790000			1944570000
PG9 Female			1784780000			1944580000
D-coded						
Screw connection						
PG9 Male		1892120000				
PG9 Female		1892130000				
D-coded						
Tension clamp connection						
PG9 Male		1892120001			1803930001	
PG9 Female		1892130001			1139330000	

Overview of M8 connectors

Plastic

Screw connection	straight			angled		
	3-pole	4-pole	5-pole	3-pole	4-pole	5-pole
Male Screw connection	1803860000	1803850000				
Female Screw connection	1803870000	1803880000				
Male IDC connection	1784040001	1784060001				
Female IDC connection	1784030001	1784050001				
Male Solder connection				1920990000	1921000000	
Female Solder connection				1920970000	1920980000	

Metal

	straight			angled		
	3-pole	4-pole	5-pole	3-pole	4-pole	5-pole
Male Screw connection	1010060000	1010070000				
Female Screw connection	1010080000	1010090000				
Male Solder connection	1921030000	1921040000				
Female Solder connection	1921010000	1921020000				

Screw connection M12, A-coded

SAIS / SAIB

straight



SAISW / SAIBW

angled



Ordering data

Male	
3-pole, PG 7	
3-pole, PG 9	
4-pole, PG 7	
4-pole, PG 9	
Socket	
3-pole, PG 7	
3-pole, PG 9	
4-pole, PG 7	
4-pole, PG 9	
Note	

Type	Qty.	Order No.
SAIS-3/7	1	1021470000
SAIS-3/9	1	1021480000
SAIS-4/7	1	9457550000
SAIS-4/9	1	1807340000
SAIB-3/7	1	1021490000
SAIB-3/9	1	1021510000
SAIB-4/7	1	9457240000
SAIB-4/9	1	1807230000
Other versions on request		

Type	Qty.	Order No.
SAISW-3/7	1	1021280000
SAISW-3/9	1	1021290000
SAISW-4/7	1	9457290000
SAISW-4/9	1	1807360000
SAIBW-3/7	1	1021310000
SAIBW-3/9	1	1021320000
SAIBW-4/7	1	9457700000
SAIBW-4/9	1	1807240000
Other versions on request		

Technical data

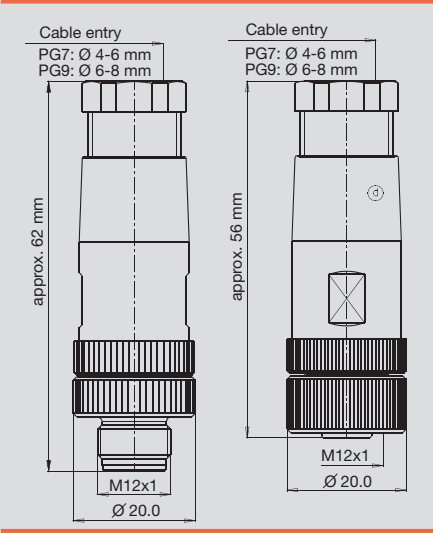
Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface

Screw connection
PA
M12
4...6 mm (PG7)/ 6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
250 V
-25...+85 °C
IP 67
CuSnZn

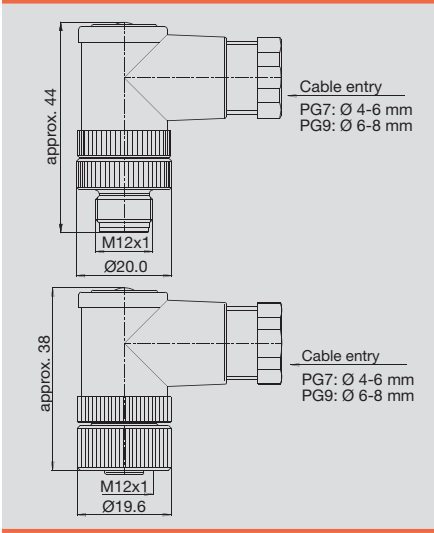
Screw connection
PA
M12
4...6 mm (PG7)/ 6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
250 V
-25...+85 °C
IP 67
CuSnZn

Note

Dimensioned drawing



Dimensioned drawing



Customisable connectors

Screw connection M12, A-coded

SAIS / SAIB

straight



SAISW / SAIBW

angled



D

Ordering data

Male	
	5-pole, PG 7
	5-pole, PG 9
	8-pole, PG 9
Socket	
	5-pole, PG 7
	5-pole, PG 9
	8-pole, PG 9
Note	

Type	Qty.	Order No.
SAIS-5/7	1	9456940000
SAIS-5/9	1	1807350000
SAIS-8/9	1	1836970000
SAIB-5/7	1	9457250000
SAIB-5/9	1	1807250000
SAIB-8/9	1	1836960000
Other versions on request		

Type	Qty.	Order No.
SAISW-5/7	1	9456950000
SAISW- 5/9	1	1807370000
SAIBW-5/7	1	9457260000
SAIBW-5/9	1	1807330000
Other versions on request		

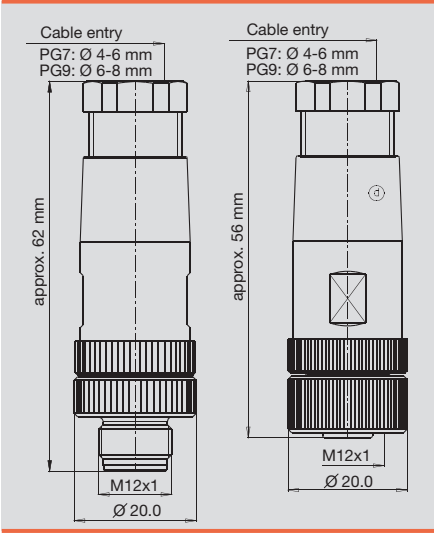
Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

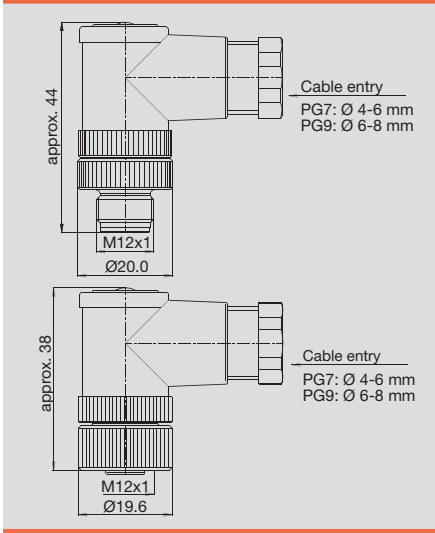
Screw connection
PA
M12
4...6 mm (PG7)/ 6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
125 V
-25...+85 °C
IP 67
CuSnZn

Screw connection
PA
M12
4...6 mm (PG7)/ 6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
125 V
-25...+85 °C
IP 67
CuSnZn

Dimensioned drawing



Dimensioned drawing



Screw connection M12, A-coded

SAIS / SAIB

straight



SAISW / SAIBW

angled



Ordering data

Male	
	4-pole, PG 7
	5-pole, PG 7
Socket	
	4-pole, PG 7
	5-pole, PG 7
Note	

Type	Qty.	Order No.
SAIS-4/7-(KV)	1	1921060000
SAIS-5/7-(KV)	1	1921050000
Other versions on request		

Type	Qty.	Order No.
SAISW-4/7-(KV)	1	1962620000
SAISW-5/7-(KV)	1	1962610000
Other versions on request		

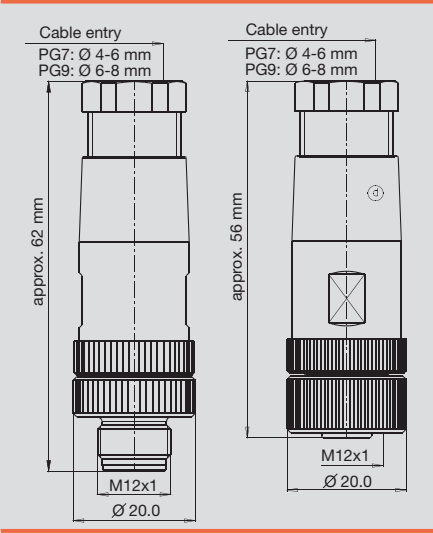
Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

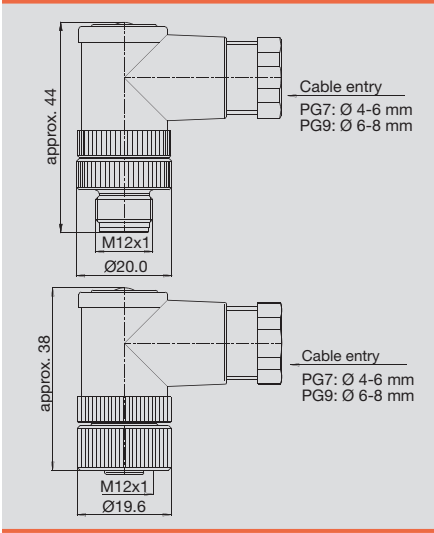
Screw connection
PA
M12
4...6 mm (PG7)/ 6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
250 V
-25...+85 °C
IP 67
CuSnZn
KV = plastic cable gland

Screw connection
PA
M12
4...6 mm (PG7)/ 6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
125 V
-25...+85 °C
IP 67
CuSnZn
KV = plastic cable gland

Dimensioned drawing



Dimensioned drawing



KV = plastic cable gland

Customisable connectors

Tension clamp connection M12, stainless steel
A-Codiert
B-Codiert

SAIS / SAIB VA
straight



D

Ordering data

Male	
	5-pole, PG 9
	5-pole, PG 9
Socket	
	5-pole, PG 9
	5-pole, PG 9
Note	

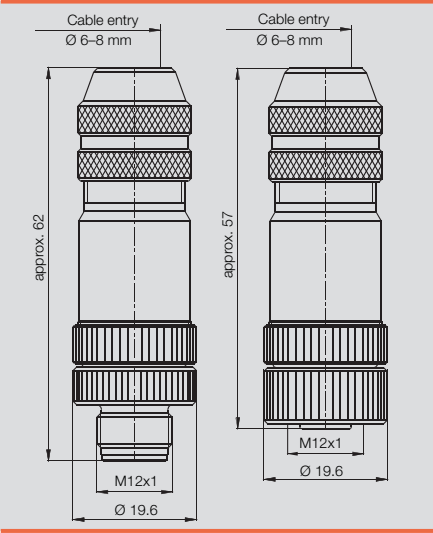
Type	Qty.	Order No.
SAIS 5/9-VA	1	1920700000
SAIS 5/9-VA-B-COD	1	1920720000
SAIB 5/9-VA	1	1920710000
SAIB 5/9-VA-B-COD	1	1920730000

Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

Tension clamp connection
1.4404/316L
M12
6...8 mm
0.25 - 0.5 mm²
4 A
125 V
-25...+85 °C
IP 69 k
gold-plated
PB = PROFIBUS (B-COD)

Dimensioned drawing



PB = PROFIBUS (B-COD)

SAI M12 plug
with shield connection

SAISM / SAISB 8/11
straight



Ordering data

Male	8-pole, PG 11
Socket	8-pole, PG 11
Note	

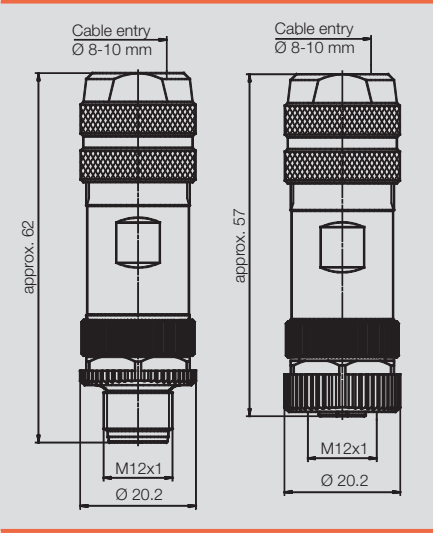
Type	Qty.	Order No.
SAISM-8/11	1	1118910000
SAIBM-8/11	1	1118920000

Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

Screw connection
CuZn
M12
8...10 mm (PG11)
0.14 - 0.5 mm ²
2 A
60 V
-25...+85 °C
IP 67
gold-plated

Dimensioned drawing



Customisable connectors

Screw connection M12, metal (EMC)
A-coded

FBCon / SAIS
straight



SAISW / SAIBW
angled



D

Ordering data

Male	
	4-pole, PG 9
	5-pole, PG 9
Socket	
	4-pole, PG 9
	5-pole, PG 9
Note	

Type	Qty.	Order No.
FBCon M12 4P M EMC	1	9455640000
SAIS-M-5/8S M12 5P A-COD	1	1784740000
FBCon M12 4P FM EMC	1	8426220000
SAIB-M-5/8S M12 5P A-COD	1	1784750000
Other versions on request		

Type	Qty.	Order No.
SAISW-M-4/8 M12	1	1803930000
SAISW-M-5/8 M12	1	1803940000
SAIBW-M-4/8 M12	1	1803910000
SAIBW-M-5/8 M12	1	1803920000
Other versions on request		

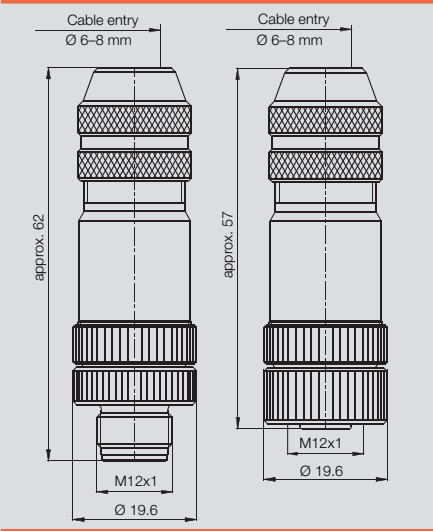
Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

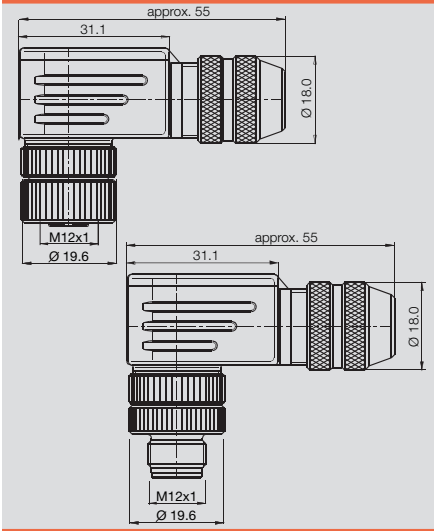
Screw connection
CuZn
M12
6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
250 V
-25...+85 °C
IP 67
CuSnZn

Screw connection
CuZn
M12
6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
125 V
-25...+85 °C
IP 67
gold-plated

Dimensioned drawing



Dimensioned drawing



Screw connection M12, metal (EMC)
B-coded
D-coded



Industrial Ethernet

Ordering data

Male	
	3-pole, PG 9
	4-pole, PG 9
	5-pole, PG 9
Socket	
	3-pole, PG 9
	4-pole, PG 9
	5-pole, PG 9
Note	

Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

SAISM / SAIBM
straight



Type	Qty.	Order No.
SAISM-4/8S-M12-4P D-COD	1	1892120000
SAISM 5/8S M12 5P B-COD	1	1784790000
SAIBM-4/8S-M12-4P D-COD	1	1892130000
SAIBM 5/8S M12 5P B-COD	1	1784780000

Screw connection
CuZn
M12
6...8 mm (PG9)
0.14 - 0.75 mm ²
4 A
250 V
-25...+85 °C
IP 67
gold-plated

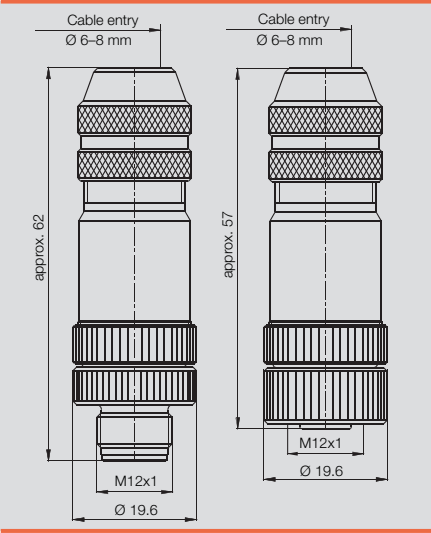
SAIS / SAIB
straight



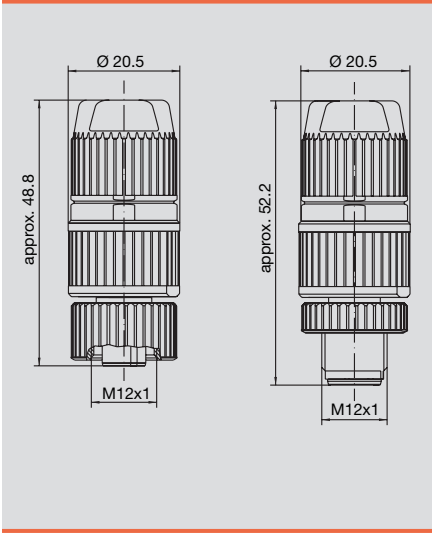
Type	Qty.	Order No.
SAIS-3-IDC-M12B-COD	1	1864730000
SAIB-3-IDC-M12B-COD	1	1864740000

Insulation displacement connection	
CuZn	
M12	
7...8.8 mm	
0.34 - 0.75 mm²	
4 A	
32 V	
-25...+85 °C	
IP 67	
tinned	
PB = PROFIBUS (B-COD)	
IE = Industrial Ethernet (D-COD)	

Dimensioned drawing



Dimensioned drawing



Customisable connectors

Screw connection M12, metal (EMC)
B-coded



SAISW / SAIBW

angled



D

Ordering data

Male	5-pole, PG 9
Socket	5-pole, PG 9
Note	

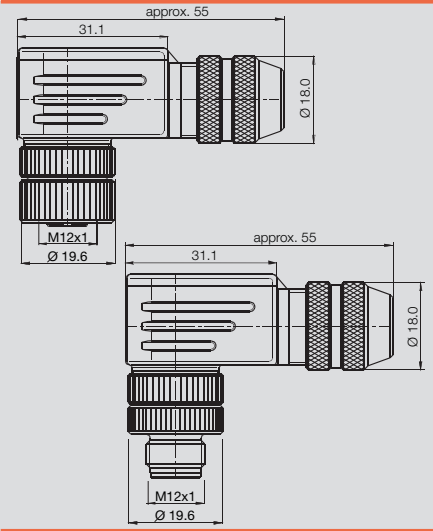
Type	Qty.	Order No.
SAISW-M-5/8 M12 B-COD	1	1944570000
SAIBW-M-5/8 M12 B-COD	1	1944580000

Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

Screw connection
CuZn
M12
6...8 mm (PG9)
0.14 - 0.75 mm²
4 A
125 V
-25...+85 °C
IP 67
gold-plated

Dimensioned drawing



Tension clamp connection, metal
D-coded

Industrial Ethernet

Ordering data

Male	4-pole, PG 9
Socket	
	4-pole, PG 9
Note	

Technical data

Type of connection	Tension clamp connection
Housing main material	CuZn
Contact tube diameter	M12
Cable diameter	6...8 mm (PG9)
Cross-section for connected wire	0.25 - 0.5 mm ²
Rated current	4 A
Rated voltage	250 V
Temperature range of housing	-25...+85 °C
Protection class	IP 67
Contact surface	gold-plated
Note	

SAISM / SAIBM

straight



Type	Qty.	Order No.
SAISM-4/8S-M12 4P D-ZF	1	1892120001
SAIBM-4/8S-M12 4P D-ZF	1	1892130001

Type of connection	Tension clamp connection
Housing main material	CuZn
Contact tube diameter	M12
Cable diameter	6...8 mm (PG9)
Cross-section for connected wire	0.25 - 0.5 mm ²
Rated current	4 A
Rated voltage	250 V
Temperature range of housing	-25...+85 °C
Protection class	IP 67
Contact surface	gold-plated
Note	

SAISW / SAIBW

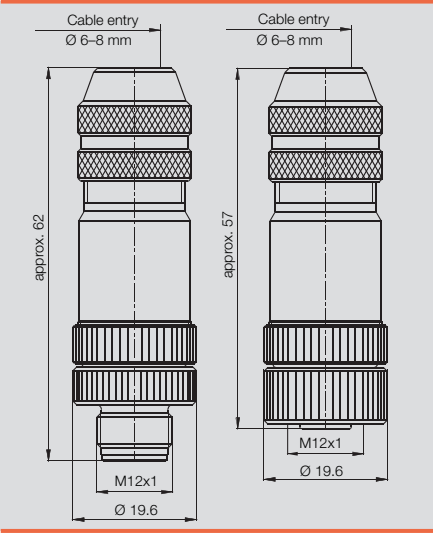
angled



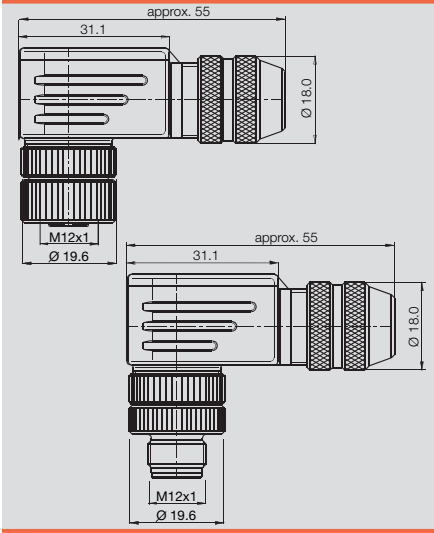
Type	Qty.	Order No.
SAISW-4/8S-M12 4P D-ZF	1	1803930001
SAIBW-4/8S-M12 4P D-ZF	1	1139330000

Type of connection	Tension clamp connection
Housing main material	PA
Contact tube diameter	M12
Cable diameter	4...6 mm
Cross-section for connected wire	0.25 - 0.5 mm ²
Rated current	4 A
Rated voltage	250 V
Temperature range of housing	-25...+85 °C
Protection class	IP 67
Contact surface	gold-plated
Note	

Dimensioned drawing



Dimensioned drawing



Customisable connectors

Tension clamp connection M12
A-coded

SAIS-ZF
straight



D

Ordering data

Male	5-pole, PG 7
Socket	5-pole, PG 7
Note	

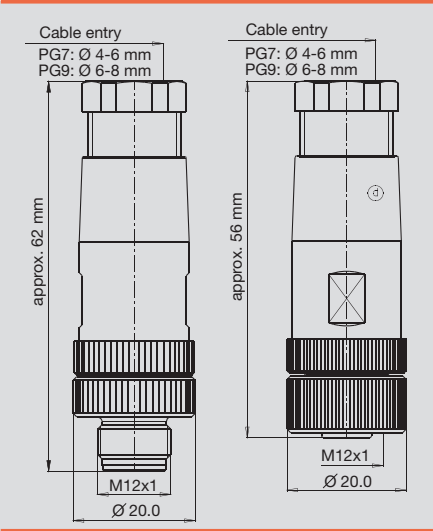
Type	Qty.	Order No.
SAIS-5/7-ZF	1	1906390000
SAIB-5/7-ZF	1	1924970000

Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

Tension clamp connection
PA
M12
4...6 mm
0.25 - 0.5 mm²
4 A
125 V
-25...+85 °C
IP 67
gold-plated

Dimensioned drawing



M8 screw connection

SAIS / SAIB

straight



Ordering data

Male	
	3-pole
	4-pole
Socket	
	3-pole
	4-pole
Note	

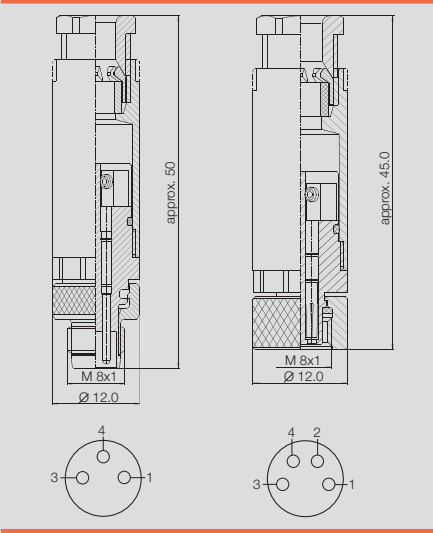
Type	Qty.	Order No.
SAIS-M8-3P	1	1803860000
SAIS-M8-4P	1	1803850000
SAIB-M8-3P	1	1803870000
SAIB-M8-4P	1	1803880000
Other versions on request		

Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

Screw connection
PA
M8
3.5...5 mm
0.14 - 0.5 mm²
4 A
30 V
-25...+85 °C
IP 67
gold-plated

Dimensioned drawing



Customisable connectors

Solder connection M8, shielded
screw connection M8, shielded

SAISM / SAIBM

straight



SAISM / SAIBM

straight



D

Ordering data

Male	
	3-pole
	4-pole
Socket	
	3-pole
	4-pole
Note	

Type	Qty.	Order No.
SAISM-M8-3P(TL)	1	1921030000
SAISM-M8-4P(TL)	1	1921040000
SAIBM-M8-3P(TL)	1	1921010000
SAIBM-M8-4P(TL)	1	1921020000

Type	Qty.	Order No.
SAISM-M8-3P-(IF)	1	1010060000
SAISM-M8-4P-(IF)	1	1010070000
SAIBM-M8-3P-(IF)	1	1010080000
SAIBM-M8-4P-(IF)	1	1010090000

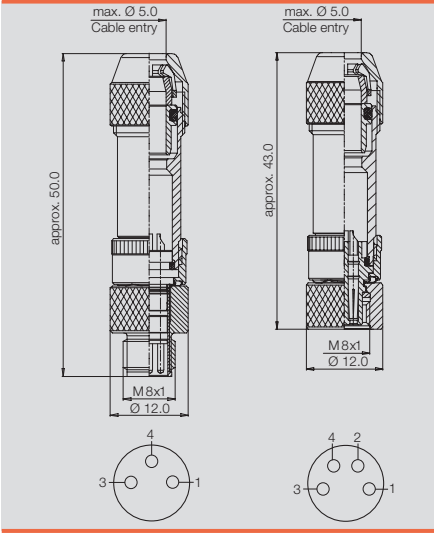
Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

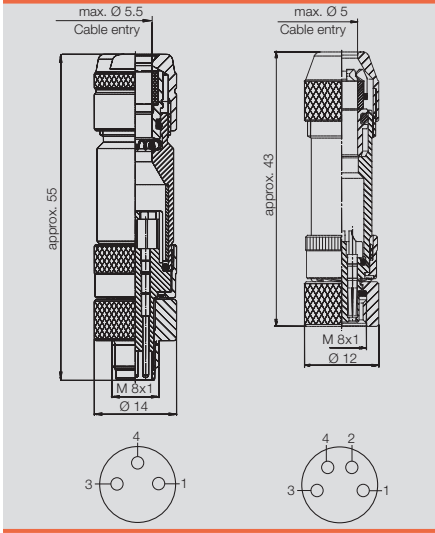
Solder connection
CuZn
M8
3.5...5.5 mm
0.25 - 0.25 mm²
4 A
30 V
-25...+85 °C
IP 67
gold-plated
Note

Screw connection
CuZn
M8
3.5...5 mm
0.14 - 0.5 mm²
4 A
30 V
-25...+85 °C
IP 67
gold-plated
IF = Iris-type spring
Note

Dimensioned drawing



Dimensioned drawing



Solder connection M8

SAISW / SAIBW

angled



Ordering data

Male	
	3-pole
	4-pole
Socket	
	3-pole
	4-pole
Note	

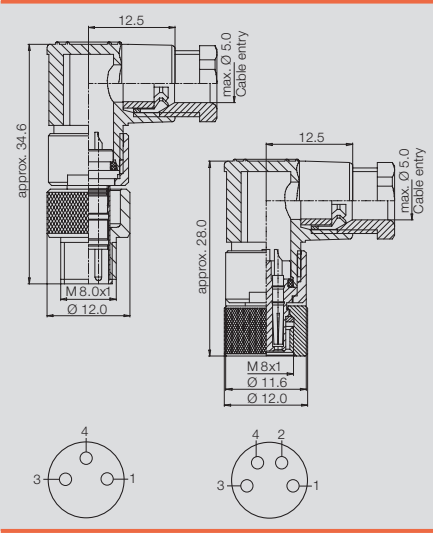
Type	Qty.	Order No.
SAISW-M8-3P(TL)	1	1920990000
SAISW-M8-4P(TL)	1	1921000000
SAIBW-M8-3P(TL)	1	1920970000
SAIBW-M8-4P(TL)	1	1920980000

Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

Solder connection
CuZn
M8
3.5...5.5 mm
0.25 - 0.25 mm²
4 A
30 V
-25...+85 °C
IP 67
gold-plated

Dimensioned drawing



IDC coding systems

SAI-M/SAI-F

IDC



3-pole

Pole	Colour code	Assignment
●	brown	+ 24 V DC
●●	white	input/output
●●●	blue	0 V DC



4-pole

Pole	Colour code	Assignment
1	brown	+ 24 V DC
2	uncoloured	input/output 2
3	blue	0 V DC
4	black	input/output 1

IDC connection elements

Ordering data

Type	Qty.	Order No.
SAI-SA-3-IDC	1	9457720000
SAI-SA-4-IDC	1	1766810000
SAI-SA-3-IDC (1Set)	1*	1896740000

*) One set contains 100 pieces.

IDC insulation displacement connections

The insulation displacement connection on Weidmüller SAI distributors is presently the smallest and most robust IDC connection on the market. The connection element is available in 3 and 4 pole versions. The connection system enables you to perform individual fabrication of sensor/actuator cables quickly and reliably on the spot. Conductor cross sections are from 0.25 mm² to 0.5 mm².



M8 and M12 insulation displacement connection (IDC)

M8



The assembly of round plugs is very time consuming.

The cable has to be stripped and possibly also fitted with a wire end ferrule.

But the IDC plug in connector system enable Weidmüller to offer a quick fit connection system that saves users working time and hard cash.

The IDC quick fit quick connection system is available for M12 and M8.

M12



Screwty



This is the perfect tool for all common cable glands on sensor and actuator cables.

The Screwty fits M12 and M8 round plugs. Both types can be used for plugs and sockets on custom cables.

The handle of every Screwty has a conventional 1/4 inch fitting and can be used for all sizes. Simply turn the tool to tighten or release a round plug.

Of course, the Screwty is also available with a torque fitting. This adjustable attachment can be used for all sizes.

The torque can be infinitely adjusted between 0.5 and 1.7 Nm.

Customisable connectors

Insulation displacement connection
M12
A-coded

SAIS IDC / SAIB IDC

straight



SAISW IDC / SAIBW IDC

angled



D

Ordering data

Male	4-pole
Socket	4-pole
Note	

Type	Qty.	Order No.
SAIS-4-IDC M12 small	1	1781550001
SAIB-4-IDC-M12 small	1	1781540001
Other versions on request		

Type	Qty.	Order No.
SAISW-4-IDC M12	1	1812870000
SAIBW-4-IDC M12	1	1812890000
Other versions on request		

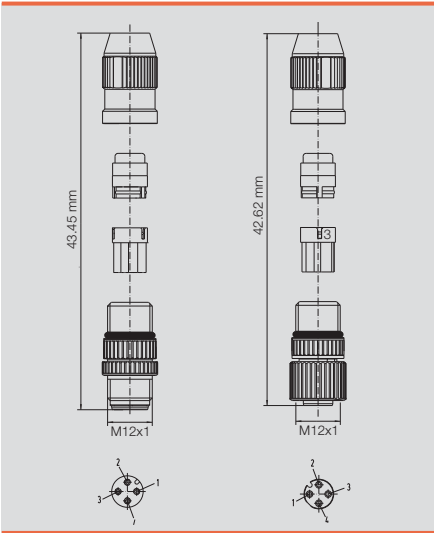
Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

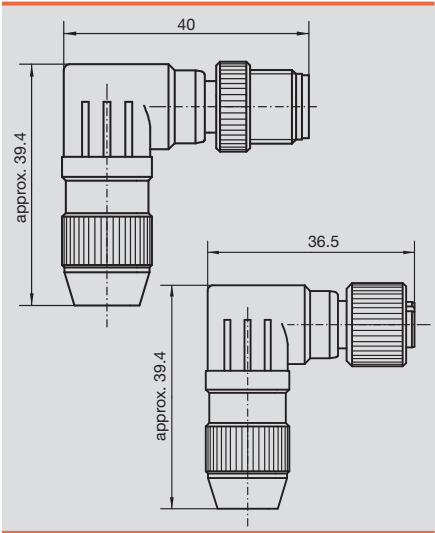
Insulation displacement connection
CuZn
M12
4...5.1 mm
0.14 - 0.34 mm²
4 A
32 V
-25...+85 °C
IP 67
tinned

Insulation displacement connection
CuZn
M12
4...5.1 mm
0.25 - 0.5 mm²
4 A
32 V
-25...+85 °C
IP 67
tinned

Dimensioned drawing



Dimensioned drawing



Insulation displacement connection
M12 (0.75)
A-coded

SAIS IDC / SAIB IDC (0.75)

straight



Ordering data

Male	
	3-pole
	4-pole
Socket	
	3-pole
	4-pole
Note	

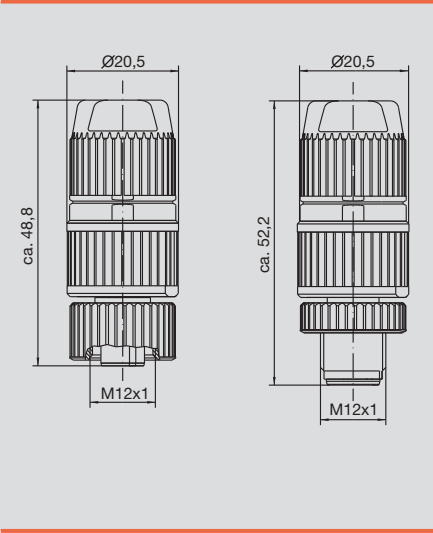
Type	Qty.	Order No.
SAIS-3-IDC (0,75) M12	1	1852720000
SAIS-4-IDC (0,75) M12	1	1852740000
SAIB-3-IDC (0,75) M12	1	1852730000
SAIB-4-IDC (0,75) M12	1	1852750000
Other versions on request		

Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

Insulation displacement connection
CuZn
M12
5.5...8 mm
0.34 - 0.75 mm²
6 A
50 V
-25...+85 °C
IP 67
tinned

Dimensioned drawing



Customisable connectors

Insulation displacement connection
M8

SAIS IDC / SAIB IDC

straight



D

Ordering data

Male	
	3-pole
	4-pole
Socket	
	3-pole
	4-pole
Note	

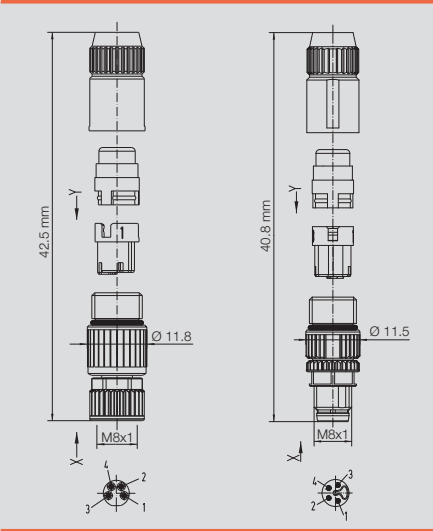
Type	Qty.	Order No.
SAIS-3-IDC M8 small	1	1784040001
SAIS-4-IDC M8 small	1	1784060001
SAIB-3-IDC-M8 small	1	1784030001
SAIB-4-IDC-M8 small	1	1784050001
Other versions on request		

Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

Insulation displacement connection
CuZn
M8
3.2...5.4 mm
0.14 - 0.34 mm²
4 A
32 V
-25...+85 °C
IP 67
tinned

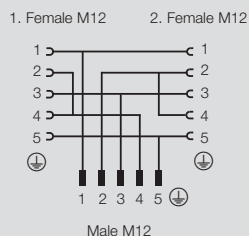
Dimensioned drawing



T distributor

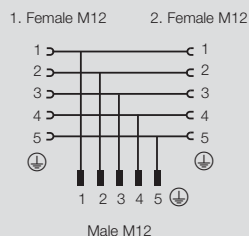
M12/M12

Mounting screw M3



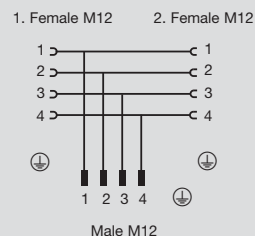
M12/M12

Mounting screw M3



M12/M12

Mounting screw M3



Ordering data

Type	Qty.	Order No.
Distribution, pin 2 + 4 bridged		
SAI-Y-5S B2-4 M12/M12	1	1783410000

Ordering data

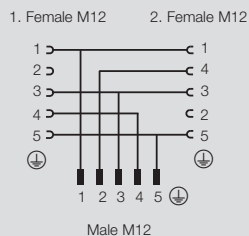
Type	Qty.	Order No.
Parallel distribution		
SAI-Y-5S PARA M12/M12	1	1783430000

Ordering data

Type	Qty.	Order No.
SAI-Y-4S-M12/M12	1	1060730000

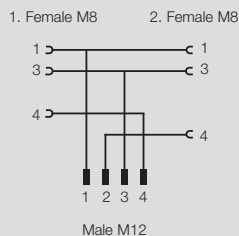
M12/M12

Mounting screw M3

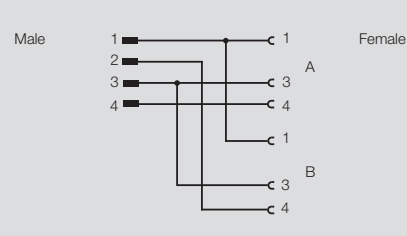


M12/M8

Mounting screw M3



M8/M8



Ordering data

Type	Qty.	Order No.
Individual distribution		
SAI-Y-5S-M12/M12	1	1826880000

Ordering data

Type	Qty.	Order No.
Individual distribution		
SAI-Y-4-4/2-4 M12/M8	1	1783420000

Ordering data

Type	Qty.	Order No.
SAI-Y-4S M8/M8	1	1805660000

Twin plugs and wall bushings



Miniature twin plugs

Purpose built machines often require individual cable lengths for the initiator cables. In some cases, two cables have to be of different lengths even when going to the same connector position.

To resolve this difficulty, we offer male and female connectors with two cable outlets that you can fabricate as you wish. The miniature twin plug is available with a 90° outlet and a straight outgoing cable direction. The 90° version can be twisted as you wish in steps of 90°.

Ordering data

Type	Qty.	Order No.
SAIS-ZW-5 (straight)	1	9457540000
SAIS-ZWW (90°)	1	1837560000



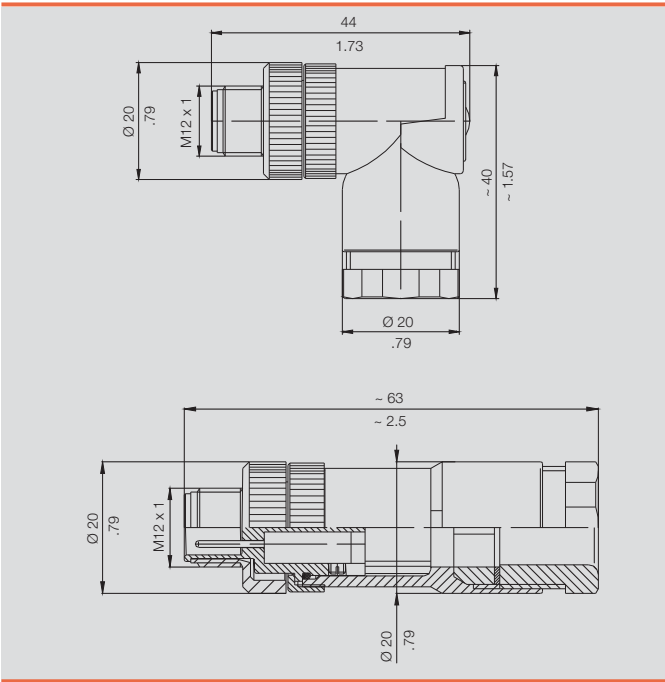
Wall bushing

In general machine building, it is common to have cables passing through the walls of control cabinets. To meet the need for a wall penetration with M12 plug in connectors, the M12 bushing is included in the range. The wall bushings is available as 5 pole.

In addition, a bushing for PROFIBUS plug in connectors (PB) is available

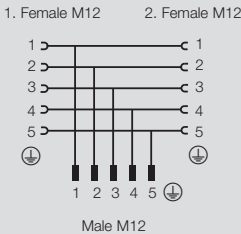
Ordering data

Type	Länge	Codierung	Qty.	Order No.
SAI-WDF-5P M12 60 mm	60 mm	A	1	1819450000
SAI-WDF-5PB M12 60 mm	60 mm	B	1	1820690000



M12/M12

Mounting screw M4



Ordering data

Type	Qty.	Order No.
SAI-Y-5S M12/M12 2 BO	1	1881710000

Protective caps for SAI distributors

Protective cap M5

Protects against external effects when the I/O is not in use. For SAI M5 distributors.



Ordering data

Type	Qty.	Order No.
SAI-SK-M5	50	1855310000

Protective cap M8

Protects against external effects when connector positions are not in use. For SAI M8 distributors.



Ordering data

Type	Qty.	Order No.
SAI-SK-M8	50	1802760000

Protective cap M12

Protects against external effects when connector positions are not in use. For SAI M12 distributors.



Ordering data

Type	Qty.	Order No.
SAI-SK-M12	30	9456050000

Protective cap M12

Protects against external effects when connector positions are not in use. For SAI metal distributors.



Ordering data

Type	Qty.	Order No.
SAI-SK-M12-M	30	1802750000

Protective cap M12 IDC

Protects against external effects when connector positions are not in use. For SAI distributors with IDC connection.



Ordering data

Type	Qty.	Order No.
SAI-SK IDC	10	1794850000

Protective cap M12 Universal

Protects against external effects when connector positions are not in use. For SAI M12 Universal distributors.



Ordering data

Type	Qty.	Order No.
SAI-SK-M12-UNI	20	2330260000

Hand operation possible. Screwdriver compatible.

Protective cap M12 connector

Protection from external influences. For open plugs. For attaching to cable.



Ordering data

Type	Qty.	Order No.
SAI-SK-M12 BU	1	8425960000

Protective cap M12 connector

Protects against external effects. For open plugs or sockets.



Ordering data

Type	Qty.	Order No.
Protective cap connector (yellow)	50	1781520000



M12, M8, M5 built in plugs

For connection of cables to sensors and actuators, different built in connectors are needed at the device end.

M12



M12 plug in connectors are available with the following numbers of poles: 4 to 5-pole and 8-pole. Built in connectors for M12 connections are all A-coded and have individual leads of 0.5 m. Fixing of the FP version is achieved with the supplied locknut. Also available are built in connectors that can be screwed in from the front.

M8



M8 connector requirements are covered by the 3 and 4 pole built in male and female connectors. Like the M12 built in connectors, these have a locknut for fastening into a housing wall. These connectors too have 0.5 m long leads attached.

M5



Of course, Weidmüller also offers corresponding built-in connectors for the smallest plug in connectors, M5. The M5 built in connector is available in 3 and 4 pole versions. This plug in connector too has a locknut. The individual lead length with M5 built in connectors is 0.2 m.

The cross sections of the individually attached leads are available from the technical data of the various families of plug in connectors.

M12 (M16)

SAIE-M12 FP



M12 (M16)

SAIE-M12 PG



Ordering data

Male	
4-pole	
5-pole	
8-pole	
Socket	
4-pole	
5-pole	
8-pole	
Note	

Type	Qty.	Order No.
SAIE-M12S-4-0.5U-FP-M16	1	1861160000
SAIE-M12S-5-0.5U-FP-M16	1	1861170000
SAIE-M12S-8-0.5U-FP-M16	1	1861180000
SAIE-M12B-4-0.5U-FP-M16	1	1861190000
SAIE-M12B-5-0.5U-FP-M16	1	1856110000
SAIE-M12B-8-0.5U-FP-M16	1	1861210000
FP with M16 cable gland FP = can be positioned as required		

Type	Qty.	Order No.
SAIE-M12S-4-0.5U-M16	1	1861090000
SAIE-M12S-5-0.5U-M16	1	1861230000
SAIE-M12S-8-0.5U-M16	1	1861110000
SAIE-M12B-4-0.5U-M16	1	1861120000
SAIE-M12B-5-0.5U-M16	1	1836910000
SAIE-M12B-8-0.5U-M16	1	1861140000
with PG cable gland		

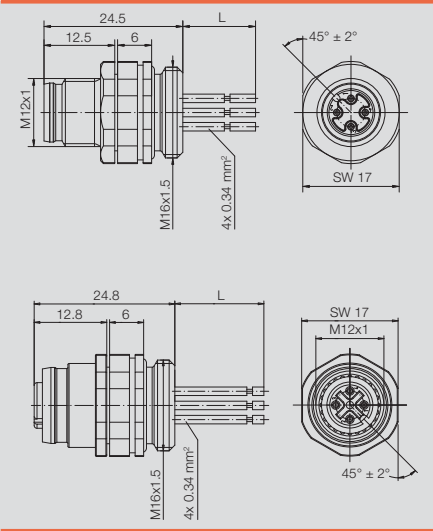
Technical data

Cable gland
Housing main material
Contact tube diameter
Core cross-section
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

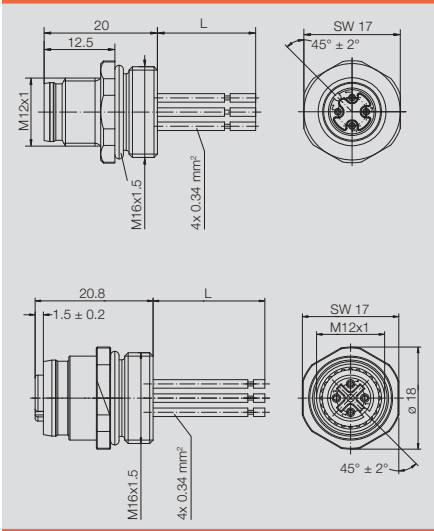
M16
CuZn, nickel-plated
M12
0.25 mm²
4 A
30 V
-30...+90 °C
IP 67
gold-plated

M16
CuZn, nickel-plated
M12
0.34 mm²
4 A
60 V
-30...+90 °C
IP 67
gold-plated

Dimensioned drawing



Dimensioned drawing



Built in plugs

M12 (PG 9)

SAIE-M12 PG



D

Ordering data

Male	
	4-pole
	5-pole
	8-pole
Socket	
	4-pole
	5-pole
	8-pole
Note	

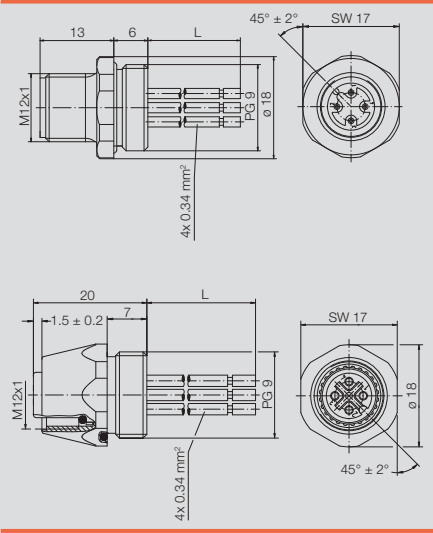
Type	Qty.	Order No.
SAIE-M12S-4-0.5U-PG9	1	1861220000
SAIE-M12S-5-0.5U-PG9	1	1856120000
SAIE-M12S-8-0.5U-PG9	1	1861240000
SAIE-M12B-4-0.5U-PG9	1	1861250000
SAIE-M12B-5-0.5U-PG9	1	1814890000
SAIE-M12B-8-0.5U-PG9	1	1861270000
with PG cable gland		

Technical data

Cable gland
Housing main material
Contact tube diameter
Core cross-section
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

PG 9
CuZn, nickel-plated
M12
0.34 (4- and 5-pole) / 0.25 (8-pole)
4 A
30 V
-30...+90 °C
IP 67
gold-plated

Dimensioned drawing



M8

SAIE-M8 FP



M5

SAIE-M5



Ordering data

Male	
3-pole	
4-pole	
Socket	
3-pole	
4-pole	
female - snap-on interlock	
3-pole	
4-pole	
Note	

Type	Qty.	Order No.
SAIE-M8S-3-0.5U-FP-M8	1	1078730000
SAIE-M8S-4-0.5U-FP-M8	1	1078720000
SAIE-M8B-3-0.5U-FP-M8	1	1856130000
SAIE-M8B-4-0.5U-FP-M8	1	1856140000
SAIE-M8R-3-0.5U-FP-M8	1	1861280000
SAIE-M8R-4-0.5U-FP-M8	1	1861290000
Fixing nut included FP = can be positioned as required		

Type	Qty.	Order No.
SAIE-M5S-3-0.2U	1	1873050000
SAIE-M5S-4-0.2U	1	1873030000
SAIE-M5B-3-0.2U	1	1873060000
SAIE-M5B-4-0.2U	1	1873040000
Fixing nut included		

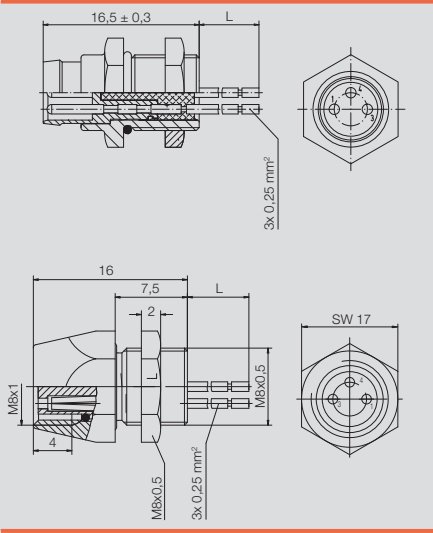
Technical data

Cable gland
Housing main material
Contact tube diameter
Core cross-section
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

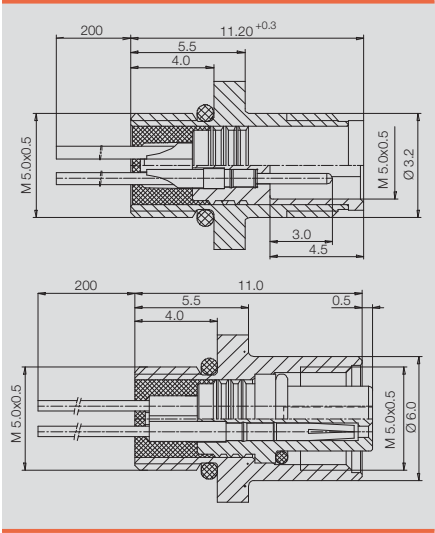
M 8
CuZn, nickel-plated
M8
0.25 mm²
4 A
30 V
-30...+90 °C
IP 67
gold-plated

M 5
CuZn, nickel-plated
M5
0.14 mm²
1 A
60 V
-25...+80 °C
IP 67
gold-plated

Dimensioned drawing



Dimensioned drawing



Introduction



Valve plugs for custom cables are often incorporated when designing special machines. Such plugs are used to connect solenoid valves.

Weidmüller valve plugs are available in all customary forms. The range includes form A, form B to industry standards and to DIN, and form C to industry standards and to DIN.

These valve plugs are available without circuitry in 3 pole and 4 pole versions. A flat gasket seal is included which, when screwed on, guarantees IP65 protection.

Ordering data

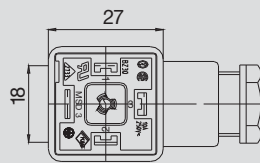
Type	(Qty.=1)	Order No.
Type A		
SAIB-VSA-3P/250/9-OB		1873070000
SAIB-VSA-4P/250/9-OB		1873080000
SAIB-VSA-3P/250/11-OB		1873090000
SAIB-VSA-4P/250/11-OB		1873100000
SAIB-VSA-3P/230/9-LD		1873110000
SAIB-VSA-3P/24/9-LD		1873120000
SAIB-VSA-3P/230/9-H/OB		1873130000
SAIB-VSA-4P/230/9-H/OB		1873140000
SAIB-VSA-3P/230/11-H/OB		1873150000
SAIB-VSA-4P/230/11-H/OB		1873160000
Type B		
SAIB-VSB-3P/250/9-OB		1873170000
SAIB-VSB-3P/24/9-LD		1873180000
SAIB-VSBD-3P/250/9-OB		1873190000
Type C		
SAIB-VSC-3P/250/7-OB		1873200000
SAIB-VSC-4P/250/7-OB		1873210000
SAIB-VSCD-3P/250/7-OB		1873220000
SAIB-VSCD-4P/250/7-OB		1873230000
All types supplied complete with seal.		

Legend

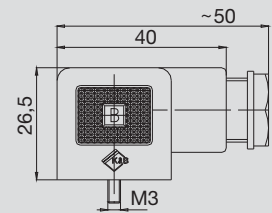
Designation code	
VS-	valve plug
OB-	without cables
3P, 4P-	No. of poles
7, 9, 11-	cable entry (PG)
H	high form
T	Transparent housing
3P	2 + PE
4P	3 + PE

Type of valve plug	Contact gap
A	18.0 mm
B	11.0 mm to industry standard
BD	10.0 mm to DIN
C	9.4 mm to industry standard
CD	8.0 mm to DIN

Plug in connector Type A to DIN EN 175301-803

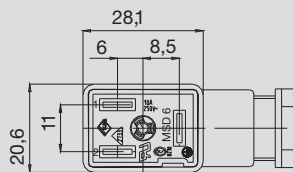


Contact gap: 18 mm

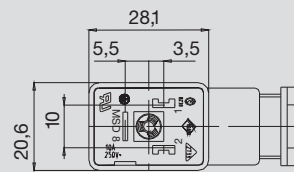


Type VSA

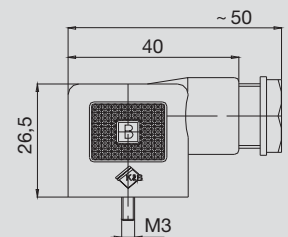
Plug in connector Type B



Contact gap: 11 mm
industry standard

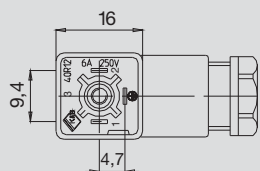


Contact gap: 10 mm
to DIN 43650 (ISO 6952)

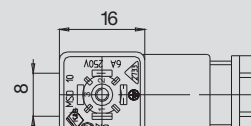


Type VSB/VBSD

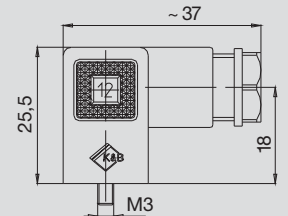
Plug in connector Type C



Contact gap: 9.4 mm
industry standard



Contact gap: 8 mm
to DIN 43650 (ISO 6952)



Type VSC/VSCD

Protective sleeve adapter



In machine construction, it is very common for cables to be run in the open air. To be able to protect cables from damage through a wide range of causes such as rodents, it is sometimes necessary to protect the cable with a protective sleeve.

To fasten the protective sleeve to a plug in connector designed for custom assembly, Weidmüller offers a protective sleeve adapter. This adapter is used instead of the PG7 cable gland. The protective sleeve is quick to fit, protecting the cable straight away.

Ordering data

Type	Qty.	Order No.
SAI-SSA-PG7	10	1938300000

Fitting a protective sleeve adapter



1. Unscrewing the PG7 cable gland



2. Screwing on the protective sleeve adapter



3. Fitting a PG7 protective sleeve



4. Finished

Connection of protective sleeve adapter to other plug connectors



1. Connect the protective tubing to the tube union



2. Finished

The protective sleeve is also suitable for protecting cables with valve plugs. A corresponding connecting piece is already present on valve plugs with moulded seal.

IP67 Remote I/O system SAI Active

IP67 Remote I/O system SAI Active

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SAI Active Universal - Overview	E.6
SAI Active Universal - PROFIBUS-DP	E.8
SAI Active Universal - CANopen	E.12
SAI Active Universal - DeviceNet™	E.16
SAI Active Universal - EtherNet/IP™	E.20
SAI Active Universal - Modbus TCP	E.24
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SAI Active Universal Pro	E.30
SAI Active Universal Wireless - Overview	E.42
SAI Active Universal Wireless	E.44

Sensor Actuator Interface (SAI Active)

Decentralised Remote I/O system with IP67 protection

Industrial automation solutions are becoming more and more decentralised. The Weidmüller sensor-actuator distributor SAI Active provides a fieldbus interface for digital communication. It is capable of merging all types of signals from the field and transmitting them without interference to the central controller unit. The SAI Active Remote I/O system is available in several variants to support different applications. A wide range of products for industrial automation are available to the user: the basic “SAI-AU” version provides a quick and simple, entry level solution for decentralisation; the professional “SAI-AU Pro” version has versatile extension options and functional modules; and the “SAI-AU Wireless” system provides a radio based solution.

The SAI Active Remote I/O system features IP67 protection. It provides users with the opportunity to add input and/or output units to the process in a decentralised manner directly on location. The wiring is uncomplicated with pre-assembled cables and standardised M8 and M12 connectors. This simplifies the installation process and reduces the risk of cabling errors. There is no need for complex parallel wiring of the sensors and actuators. Nor do you need to merge the cables together at a central location or electrical cabinet. The IP67 modules have a sturdy construction and provide excellent reliability under adverse conditions involving dust, moisture, acids, high temperatures or vibrations.



In comparison to traditional passive solutions which require a separate line from the point of measurement to the controller for each signal, the active modules stand out because they need only one line to digitally transmit all the signals of a standard fieldbus system. The measurement signal is transmitted to the controller unit precisely (i.e., with no drift). Thus there is no need for manual calibration.

The SAI Active Remote I/O system is available for industrial fieldbus protocols (PROFIBUS-DP, DeviceNet, CANopen, Modbus ASCII) and Ethernet protocols (Modbus TCP and Ethernet/IP). Standardised device drivers are available. They allow you to carry out a vendor-neutral integration into your engineering system without the use of any proprietary software. The drivers can also be used with a wide range of controller units. The diagnostic capabilities of the SAI Active system (available in part using a web browser) make troubleshooting simple. They also significantly reduce the time required for initial commissioning and maintenance. Each module provides a continual specific diagnostic function for each individual channel. When a sensor, actuator or module error is detected, an easily recognised signal is displayed with an arrow icon on the corresponding module. An alert is simultaneously sent on the fieldbus or directly to the controller unit. This allows the application to react quickly so that prompt system analysis can be carried out.



The SAI Active system offers many benefits including less expensive installation and maintenance. It also makes optimal use of space with its compact modules.

This system includes all purpose compact modules and modular subbus components – providing users with decentralised automation that they can profit from as a long term solution.

Weidmüller offers users a wide line of active and passive sensor-actuator distributors for designing a single vendor system. The distributors are versatile enough to be used for practically all industrial automation applications. Our product line is being constantly improved, expanded and adapted to meet future needs.

Use the following table for quickly finding the proper product. Plenty of documentation and software is available to support you during the project planning and initial commissioning phases. All software programs and corresponding product documentation can be downloaded free of charge from the Weidmüller web site.



Quick select – SAI Active

Selection table

Order No.	Product designation	Connection system			Communication								
		M8	M12	PROFIBUS DP	CANopen	DeviceNet	Modbus ASCII (RS 232 / USB)	Modbus TCP	Ethernet/IP	Subbus	Wireless		
SAI Active Universal													
1906550000	SAI-AU M8 PB 16DI	X		X									
1906640000	SAI-AU M8 PB 16DI/8DO	X		X									
1975450000	SAI-AU M8 PB 8DI8DO 2A	X		X									
1890020000	SAI-AU M12 PB 16DI		X	X									
1890010000	SAI-AU M12 PB 16DI/8DO		X	X									
1968220000	SAI-AU M12 PB 8DI8DO 2A		X	X									
1890000000	SAI-AU M12 PB AI/AO/DI		X	X									
1906680000	SAI-AU M8 CAN 16DI	X			X								
1906690000	SAI-AU M8 CAN 16DI/8DO	X			X								
1906650000	SAI-AU M12 CAN 16DI		X		X								
1906660000	SAI AU M12 CAN 16DI/8DO		X		X								
1906670000	SAI-AU M12 CAN AI/AO/DI		X		X								
1906730000	SAI-AU M8 DN 16DI	X				X							
1906740000	SAI AU M8 DN 16DI/8DO	X				X							
1906700000	SAI-AU M12 DN 16DI		X			X							
1906710000	SAI AU M12 DN 16DI/8DO		X			X							
1906720000	SAI-AU M12 DN AI/AO/DI		X			X							
1906880000	SAI-AU M8 IE 16DI	X						X					
1906890000	SAI-AU M8 IE 16DI/8DO	X						X					
1906850000	SAI-AU M12 IE 16DI		X					X					
1906860000	SAI-AU M12 IE 16DI/8DO		X					X					
1906870000	SAI-AU M12 IE AI/AO/DI		X					X					
1906930000	SAI-AU M8 EIP 16DI	X							X				
1906940000	SAI-AU M8 EIP 16DI/8DO	X							X				
1906900000	SAI-AU M12 EIP 16DI		X						X				
1906910000	SAI-AU M12 EIP 16DI/8DO		X						X				
1906920000	SAI-AU M12 EIP AI/AO/DI		X						X				
SAI Active Universal Pro													
1024310000	SAI-AU M8 PB GW 16DI	X		X							X		
1938550000	SAI-AU M12 PB GW 16DI		X	X							X		
1938570000	SAI-AU M12 DN GW 16DI		X			X					X		
1962240000	SAI-AU M12 USB GW 8I8O		X				X				X		
1938580000	SAI-AU M12 IE GW 16DI		X					X			X		
1019490000	SAI-AU M12 EIP GW 16DI		X						X		X		
1938600000	SAI-AU M8 SB 8DI	X									X		
1938660000	SAI-AU M8 SB 8DO 2A	X									X		
1938630000	SAI-AU M8 SB 8DIO	X									X		
1938610000	SAI-AU M12 SB 8DI		X								X		
1938668000	SAI-AU M12 SB 8DO 2A		X								X		
1938640000	SAI-AU M12 SB 8DIO		X								X		
1938690000	SAI-AU M12 SB 4AI		X								X		
1938700000	SAI-AU M12 SB 4AO		X								X		
1938730000	SAI-AU M12 SB 2Counter		X								X		
1938720000	SAI-AU M12 SB 4Thermo		X								X		
1938710000	SAI-AU M12 SB 4PT100		X								X		
SAI Active Universal Wireless													
1006980000	SAI-AU M12 GW PB/BT 12I		X	X								X	
1006940000	SAI-AU M12 BT 16DI		X									X	
1006930000	SAI-AU M12 BT 16DI/8DO		X									X	
1006920000	SAI-AU M12 BT4AI2AO2DIO		X									X	

	Inputs					Outputs				Supply voltage feed circuits	Special characteristics	Page
	Digital	Analogue	Counter	TC	RTD	Digital	Output current	Analogue	Output range			
	16									2		E.8
	Max. 16, min. 8 (can be configured)					Max. 8, min. 0 (can be configured)	0.5 A			4	- Max. I/O channels = 16	E.8
	8					8	2 A			4	- Max. total current, output = 8 A	E.8
	16									2		E.8
	Max. 16, min. 8 (can be configured)					Max. 8, min. 0 (can be configured)	0.5 A			1	- Max. I/O channels = 16	E.8
	8					8	2 A			2	- Max. total current, output = 8 A	E.8
	4	4						2	-10...+10 V, 0...+10 V, 0...20 mA, 4...20 mA	2		E.9
	16									2		E.12
	Max. 16, min. 8 (can be configured)					Max. 8, min. 0 (can be configured)	0.5 A			4	- Max. I/O channels = 16	E.12
	16									2		E.12
	Max. 16, min. 8 (can be configured)					Max. 8, min. 0 (can be configured)	0.5 A			4	- Max. I/O channels = 16	E.12
	4	4						2	-10...+10 V, 0...+10 V, 0...20 mA, 4...20 mA	2		E.13
	16									2		E.16
	Max. 16, min. 8 (can be configured)					Max. 8, min. 0 (can be configured)	0.5 A			4	- Max. I/O channels = 16	E.16
	16									2		E.16
	Max. 16, min. 8 (can be configured)					Max. 8, min. 0 (can be configured)	0.5 A			4	- Max. I/O channels = 16	E.16
	4	4						2	-10...+10 V, 0...+10 V, 0...20 mA, 4...20 mA	2		E.17
	16									2		E.24
	Max. 16, min. 8 (can be configured)					Max. 8, min. 0 (can be configured)	0.5 A			4	- Max. I/O channels = 16	E.24
	16									2		E.24
	Max. 16, min. 8 (can be configured)					Max. 8, min. 0 (can be configured)	0.5 A			4	- Max. I/O channels = 16	E.24
	4	4						2	-10...+10 V, 0...+10 V, 0...20 mA, 4...20 mA	2		E.25
	16									2		E.20
	Max. 16, min. 8 (can be configured)					Max. 8, min. 0 (can be configured)	0.5 A			4	- Max. I/O channels = 16	E.20
	16									2		E.20
	Max. 16, min. 8 (can be configured)					Max. 8, min. 0 (can be configured)				4	- Max. I/O channels = 16	E.20
	4	4						2	-10...+10 V, 0...+10 V, 0...20 mA, 4...20 mA	2		E.21
	16									2		E.30
	16									2		E.30
	16									2		E.32
	8					8	0.5 A			2		E.34
	16									2		E.34
	16									2		E.32
	8											E.36
						8	2 A			2	- Max. total current, output = 8 A	E.36
	Max. 8, min. 0 (can be configured)					Max. 8, min. 0 (can be configured)	0.5 A			2	- Max. I/O channels = 8 - Max. total current, output = 4 A	E.36
	8											E.36
						8	2 A			2	- Max. I/O channels = 8 - Max. total current, output = 4 A	E.36
	Max. 8, min. 0 (can be configured)					Max. 8, min. 0 (can be configured)	0.5 A			2	- Max. I/O channels = 8	E.36
		4										E.37
								4	-10...+10 V, 0...+10 V, 0...20 mA, 4...20 mA			E.37
			2							2		E.38
				4								E.39
					4							E.40
	12									2		E.44
	16									2		E.45
	Max. 16, min. 8 (can be configured)					Max. 8, min. 0 (can be configured)	0.5 A			4	- Max. I/O channels = 16	E.45
	Max. 4, min. 2 (can be configured)	4				Max. 2, min. 0 (can be configured)	0.5 A	2	-10...+10 V, 0...+10 V, 0...20 mA, 4...20 mA	2	- Max. I/O channels = 10	E.46

SAI Active Universal

Compact, basic versions of the Remote I/O system with IP67 protection

The SAI Active Universal consists of basic, compact designed variants that include a variety of modules for digital and analogue inputs and outputs. The housing has a sturdy construction in compliance with strict industrial requirements. It is resistant against aggressive materials, vibration, shock, temperature, water and dust.

The high quality connection system uses conventional, standardised M8 and M12 connectors with standard compliant coding. They ensure a reliable wiring process with less risk of errors. Two M12 connections for the fieldbus allow for a continuous bus installation without any additional T-distributor. The functional earth connection is automatically created when installing on a metallic earthed base.





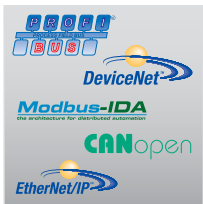
4 independent voltage circuits

The modules can be supplied with up to four different voltage potentials. The module voltage can be simultaneously used for the inputs. In addition, up to three feed points are available for outputs; these can be switched off individually depending on the application requirements. Plug in cross connectors can be used to merge voltage potentials on the module.



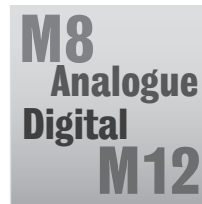
Efficient diagnostics and status alerts

The status of the I/Os is shown directly on the module using arrow icons. The arrows point to the label and the plug in position. Up to seven status LEDs are available for displaying additional information about the power supply, fieldbus status and group diagnostics. The information is simultaneously transmitted to the controller unit via the bus system.



Freedom of choice

Total compliance with many industrial fieldbus standards: this permits integration with all conventional controllers so that the modules can be used in practically all applications. SAI Active Universal supports PROFIBUS-DP, CANopen, DeviceNet, Modbus TCP and Ethernet/IP communication protocols.



A wide variety of variants

All SAI Active modules with digital inputs or digital outputs are optionally available with standard M8 or M12 connection systems. For modules in the 16DI/8DO series, the configuration can be customised to fit the application so that anywhere between 16DI to 8DI/8DO can be used. Output cables with up to 2 A per channel are used to connect almost any load. Analogue modules can be configured flexibly for current or voltage outputs.

PROFIBUS-DP

Remote I/O for digital signal processing



SAI-AU



SAI-AU



Ordering data

Module variants	
	16 Digital In; 16 Digital In / 8 Digital Out
	16 Digital In; 16 Digital In / 8 Digital Out
	8 Digital In / 8 Digital Out
	8 Digital In / 8 Digital Out

Note

Technical data

Connections

- Fieldbus (BUS-IN)
- Fieldbus (BUS-OUT)
- Supply voltage (AUX-IN)
- Supply voltage (AUX-OUT)
- I/O connections

Voltage supply

Operating voltage
Contact load
Max. total current module

Digital inputs

Permitted input voltage
Input voltage, low
Input voltage, high
Input current, low
Input current, high
Input filter

Digital outputs

- max. current-carrying capacity per output signal
- Switching frequency load (resistive / inductive / inrush)
- Short-circuit-proof
- Output voltage, low
- Output voltage, high
- Max. total current of outputs

Fieldbus

- Bus system
- Transmission rate
- Addressing
- System integration

General data

- L x W x H
- Earth
- Protection class
- operating temperature
- Storage temperature
- Housing main material / Flammability class UL 94
- Certificate

Type	Qty.	Order No.
SAI-AU M8 PB 16DI	1	1906550000
SAI-AU M12 PB 16DI	1	1890020000

1x M12 plug 5-pole, B-coded
1x M12 female 5-pole, B-coded
1x M12 plug 5-pole, A-coded
1x M12 female 5-pole, A-coded
16x M8 female 3-pole / 8 x M12 female 5-pole, A-coded
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
10 A
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
3 ms
Profibus-DP
Max. 12 Mbit/s (automatic detection)
Via rotary coding switch (1 – 126)
GSD file (Device-specific for each module)
210 mm / 54 mm / 32 mm
< 400 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus

Type	Qty.	Order No.
SAI-AU M8 PB 16DI8/8DO	1	1906640000
SAI-AU M12 PB 16DI8/8DO	1	1890010000
SAI-AU M8 PB 8DI8DO 2A	1	1975450000
SAI-AU M12 PB 8DI8DO 2A	1	1968220000

1x M12 plug 5-pole, B-coded
1x M12 female 5-pole, B-coded
2x M12 plug 5-pole, A-coded
16x M8 female 3-pole / 8 x M12 female 5-pole, A-coded
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
10 A
-30 V to +30 V (protected against polarity reversal)
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
3 ms
0.5 A, 2 A
max. 100 Hz / max. 1 Hz / max. 8 Hz
Yes, cut-off for short circuit and error message
0 V DC
Supply voltage less 0.7 V DC
7 A, 8 A (1975450000, 1968220000)
Profibus-DP
Max. 12 Mbit/s (automatic detection)
Via rotary coding switch (1 – 126)
GSD file (Device-specific for each module)
210 mm / 54 mm / 32 mm
< 400 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus

Note

PROFIBUS-DP
Remote I/O for digital and
analogue signal processing



SAI-AU



Ordering data

Module variants
4 Analogue In / 2 Analogue Out / 4 Digital In
Note

Type	Qty.	Order No.
SAI-AU M12 PB AI/AO/DI	1	1890000000

Technical data

Connections
Fieldbus (BUS-IN)
Fieldbus (BUS-OUT)
Supply voltage (AUX-IN)
Supply voltage (AUX-OUT)
I/O connections
Voltage supply
Operating voltage
Contact load
Max. total current module
Digital inputs
Permitted input voltage
Input voltage, low
Input voltage, high
Input current, low
Input current, high
Input filter
Analogue inputs
Measurement range
Maximum input voltage in relation to GND
Input resistance (load)
Max. input current (differential)
Short-circuit-proof
Resolution / Accuracy
Analogue outputs
Measurement range
Output interval
Short-circuit-proof
Resolution / Accuracy
Fieldbus
Bus system
Transmission rate
Addressing
System integration
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

1x M12 plug 5-pole, B-coded
1x M12 female 5-pole, B-coded
1x M12 plug 5-pole, A-coded
1x M12 female 5-pole, A-coded
8 x M12 female 5-pole, A-coded
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
10 A
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
3 ms
-10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA
35 V
<125 Ohm
-50 mA to +50 mA (protected against polarity reversal)
Yes
12-bit / < 0.2 %
-10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA
5 ms to 250 ms (can be configured)
Yes
12-bit / < 0.2 %
Profibus-DP
Max. 12 Mbit/s (automatic detection)
Via rotary coding switch (1 – 126)
GSD file (Device-specific for each module)
210 mm / 54 mm / 32 mm
< 400 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus

Note

Note

Engineering tables for PROFIBUS



When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

PROFIBUS modules



PROFIBUS accessories



Sensor/actuator accessories



Markers



Protective caps



Ordering data

Description	Typee	Qty.	Order No.
PROFIBUS modules			
16 Digital In	SAI-AU M12 PB 16DI	1	1890020000
16 Digital In / 8 Digital Out	SAI-AU M12 PB 16DI/8DO	1	1890010000
4 Analogue In / 2 Analogue Out / 4 Digital In	SAI-AU M12 PB AI/AO/DI	1	1890000000
8 Digital In / 8 Digital Out	SAI-AU M12 PB 8DI/8DO 2A	1	1968220000
16 Digital In	SAI-AU M8 PB 16DI	1	1906550000
16 Digital In / 8 Digital Out	SAI-AU M8 PB 16DI/8DO	1	1906640000
8 Digital In / 8 Digital Out	SAI-AU M8 PB 8DI/8DO 2A	1	1975450000

PROFIBUS accessories

PROFIBUS cables with female plug and male plug	Chapter C
PROFIBUS cables with female plug and other side open	Chapter C
PROFIBUS cables with male plug and other side open	Chapter C

PROFIBUS plug-in connector	Chapter C
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PROFIBUS terminating resistor	SAIEND PB M12 5P B-COD	1	1784770000
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Sensor/actuator accessories

Sensor-actuator cables	Chapter B
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Sensor-actuator plugs	Chapter D
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Markers

Semi-transparent markers for PrintJet printing	ESG 8/13.5/43.3 SAI AU	5	1912130000
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Protective caps

M8 Dust cap (Sensor connections)	SAI-SK M8	50	1802760000
M12 Dust cap (Sensor connections)	SAI-SK	30	9456050000
M12 Dust cap (Bus-in and power-in)	SAI-SK-M12-UNI	20	2330260000
M12 Dust cap (Bus-in and power-in)	SAI-SK plug M12	50	1781520000

SAI Active Universal - CANopen

CANopen
Remote I/O for digital
signal processing



SAI-AU



SAI-AU



Ordering data

Module variants
16 Digital In; 16 Digital In / 8 Digital Out
16 Digital In; 16 Digital In / 8 Digital Out
Note

Type	Qty.	Order No.
SAI-AU M8 CAN 16DI	1	1906680000
SAI-AU M12 CAN 16DI	1	1906650000

Type	Qty.	Order No.
SAI-AU M8 CAN 16DI/8DO	1	1906690000
SAI-AU M12 CAN 16DI/8DO	1	1906660000

Technical data

Connections
Fieldbus (BUS-IN)
Fieldbus (BUS-OUT)
Supply voltage (AUX-IN)
Supply voltage (AUX-OUT)
I/O connections
Voltage supply
Operating voltage
Contact load
Max. total current module
Digital inputs
Permitted input voltage
Input voltage, low
Input voltage, high
Input current, low
Input current, high
Input filter
Digital outputs
max. current-carrying capacity per output signal
Switching frequency load (resistive / inductive / inrush)
Short-circuit-proof
Output voltage, low
Output voltage, high
Max. total current outputs
Fieldbus
Bus system
Transmission rate
Addressing
System integration
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

1x M12 plug 5-pole, A-coded
1x M12 female 5-pole, A-coded
1x M12 plug 5-pole, A-coded
1x M12 female 5-pole, A-coded
16x M8 female 3-pole / 8 x M12 female 5-pole, A-coded
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
8 A
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
3 ms
CANopen
Max. 1 Mbit/s (automatic detection)
Via rotary coding switch (1 – 127)
EDS file (Device-specific for each module)
210 mm / 54 mm / 32 mm
< 400 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus (planned for 4Q/2010)

1x M12 plug 5-pole, A-coded
1x M12 female 5-pole, A-coded
2x M12 plug 5-pole, A-coded
16x M8 female 3-pole / 8 x M12 female 5-pole, A-coded
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
8 A
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
3 ms
0.5 A, 2 A
max. 100 Hz / max. 1 Hz / max. 8 Hz
Yes, cut-off for short circuit and error message
0 V DC
Supply voltage less 0.7 V DC
7 A
CANopen
Max. 1 Mbit/s (automatic detection)
Via rotary coding switch (1 – 127)
EDS file (Device-specific for each module)
210 mm / 54 mm / 32 mm
< 400 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus (planned for 4Q/2010)

Note

Note

Note

CANopen

Remote I/O for digital and analogue signal processing



SAI-AU



Ordering data

Module variants
4 Analogue In / 2 Analogue Out / 4 Digital In
Note

Type	Qty.	Order No.
SAI-AU M12 CAN AI/AO/DI	1	1906670000

Technical data

Connections
Fieldbus (BUS-IN)
Fieldbus (BUS-OUT)
Supply voltage (AUX-IN)
Supply voltage (AUX-OUT)
I/O connections
Digital inputs
Permitted input voltage
Input voltage, low
Input voltage, high
Input current, low
Input current, high
Input filter
Analogue inputs
Measurement range
Maximum input voltage in relation to GND
Input resistance (load)
Max. input current (differential)
Short-circuit-proof
Resolution / Accuracy
Analogue outputs
Measurement range
Output interval
Short-circuit-proof
Resolution / Accuracy
Fieldbus
Bus system
Transmission rate
Addressing
System integration
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

1x M12 plug 5-pole, A-coded
1x M12 female 5-pole, A-coded
1x M12 plug 5-pole, A-coded
1x M12 female 5-pole, A-coded
8 x M12 female 5-pole, A-coded
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
3 ms
-10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA
35 V
<125 Ohm
-50 mA to +50 mA (protected against polarity reversal)
Yes
12-bit / < 0.2 %
-10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA
5 ms to 250 ms (can be configured)
Yes
12-bit / < 0.2 %
CANopen
Max. 1 Mbit/s (automatic detection)
Via rotary coding switch (1 – 127)
EDS file (Device-specific for each module)
210 mm / 54 mm / 32 mm
< 400 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus (planned for 4Q/2010)

Note

Note

Engineering tables for CANopen



When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

CANopen modules



CANopen accessories



Sensor/actuator accessories



Markers



Protective caps



Ordering data

Description	Type	Qty.	Order No.
CANopen modules			
16 Digital In	SAI-AU M12 CAN 16DI	1	1906650000
16 Digital In / 8 Digital Out	SAI AU M12 CAN 16DI/8DO	1	1906660000
4 Analogue In / 2 Analogue Out / 4 Digital In	SAI-AU M12 CAN AI/AO/DI	1	1906670000
16 Digital In	SAI-AU M8 CAN 16DI	1	1906680000
16 Digital In / 8 Digital Out	SAI-AU M8 CAN 16DI/8DO	1	1906690000
CANopen accessories			
CANopen cables with female plug and male plug			Chapter C
CANopen cables with female plug and other side open			Chapter C
CANopen cables with male plug and other side open			Chapter C
CANopen plug-in connector			Chapter C
CANopen terminating resistor	SAIEND CAN-M12 5P A-COD	1	1784760000
Sensor/actuator accessories			
Sensor-actuator cables			Chapter B
Sensor-actuator plugs			Chapter D
Markers			
Semi-transparent markers for PrintJet printing	ESG 8/13.5/43.3 SAI AU	5	1912130000
Protective caps			
M8 Dust cap (Sensor connections)	SAI-SK M8	50	1802760000
M12 Dust cap (Sensor connections)	SAI-SK	30	9456050000
M12 Dust cap (Bus-in and power-in)	SAI-SK-M12-UNI	20	2330260000
M12 Dust cap (Bus-in and power-in)	SAI-SK plug M12	50	1781520000

SAI Active Universal - DeviceNet™

DeviceNet™
Remote I/O for digital
signal processing



SAI-AU



SAI-AU



Ordering data

Module variants
16 Digital In; 16 Digital In / 8 Digital Out
16 Digital In; 16 Digital In / 8 Digital Out
Note

Technical data

Connections
Fieldbus (BUS-IN)
Fieldbus (BUS-OUT)
Supply voltage (AUX-IN)
Supply voltage (AUX-OUT)
I/O connections
Voltage supply
Operating voltage
Contact load
Max. total current module
Digital inputs
Permitted input voltage
Input voltage, low
Input voltage, high
Input current, low
Input current, high
Input filter
Digital outputs
max. current-carrying capacity per output signal
Switching frequency load (resistive / inductive / inrush)
Short-circuit-proof
Output voltage, low
Output voltage, high
Max. total current outputs
Fieldbus
Bus system
Transmission rate
Addressing
System integration
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

Type	Qty.	Order No.
SAI-AU M8 DN 16DI	1	1906730000
SAI-AU M12 DN 16DI	1	1906700000
1x M12 plug 5-pole, A-coded		
1x M12 female 5-pole, A-coded		
1x M12 plug 5-pole, A-coded		
1x M12 female 5-pole, A-coded		
16x M8 female 3-pole / 8 x M12 female 5-pole, A-coded		
24 V (18 V DC ... 30 V DC)		
Per PIN max. 4 A		
8 A		
-30 V to +30 V (protected against polarity reversal)		
<5 V in accordance with EN 61131-2 Typ 1		
>15 V in accordance with EN 61131-2 Typ 1		
< 15 mA in accordance with EN 61131-2 Type 1		
2 mA to 15 mA in accordance with EN 61131-2 Type 1		
3 ms		
DeviceNet		
Max. 500 kBit/s (automatic detection)		
Via rotary coding switch (0 – 63)		
EDS file (Device-specific for each module)		
210 mm / 54 mm / 32 mm		
< 400 g		
IP 67		
0 °C...+60 °C		
-25 °C...+85 °C		
Pocan, PBT / V-0		
CE, cULus (planned for 4Q/2010)		

Type	Qty.	Order No.
SAI-AU M8 DN 16DI/8DO	1	1906740000
SAI-AU M12 DN 16DI/8DO	1	1906710000
1x M12 plug 5-pole, A-coded		
1x M12 female 5-pole, A-coded		
2x M12 plug 5-pole, A-coded		
16x M8 female 3-pole / 8 x M12 female 5-pole, A-coded		
24 V (18 V DC ... 30 V DC)		
Per PIN max. 4 A		
8 A		
-30 V to +30 V (protected against polarity reversal)		
<5 V in accordance with EN 61131-2 Typ 1		
>15 V in accordance with EN 61131-2 Typ 1		
< 15 mA in accordance with EN 61131-2 Type 1		
2 mA to 15 mA in accordance with EN 61131-2 Type 1		
3 ms		
0.5 A, 2 A		
max. 100 Hz / max. 1 Hz / max. 8 Hz		
Yes, cut-off for short circuit and error message		
0 V DC		
Supply voltage less 0.7 V DC		
7 A		
DeviceNet		
Max. 500 kBit/s (automatic detection)		
Via rotary coding switch (0 – 63)		
EDS file (Device-specific for each module)		
210 mm / 54 mm / 32 mm		
< 400 g		
IP 67		
0 °C...+60 °C		
-25 °C...+85 °C		
Pocan, PBT / V-0		
CE, cULus (planned for 4Q/2010)		

Note

DeviceNet™

Remote I/O for digital and
analogue signal processing



SAI-AU



Ordering data

Module variants
4 Analogue In / 2 Analogue Out / 4 Digital In
Note

Type	Qty.	Order No.
SAI-AU M12 DN AI/AO/DI	1	1906720000

Technical data

Connections
Fieldbus (BUS-IN)
Fieldbus (BUS-OUT)
Supply voltage (AUX-IN)
Supply voltage (AUX-OUT)
I/O connections
Voltage supply
Operating voltage
Contact load
Max. total current module
Digital inputs
Permitted input voltage
Input voltage, low
Input voltage, high
Input current, low
Input current, high
Input filter
Analogue inputs
Measurement range
Maximum input voltage in relation to GND
Input resistance (load)
Max. input current (differential)
Short-circuit-proof
Resolution / Accuracy
Analogue outputs
Measurement range
Output interval
Short-circuit-proof
Resolution / Accuracy
Fieldbus
Bus system
Transmission rate
Addressing
System integration
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

1x M12 plug 5-pole, A-coded
1x M12 female 5-pole, A-coded
1x M12 plug 5-pole, A-coded
1x M12 female 5-pole, A-coded
8 x M12 female 5-pole, A-coded
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
8 A
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Typ 1
2 mA to 15 mA in accordance with EN 61131-2 Typ 1
3 ms
-10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA
35 V
<125 Ohm
-50 mA to +50 mA (protected against polarity reversal)
Yes
12-bit / < 0.2 %
-10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA
5 ms to 250 ms (can be configured)
Yes
12-bit / < 0.2 %
DeviceNet
Max. 500 kBit/s (automatic detection)
Via rotary coding switch (0 – 63)
EDS file (Device-specific for each module)
210 mm / 54 mm / 32 mm
< 400 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus (planned for 4Q/2010)

Note

Note

Engineering tables for DeviceNet™



When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

DeviceNet™ modules



DeviceNet™ accessories



Sensor/actuator accessories



Markers



Protective caps



Ordering data

Description	Type	Qty.	Order No.
DeviceNet™ modules			
16 Digital In	SAI-AU M12 DN 16DI	1	1906700000
16 Digital In / 8 Digital Out	SAI-AU M12 DN 16DI/8DO	1	1906710000
4 Analogue In / 2 Analogue Out / 4 Digital In	SAI-AU M12 DN AI/AO/DI	1	1906720000
16 Digital In	SAI-AU M8 DN 16DI	1	1906730000
16 Digital In / 8 Digital Out	SAI-AU M8 DN 16DI/8DO	1	1906740000
DeviceNet™ accessories			
DeviceNet™ cables with female plug and male plug			Chapter C
DeviceNet™ cables with female plug and other side open			Chapter C
DeviceNet™ cables with male plug and other side open			Chapter C
DeviceNet™ plug-in connector			Chapter C
DeviceNet™ terminating resistor	SAIEND CAN-M12 5P A-COD	1	1784760000
Sensor/actuator accessories			
Sensor-actuator cables			Chapter B
Sensor-actuator plugs			Chapter D
Markers			
Semi-transparent markers for PrintJet printing	ESG 8/13.5/43.3 SAI AU	5	1912130000
Protective caps			
M8 Dust cap (Sensor connections)	SAI-SK M8	50	1802760000
M12 Dust cap (Sensor connections)	SAI-SK	30	9456050000
M12 Dust cap (Bus-in and power-in)	SAI-SK-M12-UNI	20	2330260000
M12 Dust cap (Bus-in and power-in)	SAI-SK plug M12	50	1781520000

SAI Active Universal - EtherNet/IP™

EtherNet/IP™
Remote I/O for digital
signal processing



Ordering data

Module variants
16 Digital In; 16 Digital In / 8 Digital Out
16 Digital In; 16 Digital In / 8 Digital Out
Note

Technical data

Connections
Fieldbus (BUS-IN)
Supply voltage (AUX-IN)
Supply voltage (AUX-OUT)
I/O connections
Voltage supply
Operating voltage
Contact load
Max. total current module
Digital inputs
Permitted input voltage
Input voltage, low
Input voltage, high
Input current, low
Input current, high
Input filter
Digital outputs
max. current-carrying capacity per output signal
Switching frequency load (resistive / inductive / inrush)
Short-circuit-proof
Output voltage, low
Output voltage, high
Max. total current outputs
Fieldbus
Bus system
Transmission rate
Addressing
System integration
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

SAI-AU



Type	Qty.	Order No.
SAI-AU M8 EIP 16DI	1	1906930000
SAI-AU M12 EIP 16DI	1	1906900000

1x M12 female 4-pole, D-coded
1x M12 plug 5-pole, A-coded
1x M12 female 5-pole, A-coded
16x M8 female 3-pole
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
8 A
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
3 ms
EtherNet/IP
10/100 Mbit/s
DHCP, BOOTP, Static
EDS file, Web server
210 mm / 54 mm / 32 mm
< 400 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus (planned for 4Q/2010)

SAI-AU



Type	Qty.	Order No.
SAI-AU M8 EIP 16DI/8DO	1	1906940000
SAI-AU M12 EIP 16DI/8DO	1	1906910000

1x M12 female 4-pole, D-coded
2x M12 plug 5-pole, A-coded
16x M8 female 3-pole
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
8 A
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
3 ms
0.5 A, 2 A
max. 100 Hz / max. 1 Hz / max. 8 Hz
Yes, cut-off for short circuit and error message
0 V DC
Supply voltage less 0.7 V DC
7 A
EtherNet/IP
10/100 Mbit/s
DHCP, BOOTP, Static
EDS file, Web server
210 mm / 54 mm / 32 mm
< 400 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus (planned for 4Q/2010)

Note

EtherNet/IP™

Remote I/O for digital and
analogue signal processing



SAI-AU



Ordering data

Module variants
4 Analogue In / 2 Analogue Out / 4 Digital In
Note

Type	Qty.	Order No.
SAI-AU M12 EIP AI/AO/DI	1	1906920000

Technical data

Connections
Fieldbus (BUS-IN)
Supply voltage (AUX-IN)
Supply voltage (AUX-OUT)
I/O connections
Voltage supply
Operating voltage
Contact load
Max. total current module
Digital inputs
Permitted input voltage
Input voltage, low
Input voltage, high
Input current, low
Input current, high
Input filter
Analogue inputs
Measurement range
Maximum input voltage in relation to GND
Input resistance (load)
Max. input current (differential)
Short-circuit-proof
Resolution / Accuracy
Analogue outputs
Measurement range
Output interval
Short-circuit-proof
Resolution / Accuracy
Fieldbus
Bus system
Transmission rate
Addressing
System integration
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

1x M12 female 4-pole, D-coded
1x M12 plug 5-pole, A-coded
1x M12 female 5-pole, A-coded
8 x M12 female 5-pole, A-coded
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
8 A
-30 V to +30 V (protected against polarity reversal)
< 15 mA in accordance with EN 61131-2 Type 1
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
3 ms
-10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA
35 V
<125 Ohm
-50 mA to +50 mA (protected against polarity reversal)
Yes
12-bit / < 0.2 %
-10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA
5 ms to 250 ms (can be configured)
Yes
12-bit / < 0.2 %
EtherNet/IP
10/100 Mbit/s
DHCP, BOOTP, Static
EDS file, Web server
210 mm / 54 mm / 32 mm
< 400 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus (planned for 4Q/2010)

Note

Note

Engineering tables for EtherNet/IP™



When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

EtherNet/IP™ modules



EtherNet/IP™ accessories



Sensor/actuator accessories



Markers



Protective caps



Ordering data

Description	Type	Qty.	Order No.
EtherNet/IP™ modules			
16 Digital In	SAI-AU M12 EIP 16DI	1	1906900000
16 Digital In / 8 Digital Out	SAI-AU M12 EIP 16DI/8DO	1	1906910000
4 Analogue In / 2 Analogue Out / 4 Digital In	SAI-AU M12 EIP AI/AO/DI	1	1906920000
16 Digital In	SAI-AU M8 EIP 16DI	1	1906930000
16 Digital In / 8 Digital Out	SAI-AU M8 EIP 16DI/8DO	1	1906940000
EtherNet/IP™ accessories			
EtherNet/IP™ cables and plugs (refer to Catalogue 9/Chapter C)			
Sensor/actuator accessories			
Sensor-actuator cables			Chapter B
Markers			
Semi-transparent markers for PrintJet printing	ESG 8/13.5/43.3 SAI AU	5	1912130000
Protective caps			
M8 Dust cap (Sensor connections)	SAI-SK M8	50	1802760000
M12 Dust cap (Sensor connections)	SAI-SK	30	9456050000
M12 Dust cap (Bus-in and power-in)	SAI-SK-M12-UNI	20	2330260000
M12 Dust cap (Bus-in and power-in)	SAI-SK plug M12	50	1781520000

SAI Active Universal - Modbus TCP

Modbus TCP
Remote I/O for digital
signal processing



Ordering data

Module variants
16 Digital In; 16 Digital In / 8 Digital Out
16 Digital In; 16 Digital In / 8 Digital Out
Note

Technical data

Connections
Fieldbus (BUS-IN)
Supply voltage (AUX-IN)
Supply voltage (AUX-OUT)
I/O connections
Voltage supply
Operating voltage
Contact load
Max. total current module
Digital inputs
Permitted input voltage
Input voltage, low
Input voltage, high
Input current, low
Input current, high
Input filter
Digital outputs
max. current-carrying capacity per output signal
Switching frequency load (resistive / inductive / inrush)
Short-circuit-proof
Output voltage, low
Output voltage, high
Max. total current outputs
Fieldbus
Bus system
Transmission rate
Addressing
System integration
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

SAI-AU



Type	Qty.	Order No.
SAI-AU M8 IE 16DI	1	1906880000
SAI-AU M12 IE 16DI	1	1906850000

1x M12 female 4-pole, D-coded
1x M12 plug 5-pole, A-coded
1x M12 female 5-pole, A-coded
16x M8 female 3-pole
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
8 A
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
3 ms
Modbus TCP
10/100 Mbit/s
DHCP, BOOTP, Static
Register, Webserver
210 mm / 54 mm / 32 mm
< 400 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus (planned for 4Q/2010)

SAI-AU



Type	Qty.	Order No.
SAI-AU M8 IE 16DI/8DO	1	1906890000
SAI-AU M12 IE 16DI/8DO	1	1906860000

1x M12 female 4-pole, D-coded
2x M12 plug 5-pole, A-coded
16x M8 female 3-pole
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
8 A
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
3 ms
0.5 A, 2 A
max. 100 Hz / max. 1 Hz / max. 8 Hz
Yes, cut-off for short circuit and error message
0 V DC
Supply voltage less 0.7 V DC
7 A
Modbus TCP
10/100 Mbit/s
DHCP, BOOTP, Static
Register, Webserver
210 mm / 54 mm / 32 mm
< 400 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus (planned for 4Q/2010)

Note

Modbus TCP
Remote I/O for digital and
analogue signal processing



SAI-AU



Ordering data

Module variants
4 Analogue In / 2 Analogue Out / 4 Digital In
Note

Type	Qty.	Order No.
SAI-AU M12 IE AI/AO/DI	1	1906870000

Technical data

Connections
Fieldbus (BUS-IN)
Supply voltage (AUX-IN)
Supply voltage (AUX-OUT)
I/O connections
Voltage supply
Operating voltage
Contact load
Max. total current module
Digital inputs
Permitted input voltage
Input voltage, low
Input voltage, high
Input current, low
Input current, high
Input filter
Analogue inputs
Measurement range
Maximum input voltage in relation to GND
Input resistance (load)
Max. input current (differential)
Short-circuit-proof
Resolution / Accuracy
Analogue outputs
Measurement range
Output interval
Short-circuit-proof
Resolution / Accuracy
Fieldbus
Bus system
Transmission rate
Addressing
System integration
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

1x M12 female 4-pole, D-coded
1x M12 plug 5-pole, A-coded
1x M12 female 5-pole, A-coded
8 x M12 female 5-pole, A-coded
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
8 A
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
3 ms
-10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA
35 V
<125 Ohm
-50 mA to +50 mA (protected against polarity reversal)
Yes
12-bit / < 0.2 %
-10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA
5 ms to 250 ms (can be configured)
Yes
12-bit / < 0.2 %
Modbus TCP
10/100 Mbit/s
DHCP, BOOTP, Static
Register, Webserver
210 mm / 54 mm / 32 mm
< 400 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus (planned for 4Q/2010)

Note

Note

Engineering tables for Modbus TCP

When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

Modbus TCP modules



Modbus TCP accessories



Sensor/actuator accessories



Markers



Protective caps



Ordering data

Description	Type	Qty.	Order No.
Modbus TCP modules			
16 Digital In	SAI-AU M12 IE 16DI	1	1906850000
16 Digital In / 8 Digital Out	SAI-AU M12 IE 16DI/8DO	1	1906860000
4 Analogue In / 2 Analogue Out / 4 Digital In	SAI-AU M12 IE AI/AO/DI	1	1906870000
16 Digital In	SAI-AU M8 IE 16DI	1	1906880000
16 Digital In / 8 Digital Out	SAI-AU M8 IE 16DI/8DO	1	1906890000
Modbus TCP accessories			
Modbus TCP cables and plugs (refer to Catalogue 9)			Chapter C
Sensor/actuator accessories			
Sensor-actuator cables			Chapter B
Sensor/actuator plugs			
Sensor-actuator plugs			Chapter D
Markers			
Semi-transparent markers for PrintJet printing	ESG 8/13.5/43.3 SAI AU	5	1912130000
Protective caps			
M8 Dust cap (Sensor connections)	SAI-SK M8	50	1802760000
M12 Dust cap (Sensor connections)	SAI-SK	30	9456050000
M12 Dust cap (Bus-in and power-in)	SAI-SK-M12-UNI	20	2330260000
M12 Dust cap (Bus-in and power-in)	SAI-SK plug M12	50	1781520000

SAI Active Universal Pro

Professional versions of the Remote I/O System featuring IP67 protection

The modules in the SAI Active Universal Pro systems provide additional I/O and functional modules for more versatile topologies. The extension modules come in a compact, space saving design. They can also be mounted on the side because of the additional drilled holes in the side of the housing. Up to 15 extension modules can be connected over a distance of 50 metres using a shielded, standard M8 sensor cable and the SAI fieldbus module.

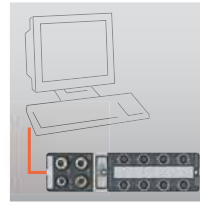
In addition to the digital input and output modules, we also offer counter unit modules, thermal modules, RTD modules and analogue modules. The digital input and output modules are also available in M8 and M12 variants. The analogue modules and functional modules are available with M12 connections. Markers are included with every SAI Active module for labelling the I/O channels and the entire device. These markers can be printed on using the PrintJet system from Weidmüller.





Cost-effective Subbus system

Subbus modules are wired up using conventional, shielded, standard M8 sensor cables. Thus there is no need for expensive custom cables. The extension modules enable versatile expansion and minimise the costs associated with the fieldbus interface. The modules do not, however, detract from the performance of the fieldbus system.



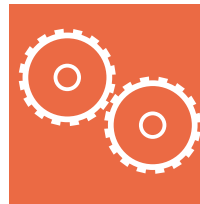
Integration with an industrial PC

Weidmüller offers an SAI Active Universal Pro module with USB and RS232 interfaces especially for controllers or industrial PCs without any Fieldbus connection. A driver is used to set up the connection; communication is based on the standard Modbus ASCII format. All available extension modules can be used on these components and can be accessed via the controller.



Simplified installation

The modules have a compact, space saving design with additional holes drilled on the side of the housing: this allows them to be installed in a quick and versatile manner. All SAI Active modules with digital inputs or digital outputs are optionally available with standard M8 or M12 connection systems. The outputs are short-circuit-proof and protected against polarity reversal.



Efficient engineering

All Pro-System modules are described in the standardised fieldbus specific device description files. They can be integrated into any controller unit and corresponding engineering system regardless of the particular manufacturer. The configuration (whether for the input, DESINA input, or output) is carried out without any additional software. Any user can configure directly from the engineering system.

SAI-Active Universal Pro

Gateway modules with digital inputs



SAI-AU GW



SAI-AU GW



Ordering data

Module variants
16 Digital In
Note

Technical data

Connections
Fieldbus (BUS-IN)
Fieldbus (BUS-OUT)
Supply voltage (AUX-IN)
Connection to Subbus (SUB-OUT)
I/O connections
Voltage supply
Operating voltage
Contact load
Max. total current module
Digital inputs
Permitted input voltage
Input voltage, low
Input voltage, high
Input current, low
Input current, high
Input filter
Fieldbus
Bus system
Transmission rate
Addressing
System integration
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

Type	Qty.	Order No.
SAI-AU M12 PB GW 16DI	1	1938550000

1x M12 plug 5-pole, B-coded
1x M12 female 5-pole, B-coded
1x M12 plug 5-pole, A-coded
1 x M8 female 4-pole, A-coded
8 x M12 female 5-pole, A-coded
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
8 A
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
1 ms, 3 ms, 5 ms, 10 ms, Configurable
Profibus-DP
Max. 12 Mbit/s (automatic detection)
Via rotary coding switch (1 – 126)
GSD file
210 mm / 54 mm / 32 mm
< 350 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus

Type	Qty.	Order No.
SAI-AU M8 PB GW 16DI	1	1024310000

1x M12 plug 5-pole, B-coded
1x M12 female 5-pole, B-coded
1x M12 plug 5-pole, A-coded
1 x M8 female 4-pole, A-coded
16x M8 female 3-pole
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
8 A
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
1 ms, 3 ms, 5 ms, 10 ms, Configurable
Profibus-DP
Max. 12 Mbit/s (automatic detection)
Via rotary coding switch (1 – 126)
GSD file
210 mm / 54 mm / 32 mm
< 350 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus

Note

Engineering tables for PROFIBUS



When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

PROFIBUS modules



PROFIBUS accessories



Subbus cables / Terminating resistor



Sensor/actuator accessories



Markers



Protective caps

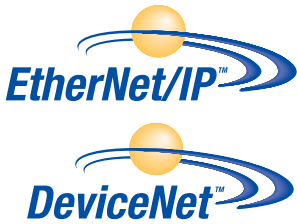


Ordering data

Description	Type	Qty.	Order No.
PROFIBUS modules			
PROFIBUS Gateway M12	SAI-AU M12 PB GW 16DI	1	1938550000
PROFIBUS Gateway M8	SAI-AU M8 PB GW 16DI	1	1024310000
Subbus module	SAI-AU M12 SB 8DI	1	1938610000
Subbus module	SAI-AU M12 SB 8DI/8DO	1	1938640000
Subbus module	SAI-AU M8 SB 8DI	1	1938600000
Subbus module	SAI-AU M8 SB 8DI/8DO	1	1938630000
Subbus module	SAI-AU M12 SB AI	1	1938690000
Subbus module	SAI-AU M12 SB AO	1	1938700000
Subbus module	SAI-AU M12 SB PT100	1	1938710000
Subbus module	SAI-AU M12 SB Thermo	1	1938720000
Subbus module	SAI-AU M12 SB Zähler	1	1938730000
Subbus module	SAI-AU M8 SB 8DO 2A	1	1938660000
Subbus module	SAI-AU M12 SB 8DO 2A	1	1938680000
PROFIBUS accessories			
PROFIBUS cables with female plug and male plug			Chapter C
PROFIBUS cables with female plug and other side open			Chapter C
PROFIBUS cables with male plug and other side open			Chapter C
PROFIBUS plug-in connector			Chapter C
PROFIBUS terminating resistor	SAIEND PB M12 5P B-COD	1	1784770000
Subbus cables / Terminating resistor			
Subbus cables			Chapter C
Subbus terminating resistor	SAIEND CAN M8 4P	1	1955340000
Sensor/actuator accessories			
Sensor-actuator cables			Chapter B
Sensor-actuator plugs			Chapter D
Markers			
Semi-transparent markers for PrintJet printing	ESG 8/13.5/43.3 SAI AU	5	1912130000
Protective caps			
M8 Dust cap (Sensor connections)	SAI-SK M8	50	1802760000
M12 Dust cap (Sensor connections)	SAI-SK	30	9456050000
M12 Dust cap (Bus-in and power-in)	SAI-SK-M12-UNI	20	2330260000
M12 Dust cap (Bus-in and power-in)	SAI-SK plug M12	50	1781520000

SAI-Active Universal Pro

Gateway modules with digital inputs



Ordering data

Module variants
16 Digital In
Note

Technical data

Connections
Fieldbus (BUS-IN)
Fieldbus (BUS-OUT)
Supply voltage (AUX-IN)
Connection to Subbus (SUB-OUT)
I/O connections
Voltage supply
Operating voltage
Contact load
Max. total current module
Digital inputs
Permitted input voltage
Input voltage, low
Input voltage, high
Input current, low
Input current, high
Input filter
Fieldbus
Bus system
Transmission rate
Addressing
System integration
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

SAI-AU GW



Type	Qty.	Order No.
SAI-AU M12 EIP GW 16DI	1	1019490000

1x M12 female 4-pole, D-coded
1x M12 plug 5-pole, A-coded
1 x M8 female 4-pole, A-coded
8 x M12 female 5-pole, A-coded
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
8 A
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
1 ms, 3 ms, 5 ms, 10 ms, Configurable
EtherNet/IP
10/100 Mbit/s
DHCP, BOOTP, Static
EDS file, Web server
210 mm / 54 mm / 32 mm
< 350 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus (planned for 4Q/2010)

SAI-AU GW



Type	Qty.	Order No.
SAI-AU M12 DN GW 16DI	1	1938570000

1x M12 plug 5-pole, A-coded
1x M12 female 5-pole, A-coded
1x M12 plug 5-pole, A-coded
1 x M8 female 4-pole, A-coded
8 x M12 female 5-pole, A-coded
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
8 A
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
1 ms, 3 ms, 5 ms, 10 ms, Configurable
DeviceNet
Max. 500 kBit/s (automatic detection)
Via rotary coding switch (0 – 63)
EDS file
210 mm / 54 mm / 32 mm
< 350 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus (planned for 4Q/2010)

Note

Engineering tables for DeviceNet™ and EtherNet/IP™



When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

DeviceNet™ and EtherNet/IP™ modules



DeviceNet™ und EtherNet/IP™ accessories



Subbus cables / Terminating resistor



Sensor/actuator accessories



Markers



Protective caps



Ordering data

Description	Type	Qty.	Order No.
DeviceNet™ and EthernetIP™ modules			
DeviceNet™ Gateway	SAI-AU M12 DN GW 16DI	1	1938570000
EtherNet/IP™ Gateway	SAI-AU M12 EIP GW 16DI	1	1019490000
Subbus module	SAI-AU M12 SB 8DI	1	1938610000
Subbus module	SAI-AU M12 SB 8DI/8DO	1	1938640000
Subbus module	SAI-AU M8 SB 8DI	1	1938600000
Subbus module	SAI-AU M8 SB 8DI/8DO	1	1938630000
Subbus module	SAI-AU M12 SB AI	1	1938690000
Subbus module	SAI-AU M12 SB AO	1	1938700000
Subbus module	SAI-AU M12 SB PT100	1	1938710000
Subbus module	SAI-AU M12 SB Thermo	1	1938720000
Subbus module	SAI-AU M12 SB Zähler	1	1938730000
Subbus module	SAI-AU M8 SB 8DO 2A	1	1938660000
Subbus module	SAI-AU M12 SB 8DO 2A	1	1938680000
DeviceNet™ and EthernetIP™ accessories			
DeviceNet™ cables with female plug and male plug			Chapter C
DeviceNet™ cables with female plug and other side open			Chapter C
DeviceNet™ cables with male plug and other side open			Chapter C
DeviceNet™ plug-in connector			Chapter C
DeviceNet™ terminating resistor	SAIEND CAN-M12 5P A-COD	1	1784760000
EtherNet/IP™ cables and plugs (refer to Catalogue 9/Chapter C)			
Subbus cables / Terminating resistor			
Subbus cables			Chapter C
Subbus terminating resistor	SAIEND CAN M8 4P	1	1955340000
Sensor/actuator accessories			
Sensor-actuator cables			Chapter B
Sensor-actuator plugs			Chapter D
Markers			
Semi-transparent markers for PrintJet printing	ESG 8/13.5/43.3 SAI AU	5	1912130000
Protective caps			
M8 Dust cap (Sensor connections)	SAI-SK M8	50	1802760000
M12 Dust cap (Sensor connections)	SAI-SK	30	9456050000
M12 Dust cap (Bus-in and power-in)	SAI-SK-M12-UNI	20	2330260000
M12 Dust cap (Bus-in and power-in)	SAI-SK plug M12	50	1781520000

SAI-Active Universal Pro

Gateway modules with digital
inputs/outputs



Ordering data

Module variants
16 Digital In; 8 Digital In / 8 Digital Out
Note

Technical data

Connections
Fieldbus (BUS-IN)
Fieldbus (BUS-OUT)
Supply voltage (AUX-IN)
Connection to Subbus (SUB-OUT)
I/O connections
Voltage supply
Operating voltage
Contact load
Max. total current module
Digital inputs
Permitted input voltage
Input voltage, low
Input voltage, high
Input current, low
Input current, high
Input filter
Digital outputs
max. current-carrying capacity per output signal
Switching frequency load (resistive / inductive / inrush)
Short-circuit-proof
Output voltage, low
Output voltage, high
Max. total current outputs
Fieldbus
Bus system
Transmission rate
Addressing
System integration
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

SAI-AU GW



Type	Qty.	Order No.
SAI-AU M12 IE GW 16DI	1	1938580000

1x M12 female 4-pole, D-coded
1x M12 plug 5-pole, A-coded
1 x M8 female 4-pole, A-coded
8 x M12 female 5-pole, A-coded
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
8 A
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
1 ms, 3 ms, 5 ms, 10 ms, Configurable
Modbus TCP
10/100 Mbit/s
DHCP, BOOTP, Static
Register, Webserver
210 mm / 54 mm / 32 mm
< 350 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, cULus (planned for 4Q/2010)

SAI-AU GW



Type	Qty.	Order No.
SAI-AU M12 USB GW 8I8O	1	1962240000

1x M12 plug 5-pole, B-coded (BUS-USB)
1x M12 female 5-pole, B-coded (BUS-RS232)
1x M12 plug 5-pole, A-coded
1 x M8 female 4-pole, A-coded
8 x M12 female 5-pole, A-coded
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
8 A
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
1 ms, 3 ms, 5 ms, 10 ms, Configurable
0.5 A
max. 100 Hz / max. 1 Hz / max. 8 Hz
Yes, cut-off for short circuit and error message
0 V DC
Supply voltage less 0.7 V DC
4 A
Modbus ASCII (RS 232 / USB)
115.2 kBit/s
Static
Register
210 mm / 54 mm / 32 mm
< 350 g
IP 67
0 °C...+60 °C
-20 °C...
Pocan, PBT / V-0
CE, cULus (planned for 4Q/2010)

Note

Engineering tables for Modbus TCP and USB



When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

Modbus TCP and USB modules



Modbus TCP and USB accessories



Subbus cables / Terminating resistor



Sensor/actuator accessories



Markers



Protective caps



Ordering data

Description	Type	Qty.	Order No.
Modbus TCP and USB modules			
USB Gateway	SAI-AU M12 USB GW 8I8O	1	1962240000
Modbus TCP Gateway	SAI-AU M12 IE GW 16DI	1	1938580000
Subbus module	SAI-AU M12 SB 8DI	1	1938610000
Subbus module	SAI-AU M12 SB 8DI/8DO	1	1938640000
Subbus module	SAI-AU M8 SB 8DI	1	1938600000
Subbus module	SAI-AU M8 SB 8DI/8DO	1	1938630000
Subbus module	SAI-AU M12 SB AI	1	1938690000
Subbus module	SAI-AU M12 SB AO	1	1938700000
Subbus module	SAI-AU M12 SB PT100	1	1938710000
Subbus module	SAI-AU M12 SB Thermo	1	1938720000
Subbus module	SAI-AU M12 SB Zähler	1	1938730000
Subbus module	SAI-AU M8 SB 8DO 2A	1	1938660000
Subbus module	SAI-AU M12 SB 8DO 2A	1	1938680000
Modbus TCP and USB accessories			
USB module plug-in connector			Chapter C
Modbus TCP cables and plugs (refer to Catalogue 9/Chapter C)			
Subbus cables / Terminating resistor			
Subbus cables			Chapter C
Subbus terminating resistor	SAIEND CAN M8 4P	1	1955340000
Sensor/actuator accessories			
Sensor-actuator cables			Chapter B
Sensor-actuator plugs			Chapter D
Markers			
Semi-transparent markers for PrintJet printing	ESG 8/13.5/43.3 SAI AU	5	1912130000
Protective caps			
M8 Dust cap (Sensor connections)	SAI-SK M8	50	1802760000
M12 Dust cap (Sensor connections)	SAI-SK	30	9456050000
M12 Dust cap (Bus-in and power-in)	SAI-SK-M12-UNI	20	2330260000
M12 Dust cap (Bus-in and power-in)	SAI-SK plug M12	50	1781520000

Subbus modules with analogue input/ outputs

SAI-AU Analog

SAI-AU Analog



Ordering data

Module variants
4 Analogue Out / 4 Analogue In
Note

Type	Qty.	Order No.
SAI-AU M12 SB 4AO	1	1938700000

Type	Qty.	Order No.
SAI-AU M12 SB 4AI	1	1938690000

Technical data

Connections
Connection to Subbus (SUB-IN)
Connection to Subbus (SUB-OUT)
I/O connections
Voltage supply
Operating voltage
Analogue inputs
Measurement range
Maximum input voltage in relation to GND
Input resistance (load)
Max. input current (differential)
Short-circuit-proof
Resolution / Accuracy
Analogue outputs
Measurement range
Output interval
Short-circuit-proof
Resolution / Accuracy
Fieldbus
Bus system
Addressing
System integration
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

1 x M8 plug 4-pole, A-coded
1 x M8 female 4-pole, A-coded
4 x M12 female, 5-pole A-coded
24 V (18 V DC ... 30 V DC)
-10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA
5 ms to 250 ms (can be configured)
Yes
12-bit / < 0.2 %
Subbus
automatic
automatic
155 mm / 30 mm / 32 mm
< 200 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / 5VA
CE, cULus

1 x M8 plug 4-pole, A-coded
1 x M8 female 4-pole, A-coded
4 x M12 female, 5-pole A-coded
24 V (18 V DC ... 30 V DC)
-10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA
35
<125 Ohm
-50 mA to +50 mA (protected against polarity reversal)
Yes
12-bit / < 0.2 %
Subbus
automatic
automatic
155 mm / 30 mm / 32 mm
< 200 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / 5VA
CE, cULus

Note

Note

Note

SAI Active Universal Pro

Subbus modules with
functional inputs

SAI-AU Counter



Ordering data

Module variants
2 counter inputs / 2 gate outputs
Note

Type	Qty.	Order No.
SAI-AU M12 SB 2Counter	1	1938730000

Technical data

Connections
Supply voltage (AUX-IN)
Connection to Subbus (SUB-IN)
Connection to Subbus (SUB-OUT)
I/O connections
Voltage supply
Operating voltage
Contact load
Max. total current module
Functional inputs
Counting breadth
Switching frequency
No. Inputs
Fieldbus
Bus system
Addressing
System integration
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

1x M12 plug 5-pole, A-coded
1 x M8 plug 4-pole, A-coded
1 x M8 female 4-pole, A-coded
4 x M12 female, 5-pole A-coded
24 V (18 V DC ... 30 V DC)
Per PIN max. 4 A
8 A
32 Bit
100
2 x enables, 2 x counters, 2 x count directions
Subbus
automatic
automatic
180 mm / 30 mm / 32 mm
< 200 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / 5VA
CE, cULus

Note

Subbus modules with functional inputs

SAI-AU Thermo



Ordering data

Module variants
4 Thermo inputs
Note

Type	Qty.	Order No.
SAI-AU M12 SB 4Thermo	1	1938720000

Technical data

Connections
Connection to Subbus (SUB-IN)
Connection to Subbus (SUB-OUT)
I/O connections
Voltage supply
Operating voltage
Functional inputs
Sensor
Temperature range
Resolution
Conversion time
Measurement error
Input filter
cold junction compensation
Fieldbus
Bus system
Addressing
System integration
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

1 x M8 plug 4-pole, A-coded
1 x M8 female 4-pole, A-coded
4 x M12 female, 5-pole A-coded
24 V (18 V DC ... 30 V DC)
Type J, K, L, B, E, N, R, S, T, U, mV measurement
Typical for sensor, Preset Type K, -100 °C to 1370 °C
0.1 °C per digit
250 ms (can be configured to 70 ms)
< ± 0.5% (of measuring range limit)
Configurable
External PT1000 connection on pins 1 and 3 (GND)
Subbus
automatic
automatic
155 mm / 30 mm32 mm
< 200 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / 5VA
CE, cULus

Note

Note

SAI Active Universal Pro

Subbus modules with
functional inputs

SAI-AU PT100



Ordering data

Module variants
4 PT100 inputs
Note

Type	Qty.	Order No.
SAI-AU M12 SB 4PT100	1	1938710000

Technical data

Connections
Connection to Subbus (SUB-IN)
Connection to Subbus (SUB-OUT)
I/O connections
Voltage supply
Operating voltage
Functional inputs
Sensor
Resolution
Conversion time
Measurement error
Input filter
Measurement range for PT sensors
Measurement range for Ni sensors
Resistance measurement
Potentiometer
Measurement current
Fieldbus
Bus system
Addressing
System integration
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

1 x M8 plug 4-pole, A-coded
1 x M8 female 4-pole, A-coded
4 x M12 female, 5-pole A-coded
24 V (18 V DC ... 30 V DC)
N100, N1000, N120, PT100, PT1000, PT200, PT300, PT500, *UNDEFINED TEXT*, Widerstandsmessung
0.1 °C per digit
250 ms (can be configured to 65 ms)
< ± 1 °C
Configurable
-200 °C ... + 850 °C
-60 °C ... +250 °C
max. 4000 Ohm
100 bis 4000 Ω (Three-conductor)
Typically 0.5 mA
Subbus
automatic
automatic
155 mm / 30 mm / 32 mm
< 200 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / 5VA
CE, cULus

Note

SAI Active Universal Wireless

Wireless versions of the Remote I/O System with IP67 protection

Weidmüller offers a remote wireless solution – the SAI Active Universal Wireless series – for providing radio based communication to movable facility units. The remote modules form a safe, wireless I/O communications network and thus completely replace drag lines containing bus cables or interference-prone slip-ring assemblies. Maintenance and servicing is reduced because no communication cables are needed. Potential sources of error, such as broken shielding in the communication cables, are eliminated all together. Thus the user benefits from a long-term cost savings. He requires neither new cables nor installation material for the new communication system. For the engineering system, the change to a wireless system is transparent; it behaves in an identical manner as the cable bound SAI Active Universal Pro System. No complex programming using proprietary software is required. Safe and reliable operations are ensured by the comprehensive diagnostics options on the module and through the higher-level controller.

All wireless modules feature integrated radio-wave antennae and IP67 protection. They may be used directly in surroundings containing hazardous substances or humidity. The wireless modules bring together the required inputs and outputs in a very compact size. This ensures that the robot arms are not weighted down with bulky modules, additional components or external antennae. The wireless fieldbus module is a master module responsible for establishing communication with the higher-level controller unit and with the wireless I/O (slave) modules. Various slave modules with digital and analogue inputs and outputs are available and enable exact adjustments to the requirements of a given application. The wireless connection between the modules is established automatically and remains invisible to other wireless devices. This ensures that there will be no interference on the connection. The output power and, thus, the range, can be set individually on the module.





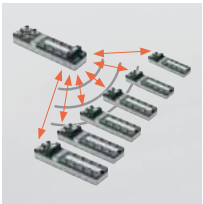
Can be used instead of bus cables in drag line or slip chains

In non stationary applications, a wireless connection can be used instead of the error prone drag-line based bus cable or slip chain transmission. This helps to minimise facility downtimes and reduce costs for maintenance, installation and materials. The SAI wireless system has a similar handling method compared to cable bound systems so installation is simple and safe.

Bluetooth
WLAN
ZigBee

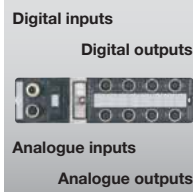
Coexistence with other wireless systems

The wireless modules transmit in the license free ISM frequency band. This allows them to be used throughout the world. Integrated wireless mechanisms ensure that the modules can be operated at the same time as other wireless systems from other vendors. This ensures communication with no interference and also allows the system to coexist alongside other wireless systems (such as WLAN, ZigBee or Bluetooth).



A maximum of 186 modules can be used simultaneously.

The SAI Active Universal Wireless System allows 31 wireless fieldbus modules to be operated simultaneously with six remote I/O modules each. This makes it possible to design an automation solution that can process up to 3348 digital signals. Standardised device description files are provided so that the modules can be integrated into other systems not manufactured by Weidmüller. No special proprietary software is required.



A wide variety of variants

The SAI Active Universal Wireless product line includes the wireless fieldbus module with its 12 integrated digital input channels. This product line also features additional wireless I/O modules with up to 16 digital inputs than can be optionally configured by the user as outputs. A mixed module with both digital and analogue inputs and outputs is also available. The outputs can be supplied with power separate from the input channels.

SAI-Active Universal Wireless

Wireless gateway with digital inputs



Wireless-Gateway



Ordering data

Module variants
12 Digital In
Note

Technical data

Connections
Fieldbus (BUS-IN)
Fieldbus (BUS-OUT)
Supply voltage (AUX-IN)
Supply voltage (AUX-OUT)
I/O connections
Voltage supply
Operating voltage
Contact load
Digital inputs
Permitted input voltage
Input voltage, low
Input voltage, high
Input current, low
Input current, high
Input filter
Fieldbus
Bus system
System integration
Range of coverage
Addressing
Communication coexistence
Properties of radio system
Frequency band / Channel usage
Transmit power
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

Type	Qty.	Order No.
SAI-AU M12 GW PB/BT 12I	1	1006980000
1x M12 plug 5-pole, B-coded		
1x M12 female 5-pole, B-coded		
1x M12 plug 5-pole, A-coded		
1x M12 female 5-pole, A-coded		
6x M12 female 5-pole		
24 V DC (18 V DC ... 30 V DC)		
Per PIN max. 4 A		
-30 V to +30 V (protected against polarity reversal)		
<5 V in accordance with EN 61131-2 Typ 1		
>15 V in accordance with EN 61131-2 Typ 1		
< 15 mA in accordance with EN 61131-2 Type 1		
2 mA to 15 mA in accordance with EN 61131-2 Type 1		
1 ms, 3 ms, 5 ms, 10 ms, Configurable		
Profibus-DP		
GSD file / WIAU0A75.GSD		
In accordance with the PROFIBUS specification		
Via rotary coding switch (1 – 126)		
Max. 31 wireless gateways		
2.401 GHz – 2.480 GHz / 1 to 79 channels (can be configured)		
0 dBm to 20 dBm / max 100 mW (can be configured)		
210 mm / 54 mm / 52 mm		
< 400 g		
IP 67		
0 °C...+60 °C		
-25 °C...+85 °C		
PBT, Pocan / V-0		
CE, cULus (planned for 4Q/2010)		

Note

Engineering tables for PROFIBUS



When planning the automation of a facility, you must have a wide variety of components available. These engineering tables list all the components required for wiring up the SAI Active modules.

PROFIBUS modules



PROFIBUS accessories



Sensor/actuator accessories



Markers



Protective caps



Ordering data

Description	Type	Qty.	Order No.
PROFIBUS modules			
Gateway module with 12 Digital In	SAI-AU M12 GW PB/BT 12I	1	1006980000
Subbus module with 16 Digital In	SAI-AU M12 BT 16DI	1	1006940000
Subbus module with 16 Digital In / 8 Digital Out	SAI-AU M12 BT 16DI/8DO	1	1006930000
Subbus module with 4 Analogue In / 2 Analogue Out / 2 Digital In / 2 Digital Out	SAI-AU M12 BT4AI2AO2DIO	1	1006920000

PROFIBUS accessories

PROFIBUS cables with female plug and male plug		Chapter C
PROFIBUS cables with female plug and other side open		Chapter C
PROFIBUS cables with male plug and other side open		Chapter C
PROFIBUS plug-in connector		Chapter C
PROFIBUS terminating resistor	SAIEND PB M12 5P B-COD	1
		1784770000

Sensor/actuator accessories

Sensor-actuator cables		Chapter B
Sensor-actuator plugs		Chapter D

Markers

Semi-transparent markers for PrintJet printing	ESG 8/13.5/43.3 SAI AU	5	1912130000
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Protective caps

M12 Dust cap (Sensor connections)	SAI-SK	30	9456050000
M12 Dust cap (Bus-in and power-in)	SAI-SK-M12-UNI	20	2330260000
M12 Dust cap (Bus-in and power-in)	SAI-SK plug M12	50	1781520000

SAI-Active Universal Wireless

Wireless slave modules for digital signal processing



Wireless-Slave



Wireless-Slave



Ordering data

Module variants
16 Digital In; 16 Digital In / 8 Digital Out
16 Digital In / 8 Digital Out
Note

Technical data

Connections
Supply voltage (AUX-IN)
Supply voltage (AUX-OUT)
I/O connections
Voltage supply
Operating voltage
Contact load
Digital inputs
Permitted input voltage
Input voltage, low
Input voltage, high
Input current, low
Input current, high
Input filter
Fieldbus
Bus system
System integration
Range of coverage
Addressing
Communication coexistence
Properties of radio system
Frequency band / Channel usage
Transmit power
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

Type	Qty.	Order No.
SAI-AU M12 BT 16DI	1	1006940000
1x M12 plug 5-pole, A-coded		
1x M12 female 5-pole, A-coded		
8 x M12 female 5-pole, A-coded		
24 V DC (18 V DC ... 30 V DC)		
Per PIN max. 4 A		
-30 V to +30 V (protected against polarity reversal)		
<5 V in accordance with EN 61131-2 Typ 1		
>15 V in accordance with EN 61131-2 Typ 1		
< 15 mA in accordance with EN 61131-2 Type 1		
2 mA to 15 mA in accordance with EN 61131-2 Type 1		
1 ms, 3 ms, 5 ms, 10 ms, Configurable		
Radio in ISM band		
automatic		
Max. 100 m (open air), Max. 50 m (industrial surroundings)		
Via rotary coding switch		
Max. 186 (for 31 wireless gateways each with 6 wireless slaves)		
2.401 GHz – 2.480 GHz / 1 to 79 channels (can be configured)		
0 dBm to 20 dBm / max 100 mW (can be configured)		
210 mm / 54 mm / 52 mm		
< 400 g		
IP 67		
0 °C...+60 °C		
-25 °C...+85 °C		
PBT, Pocan / V-0		
CE, cULus (planned for 4Q/2010)		

Type	Qty.	Order No.
SAI-AU M12 BT 16DI/8DO		1006930000
2x M12 plug 5-pole, A-coded		
8 x M12 female 5-pole, A-coded		
24 V DC (18 V DC ... 30 V DC)		
Per PIN max. 4 A		
-30 V to +30 V (protected against polarity reversal)		
<5 V in accordance with EN 61131-2 Typ 1		
>15 V in accordance with EN 61131-2 Typ 1		
< 15 mA in accordance with EN 61131-2 Type 1		
2 mA to 15 mA in accordance with EN 61131-2 Type 1		
1 ms, 3 ms, 5 ms, 10 ms, Configurable		
Radio in ISM band		
automatic		
Max. 100 m (open air), Max. 50 m (industrial surroundings)		
Via rotary coding switch		
Max. 186 (for 31 wireless gateways each with 6 wireless slaves)		
2.401 GHz – 2.480 GHz / 1 to 79 channels (can be configured)		
0 dBm to 20 dBm / max 100 mW (can be configured)		
210 mm / 54 mm / 52 mm		
< 400 g		
IP 67		
0 °C...+60 °C		
-25 °C...+85 °C		
PBT, Pocan / V-0		
CE, Gost R ME25, cULus (planned for 4Q/2010)		

Note

Note

Note

Wireless slave module for digital
and analogue signal processing



Wireless-Slave



Ordering data

Module variants
4 Analogue In / 2 Analogue Out / 2 Digital In / 2 Digital Out
Note

Type	Qty.	Order No.
SAI-AU M12 BT4AI2AO2DIO		1006920000

Technical data

Connections
Supply voltage (AUX-IN)
Supply voltage (AUX-OUT)
I/O connections
Voltage supply
Operating voltage
Contact load
Max. total current module
Digital inputs
Permitted input voltage
Input voltage, low
Input voltage, high
Input current, low
Input current, high
Input filter
Digital outputs
max. current-carrying capacity per output signal
Switching frequency load (resistive / inductive / inrush)
Short-circuit-proof
Output voltage, low / Output voltage, high
Max. total current outputs
Analogue inputs
Measurement range
Maximum input voltage in relation to GND
Input resistance (load)
Max. input current (differential)
Short-circuit-proof
Resolution / Accuracy
Analogue outputs
Measurement range
Output interval
Short-circuit-proof
Resolution / Accuracy
Fieldbus
Bus system
System integration
Range of coverage
Addressing
Communication coexistence
Properties of radio system
Frequency band / Channel usage
Transmit power
General data
L x W x H
Earth
Protection class
operating temperature
Storage temperature
Housing main material / Flammability class UL 94
Certificate

1x M12 plug 5-pole, A-coded
1x M12 female 5-pole, A-coded
8 x M12 female 5-pole, A-coded
24 V DC (18 V DC ... 30 V DC)
Per PIN max. 4 A
8 A
-30 V to +30 V (protected against polarity reversal)
<5 V in accordance with EN 61131-2 Typ 1
>15 V in accordance with EN 61131-2 Typ 1
< 15 mA in accordance with EN 61131-2 Type 1
2 mA to 15 mA in accordance with EN 61131-2 Type 1
1 ms, 3 ms, 5 ms, 10 ms, Configurable
0.5 A
max. 100 Hz / max. 1 Hz / max. 8 Hz
Yes, cut-off for short circuit and error message
0 V DC / Supply voltage less 0.7 V DC
1 A
-10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA
35 V
<125 Ohm
-50 mA to +50 mA (protected against polarity reversal)
Yes
12-bit / < 0.2 %
-10 V ... +10 V, 0 V ... 10V, 0 ... 20 mA, 4...20 mA
20 ms to 250 ms (can be configured)
Yes
12-bit / < 0.2 %
Radio in ISM band
automatic
Max. 100 m (open air), Max. 50 m (industrial surroundings)
Via rotary coding switch
Max. 186 (for 31 wireless gateways each with 6 wireless slaves)
2.401 GHz – 2.480 GHz / 1 to 79 channels (can be configured)
0 dBm to 20 dBm / max 100 mW (can be configured)
210 mm / 54 mm / 52 mm
< 400 g
IP 67
0 °C...+60 °C
-25 °C...+85 °C
Pocan, PBT / V-0
CE, Gost R ME25, cULus (planned for 4Q/2010)

Note

Note

JACKPAC® (IP67)

JACKPAC® (IP67)	JACKPAC® – overview	F.2
	JACKPAC® relay module	F.3
	JACKPAC® timer	F.4
	JACKPAC® signal inverter	F.5
	JACKPAC® test	F.6
	JACKPAC® – General Data and Accessories	F.7
	Empty housing SAI JACKPAC® for custom built in components	F.8

The Concept

The IP20 Solution

Until now, all signal conditioning tasks were carried out by modules designed to IP20. For their own protection, these need to be installed in central switchgear cabinets.

However, decentralised solutions that do not require large switchgear cabinets are increasingly being sought for use in modern industrial automation technology.

It is true that shielded signals can be fed to the machinery via powerful fieldbus systems; but in each case, however, there remains an interconnecting cable between the subdistribution boards and the sensors/actuators that is susceptible to interference from surrounding operations.

As has always been the case, signals are still influenced by over-voltages and earth loops; interference pulses are superimposed on sensor signals and malfunctions can be initiated.

The result is that signal conditioning modules sealed to IP20 require terminal boxes, such as switchgear cabinets, or even cost intensive special solutions (for example, sensor-actuator distributors with integrated signal conditioning functions providing as many functionalities as possible, even when these are surplus to requirements).

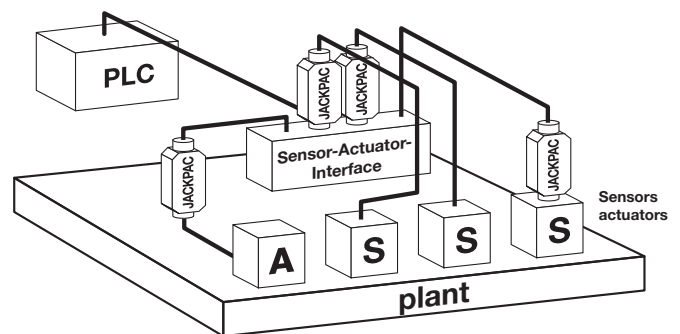
The JACKPAC® Solution

By introducing **JACKPAC®**, the new M12 Signal Box with the high IP67 ingress protection. Weidmüller can now provide a modular and versatile concept that makes it possible to condition signals in an industrial environment. Requiring no additional enclosure, these modules can be installed directly on the machine, in the production plant, conveyor system or within a process.

The M12 connector, which is standardised all over the world, makes it possible to integrate the **JACKPAC®** at any point in the sensor-actuator cabling. The fixed pin assignment means it is easy to install and is protected against polarity reversal.

This versatility really comes into its own when an installation needs to be altered or modernised, simply because no additional enclosures or cabling are required.

By providing this high degree of protection and versatility, **JACKPAC®** renders possible innovative automation concepts based on decentralised applications (without large control cabinets or small distribution boards) for consistent, transparent, efficient and cost-efficient installations.

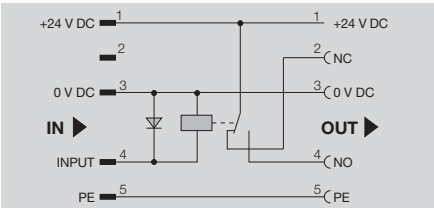


- Easy 'Plug and Play' installation
- Universal and versatile usage
- No additional enclosure required
- Saves time and costs
- Ideal for decentralised concepts and plant modernisation (retrofitting)

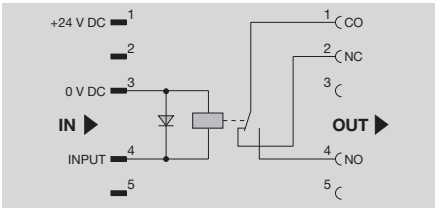
Switching amplifier

- The switching amplifiers are simply built into the actuator system controls.
- For example, switching outputs can be amplified from 24 V DC / 0.5 A to 24 V DC / 2 A.
- Optionally with galvanic isolation for insulating between the input and output circuits, which prevents conducted interference on the switching output.
- Switched voltage feed at output via T-distributor.

JPR 24 V DC 1CO M12



JPR 24 V DC ISO 1CO M12



Technical data

Input	
Rated control voltage	24 V DC ±20 %
Rated current DC	8 mA
Power rating	200 mW
DC Response/dropout Volt	16.8 V / 1.2 V
DC pickup/dropout current	5 mA / 1 mA
Free-wheel diode	Yes
Output	
max. switching capacity	24 V / 2 A
min. switching capacity	12 V / 10 mA
Contact material	AgSnO
Mechanical service life	10*10 ⁶ switching cycles
Max. switching frequency at rated load	0.1 Hz
Sparkover time / Drop-out time	ca. 5 ms
Insulation coordination (EN 50 178)	
Rated voltage	300
Overvoltage category	III
Pollution severity	2
Protective separation acc. to VDE 0106 part 101	No
General data	
operating temperature	-25 °C...+70 °C
Storage temperature	-25 °C...+70 °C
Conductor connection system	M12 plug / socket, A-coded
Approvals	cULus; CE

Rated control voltage	24 V DC ±20 %
Rated current DC	8 mA
Power rating	200 mW
DC Response/dropout Volt	16.8 V / 1.2 V
DC pickup/dropout current	5 mA / 1 mA
Free-wheel diode	Yes
max. switching capacity	24 V / 2 A
min. switching capacity	12 V / 10 mA
Contact material	AgSnO
Mechanical service life	10*10 ⁶ switching cycles
Max. switching frequency at rated load	0.1 Hz
Sparkover time / Drop-out time	ca. 5 ms
Rated voltage	300
Overvoltage category	III
Pollution severity	2
Protective separation acc. to VDE 0106 part 101	No
operating temperature	-25 °C...+70 °C
Storage temperature	-25 °C...+70 °C
Conductor connection system	M12 plug / socket, A-coded
Approvals	cULus; CE

Rated control voltage	24 V DC ±20 %
Rated current DC	8 mA
Power rating	200 mW
DC Response/dropout Volt	16.8 V / 1.2 V
DC pickup/dropout current	5 mA / 1 mA
Free-wheel diode	Yes
max. switching capacity	24 V / 2 A
min. switching capacity	12 V / 10 mA
Contact material	AgSnO
Mechanical service life	10*10 ⁶ switching cycles
Max. switching frequency at rated load	0.1 Hz
Sparkover time / Drop-out time	ca. 5 ms
Rated voltage	300
Overvoltage category	III
Pollution severity	2
Protective separation acc. to VDE 0106 part 101	Yes
operating temperature	-25 °C...+70 °C
Storage temperature	-25 °C...+70 °C
Conductor connection system	M12 plug / socket, A-coded
Approvals	cULus; CE

Dimensions	
Clamping range (nominal / min. / max.)	mm ²
Length x width x height	mm
Note	

Clamping range (nominal / min. / max.)	mm ²
Length x width x height	mm
Details for TU = 20°C	

Clamping range (nominal / min. / max.)	mm ²
Length x width x height	mm
Details for TU = 20°C	

Ordering data

Connection system

Type	Qty.	Order No.
JPR 24VDC 1CO M12	1	8771420000

Type	Qty.	Order No.
JPR 24VDC ISO 1CO M12	1	8771430000

Note

Note

Note

Accessories

Retaining clip JP CLIP M: 8778490000

Retaining clip JP CLIP M: 8778490000

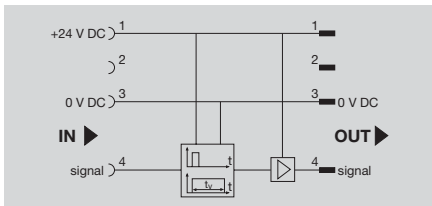
Retaining clip JP CLIP M: 8778490000

JACKPAC® timer

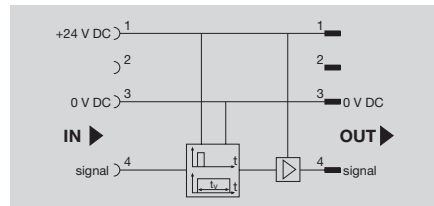
Timer relay

Signal extenders can be simply connected on the cable between the sensor and the input modules. They extend the pulse length from 1 ms. to 50 or 100 ms. Short sensor signals can also this enables short sensor signals to also be reliably recognized and evaluated by the controller.

JPTA 50 MS 24VDC PNP M12



JPTA 100 MS 24VDC PNP M12



Technical data

Input	
Rated control voltage	18...24...30 V DC
Rated current DC	3,5...7,0...10,0 mA
Switch-off delay	50 ms
Output	
Switching voltage DC, max.	30 V
Max. switching current	400 mA
Insulation coordination (EN 50 178)	
Rated voltage	32 V
Impulse withstand voltage	330 V
Overvoltage category	I
Pollution severity	2
General data	
operating temperature	0 °C...+60 °C
Storage temperature	-20 °C...+85 °C
Conductor connection system	M12 plug / socket, A-coded
Approvals	cULus; CE

Input	
Rated control voltage	18...24...30 V DC
Rated current DC	3,5...7,0...10,0 mA
Switch-off delay	100 ms
Output	
Switching voltage DC, max.	30 V
Max. switching current	400 mA
Insulation coordination (EN 50 178)	
Rated voltage	32 V
Impulse withstand voltage	330 V
Overvoltage category	I
Pollution severity	2
General data	
operating temperature	0 °C...+60 °C
Storage temperature	-20 °C...+85 °C
Conductor connection system	M12 plug / socket, A-coded
Approvals	cULus; CE

Input	
Rated control voltage	18...24...30 V DC
Rated current DC	3,5...7,0...10,0 mA
Switch-off delay	100 ms
Output	
Switching voltage DC, max.	30 V
Max. switching current	400 mA
Insulation coordination (EN 50 178)	
Rated voltage	32 V
Impulse withstand voltage	330 V
Overvoltage category	I
Pollution severity	2
General data	
operating temperature	0 °C...+60 °C
Storage temperature	-20 °C...+85 °C
Conductor connection system	M12 plug / socket, A-coded
Approvals	cULus; CE

Dimensions	
Clamping range (nominal / min. / max.)	mm ²
Length x width x height	mm
Note	

83 / 36 / 14.4	

83 / 36 / 14.4	

Ordering data

Connection system

Type	Qty.	Order No.
JPTA 50MS 24VDC PNP M12	1	8771440000

Type	Qty.	Order No.
JPTA100MS 24VDC PNP M12	1	8836630000

Note

Note

Note

Accessories

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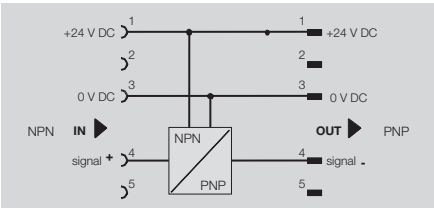
Retaining clip JP CLIP M: 8778490000

Retaining clip JP CLIP M: 8778490000

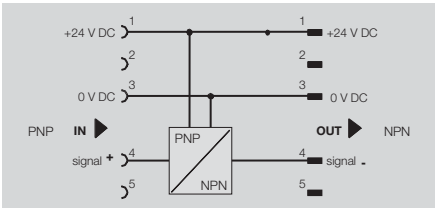
Signal inverter

Signal inverters convert PNP sensor signals to NPN signals and NPN signals back to PNP. Thus, existing circuits require no complex adaptation and the existing inputs on the I/O cards can be put to best use. This is particularly well suited for the Asian and North American markets.

JPP NPN PNP 24 V DC



JPP PNP NPN 24 V DC



Technical data

Input	
Sensor	2-/ 3-Conductor Sensor NPN-type
Rated control voltage	18...24...30 V DC
Input current for sensor	< 200 mA
Type of contact	NO contact
Output	
Solid-state type	Solid state relay
Rated switching voltage	18...30 V DC
Rated switching current	400 mA
Voltage drop at max. load	≤ 1 V
Insulation coordination (EN 50 178)	
Rated voltage	32 V
Impulse withstand voltage	330 V
Overvoltage category	I
Pollution severity	2
General data	
operating temperature	0 °C...+60 °C
Storage temperature	-20 °C...+85 °C
Conductor connection system	M12 plug / socket, A-coded
Approvals	cULus; CE

Input	
Sensor	2-/ 3-Conductor Sensor PNP-Type
Rated control voltage	18...24...30 V DC
Input current for sensor	< 200 mA
Type of contact	NO contact
Output	
Solid-state type	Solid state relay
Rated switching voltage	18...30 V DC
Rated switching current	400 mA
Voltage drop at max. load	≤ 1 V
Insulation coordination (EN 50 178)	
Rated voltage	32 V
Impulse withstand voltage	330 V
Overvoltage category	I
Pollution severity	2
General data	
operating temperature	0 °C...+60 °C
Storage temperature	-20 °C...+85 °C
Conductor connection system	M12 plug / socket, A-coded
Approvals	cULus; CE

Input	
Sensor	2-/ 3-Conductor Sensor NPN-Type
Rated control voltage	18...24...30 V DC
Input current for sensor	< 200 mA
Type of contact	NO contact
Output	
Solid-state type	Solid state relay
Rated switching voltage	18...30 V DC
Rated switching current	400 mA
Voltage drop at max. load	≤ 1 V
Insulation coordination (EN 50 178)	
Rated voltage	32 V
Impulse withstand voltage	330 V
Overvoltage category	I
Pollution severity	2
General data	
operating temperature	0 °C...+60 °C
Storage temperature	-20 °C...+85 °C
Conductor connection system	M12 plug / socket, A-coded
Approvals	cULus; CE

Dimensions	
Clamping range (nominal / min. / max.)	mm ²
Length x width x height	mm
Note	

83 / 36 / 14.4	

83 / 36 / 14.4	

Ordering data

Connection system

Type	Qty.	Order No.
JPP NPN PNP 24VDC	1	8852350000

Type	Qty.	Order No.
JPP PNP NPN 24VDC	1	8857030000

Note

Note

Note

Accessories

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Retaining clip JP CLIP M: 8778490000

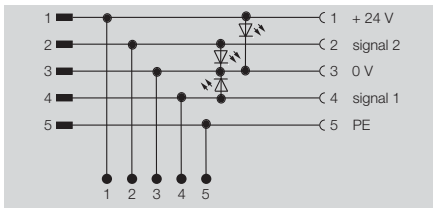
Retaining clip JP CLIP M: 8778490000

JACKPAC® test

Test adapter

The new JACKPAC® test adapter now provides a simple way of intervening in an M12 network. It can be integrated at any point and enables quick and easy connection of a testing device via the 5 PUSH IN connections. Status indicators show the status of the 2 signal channels as well as the 24 VDC auxiliary voltage.

JP TEST



Technical data

Input
Rated control voltage
Rated current DC
Status indicator
Output
Continuous current power
General data
operating temperature
Storage temperature
Conductor connection system

18...24...30 V DC
2.2 mA (LED)
Green LED
2 A
0 °C...+55 °C
-25 °C...+70 °C
M12 plug / socket, A-coded

Dimensions
Clamping range (nominal / min. / max.)
Length x width x height
Note

mm²
mm
83 / 36 / 14.4

Ordering data

Connection system

Type	Qty.	Order No.
JP TEST	1	8794120000

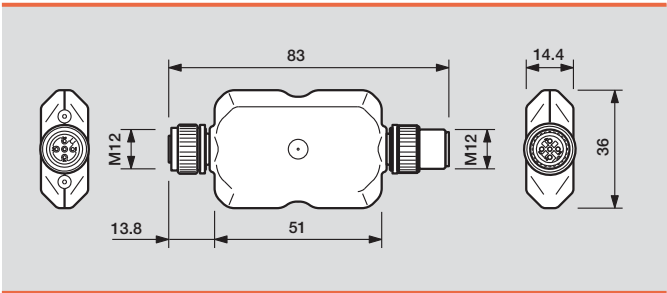
Note

Accessories

Retaining clip JP CLIP M: 8778490000

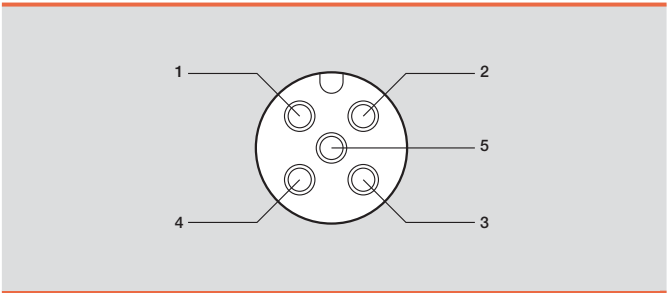
General data

Ingress protection class	IP67
Housing material	PBT, RAL 7032 (grey)
Flammability class	V0 to UL94
Screw socket	M12, CuZn, nickel plated, A-coded
Rated torque	0.8 ... 1 Nm



Contact assignment (socket)

Pole	Assignment
1	+24 V DC
2	Input / output 2
3	0 V DC
4	Input / output 1
5	PE / Earth



Accessories

Retaining clip



Version	Type	Qty.	Order No.
Stainless steel	JP CLIP M	1	8778490000

Twin plug



Type	Qty.	Order No.
5-pole	1	1783430000

Screwty M12



Type	Qty.	Order No.
With torque	1	1900001000

Sensor cables



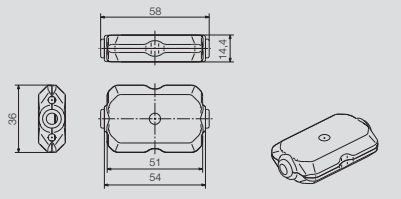
Type	Qty.	Order No.
4-pole, length 0.3 m	1	9457150000
4-pole, length 0.6 m	1	9457160000
4-pole, length 1.5 m	1	9457170000
5-pole, length 0.3 m	1	9457340030
5-pole, length 0.6 m	1	9457340060
5-pole, length 1.5 m	1	9457340150

Additional accessories can be found in the Sensor Actuator Interface catalogue.

Empty housing SAI JACKPAC® for custom built-in components

Empty housing SAI JACKPAC® for custom built-in components

SAI JP



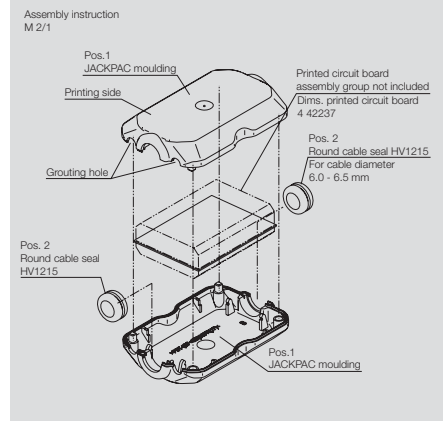
Technical data

General data

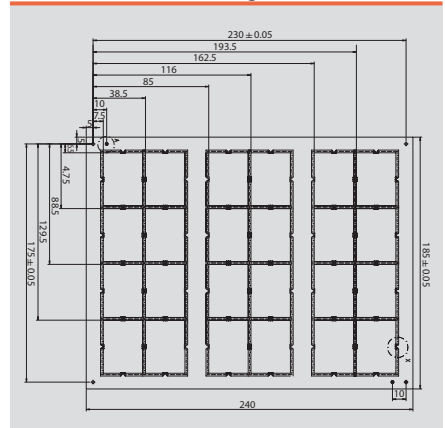
Temperature range
Connection system
Contact base material
Surface finish

-25 °C ... +70 °C
M12 plug/socket, A-coded
AgSnO
Au

Dimensioned drawing SAI JP



Dimensioned drawing, PCBs



Dimensions

Length x width x height mm

83 x 36 x 14.4

Note

Ordering data

Housing with M12 connectors

Contents 1 piece
1 piece
100 pieces
100 pieces

Note

Type	No. of poles	Qty.	Order No.
SAI JP 4P LG	4	1	1915220000
SAI JP 5P LG	5	1	1918520000
SAI JP 4P LG 100	4	1	8794090000
SAI JP 5P LG 100	5	1	8794080000
Housing without M12 connectors SAI JP FC SET 1933680000			

Accessories

Passive distributors

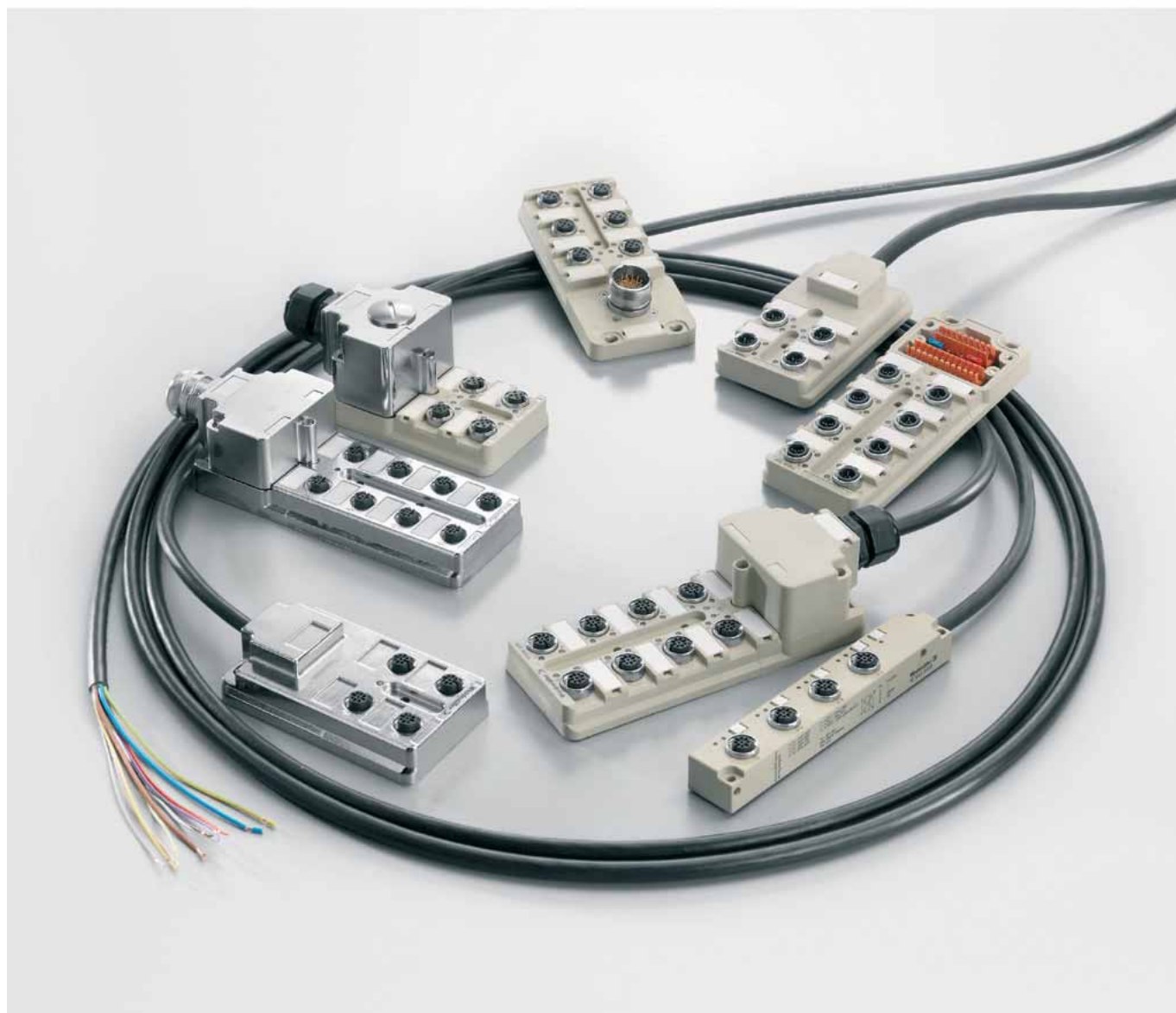
Passive distributors

Introduction	G.2
M12 distributors	G.4
ECO modules	G.14
M12 Push-Pull	G.16
M12 IDC	G.24
M12 VA stainless steel	G.28
M12 metal distributors	G.30
M12 distributors 1:1 Passive	G.36
M12 Combi distributor	G.37
M12 distributor for NPN and PNP sensors	G.38
M12 wall bushing	G.39
Solutions to customer specification	G.42
M8 distributors	G.44
M5 distributors	G.54
M12 Ex i distributors	G.58

SAI Passive

SAI Passive products are built with premium materials using the highest quality production methods. The fully encapsulated distributors are designed to meet harsh industrial requirements. Naturally they have also been designed so that they are easy to handle. The self assembled connectors in the hooded version, for example, are joined into a single part so that the entire block is available for the connection. This is a unique solution for distributors that has no equal anywhere. Nothing can break off, get mixed up or wired up incorrectly.

The distributors are equipped by default with threaded metal rings. This ensures a very reliable screw-on connection. The nut is completely threaded without any interruptions. This eliminates the possibility of it getting stuck or jammed. The IDC versions are especially noteworthy. Sensor cables of the proper lengths can be connected directly here.





Compact

The connection block is a single piece.



Small

Extremely small M12 distributor



Fast

Insulation displacement connection can be used to directly connect the sensor cables



Robust

Threaded metal ring without cut outs for reliable, safe handling



M12 distributor standard



M12 distributor with
DIP switch coding



M12 distributor with
stainless steel housing



M12 distributor for Zone 1 and
Zone 22

SAI distributor with plug in connection hood: SAI-M



- Integrated plug in connector in connection hood
- M12 robust metal thread for sensor/actuator connection, now also available with plastic thread as an alternative
- Quick replacement of bus cables
- Bus cable can be supplied pre assembled
- Two connection systems for bus cable: screw or tension clamp
- Very flat connection hood: no higher than smallest 90° M12 round plug
- Distributor and connection hood can be supplied separately
- Connection hood compatible with 4 and 8 channel SAI distributors (upgrades only entail changing the base module)
- IP 68 Ingress protection class (IDC IP 67),
- Housing made from Pocan (PBT):
 - high dimensional stability
 - good electrical and mechanical properties
 - flame retardant without dioxin or furan formers
 - resistant to coolants and lubricants
- UL/CSA approvals for M12 SAI distributor
- SAI distributor available in pollution severity class 3
- Cable exit on top
- Weidmüller SAI distributors have the largest storage capacity in the connection hood
- Female connectors integrated into the metal plate for fast and reliable connections
- Wide range of M8 and M12 cables and plug-in connectors
- Various cable length's available
- Metal hoods and housings also available
- Plug-in connection module for bus cables increases flexibility on site
- Integral, plug in electrical isolation for two separate electric circuits (e.g. for emergency stop)
- Simple and vibration resistant connections on site
- Captive metric screws (grade 8.8 steel) have a +/- head
- M12 and IDC connections
- 1:1 arrangement available

Overview of M12 Distributors



Fixed cable version

- Pre assembled bus cable minimises installation time and reduces wiring errors
- Cable carrier compatible versions are available with polyurethane (PUR) sheathing



M12 Push-Pull quick-fit connection system

M12 Push-Pull is the new connection system for sensors and actuators. It is downward compatible to the existing M12 system, which means that both old M12 and new M12 Push-Pull lines can be used together on these SAIs. M12 Push-Pull decreases installation time and increases installation safety by means of colour coding and provides an audible click on locking for added reassurance.

G



SAI ECO – the cost-effective alternative

Weidmüller SAI distributors with hood have long since been standard fittings in machines and installations.

Why plastic threaded rings?

There were some applications, however, that called for a further version. In some applications it is necessary to avoid all metal parts, unless these are made from stainless steel. In such cases stainless steel is then used for screws and nuts only, but the M12 threaded rings can also be made from plastic. Such modules can now be supplied on request.

The use of plastic rings therefore results in a cheaper alternative. Although the service life and resistance are reduced when compared to metal, this is acceptable for some applications.

M12 distributors

Overview of SAI

M12 plastic

	Hood	M23	5 m	10 m	15 m	20 m
4-way, 4-pole	1705920000	9456000000	9456190000	9456200000	9456210000	9456230000
4-way, 5-pole	1701230000	9456000001	9456330000	9456340000	9456350000	9456370000
6-way, 4-pole	1705930000	9456010000	9456470000	9456480000	9456490000	9456510000
6-way, 5-pole	1701240000	9456010001	9456610000	9456620000	9456630000	9456650000
8-way, 4-pole	1705940000	9456020000	9456750000	9456760000	9456770000	9456790000
8-way, 5-pole	1701250000	1795470000	9456890000	9456900000	9456910000	9456930000

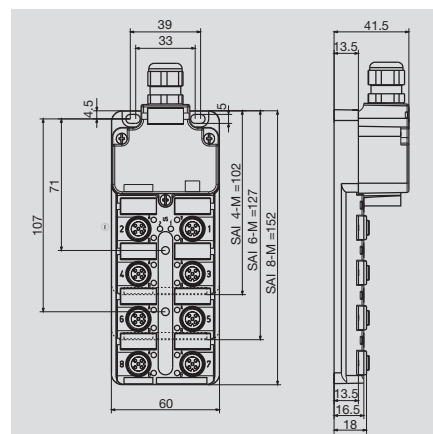
M12 metal

	Hood without shield connection	Hood with shield connection	5 m	10 m		
4-way, 4-pole		1783540000	9456190002	9456200002		
4-way, 5-pole	1783500000	1783520000				
8-way, 4-pole		1783530000	9456750002	9456760002		
8-way, 5-pole	1783490000	1783510000				

M8 line

	M12 group outlet	Solder version for PCB	5 m	10 m		
4-way, 3-pole	1828740000		1828720000	1828710000		
4-way, 4-pole			1849680000	1849690000		
6-way, 3-pole	1828730000	1057720000	1828700000	1828690000		
6-way, 4-pole			1849700000	1849670000		
8-way, 3-pole	1871680000		1828680000	1828670000		
8-way, 4-pole			1828620000	1828610000		
10-way, 3-pole	1877950000		1828660000	1828650000		
12-way, 3-pole			1828640000	1828630000		

Hood version



Ordering data

Ordering data	
Complete modules	
	4 channel
	6 channel
	8 channel
Without initiator-LED, for analogue signals	4 channel
Without initiator-LED, for analogue signals	8 channel
Tension clamp connection	4 plug-in slots
Tension clamp connection	8 channel
Base unit	
	4 channel
	6 channel
	8 channel
Mounting hood	
	Tension clamp connection
	Tension clamp connection
	Screw connection
	Screw connection
Complete modules, NPN-switched	8 channel
Note	

SAI-4/6/8-M

Type	Qty.	Order No.
SAI-4-M 4P M12	1	1705920000
SAI-6-M 4P M12	1	1705930000
SAI-8-M 4P M12	1	1705940000
SAI-4 M 4P M12 UT	2	1705921000
SAI-6-M 4P M12 UT	2	1705931000
SAI-8-M 4P M12 UT	2	1705941000
SAI-4/6/8-MH BLZF3.5	1	1752080000
SAI-4/6/8-MH BLZF3.5 SV	50	1752080050
SAI-4/6/8-MH BL3.5	1	1724750000
SAI-4/6/8-MH BL3.5 SV	50	1724750050
Other versions on request		

SAI-4/6/8-M

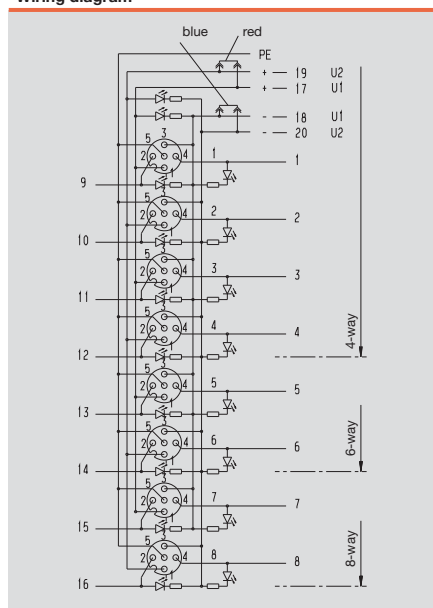
Type	Qty.	Order No.
SAI-4-M 5P M12	1	1701230000
SAI-6-M 5P M12	1	1701240000
SAI-8-M 5P M12	1	1701250000
SAI-4-M 5P M12 OL	1	1800000000
SAI-8-M 5P M12 OL2	1	1816610000
SAI-4-M 5P M12 ZF	1	1854000000
SAI-8-M 5P M12 ZF III	1	1767880000
SAI-4-M 5P M12 UT	2	1701231000
SAI-6-M 5P M12 UT	2	1701241000
SAI-8-M 5P M12 UT	2	1701251000
SAI-4/6/8-MH BLZF3.5	1	1752080000
SAI-4/6/8-MH BLZF3.5 SV	50	1752080050
SAI-4/6/8-MH BL3.5	1	1724750000
SAI-4/6/8-MH BL3.5 SV	50	1724750050
SAI-8-M 5P M12 NPN	1	1781060000
Other versions on request		

Technical data

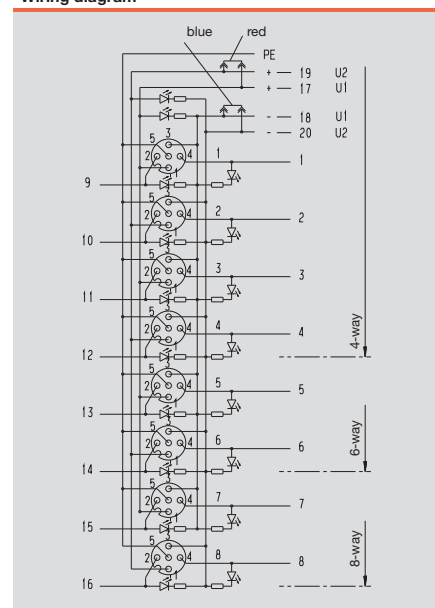
Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	3 A
Total current	10 A
Pollution severity	3
Protection class	IP 68
Operating temperature range	-20...+90 °C
Housing main material	Pocan
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickel- plated
screw socket	CuZn, nickel- plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	0.08...1.5 mm²
Suitable for dragline cable (fixed cable connection)	

With dual power supply: 2x8 = 16A total current
Clamping range up to 2.5 mm² with screw connection

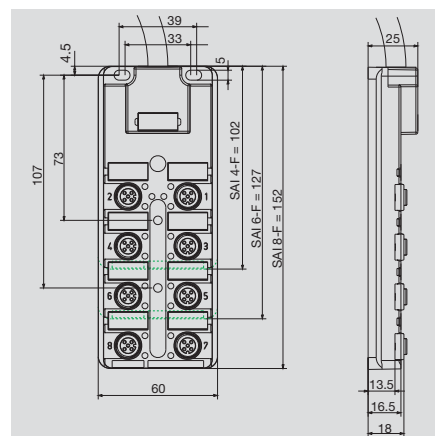
Wiring diagram



Wiring diagram



Fixed cable version



Ordering data

4 channel	
	Cable length 3 m
	Cable length 5 m
	Cable length 10 m
	Cable length 15 m
	Cable length 20 m
6 channel	
	Cable length 3 m
	Cable length 5 m
	Cable length 10 m
	Cable length 15 m
	Cable length 20 m
8 channel	
	Cable length 3 m
	Cable length 5 m
	Cable length 10 m
	Cable length 15 m
	Cable length 20 m
8 channel with reinforced fixed cable*	
	Cable length 2 m
	Cable length 5 m
	Cable length 10 m
	Cable length 15 m
	Cable length 20 m
Note	

SAI-4/6/8-F

Type	Qty.	Order No.
SAI-4-F 4P PUR 3M	1	9456180000
SAI-4-F 4P PUR 5M	1	9456190000
SAI-4-F 4P PUR 10M	1	9456200000
SAI-4-F 4P PUR 15M	1	9456210000
SAI-4-F 4P PUR 20M	1	9456230000
4-pole		
SAI-6-F 4P PUR 3M	1	9456460000
SAI-6-F 4P PUR 5M	1	9456470000
SAI-6-F 4P PUR 10M	1	9456480000
SAI-6-F 4P PUR 15M	1	9456490000
SAI-6-F 4P PUR 20M	1	9456510000
SAI-8-F 4P PUR 3M	1	9456740000
SAI-8-F 4P PUR 5M	1	9456750000
SAI-8-F 4P PUR 10M	1	9456760000
SAI-8-F 4P PUR 15M	1	9456770000
SAI-8-F 4P PUR 20M	1	9456790000
Other versions on request		

SAI-4/6/8-F

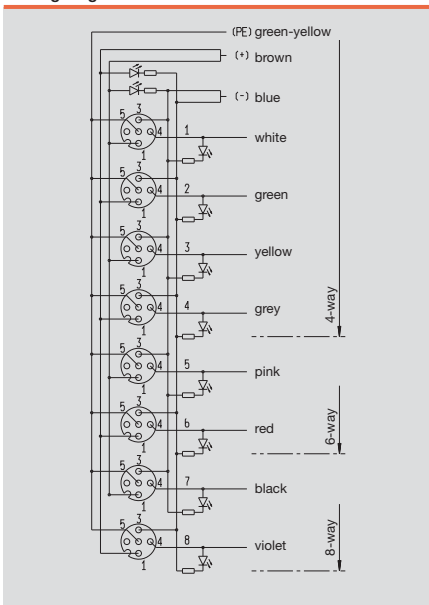
Type	Qty.	Order No.
SAI-4-F 5P PUR 3M	1	9456320000
SAI-4-F 5P PUR 5M	1	9456330000
SAI-4-F 5P PUR 10M	1	9456340000
SAI-4-F 5P PUR 15M	1	9456350000
SAI-4-F 5P PUR 20M	1	9456370000
5-pole		
SAI-6-F 5P PUR 3M	1	9456600000
SAI-6-F 5P PUR 5M	1	9456610000
SAI-6-F 5P PUR 10M	1	9456620000
SAI-6-F 5P PUR 15M	1	9456630000
SAI-6-F 5P PUR 20M	1	9456650000
SAI-8-F 5P PUR 3M	1	9456880000
SAI-8-F 5P PUR 5M	1	9456890000
SAI-8-F 5P PUR 10M	1	9456900000
SAI-8-F 5P PUR 15M	1	9456910000
SAI-8-F 5P PUR 20M	1	9456930000
SAI-8-F 5P 2M 0.5/1.0U	1	7915030000
SAI-8-F 5P 5M 0.5/1.0U	1	9457590000
SAI-8-F 5P 10M 0.5/1.0U	1	9457600000
SAI-8-F 5P 15M 0.5/1.0U	1	1784510000
SAI-8-F 5P 20M 0.5/1.0U	1	1784500000
Other versions on request		

Technical data

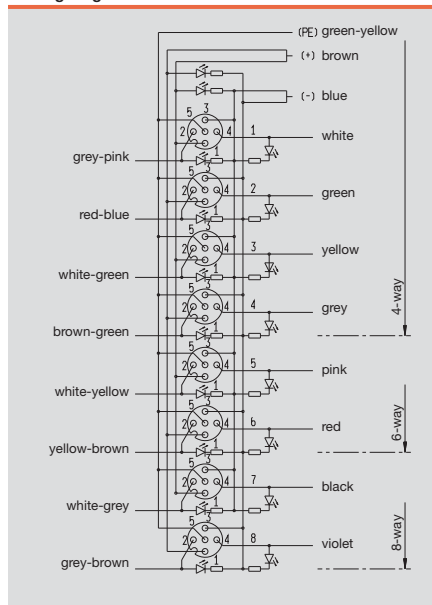
Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	3 A
Total current	9 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-20...+80 °C
Housing main material	Pocan
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	Yes

* 3x1mm² und 16x0.5mm² total current 12A

Wiring diagram

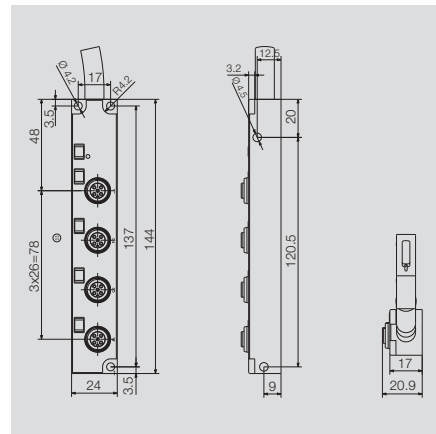


Wiring diagram



M12 distributor

Fixed-cable version thin design



Ordering data

4 channel	
	Cable length 5 m
	Cable length 10 m
Note	

SAI-4-F M12 L

4-pole

Type	Qty.	Order No.
SAI-4-F 4P M12 L 5M	1	1070650000
SAI-4-F 4P M12 L 10M	1	1070660000
Other versions on request		

SAI-4-F M12 L

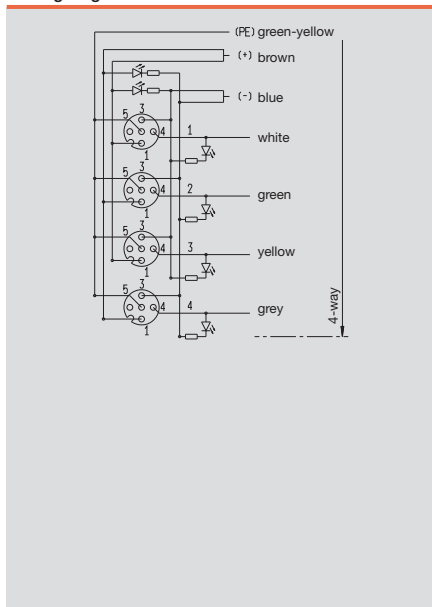
5-pole

Type	Qty.	Order No.
SAI-4-F 5P M12 L 5M	1	1070630000
SAI-4-F 5P M12 L 10M	1	1070640000
Other versions on request		

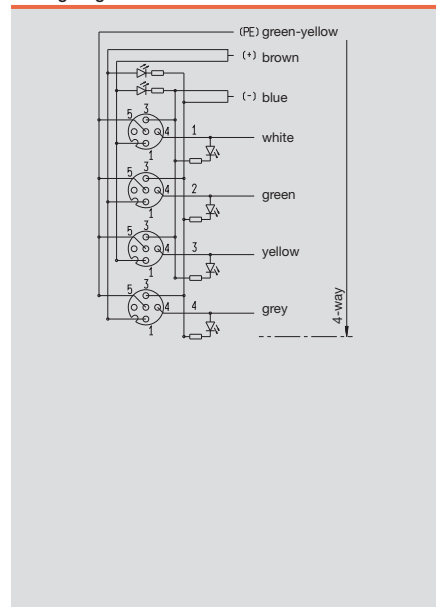
Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	3 A
Total current	9 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-20...+80 °C
Housing main material	PA 6 GF
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	Yes

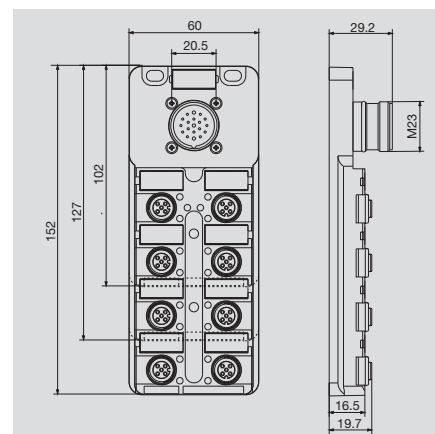
Wiring diagram



Wiring diagram



with M23 outlet



Ordering data

Complete modules	
	4 channel
	6 channel
	8 channel
Note	

SAI-4/6/8-S

4-pole

Type	Qty.	Order No.
SAI-4-S 4P M12	1	9456000000
SAI-6-S 4P M12	1	9456010000
SAI-8-S 4P M12	1	9456020000
Other versions on request		

SAI-4/6/8-S

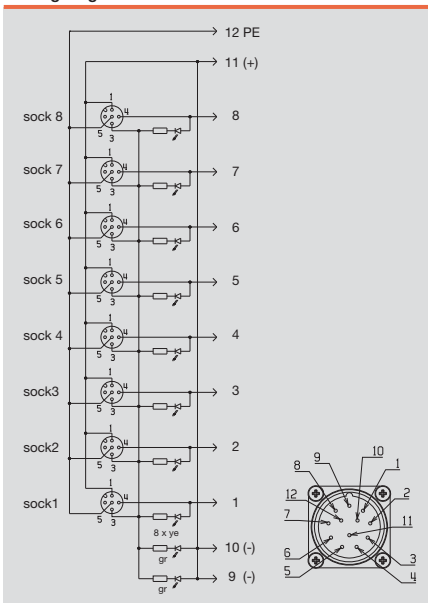
5-pole

Type	Qty.	Order No.
SAI-4-S 5P M12	1	9456000001
SAI-6-S 5P M12	1	9456010001
SAI-8-S 5P M12	1	1795470000
Other versions on request		

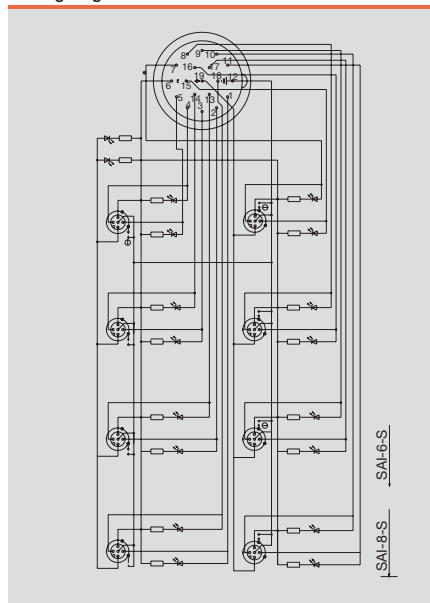
Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	3 A
Total current	10 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-20...+90 °C
Housing main material	Pocan
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	

Wiring diagram



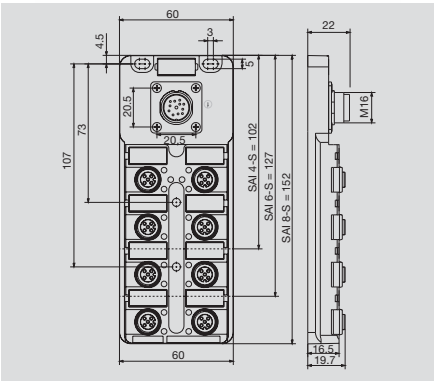
Wiring diagram



M12 distributor

with M16 outlet

SAI-8-M16



Ordering data

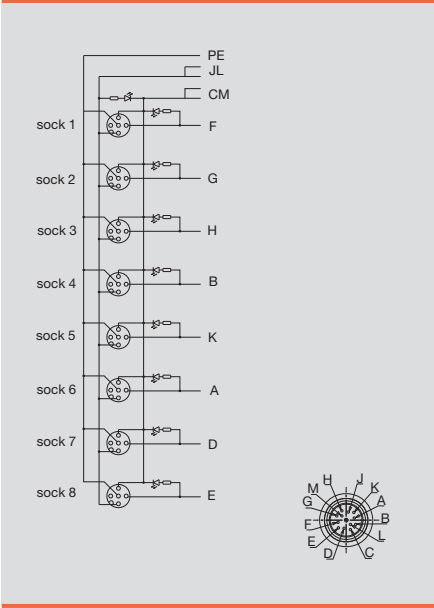
Complete modules	8 channel
Note	

SAI-8-M16		4-pole
Type	Qty.	Order No.
SAI-8-M16 4P M12	1	1831020000
Other versions on request		

Technical data

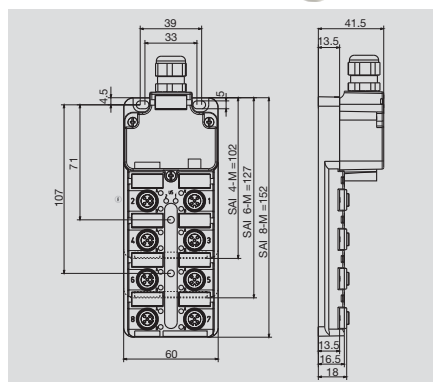
Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	3 A
Total current	6 A
Pollution severity	3
Protection class	IP 67
Ambient temperature range	-20...+90 °C
Housing main material	Pocan
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	

Wiring diagram



Hood version with DIP-switch coding

SAI-8-M M12 DIP



Ordering data

Complete modules	8 channel
Note	

SAI-8-M M12 DIP

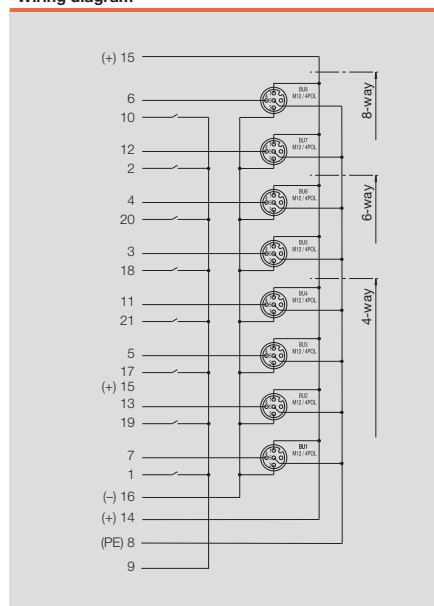
4-pole

Type	Qty.	Order No.
SAI-8-M-4P M12 DIP	1	1059430000
Other versions on request		

Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	3 A
Total current	8 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-20...+90 °C
Housing main material	Pocan
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickel- plated
screw socket	CuZn, nickel- plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	0.08...1.5 mm ²
Suitable for dragline cable (fixed cable connection)	

Wiring diagram



SAI ECO

SAI ECO – the cost-effective alternative

The Weidmüller SAI distributors with hoods have long since been standard fittings in machines and installations.

Why plastic threaded rings?

There were some applications, however, that called for a further version. In some applications it is necessary to avoid all metal parts. In such cases stainless steel is then used for screws and nuts only, but the M12 threaded rings can also be made from plastic. Such modules can now be supplied on request.

The use of plastic rings therefore results in a cheaper alternative. Although the service life and resistance are reduced when compared to metal, this is acceptable for some applications.

Cost-effective alternative

The ECO modules were developed to optimise costs. Many details of these modules were adapted in such a way that they can still be used wherever standard modules were used in the past, but the individual solutions have now become simpler:

- One way disconnecter: Up until now it was usual to achieve electrical isolation devised by Weidmüller by way of jumpers. To reduce costs, these jumpers have been replaced by solder bridges. These are simply cut to provide electrical isolation.
- No protective caps: Normally, Weidmüller M12 distributors are always supplied with two protective caps. These were not always required and so they have been omitted.
- Standard cable gland: The vibration resistant black screw cable gland has been replaced by a standard IP 68 cable gland.

These cost-cutting measures result in yet more applications for Weidmüller SAI distributors.

Greater reliability than with comparable systems

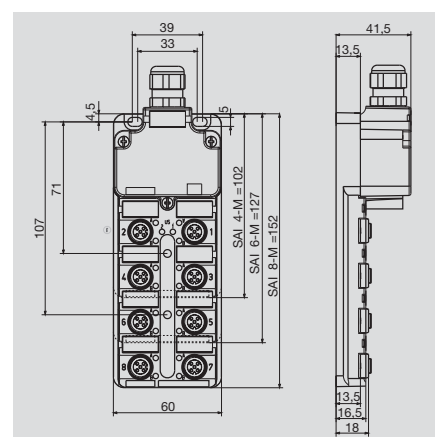
Plastic threaded rings are nothing new. However, the problem in the past was that the threaded rings formed part of the housing and were therefore made from the same plastic.

Weidmüller has once again pioneered a new and better solution. Weidmüller plastic rings are manufactured separately, which means that a more suitable, more durable material can be chosen. The Weidmüller production method is also patented.



Special threaded ring increases durability

Hood version



Ordering data

Ordering data	
Complete modules	
	4 channel
	6 channel
	8 channel
NPN	4 channel
NPN	8 channel
Base unit	
	4 channel
	6 channel
	8 channel
Mounting hood	
	Tension clamp connection
	Screw connection
Note	

SAI-4/6/8-M

5-pole

Type	Qty.	Order No.
SAI-4-M 5P M12 ECO	1	1892100000
SAI-6-M 5P M12 ECO	1	1892090000
SAI-8-M 5P M12 ECO	1	1892080000
SAI-4-M 5P M12 NPN ECO	1	1892100005
SAI-8-M 5P M12 NPN ECO	1	1892080005
SAI-4-M 5P M12 ECO UT	2	1892101000
SAI-6-M 5P M12 ECO UT	2	1892091000
SAI-8-M 5P M12 ECO UT	2	1892081000
SAI-4/6/8-MH BLZF3.5 SV	50	1752080050
SAI-4/6/8-MH BL3.5 SV	50	1724750050

These distributors are supplied without protective caps and markers.

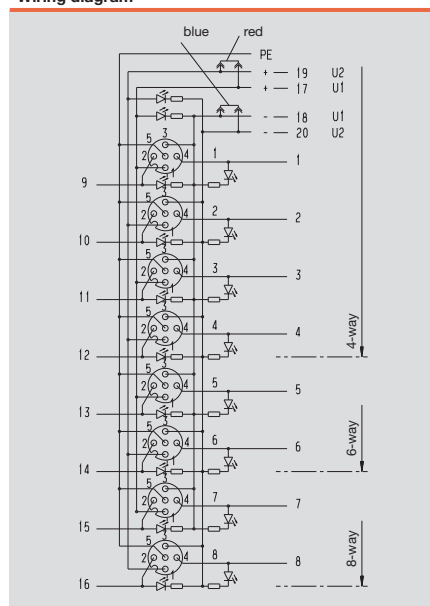
[illegible]

Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	3 A
Total current	10 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-20...+90 °C
Housing main material	Pocan
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	Pocan
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	0.08...1.5 mm²
Suitable for dragline cable (fixed cable connection)	

With dual power supply: 2x8 = 16A total current
Clamping range up to 2.5 mm² with screw connection

Wiring diagram



M12 Push-Pull: SAI distributors and cables, with rapid-connection technology

SAI distributors with M12 Push-Pull plug



Whereas the standard M12 system requires the sleeves to be laboriously screwed on and that operation is hindered by the vibration guard, M12 Push-Pull works with one click, just like those well-known garden hose systems. The audible locking function guarantees a safe and reliable connection as well as a good seal.

M12 Push-Pull is currently supplied by Weidmüller and five other international companies

M12 Push-Pull M23 versions



M12 Push-Pull connections provide sufficient space for using T-pieces. The SAI module is slimmer and now only 54 mm wide.

The new SAI M12 Push-Pull distributors can be used with M12 plug-in connectors but also with the new M12 Push-Pull plug-in connectors.

The SAI distributors are available in fixed cable, hood, bayonet connection and M23 versions.

M12 Push-Pull speeds up installation and increases installation reliability thanks to the colour coding and the audible click when locking it into place.

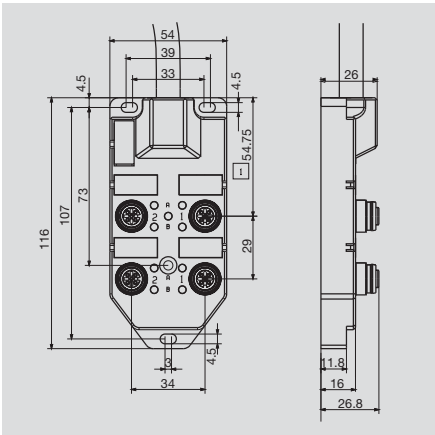
M12 Push-Pull hood version



M12 Push-Pull with bayonet connection



Fixed cable version



Ordering data

4 channel	
	Cable length 2 m
	Cable length 5 m
	Cable length 10 m
8 channel	
	Cable length 2 m
	Cable length 5 m
	Cable length 10 m
Note	

SAI-4/8-F		4-pole
Type	Qty.	Order No.
SAI-4-F 4P FC 2M	1	1848080000
SAI-4-F 4P FC 5M	1	1848060000
SAI-4-F 4P FC 10M	1	1848050000
Other versions on request		

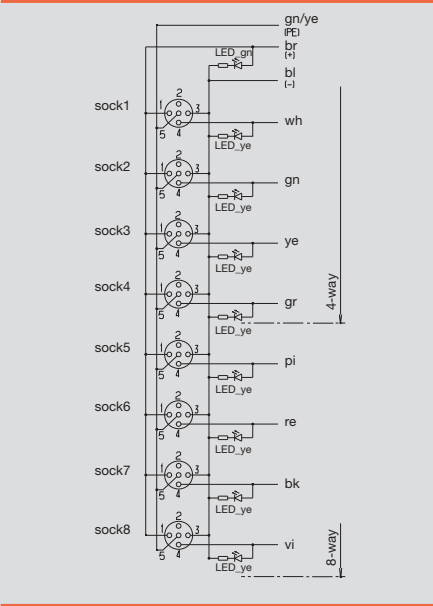
SAI-4/8-F		5-pole
Type	Qty.	Order No.
SAI-4-F 5P FC 2M	1	1847940000
SAI-4-F 5P FC 5M	1	1847950000
SAI-4-F 5P FC 10M	1	1847930000
Other versions on request		

Technical data

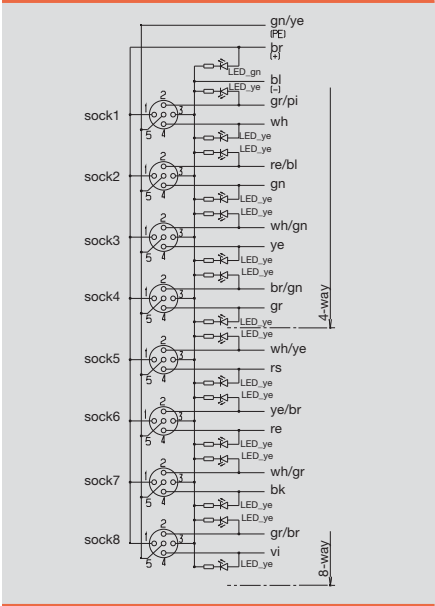
Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	4 A
Total current	10 A
Pollution severity	3
Protection class	IP 67
Ambient temperature range	-25...+80 °C
Housing main material	PA 6 GF
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	Yes

Master trunk cable 3x1mm² x n x 0.34mm²; Hallogen

Wiring diagram

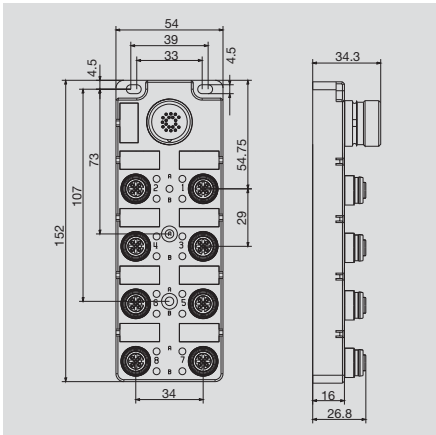


Wiring diagram



M12 Push-Pull

with M23 outlet



Ordering data

Complete modules	
	4 channel
	8 channel
Note	

SAI-4/8-S

4-pole

Type	Qty.	Order No.
SAI-4-S 4P FC	1	1847960000
SAI-8-S 4P FC	1	1847920000
Other versions on request		

SAI-4/8-S

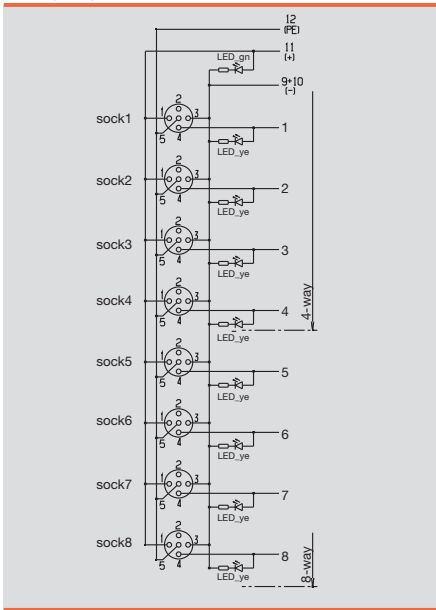
5-pole

Type	Qty.	Order No.
SAI-4-S 5P FC	1	1847970000
SAI-8-S 5P FC	1	1848040000
Other versions on request		

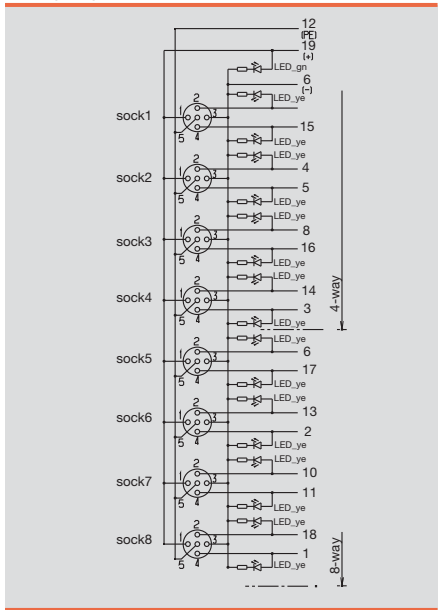
Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	4 A
Total current	9 A
Pollution severity	3
Protection class	IP 67
Ambient temperature range	-25...+80 °C
Housing main material	PA 6 GF
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	

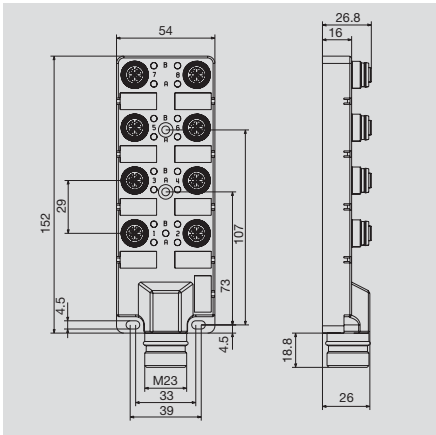
Wiring diagram



Wiring diagram



with M23 outlet on front



Ordering data

Complete modules	
	4 channel
	8 channel
Note	

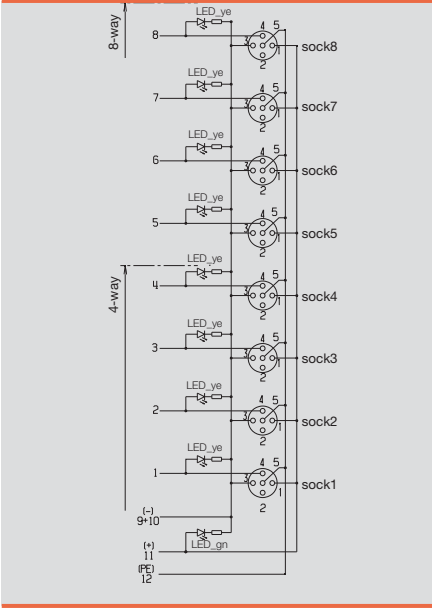
SAI-4/8-SH		4-pole
Type	Qty.	Order No.
SAI-4-SH 4P FC	1	1859110000
SAI-8-SH 4P FC	1	1859120000

SAI-4/8-SH		5-pole
Type	Qty.	Order No.
SAI-4-SH 5P FC	1	1859130000
SAI-8-SH 5P FC	1	1859140000

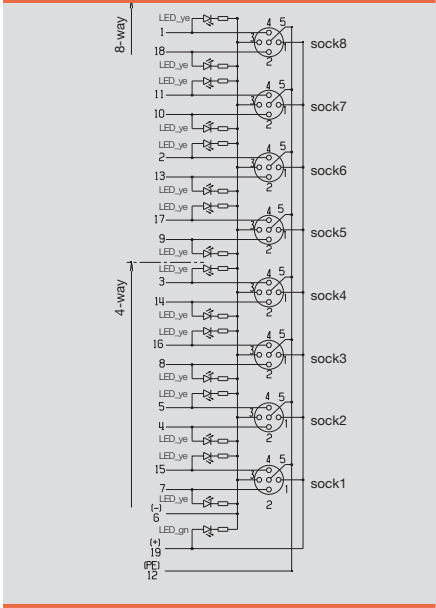
Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	4 A
Total current	9 A
Pollution severity	3
Protection class	IP 67
Ambient temperature range	-25...+80 °C
Housing main material	PA 6 GF
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	

Wiring diagram



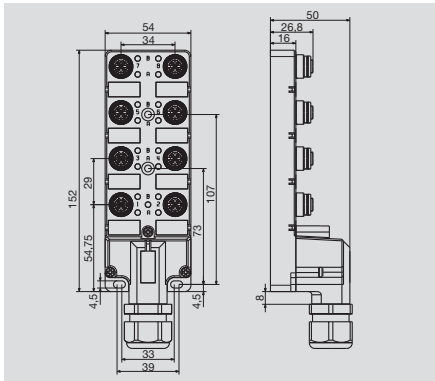
Wiring diagram



M12 Push-Pull

Hood version

SAI-8-M



Ordering data

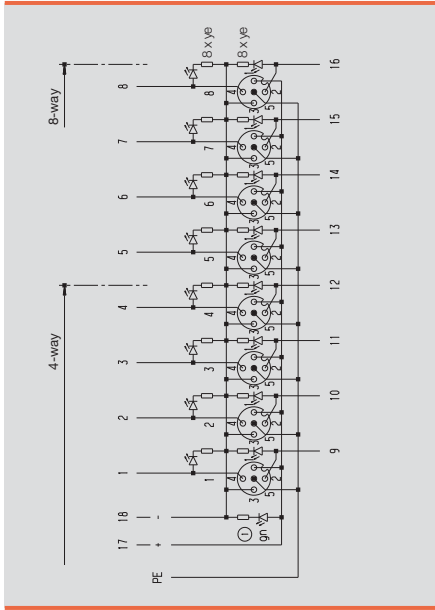
Complete modules	8 channel
Note	

Type	Qty.	Order No.
SAI-8-M 5P FC	1	1848070000
Other versions on request		

Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	4 A
Total current	
Pollution severity	3
Protection class	IP 67
Ambient temperature range	-25...+80 °C
Housing main material	PA 6 GF
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	
Master trunk cable 3x1mm² x n x 0.34mm²; halogen-free	

Wiring diagram

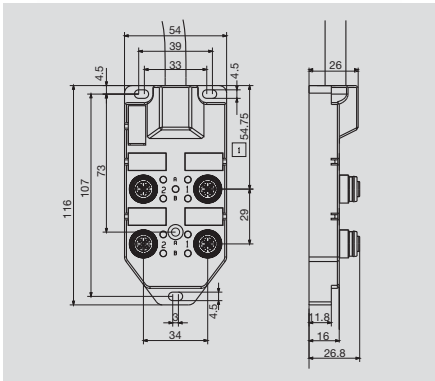
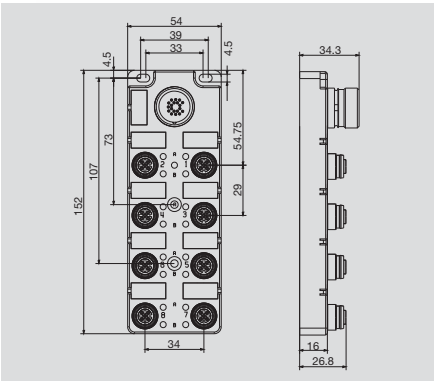


Terminal	Slot M12	Contact	Colour
1	1	4	white
2	2	4	green
3	3	4	yellow
4	4	4	grey
5	5	4	pink
6	6	4	red
7	7	4	black
8	8	4	violet
9	1	2	grey/pink
10	2	2	red/blue
11	3	2	white/green
12	4	2	brown/green
13	5	2	white/yellow
14	6	2	yellow/brown
15	7	2	white/grey
16	8	2	grey/brown
17	1-8	1	brown (+)
18	1-8	3	blue (-)
PE	1-8	5	green/yellow (PE)

CNOMO

SAI-4/8-S

SAI-4/8-F



Ordering data

4 channel	Cable length 5 m Cable length 10 m
8 channel	Cable length 5 m Cable length 10 m
M23	4 channel 8 channel
Note	

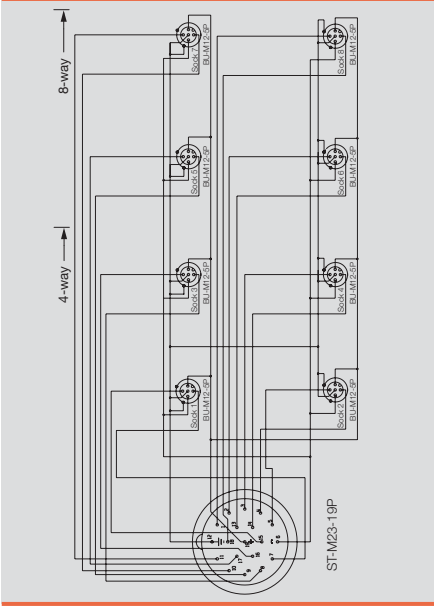
Type	Qty.	Order No.
SAI-4-S 5P CNOMO	1	1861540000
SAI-8-S 5P CNOMO	1	1861580000

Type	Qty.	Order No.
SAI-4-F 5P CNOMO 5M	1	1861570000
SAI-4-F 5P CNOMO 10M	1	1861560000
SAI-8-F 5P CNOMO 5M	1	1861550000
SAI-8-F 5P CNOMO 10M	1	1861590000

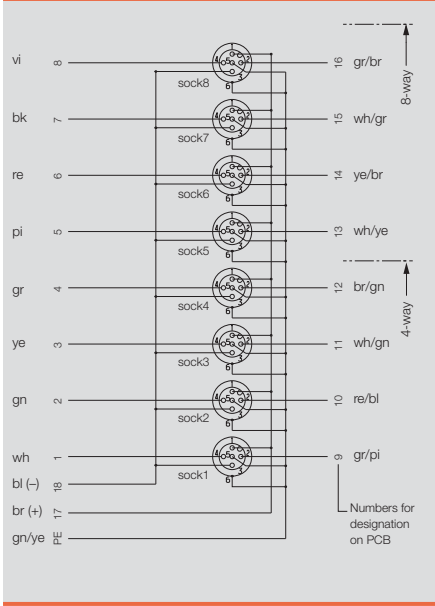
Technical data

Operating voltage	10...50 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	4 A
Total current	8 A
Pollution severity	3
Protection class	IP 67
Ambient temperature range	-25...+80 °C
Housing main material	PA 6 GF
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	Yes
Max. total current with 4-channel distributor is 8A. And with 8-channel distributor is 12A	

Wiring diagram



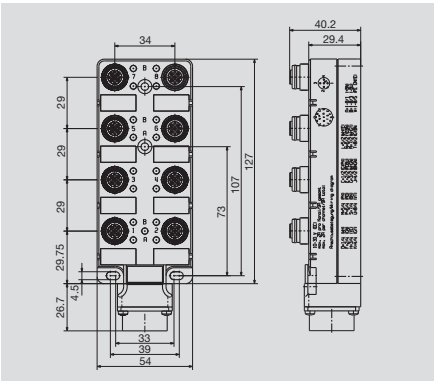
Wiring diagram



M12 Push-Pull

Bayonet joint

SAI-8-SHB



Ordering data

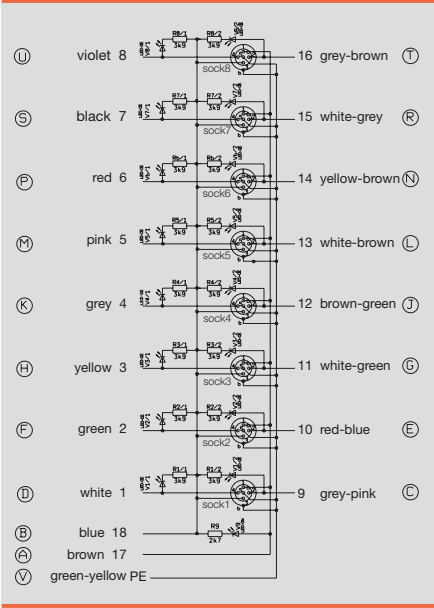
Complete modules	8 channel
Note	

SAI-8-SHB		5-pole
Type	Qty.	Order No.
SAI-8-SHB 5P FC	1	1872440000
Other versions on request		

Technical data

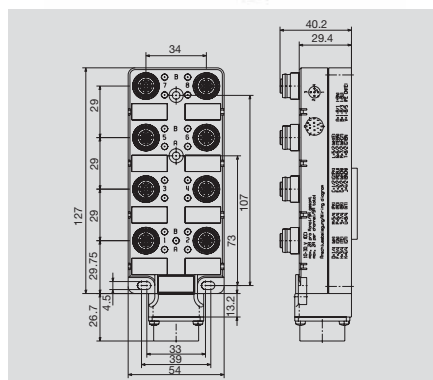
Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	4 A
Total current	9 A
Pollution severity	3
Protection class	IP 67
Ambient temperature range	-25...+80 °C
Housing main material	PA 6 GF
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	

Wiring diagram



Bayonet joint with socket connector on reverse

SAI-8-SHB



Ordering data

Complete modules	8 channel
Note	

SAI-8-SHB

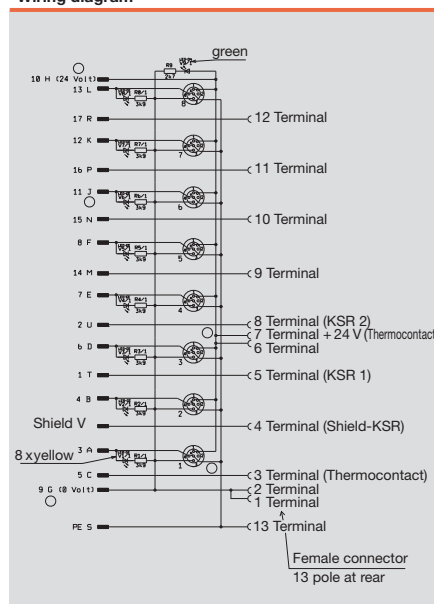
Type	Qty.	Order No.
SAI-8-SHB 5P F13 FC	1	1872460000
Other versions on request		

5-pole

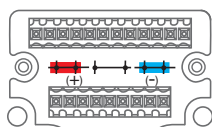
Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	4 A
Total current	9 A
Pollution severity	3
Protection class	IP 67
Ambient temperature range	-25...+80 °C
Housing main material	PA 6 GF
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	

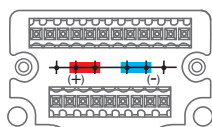
Wiring diagram



IDC – the quick connection



Factory setting
(see wiring diagram)
Current bridged



Current isolated



Hood version

- Compact IDC connection cuts production, commissioning and maintenance work
- Robust, knurled metal nut, safe handling requiring little force
- The dimensions of the IDC distributor correspond to and are compatible with the standard SAI distributor.
- Plug-in connection module for bus cables enhances on-site flexibility
- Three sizes for 4, 6 and 8 channels
- 3-pole version with one I/O signal per channel, 4-pole version with two I/O signals per channel
- Individual on site assembly of sensor/actuator lines
- Fast, reliable connection with IDC connection element
- IP 67 Ingress protection classification.

SAI fixed cable version

- Pre-assembled bus cables minimise installation work and avoid wiring errors
- 3 sizes for 4, 6 and 8 channels
- Highly flexible, cable carrier compatible bus cables with polyurethane (PUR/PVC) sheathing
 - 3 x 0.75 mm²
 - n x 0.34 mm²,
- 3-pole version with one I/O signal per channel, 4-pole version with two I/O signals per channel

IDC connection element

Ordering data

Type	Qty.	Order No.
SAI-SA-3-IDC	1	9457720000
SAI-SA-4-IDC	1	1766810000



The significant advantages of Weidmüller tools:

- Easy handling
- Very small, ideal for confined assembly conditions
- Patented solution
- Metal Connectors

Insulation displacement connections on Weidmüller SAI distributors are currently the smallest but also the most robust connection elements on the market. Thanks to their extremely small dimensions, corresponding distributors are available with the same dimensions in M12 or IDC versions.

For large series, e.g. where more than 100 modules are used every year, we recommend using a special tool to simplify the handling of the connected lines even further. However, this tool is not always necessary because all connection elements can be readily tightened by hand.

IDC tool



Ordering data

Type	Qty.	Order No.
SAI-IDC-Tool	1	1795020000

Screwty®

The IDC elements can also be tightened with the Weidmüller Screwty®.



Ordering data

Type	Qty.	Order No.
Screwty M12	1	1900001000

Protective cap M12 for IDC

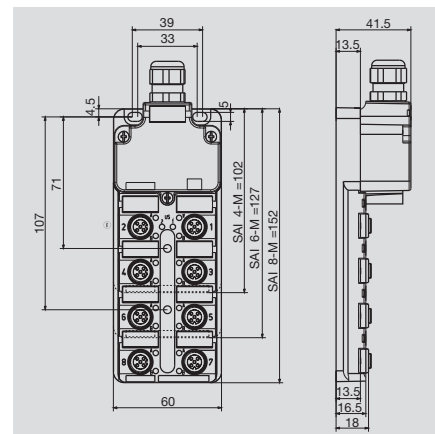


Ordering data

Type	Qty.	Order No.
SAI-SK-M12 IDC	10	1794850000

M12 IDC

Hood version



Ordering data

Complete modules	
	4 channel
	6 channel
	8 channel
Base unit	
	4 channel
	6 channel
	8 channel
Mounting hood	
	Tension clamp connection
	Tension clamp connection
	Screw connection
	Screw connection
Note	

SAI-4/6/8-M IDC

4-pole

Type	Qty.	Order No.
SAI-4-M 3P IDC	1	1760040000
SAI-6-M 3P IDC	1	1760050000
SAI-8-M 3P IDC	1	1760060000
SAI-4-M 3P IDC UT	2	1760041000
SAI-6-M 3P IDC UT	2	1760051000
SAI-8-M 3P IDC UT	2	1760061000
SAI-4/6/8-MH BLZF3.5	1	1752080000
SAI-4/6/8-MH BLZF3.5 SV	50	1752080050
SAI-4/6/8-MH BL3.5	1	1724750000
SAI-4/6/8-MH BL3.5 SV	50	1724750050
Other versions on request		

SAI-4/6/8-M IDC

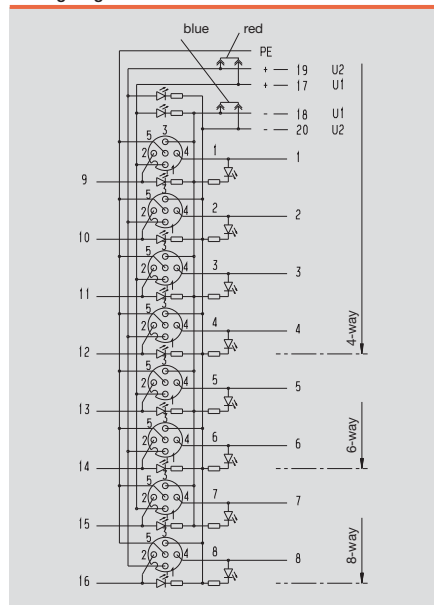
4-pole

Type	Qty.	Order No.
SAI-4-M 4P IDC	1	1766780000
SAI-6-M 4P IDC	1	1766790000
SAI-8-M 4P IDC	1	1766800000
SAI-4-M 4P IDC UT	2	1766781000
SAI-6-M 4P IDC UT	2	1766791000
SAI-8-M 4P IDC UT	2	1766801000
SAI-4/6/8-MH BLZF3.5	1	1752080000
SAI-4/6/8-MH BLZF3.5 SV	50	1752080050
SAI-4/6/8-MH BL3.5	1	1724750000
SAI-4/6/8-MH BL3.5 SV	50	1724750050
Other versions on request		

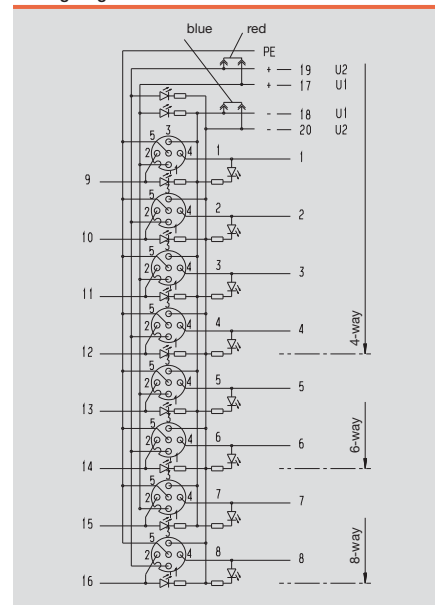
Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	3 A
Total current	10 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-20...+90 °C
Housing main material	Pocan
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	0.08...1.5 mm²
Suitable for dragline cable (fixed cable connection)	
With dual power supply: 2x8 = 16A total current	
Clamping range up to 2.5 mm² with screw connection	

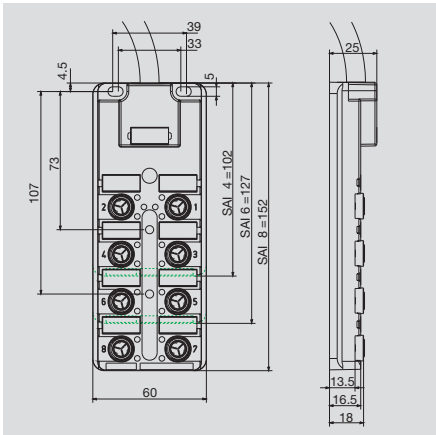
Wiring diagram



Wiring diagram



Fixed cable version



Ordering data

4 channel	Cable length 5 m Cable length 10 m
6 channel	Cable length 5 m Cable length 10 m
8 channel	Cable length 5 m Cable length 10 m
Note	

SAI-4/6/8-F IDC

Type	Qty.	Order No.
SAI-4-F 3P IDC PUR 5M	1	1766720000
SAI-4-F 3P IDC PUR 10M	1	1766730000
SAI-6-F 3P IDC PUR 5M	4	1766740000
SAI-6-F 3P IDC PUR 10M	1	1766750000
SAI-8-F 3P IDC PUR 5M	1	1766760000
SAI-8-F 3P IDC PUR 10M	1	1766770000
Other versions on request		

3-pole

SAI-4/6/8-F IDC

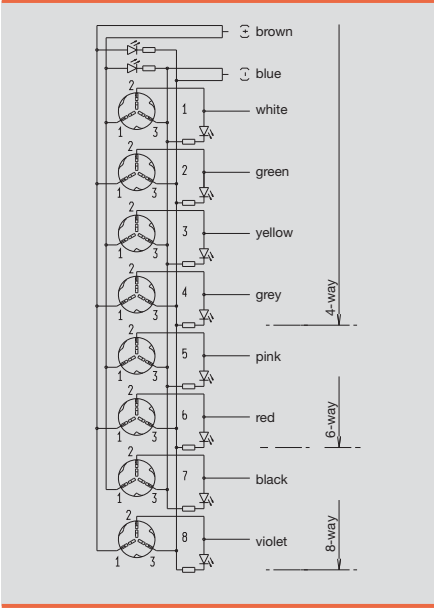
Type	Qty.	Order No.
SAI-4-F 4P IDC PUR 5M	1	1766660000
SAI-4-F 4P IDC PUR 10M	1	1766670000
SAI-6-F 4P IDC PUR 5M	1	1766680000
SAI-6-F 4P IDC PUR 10M	1	1766690000
SAI-8-F 4P IDC PUR 5M	1	1766700000
SAI-8-F 4P IDC PUR 10M	1	1766710000
Other versions on request		

4-pole

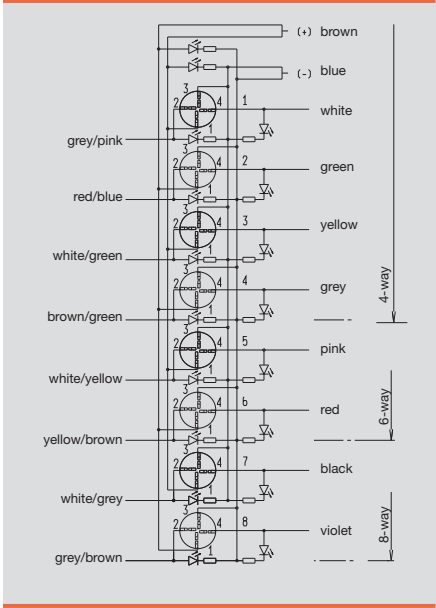
Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	3 A
Total current	9 A
Pollution severity	2
Protection class	IP 67
Ambient temperature range	-20...+80 °C
Housing main material	Pocan
Contact carrier material	PBT UL 94 V0
Base material of contacts	
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	Yes

Wiring diagram



Wiring diagram



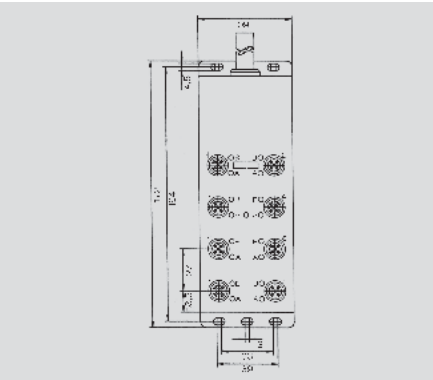
M12 VA stainless steel

Fixed cable version

- 5-pole, 2 signals per socket
- green LED operating indicator and yellow LED function indicator
- with stainless steel housing and cable glands

Ideal for machinery within the Food and Beverage Industries

SAI-8-F 5P M12 5M VA



Ordering data

Male plug
M12 connectors in stainless steel
Note

Technical data

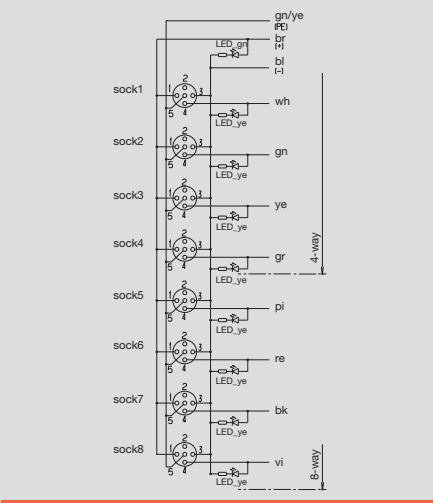
Temperature range	0 °C/+ 60 °C
Materials:	
Housing	stainless steel 1.4404/316L
Contact carrier	PVC
Contact	CuZn, pre-nickeled & 0.8 µm gold platin
Threaded bush	stainless steel 1.4404/316L
O-ring	EPDM
Mechanical data:	
Ingress protection class	IP69K
	only in screwed condition
	with associated mating pieces
Electrical data:	
Contact resistance	≤ 5mΩ
Current-carrying capacity	4 A per channel
	12 A max. total
Operating voltage	10-30 V DC
Rated voltage	32 V AC eff
Pollution severity	2 to VDE 0110
Accessories (included)	
	4 protective caps for channels not assigned

SAI-8-F 5P M12 5M VA

5-pole

Type	Qty.	Order No.
SAI-8-F 5P M12 5M VA	1	1865310000
SAIS-5/9-VA	1	1920700000

Wiring diagram



Tension-clamp connection M12, stainless steel

SAIS / SAIB VA

straight



Ordering data

Male	
	5-pole, PG 9
	5-pole, PG 9
Socket	
	5-pole, PG 9
	5-pole, PG 9
Note	

Type	Qty.	Order No.
SAIS 5/9-VA	1	1920700000
SAIS 5/9-VA-B-COD	1	1920720000
SAIB 5/9-VA	1	1920710000
SAIB 5/9-VA-B-COD	1	1920730000

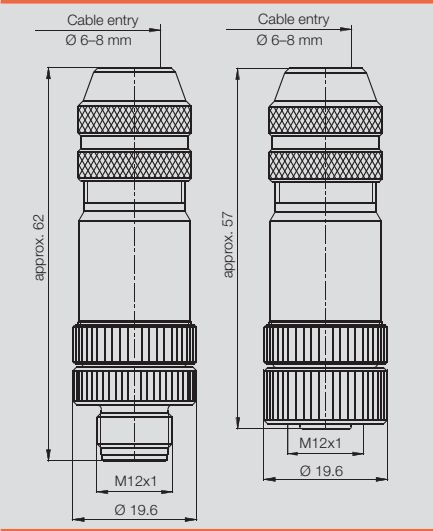
Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Cross-section for connected wire
Rated current
Rated voltage
Temperature range of housing
Protection class
Contact surface
Note

Tension clamp connection
1.4404/316L
M12
6...8 mm
0.25 - 0.5 mm²
4 A
125 V
-25...+85 °C
IP 69 k
gold-plated
PB = PROFIBUS (B-COD)

G

Dimensioned drawing



PB = PROFIBUS (B-COD)

Sensor-actuator distributors for special applications

All-metal

SAI-4/8-FMM M12



Shielded cable, e.g. for analogue initiators

Some applications need full shielding from sensor to control. This is possible with the all metal SAI distributors. The distributors are supplied with an EMC cable gland. Initiator LEDs are omitted.

Especially thick trunk cable

It is sometimes advisable to use the machine manufacturer's standard trunk cable. This cable will usually have a relatively large outside diameter and will therefore require plenty of space (SAI-4/6/8 MHD).

All-metal fixed cable distributors

Weidmüller metal distributors have proved their worth in many situations. They are available as 4 and 8 channel M12 versions with cable lengths of 5 or 10 m. Metal distributors are also necessary when ESD requirements must be complied with. The conductive metal surface provides low surface resistance.

Advantages:

- no ESD/EMC problems
- high resistance to chemicals or mechanical loads
- standard mounting dimensions

SAI-M with metal hood

SAI-4/6/8 MMS SAI-4/6/8 MM

MMS: **M**odular, **M**etal, **S**hield

MM: **M**odular, **M**etal



SAI-4/6/8 MH

MH: **M**odular, **H**igh



SAI-4/6/8 MHD

MHD: **M**odular, **H**igh, sealed

(for especially thick cables)



SAI-4/6/8 MMS with EMC cable gland in metal housing

Especially tough conditions where plastic is totally unsuitable. In certain cases it makes sense to avoid the use of plastics altogether. In such cases a distributor made completely from metal is required that can be connected to others using metal cable glands, without additional connections for the shielding.

Cable gland: M20

For cables with outside insulation diameter from 10 mm to 14 mm. Listed below are just some of the cable sizes that are suitable for the SAI distributor with M20 cable gland:

- 14 x 0.50 mm² bis 16 x 0.50 mm²
- 8 x 0.75 mm² bis 15 x 0.75 mm²
- 8 x 1.00 mm² bis 10 x 1.00 mm²
- 5 x 1.50 mm² bis 7 x 1.50 mm²

Cable gland: M25

For cables with outside insulation diameter from 13 mm to 18 mm. Listed below are just some of the cable sizes that are suitable for the SAI distributor with M25 cable gland:

- 21 x 0.50 mm²
- 18 x 0.75 mm² bis 21 x 0.75 mm²
- 14 x 1.00 mm² bis 20 x 1.00 mm²
- 8 x 1.50 mm² bis 16 x 1.50 mm²

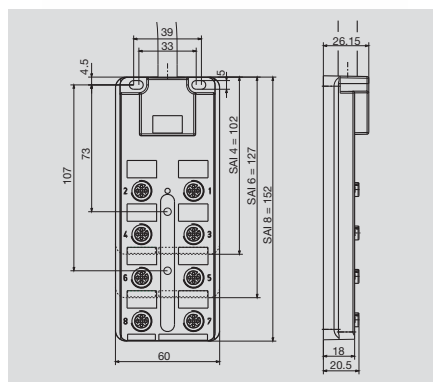
Overview of metal distributors

Type	SAI-UT	Sockets	M12	Poles-Hood	Form	Cable gland	Cable gland	Length	Order No.
SAI-4-MH-4P M12	PBT	4	4	Zn-G	high	M20	plastic		1705922000
SAI-6-MH-4P M12	PBT	6	4	Zn-G	high	M20	plastic		1705932000
SAI-8-MH-4P M12	PBT	8	4	Zn-G	high	M20	plastic		1705942000
SAI-4-MH-5P M12	PBT	4	5	Zn-G	high	M20	plastic		1701232000
SAI-6-MH-5P M12	PBT	6	5	Zn-G	high	M20	plastic		1701242000
SAI-8-MH-5P M12	PBT	8	5	Zn-G	high	M20	plastic		1701252000
SAI-4-MHD-5P M12	PBT	4	5	Zn-G	high	M25	plastic		1701233000
SAI-6-MHD-5P M12	PBT	6	5	Zn-G	high	M25	plastic		1701243000
SAI-8-MHD-5P M12	PBT	8	5	Zn-G	high	M25	plastic		1701253000
SAI-4-MHD-4P M12	PBT	4	4	Zn-G	high	M25	plastic		1705923000
SAI-6-MHD-4P M12	PBT	6	4	Zn-G	high	M25	plastic		1705933000
SAI-8-MHD-4P M12	PBT	8	4	Zn-G	high	M25	plastic		1705943000
SAI-4-MMS-4P M12	Zn-G	4	4	Zn-G	low	M20	EMC		1783540000
SAI-6-MMS-4P M12	Zn-G	8	4	Zn-G	low	M20	EMC		1783530000
SAI-4-MMS-5P M12	Zn-G	4	5	Zn-G	low	M20	EMC		1783520000
SAI-8-MMS-5P M12	Zn-G	8	5	Zn-G	low	M20	EMC		1783510000
SAI-4-MM-5P M12	Zn-G	4	5	Zn-G	low	M20	brass		1783500000
SAI-8-MM-5P M12	Zn-G	8	5	Zn-G	low	M20	brass		1783490000
SAI-4/6/8 MH-MH BL 3.5				Zn-G	high	M20	plastic		1724752000
SAI-4/6/8 MH-MHD BL 3.5				Zn-G	high	M25	plastic		1724753000
SAI-8-MH-5P M12 ZF III	PBT	8	5	Zn-G	high	M20	plastic		1782760000
SAI-8-MMS-5P M12 ZF III	Zn-G	8	5	Zn-G	high	M20	plastic		1782740000
SAI-4/6/8 MH-MH BL-ZF 3.5				Zn-G	high	M20	plastic		1782750000
SAI-4-FMM-4P M12 5M	Zn-G	4	4					5 m	9456190002
SAI-4-FMM-4P M12 10M	Zn-G	4	4					10 m	9456200002
SAI-8-FMM-4P M12 5M	Zn-G	8	4					5 m	9456750002
SAI-8-FMM-4P M12 10M	Zn-G	8	4					10 m	9456760002
Note: The cable outside diameter can vary from manufacturer to manufacturer. It is therefore possible that the cable glands hold other cables firmly despite a different strand lay-up. In each case, it is best to first measure the cable diameter and then choose an appropriate distributor.									

M12 metal distributors

Fixed cable version

SAI-4-FMM



Ordering data

4 channel	Cable length 5 m Cable length 10 m
8 channel	Cable length 5 m Cable length 10 m
Note	

SAI-4-FMM

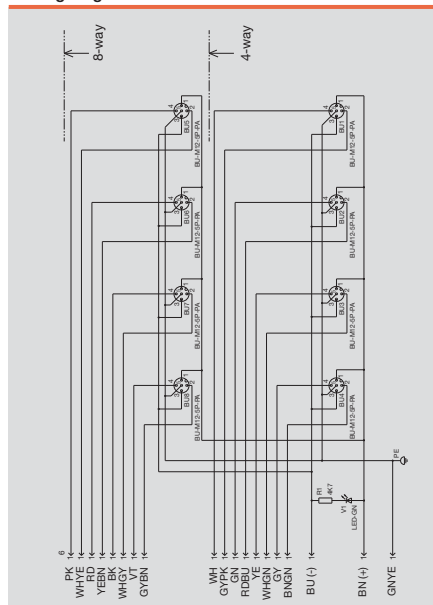
4-pole

Type	Qty.	Order No.
SAI-4-FMM-4P M12 5M	4	9456190002
SAI-4-FMM-4P M12 10M	3	9456200002
SAI-8-FMM-4P M12 5M	1	9456750002
SAI-8-FMM-4P M12 10M	3	9456760002
Additional variants on request Bus cable is not shielded		

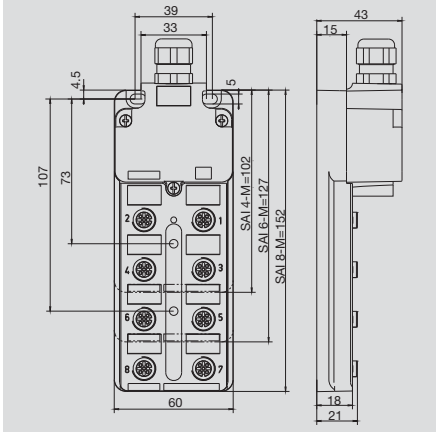
Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	3 A
Total current	9 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-20...+90 °C
Housing main material	CuZn, nickel-plated
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	silver
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	Yes

Wiring diagram



Hood version



Ordering data

Complete modules,4-pole	
	4 channel
	8 channel
Complete modules,5-pole	
	4 channel
	8 channel
Tension-clamp connection,high cover	8 channel
Base unit	
	8 channel
Mounting hood	
	Screw connection
Note	

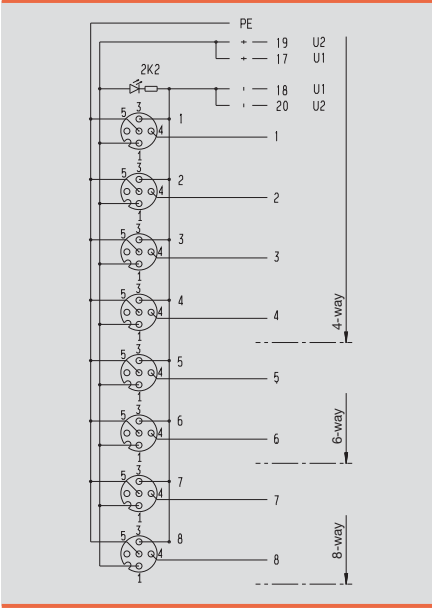
SAI-4/6/8-MMS		M12	
Type	Qty.	Order No.	
SAI-4-MMS 4P M12	1	1783540000	
SAI-8-MMS 4P M12	1	1783530000	
SAI-4-MMS 5P M12	1	1783520000	
SAI-8-MMS 5P M12	1	1783510000	
SAI-4/6/8 MH-MM BL 3.5	1	1724754000	
With EMC cable gland			

SAI-4/6/8-MM		M12	
Type	Qty.	Order No.	
SAI-4-MM 5P M12	1	1783500000	
SAI-8-MM 5P M12	1	1783490000	
SAI-8-MMH 5P M12 ZF	1	1782740000	
SAI-8-MM 5P M12 UT	2	1783491000	
SAI-4/6/8 MH-MM BL 3.5	1	1724754000	
MM without initiator LED and with standard metal cable gland			

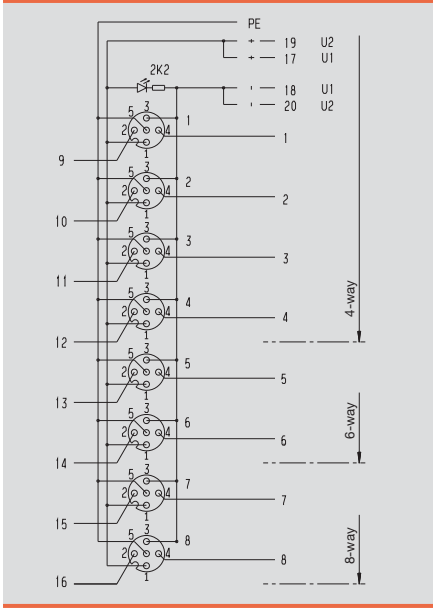
Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	3 A
Total current	10 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-20...+90 °C
Housing main material	CuZn, nickel-plated
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	silver
Flammability class UL 94	V-0
Clamping range of hood-version	0.08...1.5 mm²
Suitable for dragline cable (fixed cable connection)	

Wiring diagram



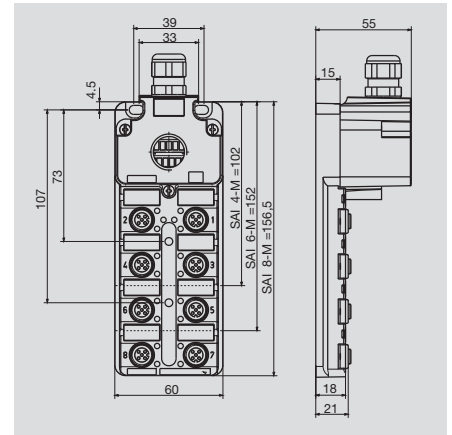
Wiring diagram



M12 metal distributors

Hood version with M20 outlet

For cables with 10-14 mm outer diameter



Ordering data

Complete modules	
	4 channel
	6 channel
	8 channel
Tension clamp connection	8 channel
Mounting hood	
	Tension clamp connection
	Screw connection
Note	

SAI-4/6/8-MH

Type	Qty.	Order No.
SAI-4-MH-4P M12	1	1705922000
SAI-6-MH-4P M12	1	1705932000
SAI-8-MH-4P M12	1	1705942000
SAI-4/6/8 MH MH BLZF3,5	1	1782750000
SAI-4/6/8 MH-MH BL 3.5	1	1724752000
Other versions on request		

4-pole

SAI-4/6/8-MH

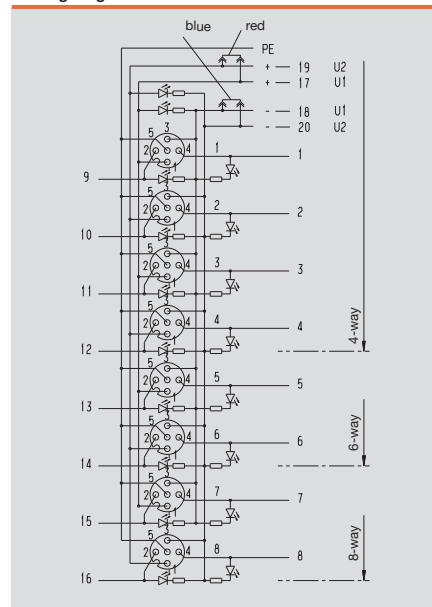
Type	Qty.	Order No.
SAI-4-MH-5P M12	1	1701232000
SAI-6-MH-5P M12	1	1701242000
SAI-8-MH-5P M12	1	1701252000
SAI-8-MH-5P M12 ZF III	1	1782760000
SAI-4/6/8 MH MH BLZF3,5	1	1782750000
SAI-4/6/8 MH-MH BL 3.5	1	1724752000
Other versions on request		

5-pole

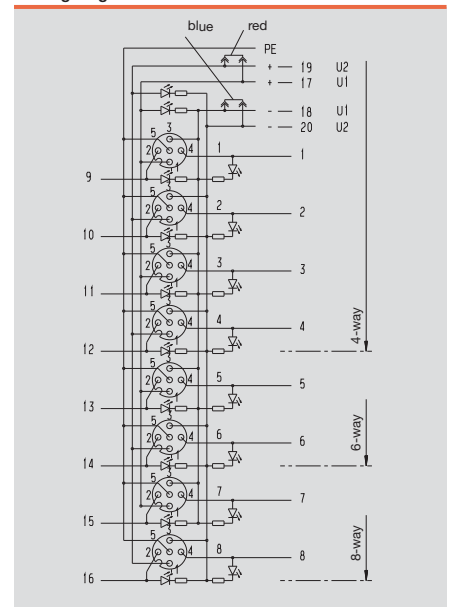
Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	3 A
Total current	10 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-20...+90 °C
Housing main material	CuZn, nickel-plated
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	silver
Flammability class UL 94	V-0
Clamping range of hood-version	0.08...1.5 mm ²
Suitable for dragline cable (fixed cable connection)	
With dual power supply: 2x8 = 16A total current	
Clamping range up to 2.5 mm ² with screw connection	

Wiring diagram

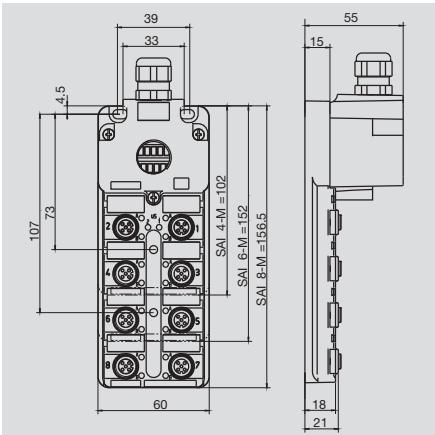


Wiring diagram



Hood version with M25 outlet

For cables with 13-18 mm outer diameter



Ordering data

Complete modules	
	4 channel
	6 channel
	8 channel
Mounting hood	
	Screw connection
Note	

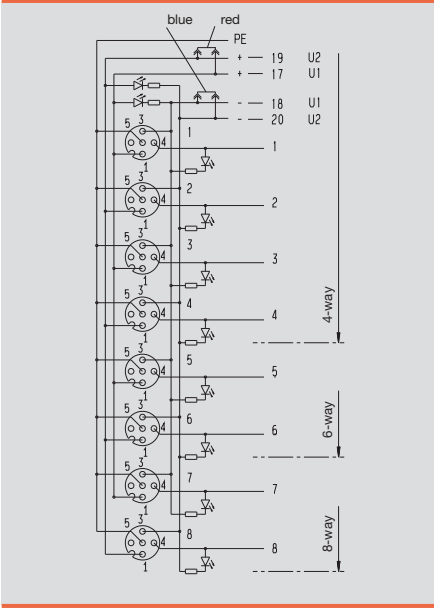
SAI-4/6/8-MHD		4-pole
Type	Qty.	Order No.
SAI-4-MHD-4P M12	1	1705923000
SAI-6-MHD-4P M12	1	1705933000
SAI-8-MHD-4P M12	1	1705943000
SAI-4/6/8 MH-MHD BL 3.5	1	1724753000
Other versions on request		

SAI-4/6/8-MHD		5-pole
Type	Qty.	Order No.
SAI-4-MHD-5P M12	1	1701233000
SAI-6-MHD-5P M12	1	1701243000
SAI-8-MHD-5P M12	1	1701253000
SAI-4/6/8 MH-MHD BL 3.5	1	1724753000
Other versions on request		

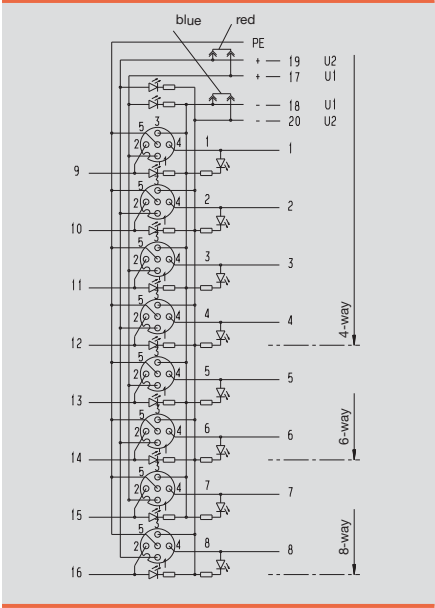
Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	3 A
Total current	10 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-20...+90 °C
Housing main material	CuZn, nickel-plated
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	silver
Flammability class UL 94	V-0
Clamping range of hood-version	0.08...1.5 mm²
Suitable for dragline cable (fixed cable connection)	
With dual power supply: 2x8 = 16A total current	
Clamping range up to 2.5 mm² with screw connection	

Wiring diagram



Wiring diagram



For switching with five no-voltage contacts in an M12 without LED

with hood



Emergency stop wiring

Sometimes a machine builder will need more than two floating contacts in one M12 plug-in connector. This is the case, for example, in the wiring for some “emergency stop” circuits. It was for this application that Weidmüller developed the 1:1 SAI distributor.

This SAI distributor has four M12 plug-in connectors with five floating contacts in one socket connector. The distributor is supplied complete with hood.

When connecting PT100 3- and 4-conductor initiators, we recommend the new shielded metal version. If you need other circuit configurations, simply contact us.

Note: This distributor should not be used as base module for active bus distributors.

base element



Wiring diagram

Socket	Contact	BL 3.5 contact
1	1	1
1	2	2
1	3	3
1	4	4
1	5	5
2	1	6
2	2	7
2	3	8
2	4	9
2	5	10
3	1	11
3	2	12
3	3	13
3	4	14
3	5	15
4	1	16
4	2	17
4	3	18
4	4	19
4	5	20
–	–	21

metal



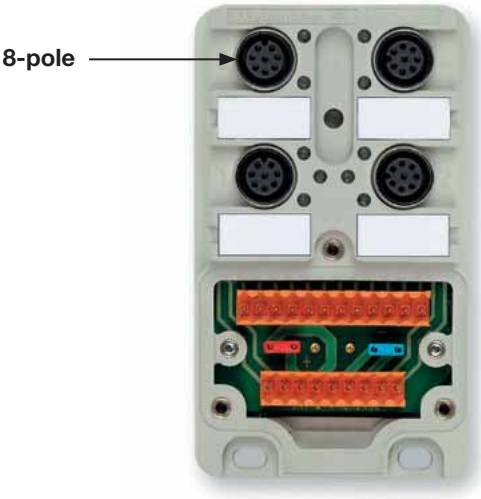
Technical data

Current per channel	2A
Total current	8A
LEDs	No LEDs are integrated at any point.

Ordering data

Type	Qty.	Order No.
SAI-4-M 5P M12 1:1 (plastic hood)	1	1806010000
Base element (plastic)	1	1806011000
SAI-4-MMS 5P M12 1:1 (Metal hood)	1	1897680000

SAI distributor with 8 poles per M12



Applications

This distributor can be used both as a base module for satellite solutions (SAI-Combi) and for connecting sensors/units with more than two contacts.

SAI-Combi

A sub-distribution board can be connected to every M12 with the help of the SAI-4-M 8P in conjunction with the SAI Active bus hood. This SAI should then be a 4-channel distributor with one channel per socket. The SAI-4-M 4P M12 is particularly suitable.

Part No. **1705920000**.

Sensors, units with more than two signals in one line

As one socket in this module contains four signal paths and, in addition, two +, two – and one PE, components with more than two signal lines can be connected to this module. Eight-pole connecting cables are available on request.

Wiring

M12 socket	M12 contact	BL 3.5 connection	PLC input	Supply
1	1	1	E0.0	
1	2	3	E0.1	
1	3	5	E0.2	
1	4	7	E0.3	
2	1	2	E0.4	
2	2	4	E0.5	
2	3	6	E0.6	
2	4	8	E0.7	
3	1	9	E1.0	
3	2	11	E1.1	
3	3	13	E1.2	
3	4	15	E1.3	
4	1	10	E1.4	
4	2	12	E1.5	
4	3	14	E1.6	
4	4	16	E1.7	
1/3	5	17		24 V
2/4	5	19		24 V
1/3	6/7	18		0 V
2/4	6/7	20		0 V
1/2/3/4	8	PE		PE

The jumpers in the distributor enable the potentials of 17 and 19 or 18 and 20 to be bridged. Contacts 6 and 7 are bridged in the 8-pole M12 in order to increase the current-carrying capacity. total current per M12: 2 A, signal current per pin: 1 A

Ordering data

Type	Qty.	Order No.
Complete module: SAI-4-M 8P M12	1	1807640000
Base separate: SAI-4-M M12 UT	1	1807641000
Matching hood passive: SAI-4/6/8-MH-BL3.5	1	1724750000

Technical information: The distributor does not include any signalling LEDs.
Supply LEDs and electrical isolation are provided.

Fixed cable version

Fixed cable version



This distributor includes the option of attaching either a PNP sensor or an NPN sensor with 2 or 3 conductor connection to an M12 socket.

Eight inputs are available in total. In the case of a switched sensor, a + signal on the corresponding wire is connected through and the appropriate LED is illuminated.

The upper LED "N" is illuminated for NPN sensors and the lower LED "P" for PNP sensors. Do not connect a T-piece to the M12 socket.

The existing M12 plug-in connectors are wired in such a manner that the PNP sensor can be connected to pin 4 and the NPN sensor to pin 2.

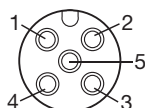
The distributor has eight channels and 5 m of cable. Other versions are also available.

Pin assignment

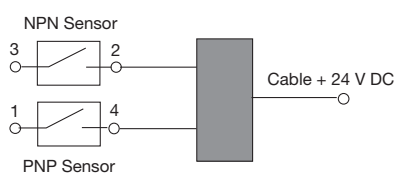
M12 socket	Pin	Function	Pin	Function	Output	Wire colour	Wire size
1	4	PNP	2	NPN	1	white	0.34 mm ²
2	4	PNP	2	NPN	2	green	0.34 mm ²
3	4	PNP	2	NPN	3	yellow	0.34 mm ²
4	4	PNP	2	NPN	4	grey	0.34 mm ²
5	4	PNP	2	NPN	5	pink	0.34 mm ²
6	4	PNP	2	NPN	6	red	0.34 mm ²
7	4	PNP	2	NPN	7	black	0.34 mm ²
8	4	PNP	2	NPN	8	violet	0.34 mm ²
all	1	24 V DC				brown	0.75 mm ²
all	3	0 V DC				blue	0.75 mm ²
all	5	PE				green/yellow	0.75 mm ²

M12 sockets

Pin 1 = +24 V DC
Pin 2 = NPN input
Pin 3 = 0 V DC
Pin 4 = PNP input
Pin 5 = PE



Wiring diagram (schematic)



Technical data

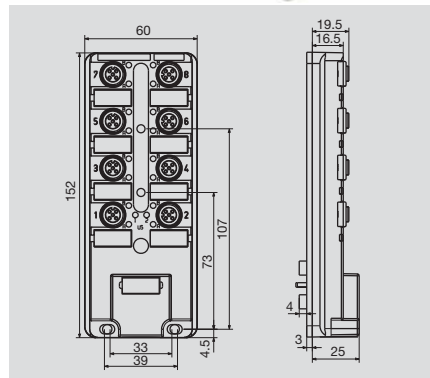
Operating voltage	24 V DC ±20 %
Operation temperature	0...80 °C
Storage temperature	-25...80 °C
Ingress protection class	IP68
PUR cable	5 m
Max. no-load current for 2-wire NPN sensors	2 mA DC

Ordering data

Type	Qty.	Order No.
SAI-8-F 5P NPN-PNP 5M	1	1814990000

Wall bushing

SAI-8-B 5P M12 SL



Ordering data

Note

SAI-8-B 5P M12 SL

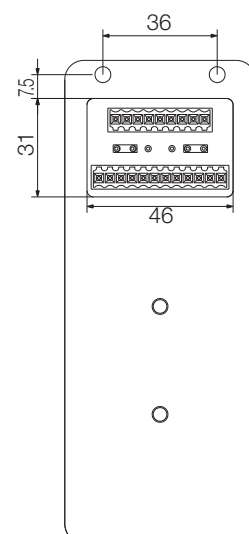
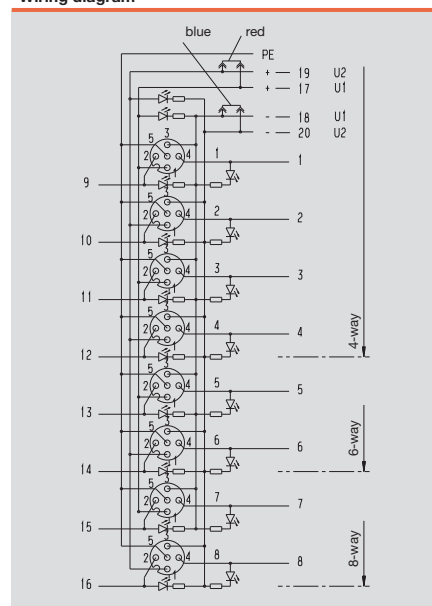
5-pole

Type	Qty.	Order No.
SAI-8-B 5P M12 SL	1	1847560000
BL 3.5 connector included in delivery		

Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	3 A
Total current	10 A
Pollution severity	3
Protection class	IP 65
Ambient temperature range	-20...+90 °C
Housing main material	Pocan
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	0.08...1.5 mm²
Suitable for dragline cable (fixed cable connection)	

Wiring diagram



Overview

Distributors for system cabling

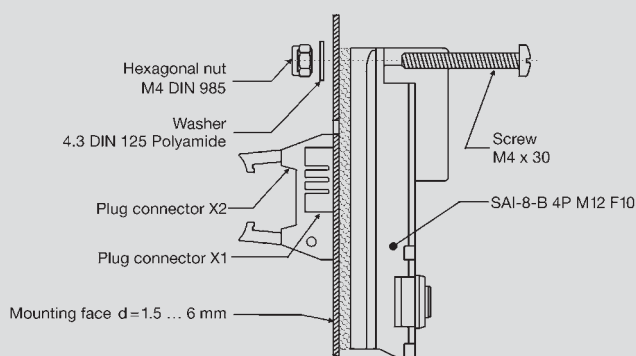
On site distribution is becoming more important. For example, in some places the IP 20 I/O module has to be mounted in housings directly on the machine. This is where a simplified form of wiring is essential.

Weidmüller now offers two simple solutions

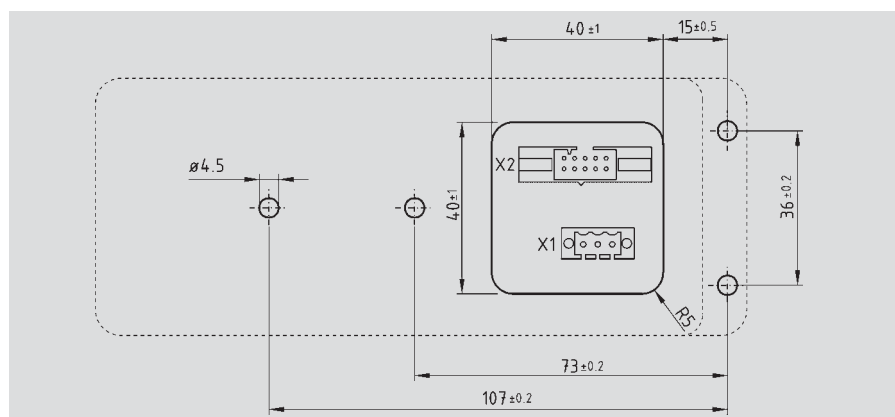
- A distributor equipped at the rear with a standardised ribbon cable connector, which is compatible with the Weidmüller PLC system interface.
- Weidmüller also offers a unique solution for feeding bus cables through panels that can be plugged in from both sides.

Advantages

- Sensors and actuators can be plugged in from outside
- Through-panel version can be mounted in cut outs in steel panels
- Standardised ribbon cable connector inside
- Plus: M12 through-panel feed that can be plugged in from both sides



Drilling template



Advantages of system cabling

Fast

- Time saving installation
- Reduces commissioning and troubleshooting times
- On site wiring cuts wiring costs

Safe

- Reduces installation errors
- Using system cables instead of individual wires improves clarity in control cabinets
- Direct marking corresponding to the PLC

Variability

- Additional I/O modules available
- Cable length options
- Easy replacement of I/O interfaces provides flexibility

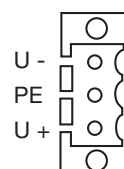
Contact assignment

Male connector X1

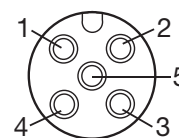
M12 socket		Male connector X1
1 ... 8	Pin 1	U +
1 ... 8	Pin 3	U –
1 ... 8	Pin 5	PE

Male connector

X1



M12 socket



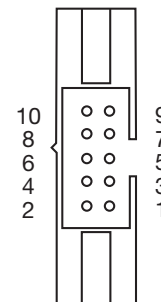
Contact assignment

Male connector X2

M12 socket		Male connector X2
1	Pin 4	1
2	Pin 4	2
3	Pin 4	3
4	Pin 4	4
5	Pin 4	5
6	Pin 4	6
7	Pin 4	7
8	Pin 4	8
1 – 8	Pin 1	9
1 – 8	Pin 3	10

Male connector

X2



Note:

You will find further products for Interface units and PLC solutions in the Electronic catalogue 4.5.

Technical data

Operating voltage
Outputs
Inputs

Mounting conditions

Mounting surface

Surface temperature
Ingress protection class

Fixings

Note:

10 – 30 V (DC)

max. 1 A per channel / max. 8 A in total

max. 1 A in total

sheet steel, flat, min. 1.5 mm thick, or panels with at least equivalent stability, max. 6 mm thick

max. 40 °C

IP67/IP68 only in conjunction

with control cabinets with equivalent class of protection

4 screws + washers + nuts / torque: 0.8 Nm

Connect the male connector 3.5 (X1) when using actuators

Ordering data

Distributor
Male connector X1

Type	Qty.	Order No.
SAI-8-B 4P M12 F10	1	1812170000
BL 3.50/07/180 SN DKGN BX	50	1606550000

Pre-assembled hood version

In some instances it is helpful to order the hoods pre-assembled.



SAI distributor with pre-assembled hood Colour-coded cable

Ordering data		4-pole
Type	Length	Order No.
8-channel		
SAI-8-MF 4P PUR 5M	5 m	1799960000
SAI-8-MF 4P PUR 10M	10 m	1789190000

Ordering data		5-pole
Type	Length	Order No.
4-channel		
SAI-4-MF 5P PUR 5M	5 m	1804600000
SAI-4-MF 5P PUR 10M	10 m	1804580000
8-channel		
SAI-8-MF 5P PUR 5M	5 m	1804590000
SAI-8-MF 5P PUR 10M	10 m	9457430000
8-channel, without initiator LED		
SAI-8-MF 5P PUR 5M OL	5 m	9457350000

Pre-assembled hood Colour-coded cable

Ordering data		4-pole
Type	Length	Order No.
SAI-4/6/8-MHF 4P PUR 4M	4 m	1791450400
SAI-4/6/8-MHF 4P PUR 6M	6 m	1791450600
SAI-4/6/8-MHF 4P PUR 9M	9 m	1791450900
SAI-4/6/8-MHF 4P PUR14M	14 m	1791451400
SAI-4/6/8-MHF 4P PUR20M	20 m	1791452000
SAI-4/6/8-MHF 4P PUR28M	28 m	1791452800
SAI-4/6/8-MHF 4P PUR34M	34 m	1791453400

Matching base module

Type	Qty.	Order No.
SAI-4-M-4PM12UT	1	1705921000
SAI-6-M-4PM12UT	1	1705931000
SAI-8-M-4PM12UT	1	1705941000

Pre-assembled hood

Ordering data		5-pole
Type	Length	Order No.
SAI-4/6/8-MHF 5P PUR 4M	4 m	1791460400
SAI-4/6/8-MHF 5P PUR 6M	6 m	1791460600
SAI-4/6/8-MHF 5P PUR 9M	9 m	1791460900
SAI-4/6/8-MHF 5P PUR14M	14 m	1791461400
SAI-4/6/8-MHF 5P PUR16M	16 m	1791461600
SAI-4/6/8-MHF 5P PUR20M	20 m	1791462000
SAI-4/6/8-MHF 5P PUR28M	28 m	1791462800
SAI-4/6/8-MHF 5P PUR34M	34 m	1791463400
SAI-4/6/8-MHF 5P PUR40M	40 m	1791464000
SAI-4/6/8-MHF 5P PUR50M	50 m	1791465000
SAI-4/6/8-MHF 5P PUR55M	55 m	1791465500

Matching base module

Type	Qty.	Order No.
SAI-4-M-5PM12UT	1	1701231000
SAI-6-M-5PM12UT	1	1701241000
SAI-8-M-5PM12UT	1	1701251000

SAI M8

Weidmüller offers two different series for the M8 range. Both of these series offer key advantages: while one is optimised for size, the other has a patented shape and protected design that make it easy to handle. The SAI M8 product line is available with up to 12 plug in slots (as a fixed-cable version) and with up to 10 plug-in slots (as a pluggable version). The housings can be screwed on from the side or from the top which makes them more versatile. They are durable and well-sealed with a sturdy, fully encapsulated construction. These single row distributors

are easy to handle; their compact shape makes them one of the smallest product solutions available on the market. The hooded distributor is a favourite from the line of ergonomic distributors (also known as the hedgehog distributor). The cable outlet is customisable and can exit from the top or from the back. These distributors are of course also fully encapsulated.



**Easily accessible**

The side-mounted M8 connector ensures very convenient handling

**Directly on the PCB**

Custom versions are also available.
This is the PCB connection module.

**Space-saving**

The line version has a very small size.

Overview

Fixed cable version



Compact dimensions, readily accessible M8 connections, eye-catching design

The unconventional design of this generation of SAI M8 distributors catches the eye immediately. Their shape is helpful because in this patented design the sockets are no longer arranged in simple rows. Instead, some are on 45° bevelled surfaces. That considerably improves the accessibility of the screw connections for the sensor and actuator cables. Ease of use, compact dimensions and the eye catching design are the obvious advantages of this M8 generation.

The following variations are available:

- SAI M8 distributor with removable connection hood; the bus cable can be connected either vertically or horizontally
- SAI M8 distributor with permanently attached, pre-assembled bus cable, 5 or 10 m long; this version is particularly slim and is therefore ideal for mounting in confined spaces
- SAI M8 distributor with metal plated M23 thread

G

Hood version



M23 version



SAI-M8-Line

M8 distributor with M12 outlet



M8 distributor line / fixed-cable version



M8 distributor with solder pins



n

Extra-narrow M8 distributor for confined spaces

Single-row M8 distributors are the smallest sensor-actuator modules currently available with this thread size and it is precisely their size that is decisive for applications. Therefore, this form has become very popular. It is important to maintain the widest possible range of options. The SAI-M8-Line products can provide many interesting solutions:

- 4 and 6 channel modules with 8 pole M12 bus connection
- 8 and 10 channel modules with 12 pole bus connection
- 4, 10 and 12 channel distributors with fixed cable connection, the 4 and 8 channel modules also with 4 poles

It is important to note that the distributors can be labelled with the same markers as the Weidmüller 5 mm modular terminals. Therefore, no new tags had to be introduced. The modules can also be mounted sideways and are completely encapsulated.

Consequently, Weidmüller SAI distributors represent stability, robustness, flexibility and compactness in one unit.

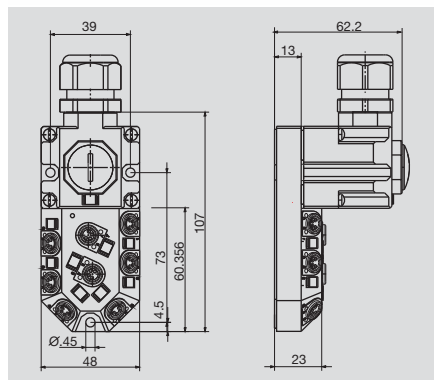
PCB version of a complete SAI distributor

During the design of PCBs, it is often necessary to plug in different external data lines. There are a variety of connectors available for this purpose. For machine construction, the M8 and M12 connectors have become established as the standard solutions for sensor and actuator wiring. When attempting to mount these PCB-type connectors to the PCB, there is a significant risk that they will not be firmly attached to the board. Now, the SL version of the SAI distributor series solves this problem. The distributor can be completely mounted onto a PCB. It features soldering pins for the electrical connection to the PCB. The distributor itself should be slightly raised up during assembly by means of washers. This provides some clearance under the box. Naturally, the power supply channels are bridged in the distributor. This saves space on the PCB since there is no need for holes on any assembly surface. Thus the reverse side can be used for other purposes.

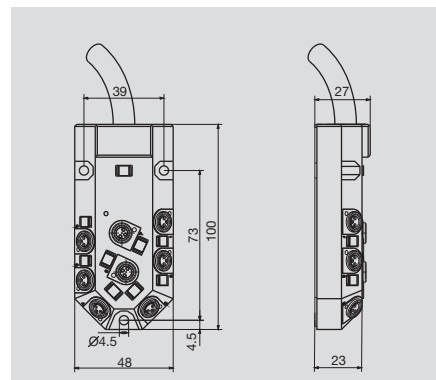
M8 distributors

Hooded/fixed cable version

SAI-4/8-M



SAI-4/8-F



Ordering data

3-pole	
Cable length 5 m (with fixed cable version)	4 channel
	8 channel
Cable length 10 m (with fixed cable version)	4 channel
	8 channel
4-pole	
Cable length 5 m (with fixed cable version)	4 channel
	8 channel
Cable length 10 m (with fixed cable version)	4 channel
	8 channel
Note	

SAI-4/8-M

Type	Qty.	Order No.
SAI-4-M 3P M8	1	1784680000
SAI-8-M 3P M8	1	1784670000
SAI-4-M 4P M8	1	1784700000
SAI-8-M 4P M8	1	1784690000
Other versions on request		

M8

SAI-4/8-F

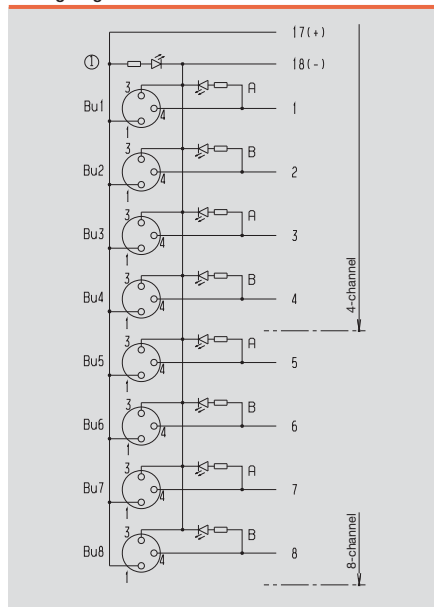
Type	Qty.	Order No.
SAI-4-F 3P M8 PUR 5M	1	1784640000
SAI-8-F 3P M8 PUR 5M	1	1784620000
SAI-4-F 3P M8 PUR 10M	1	1784630000
SAI-8-F 3P M8 PUR 10M	1	1784610000
SAI-4-F 4P M8 PUR 5M	1	1784600000
SAI-8-F 4P M8 PUR 5M	1	1784580000
SAI-4-F 4P M8 PUR 10M	1	1784590000
SAI-8-F 4P M8 PUR 10M	1	1784570000
Other versions on request		

M8

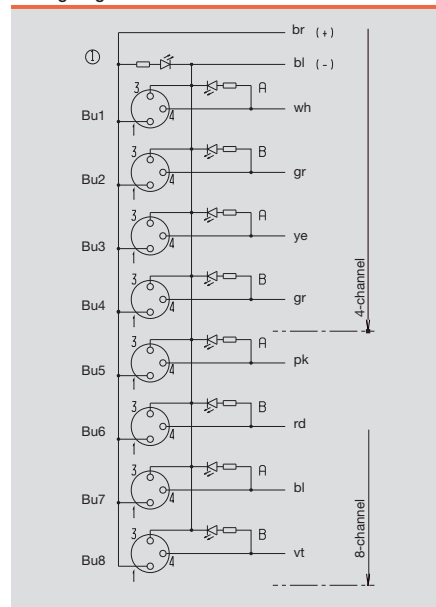
Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	2 A
Total current	8 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-20...+80 °C
Housing main material	Pocan
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	0.08...1 mm²
Suitable for dragline cable (fixed cable connection)	Yes

Wiring diagram



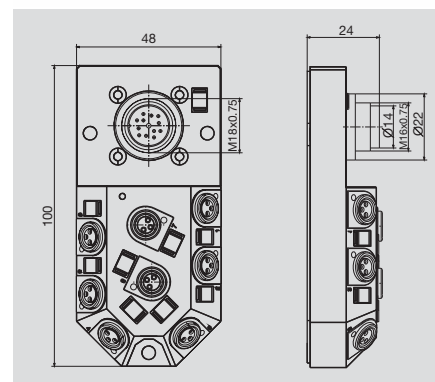
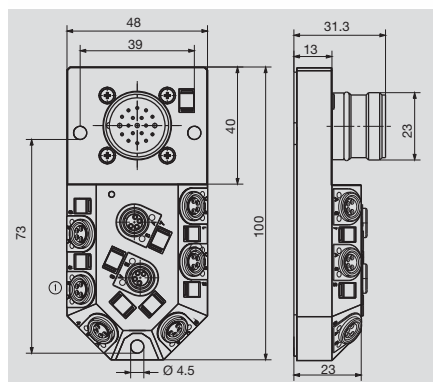
Wiring diagram



With M23/ M16 outlet

SAI-4/8-M23

SAI-8-M16



Ordering data

3-pole	8 channel
4-pole	4 channel
	8 channel
Note	

SAI-4/8-M23

M23

Type	Qty.	Order No.
SAI-4-M23 4P M8	1	1784660000
SAI-8-M23 4P M8	1	1784650000
Other versions on request		

SAI-8-M16

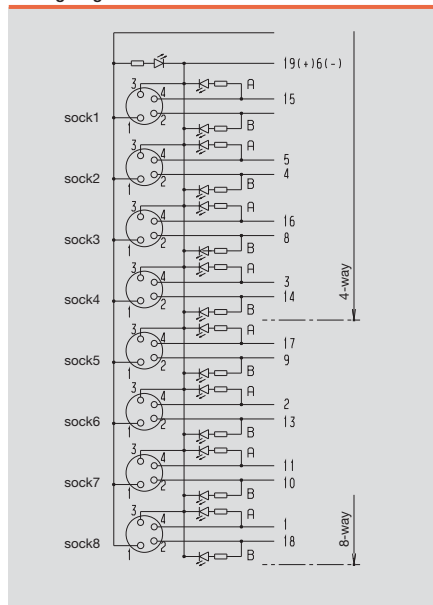
M16

Type	Qty.	Order No.
SAI-8-M16 3P M8	1	1795900000
Other versions on request		

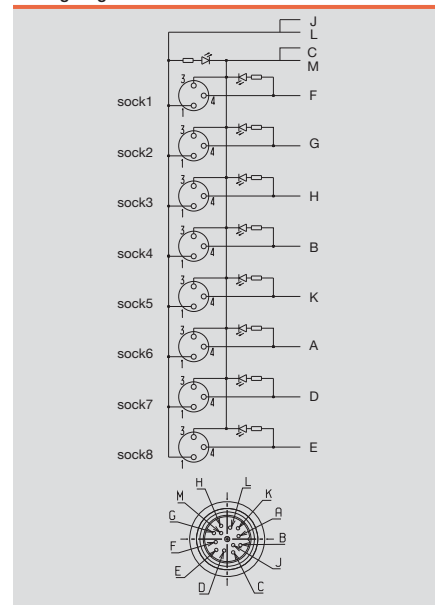
Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	2 A
Total current	8 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-20...+90 °C
Housing main material	Pocan
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	

Wiring diagram



Wiring diagram

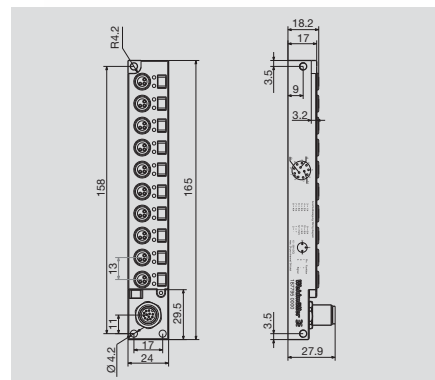
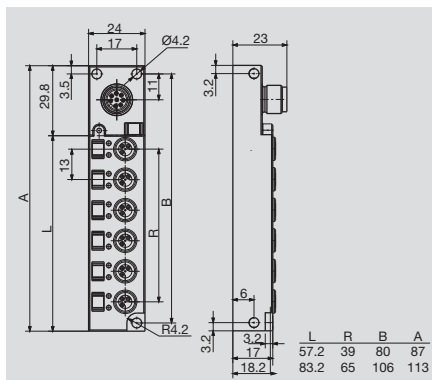


M8 distributors

Line

SAI-4/6-S

SAI-5/8-S



Ordering data

3-pole	
	4 channel
	6 channel
	8 channel
	10 channel
3-pole without LED	
	4 channel
	6 channel
Note	

SAI-4/6-S

M12

Type	Qty.	Order No.
SAI-4-S 3P M8 L	1	1828740000
SAI-6-S 3P M8 L	1	1828730000
SAI-4-S 3P M8 L OL	1	1051760000
SAI-6-S 3P M8 L OL	1	1932380000
Other versions on request		

SAI-5/8-S

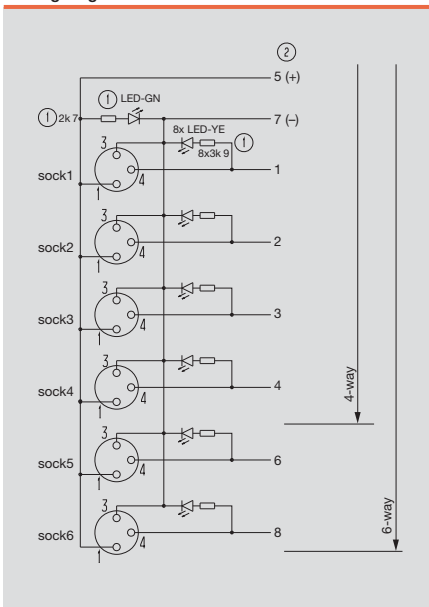
M12

Type	Qty.	Order No.
SAI-8-S12 3P M8 L	1	1871680000
SAI-10-S12 3P M8 L	1	1877950000

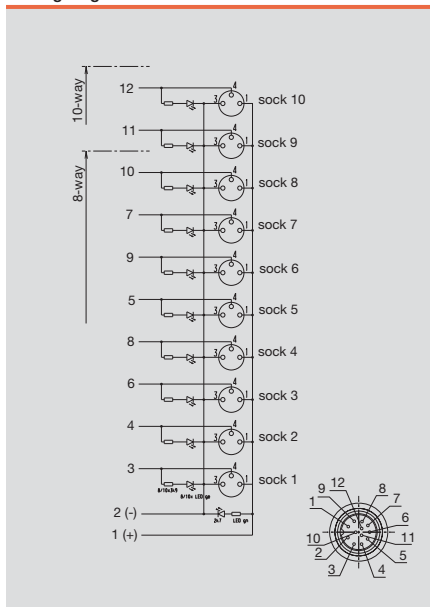
Technical data

Operating voltage	10...30 V
Current of continuous busbars	1 A
max. current-carrying capacity per slot	2 A
Total current	6 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-25...+80 °C
Housing main material	Pocan
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	Yes

Wiring diagram

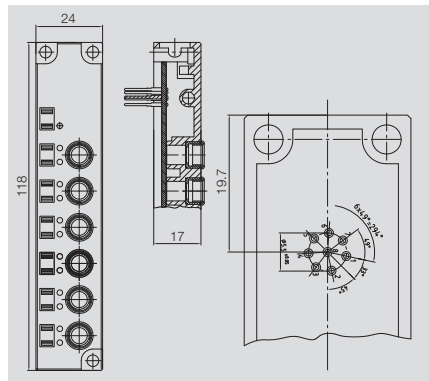


Wiring diagram



Line PCB version

SAI-6-S M8 L SL



Ordering data

3-pole	6 channel
Note	

SAI-6-S M8 L SL

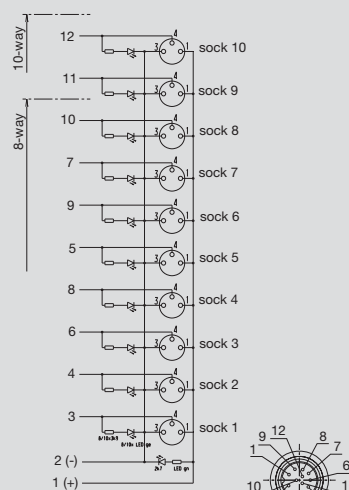
3-pole

Type	Qty.	Order No.
SAI-6-S 3P M8 L SL	1	1057720000
Other versions on request		

Technical data

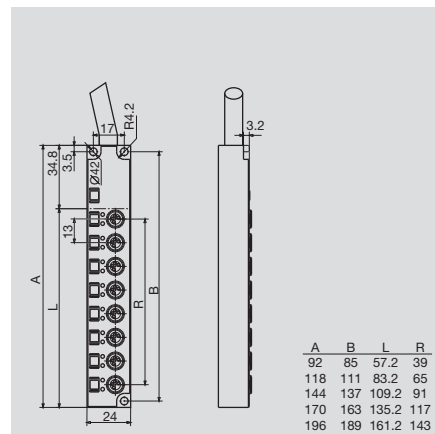
Operating voltage	10...30 V
Current of continuous busbars	1 A
max. current-carrying capacity per slot	2 A
Total current	6 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-25...+80 °C
Housing main material	Pocan
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	Yes

Wiring diagram



M8 distributors

Line / Fixed cable version



Ordering data

Cable length 5 m (with fixed cable version)	
4 channel	
6 channel	
8 channel	
10 channel	
12 channel	
Cable length 10 m (with fixed cable version)	
4 channel	
6 channel	
8 channel	
10 channel	
12 channel	
Note	

SAI-4/6/8/10/12-L

Type	Qty.	Order No.
SAI-4-F 3P M8 L 5M	1	1828720000
SAI-6-F 3P M8 L 5M	1	1828700000
SAI-8-F 3P M8 L 5M	1	1828680000
SAI-10-F 3P M8 L 5M	1	1828660000
SAI-12-F 3P M8 L 5M	1	1828640000
SAI-4-F 3P M8 L 10M	1	1828710000
SAI-6-F 3P M8 L 10M	1	1828690000
SAI-8-F 3P M8 L 10M	1	1828670000
SAI-10-F 3P M8 L 10M	1	1828650000
SAI-12-F 3P M8 L 10M	1	1828630000

3-pole

SAI-4/6/8/10/12-L

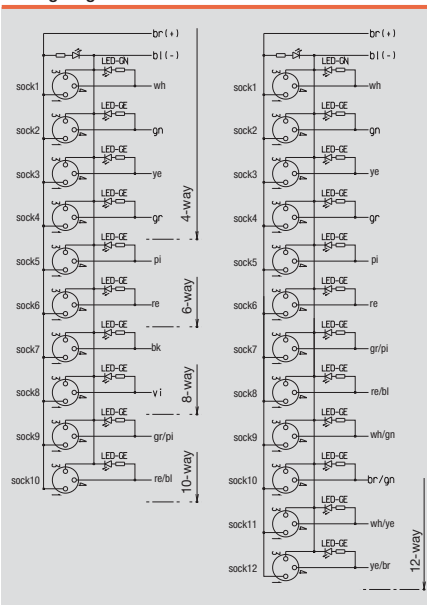
Type	Qty.	Order No.
SAI-4-F 4P M8 L 5M	1	1849680000
SAI-6-F 4P M8 L 5M	1	1849700000
SAI-8-F 4P M8 L 5M	1	1828620000
SAI-4-F 4P M8 L 10M	1	1849690000
SAI-6-F 4P M8 L 10M	1	1849670000
SAI-8-F 4P M8 L 10M	1	1828610000

4-pole

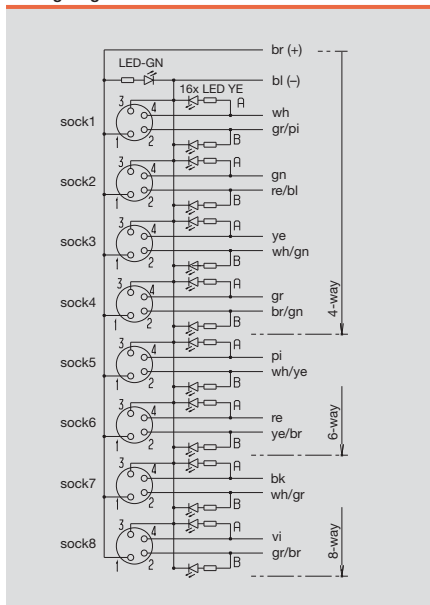
Technical data

Operating voltage	10...30 V
Current of continuous busbars	1 A
max. current-carrying capacity per slot	2 A
Total current	6 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-25...+80 °C
Housing main material	Pocan
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	Yes

Wiring diagram



Wiring diagram



Overview

M5-Line with M12 outlet



The Weidmüller SAI-M5 distributors are currently the smallest SAI distributors in the world

Whether mobile phones or computers as the functionality increases so the size of the components decreases! Today, machine designers face the same problem. Space is at a premium here as well, even in large machines, particularly where the sensor components are located. In the past the M8 distributor solved these problems. However, these units are now considered to be too large. The first move was to make the sensors smaller. Then it was the turn of the cables and distributors.

These extremely small units are surprisingly easy to handle. M5 plug in connectors have three or four poles and are thus equivalent to M8 plug-in connectors.

Fixed cable version



But in contrast to the M8 plug in connectors, the different pole numbers here are compatible with each other. The advantage is obvious: 4 pole units which are required, for example, for antivalent sensors can now be plugged into one and the same distributor with standard NOC applications. In the M8 system special adapters are required. Besides their actual size, in some applications module weight is critical too.

For example, the speed of a handling machine is influenced by the weight of the moving parts. Here again, the M5 system offers outstanding advantages, with its almost unrivalled small size and light weight.

M5-Line with M16 outlet



There is no version for custom bus cable assembly for this SAI distributor, which is delivered with a plug in connection and a fixed cable connection. A compact 12 pole M12 plug in connector has been developed as a plug in connection specifically for this distributor.

This ratio of surface area to number of connections is reminiscent of the computer industry. The M16 bus connection is also integrated in the module as an option, so the SAI M5 can be used as a combined SAI system as well. A Y-configuration is possible in conjunction with the M16 splitter.

The fixed cable version is particularly suitable for standard applications where the distributor is permanently installed and the electrical installation does not have to be disconnected after installation. The bus cable is reduced in cross section to save weight here too.

M5 distributors



Quality comes in little packages...

This is the motto with which Weidmüller developed its distributor with M5 plug in connectors. The outstanding feature of these connectors is their size. Attention has also been given to stability and good conductivity.

For a comparison of sizes, take a look at the photos on the left.

These products are ideal for handling machines where light weight and small size are vital.

Comparing the sizes



M12

M8

M5



M12

M8

M5

Marking

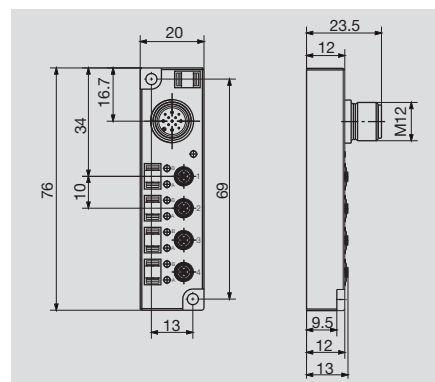
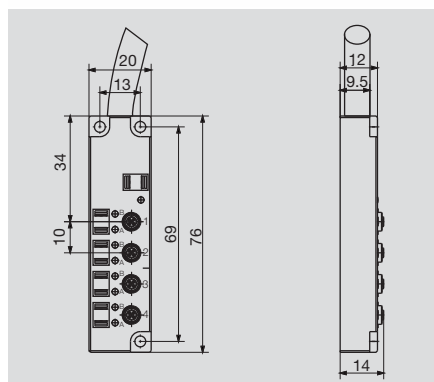
Each channel is marked with the channel number. Each initiator LED can be exactly allocated with the letters A and B. In addition, the distributor and every channel can be marked.

M5 distributors

Line

SAI-4/8-F

SAI-4/8-S



Ordering data

3-pole		
Cable length 5 m (with fixed cable version)	4 channel	
	8 channel	
Cable length 10 m (with fixed cable version)	4 channel	
	8 channel	
4-pole		
Cable length 5 m (with fixed cable version)	4 channel	
	8 channel	
Cable length 10 m (with fixed cable version)	4 channel	
	8 channel	
Note		

SAI-4/8-F

M5

Type	Qty.	Order No.
SAI-4-F 3P M5 L5M	1	1851740000
SAI-8-F 3P M5 L5M	1	1851760000
SAI-4-F 3P M5 L10M	1	1845820000
SAI-8-F 3P M5 L10M	1	1845830000
SAI-4-F 4P M5 L5M	1	1851770000
SAI-8-F 4P M5 L5M	1	1851750000
SAI-4-F 4P M5 L10M	1	1845800000
SAI-8-F 4P M5 L10M	1	1845810000
Other versions on request		

SAI-4/8-S

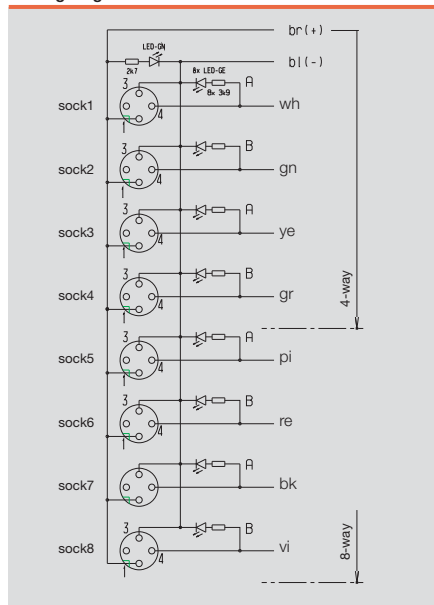
M5

Type	Qty.	Order No.
SAI-8-S 3P M5	1	1845850000
SAI-4-S 4P M5	1	1845840000
Other versions on request		

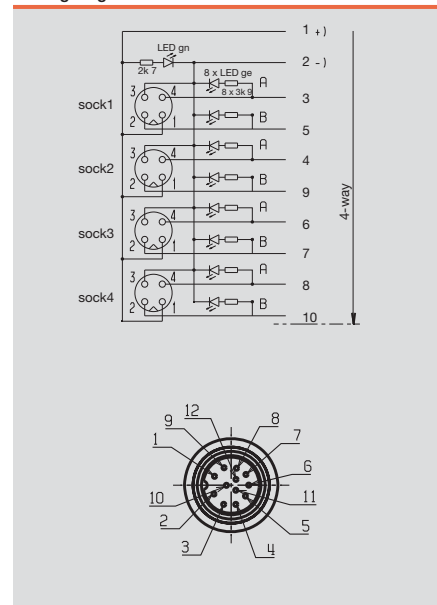
Technical data

Operating voltage	10...30 V
Current of continuous busbars	1 A
max. current-carrying capacity per slot	3 A
Total current	3 A
Pollution severity	3
Protection class	IP 67
Ambient temperature range	-25...+80 °C
Housing main material	PA 6 GF
Contact carrier material	CuZn, nickel-plated
Base material of contacts	Au (Gold)
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	Yes

Wiring diagram

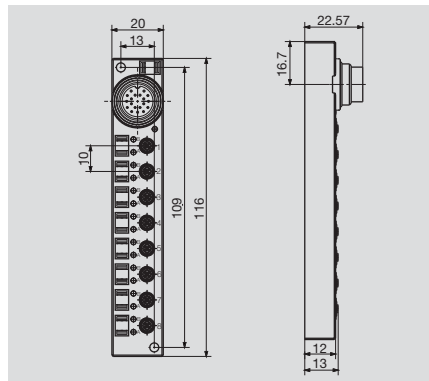


Wiring diagram



Line

SAI-4/8-S16



Ordering data

3-pole	4 channel
	8 channel
4-pole	4 channel
	8 channel
Note	

SAI-4/8-S16

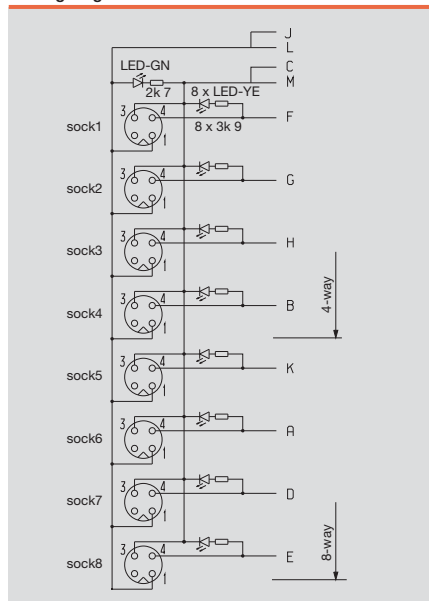
M5

Type	Qty.	Order No.
SAI-4-S16 3P M5	1	1845890000
SAI-8-S16 3P M5	1	1845880000
SAI-4-S16 4P M5	1	1845870000
SAI-8-S16/19P 4P M5	1	1845860000
1845870000, 1845880000 and 1845890000 with M16 / 12-pole 1845860000 with M16 / 19-pole		

Technical data

Operating voltage	10...30 V
Current of continuous busbars	1 A
max. current-carrying capacity per slot	3 A
Total current	3 A
Pollution severity	3
Protection class	IP 67
Ambient temperature range	-25...+80 °C
Housing main material	PA 6 GF
Contact carrier material	CuZn, nickel-plated
Base material of contacts	Au (Gold)
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	

Wiring diagram



SAI Ex i distributor for Ex i zone 1

Hooded version with 4 plug-in slots



SAI distributor for Ex i zone 1

Available for the first time: passive SAI distributors with M12 connection technology in IP 68 ingress protection classification for Ex i hazardous area applications.

SAI Ex i distributor certified for zone 1 of potentially explosive areas, even for G and D zones.

The SAI Ex i distributors are available with four or eight connections for simple connection of NAMUR sensors. Distribution boxes with costly certification are thus a thing of the past. These modules are suitable for process engineering, but also for “standard” machine applications. The versions are available with or without yellow LEDs.

Hooded version with 8 plug-in slots



The distributors are provided with a removable connection hood. This detail also helps to reduce costs because only the defective bus cable needs to be replaced and not the entire distributor.

SAI Ex i distributor for Ex i zone 22



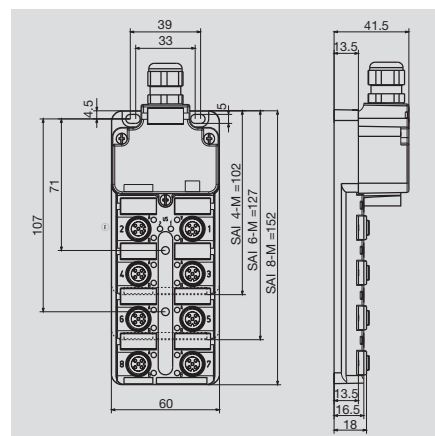
World first: SAI distributor for Ex i zone 22

In some areas of machine design only Ex i certified devices are permitted.

The wiring of these modules corresponds to that of standard SAI distributors. However, these components were specially developed, manufactured, checked and certified for zone 22 modules. All zone 22 modules are therefore provided with suitable printing.

Hood version

Zone 1



Ordering data

Complete modules	
	4 channel
	6 channel
	8 channel
Without initiator LED	4 channel
Without initiator LED	8 channel
Note	

SAI-4/8-M Ex i

4-pole

Type	Qty.	Order No.
SAI-4-M 4P Exi Z1 IL	1	1868360000
SAI-8-M 4P Exi Z1 IL	1	1868370000
SAI-4-M 4P Exi Z1 OL	1	1868350000
SAI-8-M 4P Exi Z1 OL	1	1894380000

SAI-4/8-M Ex ia

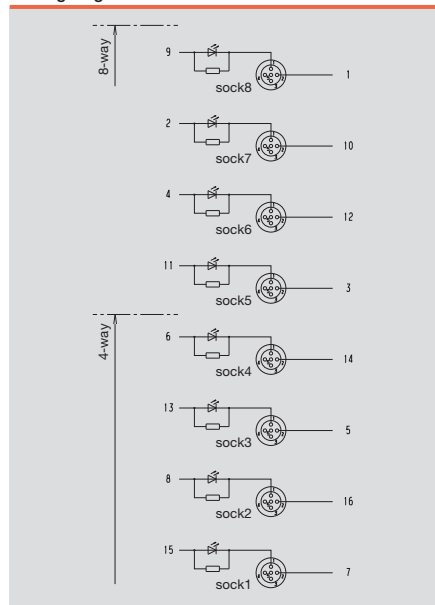
5-pole

Type	Qty.	Order No.
SAI-4-M 5P M12 Ex ia	1	1896050000
SAI-6-M 5P M12 Ex ia	1	1896070000
SAI-8-M 5P M12 Ex ia	1	1896090000

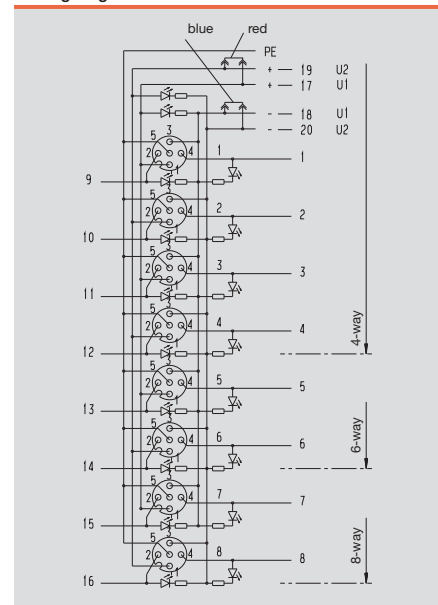
Technical data

Operating voltage	10...30 V
Current of continuous busbars	100 mA
max. current-carrying capacity per slot	100 mA
Total current	2.3 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-20...+40 °C
Housing main material	Pocan
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	0.1...1.5 mm ²
Suitable for dragline cable (fixed cable connection)	

Wiring diagram



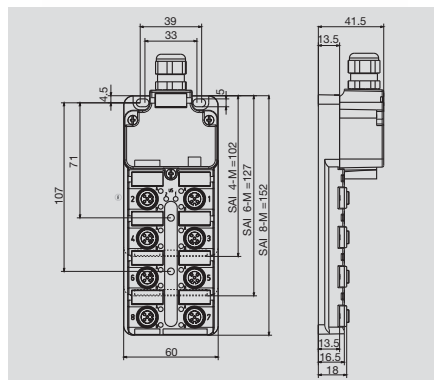
Wiring diagram



M12 Ex i distributors

Ex i distributor for the Ex i zone 22

SAI-4/6/8-M



Ordering data

Complete modules	
	4 channel
	6 channel
	8 channel
Note	

SAI-4/6/8-M

5-pole

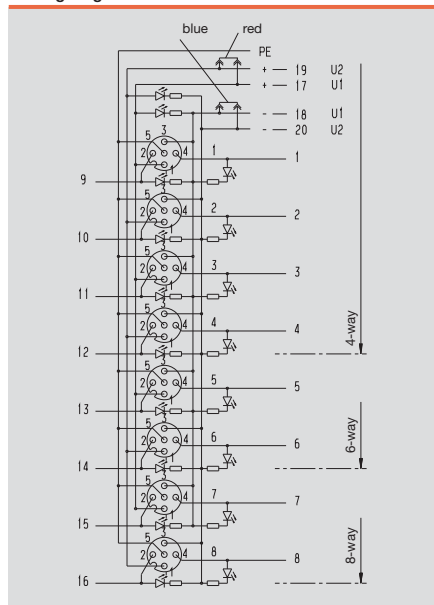
Type	Qty.	Order No.
SAI-4-M 5P Ex Z22	1	1861850000
SAI-6-M 5P Ex Z22	1	1861840000
SAI-8-M 5P Ex Z22	1	1861530000

Technical data

Operating voltage	10...30 V
Current of continuous busbars	100 mA
max. current-carrying capacity per slot	100 mA
Total current	2.3 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-20...+80 °C
Housing main material	Pocan
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	0.1...1.5 mm ²
Suitable for dragline cable (fixed cable connection)	

A higher current is allowed when using a lower voltage. A total capacity of 3W per plug-in station should not be exceeded.

Wiring diagram



M23 Connectors and cables

M23 Connectors and cables	Product Description: SAI M23 Connectors	H.2
	Contact assignment	H.7
	Technical data	H.8
	Overview	H.10
	M23 connector for signal transmission	H.12
	M23 connector for power transmission	H.18
	Moulded M23 cables	H.22
	SAI distributor M12 with M23	H.23
	SAI distributor M18 with M23	H.25
	Installation instructions – Signal connectors	H.26
	Installation instructions – Power connectors	H.31
	M23 connector	H.35

SAI M23



A comprehensive product line of connectors, distributors and cables

M23 connectors are mainly used for connecting electrical drives and servo-motors into industrial automation applications. The M23 connectors are very easy to handle and operate. In addition to the injection-moulded variants and the SAI distributors with M23 connectors, Weidmüller is now offering customisable versions and built in plugs.





The M23 built in connector

The M23 built in connector provides a custom fit solution for building directly into the device.



M23 connectors for crimping

M23 connectors are easy to handle and operate. This is supported by the type of crimping that is used.



Robust metal housing

The M23 connectors feature an extra robust design.



Solutions for power and signals

The extensive product line includes the key housing shapes, such as angled connectors, coupling connectors and device connectors.



M23 connector for signal transmission

Housings



M23 connector for signal transmission

Built in connector



M23 connector for power transmission

Housings



M23 connector for power transmission

Built-in connector



Moulded M23 cables



SAI distributors

Product Description: SAI M23 Connectors

Technology and requirements

The M23 connectors are mainly used for integrating electrical drives and servo motors into industrial automation facilities. The M23 designation is based on the thread diameter of the connector, as shown in Figures 1 and 2.

With their wide variety of inserts and housings, these connector are equally suited for applications involving signal or power transmission. Applications set in harsh industrial environments place strict requirements on the connector. Much is demanded of the housing, the inner insert and the connector contact as well. Thermal loads, physical loads, and loads from the transmitted electrical power are commonplace. M23 connectors are capable of carrying a load of up to 250/630 V at 9/30 A.

The connectors must be resistant to the penetration of all particles and substances. They must also comply with the required class of IP protection. The material used for manufacture must be resistant to acid and alkaline solutions that may be used during cleaning or production processes. Also it must not be possible for residues to accumulate in the plug which could later contaminate the production flow. It must not be possible for the plug components to loosen due to vibration. In addition, the cable and connector must have EMC shielding for some applications. This keeps external interference from influencing the signals and it also prevents the transmitted signals in the cable from interfering with other cables or components. The standards and directives (such as the German or European standards) that are followed are basically only recommendations concerning the composition of the connector. A so-called "cold standard" exists for the M23 connectors.

Variants and designs

The variants can be classified generally according to their outer design into either customisable types or plastic moulded connectors with pre connected cables. Both variants are available in male or female versions, and in straight or angled design. Different designs and inserts can be combined to fit the particular application so that an almost limitless variety of combinations is possible. The connector inserts are available in a variety of different pole counts and as either male or female versions. The pole counts also vary in that some contacts in the mating profile may have a larger cross-section than the others. Other types include the device connector variants which are used for contacting and connecting housings. These also come in a variety of designs. The metal alloy in use may differ depending on the particular type of application. For example, stainless steel is used for those variants that will be used in the food processing industry. Each connector is optionally available with EMC protection and a plastic surface.

Customisable connectors

The customisable connectors are almost all manufactured from metal alloys. Variants with plastic housings or fitting nuts are rare and then used mostly for customer-specific solutions. Customisable connectors are made up of a housing, a plastic contact carrier, and the contacts themselves. The various housing types can be equipped with the corresponding contact carriers. The carriers differ in their number of poles and the arrangement of the poles. Different types of contacts may also be used within the contact carriers. The shape of the contacts is either male or female. There are also difference in the width, material, and connection system (such as soldered, crimped or screwed).

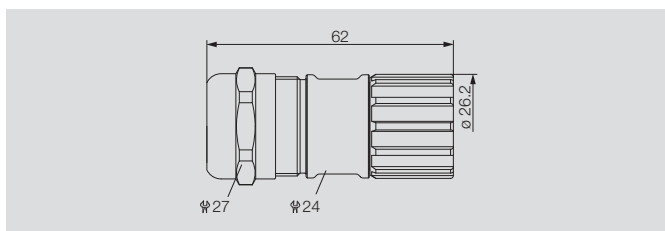


Figure 1: M23 cable connector

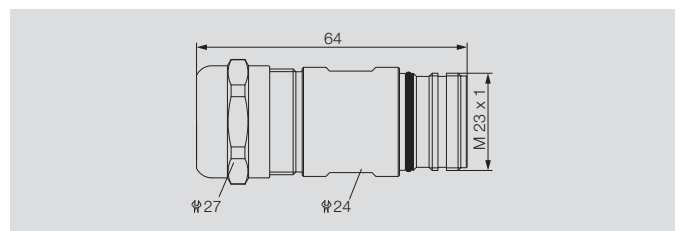


Figure 2: M23 coupling connector

This modular construction allows for a wide variety of combinations to fit any application type. Figure 3 shows the design and assembly of a M23 signal connector. Since the connector is usually put together in the field, the key requirement is that the connector is easy and reliable for the electrician to handle on-site. A good example of convenient handling is the integrated

EMC shielding. An improved shield connection results because the shielding can be connected in less steps and with fewer tools. The complete assembly process must be clear and concise, and should only take a few steps.

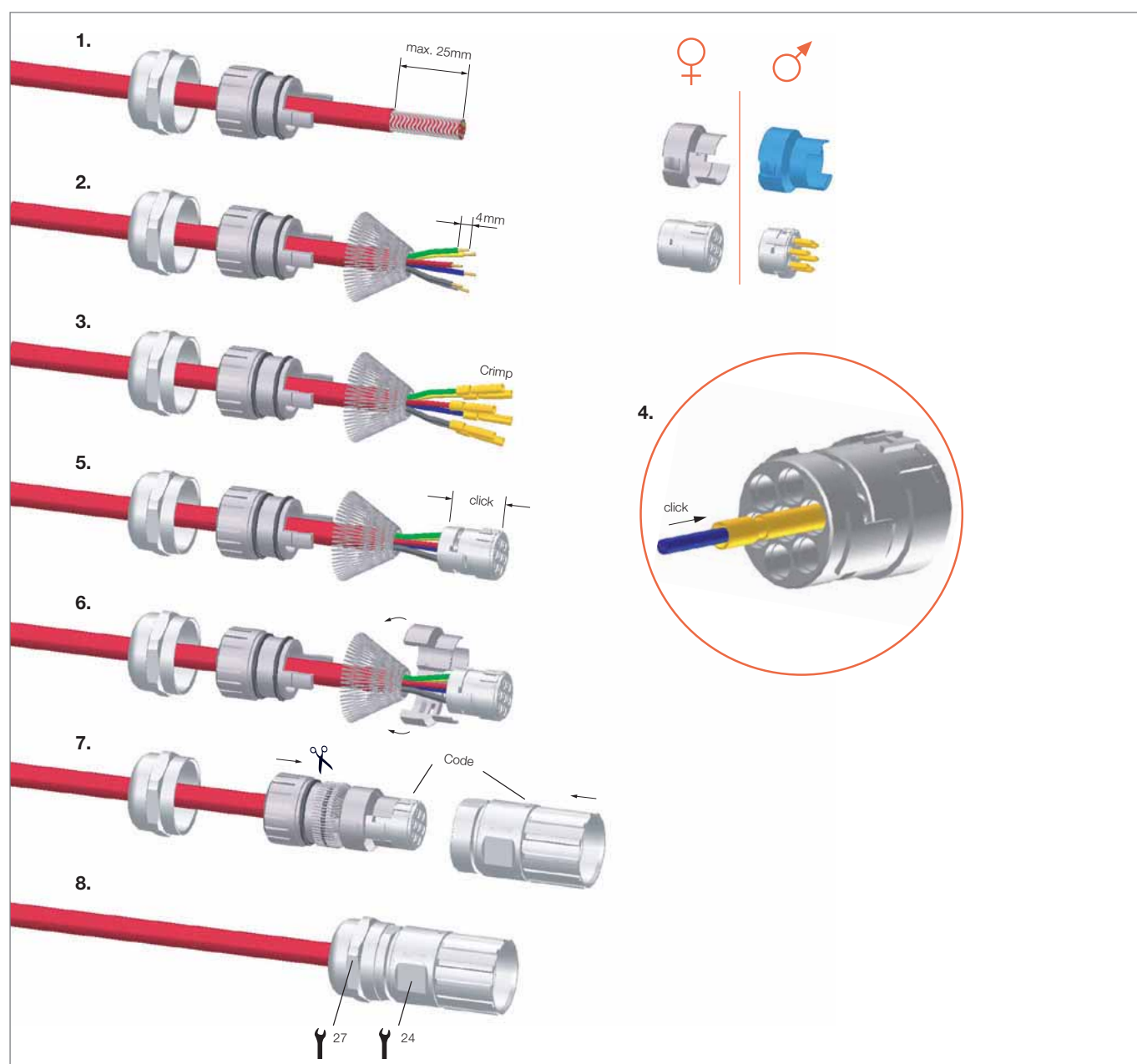


Figure 3: Design and assembly of an M23 connector

Product Description: SAI M23 Connectors

Plastic injection moulded connector with connected cable

The plastic injection moulded cables are cables that have already been fitted with connectors. First the cables are connected with the contacts and then these are mounted into the contact carrier. Next, plastic injection moulding is used to cover the cable and contact carrier with a plastic moulding. This ensures a highly stable and well sealed connector housing. The connector must be destroyed for it to be disconnected from its cable. The connector's outer form and material is arranged by a plastic processing tool.

The advantage of a moulded cable is that the connection between the cable and the connector has already been tested at

bending radius are used for such applications (for example, the bending radius may be 10d, i.e., ten times the cable diameter). When constructing a facility, a variety of connection scenarios are possible based on the particular conditions or adaptations on existing facilities. The length or configuration of the cable must be adapted to fit these conditions. If space is constricted, for instance, it may be necessary to replace a straight connector with an angled one.

Cables can be equipped with both a moulded (extruded) connector and a customizable connector. This ensures proper functionality while providing the flexibility to adapt to changing conditions on location. Safe connections can thus be established with any possible connector combination or at any protective class



Plastic injection-moulded M23 connector

the production factory. The electrician need only adjust the length. Depending on the application, he may choose to use another connector on the open end or connect the individual cable wires directly (for example, to a terminal block). These advantages of this variant type includes the inexpensive assembly of large batches, the high degree of automation and minimal amount of material used. High reliability and an excellent seal are two additional advantages.

Connector usage and application

M23 connectors are mainly used for integrating within machine and facility construction applications. These applications require connections with a long life span and high reliability. The failure of a single connector could lead to the failure of the entire production line. It's important to avoid facility outages caused by a connector malfunction, so the machine and facility construction industry relies on connectors with the advantages listed above. Both signals and power must be transferred in such applications. The connector and the cable must be able to withstand harsh industrial conditions. Cables may be under stress from constant motion, in particular for applications involving robotics or dragline chains. Special cables with a specific maximum

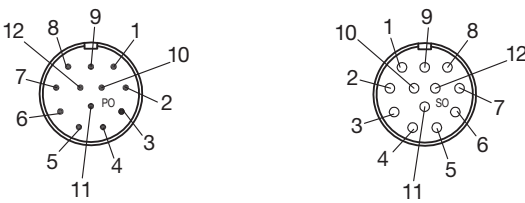
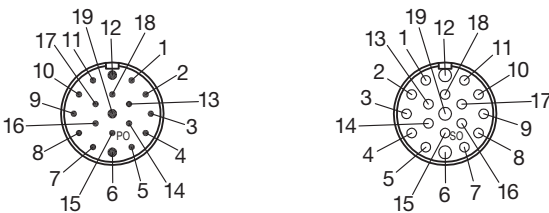


SAI distributor with M23 connector

required. This gives the facility planner the safety he needs. And the electrician on-site can set up the facility properly because he has sufficient flexibility to adapt to uncertain conditions. For sensor systems, connectors with high pole counts are often used on SAI distributors. Individual sensors are connected to the distributors where the signals are then centralized. They are then transferred to the controller using a cable with an M23 connector. The most common use for transmitting power involves the connection of servo-motors in machines. M23 connectors are used for this purpose because of their sturdy and compact design and their high power-carrying capacities. Because of the size of the M23 connector, it can also be used in a hybrid version for transmitting both signals and power. The signal-carrying contacts are then shielded within the connector to ensure that the transmitted voltages do not interfere with the signals.

Contact assignment SAI M23

M23 12- and 19-pole, for SAI distributors and cables

12-pole	Pole	Colour code	Plug-in station	Contact M12
	1	white	1	4
	2	green	2	4
	3	yellow	3	4
	4	grey	4	4
	5	pink	5	4
	6	red	6	4
	7	black	7	4
	8	violet	8	4
	9	blue (-)	1-8	3
	10	blue (-)	1-8	3
	11	brown (+)	1-8	1
	12	green-yellow (PE)	1-8	5
19-pole	Pole	Colour code	Plug-in station	Contact M12
	1	violet	8	4
	2	red	6	4
	3	grey	4	4
	4	red/blue	2	2
	5	green	2	4
	7	grey/pink	1	2
	8	white/green	3	2
	9	white/yellow	5	2
	10	white/grey	7	2
	11	black	7	4
	13	yellow/brown	6	2
	14	brown/green	4	2
	15	white	1	4
	16	yellow	3	4
	17	pink	5	4
	18	grey/brown	8	2
	6	blue (-)	1-8	3
	12	green-yellow (PE)	1-8	5
	19	brown (+)	1-8	1

Description code

Housing	
G	Inner thread
K	Outer thread
W	angled
S	Signal connectors
L	Power connectors
7/12	Cable passage
Inserts	
BE	Female insert
SE	Male insert
4/4	Number of contacts, here for 4 sensor and 4 power contacts
Contacts	
KBC	Female contact
Wire cross-section	
0.08/0.56	0.08 mm² – 0.56 mm²
0.25/1.0	0.25 mm² – 1.0 mm²
0.75/2.5	0.75 mm² – 2.5 mm²
Moulded M23 cables	
SAIS	Cable with male plug
SAIB	Cable with female plug
12p	12-pole
19p	19-pole
AN	angled
ST	straight
...M	Length in metres

Contact partitioning

Signal connectors			
Type	1 mm contact	1.5 mm contact	2 mm contact
6-pole			6
7-pole			7
9-pole	8		1
12-pole	12		
16-pole	16		
17-pole	17		
19-pole	16	3	
Power connectors			
Type	1 mm contact	1.5 mm contact	2 mm contact
6-pole			6
4+4-pole	4		4

Contacts for signal plugs cannot be used in inserts for power plugs and vice versa.

Technical data

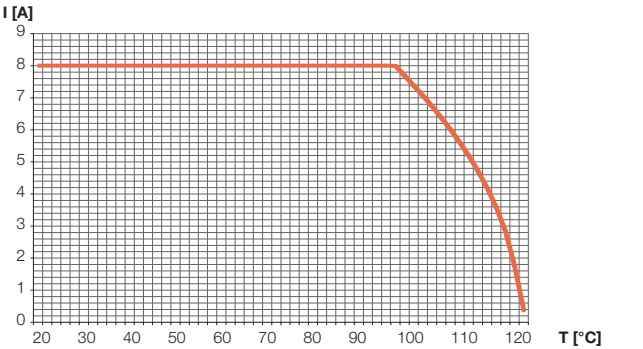
Signal connectors

Technical data

Mechanical data									
Housing		Copper-Zinc alloy Die Casting							
Housing surface		Nickel plated brass other surface upon request							
Inserts (for contacts)		Thermoplastic Polyamid PA 6 (Nylon 6/6), PBT / Fire protection class V-0							
Contacts		Brass Alloy							
Contact surface at point of contact		Nickel and gold plated (0.25 µm Au)							
Minimum mating cycles		> 1000							
Seals / O-Rings		Buna-N standard optional Viton® (Viton is a registered trademark of DuPont)							
Temperature range		-40 °C – 125 °C							
Type of contacts		Crimp, solder, dip-solder (PCB)							
Protection		IP 67 / IP 69 K per EN 60 529 (connected)							
Cable diameter range		3 – 17 mm							
Electrical Data									
Number of positions		6	7	9		12	16	17	19
Number of contacts		6	7	8	1	12	16	17	16 3
Contact-Ø		mm	2	2	1 2	1	1	1	1 1.5
Nominal current		A	20	20	8 20	8	8	8	8 10
Nominal voltage at pollution degree 2		V~	630	630	500	500	400	400	320
Nominal voltage at pollution degree 3		V~	300	300	200	200	160	160	100
Test voltage		V~	2500	2500	2500	2500	1500	1500	1500
Insulation resistance		MΩ	> 10 ¹⁰	> 10 ¹⁰	> 10 ¹⁰	> 10 ¹⁰	> 10 ⁶	> 10 ⁶	> 10 ⁶
Max. contact resistance		mΩ	3	3	3	3	3	3	3

Derating curve

Straight Connectors male + female M 23, 12-pole,
wires 12 x AWG17



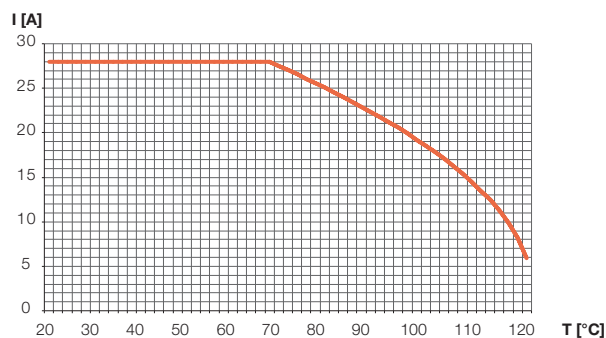
Power connectors

Technical data

Mechanical data				
Housing		Copper-Zinc alloy Die Casting		
Housing surface		Nickel plated brass other surface upon request		
Inserts (for contacts)		Thermoplastic Polyamid PA 6 (Nylon 6/6), PBT / Fire protection class V-0		
Contacts		Brass Alloy		
Contact surface at point of contact		Nickel and gold plated (0.25 µm Au)		
Minimum mating cycles		> 1000		
Seals / O-Rings		Buna-N standard optional Viton® (Viton is a registered trademark of DuPont)		
Temperature range		-40 °C – 125 °C		
Type of contacts		Crimp		
Protection		IP 67 / IP 69 K per EN 60 529 (connected)		
Cable diameter range		7 – 17 mm		
Electrical Data				
Number of positions		5 + PE	4/4	
Number of contacts		6	4	4
Contact-Ø	mm	2	1	2
Nominal current	A	28	8	28
Nominal voltage at pollution degree 2	V~	800	300	800
Nominal voltage at pollution degree 3	V~	600	300	600
Test voltage	V~	4000	2500	4000
Insulation resistance	MΩ	> 10 ¹³	> 10 ¹³	
Max. Max. contact resistance	mΩ	3	3	

Derating curve

Straight connectors male + female M 23, 5 + PE,
wires 5 x AWG12



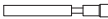
Overview

M23 connector for signal transmission

All customizable connectors can also be assembled together with shielded cables.

Housing	Contact inserts*	Contacts
Cable connector	6-pole	Crimp pin 1 mm rotated 0.08 – 0.56 mm ²
Coupling connector	7-pole	Crimp pin 1 mm rotated 0.14 – 1.00 mm ²
Angled connector	9-pole	Crimp pin 1 mm rotated 1.00 – 1.50 mm ²
Angled connector (coupling)	12-pole	Crimp socket 1 mm rotated 0.08 – 0.56 mm ²
Device connector (front panel)	16-pole	Crimp socket 1 mm rotated 0.14 – 1.00 mm ²
Device connector with knurled nut	17-pole	Crimp socket 1 mm rotated 1.00 – 1.50 mm ²
Device connector (single-hole mount)	19-pole	Crimp pin 2 mm rotated 0.14 – 0.56 mm ²
Device connector (angled)		Crimp socket 2 mm rotated 0.56 – 1.00 mm ²
Device connector (back panel)		Crimp pin 2 mm rotated 0.75 – 2.50 mm ²
		Crimp socket 2 mm rotated 0.75 – 2.50 mm ²
	* Solder and crimp inserts	

M23 connector for power transmission

Housing		Contact inserts*		Contacts	
Cable connector		6 x Male 2 mm		Crimp pin 1 mm turned 0.25 – 1.00 mm ²	
Coupling connector		6 x Socket 2 mm		Crimp socket 1 mm turned 0.25 – 1.00 mm ²	
Angled connector		4 x Male 1 mm 4 x Male 2 mm		Crimp pin 2 mm turned 0.75 – 2.50 mm ²	
Angled connector (coupling)		4 x Socket 1 mm 4 x Socket 2 mm		Crimp pin 2 mm turned 2.50 – 4.00 mm ²	
Device connector (front panel)				Crimp socket 2 mm turned 0.75 – 2.50 mm ²	
Device connector with knurled nut				Crimp socket 2 mm turned 2.50 – 4.00 mm ²	
Device connector (back panel)					
Device connector (back panel)					
Device connector (angled)					
		* Crimp inserts			

Moulded M23 cables

Housing
Cable connector
Coupling connector
Angled connector
Angled connector (coupling)

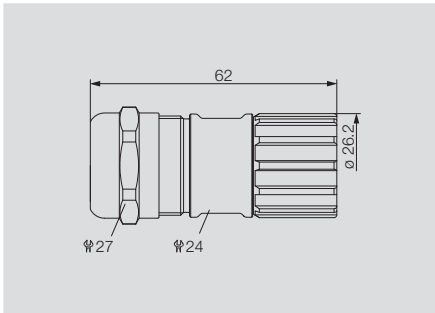


M23 connector for signal transmission

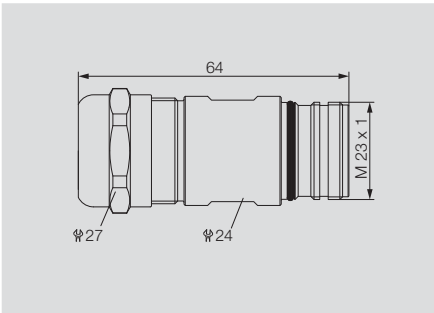
Housing

For cables with outer diameter of: 7–12 mm

Cable connector



Coupling connector



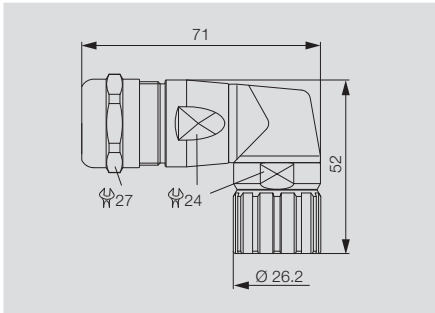
Ordering data

Type	Qty.	Order No.
SAI-M23-GS-7/12	1	1995840000

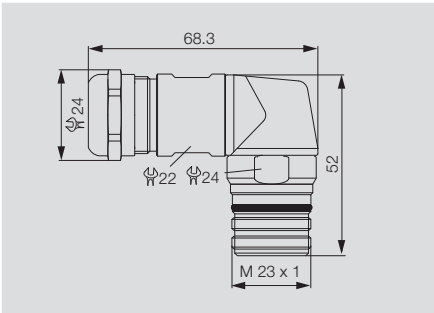
Ordering data

Type	Qty.	Order No.
SAI-M23-KS-7/12	1	1169900000

Angled connector



Angled connector (coupling)



Ordering data

Type	Qty.	Order No.
SAIL-M23-GS-S-7/12	1	1169920000

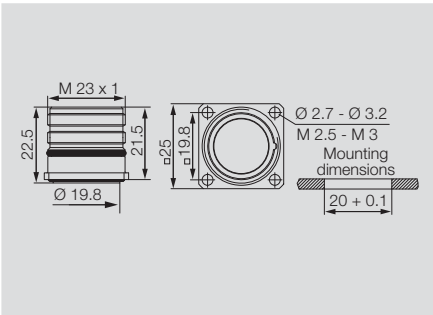
Ordering data

Type	Qty.	Order No.
SAIL-M23-KSW-7/12	1	1169930000

Built-in connector

With 3.2-mm mounting holes

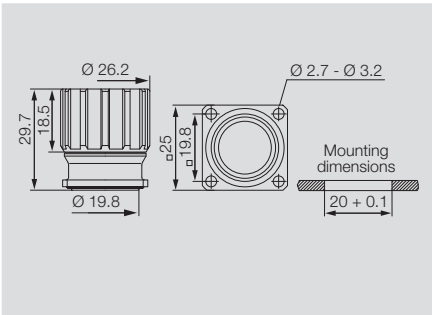
Device connector (front panel)



Ordering data

Type	Qty.	Order No.
SAIE-M23-S-VW	1	1169940000

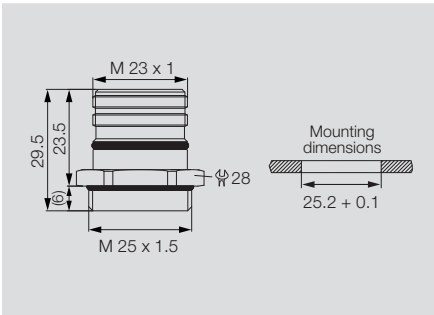
Device connector with knurled nut



Ordering data

Type	Qty.	Order No.
SAIE-M23-S-RM	1	1169950000

Device connector (single-hole mount)

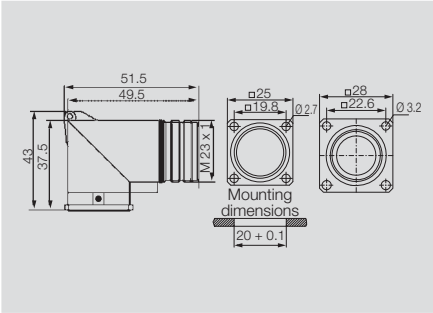


Ordering data

Type	Qty.	Order No.
SAIE-M23-S-EM	1	1169970000

H

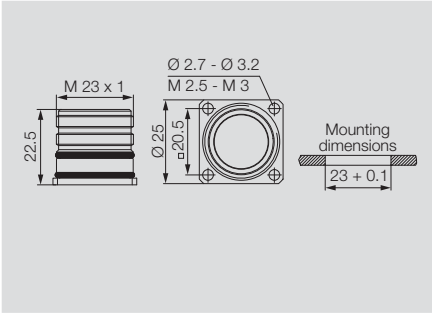
Device connector (angled)



Ordering data

Type	Qty.	Order No.
SAIE-M23-S-W	1	1169980000

Device connector (back panel)



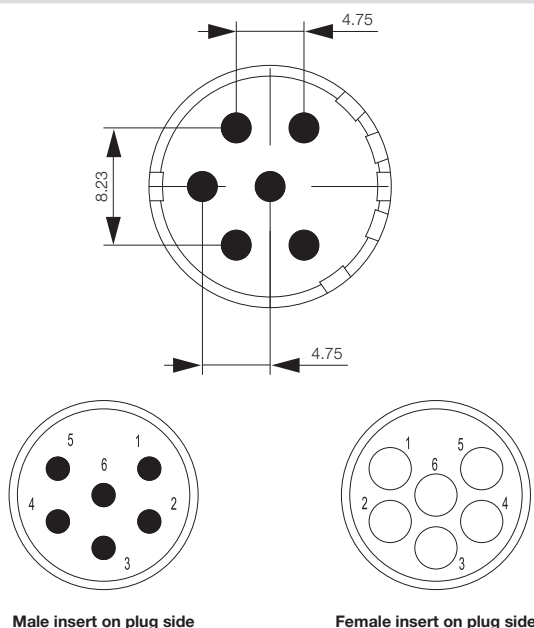
Ordering data

Type	Qty.	Order No.
SAIE-M23-S-HW	1	1169990000

M23 connector for signal transmission

Inserts

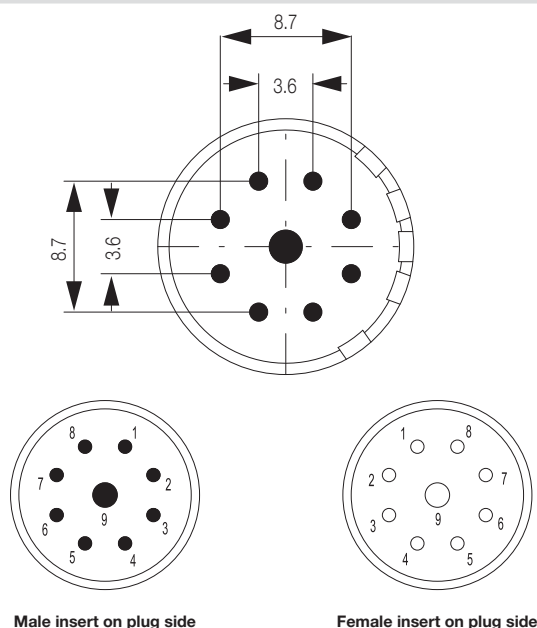
6-pole



Ordering data

	Type	Qty.	Order No.
Insert 6-pole male	SAI-M23-SE-6	1	1170000000
Insert 6-pole socket	SAI-M23-BE-6	1	1170020000

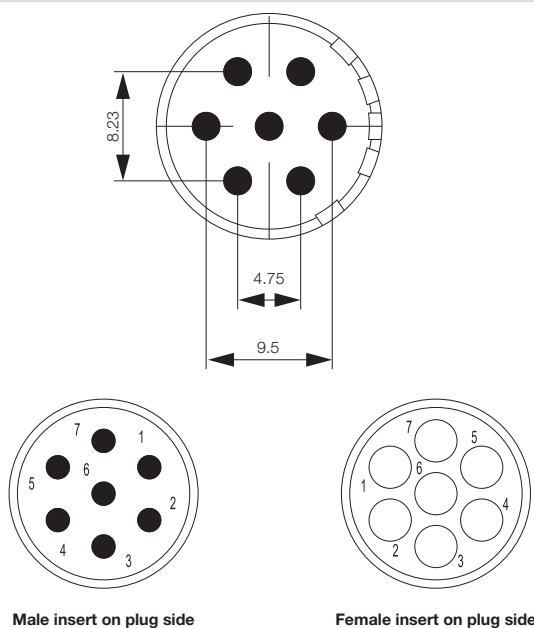
9-pole



Ordering data

	Type	Qty.	Order No.
Insert 9-pole male	SAI-M23-SE-9	1	1170050000
Insert 9-pole socket	SAI-M23-BE-9	1	1170060000

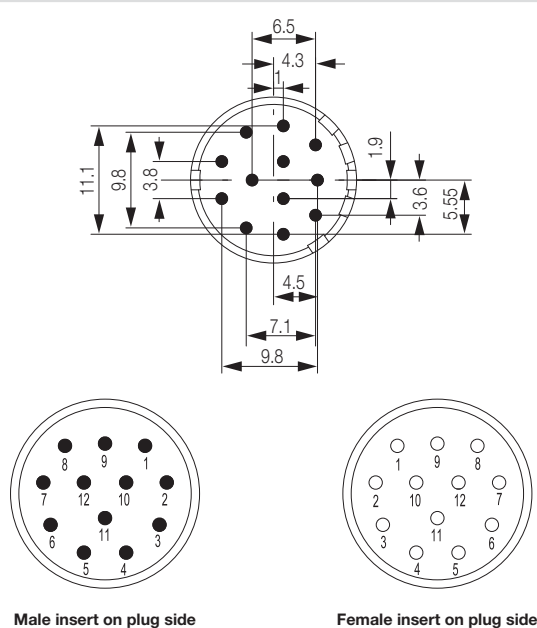
7-pole



Ordering data

	Type	Qty.	Order No.
Insert 7-pole male	SAI-M23-SE-7	1	1170030000
Insert 7-pole socket	SAI-M23-BE-7	1	1170040000

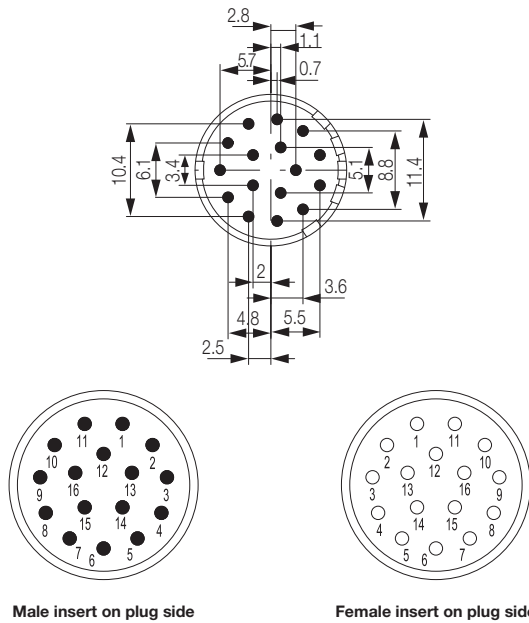
12-pole



Ordering data

	Type	Qty.	Order No.
Insert 12-pole male	SAI-M23-SE-12	1	1170070000
Insert 12-pole socket	SAI-M23-BE-12	1	1995850000

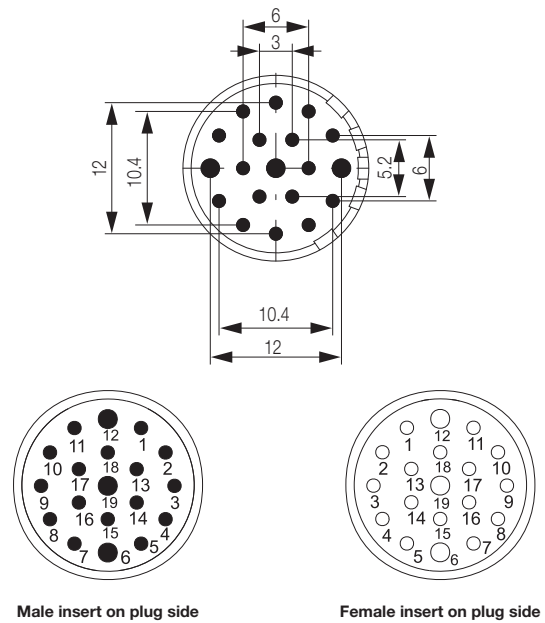
16-pole



Ordering data

	Type	Qty.	Order No.
Insert 16-pole male	SAI-M23-SE-16	1	1170080000
Insert 16-pole socket	SAI-M23-BE-16	1	1170090000

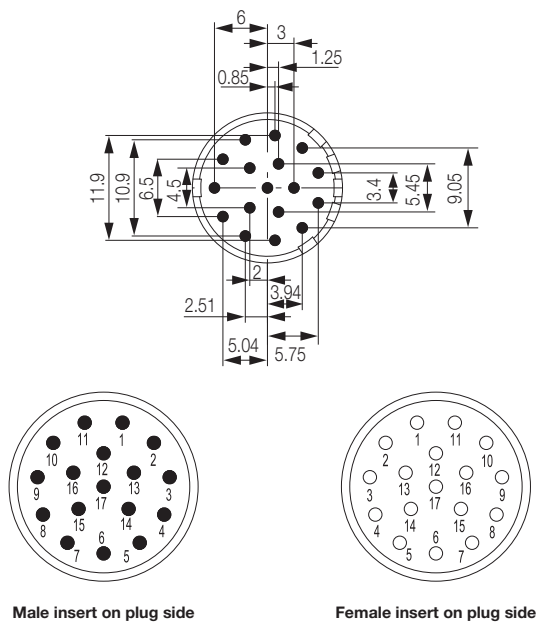
19-pole



Ordering data

	Type	Qty.	Order No.
Insert 19-pole male	SAI-M23-SE-19	1	1170120000
Insert 19-pole socket	SAI-M23-BE-19	1	1170130000

17-pole



Ordering data

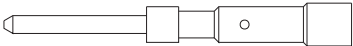
	Type	Qty.	Order No.
Insert 17-pole male	SAI-M23-SE-17	1	1170100000
Insert 17-pole socket	SAI-M23-BE-17	1	1170110000

M23 connector for signal transmission

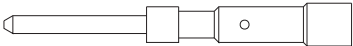
Contacts

Male, 1 mm

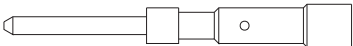
0.08-0.56



0.14-1.00

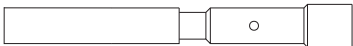


1.00-1.50

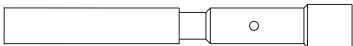


Female, 1 mm

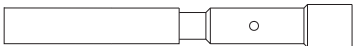
0.08-0.56



0.34-1.00

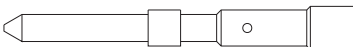


1.00-1.50



Male, 1.5 mm

0.14-1.00



Female, 1.5 mm

0.14-0.56



0.56-1.00



Ordering data

	Type	Qty.	Order No.
1.0 mm Male (0.08-0.56)	SAI-M23-KSC-0.08/0.56	50	1170140000
1.0 mm Male (0.14-1.00)	SAI-M23-KSC-0.14/1.00	50	1170150000
1.0 mm Male (1.00-1.50)	SAI-M23-KSC-1.00-1.5	50	1170170000

Ordering data

	Type	Qty.	Order No.
1.0 mm Socket (0.08-0.56)	SAI-M23-KBC-0.08/0.56	50	1995860000
1.0 mm Socket (0.34-1.00)	SAI-M23-KBC-0.34/1.00	50	1170180000
1.0 mm Male (1.00-1.50)	SAI-M23-KBC-1.00-1.5	50	1170210000

Ordering data

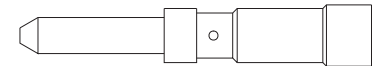
	Type	Qty.	Order No.
1.5 mm Male (0.14-1.00)	SAI-M23-KSC-1.5-0.14-1	50	1170220000

Ordering data

	Type	Qty.	Order No.
1.5 mm Socket (0.14-0.56)	SAI-M23-KBC-1.5-.14-.56	50	1170230000
1.5 mm Socket (0.56-1.00)	SAI-M23-KBC-1.5-.56-1.0	50	1170240000

Male, 2 mm

0.75-2.00

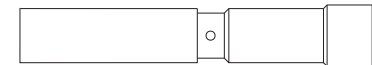


Ordering data

	Type	Qty.	Order No.
2.0 mm Male (0.75-2.00)	SAI-M23-KSC-2-0.75-2.00	50	1170250000

Female, 2 mm

0.75-2.00



Ordering data

	Type	Qty.	Order No.
2.0 mm Socket (0.75-2.00)	SAI-M23-KBC-2-0.75-2.00	50	1170260000

Technical data

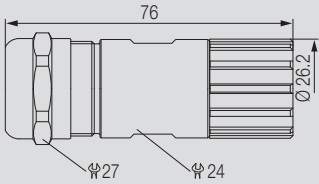
Number of positions	6	7	9		12	16	17	19		
Number of contacts	6	7	8	1	12	16	17	16	3	
Contact-Ø	mm	2	2	1	2	1	1	1	1	1.5

M23 connector for power transmission

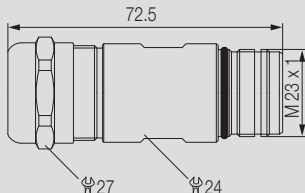
Housing

For cables with outer diameter of: 7–12 mm

Cable connector



Coupling connector



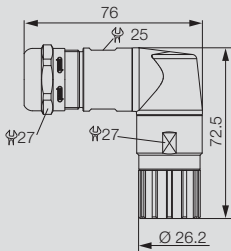
Ordering data

Type	Qty.	Order No.
SAI-M23-GS-L-7/12	1	1995800000

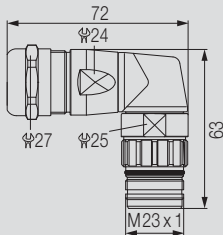
Ordering data

Type	Qty.	Order No.
SAI-M23-KS-L-7/12	1	1170270000

Angled connector



Angled connector (coupling)



Ordering data

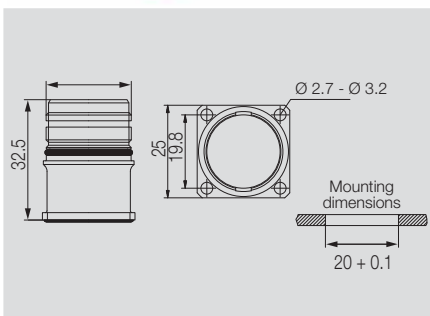
Type	Qty.	Order No.
SAIL-M23-GSW-L-7/12	1	1170280000

Ordering data

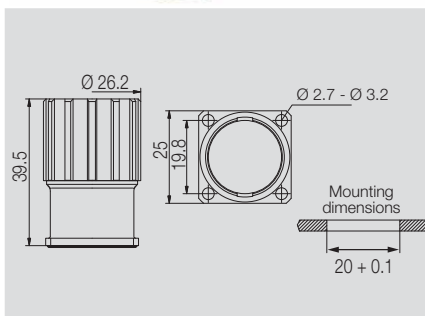
Type	Qty.	Order No.
SAIL-M23-KSW-L-7/12	1	1170290000

Built-in connector

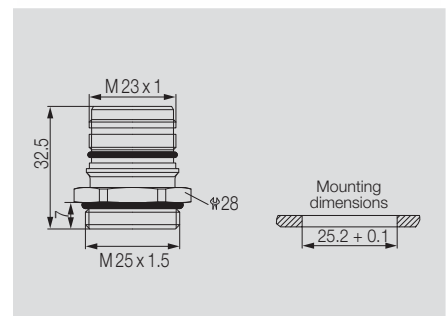
With 3.2-mm mounting holes

Device connector (front panel)**Ordering data**

Type	Qty.	Order No.
SAIE-M23-L-VW	1	1170300000

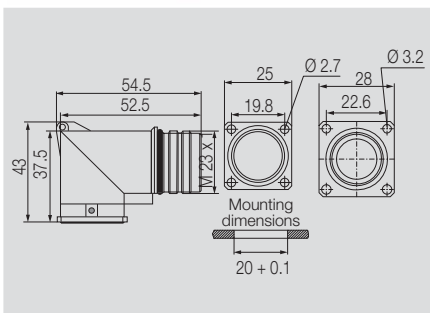
Device connector with knurled nut**Ordering data**

Type	Qty.	Order No.
SAIE-M23-L-RM	1	1170310000

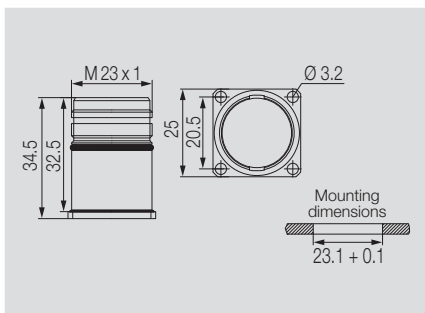
Device connector (single-hole mount)**Ordering data**

Type	Qty.	Order No.
SAIE-M23-L-EM	1	1170320000

H

Device connector (angled)**Ordering data**

Type	Qty.	Order No.
SAIE-M23-L-W	1	1170330000

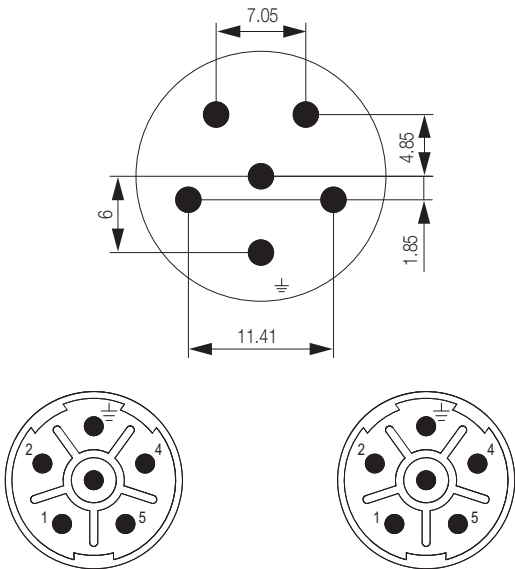
Device connector (back panel)**Ordering data**

Type	Qty.	Order No.
SAIE-M23-L-HW	1	1170340000

M23 connector for power transmission

Inserts

5 + PE



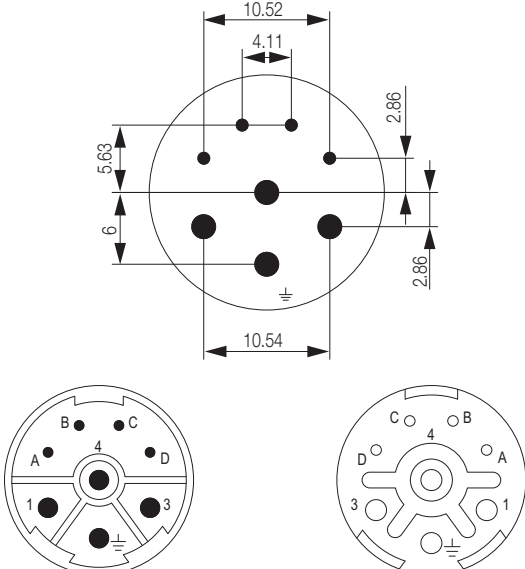
6 times male, 2 mm

6 times female, 2 mm

Ordering data

	Type	Qty.	Order No.
6 times male, 2 mm	SAI-M23-SE-L-6	1	1170350000
6 times female, 2 mm	SAI-M23-BE-L-6	1	1170370000

4/4



4 times 1-mm male and 4 times 2-mm male

4 times 1-mm female and 4 times 2-mm female

Ordering data

	Type	Qty.	Order No.
4 times 1-mm male and 4 times 2-mm male	SAI-M23-SE-L-4/4	1	1170380000
4 times 1-mm female and 4 times 2-mm female	SAI-M23-BE-L-4/4	1	1995810000

Contacts

Male, 1 mm

0.25 - 1.00



Ordering data

	Type	Qty.	Order No.
1 mm Male (0.25-1.00)	SAI-M23-KSC-0,25-1.0	50	1170390000

Female, 1 mm

0.25 - 1.00

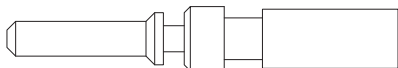


Ordering data

	Type	Qty.	Order No.
1 mm Socket (0.25-1.00)	SAI-M23-KBC-0.25-1.0	50	1995830000

Male, 2 mm

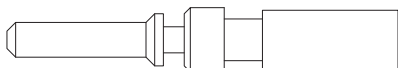
0.75 - 2.5



Ordering data

	Type	Qty.	Order No.
2 mm Male (0.75-2.5)	SAI-M23-KSC-L-0.75-2.5	50	1170400000

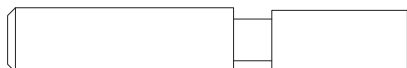
2.5 - 4.00



2 mm Male (2.5-4.00)	SAI-M23-KSC-L-2.5-4.0	50	1170410000
----------------------	-----------------------	----	------------

Female, 2 mm

0.75 - 2.5



Ordering data

	Type	Qty.	Order No.
2 mm Socket (0.75-2.5)	SAI-M23-KBC-L-0.75-2.5	50	1995820000

2.5 - 4.00



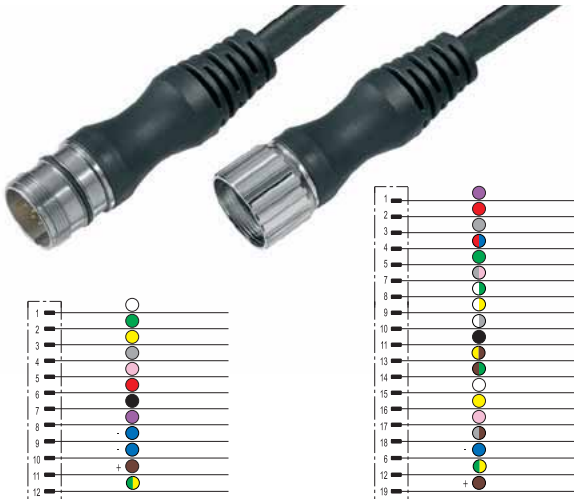
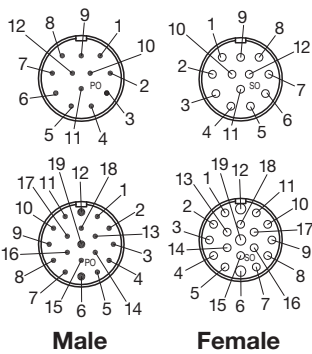
2 mm Socket (2.5-4.00)	SAI-M23-KBC-L-2.5-4.0	50	1170420000
------------------------	-----------------------	----	------------

Technical data

Number of positions	5 + PE	4/4	
Number of contacts	6	4	4
Contact-Ø	mm	2	2

Moulded M23 cables

M23 cables



Ordering data

Male, straight	1 m
Male, angled	1 m
Female, straight	1 m
Female, angled	1 m
Note	

12-pole

Type	Order No.
SAIS-M23-12P-AN-1,0M	1906290100
SAIS-M23-12P-ST-1,0M	1906280100
SAIB-M23-12P-AN-1,0M	1877440100
SAIB-M23-12P-ST-1,0M	1886440100
ST = straight AN = 90° elbow	

19-pole

Type	Order No.
SAIS-M23-19P-AN-1,0M	1818090100
SAIS-M23-19P-ST-1,0M	1818160100
SAIB-M23-19P-AN-1,0M	1818140100
SAIB-M23-19P-ST-1,0M	1818180100
Other versions on request	

Standard cable lengths

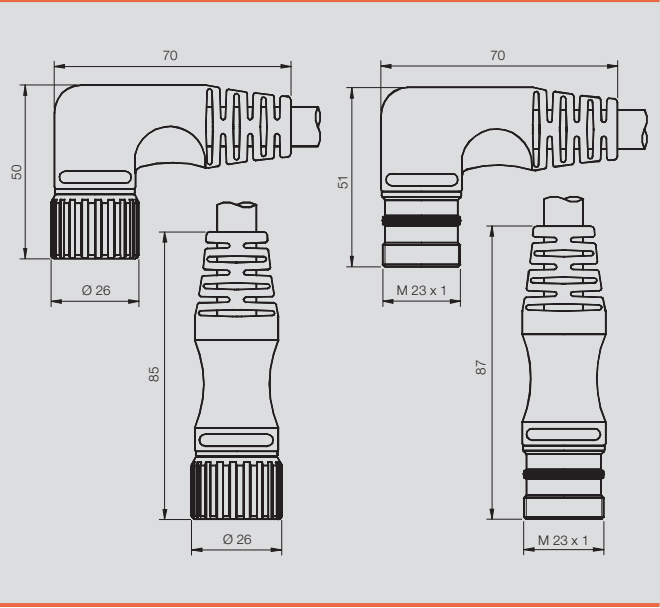
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

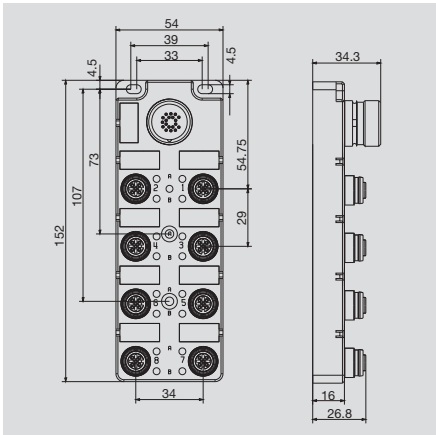
Rated current	8 A
Protection class	IP 67
Core cross-section	0.75 mm²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C
Rated voltage	150 V
(acc. to VDE standard 0110 ISO group C)	

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



with M23 outlet



Ordering data

Complete modules	
	4 channel
	8 channel
Note	

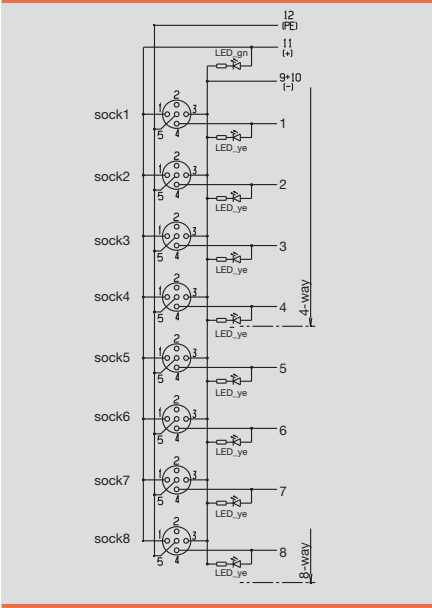
SAI-4/8-S		4-pole
Type	Qty.	Order No.
SAI-4-S 4P FC	1	1847960000
SAI-8-S 4P FC	1	1847920000
Other versions on request		

SAI-4/8-S		5-pole
Type	Qty.	Order No.
SAI-4-S 5P FC	1	1847970000
SAI-8-S 5P FC	1	1848040000
Other versions on request		

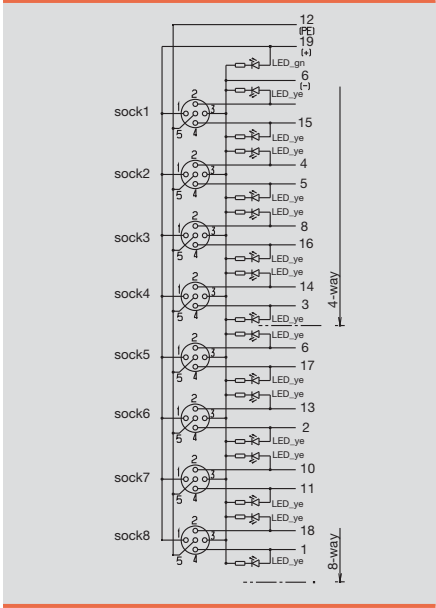
Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	4 A
Total current	9 A
Pollution severity	3
Protection class	IP 67
Ambient temperature range	-25...+80 °C
Housing main material	PA 6 GF
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	

Wiring diagram

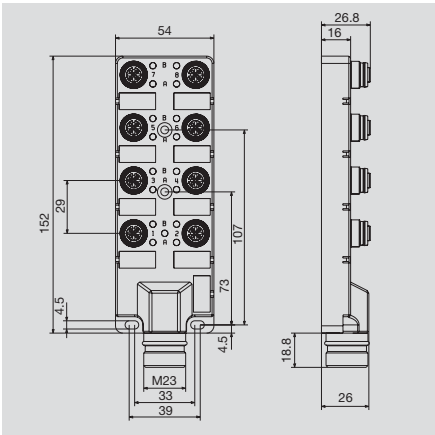


Wiring diagram



SAI distributor M12 with M23

with M23 outlet on front



Ordering data

Complete modules	
	4 channel
	8 channel
Note	

SAI-4/8-SH

4-pole

Type	Qty.	Order No.
SAI-4-SH 4P FC	1	1859110000
SAI-8-SH 4P FC	1	1859120000

SAI-4/8-SH

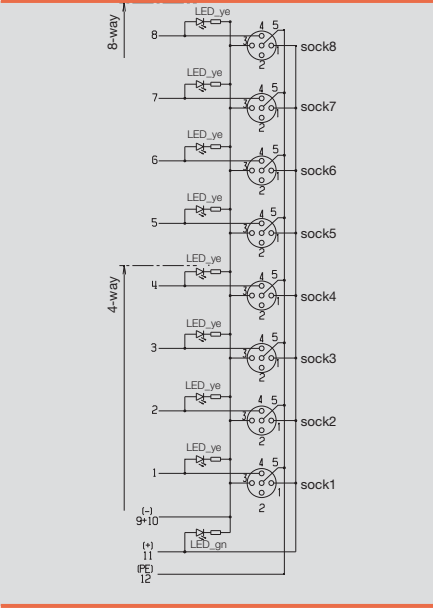
5-pole

Type	Qty.	Order No.
SAI-4-SH 5P FC	1	1859130000
SAI-8-SH 5P FC	1	1859140000

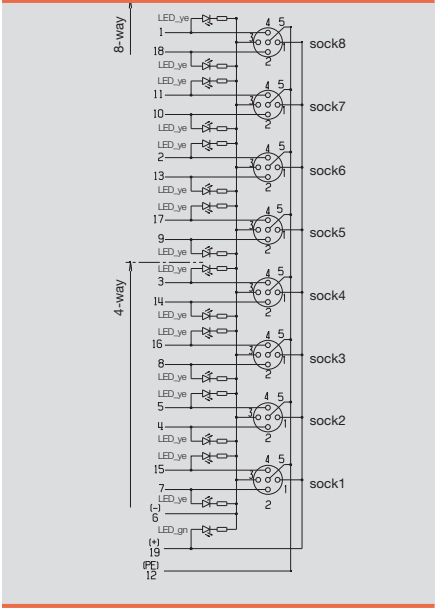
Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	4 A
Total current	9 A
Pollution severity	3
Protection class	IP 67
Ambient temperature range	-25...+80 °C
Housing main material	PA 6 GF
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	

Wiring diagram

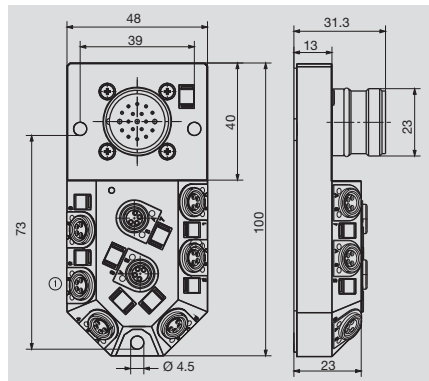


Wiring diagram



With M23/ M16 outlet

SAI-4/8-M23



Ordering data

3-pole	8 channel
4-pole	4 channel
	8 channel
Note	

SAI-4/8-M23

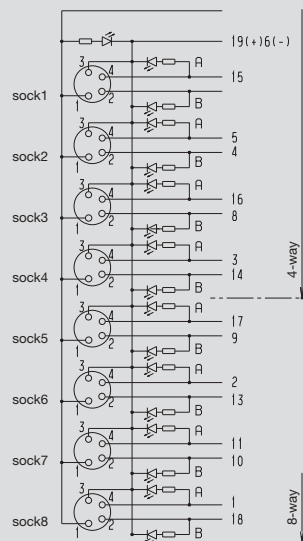
M23

Type	Qty.	Order No.
SAI-4-M23 4P M8	1	1784660000
SAI-8-M23 4P M8	1	1784650000
Other versions on request		

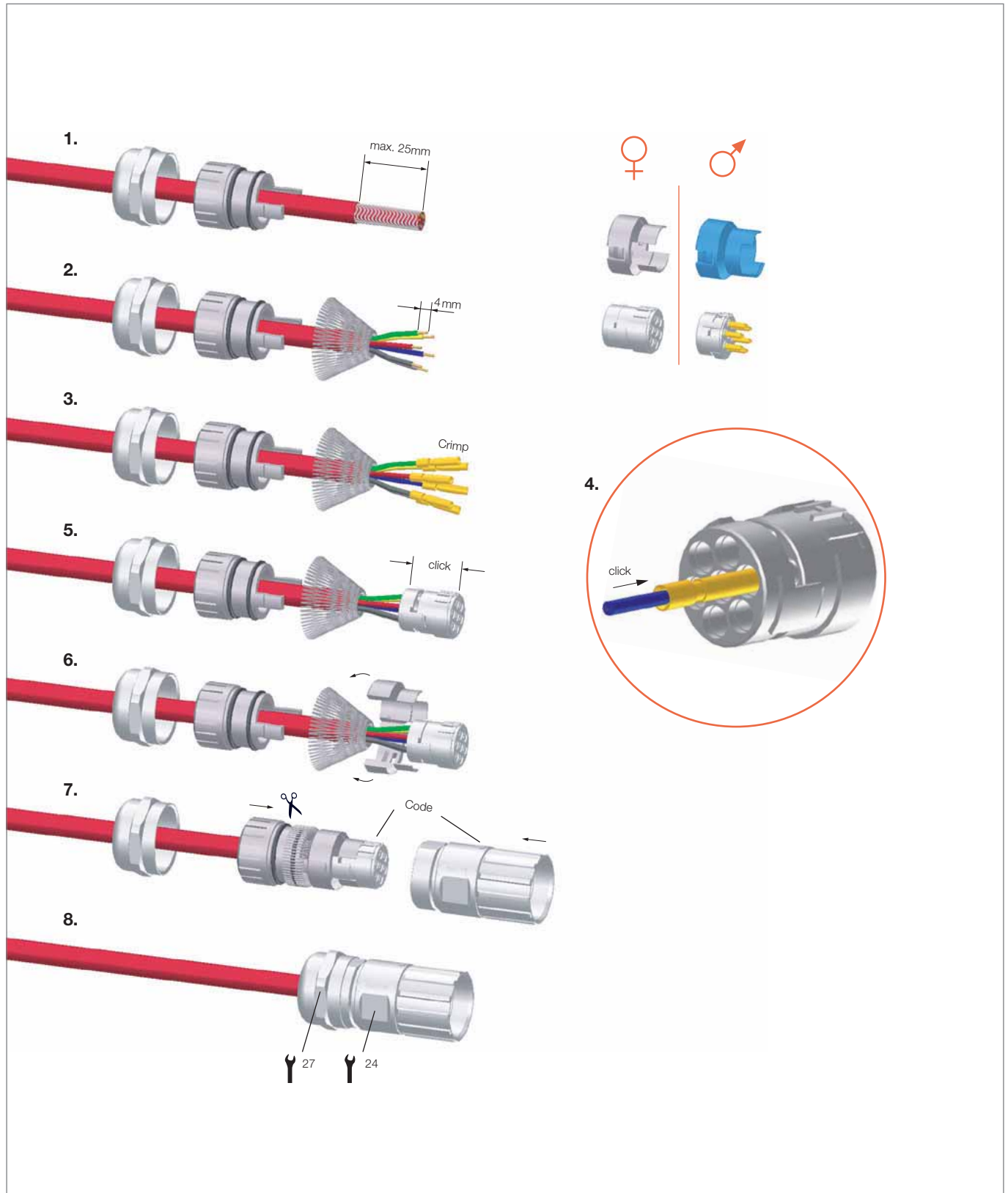
Technical data

Operating voltage	10...30 V
Current of continuous busbars	2 A
max. current-carrying capacity per slot	2 A
Total current	8 A
Pollution severity	3
Protection class	IP 68
Ambient temperature range	-20...+90 °C
Housing main material	Pocan
Contact carrier material	PBT UL 94 V0
Base material of contacts	CuZn, pre-nickeled, gold-plated
screw socket	CuZn, nickel-plated
Housing colour	grey, RAL 7032
Flammability class UL 94	V-0
Clamping range of hood-version	
Suitable for dragline cable (fixed cable connection)	

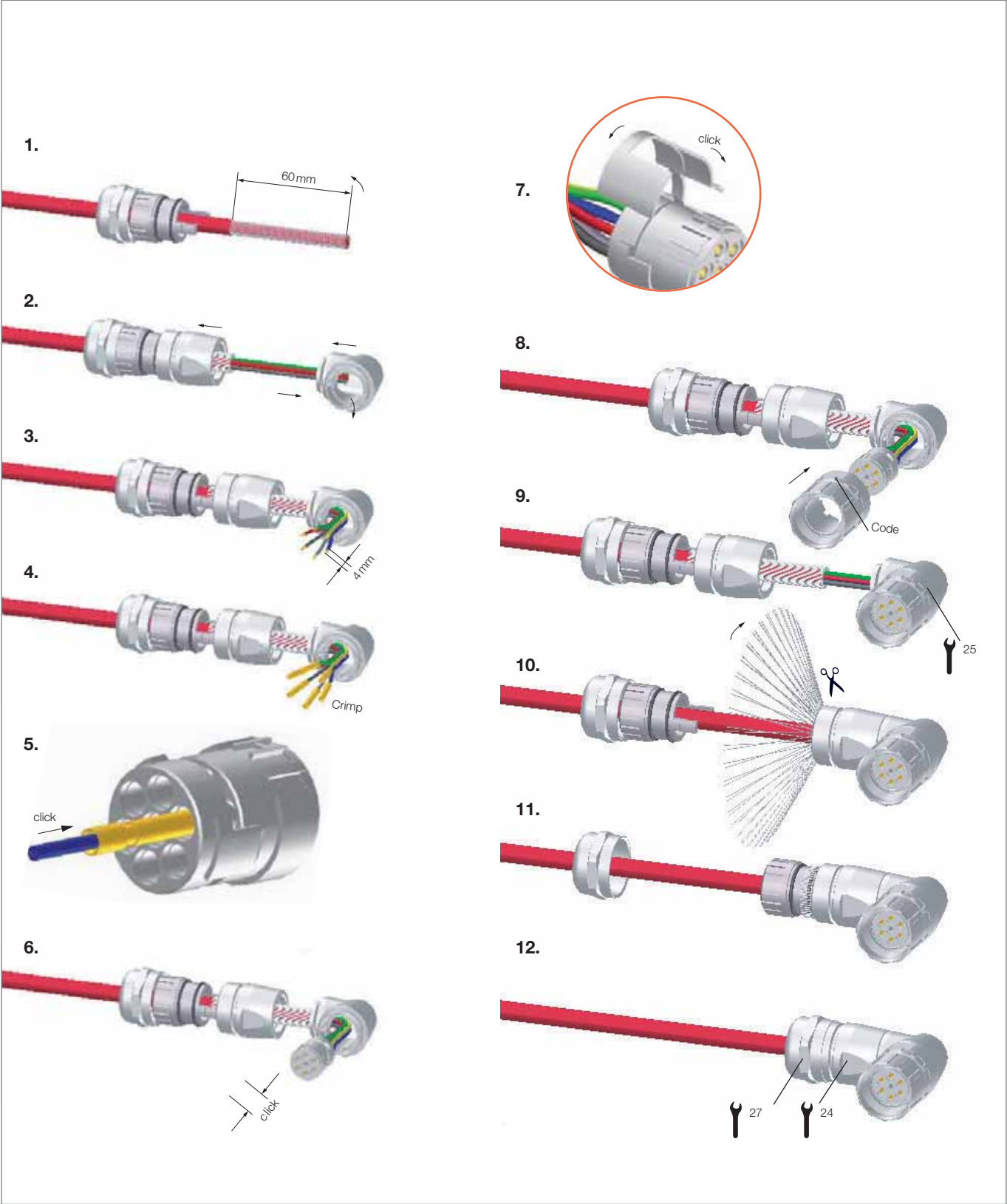
Wiring diagram



Cable connector

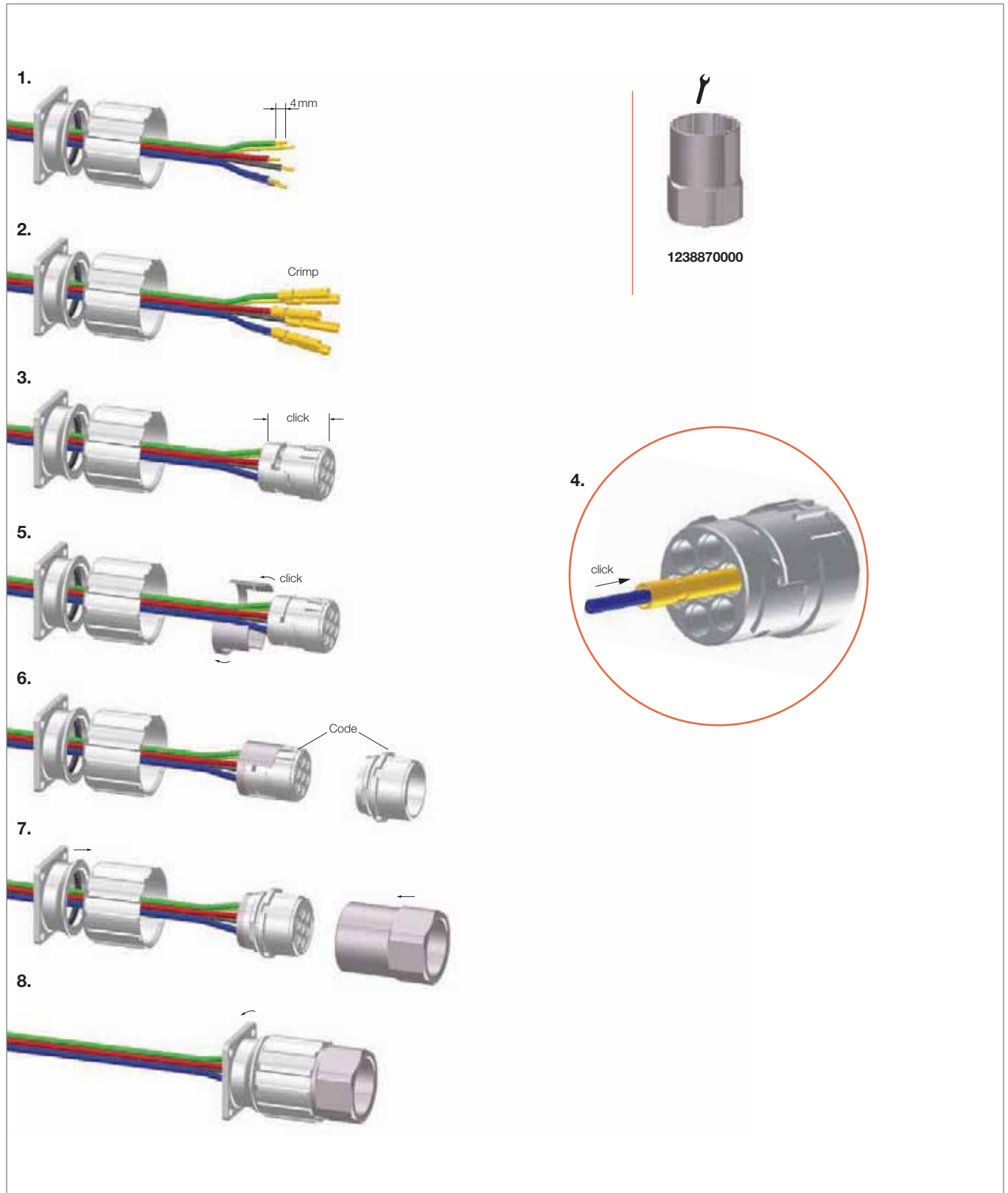


Angled connector

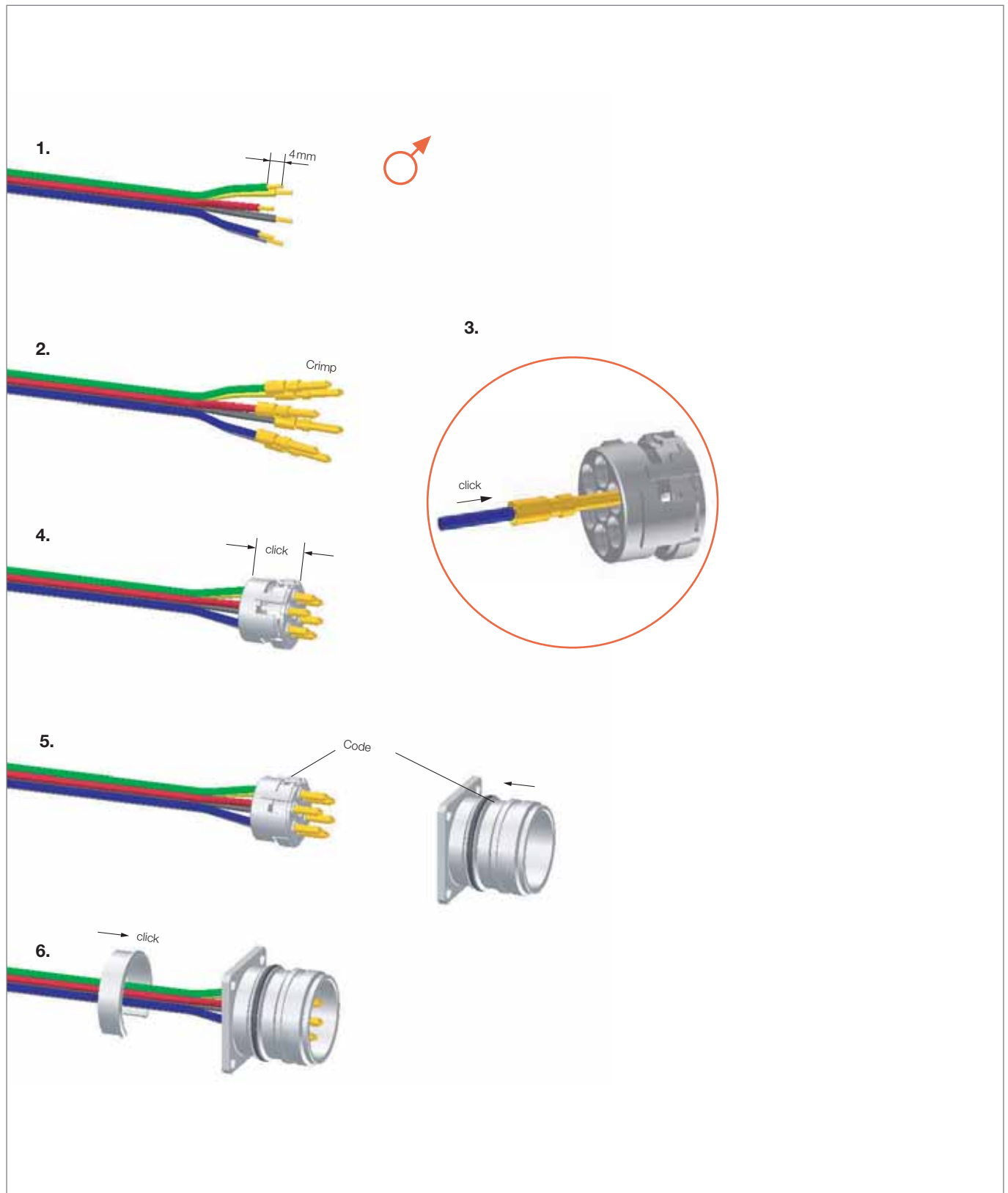


H

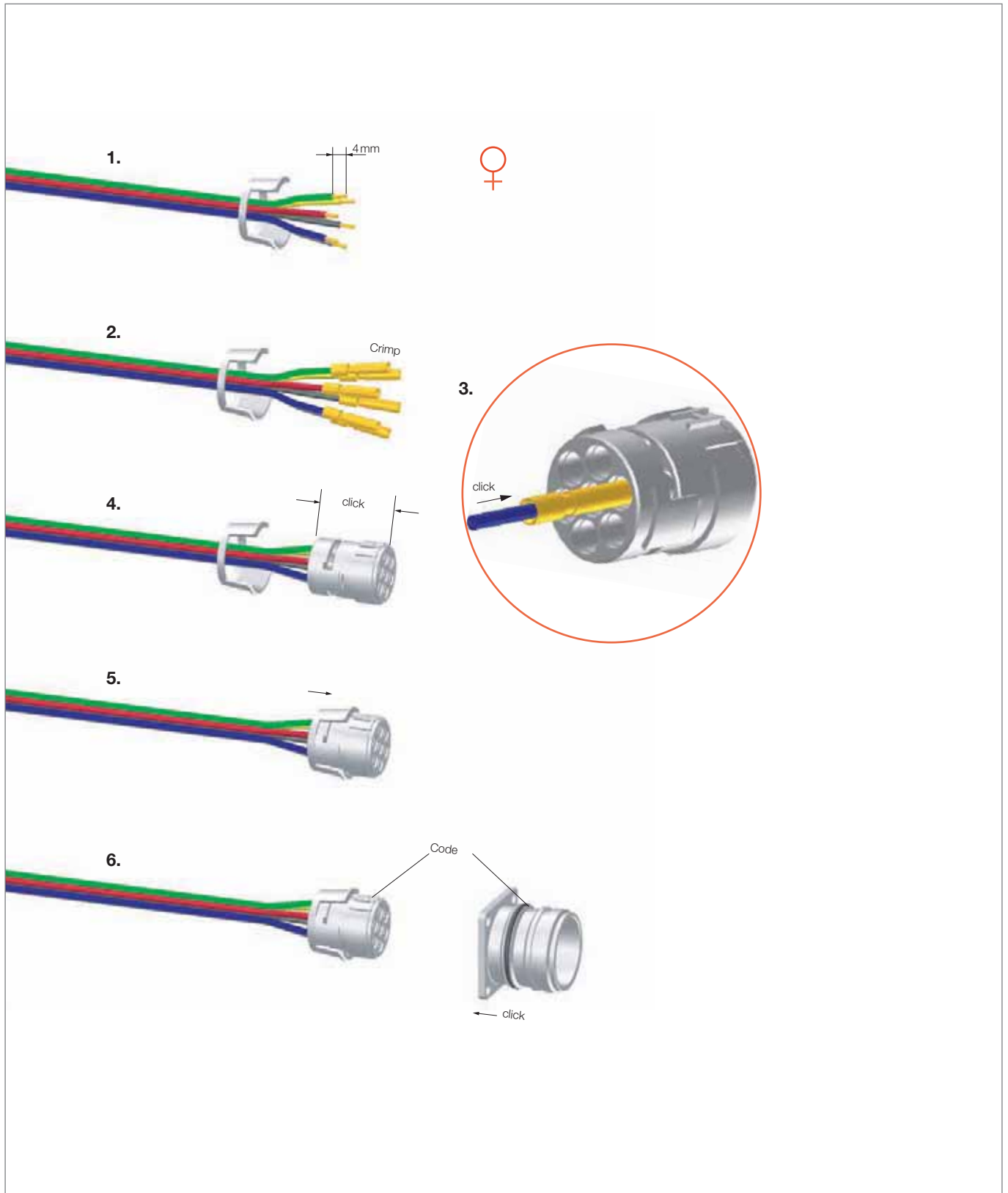
Device connector with knurled nut



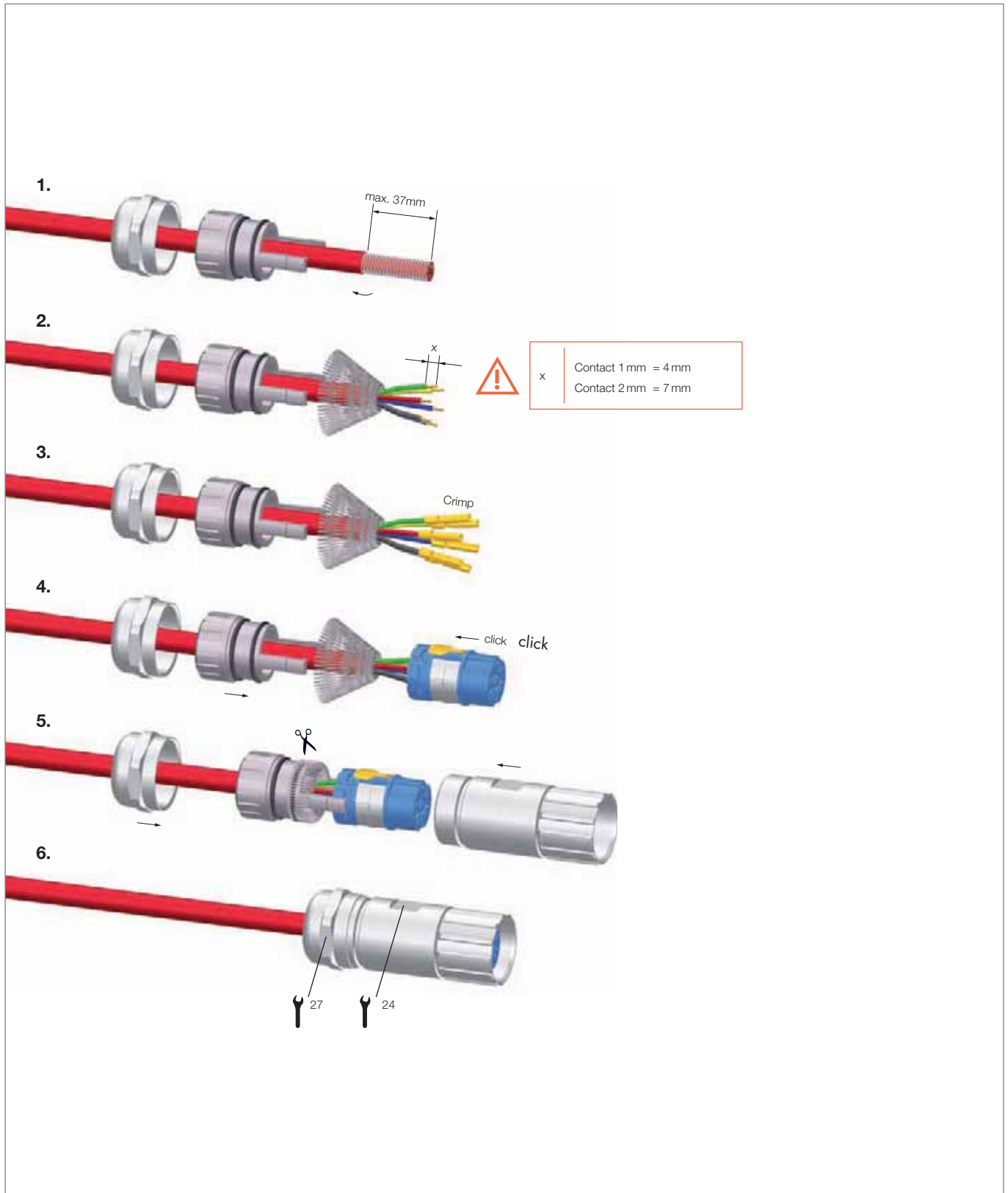
Device connector, male



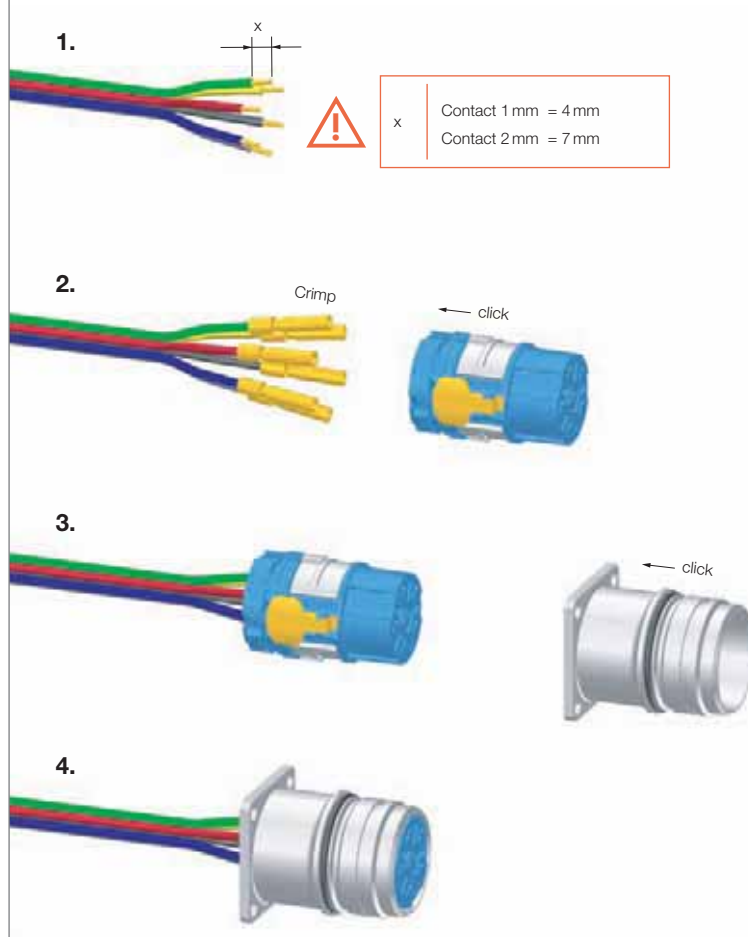
Device connector, female



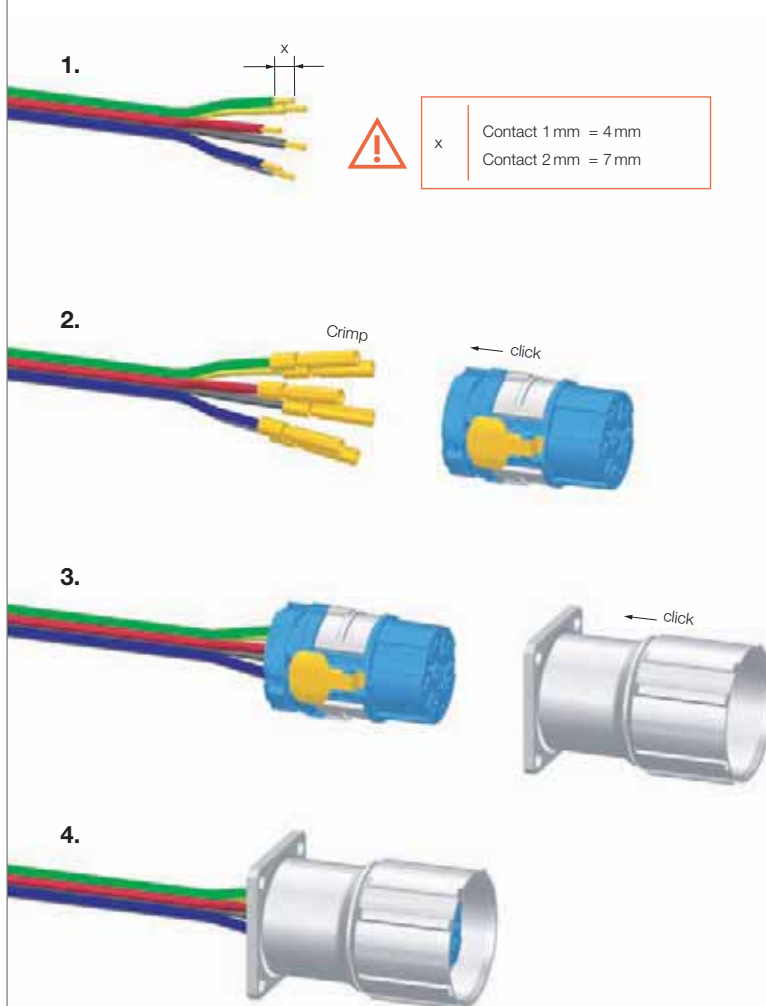
Cable connector



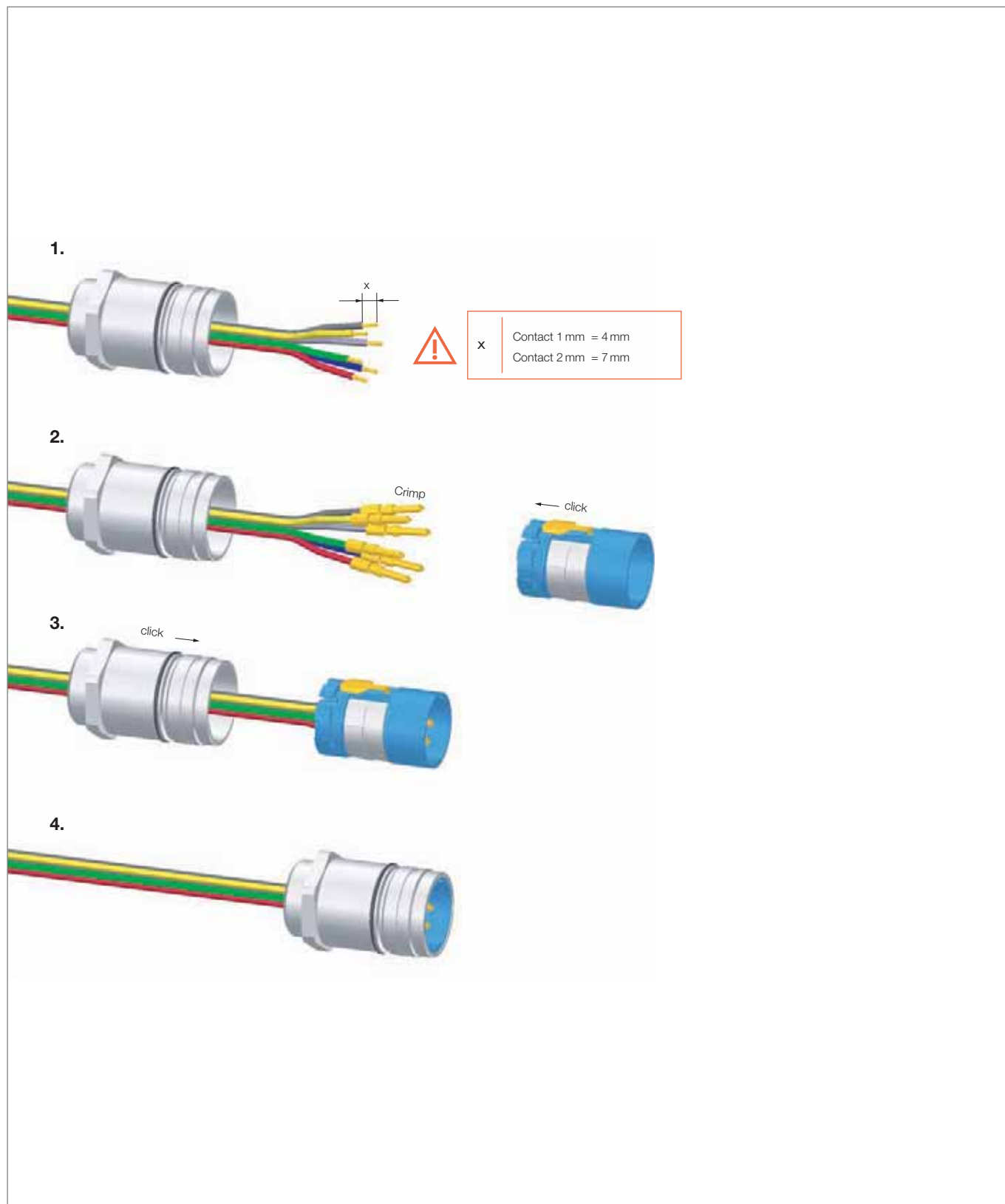
Device connector



Device connector



Device connector, single-hole mount



M23 connector

Easy to assemble

- An integrated approach for all plug sizes
- A patented assembly module consisting of terminal insert and insulating body
- Assembly and shield connection combined into one step
- Simple, quick and safe assembly in the housing



Flexibility



Total modularity means flexibility. Male or female inserts can even be used with any of the housing types for the M23 power connectors.



The concise layout of this connector range and the reduced number of individual parts has clear benefits for the user – speedier assembly and easier installation.



The spacer sleeves are colour-coded for the male and female inserts.



Assembly and shield connection are combined into one step.



The snap-on terminal insert protects the cable outlet from getting twisted.



The variable shield connection ensures secure EMC protection for both light and heavy shielding braid.

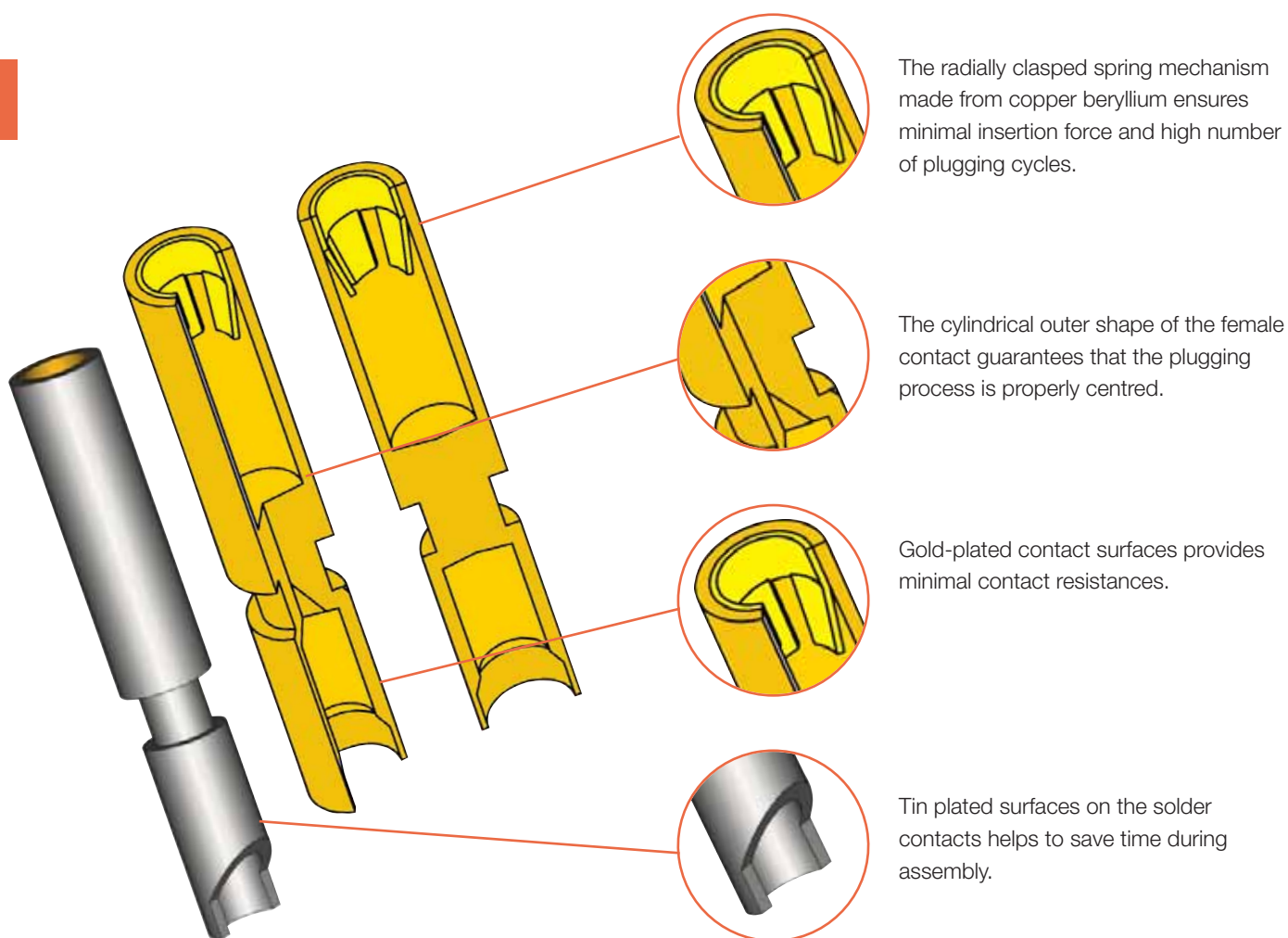
M23 connector

Secure contact with SLS® technology

The new, premium-grade contact – the spring-loaded socket (SLS®) system

- Integrated spring takes the pin contact and clasps it radially
- Outstanding electrical characteristics with the most secure contact
- Quick assembly: solder contacts already tin-plated

H



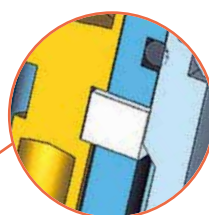
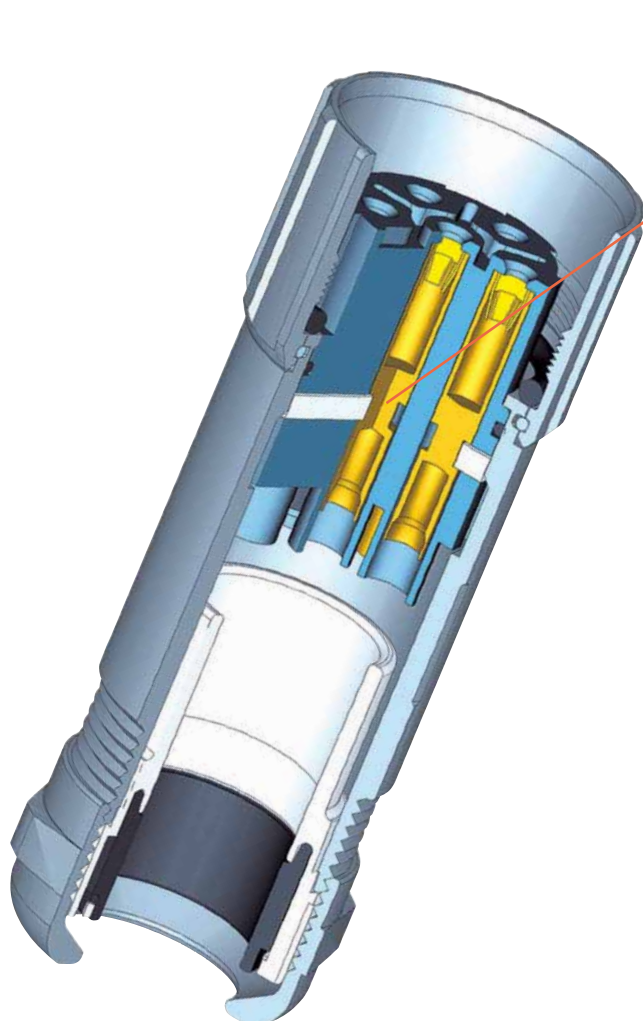
Euro-Lock system® for a secure mount

Euro-Lock system® – the patented interlock system

- The integrated support clip locks the contacts into the insulating body
- Contacts are easy to install and remove
- No special tool is required

High-quality cable gland

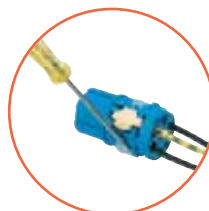
- Replaceable male or female inserts in each type of housing
- Integrated strain relief mechanism with patented HSK cable gland
- Internationally certified, with proven and established quality



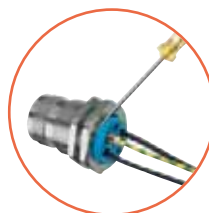
Secure contact interlock



Quick assembly



Simple removal of contacts



Complete installation and removal without any special tools

Tools and markers

Tools and markers

Introduction	I.2
Screwty®	I.4
Cutting tools	I.7
Sheathing and insulation stripping tools	I.8
Stripping and cutting tools	I.9
M23 crimping tools	I.12
Identification systems	I.14

SAI tools

The Screwty® is a state of the art tool that features a unique, patented retention method. The adjustable torque ensures that the connectors have actually been sealed tightly. The Screwty® attachment for M23 is also very important. The sealing method for the M8 and M12 connectors is comparable to the M23.

The fact that the Screwty® attachment slips back is also a major advantage of this system. This means that it does not have to be re-applied, as would be the case when using an open ended

wrench. There is also no risk that the screw can loosen when you turn the tool the wrong way since the Screwty® is only capable of exerting force in one direction.

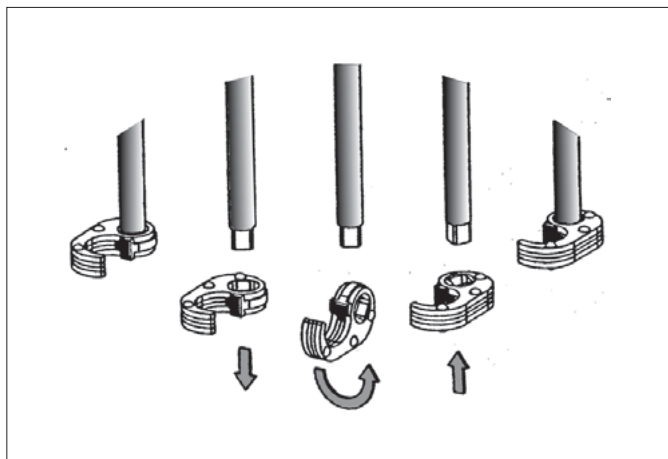
It is also possible to put other tool attachments on the 1/4"-drive. This allows the use of torque spanner wrenches or torque screwdrivers. This is also available without torque for those who cannot fit a torque tool into their budgets.



The Screwty® can also be used to screw on M23 connectors.



The tool does not have to be re applied. During the follow-up it simply slips back.



You can change the function from close to open by simply turning it around.



The Screwty® can also be purchased as a set with other suitable attachments.



Screwty® torque

- Screw-on circular plug, safety sealed
- Easier work



Cutting tools

- Cutting shape for various cable sizes
- Cutting without deformation of the conductor



Sheathing and insulation stripping tools

- No need to adjust cutting depth
- No damage to inner conductors



Stripping and cutting tool

- Special, self adjusting stripping blades do not damage the conductor



Screwty®

Bolting tools



Cutting tools



Sheathing and insulation stripping tools



Stripping and cutting tools



SAI M23 crimping tool



Identification systems

Screwty® for M8/M12/M23



The Torque Screwty®

- Easier work
- Screw on circular plug, safety sealed

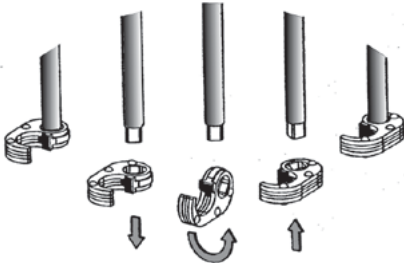
The perfect tool for all situations

Screwty® is the ideal, universal tool for tightening and releasing cable glands on all common sensor and actuator cables. The Screwty® can also reach those round plugs normally considered inaccessible! No great force is required, simply turn the tool to tighten or release the plug in connector as required.

The Screwty® also fits the majority (more than 90 %) of the cables and plug-in connectors of other suppliers and is therefore a unique tool useful throughout the world. The Screwty® consists of a handle with a conventional 1/4" fitting. This means it can be used for all sizes: for M12 and M8 round plugs, and the M12F and M8F types, also for plugs and sockets on custom cables.

The Screwty® is suitable for the following round plugs:

Size	M8	M8F	M12	M12F
	10 ±0.3 mm	11.9 ±0.3 mm	14.5 ±0.3 mm	19.8 ±0.3 mm
Thread	M8x1	M8x1	M12x1	M12x1



Simply turn the ratchet to tighten or loosen the cable gland.

An adjustable torque fitting is also available for the Screwty®, for guaranteeing extra reliability during installation.

The torque can be infinitely adjusted between 0.5 and 1.7 Nm. This accurate setting enables all round plugs to be tightened precisely with a pre set torque.

Weidmüller specifies the following torques for its round plugs:

Size	M8	M8F	M12	M12F	M12 plastic
Torque	0.5-0.6 Nm	0.5-0.6 Nm	0.8-1.2 Nm	0.8-1.2 Nm	0.9-1.1 Nm
Thread	M8x1	M8x1	M12x1	M12x1	M12x1

The Screwty® can also be fitted with other blades to create a torque screwdriver. You can find these blades in our catalogue "Tools".



Use of a M12 Screwty®

1. Position Screwty®,
2. tighten connector,
3. finished!



Use of a M23 Screwty®

Screwty® standard



Ordering data

Type	Use	Qty.	Order No.
Screwty® M12	moulded M12 lines	1	1900000000
Screwty® M8	moulded M8 lines	1	1900010000
Screwty® M12 F	M12 plugs for custom assembly	1	1900020000
Screwty® M8 F	M8 plugs for custom assembly	1	1900030000

Screwty® Set



Ordering data

Type	Qty.	Order No.
Screwty® Set	1	1910000000
Fittings		
Type	Contents	
Screwty® Set	1 Screwty® standard handle + 1 M12, M8, M12 F, M8 F attachments	

Screwty® attachments



Screwty® M8 attachment

Screwty® M8 F attachment

Screwty® M12 attachment

Screwty® M12 F attachment

Screwty® M23 attachment

Ordering data

Type	Qty.	Order No.
Screwty® M12 KO o. SD	1	1900100000
Screwty® M8 KO o. SD	1	1900110000
Screwty® M12F KO o. SD	1	1900120000
Screwty® M8F KO o. SD	1	1900130000
Screwty® M23	1	1981560000

Legend:

F	for custom assemblies
DM	torque
KO or SD	ratchet only (attachment)
Screwty®	screwdriver
Screwty® DM	torque screwdriver, interchangeable blade
WK	interchangeable blade
LS	power plug

Screwty® with torque fitting

Setting aid for Screwty® with torque fitting (included)



Ordering data

Type	Use	Qty.	Order No.
Screwty®-M12-DM	moulded M12 lines with torque requirement	1	1900001000
Screwty®-M8-DM	moulded M8 lines with torque requirement	1	1900011000
Screwty®-M12 F-DM	M12 plugs, custom assembly w. torque requirement	1	1900021000
Screwty®-M8 F-DM	M8 plugs, custom assembly with torque requirement	1	1900031000

Fittings	
Type	Contents
Screwty®-M12-DM	1 interchangeable blade, 1 torque handle, 1 setting aid for Screwty® torque, 1 Screwty® M12 attachment
Screwty®-M8-DM	1 interchangeable blade, 1 torque handle, 1 setting aid for Screwty® torque, 1 Screwty® M18 attachment
Screwty®-M12 F-DM	1 interchangeable blade, 1 torque handle, 1 setting aid for Screwty® torque, 1 Screwty® M12 F attachment
Screwty®-M8 F-DM	1 interchangeable blade, 1 torque handle, 1 setting aid for Screwty® torque, 1 Screwty® M18 F attachment

Screwty® Set-DM



Ordering data

Type	Qty.	Order No.
Screwty® Set-DM	1	1920000000
Fittings		
Type	Contents	
Screwty® Set-DM	1 interchangeable blade, 1 torque handle, 1 setting aid for Screwty® torque, 1 each of Screwty® M12, M8, M12 F, M8 F attachments	

Screwty® interchangeable handle/interchangeable bit



Ordering data

Type	Use	Qty.	Order No.
1/4" handle		1	4294820000
WK-1/4" (Screwty®)		1	1862200000

SAI tool boxes

SAI-Screwty® Box



- Stripping of PVC and PUR sensor/actuator cables
- Tightening of M8 and M12 round connectors with adjustable torque setting

Accessories

[illegible]

*) Screwing attachment for M8/10 mm; M8F/11.9 mm; M12/14.5 mm; M12/19.8 mm;
F...male and female connectors for custom assembly .

Ordering data

Type	Order No.
SAI-SCREWTY BOX	1939180000

SAI-Screwty® Tool Box



- Screwing of M8 and M12 round connectors with adjustable torque setting
- Tightening of slot-head and cross-head screws (PZ and PH)

Accessories

Article description	Qty.
Torque screwdriver DMS manual for 0.5–1.7 Nm	1
Torque screwdriver DMS manual for 2.0–8.0 Nm	1
Interchangeable blade 0.4 x 2.5 mm	1
Interchangeable blade 0.5 x 3.0 mm	1
Interchangeable blade 0.6 x 3.5 mm)	1
Interchangeable blade 0.8 x 4.0 mm	1
Interchangeable blade 1.0 x 5.5 mm	1
Interchangeable blade PZ0	1
Interchangeable blade PZ1	1
Interchangeable blade PZ2	1
Interchangeable blade PH=0	1
Interchangeable blade PH1	1
Interchangeable blade PH2	1
Screwty® attachment for plug-in connectors* M8	1
Screwty® attachment for plug-in connectors* M8F	1
Screwty® attachment for plug-in connectors* M12	1
Screwty® attachment for plug-in connectors* M12F	1
Carry case	1

*) Screwing attachment for M8/10 mm; M8F/11.9 mm; M12/14.5 mm; M12/19.8 mm;
F...male and female connectors for custom assembly .

Ordering data

Type	Order No.
SAI-SCREWTY TOOL BOX	1939170000

Cutting tools

- Cutting formation for different cable sizes increases the quality of the cuts for smaller cross sections
- Not suitable for steel wires, steel armoured cables, aluminium alloys and hard drawn copper conductors!
- Cutting without deformation of the conductor



KT 8



- max. 8 mm
- max. 16 mm²
- max. 16 mm²
- max. 16 mm²

KT 12



- max. 12 mm
- max. 16 mm²
- max. 25 mm²
- max. 35 mm²

Technical data

Max. cutting performance, copper cable	
Solid (max. conductor cross-section)	mm ² / –
Stranded (max. conductor cross-section)	mm ² / –
Flexible (max. conductor cross-section)	mm ² / –
Flexible, stranded (max. conductor diameter)	mm
Max. cutting performance, aluminium cable	
Stranded (max. conductor cross-section)	mm ² / –
Stranded (max. conductor diameter)	mm
solid	mm ²
Data / telephone / control cable	
Max. outer diameter	mm
Tool data	
Length / Width / Height	mm
Weight	g
Note	

KT8		
	16 / 6	
	16 / 6	
	16 / 6	
	8	
	16 / 6	
	8	
	16	
	8	
	165 / 65 / 25	
	180	
	Tool closed	

KT12		
	16 / 6	
	25 / 3	
	35 / 2	
	12	
	25 / 6	
	8	
	25	
	12	
	215 / 66 / 28	
	300	
	Tool closed	

Ordering data

Version
Note

Type	Qty	Order No.
KT 8	1	9002650000

Type	Qty	Order No.
KT 12	1	9002660000

Sheathing and insulation stripping tools

Special sheathing and insulation stripping tools

- Quick and accurate stripping
- No need to adjust cutting depth
- No damage to inner conductors

Stripper 6-16



Stripper 6-16

The Stripper 6-16 insulation stripping tool is for removing the outer sheath of sensor cables. No damage to inner wires can occur because the blades have a specially ground surface. Adjusting the tool to different cross-sections is unnecessary. The visual scale of 15 to 20 mm enables quick and precise stripping of outer insulation.

AM12

For UTP and STP data cables



- Cutting of UTP and STP data cables and other flexible copper cables with a diameter of up to 4 mm² (~AWG11)
- Stripping of the outer insulation of UTP and STP data cables and other round cables with $\varnothing$ 0.5 ... 12.5 mm
- No damage to the shielding or conductor due to adjustable stripping blade
- Length end stop for repeated cutting or stripping lengths

Technical data

Max. stripping performance	
Cable model	
Conductor cross-section	AWG
Conductor diameter	mm
Depth of cut	
Cutting performance	
UTP und STP data cables, max. diameter	mm
Flexible (max. conductor cross-section)	mm ²
Tool data	
Length	mm
Weight	g
Information	

Stripper 6-16		
suitable for PVC and PUR cables		
Information		

AM12		
UTP and STP data cables		
Information		

Ordering data

Version
Information

Type	Qty.	Order No.
STRIPPER 6-16 RED-LINE	1	9203110000
Information		

Type	Qty.	Order No.
AM 12	1	9030060000
Information		

Accessories

Information

Type	Qty.	Order No.
Information		

Type	Qty.	Order No.
Sheathing stripper		
Information		

Stripping and cutting tools

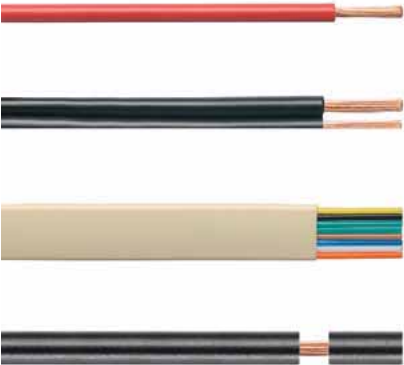
- for flexible and solid conductors with PVC insulation
- Cable with double insulation in two processing steps without special adjustment
- Automatic opening of clamping jaws after stripping
- No play in self adjusting cutting unit
- Long-lasting
- No splicing of single conductors
- Optimised ergonomic design
- Stripping length adjustable via stop
- Adjustable for different insulation thicknesses
- Switchable partial stripping function
- Removable handle shells
- Fold-out cutting protection
- Custom marking with ESG device markers

stripax®

0.08 - 10 mm²



- Stripping: PVC insulated flexible conductor, size 0.08...10 mm² (~AWG 28...7)
- Cutting: PVC insulated flexible conductor, size 0.08...6 mm² (~AWG 28...10)
- Conductors undamaged due to self adjusting stripping blades.
- Processing of multi-conductors, with thin flat ribbon cables and even multiple conductors in one operation



Technical data

Max. stripping performance	
Cable type	
Conductor cross-section	mm²
Stripping length, max.	mm
Cutting performance	
Max. cutting performance	mm²
Tool data	
Length	mm
Weight	g
Note	

stripax®	
Flexible and solid conductors with PVC insulation	
0.08...10	
25	
6	
190	
175	

Ordering data

Version
Note

Type	Qty.	Order No.
stripax®	1	9005000000

Accessories

Note

Type	Qty.	Order No.
Spare stripping blades	1	1119030000

Stripping and cutting tools

multi-stripax®

Multifunctional stripping tool for use on a multitude of conductor insulation forms and configurations – even those not covered by the standard

multi-stripax® – the troubleshooter

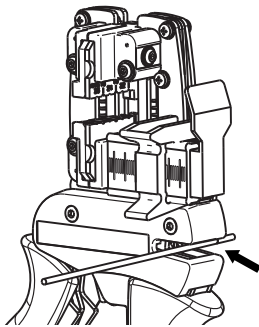
- Interchangeable stripping units
- Proper stripping of any conductor, round, flat or special profiles, thanks to the specially shaped stripping blades
- Incorporates cutting function for up to 2.5 mm² solid and 6 mm² fine
- Fatigueless operation thanks to ergonomic design
- No damage to conductor or remaining insulation
- Best stripping results for industrial applications
- Stripping results reproduced accurately time and time again
- A long lasting, reliable tool thanks to its robust design
- Plus, the customary Weidmüller repair service

Special stripping units – the answer to diverse stripping tasks

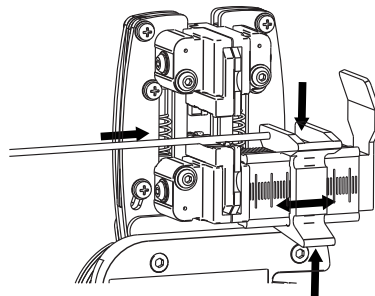
The multi-stripax® tool – distinguished by its robust design, was developed to handle all the stripping tasks met with in practice. Thanks to the interchangeable stripping units, a special solution can be found for every challenge in the marketplace.

The specially shaped stripping blades guarantee perfect stripping results. The guide plates ensure the correct positioning of the wire and therefore prevent damage to the remaining wire. The clamping jaws hold the conductor with just the right force during the stripping operation and are matched to the specific situation. This flexibility within the variables that affect the result of the stripping operation turns the multi-stripax® tool into a universal troubleshooter.

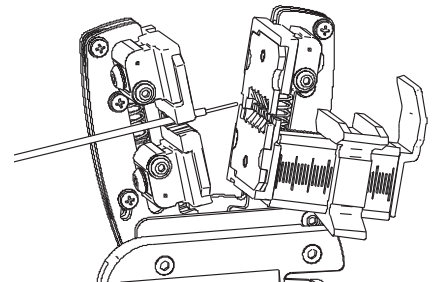
Cutting



Positioning



Stripping



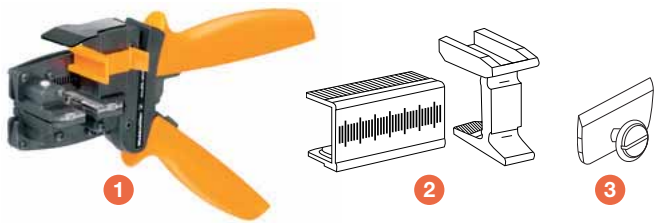
multi-stripax®



Technical data

Cable type	PVC, Teflon, PTE, PUR, silicone, halogen-free
Conductor cross-section, min.	2 mm
Conductor cross-section, max.	no limit (in several steps)
max. cutting capacity, fine-strand	6 mm ²
max. cutting capacity, solid	2.5 mm ²
max. cutting capacity, ribbon	10.2 x 4 mm
Length/Width/Height	250 / 85 / 40 mm
Weight	250 g
Information	

multi-stripax® incl. stripping unit



- High quality stripping for industrial applications
- Specially shaped stripping blades enable stripping of special types of insulation and conductor configurations
- Adjustable stop for setting stripping lengths from 2.3 to 30 mm
- Highly flexible thanks to interchangeable stripping units
- Stripping results reproduced accurately time and time again
- No damage to the conductor or insulation
- A long lasting, reliable tool thanks to its robust design
- Integral cutting function for max. 2.5 mm² solid or 6 mm² flexible cables

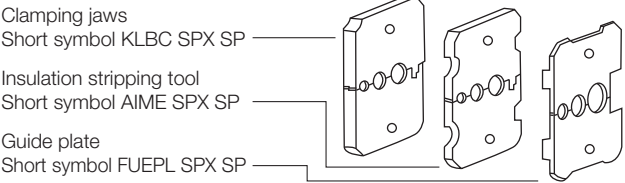
Ordering data

Illustration	Type	Qty.	Order No.	Features
1	multi-stripax® 6-16	1	9202210000	PVC-insulated cables; Cable cross-section 6 up to 16 mm²; max. stripping lengths depends on cable design / cable type 1. station solid, stranded and flexible 6 mm² 2. station solid, stranded and flexible 10 mm² 3. station solid, stranded and flexible 16 mm² double stranded (flexible) Cutting function up to 6 mm²
1	multi-stripax® ASI	1	9202250000	ASI Bus cables 2 x 1.5 mm² flexible for PTE, PUR and EPDM insulated cables Stripping of outer insulation and inner cable Cutting function up to 6 mm²
1	multi-stripax® GKW LW	1	9205760000	Railway cable Radox GKW LW; Cable cross-section 1.0; 1.5 and 2.5 mm² max. stripping lengths depends on cable design / cable type Cutting function up to 6 mm²
2	ERAN multi-stripax®	1	9203100000	Length stop
3	ERME multi-stripax®	1	9203070000	Cutting knife

Information

Stripping units for multi-stripax®

Stripping unit consists of:



- High flexible thanks to interchangeable stripping units
- High quality stripping for industrial applications
- Specially shaped stripping blades enable stripping of special types of insulation and conductor configurations

Ordering data

Type	Qty.	Order No.	Features
AIE multi-stripax® 6-16	1	9202260000	PVC-insulated cables; Cable cross-section 6 up to 16 mm²; max. stripping lengths depends on cable design / cable type 1. station solid, stranded and flexible 6 mm² 2. station solid, stranded and flexible 10 mm² 3. station solid, stranded and flexible 16 mm² double stranded (flexible)
AIE multi-stripax® ASI	1	9202300000	ASI Bus cables 2 x 1.5 mm² flexible for PTE, PUR and EPDM insulated cables Stripping of outer insulation and inner cable
AIE multi-stripax® GKW LW	1	9205770000	Railway cable Radox GKW LW; Cable cross-section 1.0; 1.5 and 2.5 mm² max. stripping lengths depends on cable design / cable type

M23 crimping tools

SAI M23 crimping tool 1

n



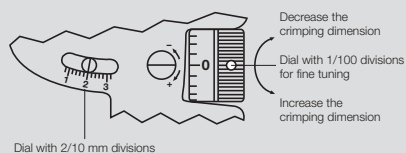
Adjusting the crimping dimensions

The adjustment mechanism is used to set the crimping depth of the crimping mandrel as described below. The adjusting dial is used to prepare the feed; the dial can be turned clockwise (for decreasing the dimension) or counter-clockwise (for increasing the dimension).

Adjustment precision

- 1 division mark on the dial $\approx 1/100$ mm adjustment
- 1 complete revolution of the dial $\approx 0,2$ mm adjustment read from scale
- 5 revolutions of the dial ≈ 1 mm adjustment read from scale

Verifying the crimping dimension



The four-mandrel crimping tool is pre-set at the factory. The actual crimping size should still be checked periodically. It should be checked using the plug gauge ($\varnothing 2.0$ mm) that is included with the crimping tool as described below. Use the dial on the stationary tool shank to set the size to 2.0 mm on the scale. Set to the zero-point tick mark on the dial and close the tool. (Refer to the diagram showing the crimping size adjustment.) At this setting, it should be possible to move the 2.00-mm- $\varnothing$ plug gauge without any play or extra room. If this is not possible, then the size deviation (+/-) can be determined using the dial's fine-adjustment mechanism. If this size check reveals that the tool is not within the tolerance range specified by the manufacturer of the contacts, then you should contact the manufacture of the tool for further inspection.

Servicing and maintenance

Before you start to use the hand crimping tool, it must be clean and in proper working condition. Crimp residue or fragments must be removed from the crimping jaws and locator. The joints should be regularly lubricated using machine oil to protect them from dirt. Make sure that all bolts are secured with locking rings.

Technical data

Crimp contact	Wire cross-section (mm ²)	Crimping mandrel adjustment	Locator position	Order No.
Crimp male, signal 1 mm	0.14	0.75	11	1170150000
	0.25	0.82		
	0.34	0.90		
	0.50	1.00		
	0.75	1.08		
	1.00	1.20		
Crimp female, signal 1 mm (0.08 - 0.56 mm ²)	0.14	0.75	12	1995860000
	0.25	0.80		
	0.35	0.87		
	0.50	0.97		
Crimp female, signal 1 mm (0.34 - 1.00 mm ²)	0.50	0.95	12	1170180000
	0.75	4.00		
	1.00	1.05		
Crimp male, signal 1.5 mm	0.14	0.75	3	1170220000
	0.25	0.82		
	0.35	0.90		
	0.50	0.96		
	0.75	1.03		
	1.00	1.00		
Crimp female, signal 1.5 mm	0.14	0.75	4	1170230000
	0.25	0.80		
	0.35	0.87		
	0.50	0.97		
Crimp female, signal 1.5 mm (0.34 - 1.00 mm ²)	0.50	0.95	4	1170240000
	0.75	1.00		
	1.00	1.05		
Crimp male, signal 2 mm	0.75	1.30	5	1170250000
	1.00	1.40		
	1.50	1.55		
	2.50	1.75		
Crimp female, signal 2 mm	0.75	1.30	6	1170260000
	1.00	1.40		
	1.50	1.55		
	2.50	1.75		
Crimp male, power 1 mm	0.14	0.75	1	1170390000
	0.25	0.80		
	0.35	0.85		
	0.50	1.03		
	0.75	1.08		
	1.00	1.13		
Crimp female, power 1 mm	0.14	0.75	2	1995830000
	0.25	0.80		
	0.35	0.85		
	0.50	0.89		
	0.75	0.95		
	1.00	1.02		
Crimp male, power 2 mm	0.75	1.20	7	1170400000
	1.00	1.40		
	1.50	1.55		
	2.50	1.70		
Crimp male, power 2 mm	2.50	1.47	7	1170410000
	4.00	1.60		
Crimp female, power 2 mm	0.75	1.20	8	1995820000
	1.00	1.40		
	1.50	1.55		
	2.50	1.70		
Crimp female, power 2 mm	2.50	1.47	8	1170420000
	4.00	1.60		

Ordering data

Type	Order No.
SAI M23 CRIMPING TOOL 1	1203840000

Operation mode

The following table specifies the locator positions and the crimping dimensions for various crimping contacts. The contact is inserted through the tool into the locator; this ensures the proper crimping position. The inserted contact is secured by closing gently (approximately to first snap-close level). Now the cable can be easily inserted and it is not possible for the contact to fall out. The tool must be pressed together until it reaches the end stop position in order to function properly. They are then able to open automatically which brings the crimping process to a close in the intended manner.

SAI M23 crimping tool 2



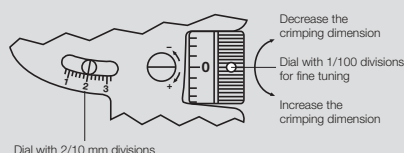
Adjusting the crimping dimensions

The adjustment mechanism is used to set the crimping depth of the crimping mandrel as described below. The adjusting dial is used to prepare the infeed; the dial can be turned clockwise (for decreasing the dimension) or counter-clockwise (for increasing the dimension).

Adjustment precision

- 1 division mark on the dial $\approx 1/100$ mm adjustment
- 1 complete revolution of the dial $\approx 0,2$ mm adjustment read from scale
- 5 revolutions of the dial ≈ 1 mm adjustment read from scale

Verifying the crimping dimension



The four-mandrel crimping tool is pre-set at the factory. The actual crimping size should still be checked periodically. It should be checked using the plug gauge ($\varnothing 1.0$ mm) that is included with the crimping tool as described below. Use the dial on the stationary tool shank to set the size to 1.0 mm on the scale. Set to the zero-point tick mark on the dial and close the tool. (Refer to the diagram showing the crimping size adjustment.) At this setting, it should be possible to move the 1.00-mm- $\varnothing$ plug gauge without any play or extra room. If this is not possible, then the size deviation (+/-) can be determined using the dial's fine-adjustment mechanism. If this size check reveals that the tool is not within the tolerance range specified by the manufacturer of the contacts, then you should contact the manufacture of the tool for further inspection.

Servicing and maintenance

Before you start to use the hand crimping tool, it must be clean and in proper working condition. Crimp residue or fragments must be removed from the crimping jaws and locator. The joints should be regularly lubricated using machine oil to protect them from dirt. Make sure that all bolts are secured with locking rings.

Technical data

Crimp contact	Wire cross-section (mm ²)	Crimping mandrel adjustment	Locator position	Order No.
Crimp male 1 mm	0.14	0.86	1	1170150000
	0.25	0.90		
	0.34	0.95		
	0.56	0.98		
	0.75	1.03		
	1.00	1.08		
Crimp female 1 mm (0.08-0.56 mm ²)	0.08	0.75	2	1995860000
	0.14	0.78		
	0.25	0.82		
	0.34	0.86		
	0.56	0.90		
Crimp female 1 mm (0.34-1.00 mm ²)	0.34	0.77	2	1170180000
	0.56	0.82		
	0.75	0.88		
	1.00	0.95		
Crimp male 1.5 mm	0.14	0.65	3	1170220000
	0.25	0.68		
	0.34	0.72		
	0.56	0.81		
	0.75	0.95		
	1.00	1.07		
Crimp female 1.5 mm (0.14-0.75 mm ²)	0.14	0.70		1170230000
	0.25	0.73		
	0.34	0.77		
	0.56	0.85		
	0.75	1.05		
Crimp female 1.5 mm (0.34-1.00 mm ²)	0.34	0.88		1170240000
	0.56	0.95		
	0.75	1.05		
	1.00	1.13		
Crimp male 2.0 mm	0.75	1.20		1170250000
	1.00	1.35		
	1.50	1.45		
	2.50	1.60		
Crimp female 2.0 mm	0.75	1.25		1170260000
	1.00	1.35		
	1.50	1.45		
	2.50	1.60		

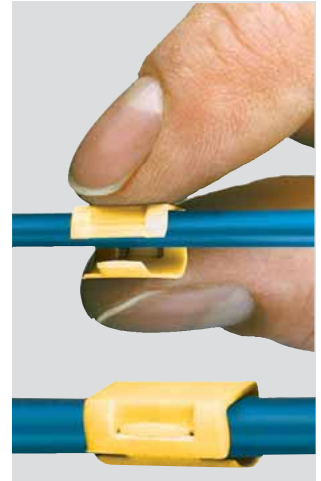
Ordering data

Type	Order No.
SAI M23 CRIMPING TOOL 2	1203960000

SlimFix Clip

The SlimFix Clip combines two advantages in one: its unique closure mechanism offers the reliability of a closed marker with ease of attaching an open marker. The Clip closure mechanism also allows quick, no fuss attachment of the markers after the wires have been installed. SlimFix Clip markers are suitable for wires and cables with external diameters up to 5 mm. Long sequences of characters are possible on the large marking surface – up to 30 mm.

- Halogen free, flammability class V2 material
- Narrow markers with reliable attachment thanks to compensation feature
- Clip closure mechanism ensures permanent attachment following wire installation
- Rapid attachment without tools
- Three sizes for wire cross-sections from 0.5 – 10.0 mm²
- Available in lengths of 12, 21 and 30 mm
- Markers available in the proven MultiCard format
- Additional marking surface for precise assignment to projects
- Custom-printed markers supplied to your specifications



Technical data

Material	Polyamide 66, halogen-free
UL 94 flammability rating	V2
Temperature range	–40 °C to 100 °C
Printing	black

Ordering data

Type	Wire, ext. ø	Wire cross-section
SFC 0	1.5 - 2.5 mm	0.5 - 1.0 mm ²
SFC 1	2.0 - 3.5 mm	0.75 - 2.5 mm ²
SFC 2	2.5 - 5.0 mm	2.5 - 4.0 mm ²
SFC 2,5	4.0 - 6.0 mm	4.0 - 10.0 mm ²
Colour	Other colours on request	

- brown ● orange ● green
 ● violet ● grey

Special printing Specify special printing and colours per diskette, Excel file or using the M-Print® PRO software.

Minimum order quantity 1 pack

Note: SlimFix Clip markers can be printed with PrintJet.



SFC - blank

Technical specification

Material	Polyamide
UL 94 flammability rating	V2
Min. temperature, continuous	–40 °C
Max. temperature, continuous	100 °C

Ordering data

Type	Length	Qty.	Order No. white	Order No. yellow	Order No. blue	Order No. red	Custom printing
SFC 0/12	12	200	1813130000	1813160000	1813170000	1813150000	
SFC 1/12	12	200	1747320001	1747320004	1747320002	1747320003	
SFC 2/12	12	120	1758320001	1758320004	1758320002	1758320003	
SFC 2,5/12	12	120	1062000000	1062010000	1062030000	1062020000	1062040000
SFC 0/21	21	200	1813190000	1813210000	1813220000	1813200000	
SFC 1/21	21	200	1779080001	1779080004	1779080002	1779080003	
SFC 2/21	21	120	1805810000	1805780000	1805770000	1805790000	
SFC 2,5/21	21	120	1062050000	1062070000	1062090000	1062080000	1062110000
SFC 0/30	30	150	1813240000	1813260000	1813270000	1813250000	
SFC 1/30	30	150	1805760000	1805730000	1805720000	1805740000	
SFC 2/30	30	90	1805870000	1805830000	1805820000	1805850000	

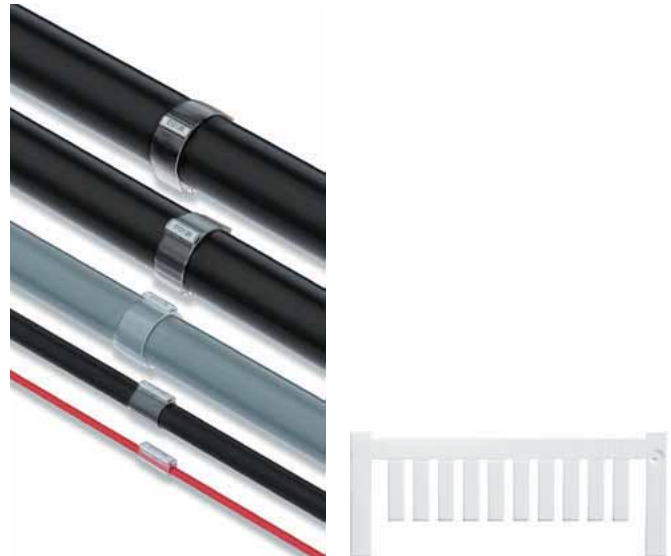
Marker tags for sensor cables

Sleeves for marking sensor cables

To enable unique marking of sensor/actuator cables, these can be identified with a marker tag. Each cable has a sleeve that accepts a marker tag TM-I 18. Cables open at one end have one sleeve, connecting cables have two marker sleeves. The TM-I 18 is available in various colours.

Ordering data

Type	Colour	Order No.
Sleeve		
TM 203/18 VO	transparent	1798480000
TM 4/18 HF/HB	transparent	1719850000
Marker		
TM-I 18 NEUTRAL WS	white	1718431044
TM-I 18 NEUTRAL GE	yellow	1718431687



The Weidmüller PrintJet marking system prints marker tags quickly, reliably and individually.

The **PrintJet PRO** inkjet printer prints markers for electric connectivity. These markers can be used for clear equipment identification on devices, cables and connectors. The labelling makes servicing, maintenance and troubleshooting much easier. Water-based ink is used for the spot colour printing. The print is crystal clear and resistant to environmental influences. The **PrintJet PRO** prints plastic markers in **MultiCard** format.

In combination with the user-friendly **M-Print® PRO** software and the attached loader, the printer becomes an essential part of the production. The inkjet process being used, the subsequent fusing, as well as the printer cartridge and ink have all been specially adapted by Weidmüller for industrial use. The printer has excellent long-term use capabilities, thanks to its integrated loader.

Ordering data

PrintJet PRO

Type	Order No.
PrintJet PRO 115V	1024050000
PrintJet PRO 230V	1001180001
Accessories	
PJ PRO TNTK INK SET COL	Ink tank starter set, colour
PJ PRO TNTK INK K	● Ink tank Black
PJ PRO TNTK INK C	● Ink tank Cyan
PJ PRO TNTK INK M	● Ink tank Magenta
PJ PRO TNTK INK Y	● Ink tank Yellow
PJ PRO TNAW	Ink collecting tray



Marker tags for distributors

Marker tags can be affixed to distributors to ensure unique identification. For marking of our standard M12 products, ESG 9/20 tags are used, M8 and M5 distributors can be labelled with WS 10/5 and DEK 5 markers. For labelling metal distributors, self-adhesive ESG 9/17 must be used.

In the case of the SAI Active family, we differentiate between SAI Active Universal and SAI Active Line. For labelling of Active Universal, we offer ESG 8/13.5/43.3 SAI AU. For labelling of Active Line, the ESG 9/6 is used.

All of these markers are available in MultiCard format and can therefore also be printed using our innovative PrintJet PRO marking solutions.

DEK for marking of M8 and M5 distributors



DEK – Blank

Type	Colour	Width/Length	Qty.	Order No.
DEK 5/5 MC	white	5 mm/5 mm	1000	1609801044

DEK – Custom printing

Type	Colour	Width/Length	Qty.	Order No.
DEK 5/5 MC	white	5 mm/5 mm	200	1609810000

WS for marking of M8 and M5 distributors



WS – Blank

Type	Colour	Width/Length	Qty.	Order No.
WS 10/5 MC	white	5 mm/10 mm	720	1635000000
WS 15/5 MC	white	5 mm/15 mm	480	1609880000

WS – Custom printing

Type	Colour	Width/Length	Qty.	Order No.
WS 10/5 MC	white	5 mm/10 mm	144	1635010000
WS 15/5 MC	white	5 mm/15 mm	96	1609890000

ESG for marking of M12 Universal distributors



Ordering data

Type	Colour	Width/Length	Qty.	Order No.
for SAI Active Line				
ESG 9/20 MC NEUTRAL WS	white	20 mm/9 mm	200	1609940000

ESG for marking of M12 Universal distributors



Ordering data

Type	Colour	Width/Length	Qty.	Order No.
for SAI Active Universal				
ESG 8/13.5/43.3 SAI AU	transparent	13,5 mm/43,3 mm/8 mm	5	1912130000

Technical appendix

Technical appendix	Sensor Actuator Interface Passive – Overview	W.2
	Coding systems	W.4
	Sensor Actuator Interface Passive – Connection plan	W.9
	Overview of sensor cables	W.10
	Overview of bus cables	W.13
	Drilling templates	W.14
	Resistances table	W.24

Sensor Actuator Interface Passive – Overview



Technical data

Material data			M5	M8	M12
Insulating material	Housing		PA 6 GF	PBT (UL 94 V0)	PBT (UL 94 V0)
	Contact carrier		PA66	PBT (UL 94 V0)	PBT (UL 94 V0)
Base material	Contact		CuSn4	CuSn6	CuSn6
	Screw socket		CuZn, nickel-plated	CuZn, nickel-plated	CuZn, nickel-plated
Temperature range		°C	-25 ... +90	-20 ... +90	-20 ... +90
Colour	Housing		grey, RAL 7032s	grey, RAL 7032	grey, RAL 7032
	PG & contact carrier			black	black
Cable sheathing			PUR	PUR	PUR
Cable type			PUR/PVC	halogen free	halogen free, UL
O-ring			Viton	Viton	Viton
Housing seal					foamed PUR
Type of connection, hood version				tension clamp	screw/tension clamp
Clamping range		mm ²		0.08...1.0	0.08...1.5
AWG No.				28...18	22...14
Stripping length, hood version		mm		100	100
Stripping length, screw version		mm		–	7
Stripping length, tension clamp version		mm		7	10
Contact surface				tinned	tinned
BL3.5 / B2L					
Contact base material				Cu alloy	Cu alloy
BL3.5 / B2L					
Torques					
Hoods		Nm		0.8	0.8
Blanking plugs		Nm		0.5	0.5
Mechanical data					
Ingress Protection Class*	IP		67	68 (M16/M23 IP67)	68
Suitability for cable carrier	cycles at 15d		1 million 15d	1 million 15d	2 million 10d
IDC connection					
Max. connect. frequency of a cable with same cross-section					–
Stripping length	mm				–
Conductor cross-section (flexible)	mm ²				–
Smallest strand diameter	mm				–
Conductor insulation material					–
Conductor outside diameter	mm				–
Cable outside diameter	mm				–
Pin assignment					–
Electrical data to VDE 110 (Apr 97)					
Operating voltage	V-		10 ... 30	10 ... 30	10 ... 30
Max. current carrying capacity per I/O signal	A		1	2 (Derating)	2 (Derating)
– total with single supply	A		3	8	10 (9 A for F-version)
– total with dual supply	A		–	–	2 x 8 = 16
Rated voltage	V _{eff}		24	32	32
Test voltage	kV _{eff}			1.0	1.0
Pollution severity				3	3
Insulation resistance	Ω			> 10 ⁹	> 10 ⁹
Other data					
Dimensions	see chapter G				
Fixing holes	see chapter G				
Function indicators					
for operating voltage			1 LED, green	1 LED, green	2 LEDs, green
for I/O function			1 LED, yellow (per function)	1 LED, yellow (per function)	1 LED, yellow (per function)
Current isolation (SAI-... -M)				–	via 2 jumper plugs
Cable strain relief (SAI-... -M)				M20	M20
Max. cable diameter (SAI-... -M)	mm			10–14	6–12
* only when plugged in and secured					

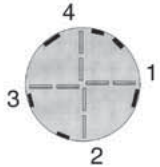


Technical data

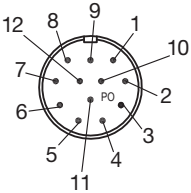
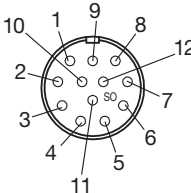
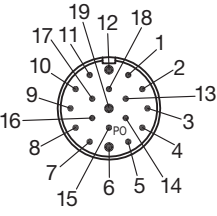
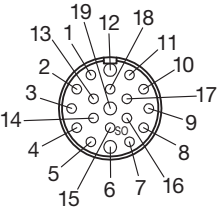
Material data			IDC		M12 Push-Pull	
Insulating material	Housing		PBT (UL 94 V0)		PA 6 GF	
	Contact carrier		PBT (UL 94 V0)		PBT (UL 94 V0)	
Base material	Contact		CuZn, pre-nickel- & gold-plated		CuSn6	
	Screw socket		CuZn, nickel-plated		CuZn, nickel-plated	
Temperature range		°C	-20 ... +90		-25 ... +80	
Colour	Housing		grey, RAL 7032		grey, RAL 7032	
	PG & contact carrier		black		black	
Cable sheathing			PUR		PUR	
Cable type			PUR/PVC		halogen free, UL	
O-ring			Viton		Viton	
Housing seal			foamed PUR		foamed PUR	
Type of connection, hood version			screw/tension clamp		tension clamp	
Clamping range		mm ²	0.08 ... 1.5		0.08 ... 1.5	
AWG No.			22 ... 14		22 ... 14	
Stripping length, hood version		mm	100		100	
Stripping length, screw version		mm	7		7	
Stripping length, tension clamp version		mm	10		10	
Contact surface			tinned		tinned	
BL3.5 / B2L						
Contact base material			CU-Alloy		CU-Alloy	
BL3.5 / B2L						
Torques						
Hoods		Nm	0.8		0.8	
Blanking plugs		Nm	0.5			
Mechanical data						
Ingress Protection Class*		IP	67		68	
Suitability for cable carrier		cycles at 15d	1 million 15d		2 million 10d	
IDC connection						
Max. connect. frequency of a cable with same cross-section			10			
Stripping length		mm	15 ... 20			
Conductor cross-section (flexible)		mm ²	0.25 ... 0.5			
Smallest strand diameter		mm	0.1			
Conductor insulation material			PVC/PE/PUR			
Conductor outside diameter		mm	1.2 ... 1.6			
Cable outside diameter		mm	3.5 ... 5.0			
Pin assignment			see next page			
Electrical data to VDE 110 (Apr 97)						
Operating voltage		V-	10 ... 30		10 ... 30	
Max. current carrying capacity per I/O signal		A	2 (Derating)		2	
– total with single supply		A	10 (9 A bei F-Version)		10	
– total with dual supply		A	2 x 8 = 16			
Rated voltage		V _{eff}	32		32	
Test voltage		kV _{eff}	1.0		1.0	
Pollution severity			2		3	
Insulation resistance		Ω	> 10 ⁹			
Other data						
Dimensions		see chapter G				
Fixing holes		see chapter G				
Function indicators						
for operating voltage			2 LEDs, green		1 LED, green	
for I/O function			1 LED, yellow (per function)		1 LED, yellow (per function)	
Current isolation (SAI-... -M)			via 2 jumper plugs			
Cable strain relief (SAI-... -M)			M20		M20	
Max. cable diameter (SAI-... -M)		mm	6–12		6–12	
* only when plugged in and secured						

Contact assignment

SAI-M/SAI-F – IDC

3-pole	Pole	Colour code	Assignment
	1	brown	+ 24 V DC
	2	white	input/output
	3	blue	0 V DC
4-pole	Pole	Colour code	Assignment
	1	brown	+ 24 V DC
	2	no colour	Input/output 2
	3	blue	0 V DC
	4	black	Input/output 1

M23

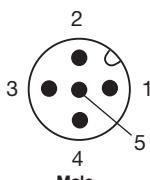
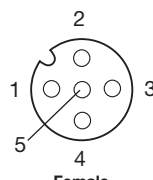
12-pole	Pole	Colour code	Plug-in station	Contact M12
 	1	white	1	4
	2	green	2	4
	3	yellow	3	4
	4	grey	4	4
	5	pink	5	4
	6	red	6	4
	7	black	7	4
	8	violet	8	4
	9	blue (-)	1-8	3
	10	blue (-)	1-8	3
	11	brown (+)	1-8	1
	12	green-yellow (PE)	1-8	5
19-pole	Pole	Colour code	Plug-in station	Contact M12
 	1	violet	8	4
	2	red	6	4
	3	grey	4	4
	4	red/blue	2	2
	5	green	2	4
	7	grey/pink	1	2
	8	white/green	3	2
	9	white/yellow	5	2
	10	white/grey	7	2
	11	black	7	4
	13	yellow/brown	6	2
	14	brown/green	4	2
	15	white	1	4
	16	yellow	3	4
	17	pink	5	4
	18	grey/brown	8	2
	6	blue (-)	1-8	3
	12	green-yellow (PE)	1-8	5
	19	brown (+)	1-8	1

Coding systems for round connectors

Round connectors are used for wiring sensors, actuators and data cables. To prevent wiring errors, there are different coding systems: for M12, the plug-in connectors are coded A, B and D. The M12 A-coded plug-in connector is available with 3 to 5 pins, 6 to 8 and 9 to 12 pins. There is no coding for M8 and M5.

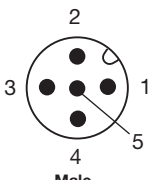
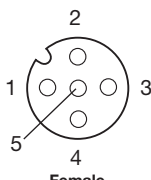
The arrangement of the pins in the M8 plug-in connector (asymmetrical) rules out the possibility of 3 and 4-pole M8 plug-in connectors being connected together. In the case of M5 plug-in connectors, 3 and 4-pole plug-in connectors can be connected together since the pins are symmetrically arranged.

A-coded, M12, Sensor wiring

2- to 5-pole:		Pole	Colour code	Assignment
		1	brown	+ 24 V DC
		2	white	Input/output 2*
		3	blue	0 V DC
		4	black	Input/output 1
		5	grey	FE
		Housing	shield**	
		*) = only 5-pole version **) = only with shielded version		

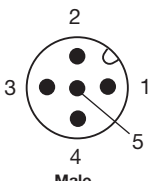
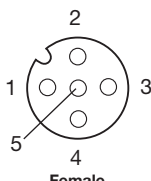
A-coded, M12, PROFIBUS-PA



2- to 5-pole:		Pole	Assignment
 Male	 Female	1	DATA-B (red wire)
		3	DATA-A (green wire)
		Housing	shield

A-coded, M12, CANopen/DeviceNet



2- to 5-pole:		Pole	Assignment
 Male	 Female	1	shield
		2	V+
		3	V- (CAN_GND)
		4	CAN_H signal
		5	CAN_L signal



B-coded, M12, PROFIBUS-DP

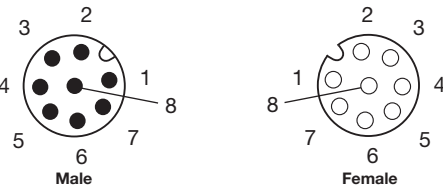
3- to 5-pole:		Pin	Assignment
		2	Data A (green wire)
		4	Data B (red wire)
		Housing	shield

D-coded, M12, Industrial Ethernet

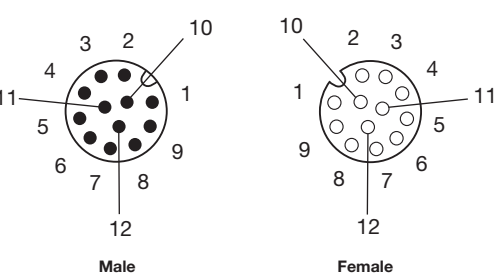
Industrial Ethernet

4-pole:		Pin	Assignment
		1	TD+ (transmit data +)
		2	RD+ (receive data +)
		3	TD - (transmit data -)
		4	RD - (receive data -)
		Housing	shield

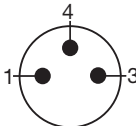
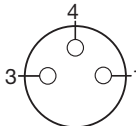
M12

8-pole:		Pole	Colour code	Assignment
		1	white	signal
		2	brown	signal
		3	green	signal
		4	yellow	signal
		5	grey	+ 24 V DC
		6	pink	signal
		7	blue	0 V DC
		8	red	signal

M12

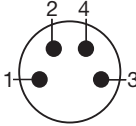
12-pole:		Pole	Colour code	Assignment
		1	brown	+ 24 V DC
		2	blue	0 V DC
		3	white	input/output 1
		4	green	input/output 1
		5	pink	input/output 1
		6	yellow	input/output 1
		7	black	input/output 1
		8	grey	input/output 1
		9	red	input/output 1
		10	violet	input/output 1
		11	grey/pink	input/output 1
		12	red/blue	input/output 1

M8 connector position

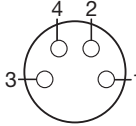
3-pole:		Pole	Colour code	Assignment
		1	brown	+ 24 V DC
		3	blue	0 V DC
		4	black	Input/output 1
		Male		Female

M8 connector position

4-pole:



Male



Female

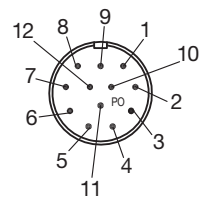
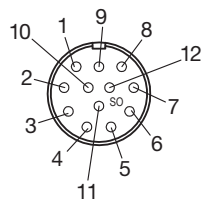
Pole	Colour code	Assignment
1	brown	+ 24 V DC
2	white	Input/output 2
3	blue	0 V DC
4	black	Input/output 1

M5 connector position

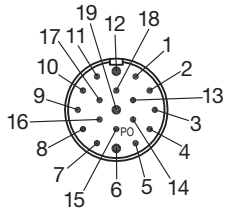
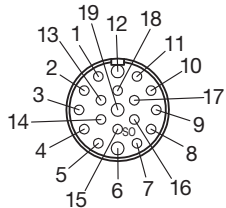
4-pole:

Pole	Colour code	Assignment
1	brown	+ 24 V DC
2	white	Input/output 2
3	blue	0 V DC
4	black	Input/output 1

M23

12-pole:		Pole	Colour code	Assignment	Cross-section
		1	white	signal	0.34
		2	green	signal	0.34
Male	Female	3	yellow	signal	0.34
		4	grey	signal	0.34
		5	pink	signal	0.34
		6	red	signal	0.34
		7	black	signal	0.34
		8	violet	signal	0.34
		9	nc	nc	nc
		10	blue	0 V DC	0.75
		11	brown	+ 24 V DC	0.75
		12	green/yellow	PE	0.75

M23

19-pole:		Pole	Colour code	Assignment	Cross-section
		1	violet	signal	0.34
		2	red	signal	0.34
		3	grey	signal	0.34
		4	red/blue	signal	0.34
		5	green	signal	0.34
		6	blue	0 V DC	0.75
		7	grey/pink	signal	0.34
		8	white/green	signal	0.34
		9	white/yellow	signal	0.34
		10	white/grey	signal	0.34
		11	black	signal	0.34
		12	green/yellow	PE	0.75
		13	yellow/brown	signal	0.34
		14	brown/green	signal	0.34
		15	white	signal	0.34
		16	yellow	signal	0.34
		17	pink	signal	0.34
		18	grey/brown	signal	0.34
		19	brown	+ 24 V DC	0.75

Sensor Actuator Interface Passive – Connection plan

Connection plan

Conductor colour

Terminal Connection No.	Connector position	M5/M8 contact		M12- contact	IDC contact		Potential	Conductor colour	Colour code
		3-pole	4-pole		3-pole	4-pole			
1	= 1	4	4	4	2	4	E/A 1-1	white	WH
2	= 2	4	4	4	2	4	E/A 2-1	green	GN
3	= 3	4	4	4	2	4	E/A 3-1	yellow	YE
4	= 4	4	4	4	2	4	E/A 4-1	grey	GY
5	= 5	4	4	4	2	4	E/A 5-1	pink	PK
6	= 6	4	4	4	2	4	E/A 6-1	red	RD
7	= 7	4	4	4	2	4	E/A 7-1	black	BK
8	= 8	4	4	4	2	4	E/A 8-1	violet	VT
9	= 1	–	2	2*		2	E/A 1-2	grey/pink	GYPK
10	= 2	–	2	2*		2	E/A 2-2	red/blue	RDBL
11	= 3	–	2	2*		2	E/A 3-2	white/green	WHGN
12	= 4	–	2	2*		2	E/A 4-2	brown/green	BNGN
13	= 5	–	2	2*		2	E/A 5-2	white/yellow	WHYE
14	= 6	–	2	2*		2	E/A 6-2	yellow/brown	YEBN
15	= 7	–	2	2*		2	E/A 7-2	white/grey	WHGY
16	= 8	–	2	2*		2	E/A 8-2	grey/brown	GYBN
17	= 1, 3, 5, 7	1	1	1	1	1	U1 + (24 V DC)	brown	BN
18	= 1, 3, 5, 7	3	3	3	3	3	U1 - (0 V)	blue	BU
19	= 2, 4, 6, 8	–	–	1	1	1	U2 + (24 V DC)	red*	RD*
20	= 2, 4, 6, 8	–	–	3	3	3	U2 - (0 V)	black*	BK*
21	= 1, 2, 3, 4, 5, 6, 7, 8	–	–	5	–	–	PE	green/yellow	GNYE

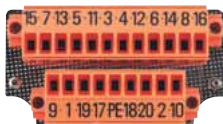
* Contact used in 5-pole version only

Plug insert, hood version

Note:

SAI distributors with fixed cable have a single supply conductor as standard. The voltage U1 is supplied to all the sockets. An SAI distributor with fixed cable but with separate supply voltage is available on request.

Pin assignment



Tension clamp connection



Screw connection

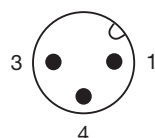


Technical data for sensor cables

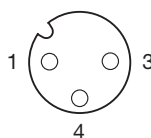


M12

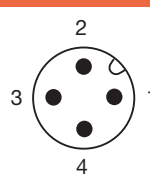
Male



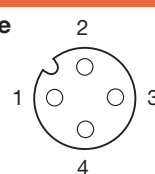
Female



Male



Female



Technical data

Material properties	
Core cross-section	0.34 mm ²
Cladding material	PUR
Wire core insulation	TPE
Conductor cross-section	4.3 ± 0.2
Colour coding	brown, blue, black
Suitable for dragline cable carriers	Yes*
Min. bending radius, flexible	10 x conductor cross-section
Min. bending radius, rigid	5 x conductor cross-section
Temperature, flexible	-25 °C / +80 °C
Temperature, rigid	-50 °C / +80 °C
UL	Yes
Colour	black
Free from halogens	Yes

Note

3-pole		
PUR/TPE (Q)	PUR/PVC (U)	PVC/PVC (V)
0.34 mm ²	0.34 mm ²	0.34 mm ²
PUR	PUR	PVC
TPE	PVC	PVC
4.3 ± 0.2	4.8 ± 0.2	4.8 ± 0.2
brown, blue, black	brown, blue, black	brown, blue, black
Yes*	Yes*	Reduced*
10 x conductor cross-section	10 x conductor cross-section	10 x conductor cross-section
5 x conductor cross-section	5 x conductor cross-section	5 x conductor cross-section
-25 °C / +80 °C	-5 °C / +80 °C	-5 °C / +80 °C
-50 °C / +80 °C	-30 °C / +80 °C	-30 °C / +80 °C
Yes	Yes	Yes
black	black	black
Yes	No	No

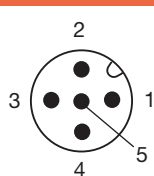
* Additional information available on request.
Applies to unshielded M12 and M8 cables.

4-pole		
PUR/TPE (Q)	PUR/PVC (U)	PVC/PVC (V)
0.34 mm ²	0.34 mm ²	0.34 mm ²
PUR	PUR	PVC
TPE	PVC	PVC
4.7 ± 0.2	5.2 ± 0.2	5.3 ± 0.2
brown, white, blue, black	brown, white, blue, black	brown, white, blue, black
Yes*	Yes*	Reduced*
10 x conductor cross-section	10 x conductor cross-section	10 x conductor cross-section
5 x conductor cross-section	5 x conductor cross-section	5 x conductor cross-section
-25 °C / +80 °C	-5 °C / +80 °C	-5 °C / +80 °C
-50 °C / +80 °C	-30 °C / +80 °C	-30 °C / +80 °C
Yes	Yes	Yes
black	black	black
Yes	No	No

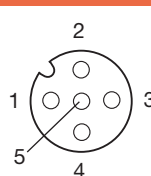
* Additional information available on request.
Applies to unshielded M12 and M8 cables.

M12

Male



Female



Technical data

Material properties	
Core cross-section	0.34 mm ²
Cladding material	PUR
Wire core insulation	TPE
Conductor cross-section	5.0 ± 0.2
Colour coding	brown, white, blue, black, grey
Suitable for dragline cable carriers	Yes*
Min. bending radius, flexible	10 x conductor cross-section
Min. bending radius, rigid	5 x conductor cross-section
Temperature, flexible	-25 °C / +80 °C
Temperature, rigid	-50 °C / +80 °C
UL	Yes
Colour	black
Free from halogens	Yes
Suitable for torsion	Yes

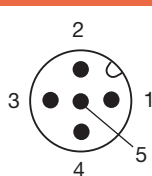
Note

5-pole		
PUR/TPE (Q)	PUR/PVC (U)	PVC/PVC (V)
0.34 mm ²	0.34 mm ²	0.34 mm ²
PUR	PUR	PVC
TPE	PVC	PVC
5.0 ± 0.2	5.6 ± 0.2	5.7 ± 0.1
brown, white, blue, black, grey	brown, white, blue, black, grey	brown, white, blue, black, grey
Yes*	Yes*	Reduced*
10 x conductor cross-section	10 x conductor cross-section	10 x conductor cross-section
5 x conductor cross-section	5 x conductor cross-section	5 x conductor cross-section
-25 °C / +80 °C	-5 °C / +80 °C	-5 °C / +80 °C
-50 °C / +80 °C	-30 °C / +80 °C	-30 °C / +80 °C
Yes	Yes	Yes
black	black	black
Yes	No	No

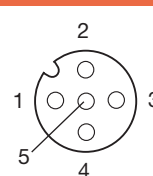
* Additional information available on request.
Applies to unshielded M12 and M8 cables.

M12 Protected against welding splatter

Male



Female

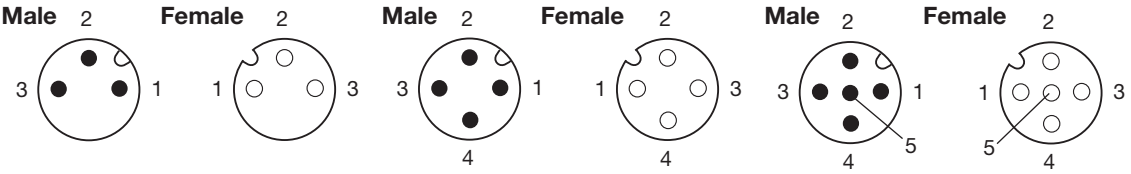


3-pole	4-pole	5-pole
PUR/PVC (T)	PUR/PVC (T)	PUR/PVC (T)
0.34 mm ²	0.34 mm ²	0.34 mm ²
PUR	PUR	PUR
PVC	PVC	PVC
4.9 ± 0.2	4.9 ± 0.2	5.1 ± 0.2
brown, blue, black	brown, white, blue, black	brown, white, blue, black, grey
Yes*	Yes*	Yes*
7.5 x conductor cross-section	7.5 x conductor cross-section	7.5 x conductor cross-section
-30 °C / +120 °C	-30 °C / +120 °C	-30 °C / +120 °C
-40 °C / +120 °C	-40 °C / +120 °C	-40 °C / +120 °C
Yes	Yes	Yes
black	black	black
Yes	Yes	Yes
Yes	Yes	Yes

* Additional information available on request.



M12 shielded



Technical data

Material properties	
Core cross-section	0.34 mm²
Cladding material	PUR
Wire core insulation	TPE
Conductor cross-section	5.0 ± 0.2
Colour coding	brown, blue, black
Suitable for dragline cable carriers	Yes*
Min. bending radius, flexible	10 x conductor cross-section
Min. bending radius, rigid	5 x conductor cross-section
Temperature, flexible	-25 °C / +80 °C
Temperature, rigid	-40 °C / +80 °C
UL	Yes
Colour	black
Free from halogens	Yes

3-pole		4-pole		5-pole	
PUR/TPE	(Q)	PUR/TPE	(Q)	PUR/TPE	(Q)
0.34 mm²		0.34 mm²		0.34 mm²	
PUR		PUR		PUR	
TPE		TPE		TPE	
5.0 ± 0.2		5.4 ± 0.2		5.7 ± 0.2	
brown, blue, black		brown, white, blue, black		brown, white, blue, black, grey	
Yes*		Yes*		Yes*	
10 x conductor cross-section		10 x conductor cross-section		10 x conductor cross-section	
5 x conductor cross-section		5 x conductor cross-section		5 x conductor cross-section	
-25 °C / +80 °C		-25 °C / +80 °C		-25 °C / +80 °C	
-40 °C / +80 °C		-40 °C / +80 °C		-40 °C / +80 °C	
Yes		Yes		Yes	
black		black		black	
Yes		Yes		Yes	

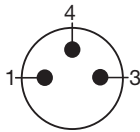
Note * Additional information available on request.

Overview of sensor cables

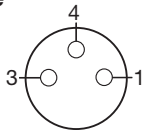


M8

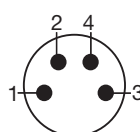
Male



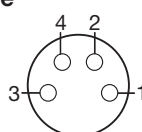
Female



Male



Female



Technical data

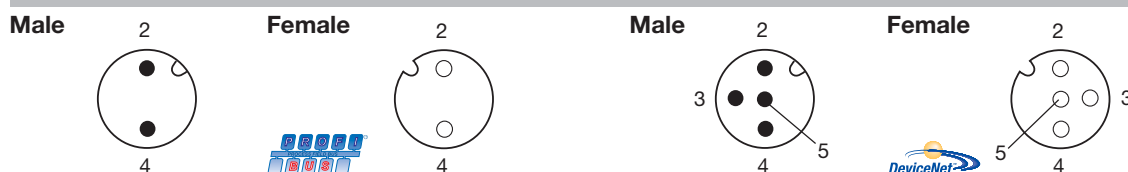
3-pole			
Material properties	PUR/TPE	PUR/PVC	PVC/PVC
Core cross-section	0.25 mm ²	0.25 mm ²	0.25 mm ²
Cladding material	PUR	PUR	PVC
Wire core insulation	TPE	PVC	PVC
Conductor cross-section	4.1 ± 0.2	4.6 ± 0.2	4.5 ± 0.2
Colour coding	brown, blue, black	brown, blue, black	brown, blue, black
Suitable for dragline cable carriers	Yes*	Yes*	Reduced*
Min. bending radius, flexible	10 x conductor cross-section	10 x conductor cross-section	10 x conductor cross-section
Min. bending radius, rigid	5 x conductor cross-section	5 x conductor cross-section	5 x conductor cross-section
Temperature, flexible	-25 °C / +80 °C	-5 °C / +80 °C	-5 °C / +80 °C
Temperature, rigid	-50 °C / +80 °C	-30 °C / +80 °C	-30 °C / +80 °C
UL	No	No	No
Colour	black	black	black
Free from halogens	Yes	No	No
Note	* Additional information available on request. Applies to unshielded M12 and M8 cables.		

4-pole		
PUR/TPE	PUR/PVC	PVC/PVC
0.25 mm ²	0.25 mm ²	0.25 mm ²
PUR	PUR	PVC
TPE	PVC	PVC
4.4 ± 0.2	5.0 ± 0.2	4.8 ± 0.2
black, brown, white, blue	black, brown, white, blue	brown, blue, black
Yes*	Yes*	Reduced*
10 x conductor cross-section	10 x conductor cross-section	10 x conductor cross-section
5 x conductor cross-section	5 x conductor cross-section	5 x conductor cross-section
-25 °C / +80 °C	-5 °C / +80 °C	-5 °C / +80 °C
-50 °C / +80 °C	-30 °C / +80 °C	-30 °C / +80 °C
No	No	No
black	black	black
Yes	No	No
* Additional information available on request. Applies to unshielded M12 and M8 cables.		

Technical data for bus cables



M 12



Technical data

Material properties

Core cross-section
Cladding material
Wire core insulation
Conductor cross-section
Colour coding

Suitable for dragline cable carriers
Min. bending radius, flexible

Min. bending radius, rigid

Temperature, flexible
Temperature, rigid

UL

Colour

Free from halogens

Note

2-pole

PUR/TPE	PVC/PVC
0.24 mm ²	0.34 mm ²
PUR	PVC
TPE	PVC
7.8 ± 0.2	7.8 ± 0.2
red, green	red, green
Yes*	No**
15 x conductor cross-section	9 x conductor cross-section
7.5 x conductor cross-section	18 x conductor cross-section
-20 °C / +60 °C	-5 °C / +60 °C
-40 °C / +70 °C	-20 °C / +70 °C
No	No
violet	violet
Yes	No

* Additional information available on request.

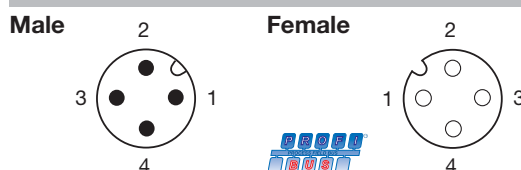
** for rigid installation

4-pole

PUR/TPE	PVC/PVC
2x 0.34 + 2x 0.22 mm ²	2x 0.34 + 2x 0.22 mm ²
PUR	PVC
TPE	PVC
7.0 ± 0.3	7.0 ± 0.3
red, black (0.34 mm ²) + white, blue (0.22 mm ²)	red, black (0.34 mm ²) + white, blue (0.22 mm ²)
Yes*	No
10 x conductor cross-section	10 x conductor cross-section
5 x conductor cross-section	5 x conductor cross-section
-10 °C / +80 °C	-10 °C / +80 °C
-40 °C / +80 °C	-40 °C / +80 °C
Yes	Yes
black	black
Yes	No

* Additional information available on request.

M 12



Technical data

Material properties

Core cross-section
Cladding material
Wire core insulation
Conductor cross-section
Colour coding

Suitable for dragline cable carriers
Min. bending radius, flexible

Min. bending radius, rigid

Temperature, flexible
Temperature, rigid

UL

Colour

Free from halogens

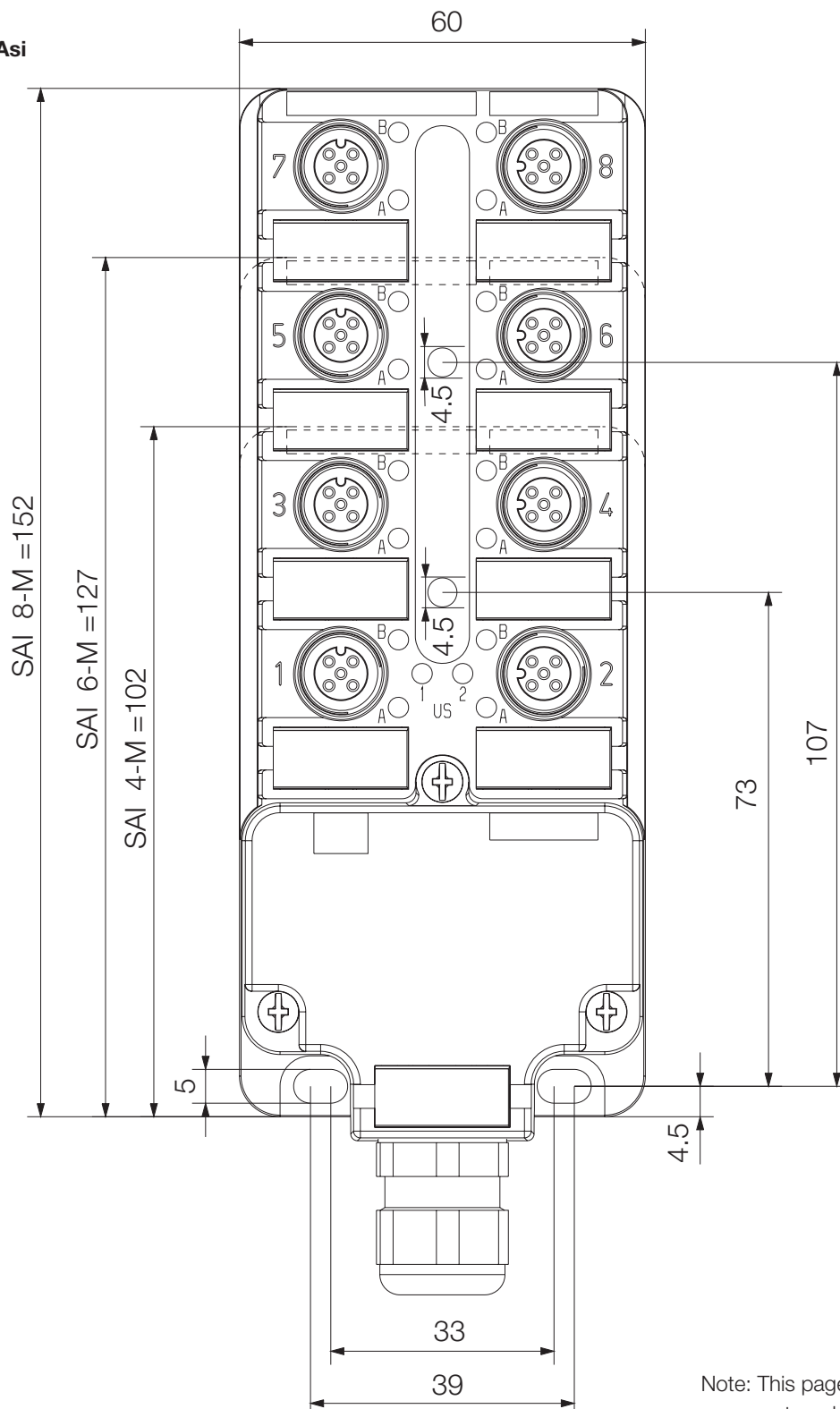
Note

2-pole

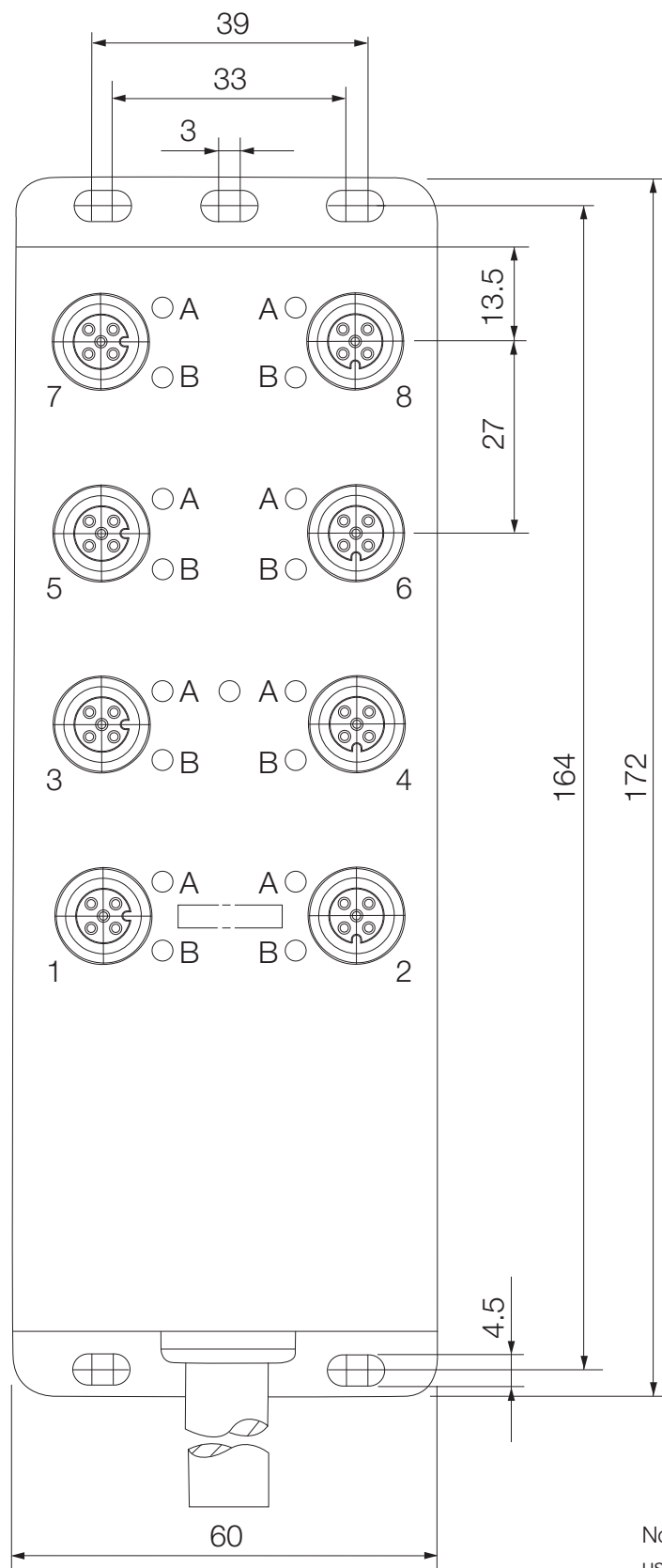
PVC/PE	PVC/PE
1.0 mm ²	1.0 mm ²
PVC	PVC
PE	PE
8.0 ± 0.4	8.0 ± 0.4
red, green	red, green
No	No
-	-
-	-
-5 °C / +60 °C	-5 °C / +60 °C
-30 °C / +80 °C	-30 °C / +80 °C
No	No
black	blue
-	-

Drilling templates

SAI M12 and M12 Push-Pull:
hood / M23 / M16 /
fixed cable / IDC / Asi



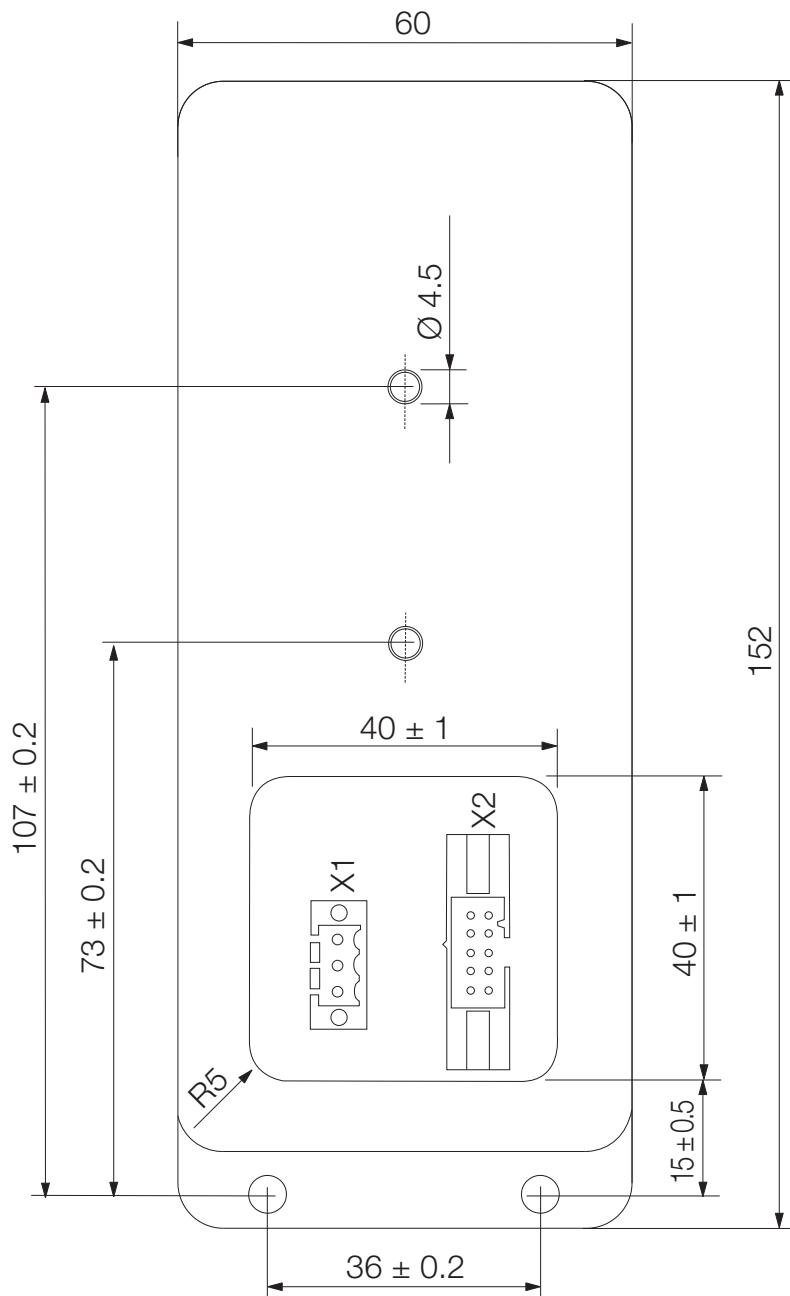
SAI stainless steel



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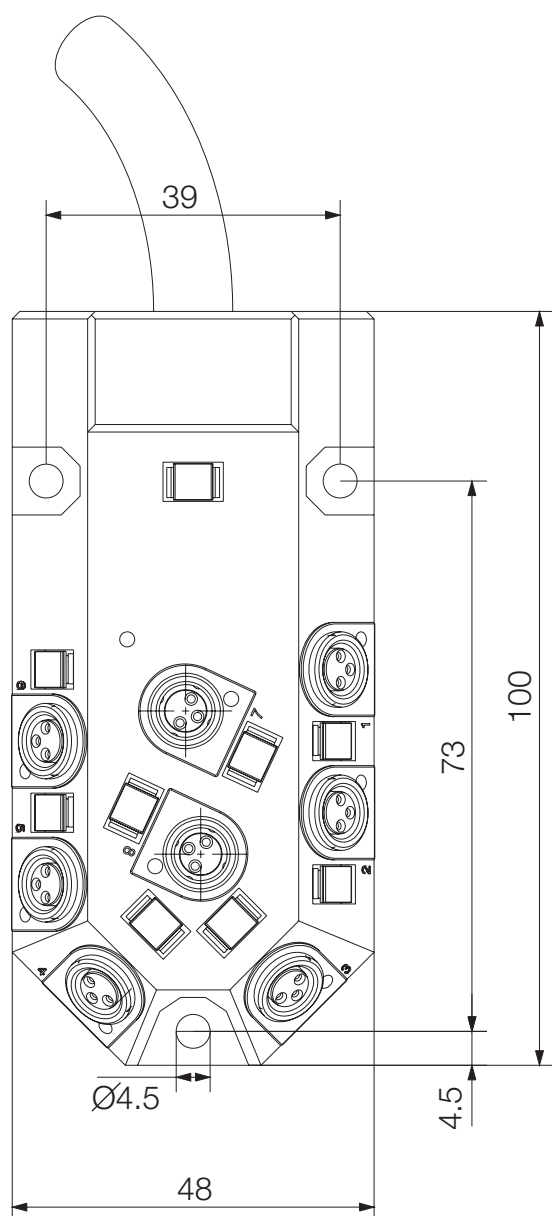
Drilling templates

SAI wall bushing



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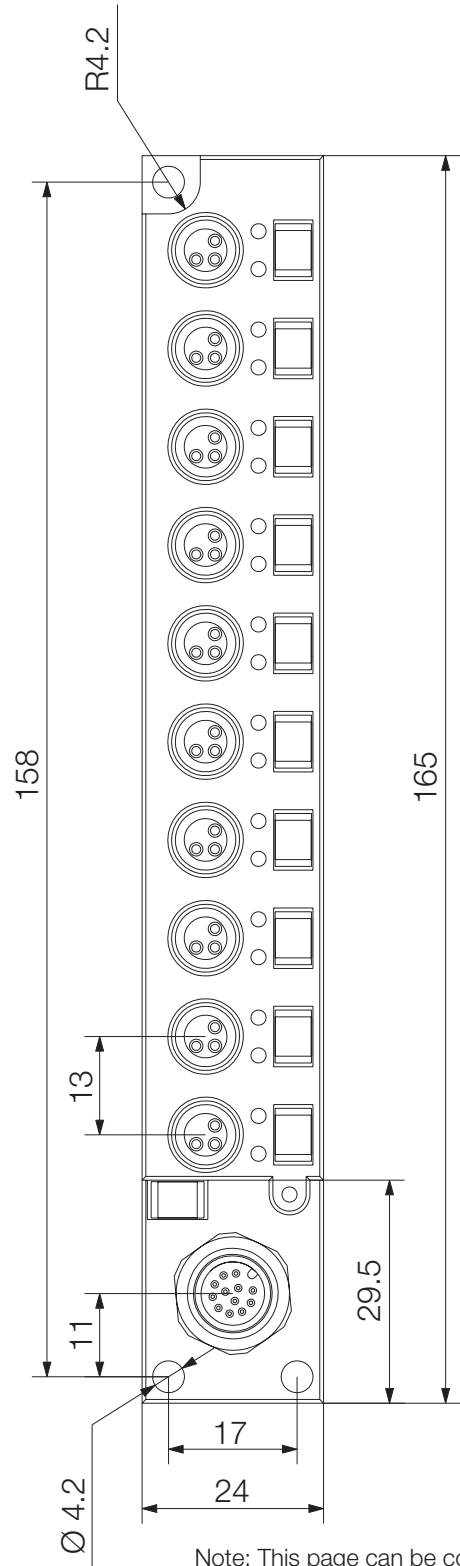
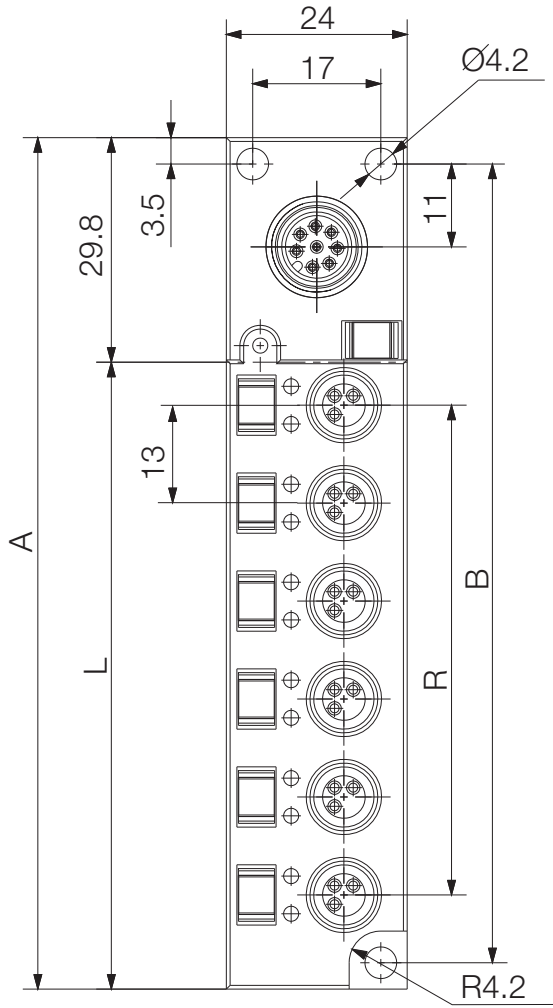
SAI M8 standard



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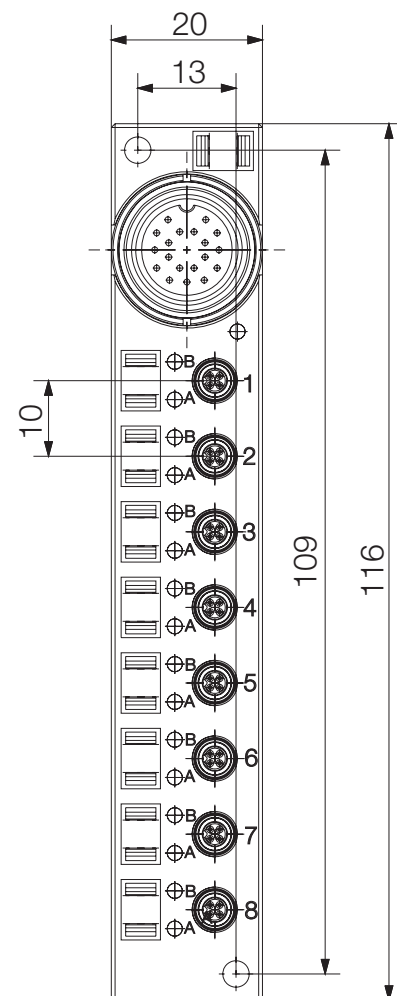
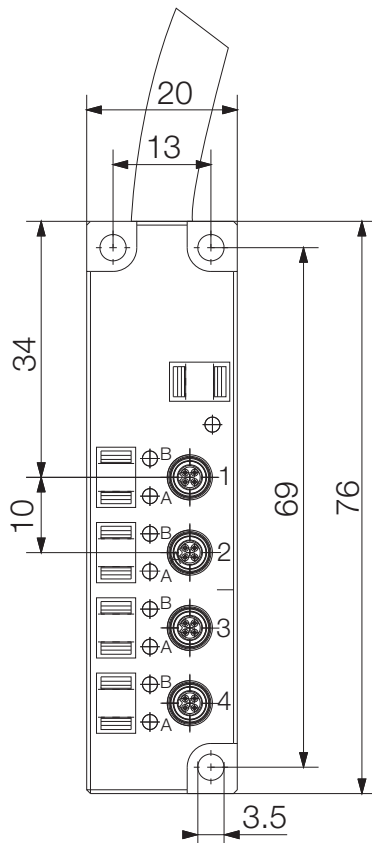
Drilling templates

SAI M8 line



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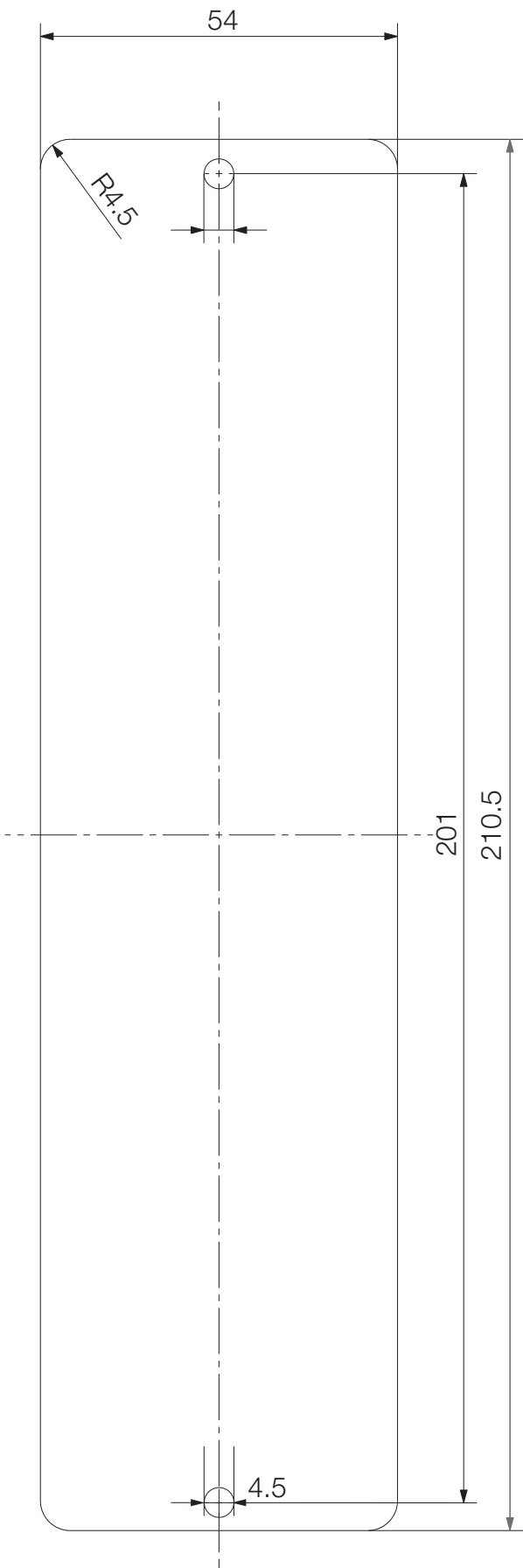
SAI M5



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Drilling templates

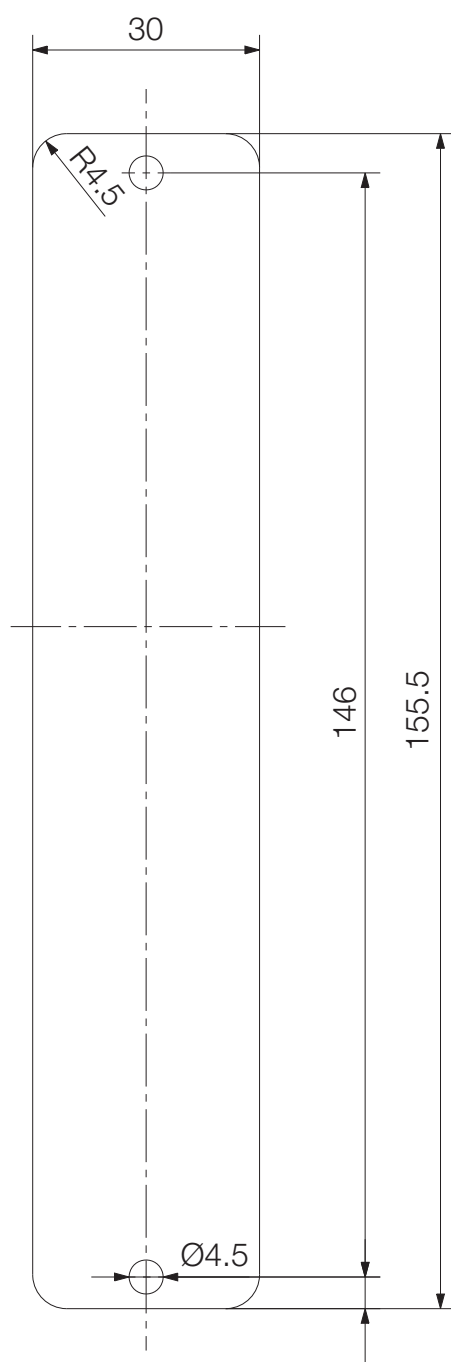
SAI Active Universal



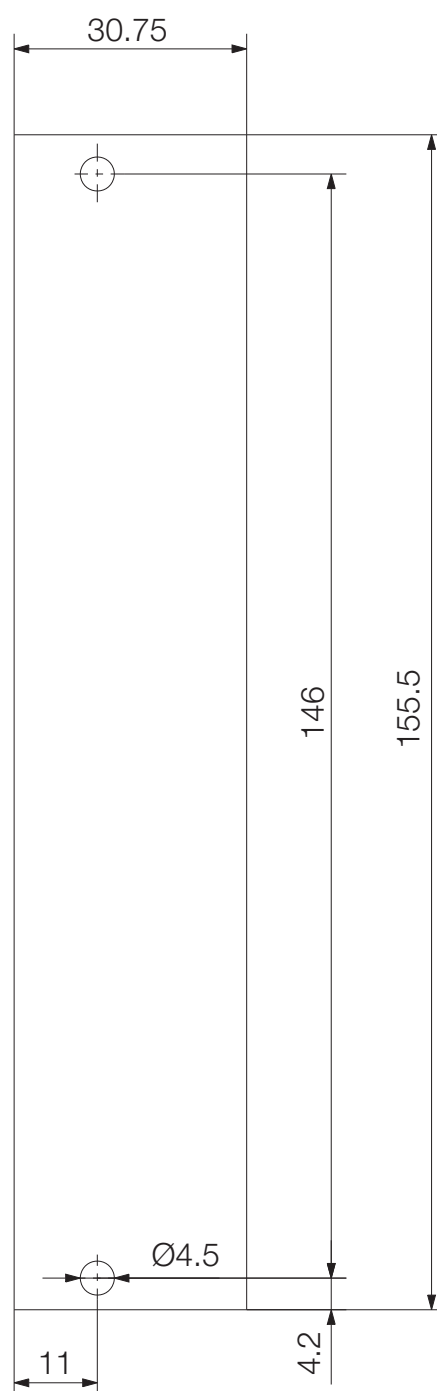
Note: This page can be copied to use as a template.

SAI Active Universal Pro:
Subbus modules with digital outputs

Plan view



Side view



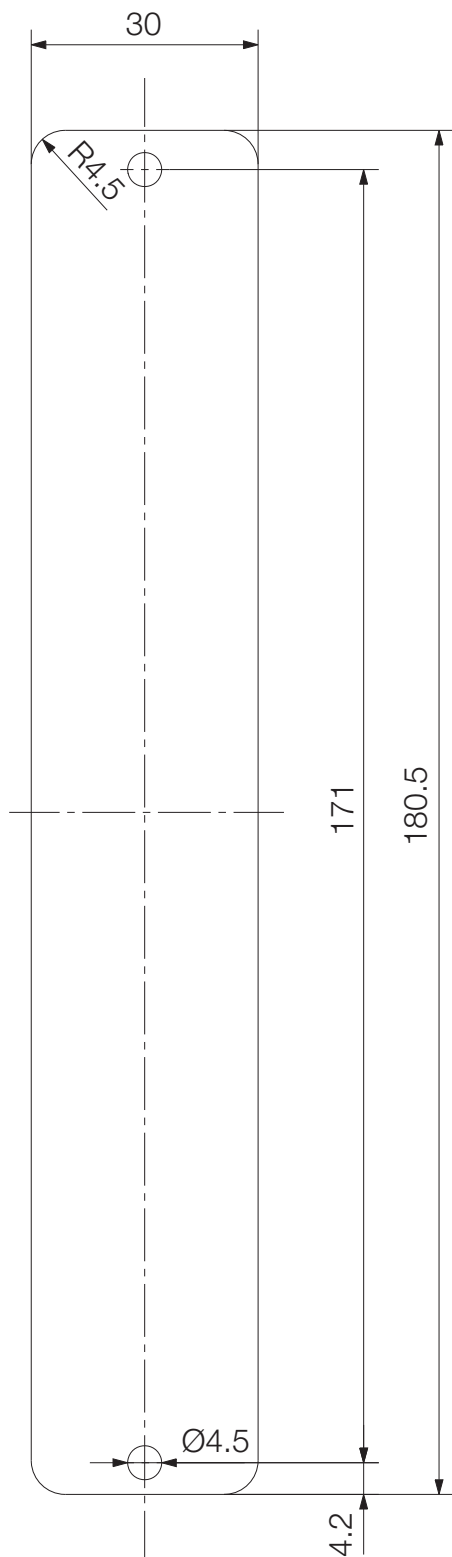
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Drilling templates

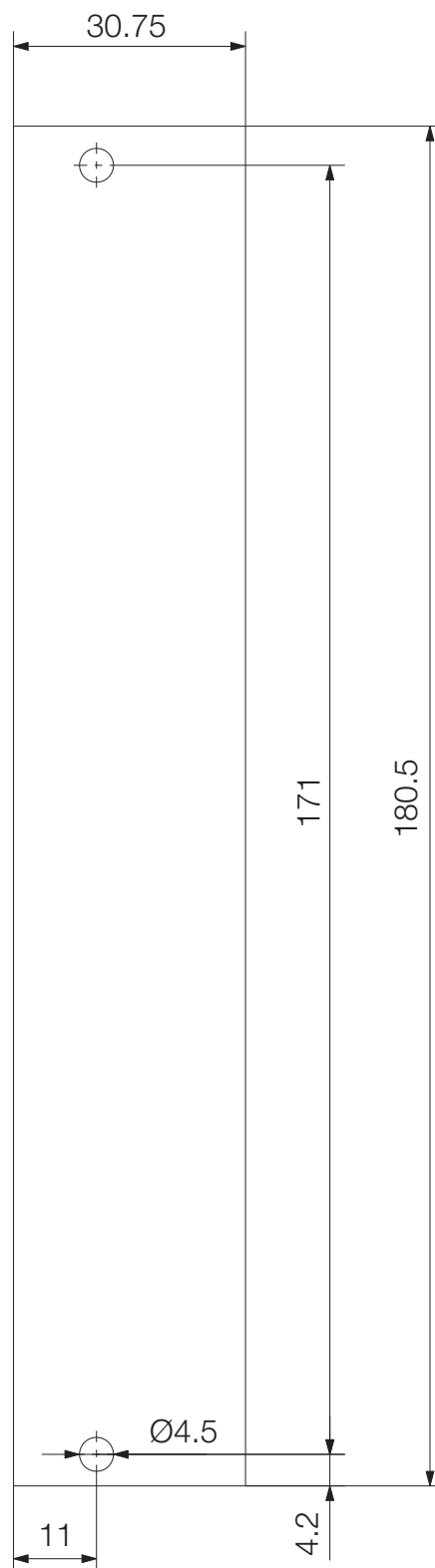
SAI Active Universal Pro:

Subbus modules without digital outputs

Plan view



Side view



Note: This page can be copied to use as a template.

Chemical resistance of nickel

The statements on the resistance of nickel to chemicals only apply when the coating is undamaged and is not subject to any mechanical loads. These statements are based on a review of the literature available and it should be noted that pure nickel is not considered in the literature – only alloyed nickel steels.

The statements on page W.15 are based on research, and once again please note that pure nickel has not been included in the testing. The findings in the research are based on undamaged alloyed nickel steels that have not been subject to any mechanical loads.

The six materials in question are:

Chlorobenzene	1
Chloroform	1
Chromic acid hydride	1
Acetic acid	1
Hydrofluoric acid	2
Concentrated hydrochloric acid	2

The findings for the two materials above marked with a “2” could have a critical impact on applications. The findings for the four materials marked with a “1” should be taken into account but would not be considered critical for applications.

A further advantage of nickel is its thermal stability. The resistance does not change up to a temperature of 120 °C.

Pure nickel:

Corrosion properties are determined by the resistance of the passive layer.

Good resistance in:

- water containing oxygen
- flowing seawater
- alkalis (very good resistance) even at high temperatures and high concentrations
- neutral and alkaline salt solutions (carbonates, phosphates, sulphates, chlorides and nitrates) even at high concentrations and temperatures

Known problems:

- corrosion attack in heavily oxidising acids and solutions containing chlorides
- in inorganic and organic acids only resistant in diluted solutions and at low temperatures
- coating is not toxic (formation of deposits by micro-organisms can lead to destruction of the passive coating)

Chemical resistance of Pocan® (PBT)

Pocan offers good resistance to chemicals. Organic solvents, such as aliphatic hydrocarbons, alcohols, ether, long-chain ester as well as fats, oils and perchlorinated hydrocarbons do not corrode Pocan.

This is also true for water and aqueous solutions, neutral and acid salts, as well as diluted acids.

On the other hand, it is susceptible to alkalis, oxidising acids, ketones and phenols.

Susceptibility to universal alcohols, aromatics and ketones increases as the ambient temperature rises above 60 °C.

In the presence of water and aqueous solutions, hydrolytic degradation at higher temperatures increasingly leads to a decline in stability.

Substances like motor and transformer oils, petrol and brake fluids do not corrode Pocan, even at higher temperatures.

Medium	23 °C	60 °C
Acetic acid 10%	±	±
Acetone	+	-
Ammonia 10%	+	-
Ammonia, concentrated	±	-
Benzene	+	-
Brake fluid	+	+
Butane	+	+
Butanol	+	±
Butyl acetate	+	+
Calcium chloride 10%	+	+
Carbon disulphide	+	±
Carbon tetrachloride	+	±
Chlorobenzene	-	-
Chloroform	-	-
Chromic acid hydride 10%	+	+
Citric acid 10%	+	±
Cresol	-	-
Curd soap	+	+
Dibutyl phthalate	+	±
Diesel oil	+	+
Diethyl ether	+	±
Dioxan	+	-
Ethanol	+	+
Ethyl acetate	±	-
Ethyl dichloride	-	-
Ethylene glycol	+	±
Formic acid 10%	+	±
Freon 11	+	+
Frigen 113	+	+
Glacial acetic acid 10%	-	-
Glycerine	+	+
Heptane	+	+
Hexane	+	+
Hydraulic oil	+	+
Hydrochloric acid 10%	+	-
Hydrochloric acid, concentrated	-	-
Hydrofluoric acid 10%	+	+
Hydrogen peroxide 20%	+	±
Isopropyl alcohol	+	±
Kerosene	+	+

Medium	23 °C	60 °C
Linseed oil	+	+
Lubricating greases	+	+
Methanol	+	±
Methyl ethyl ketone	+	±
Methylene chloride	-	-
Mineral oils	+	+
Motor oils	+	+
Nitric acid 10%	+	±
Nitric acid, concentrated	-	-
Octane	+	+
Olive oil	+	+
Paraffin oil	+	+
Perchloroethylene	±	-
Petrol, normal and lead-free	+	+
Petrol, super	+	+
Petrol/methanol 85/15	+	+
Petroleum	+	+
Phenol 10%	-	-
Phosphoric acid 20%	+	±
Potassium chloride 10%	+	+
Potassium dichromate 10%	+	+
Potassium hydroxide 10%	-	-
Potassium permanganate 10%	+	±
Soap suds 10%	+	±
Sodium bisulphite 10%	+	+
Sodium carbonate 10%	+	+
Sodium chloride 10%	+	+
Sodium hydroxide 10%	-	-
Sulphuric acid 10%	+	±
Sulphuric acid, concentrated	-	-
Tetrahydrofuran	-	-
Toluene	±	-
Transformer oil	+	+
Trichlorethene/chloroform 1/1	±	-
Turpentine oil	+	+
Vegetable oils	+	+
Washing liquid	+	+
Washing powder, synthetic	+	+
Water	+	+
Xylol	±	-

The above values are for guidance only. A definite statement can only be made when based on the respective case in question.

+ = resistant
- = not resistant
± = partly resistant

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AIE multi-stripax ASI	9202300000	I.11
AIE multi-stripax GKWLW	9205770000	I.11
AM 12	9030060000	I.8
AS-KG-GE	9455110000	C.64
AS-KG-SW	9455120000	C.64

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FBCon SS PCG 1way Limiter	8726110000	C.45
FBCon SS PCG 1way OVP	8715270000	C.41
FBCon SS PCG 4way	8613680000	C.38
FBCon SS PCG 4way Limiter	8715260000	C.47
FBCon SS PCG 4way OVP	8726080000	C.43
FBCon SS PCG 8way	8640720000	C.39
FBCon SS PCG 8way Limiter	8726160000	C.48
FBCon SS PCG 8way OVP	8726090000	C.44
FBCon Term.D Ex	8606190000	C.56
FBCon Term.D Ex FM	8556460000	C.56
FBCon Term.D Ex FM/PEAN	8606180000	C.56
FBCon Term.D Ex PEAN	8606200000	C.56

GWDR M16-NP	1736230000	C.73
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IE-C5DB4RE0015MCAMCA-E	1059970015	C.69
IE-C5DB4RE0015MCAXXX-X	1059900015	C.69
IE-C5DB4RE0015MCSMCA-E	1059940015	C.68
IE-C5DB4RE0015MCSMCS-E	1010850015	C.69
IE-C5DB4RE0015MCSXXX-X	1010840015	C.68
IE-C5DB4RE0015MSSMCS-E	1059834015	C.68
IE-C5DB4RE0030MCAMCA-E	1059970030	C.69
IE-C5DB4RE0030MCAXXX-X	1059900030	C.69
IE-C5DB4RE0030MCSMCA-E	1059940030	C.68
IE-C5DB4RE0030MCSMCS-E	1010850030	C.68
IE-C5DB4RE0030MCSXXX-X	1010840030	C.68
IE-C5DB4RE0030MSSMCS-E	1059834030	C.69
IE-C5DB4RE0050MCAMCA-E	1059970050	C.69
IE-C5DB4RE0050MCAXXX-X	1059900050	C.69
IE-C5DB4RE0050MCSMCA-E	1059940050	C.68
IE-C5DB4RE0050MCSMCS-E	1010850050	C.69
IE-C5DB4RE0050MCSXXX-X	1010840050	C.68
IE-C5DB4RE0050MSSMCS-E	1059834050	C.68
IE-C5DB4RE0100MCAMCA-E	1059970100	C.69
IE-C5DB4RE0100MCAXXX-X	1059900100	C.69
IE-C5DB4RE0100MCSMCA-E	1059940100	C.69
IE-C5DB4RE0100MCSMCS-E	1010850100	C.68
IE-C5DB4RE0100MCSXXX-X	1010840100	C.68
IE-C5DB4RE0100MSSMCS-E	1059834010	C.68
IE-C5DD4UG0015MCAMCA-E	1059890015	C.67
IE-C5DD4UG0015MCAXXX-X	1059750015	C.67
IE-C5DD4UG0015MCSA20-E	1044470015	C.66
IE-C5DD4UG0015MCSMCA-E	1059770015	C.67
IE-C5DD4UG0015MCSMCS-E	1025950015	C.66
IE-C5DD4UG0015MCSXXX-X	1025940015	C.66
IE-C5DD4UG0015MSSMCS-E	1059830015	C.66
IE-C5DD4UG0030MCAMCA-E	1059890030	C.67
IE-C5DD4UG0030MCAXXX-X	1059750030	C.67
IE-C5DD4UG0030MCSA20-E	1044470030	C.66
IE-C5DD4UG0030MCSMCA-E	1059770030	C.67
IE-C5DD4UG0030MCSMCS-E	1025950030	C.66
IE-C5DD4UG0030MCSXXX-X	1025940030	C.66
IE-C5DD4UG0030MSSMCS-E	1059830030	C.66
IE-C5DD4UG0050MCAMCA-E	1059890050	C.67
IE-C5DD4UG0050MCAXXX-X	1059750050	C.67
IE-C5DD4UG0050MCSA20-E	1044470050	C.66
IE-C5DD4UG0050MCSMCA-E	1059770050	C.67
IE-C5DD4UG0050MCSMCS-E	1025950050	C.66
IE-C5DD4UG0050MCSXXX-X	1025940050	C.66
IE-C5DD4UG0050MSSMCS-E	1059830050	C.66
IE-C5DD4UG0100MCAMCA-E	1059890100	C.67
IE-C5DD4UG0100MCAXXX-X	1059750100	C.67
IE-C5DD4UG0100MCSA20-E	1044470100	C.66
IE-C5DD4UG0100MCSMCA-E	1059770100	C.67
IE-C5DD4UG0100MCSMCS-E	1025950100	C.66
IE-C5DD4UG0100MCSXXX-X	1025940100	C.66
IE-C5DD4UG0100MSSMCS-E	1059830100	C.66

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JPTA 50MS 24VDC PNP M12	8771440000	F.4
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KT 8	9002650000	I.7

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multi-stripax ASI	9202250000	I.11
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PB-DP SUB-D M12 TERM	1140650000	C.16
PB-DP SUB-D M12 TERM PS	1140640000	C.17
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SAI-10-F 3P M8 L 5M	1828660000	G.6
SAI-10-S12 3P M8 L	1877950000	G.50
SAI-10-S12 3P M8 L	1877950000	G.6
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SAI-12-F 3P M8 L 10M	1828630000	G.6
SAI-12-F 3P M8 L 5M	1828640000	G.52
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SAIB-3-IDC-M8 small	1784030001	D.24
SAIB-3-IDC-M8 small	1784030001	D.6
SAIB-4/7	9457240000	D.5
SAIB-4/7	9457240000	D.7
SAIB-4/7-(KV)	1921080000	D.9
SAIB-4/9	1807230000	D.5
SAIB-4/9	1807230000	D.7
SAIB-4-IDC (0,75) M12	1852750000	D.23
SAIB-4-IDC-M12 small	1781540001	D.22
SAIB-4-IDC-M12 small	1781540001	D.5
SAIB-4-IDC-M8 small	1784050001	D.24
SAIB-4-IDC-M8 small	1784050001	D.6
SAIB-5/6S M12 5P A-COD	1191020000	D.5
SAIB-5/7	9457250000	D.5
SAIB-5/7	9457250000	D.8
SAIB-5/7-(KV)	1921070000	D.9
SAIB-5/7-ZF	1924970000	D.16
SAIB-5/7-ZF	1924970000	D.5
SAIB-5/9	1807250000	D.5
SAIB-5/9	1807250000	D.8
SAIB-8/9	1836960000	D.5
SAIB-8/9	1836960000	C.11
SAIBM 5/8S M12 5P B-COD	1784780000	C.8
SAIBM 5/8S M12 5P B-COD	1784780000	D.13
SAIBM 5/8S M12 5P B-COD	1784780000	D.5
SAIB-M23-12P-AN-1,0M	1877440010	H.22
SAIB-M23-12P-ST-1,0M	1886440100	H.22
SAIB-M23-19P-AN-1,0M	1818140010	H.22
SAIB-M23-19P-ST-1,0M	1818180100	H.22
SAIBM-4/8S-M12 4P A-ZF	1784740002	D.5
SAIBM-4/8S-M12 4P D-ZF	1892130001	D.15
SAIBM-4/8S-M12 4P D-ZF	1892130001	D.5
SAIBM-4/8S-M12 4P D-COD	1892130000	C.70
SAIBM-4/8S-M12 4P D-COD	1892130000	C.71
SAIBM-4/8S-M12 4P D-COD	1892130000	D.13
SAIBM-4/8S-M12 4P D-COD	1892130000	D.5
SAIB-M-5/8S M12 5P A-COD	1784750000	C.31
SAIB-M-5/8S M12 5P A-COD	1784750000	C.63
SAIB-M-5/8S M12 5P A-COD	1784750000	D.12
SAIB-M-5/8S M12 5P A-COD	1784750000	D.5
SAIBM-8/11	1118920000	D.11
SAIB-M8-3P	1803870000	D.17
SAIB-M8-3P	1803870000	D.6
SAIB-M8-4P	1803880000	D.17
SAIB-M8-4P	1803880000	D.6
SAIBM-M8-3P-(IF)	1010080000	D.18
SAIBM-M8-3P-(IF)	1010080000	D.6
SAIBM-M8-3P(TL)	1921010000	D.18
SAIBM-M8-3P(TL)	1921010000	D.6
SAIBM-M8-4P-(IF)	1010090000	D.18
SAIBM-M8-4P-(IF)	1010090000	D.6
SAIBM-M8-4P(TL)	1921020000	D.18
SAIBM-M8-4P(TL)	1921020000	D.6
SAIB-VSA-3P/230/11-H/OB	1873150000	D.32
SAIB-VSA-3P/230/9/LD	1873110000	D.32
SAIB-VSA-3P/230/9-H/OB	1873130000	D.32
SAIB-VSA-3P/24/9/LD	1873120000	D.32
SAIB-VSA-3P/250/11-OB	1873090000	D.32
SAIB-VSA-3P/250/9-OB	1873070000	D.32
SAIB-VSA-4P/230/11-H/OB	1873160000	D.32
SAIB-VSA-4P/230/9-H/OB	1873140000	D.32
SAIB-VSA-4P/250/11-OB	1873100000	D.32
SAIB-VSA-4P/250/9-OB	1873080000	D.32
SAIB-VSB-3P/24/9/LD	1873180000	D.32
SAIB-VSB-3P/250/9-OB	1873170000	D.32
SAIB-VSBD-3P/250/9-OB	1873190000	D.32
SAIB-VSC-3P/250/7-OB	1873200000	D.32
SAIB-VSC-4P/250/7-OB	1873210000	D.32
SAIB-VSCD-3P/250/7-OB	1873220000	D.32
SAIB-VSCD-4P/250/7-OB	1873230000	D.32
SAIBW-3/7	1021310000	D.5
SAIBW-3/7	1021310000	D.7
SAIBW-3/9	1021320000	D.7
SAIBW-4/7	9457700000	D.5
SAIBW-4/7	9457700000	D.9
SAIBW-4/7-(KV)	1935610000	D.9
SAIBW-4/8S-M12 4P D-ZF	1139330000	C.70
SAIBW-4/8S-M12 4P D-ZF	1139330000	D.15
SAIBW-4/8S-M12 4P D-ZF	1139330000	D.5
SAIBW-4/9	1807240000	D.7
SAIBW-4-IDC M12	1812890000	D.22
SAIBW-5/7	9457260000	D.5
SAIBW-5/7	9457260000	D.8
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SAIBW-M-5/8 M12 B-COD	1944580000	D.5
SAIBW-M8-3P(TL)	1920970000	D.19
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SAIE-M12B-5-0.5U-M16	1836910000	D.29
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SAIE-M12B-8-0.5U-PP-M16	1861210000	D.29
SAIE-M12B-8-0.5U-PG9	1861270000	D.30
SAIE-M12S-4-0.5U-AEH-VA	1861220001	C.33
SAIE-M12S-4-0.5U-PP-M16	1861160000	D.29
SAIE-M12S-4-0.5U-M16	1861090000	D.29
SAIE-M12S-4-0.5U-PG9	1861220000	D.30
SAIE-M12S-5-0.5U-PP-M16	1861170000	D.29
SAIE-M12S-5-0.5U-M16	1861230000	D.29
SAIE-M12S-5-0.5U-PG9	1856120000	D.30
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SAIE-M23-S-HW	1169990000	H.13
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SAIL-M12G-CD-1.5A	1964700150	C.58
SAIL-M12G-CD-1.5B	1060110150	C.58
SAIL-M12G-2G-2/4-1.5Q	1926520150	B.26
SAIL-M12GM12G-2/4-1.5QGE	1093000150	B.26
SAIL-M12GM12G-2/4-1.5U	9456990150	B.26
SAIL-M12GM12G-2/4-1.5V	1925330150	B.26
SAIL-M12GM12G-3-1.5Q	1926490150	B.25
SAIL-M12GM12G-3-1.5Q	1926490150	B.6
SAIL-M12GM12G-3-1.5QGE	1093010150	B.25
SAIL-M12GM12G-3-1.5T	1021710150	B.25
SAIL-M12GM12G-3-1.5U	9457230150	B.25
SAIL-M12GM12G-3-1.5U	9457230150	B.6
SAIL-M12GM12G-3-1.5V	1925300150	B.25
SAIL-M12GM12G-3-1.5V	1925300150	B.6
SAIL-M12GM12G-3-10Q	1926491000	B.6
SAIL-M12GM12G-3-10U	9457231000	B.6
SAIL-M12GM12G-3-10V	1925301000	B.6
SAIL-M12GM12G-3-3.0Q	1926490300	B.6
SAIL-M12GM12G-3-3.0Q	9457230300	B.6
SAIL-M12GM12G-3-3.0V	1925300300	B.6
SAIL-M12GM12G-3-5.0Q	1926490500	B.6
SAIL-M12GM12G-3-5.0U	9457230500	B.6
SAIL-M12GM12G-3-5.0V	1925300500	B.6
SAIL-M12GM12G-3B-1.5Q	1057830150	B.42
SAIL-M12GM12G-3S1.5Q	1058490150	B.28
SAIL-M12GM12G-3-X.XQ	1926490000	B.6
SAIL-M12GM12G-3-X.XU	9457230000	B.6
SAIL-M12GM12G-3-X.XV	1925300000	B.6
SAIL-M12GM12G-4-0.6U	9457160000	F.7
SAIL-M12GM12G-4-0.9U	9457170000	F.7
SAIL-M12GM12G-4-1.5Q	1926500150	B.25
SAIL-M12GM12G-4-1.5Q	1926500150	B.6
SAIL-M12GM12G-4-1.5QGE	1093020150	B.25
SAIL-M12GM12G-4-1.5T	1021730150	B.25
SAIL-M12GM12G-4-1.5U	1906300150	B.25
SAIL-M12GM12G-4-1.5U	1906300150	B.6
SAIL-M12GM12G-4-1.5V	1925310150	B.25
SAIL-M12GM12G-4-1.5V	1925310150	B.6
SAIL-M12GM12G-4-10Q	1906301000	B.6
SAIL-M12GM12G-4-10V	1925311000	B.6
SAIL-M12GM12G-4-3.0Q	1926500300	B.6
SAIL-M12GM12G-4-3.0U	1906300300	B.6
SAIL-M12GM12G-4-3.0V	1925310300	B.6
SAIL-M12GM12G-5-5.0Q	1926500500	B.6
SAIL-M12GM12G-5-5.0U	1906300500	B.6

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SAIL-M12GM12G-4-5.0V	1925310500	B.6
SAIL-M12GM12G-4S1.5Q	1058500150	B.28
SAIL-M12GM12G-4-X.XQ	1926500000	B.6
SAIL-M12GM12G-4-X.XU	1906300000	B.6
SAIL-M12GM12G-4-X.XV	1925310000	B.6
SAIL-M12GM12G-5-0.3U	9457340030	F.7
SAIL-M12GM12G-5-0.6U	9457340060	F.7
SAIL-M12GM12G-5-1.5Q	1926510150	B.25
SAIL-M12GM12G-5-1.5Q	1926510150	B.7
SAIL-M12GM12G-5-1.5QGE	1093030150	B.25
SAIL-M12GM12G-5-1.5T	1011970150	B.25
SAIL-M12GM12G-5-1.5U	9457340150	B.25
SAIL-M12GM12G-5-1.5U	9457340150	B.7
SAIL-M12GM12G-5-1.5U	9457340150	F.7
SAIL-M12GM12G-5-1.5V	1925320150	B.25
SAIL-M12GM12G-5-1.5V	1925320150	B.7
SAIL-M12GM12G-5-10Q	1926511000	B.7
SAIL-M12GM12G-5-10U	9457341000	B.7
SAIL-M12GM12G-5-10V	1925321000	B.7
SAIL-M12GM12G-5-3.0Q	1926510300	B.7
SAIL-M12GM12G-5-3.0U	9457340300	B.7
SAIL-M12GM12G-5-3.0V	1925320300	B.7
SAIL-M12GM12G-5-5.0Q	1926510500	B.7
SAIL-M12GM12G-5-5.0U	9457340500	B.7
SAIL-M12GM12G-5-5.0V	1925320500	B.7
SAIL-M12GM12G-5B-1.5Q	1057850150	B.42
SAIL-M12GM12G-5S1.5Q	1058510150	B.28
SAIL-M12GM12G-5-X.XQ	1926510000	B.7
SAIL-M12GM12G-5-X.XU	9457740000	B.7
SAIL-M12GM12G-5-X.XU	9457340000	B.7
SAIL-M12GM12G-5-X.XV	1925320000	B.7
SAIL-M12GM12G-CD-1.5A	1964710150	C.59
SAIL-M12GM12G-CD-1.5B	1060130150	C.59
SAIL-M12GM12G-PB-1.5D	1873310150	C.7
SAIL-M12GM12G-PB-1.5E	1058570150	C.7
SAIL-M12GM12W-2/4-1.5Q	1926560150	B.26
SAIL-M12GM12W-2/4-1.5QGE	1093040150	B.26
SAIL-M12GM12W-2/4-1.5U	9457890150	B.26
SAIL-M12GM12W-2/4-1.5V	1925370150	B.26
SAIL-M12GM12W-3-1.5Q	1926530150	B.25
SAIL-M12GM12W-3-1.5Q	1926530150	B.7
SAIL-M12GM12W-3-1.5QGE	1093050150	B.25
SAIL-M12GM12W-3-1.5T	1021720150	B.25
SAIL-M12GM12W-3-1.5U	9457390150	B.25
SAIL-M12GM12W-3-1.5U	9457390150	B.7
SAIL-M12GM12W-3-1.5V	1925340150	B.25
SAIL-M12GM12W-3-1.5V	1925340150	B.7
SAIL-M12GM12W-3-10Q	1926531000	B.7
SAIL-M12GM12W-3-10U	9457391000	B.7
SAIL-M12GM12W-3-10V	1925341000	B.7
SAIL-M12GM12W-3-3.0Q	1926530300	B.7
SAIL-M12GM12W-3-3.0U	9457390300	B.7
SAIL-M12GM12W-3-3.0V	1925340300	B.7
SAIL-M12GM12W-3-5.0Q	1926530500	B.7
SAIL-M12GM12W-3-5.0U	9457390500	B.7
SAIL-M12GM12W-3-5.0V	1925340500	B.7
SAIL-M12GM12W-3B-1.5Q	1057900150	B.42
SAIL-M12GM12W-3L1.5Q	1926600150	B.27
SAIL-M12GM12W-3L1.5Q	1926600150	B.8
SAIL-M12GM12W-3L1.5T	1004320150	B.27
SAIL-M12GM12W-3L1.5U	9457790150	B.27
SAIL-M12GM12W-3L1.5U	9457790150	B.8
SAIL-M12GM12W-3L1.5V	1925410150	B.27
SAIL-M12GM12W-3L1.5V	1925410150	B.8
SAIL-M12GM12W-3L10Q	1926601000	B.8
SAIL-M12GM12W-3L10U	9457791000	B.8
SAIL-M12GM12W-3L10V	1925411000	B.8
SAIL-M12GM12W-3L3.0Q	1926600300	B.8
SAIL-M12GM12W-3L3.0Q	9457790300	B.8
SAIL-M12GM12W-3L3.0Q	1925410300	B.8
SAIL-M12GM12W-3L5.0Q	1926600500	B.8
SAIL-M12GM12W-3L5.0U	9457790500	B.8
SAIL-M12GM12W-3L5.0V	1925410500	B.8
SAIL-M12GM12W-3LX.XQ	1926600000	B.8
SAIL-M12GM12W-3LX.XU	9457790000	B.8
SAIL-M12GM12W-3LX.XV	1925410000	B.8
SAIL-M12GM12W-3S1.5Q	1059470150	B.28
SAIL-M12GM12W-3-X.XQ	1926530000	B.7
SAIL-M12GM12W-3-X.XU	9457390000	B.7
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SAIL-M12GM12W-4-1.5Q	1926540150	B.25
SAIL-M12GM12W-4-1.5Q	1926540150	B.7
SAIL-M12GM12W-4-1.5QGE	1093070150	B.25
SAIL-M12GM12W-4-1.5T	1021740150	B.25
SAIL-M12GM12W-4-1.5U	9457310150	B.25
SAIL-M12GM12W-4-1.5U	9457310150	B.7
SAIL-M12GM12W-4-1.5V	1925350150	B.25
SAIL-M12GM12W-4-1.5V	1925350150	B.7
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SAIL-M12GM12W-4-10U	9457311000	B.7
SAIL-M12GM12W-4-10V	1925351000	B.7
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SAIL-M12GM12W-4-2L1.5Q	1926610150	B.8
SAIL-M12GM12W-4-2L1.5U	1004310150	B.27
SAIL-M12GM12W-4-2L1.5U	1906410150	B.27
SAIL-M12GM12W-4-2L1.5V	1906410150	B.8
SAIL-M12GM12W-4-2L1.5V	1925420150	B.27
SAIL-M12GM12W-4-2L1.5V	1925420150	B.8
SAIL-M12GM12W-4-2L10Q	1926611000	B.8
SAIL-M12GM12W-4-2L10U	1906411000	B.8

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SAIL-M12GM12W-4-2L10V	1925421000	B.8
SAIL-M12GM12W-4-2L3.0Q	1926610300	B.8
SAIL-M12GM12W-4-2L3.0U	1906410300	B.8
SAIL-M12GM12W-4-2L3.0V	1925420300	B.8
SAIL-M12GM12W-4-2L5.0Q	1926610500	B.8
SAIL-M12GM12W-4-2L5.0U	1906410500	B.8
SAIL-M12GM12W-4-2L5.0V	1925420500	B.8
SAIL-M12GM12W-4-2LX.XQ	1926610000	B.8
SAIL-M12GM12W-4-2LX.XU	1906410000	B.8
SAIL-M12GM12W-4-2LX.XV	1925420000	B.8
SAIL-M12GM12W-4-3.0Q	1926540300	B.7
SAIL-M12GM12W-4-3.0U	9457310300	B.7
SAIL-M12GM12W-4-3.0V	1925350300	B.7
SAIL-M12GM12W-4-3L1.5Q	1232810150	B.27
SAIL-M12GM12W-4-3L1.5U	1963910150	B.27
SAIL-M12GM12W-4-3L1.5V	1963930150	B.27
SAIL-M12GM12W-4-3LW1.5QGE	1093060150	B.27
SAIL-M12GM12W-4-3LW1.5T	1020930150	B.27
SAIL-M12GM12W-4-5.0Q	1926540500	B.7
SAIL-M12GM12W-4-5.0U	9457310500	B.7
SAIL-M12GM12W-4-5.0V	1925350500	B.7
SAIL-M12GM12W-4S1.5Q	1059480150	B.28
SAIL-M12GM12W-4-X.XQ	1926540000	B.7
SAIL-M12GM12W-4-X.XU	9457310000	B.7
SAIL-M12GM12W-4-X.XV	1925350000	B.7
SAIL-M12GM12W-5-1.5Q	1926550150	B.25
SAIL-M12GM12W-5-1.5Q	1926550150	B.7
SAIL-M12GM12W-5-1.5QGE	1093080150	B.25
SAIL-M12GM12W-5-1.5T	1011990150	B.25
SAIL-M12GM12W-5-1.5U	9457270150	B.25
SAIL-M12GM12W-5-1.5U	9457270150	B.7
SAIL-M12GM12W-5-1.5V	1925360150	B.25
SAIL-M12GM12W-5-1.5V	1925360150	B.7
SAIL-M12GM12W-5-10Q	1926551000	B.7
SAIL-M12GM12W-5-10U	9457271000	B.7
SAIL-M12GM12W-5-10V	1925361000	B.7
SAIL-M12GM12W-5-3.0Q	1926550300	B.7
SAIL-M12GM12W-5-3.0U	9457270300	B.7
SAIL-M12GM12W-5-3.0V	1925360300	B.7
SAIL-M12GM12W-5-5.0Q	1926550500	B.7
SAIL-M12GM12W-5-5.0U	9457270500	B.7
SAIL-M12GM12W-5-5.0V	1925360500	B.7
SAIL-M12GM12W-5B-1.5Q	1057920150	B.42
SAIL-M12GM12W-5S1.5Q	1059540150	B.28
SAIL-M12GM12W-5-X.XQ	1926550000	B.7
SAIL-M12GM12W-5-X.XU	9457270000	B.7
SAIL-M12GM12W-5-X.XV	1925360000	B.7
SAIL-M12GM12W-CD-1.5A	1061990150	C.59
SAIL-M12GM12W-CD-1.5B	1062190150	C.59
SAIL-M12GM12W-PB-1.5D	1062310150	C.7
SAIL-M12GM12W-PB-1.5E	1062380150	C.7
SAIL-M12GM8G-3-1.5Q	1938040150	B.29
SAIL-M12GM8G-3-1.5U	9457770150	B.29
SAIL-M12GM8G-3-1.5V	1938170150	B.29
SAIL-M12GM8G-4-1.5Q	1938070150	B.29
SAIL-M12GM8G-4-1.5Q	1938070150	B.5
SAIL-M12GM8G-4-1.5U	9456660150	B.29
SAIL-M12GM8G-4-1.5U	9456660150	B.5
SAIL-M12GM8G-4-1.5V	1938200150	B.29
SAIL-M12GM8G-4-1.5V	1938071000	B.5
SAIL-M12GM8G-4-10U	9456661000	B.5
SAIL-M12GM8G-4-10U	1938201000	B.5
SAIL-M12GM8G-4-3.0Q	1938070300	B.5
SAIL-M12GM8G-4-3.0Q	9456660300	B.5
SAIL-M12GM8G-4-3.0V	1938200300	B.5
SAIL-M12GM8G-4-5.0Q	1938070500	B.5
SAIL-M12GM8G-4-5.0U	9456660500	B.5
SAIL-M12GM8G-4-5.0V	1938200500	B.5
SAIL-M12GM8G-4-X.XQ	1938070000	B.5
SAIL-M12GM8G-4-X.XU	9456660000	B.5
SAIL-M12GM8G-4-X.XV	1938200000	B.5
SAIL-M12GM8G-3R-1.5U	1984530150	B.30
SAIL-M12GM8W-3-1.5Q	1938050150	B.25
SAIL-M12GM8W-3-1.5Q	1938050150	B.5
SAIL-M12GM8W-3-1.5U	9457980150	B.25
SAIL-M12GM8W-3-1.5U	9457980150	B.5
SAIL-M12GM8W-3-1.5V	1938180150	B.25
SAIL-M12GM8W-3-1.5V	1938180150	B.5
SAIL-M12GM8W-3-10Q	1938051000	B.5
SAIL-M12GM8W-3-10Q	9457981000	B.5
SAIL-M12GM8W-3-10U	1938181000	B.5
SAIL-M12GM8W-3-3.0Q	1938050300	B.5
SAIL-M12GM8W-3-3.0Q	9457980300	B.5
SAIL-M12GM8W-3-3.0U	1938180300	B.5
SAIL-M12GM8W-3-5.0Q	1938050500	B.5
SAIL-M12GM8W-3-5.0U	9457980500	B.5
SAIL-M12GM8W-3-5.0V	1938180500	B.5
SAIL-M12GM8W-3L1.5Q	1962270150	B.31
SAIL-M12GM8W-3L1.5QGE	1093110150	B.31
SAIL-M12GM8W-3L1.5U	9457760150	B.31
SAIL-M12GM8W-3L1.5U	9457760150	B.5
SAIL-M12GM8W-3L1.5V	1962290150	B.31
SAIL-M12GM8W-3L10U	9457761000	B.5
SAIL-M12GM8W-3L3.0Q	9457760300	B.5
SAIL-M12GM8W-3L5.0Q	9457760500	B.5
SAIL-M12GM8W-3LX.XQ	9457760000	B.5
SAIL-M12GM8W-3-X.XQ	1938050000	B.5
SAIL-M12GM8W-3-X.XU	9457980000	B.5
SAIL-M12GM8W-3-X.XV	1938180000	B.5

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SAIL-M12WM12G-5-3.0U	9456500300	B.7
SAIL-M12WM12G-5-5.0U	9456500500	B.7
SAIL-M12WM12G-5B-1.5Q	1057890150	B.42
SAIL-M12WM12G-5-X.XU	9456500000	B.7
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SAIL-M12WM12W-3-1.5Q	1926570150	B.7
SAIL-M12WM12W-3-1.5U	1815670150	B.25
SAIL-M12WM12W-3-1.5U	1815670150	B.7
SAIL-M12WM12W-3-1.5V	1925380150	B.25
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SAIL-M12WM12W-3-3.0V	1925380300	B.7
SAIL-M12WM12W-3-5.0Q	1926570500	B.7
SAIL-M12WM12W-3-5.0U	1815670500	B.7
SAIL-M12WM12W-3-5.0V	1925380500	B.7
SAIL-M12WM12W-3B-1.5Q	1061910150	B.42
SAIL-M12WM12W-3S1.5Q	1059720150	B.28
SAIL-M12WM12W-3-X.XQ	1926570000	B.7
SAIL-M12WM12W-3-X.XU	1815670000	B.7
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SAIL-M12WM12W-4-1.5V	1925390150	B.25
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SAIL-M12WM12W-4-10V	1925391000	B.7
SAIL-M12WM12W-4-3.0Q	1926580300	B.7
SAIL-M12WM12W-4-3.0Q	1906310300	B.7
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SAIL-M12WM12W-4-5.0Q	1926580500	B.7
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SAIL-M12WM12W-4-5.0V	1925390500	B.7
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SAIL-M12WM12W-4-X.XU	1906310000	B.7
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SAIL-M12WM12W-5-1.5U	9457900150	B.25
SAIL-M12WM12W-5-1.5U	9457900150	B.7
SAIL-M12WM12W-5-1.5V	1925400150	B.25
SAIL-M12WM12W-5-1.5V	1925400150	B.7
SAIL-M12WM12W-5-10Q	1926591000	B.7
SAIL-M12WM12W-5-10U	9457901000	B.7
SAIL-M12WM12W-5-10V	1925401000	B.7
SAIL-M12WM12W-5-3.0Q	1926590300	B.7
SAIL-M12WM12W-5-3.0Q	9457900300	B.7
SAIL-M12WM12W-5-3.0V	1925400300	B.7
SAIL-M12WM12W-5-5.0Q	1926590500	B.7
SAIL-M12WM12W-5-5.0Q	9457900500	B.7
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SAIL-M12WM12W-5B-1.5Q	1061930150	B.42
SAIL-M12WM12W-5S1.5Q	1059740150	B.28
SAIL-M12WM12W-5-X.XQ	1926590000	B.7
SAIL-M12WM12W-5-X.XU	9457900000	B.7
SAIL-M12WM12W-5-X.XV	1925400000	B.7
SAIL-M12WM12W-CD-1.5A	1062150150	C.59
SAIL-M12WM12W-CD-1.5B	1062210150	C.59
SAIL-M12WM12W-PB-1.5D	1062330150	C.7
SAIL-M12WM12W-PB-1.5E	1062400150	C.7
SAIL-M12WM8W-3-1.5Q	1938060150	B.29
SAIL-M12WM8W-3-1.5Q	1938060150	B.5
SAIL-M12WM8W-3-1.5U	1906330150	B.29
SAIL-M12WM8W-3-1.5U	1906330150	B.5
SAIL-M12WM8W-3-1.5V	1938190150	B.29
SAIL-M12WM8W-3-1.5V	1938190150	B.5
SAIL-M12WM8W-3-10Q	1938061000	B.5
SAIL-M12WM8W-3-10U	1906331000	B.5
SAIL-M12WM8W-3-10V	1938191000	B.5
SAIL-M12WM8W-3-3.0Q	1938060300	B.5
SAIL-M12WM8W-3-3.0Q	1906330300	B.5
SAIL-M12WM8W-3-3.0V	1938190300	B.5
SAIL-M12WM8W-3-5.0Q	1938060500	B.5
SAIL-M12WM8W-3-5.0U	1906330500	B.5
SAIL-M12WM8W-3-5.0V	1938190500	B.5
SAIL-M12WM8W-3-X.XQ	1938060000	B.5
SAIL-M12WM8W-3-X.XU	1906330000	B.5
SAIL-M12WM8W-3-X.XV	1938190000	B.5
SAIL-M12WM8W-4-1.5Q	1938090150	B.29
SAIL-M12WM8W-4-1.5Q	1938090150	B.5
SAIL-M12WM8W-4-1.5U	1906340150	B.29
SAIL-M12WM8W-4-1.5U	1906340150	B.5
SAIL-M12WM8W-4-1.5V	1938220150	B.29
SAIL-M12WM8W-4-1.5V	1938220150	B.5
SAIL-M12WM8W-4-10Q	1938091000	B.5
SAIL-M12WM8W-4-10U	1906341000	B.5
SAIL-M12WM8W-4-10V	1938221000	B.5
SAIL-M12WM8W-4-3.0Q	1938090300	B.5
SAIL-M12WM8W-4-3.0Q	1906340300	B.5
SAIL-M12WM8W-4-3.0V	1938220300	B.5
SAIL-M12WM8W-4-5.0Q	1938090500	B.5

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SAIL-M12WM8W-4-5.0U	1906340500	B.5
SAIL-M12WM8W-4-5.0V	1938220500	B.5
SAIL-M12WM8W-4-X.XQ	1938090000	B.5
SAIL-M12WM8W-4-X.XU	1906340000	B.5
SAIL-M12WM8W-4-X.XV	1938220000	B.5
SAIL-M12WP-PB-1.5D	1061970150	C.6
SAIL-M12WP-PB-1.5E	1062340150	C.6
SAIL-M23-KSW-7/12	1169930000	H.12
SAIL-M5BG-3P-1.5U	1873290150	B.22
SAIL-M5BG-4P-1.5U	1873250150	B.22
SAIL-M5BW-3P-1.5U	1873260150	B.22
SAIL-M5BW-4P-1.5U	1873270150	B.22
SAIL-M5G-3P-1.5U	1854060150	B.22
SAIL-M5G-4P-1.5U	1871700150	B.22
SAIL-M5W-3P-1.5U	1873280150	B.22
SAIL-M5W-4P-1.5U	1873240150	B.22
SAIL-M8BG-3-1.5Q	1926980150	B.18
SAIL-M8BG-3-1.5Q	1926980150	B.4
SAIL-M8BG-3-1.5QGE	1093190150	B.18
SAIL-M8BG-3-1.5U	9457450150	B.18
SAIL-M8BG-3-1.5U	9457450150	B.4
SAIL-M8BG-3-1.5V	1927240150	B.18
SAIL-M8BG-3-1.5V	1927240150	B.4
SAIL-M8BG-3-10Q	1926981000	B.4
SAIL-M8BG-3-10U	9457451000	B.4
SAIL-M8BG-3-10V	1927241000	B.4
SAIL-M8BG-3-3.0Q	1926980300	B.4
SAIL-M8BG-3-3.0U	9457450300	B.4
SAIL-M8BG-3-3.0V	1927240300	B.4
SAIL-M8BG-3-5.0Q	1926980500	B.4
SAIL-M8BG-3-5.0U	9457450500	B.4
SAIL-M8BG-3-5.0V	1927240500	B.4
SAIL-M8BG-3S1.5U	1906600150	B.21
SAIL-M8BG-4-1.5Q	1927000150	B.18
SAIL-M8BG-4-1.5Q	1927000150	B.5
SAIL-M8BG-4-1.5QGE	1093200150	B.18
SAIL-M8BG-4-1.5U	9457850150	B.18
SAIL-M8BG-4-1.5U	9457850150	B.5
SAIL-M8BG-4-1.5V	1927260150	B.18
SAIL-M8BG-4-10Q	1927001000	B.5
SAIL-M8BG-4-10U	9457851000	B.5
SAIL-M8BG-4-10V	1927261000	B.5
SAIL-M8BG-4-3.0Q	1927000300	B.5
SAIL-M8BG-4-3.0U	9457850300	B.5
SAIL-M8BG-4-3.0V	1927260300	B.5
SAIL-M8BG-4-5.0Q	1927000500	B.5
SAIL-M8BG-4-5.0U	9457850500	B.5
SAIL-M8BG-4-5.0V	1927260500	B.5
SAIL-M8BG-4S-1.5Q-SB	1981910150	C.61
SAIL-M8BG-4S1.5U	1906610150	B.21
SAIL-M8BG-4S-10Q-SB	1981911000	C.61
SAIL-M8BG-4S-3.0Q-SB	1981910300	C.61
SAIL-M8BG-4S-5.0Q-SB	1981910500	C.61
SAIL-M8BG-4-X.XU	9457850000	B.5
SAIL-M8BGR-3-1.5Q	1948610150	B.19
SAIL-M8BGR-3-1.5U	1827020150	B.19
SAIL-M8BGR-3-1.5V	1948710150	B.19
SAIL-M8BGR-4-1.5Q	1948630150	B.19
SAIL-M8BGR-4-1.5U	1948530150	B.19
SAIL-M8BGR-4-1.5V	1948730150	B.19
SAIL-M8BGS-3-X.XQ	1926980000	B.4
SAIL-M8BGS-3-X.XU	9457450000	B.4
SAIL-M8BGS-3-X.XV	1927240000	B.4
SAIL-M8BGS-4-X.XQ	1927000000	B.5
SAIL-M8BGS-4-X.XV	1927260000	B.5
SAIL-M8BW-3-1.5Q	1927060150	B.18
SAIL-M8BW-3-1.5Q	1927060150	B.5
SAIL-M8BW-3-1.5QGE	1093220150	B.18
SAIL-M8BW-3-1.5U	9457380150	B.18
SAIL-M8BW-3-1.5U	9457380150	B.5
SAIL-M8BW-3-1.5V	1927320150	B.18
SAIL-M8BW-3-1.5V	1927320150	B.5
SAIL-M8BW-3-10Q	1927061000	B.5
SAIL-M8BW-3-10U	9457381000	B.5
SAIL-M8BW-3-10V	1927321000	B.5
SAIL-M8BW-3-3.0Q	1927060300	B.5
SAIL-M8BW-3-3.0U	9457380300	B.5
SAIL-M8BW-3-3.0V	1927320300	B.5
SAIL-M8BW-3-5.0Q	1927060500	B.5
SAIL-M8BW-3-5.0U	9457380500	B.5
SAIL-M8BW-3-5.0V	1927320500	B.5
SAIL-M8BW-3L1.5Q	1927090150	B.20
SAIL-M8BW-3L1.5Q	1927090150	B.5
SAIL-M8BW-3L1.5QGE	1093210150	B.20
SAIL-M8BW-3L1.5U	9457460150	B.20
SAIL-M8BW-3L1.5U	9457460150	B.5
SAIL-M8BW-3L1.5V	1927350150	B.20
SAIL-M8BW-3L1.5V	1927350150	B.5
SAIL-M8BW-3L10Q	1927091000	B.5
SAIL-M8BW-3L10U	9457461000	B.5
SAIL-M8BW-3L10V	1927351000	B.5
SAIL-M8BW-3L3.0Q	1927090300	B.5
SAIL-M8BW-3L3.0Q	9457460300	B.5
SAIL-M8BW-3L3.0V	1927350300	B.5
SAIL-M8BW-3L5.0Q	1927090500	B.5
SAIL-M8BW-3L5.0Q	9457460500	B.5
SAIL-M8BW-3L5.0V	1927350500	B.5
SAIL-M8BW-3LX.XU	9457460000	B.5
SAIL-M8BW-3S1.5U	1906620150	B.21

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SAIL-M8BW-4-1.5Q	1927080150	B.5
SAIL-M8BW-4-1.5QGE	1093240150	B.18
SAIL-M8BW-4-1.5U	9456150150	B.18
SAIL-M8BW-4-1.5U	9456150150	B.5
SAIL-M8BW-4-1.5V	1927340150	B.18
SAIL-M8BW-4-1.5V	1927340150	B.5
SAIL-M8BW-4-10Q	1927081000	B.5
SAIL-M8BW-4-10U	9456151000	B.5
SAIL-M8BW-4-10V	1927341000	B.5
SAIL-M8BW-4-3.0Q	1927080300	B.5
SAIL-M8BW-4-3.0U	9456150300	B.5
SAIL-M8BW-4-3.0V	1927340300	B.5
SAIL-M8BW-4-5.0Q	1927080500	B.5
SAIL-M8BW-4-5.0U	9456150500	B.5
SAIL-M8BW-4-5.0V	1927340500	B.5
SAIL-M8BW-4L1.5Q	1927100150	B.20
SAIL-M8BW-4L1.5QGE	1093230150	B.20
SAIL-M8BW-4L1.5U	1906400150	B.20
SAIL-M8BW-4L1.5V	1927360150	B.20
SAIL-M8BW-4S1.5U	1906630150	B.21
SAIL-M8BW-4-X.XU	9456150000	B.5
SAIL-M8BWR-3-1.5Q	1948620150	B.19
SAIL-M8BWR-3-1.5U	1827010150	B.19
SAIL-M8BWR-3-1.5V	1948720150	B.19
SAIL-M8BWR-4-1.5Q	1948640150	B.19
SAIL-M8BWR-4-1.5U	1948540150	B.19
SAIL-M8BWR-4-1.5V	1948740150	B.19
SAIL-M8BWS-3LX.XQ	1927090000	B.5
SAIL-M8BWS-3LX.XV	1927350000	B.5
SAIL-M8BWS-3-X.XQ	1927060000	B.5
SAIL-M8BWS-3-X.XV	9457380000	B.5
SAIL-M8BWS-4-X.XQ	1927320000	B.5
SAIL-M8BWS-4-X.XV	1927340000	B.5
SAIL-M8G-3-1.5Q	1926970150	B.18
SAIL-M8G-3-1.5Q	1926970150	B.4
SAIL-M8G-3-1.5U	1824590150	B.18
SAIL-M8G-3-1.5U	1824590150	B.4
SAIL-M8G-3-1.5V	1927230150	B.18
SAIL-M8G-3-1.5V	1927230150	B.5
SAIL-M8G-3-10Q	1926971000	B.4
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SAIL-M8G-3-10V	1927231000	B.4
SAIL-M8G-3-3.0Q	1926970300	B.4
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SAIL-M8G-3-3.0V	1927230300	B.4
SAIL-M8G-3-5.0Q	1926970500	B.4
SAIL-M8G-3-5.0U	1824590500	B.4
SAIL-M8G-3-5.0V	1927230500	B.4
SAIL-M8G-3S1.5U	1906560150	B.21
SAIL-M8G-3-X.XQ	1926970000	B.4
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SAIL-M8G-3-X.XV	1927230000	B.4
SAIL-M8G-4-1.5Q	1926990150	B.18
SAIL-M8G-4-1.5Q	1926990150	B.5
SAIL-M8G-4-1.5U	1906270150	B.18
SAIL-M8G-4-1.5U	1906270150	B.5
SAIL-M8G-4-1.5V	1927250150	B.18
SAIL-M8G-4-1.5V	1927250150	B.4
SAIL-M8G-4-10Q	1926991000	B.4
SAIL-M8G-4-10U	1906271000	B.4
SAIL-M8G-4-10V	1927251000	B.4
SAIL-M8G-4-3.0Q	1926990300	B.4
SAIL-M8G-4-3.0Q	1906270300	B.4
SAIL-M8G-4-3.0V	1927250300	B.4
SAIL-M8G-4-5.0Q	1926990500	B.4
SAIL-M8G-4-5.0Q	1906270500	B.4
SAIL-M8G-4-5.0V	1927250500	B.4
SAIL-M8G-4S1.5U	1906570150	B.21
SAIL-M8G-4-X.XQ	1926990000	B.4
SAIL-M8G-4-X.XU	1906270000	B.4
SAIL-M8G-4-X.XV	1927250000	B.4
SAIL-M8GM12G-3-1.5Q	1938100150	B.6
SAIL-M8GM12G-3-1.5U	1937950150	B.6
SAIL-M8GM12G-3-1.5V	1938230150	B.6
SAIL-M8GM12G-3-10Q	1938101000	B.6
SAIL-M8GM12G-3-10U	1937951000	B.6
SAIL-M8GM12G-3-10V	1938231000	B.6
SAIL-M8GM12G-3-3.0Q	1938100300	B.6
SAIL-M8GM12G-3-3.0U	1937950300	B.6

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SAISW-4/7-(KV)	1962620000	D.9
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SAISW-4/8S-M12 4P D-ZF	1803930001	D.15
SAISW-4/8S-M12 4P D-ZF	1803930001	D.5
SAISW-4/8S-M12-4P D-COD	1160550000	C.71
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SAISW-5/7	9456950000	D.8
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SAISW-M-4/8 M12	1803930000	D.12
SAISW-M-4/8 M12	1803930000	D.5
SAISW-M-5/8 M12	1803940000	C.31
SAISW-M-5/8 M12	1803940000	C.63
SAISW-M-5/8 M12	1803940000	D.12
SAISW-M-5/8 M12	1803940000	D.5
SAISW-M-5/8 M12 B-COD	1944570000	C.11
SAISW-M-5/8 M12 B-COD	1944570000	D.14
SAISW-M-5/8 M12 B-COD	1944570000	D.5
SAISW-M8-3P(TL)	1920990000	D.19
SAISW-M8-3P(TL)	1920990000	D.6
SAISW-M8-4P(TL)	1921000000	D.19
SAISW-M8-4P(TL)	1921000000	D.6
SAIS-ZW-5	9457540000	D.26
SAIS-ZWW	1837560000	D.26
SAI-WDF 5P B M12 60mm	1820690000	D.26
SAI-WDF 5P M12 60mm	1819450000	C.28
SAI-WDF 5P M12 60mm	1819450000	C.29
SAI-WDF 5P M12 60mm	1819450000	D.26
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SAI-Y-4S-M12/M12	1060730000	D.25
SAI-Y-5S B2-4 2M12	1783410000	D.25
SAI-Y-5S- M12/M12	1826880000	D.25
SAI-Y-5S M12/M12 2Bo	1881710000	D.26
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Screwty M12f KO o. SD	1900120000	I.5
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Screwty- M8 F	1900030000	I.5
Screwty M8 KO o. SD	1900110000	I.5
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Screwty-M12 F-DM	1900021000	I.5
Screwty-M12-DM	1900001000	F.7
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SFC 2/12 NEUTRAL WS	1758320001	I.14
SFC 2/21 NEUTRAL BL	1805770000	I.14
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TM 203/18 V0	1798480000	I.15
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TM 4/12 HF/HB	1719840000	C.67
TM 4/12 HF/HB	1719840000	C.68
TM 4/12 HF/HB	1719840000	C.69
TM 4/18 HF/HB	1719850000	C.66
TM 4/18 HF/HB	1719850000	C.67
TM 4/18 HF/HB	1719850000	C.68
TM 4/18 HF/HB	1719850000	C.69
TM 4/18 HF/HB	1719850000	I.15
TM-I 12 NEUTRAL GE	1718411687	C.66
TM-I 12 NEUTRAL GE	1718411687	C.67
TM-I 12 NEUTRAL GE	1718411687	C.68
TM-I 12 NEUTRAL GE	1718411687	C.69
TM-I 18 NEUTRAL GE	1718431687	C.66
TM-I 18 NEUTRAL GE	1718431687	C.67
TM-I 18 NEUTRAL GE	1718431687	C.68
TM-I 18 NEUTRAL GE	1718431687	C.69
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TM-I 18 NEUTRAL WS	1718431044	I.15
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VG M16 - MS 1/EMV	1909500000	C.73
VG M16-1/K68	1909860000	C.73
VG M16-1/MS68	1909910000	C.73
VG M16-EXE MS	1737210000	C.73
VP M16-EXE SW	1737070000	C.73
VP M16-MS65	1777730000	C.73
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WK-1/4*(Screwty)	1862200000	I.5
WS 10/5 MC BEDRUCKT	1635010000	I.16
WS 10/5 MC NEUTRAL	1635000000	I.16
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1004320150	SAIL-M12GM12W-3L1.5T	B.27
1004330150	SAIL-M12BW-3L1.5T	B.15
1005270150	SAIL-ZW-M12BW-3-1.5U	B.37
1005460150	SAIL-ZW-M12BG-3-1.5U	B.37
1006920000	SAI-AU M12 BT 4A12AO2DIO	E.4
1006920000	SAI-AU M12 BT4A12AO2DIO	E.45
1006920000	SAI-AU M12 BT4A12AO2DIO	E.47
1006930000	SAI-AU M12 BT 16DI/8DO	E.4
1006930000	SAI-AU M12 BT 16DI/8DO	E.45
1006930000	SAI-AU M12 BT 16DI/8DO	E.46
1006940000	SAI-AU M12 BT 16DI	E.4
1006940000	SAI-AU M12 BT 16DI	E.45
1006940000	SAI-AU M12 BT 16DI	E.46
1006980000	SAI-AU M12 GW PB/BT 12I	E.4
1006980000	SAI-AU M12 GW PB/BT 12I	E.44
1006980000	SAI-AU M12 GW PB/BT 12I	E.45
1007000150	SAIL-M12BW-4-2L1.5T	B.15
1010000000		
1010060000	SAISM-M8-3P-(IF)	D.18
1010060000	SAISM-M8-3P-(IF)	D.6
1010070000	SAISM-M8-4P-(IF)	D.18
1010070000	SAISM-M8-4P-(IF)	D.6
1010080000	SAIBM-M8-3P-(IF)	D.18
1010080000	SAIBM-M8-3P-(IF)	D.6
1010090000	SAIBM-M8-4P-(IF)	D.18
1010090000	SAIBM-M8-4P-(IF)	D.6
1010840015	IE-C5DB4RE0015MCSXXX-X	C.68
1010840030	IE-C5DB4RE0030MCSXXX-X	C.68
1010840050	IE-C5DB4RE0050MCSXXX-X	C.68
1010840100	IE-C5DB4RE0100MCSXXX-X	C.68
1010850015	IE-C5DB4RE0015MCSMCS-E	C.68
1010850030	IE-C5DB4RE0030MCSMCS-E	C.68
1010850050	IE-C5DB4RE0050MCSMCS-E	C.68
1010850100	IE-C5DB4RE0100MCSMCS-E	C.68
1011970150	SAIL-M12GM12G-5-1.5T	B.25
1011990150	SAIL-M12GM12W-5-1.5T	B.25
1019490000	SAI-AU M12 EIP GW 16DI	E.32
1019490000	SAI-AU M12 EIP GW 16DI	E.33
1019490000	SAI-AU M12 EIP GW 16DI	E.4
1020000000		
1020930150	SAIL-M12GM12W-4-3LW1.5T	B.27
1021280000	SAISW-3/7	D.5
1021280000	SAISW-3/7	D.7
1021290000	SAISW-3/9	D.7
1021310000	SAIBW-3/7	D.5
1021310000	SAIBW-3/7	D.7
1021320000	SAIBW-3/9	D.7
1021470000	SAIS-3/7	D.7
1021480000	SAIS-3/9	D.5
1021480000	SAIS-3/9	D.7
1021490000	SAIB-3/7	D.7
1021510000	SAIB-3/9	D.5
1021510000	SAIB-3/9	D.7
1021650150	SAIL-M12G-5-1.5T	B.11
1021660150	SAIL-M12W-5-1.5T	B.11
1021670150	SAIL-M12BG-5-1.5T	B.11
1021690150	SAIL-M12BW-5-1.5T	B.11
1021710150	SAIL-M12GM12G-3-1.5T	B.25
1021720150	SAIL-M12GM12W-3-1.5T	B.25
1021730150	SAIL-M12GM12G-4-1.5T	B.25
1021740150	SAIL-M12GM12W-4-1.5T	B.25
1021750150	SAIL-M12G-3-1.5T	B.11
1021760150	SAIL-M12W-3-1.5T	B.11
1021770150	SAIL-M12G-4-1.5T	B.11
1021790150	SAIL-M12W-4-1.5T	B.11
1022940000	SAIH-SLL-3x0,34mm²(TPE)	B.51
1022950000	SAIH-SLL-4x0,34mm²(TPE)	B.51
1022960000	SAIH-SLL-5x0,34mm²(TPE)	B.51
1022970000	SAIH-SLL-3x0,25mm²(TPE)	B.51
1022980000	SAIH-SLL-4x0,25mm²(TPE)	B.51
1024050000	PRINTJET PRO 115V	I.15
1024140000	PJ PRO TNAW	I.15
1024310000	SAI-AU M8 PB GW 16DI	E.30
1024310000	SAI-AU M8 PB GW 16DI	E.31
1024310000	SAI-AU M8 PB GW 16DI	E.4
1025940015	IE-C5DD4UG0015MCSXXX-X	C.66
1025940030	IE-C5DD4UG0030MCSXXX-X	C.66
1025940050	IE-C5DD4UG0050MCSXXX-X	C.66
1025940100	IE-C5DD4UG0100MCSXXX-X	C.66
1025950015	IE-C5DD4UG0015MCSMCS-E	C.66
1025950030	IE-C5DD4UG0030MCSMCS-E	C.66
1025950050	IE-C5DD4UG0050MCSMCS-E	C.66
1025950100	IE-C5DD4UG0100MCSMCS-E	C.66
1026090000	SAI-ASI T FF small	C.65
1027040000	PJ PRO TNTK INK K	I.15
1027050000	PJ PRO TNTK INK C	I.15
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1044470030	IE-C5DD4UG0030MCSA20-E	C.66
1044470050	IE-C5DD4UG0050MCSA20-E	C.66
1044470100	IE-C5DD4UG0100MCSA20-E	C.66
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1051760000	SAI-4-S 3P M8 L OL	G.50
1057720000	SAI-6-S 3P M8 L SL	G.51
1057720000	SAI-6-S 3P M8 L SL	G.6
1057740150	SAIL-M12BG-3B-1.5Q	B.41
1057750150	SAIL-M12BG-4B-1.5Q	B.41
1057760150	SAIL-M12BW-5B-1.5Q	B.41
1057770150	SAIL-M12G-3B-1.5Q	B.41
1057780150	SAIL-M12G-4B-1.5Q	B.41
1057790150	SAIL-M12G-5B-1.5Q	B.41
1057800150	SAIL-M12W-3B-1.5Q	B.41
1057810150	SAIL-M12W-4B-1.5Q	B.41
1057820150	SAIL-M12W-5B-1.5Q	B.41
1057830150	SAIL-M12GM12G-3B-1.5Q	B.42
1057850150	SAIL-M12GM12G-5B-1.5Q	B.42
1057870150	SAIL-M12WM12G-3B-1.5Q	B.42
1057890150	SAIL-M12WM12G-5B-1.5Q	B.42
1057900150	SAIL-M12GM12W-3B-1.5Q	B.42
1057920150	SAIL-M12GM12W-5B-1.5Q	B.42
1058490150	SAIL-M12GM12G-3S1.5Q	B.28
1058500150	SAIL-M12GM12G-4S1.5Q	B.28
1058510150	SAIL-M12GM12G-5S1.5Q	B.28
1058530150	SAIL-M12G-PB-1.5E	C.6
1058540150	SAIL-M12BG-PB-1.5E	C.6
1058570150	SAIL-M12GM12G-PB-1.5E	C.7
1058630000	SAIH-CD-2x0.34/2x0.22-PUR	C.62
1059330015	IE-C5DD4UG0015MSSMCS-E	C.66
1059330030	IE-C5DD4UG0030MSSMCS-E	C.66
1059330050	IE-C5DD4UG0050MSSMCS-E	C.66
1059330100	IE-C5DD4UG0100MSSMCS-E	C.66
1059340015	IE-C5DB4RE0015MSSMCS-E	C.68
1059340030	IE-C5DB4RE0030MSSMCS-E	C.68
1059340050	IE-C5DB4RE0050MSSMCS-E	C.68
1059340100	IE-C5DB4RE0100MSSMCS-E	C.68
1059430000	SAI-8-M-4P M12 DIP	G.13
1059470150	SAIL-M12GM12W-3S1.5Q	B.28
1059480150	SAIL-M12GM12W-4S1.5Q	B.28
1059540150	SAIL-M12GM12W-5S1.5Q	B.28
1059650150	SAIL-M12W-4S1.5Q	B.16
1059720150	SAIL-M12WM12W-3S1.5Q	B.28
1059730150	SAIL-M12WM12W-4S1.5Q	B.28
1059740150	SAIL-M12WM12W-5S1.5Q	B.28
1059750015	IE-C5DD4UG0015MCAXXX-X	C.67
1059750030	IE-C5DD4UG0030MCAXXX-X	C.67
1059750050	IE-C5DD4UG0050MCAXXX-X	C.67
1059750100	IE-C5DD4UG0100MCAXXX-X	C.67
1059770015	IE-C5DD4UG0015MCSMCA-E	C.67
1059770030	IE-C5DD4UG0030MCSMCA-E	C.67
1059770050	IE-C5DD4UG0050MCSMCA-E	C.67
1059770100	IE-C5DD4UG0100MCSMCA-E	C.67
1059890015	IE-C5DD4UG0015MCAMCA-E	C.67
1059890030	IE-C5DD4UG0030MCAMCA-E	C.67
1059890050	IE-C5DD4UG0050MCAMCA-E	C.67
1059890100	IE-C5DD4UG0100MCAMCA-E	C.67
1059900015	IE-C5DB4RE0015MCAXXX-X	C.69
1059900030	IE-C5DB4RE0030MCAXXX-X	C.69
1059900050	IE-C5DB4RE0050MCAXXX-X	C.69
1059900100	IE-C5DB4RE0100MCAXXX-X	C.69
1059940015	IE-C5DB4RE0015MCSMCA-E	C.69
1059940030	IE-C5DB4RE0030MCSMCA-E	C.69
1059940050	IE-C5DB4RE0050MCSMCA-E	C.69
1059940100	IE-C5DB4RE0100MCSMCA-E	C.69
1059970015	IE-C5DB4RE0015MCAMCA-E	C.69
1059970030	IE-C5DB4RE0030MCAMCA-E	C.69
1059970050	IE-C5DB4RE0050MCAMCA-E	C.69
1059970100	IE-C5DB4RE0100MCAMCA-E	C.69
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1060110150	SAIL-M12G-CD-1.5B	C.58
1060120150	SAIL-M12BG-CD-1.5B	C.58
1060130150	SAIL-M12GM12G-CD-1.5B	C.59
1060730000	SAI-Y-4S-M12/M12	D.25
1061880150	SAIL-M12BG-5B-1.5Q	B.41
1061890150	SAIL-M12BW-3B-1.5Q	B.41
1061900150	SAIL-M12BW-4B-1.5Q	B.41
1061910150	SAIL-M12WM12W-3B-1.5Q	B.42
1061930150	SAIL-M12WM12W-5B-1.5Q	B.42
1061970150	SAIL-M12W-PB-1.5D	C.6
1061980150	SAIL-M12BW-CD-1.5A	C.58
1061990150	SAIL-M12GM12W-CD-1.5A	C.59
1062000000	SFC 2.5/12 MC NE WS	I.14
1062010000	SFC 2.5/12 MC NE GE	I.14
1062020000	SFC 2.5/12 MC NE RT	I.14
1062030000	SFC 2.5/12 MC NE BL	I.14
1062040000	SFC 2.5/12 MC SDR	I.14
1062050000	SFC 2.5/21 MC NE WS	I.14
1062070000	SFC 2.5/21 MC NE GE	I.14
1062080000	SFC 2.5/21 MC NE RT	I.14
1062090000	SFC 2.5/21 MC NE BL	I.14
1062110000	SFC 2.5/21 MC SDR	I.14
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1062180150	SAIL-M12BW-CD-1.5B	C.58
1062190150	SAIL-M12GM12W-CD-1.5B	C.59
1062210150	SAIL-M12WM12W-CD-1.5B	C.59
1062220150	SAIL-M12W-CD-1.5A	C.58
1062300150	SAIL-M12BW-PB-1.5D	C.6
1062310150	SAIL-M12GM12W-PB-1.5D	C.7
1062330150	SAIL-M12WM12W-PB-1.5D	C.7
1062340150	SAIL-M12W-PB-1.5E	C.6
1062370150	SAIL-M12BW-PB-1.5E	C.6
1062380150	SAIL-M12GM12W-PB-1.5E	C.7
1062400150	SAIL-M12WM12W-PB-1.5E	C.7
1070000000		
1070630000	SAI-4-F 5P M12 L 5M	G.10
1070640000	SAI-4-F 5P M12 L 10M	G.10
1070650000	SAI-4-F 4P M12 L 5M	G.10
1070660000	SAI-4-F 4P M12 L 10M	G.10
1077750150	SAIL-M12G-4-1.5QGE	B.11
1078720000	SAIE-M8S-4-0.5U-FP-M8	D.31
1078730000	SAIE-M8S-3-0.5U-FP-M8	D.31
1078750150	SAIL-M8WM8G-3-1.5Q	B.32
1090000000		
1092910150	SAIL-M12BG-3-1.5QGE	B.11
1092920150	SAIL-M12BG-4-1.5QGE	B.11
1092930150	SAIL-M12BG-5-1.5QGE	B.11
1092940150	SAIL-M12BW-3-1.5QGE	B.11
1092950150	SAIL-M12BW-4-2L1.5QGE	B.15
1092960150	SAIL-M12BW-4-1.5QGE	B.11
1092970150	SAIL-M12BW-5-1.5QGE	B.11
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1092990150	SAIL-M12G-5-1.5QGE	B.11
1093000150	SAIL-M12GM12G-2/4-1.5QGE	B.26
1093010150	SAIL-M12GM12G-3-1.5QGE	B.25
1093020150	SAIL-M12GM12G-4-1.5QGE	B.25
1093030150	SAIL-M12GM12G-5-1.5QGE	B.25
1093040150	SAIL-M12GM12W-2/4-1.5QGE	B.26
1093050150	SAIL-M12GM12W-3-1.5QGE	B.25
1093060150	SAIL-M12GM12W-4-3LW1.5QGE	B.27
1093070150	SAIL-M12GM12W-4-1.5QGE	B.25
1093080150	SAIL-M12GM12W-5-1.5QGE	B.25
1093110150	SAIL-M12GM8W-3L1.5QGE	B.31
1093130150	SAIL-M12GM8W-4L1.5QGE	B.31
1093150150	SAIL-M12GM8WR-3-1.5QGE	B.30
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1093170150	SAIL-M12W-4-1.5QGE	B.11
1093180150	SAIL-M12W-5-1.5QGE	B.11
1093190150	SAIL-M8BG-3-1.5QGE	B.18
1093200150	SAIL-M8BG-4-1.5QGE	B.18
1093210150	SAIL-M8BW-3L1.5QGE	B.20
1093220150	SAIL-M8BW-3-1.5QGE	B.18
1093230150	SAIL-M8BW-4L1.5QGE	B.20
1093240150	SAIL-M8BW-4-1.5QGE	B.18
1093250150	SAIL-ZW-M8BG-3-1.5QGE	B.39
1093260150	SAIL-ZW-M8BW-3-1.5QGE	B.39
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1104470150	SAIL-M8GM8G-3-1.5QGE	B.32
1106670150	SAIP-M12W-3-1.5U	B.12
1106680150	SAIP-M12W-4-1.5U	B.12
1106690150	SAIP-M12W-5-1.5U	B.12
1106730150	SAIP-M12BG-3-1.5U	B.12
1106740150	SAIP-M12BG-4-1.5U	B.12
1106750150	SAIP-M12BG-5-1.5U	B.12
1106770150	SAIP-M12BW-3-1.5U	B.12
1106780150	SAIP-M12BW-4-1.5U	B.12
1106790150	SAIP-M12BW-5-1.5U	B.12
1106800150	SAIP-M12G-3-1.5U	B.12
1106810150	SAIP-M12G-4-1.5U	B.12
1106820150	SAIP-M12G-5-1.5U	B.12
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1114880150	SAIL-M12BW-3L1.5QGE	B.15
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1140640000	PB-DP SUB-D M12 TERM PS	C.17
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1609880000	WS 15/5 MC NEUTRAL	L.16
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1701230000	SAI-4-M 5P M12	G.8
1701231000	SAI-4-M 5P M12 UT	G.8
1701231000	SAI-4-M 5P M12 UT	G.42
1701232000	SAI-4-MH-5P M12	G.31
1701232000	SAI-4-MH-5P M12	G.34
1701232000	SAI-4-MHD-5P M12	G.31
1701233000	SAI-4-MHD-5P M12	G.35
1701240000	SAI-6-M 5P M12	G.6
1701240000	SAI-6-M 5P M12	G.8
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1701242000	SAI-6-MH-5P M12	G.31
1701242000	SAI-6-MH-5P M12	G.34
1701243000	SAI-6-MHD-5P M12	G.31
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1701250000	SAI-8-M 5P M12	G.6
1701250000	SAI-8-M 5P M12	G.8
1701251000	SAI-8-M 5P M12 UT	G.8
1701251000	SAI-8-M 5P M12 UT	G.42
1701252000	SAI-8-MH-5P M12	G.31
1701252000	SAI-8-MH-5P M12	G.34
1701253000	SAI-8-MHD-5P M12	G.31
1701253000	SAI-8-MHD-5P M12	G.35
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1705920000	SAI-4-M 4P M12	G.8
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1705921000	SAI-4-M 4P M12 UT	G.42
1705922000	SAI-4-MH-4P M12	G.31
1705922000	SAI-4-MH-4P M12	G.34
1705922000	SAI-4-MH-4P M12	G.31
1705922000	SAI-4-MH-4P M12	G.31
1705923000	SAI-4-MHD-4P M12	G.35
1705930000	SAI-6-M 4P M12	G.6
1705930000	SAI-6-M 4P M12	G.8
1705931000	SAI-6-M 4P M12 UT	G.8
1705931000	SAI-6-M 4P M12 UT	G.42
1705932000	SAI-6-MH-4P M12	G.31
1705932000	SAI-6-MH-4P M12	G.34
1705933000	SAI-6-MHD-4P M12	G.35
1705940000	SAI-8-M 4P M12	G.6
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1705941000	SAI-8-M 4P M12 UT	G.8
1705941000	SAI-8-M 4P M12 UT	G.42
1705942000	SAI-8-MH-4P M12	G.31
1705942000	SAI-8-MH-4P M12	G.34
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1718411687	TM-I 12 NEUTRAL GE	C.67
1718411687	TM-I 12 NEUTRAL GE	C.68
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1718431044	TM-I 18 NEUTRAL WS	L.15
1718431687	TM-I 18 NEUTRAL GE	C.66
1718431687	TM-I 18 NEUTRAL GE	C.67
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1719840000	TM 4/12 HF/HB	C.66
1719840000	TM 4/12 HF/HB	C.67
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1719850000	TM 4/18 HF/HB	C.67
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1724750000	SAI-4/6/8-MH BL3.5	G.8
1724750050	SAI-4/6/8-MH BL3.5 SV	G.15
1724750050	SAI-4/6/8-MH BL3.5 SV	G.26
1724750050	SAI-4/6/8-MH BL3.5 SV	G.31
1724752000	SAI-4/6/8-MH-MH BL 3.5	G.31
1724752000	SAI-4/6/8-MH-MH BL 3.5	G.34
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1747320001	SFC 1/12 NEUTRAL WS	L.14
1747320002	SFC 1/12 NEUTRAL BL	L.14
1747320003	SFC 1/12 NEUTRAL RT	L.14
1747320004	SFC 1/12 NEUTRAL GE	L.14

1750000000

1752080000	SAI-4/6/8-MH BLZF3.5	G.26
1752080000	SAI-4/6/8-MH BLZF3.5	G.8
1752080050	SAI-4/6/8-MH BLZF3.5 SV	G.15
1752080050	SAI-4/6/8-MH BLZF3.5 SV	G.26
1758320001	SFC 2/12 NEUTRAL WS	L.14
1758320002	SFC 2/12 NEUTRAL BL	L.14
1758320003	SFC 2/12 NEUTRAL RT	L.14
1758320004	SFC 2/12 NEUTRAL GE	L.14

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1760040000	SAI-4-M 3P IDC	G.26
1760041000	SAI-4-M 3P IDC UT	G.26
1760050000	SAI-6-M 3P IDC	G.26
1760051000	SAI-6-M 3P IDC UT	G.26
1760060000	SAI-8-M 3P IDC	G.26
1760061000	SAI-8-M 3P IDC UT	G.26
1766660000	SAI-4-F 4P IDC PUR 5M	G.27
1766670000	SAI-4-F 4P IDC PUR 10M	G.27
1766680000	SAI-6-F 4P IDC PUR 5M	G.27
1766690000	SAI-6-F 4P IDC PUR 10M	G.27
1766700000	SAI-8-F 4P IDC PUR 5M	G.27
1766710000	SAI-8-F 4P IDC PUR 10M	G.27
1766720000	SAI-4-F 3P IDC PUR 5M	G.27
1766730000	SAI-4-F 3P IDC PUR 10M	G.27
1766740000	SAI-6-F 3P IDC PUR 5M	G.27
1766750000	SAI-6-F 3P IDC PUR 10M	G.27
1766760000	SAI-8-F 3P IDC PUR 5M	G.27
1766770000	SAI-8-F 3P IDC PUR 10M	G.27
1766780000	SAI-4-M 4P IDC	G.26
1766781000	SAI-4-M 4P IDC UT	G.26
1766790000	SAI-6-M 4P IDC	G.26
1766791000	SAI-6-M 4P IDC UT	G.26
1766800000	SAI-8-M 4P IDC	G.26
1766801000	SAI-8-M 4P IDC UT	G.26
1766810000	SAI-SA-4-IDC	D.20
1766810000	SAI-SA-4-IDC	G.24
1767880000	SAI-8-M 5P M12 ZF III	G.8

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1777730000	VP M16-MS65	C.73
1779080001	SFC 1/21 NEUTRAL WS	L.14
1779080002	SFC 1/21 NEUTRAL BL	L.14
1779080003	SFC 1/21 NEUTRAL RT	L.14
1779080004	SFC 1/21 NEUTRAL GE	L.14

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1781060000	SAI-8-M 5P M12 NPN	G.8
1781520000	SAI-SK Stecker M12	D.27
1781520000	SAI-SK Stecker M12	E.10
1781520000	SAI-SK Stecker M12	E.14
1781520000	SAI-SK Stecker M12	E.18
1781520000	SAI-SK Stecker M12	E.22
1781520000	SAI-SK Stecker M12	E.26
1781520000	SAI-SK Stecker M12	E.31
1781520000	SAI-SK Stecker M12	E.33
1781520000	SAI-SK Stecker M12	E.35
1781520000	SAI-SK Stecker M12	E.45
1781540001	SAIB-4-IDC-M12 small	D.5
1781540001	SAIB-4-IDC-M12 small	D.22
1781550001	SAIS-4-IDC M12 small	D.22
1781550001	SAIS-4-IDC M12 small	D.5
1782740000	SAI-8-MMH 5P M12 ZF	G.31
1782740000	SAI-8-MMH 5P M12 ZF	G.33
1782750000	SAI-4/6/8-MH MH BLZF3.5	G.31
1782750000	SAI-4/6/8-MH MH BLZF3.5	G.34
1782760000	SAI-8-MH-5P M12 ZF III	G.31
1782760000	SAI-8-MH-5P M12 ZF III	G.34
1783410000	SAI-Y-5S B2-4 2M12	D.25
1783420000	SAI-Y-4-4/2-4 M12/8	D.25
1783430000	SAI-Y-5S PARA 2M12	D.25
1783430000	SAI-Y-5S PARA 2M12	F.7
1783490000	SAI-8-MM 5P M12	G.31
1783490000	SAI-8-MM 5P M12	G.33
1783490000	SAI-8-MM 5P M12	G.6
1783491000	SAI-8-MM 5P M12 UT	G.33
1783500000	SAI-4-MM 5P M12	G.31
1783500000	SAI-4-MM 5P M12	G.33
1783500000	SAI-4-MM 5P M12	G.6
1783510000	SAI-8-MMS 5P M12	G.31
1783510000	SAI-8-MMS 5P M12	G.33
1783510000	SAI-8-MMS 5P M12	G.6

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1783520000	SAI-4-MMS 5P M12	G.31
1783520000	SAI-4-MMS 5P M12	G.33
1783520000	SAI-4-MMS 5P M12	G.36
1783530000	SAI-8-MMS 4P M12	G.31
1783530000	SAI-8-MMS 4P M12	G.33
1783530000	SAI-8-MMS 4P M12	G.6
1783540000	SAI-4-MMS 4P M12	G.31
1783540000	SAI-4-MMS 4P M12	G.33
1783540000	SAI-4-MMS 4P M12	G.6
1784030001	SAIB-3-IDC-M8 small	D.24
1784030001	SAIB-3-IDC-M8 small	D.6
1784040001	SAIS-3-IDC M8 small	D.24
1784040001	SAIS-3-IDC M8 small	D.6
1784050001	SAIB-4-IDC-M8 small	D.24
1784050001	SAIB-4-IDC-M8 small	D.6
1784060001	SAIS-4-IDC M8 small	D.24
1784060001	SAIS-4-IDC M8 small	D.6
1784500000	SAI-8-F 5P 20M 0.5/1.0U	G.9
1784510000	SAI-8-F 5P 15M 0.5/1.0U	G.9
1784570000	SAI-8-F 4P M8 PUR 10M	G.48
1784580000	SAI-8-F 4P M8 PUR 5M	G.48
1784590000	SAI-4-F 4P M8 PUR 10M	G.48
1784600000	SAI-4-F 4P M8 PUR 5M	G.48
1784610000	SAI-8-F 3P M8 PUR 10M	G.48
1784620000	SAI-8-F 3P M8 PUR 5M	G.48
1784630000	SAI-4-F 3P M8 PUR 10M	G.48
1784640000	SAI-4-F 3P M8 PUR 5M	G.48
1784650000	SAI-8-M23 4P M8	G.49
1784650000	SAI-8-M23 4P M8	H.25
1784660000	SAI-4-M23 4P M8	G.49
1784660000	SAI-4-M23 4P M8	H.25
1784670000	SAI-8-M 3P M8	G.48
1784680000	SAI-4-M 3P M8	G.48
1784690000	SAI-8-M 4P M8	G.48
1784700000	SAI-4-M 4P M8	G.48
1784740000	SAIS-M-5/8S M12 5P A-COD	C.31
1784740000	SAIS-M-5/8S M12 5P A-COD	C.63
1784740000	SAIS-M-5/8S M12 5P A-COD	D.12
1784740000	SAIS-M-5/8S M12 5P A-COD	D.5
1784740002	SAIBM-4/8S-M12 4P A-ZF	D.5
1784750000	SAIB-M-5/8S M12 5P A-COD	C.31
1784750000	SAIB-M-5/8S M12 5P A-COD	C.63
1784750000	SAIB-M-5/8S M12 5P A-COD	D.12
1784750000	SAIB-M-5/8S M12 5P A-COD	D.5
1784760000	SAIEND CAN-M12 5P A-COD	E.14
1784760000	SAIEND CAN-M12 5P A-COD	E.18
1784760000	SAIEND CAN-M12 5P A-COD	E.33
1784770000	SAIEND PB M12 5P B-COD	E.10
1784770000	SAIEND PB M12 5P B-COD	E.31
1784770000	SAIEND PB M12 5P B-COD	E.45
1784780000	SAIBM 5/8S M12 5P B-COD	C.11
1784780000	SAIBM 5/8S M12 5P B-COD	D.13
1784780000	SAIBM 5/8S M12 5P B-COD	D.5
1784790000	SAISM 5/8S M12 5P B-COD	C.11
1784790000	SAISM 5/8S M12 5P B-COD	D.13
1784790000	SAISM 5/8S M12 5P B-COD	D.5
1785100100	FBC PA M12 M-FM 1M	C.28
1785100200	FBC PA M12 M-FM 2M	C.28
1785100500	FBC PA M12 M-FM 5M	C.28
1785101000	FBC PA M12 M-FM 10M	C.28
1785110100	FBC PA M12 FM 1M	C.28
1785110200	FBC PA M12 FM 2M	C.28
1785110500	FBC PA M12 FM 5M	C.28
1785111000	FBC PA M12 FM 10M	C.28
1785120100	FBC PA M12 M 1M	C.28
1785120200	FBC PA M12 M 2M	C.28
1785120500	FBC PA M12 M 5M	C.28
1785121000	FBC PA M12 M 10M	C.28
1785130100	FBCEX PA M12 M-FM 1M	C.29
1785130200	FBCEX PA M12 M-FM 2M	C.29
1785130500	FBCEX PA M12 M-FM 5M	C.29
1785131000	FBCEX PA M12 M-FM 10M	C.29
1785140100	FBCEX PA M12 FM 1M	C.29
1785140200	FBCEX PA M12 FM 2M	C.29
1785140500	FBCEX PA M12 FM 5M	C.29
1785141000	FBCEX PA M12 FM 10M	C.29
1785150100	FBCEX PA M12 M 1M	C.29
1785150200	FBCEX PA M12 M 2M	C.29
1785150500	FBCEX PA M12 M 5M	C.29
1785151000	FBCEX PA M12 M 10M	C.29
1789190000	SAI-8-MF 4P PUR 10M M12	G.42

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1791450400	SAI-4/6/8-MHF 4P PUR 4M	G.42
1791450600	SAI-4/6/8-MHF 4P PUR 6M	G.42
1791450900	SAI-4/6/8-MHF 4P PUR 9M	G.42
1791451400	SAI-4/6/8-MHF 4P PUR14M	G.42
1791452000	SAI-4/6/8-MHF 4P PUR20M	G.42
1791452800	SAI-4/6/8-MHF 4P PUR28M	G.42
1791453400	SAI-4/6/8-MHF 4P PUR34M	G.42
1791460400	SAI-4/6/8-MHF 5P PUR 4M	G.42
1791460600	SAI-4/6/8-MHF 5P PUR 6M	G.42
1791460900	SAI-4/6/8-MHF 5P PUR 9M	G.42
1791461400	SAI-4/6/8-MHF 5P PUR14M	G.42
1791461600	SAI-4/6/8-MHF 5P PUR16M	G.42
1791462000	SAI-4/6/8-MHF 5P PUR20M	G.42
1791462800	SAI-4/6/8-MHF 5P PUR28M	G.42
1791463400	SAI-4/6/8-MHF 5P PUR34M	G.42
1791464000	SAI-4/6/8-MHF 5P PUR40M	G.42

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1813200000	SFC 0/21 NEUTRAL RT	I.14
1813210000	SFC 0/21 NEUTRAL GE	I.14
1813220000	SFC 0/21 NEUTRAL BL	I.14
1813240000	SFC 0/30 NEUTRAL WS	I.14
1813250000	SFC 0/30 NEUTRAL RT	I.14
1813260000	SFC 0/30 NEUTRAL GE	I.14
1813270000	SFC 0/30 NEUTRAL BL	I.14
1814890000	SAIE-M12B-5-0.5U-PG9	D.30
1814990000	SAI-8-F 5P NPN-PNP 5M	G.38
1815670000	SAIL-M12WM12W-3-X.XU	B.7
1815670150	SAIL-M12WM12W-3-1.5U	B.25
1815670150	SAIL-M12WM12W-3-1.5U	B.7
1815670300	SAIL-M12WM12W-3-3.0U	B.7
1815670500	SAIL-M12WM12W-3-5.0U	B.7
1815671000	SAIL-M12WM12W-3-10U	B.7
1816610000	SAI-8-M 5P M12 DL2	G.8
1818090100	SAIS-M23-19P-AN-1.0M	H.22
1818140100	SAIB-M23-19P-AN-1.0M	H.22
1818160100	SAIS-M23-19P-ST-1.0M	H.22
1818180100	SAIB-M23-19P-ST-1.0M	H.22
1819450000	SAI-WDF 5P M12 60mm	C.28
1819450000	SAI-WDF 5P M12 60mm	C.29
1819450000	SAI-WDF 5P M12 60mm	D.26

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1820690000	SAI-WDF 5P B M12 60mm	D.26
1821050000	SAIL-M12WM12G-3-X.XU	B.6
1821050150	SAIL-M12WM12G-3-1.5U	B.6
1821050300	SAIL-M12WM12G-3-3.0U	B.6
1821050500	SAIL-M12WM12G-3-5.0U	B.6
1821051000	SAIL-M12WM12G-3-10U	B.6
1824570000	SAIL-M8GM8B-3-X.XU	B.4
1824570150	SAIL-M8GM8B-3-1.5U	B.32
1824570150	SAIL-M8GM8B-3-1.5U	B.4
1824570300	SAIL-M8GM8B-3-3.0U	B.4
1824570500	SAIL-M8GM8B-3-5.0U	B.4
1824571000	SAIL-M8GM8B-3-10U	B.4
1824580000	SAIL-M8GM8W-3-X.XU	B.5
1824580150	SAIL-M8GM8W-3-1.5U	B.32
1824580150	SAIL-M8GM8W-3-1.5U	B.5
1824580300	SAIL-M8GM8W-3-3.0U	B.5
1824580500	SAIL-M8GM8W-3-5.0U	B.5
1824581000	SAIL-M8GM8W-3-10U	B.5
1824590000	SAIL-M8G-3-X.XU	B.4
1824590150	SAIL-M8G-3-1.5U	B.18
1824590150	SAIL-M8G-3-1.5U	B.4
1824590300	SAIL-M8G-3-3.0U	B.4
1824590500	SAIL-M8G-3-5.0U	B.4
1824591000	SAIL-M8G-3-10U	B.4
1826880000	SAI-Y-SS- M12/M12	D.25
1827010150	SAIL-M8BWR-3-1.5U	B.19
1827020150	SAIL-M8BGR-3-1.5U	B.19
1828610000	SAI-8-F 4P M8 L 10M	G.52
1828610000	SAI-8-F 4P M8 L 10M	G.6
1828620000	SAI-8-F 4P M8 L 5M	G.52
1828620000	SAI-8-F 4P M8 L 5M	G.6
1828630000	SAI-12-F 3P M8 L 10M	G.52
1828630000	SAI-12-F 3P M8 L 10M	G.6
1828640000	SAI-12-F 3P M8 L 5M	G.52
1828640000	SAI-12-F 3P M8 L 5M	G.6
1828650000	SAI-10-F 3P M8 L 10M	G.52
1828650000	SAI-10-F 3P M8 L 10M	G.6
1828660000	SAI-10-F 3P M8 L 5M	G.52
1828660000	SAI-10-F 3P M8 L 5M	G.6
1828670000	SAI-8-F 3P M8 L 10M	G.52
1828670000	SAI-8-F 3P M8 L 10M	G.6
1828680000	SAI-8-F 3P M8 L 5M	G.52
1827010150	SAI-8-F 3P M8 L 5M	G.6
1828690000	SAI-6-F 3P M8 L 10M	G.52
1828690000	SAI-6-F 3P M8 L 10M	G.6
1828700000	SAI-6-F 3P M8 L 5M	G.52
1828700000	SAI-6-F 3P M8 L 5M	G.6
1828710000	SAI-4-F 3P M8 L 10M	G.52
1828710000	SAI-4-F 3P M8 L 10M	G.6
1828720000	SAI-4-F 3P M8 L 5M	G.52
1828720000	SAI-4-F 3P M8 L 5M	G.6
1828730000	SAI-6-S 3P M8 L	G.50
1828730000	SAI-6-S 3P M8 L	G.6
1828740000	SAI-4-S 3P M8 L	G.50
1828740000	SAI-4-S 3P M8 L	G.6

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1831020000	SAI-8-M16 4P M12	G.12
1836910000	SAIE-M12B-5-0.5U-M16	D.29
1836960000	SAIB-8/9	D.5
1836960000	SAIB-8/9	D.8
1836970000	SAIS-8/9	D.5
1836970000	SAIS-8/9	D.8
1837560000	SAIS-ZWW	D.26

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1845120150	SAIL-VSA-1.5U(0.5)	B.49
1845140150	SAIL-VSB-1.5U(0.5)	B.50
1845160150	SAIL-VSBD-1.5U(0.5)	B.50
1845800000	SAI-4-F 4P M5 L10M	G.56
1845810000	SAI-8-F 4P M5 L10M	G.56
1845820000	SAI-4-F 3P M5 L10M	G.56

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1845830000	SAI-8-F 3P M5 L10M	G.56
1845840000	SAI-4-S 4P M5	G.56
1845850000	SAI-8-S 3P M5	G.56
1845860000	SAI-8-S16/19P 4P M5	G.57
1845870000	SAI-4-S16 4P M5	G.57
1845880000	SAI-8-S16 3P M5	G.57
1845890000	SAI-4-S16 3P M5	G.57
1847560000	SAI-8-B 5P M12 SL	G.39
1847920000	SAI-8-S 4P FC	G.18
1847920000	SAI-8-S 4P FC	H.23
1847930000	SAI-4-F 5P FC 10M	G.17
1847940000	SAI-4-F 5P FC 2M	G.17
1847950000	SAI-4-F 5P FC 5M	G.17
1847960000	SAI-4-S 4P FC	G.18
1847960000	SAI-4-S 4P FC	H.23
1847970000	SAI-4-S 5P FC	G.18
1847970000	SAI-4-S 5P FC	H.23
1847980000	SAI-8-F 4P FC 10M	G.17
1847990000	SAI-8-F 4P FC 2M	G.17
1848000000	SAI-8-F 4P FC 5M	G.17
1848010000	SAI-8-F 5P FC 10M	G.17
1848020000	SAI-8-F 5P FC 2M	G.17
1848030000	SAI-8-F 5P FC 5M	G.17
1848040000	SAI-8-S 5P FC	G.18
1848040000	SAI-8-S 5P FC	H.23
1848050000	SAI-4-F 4P FC 10M	G.17
1848060000	SAI-4-F 4P FC 5M	G.17
1848070000	SAI-8-M 5P FC	G.20
1848080000	SAI-4-F 4P FC 2M	G.17
1849670000	SAI-6-F 4P M8 L 10M	G.52
1849670000	SAI-6-F 4P M8 L 10M	G.6
1849680000	SAI-4-F 4P M8 L 5M	G.52
1849680000	SAI-4-F 4P M8 L 5M	G.6
1849690000	SAI-4-F 4P M8 L 10M	G.52
1849690000	SAI-4-F 4P M8 L 10M	G.6
1849700000	SAI-6-F 4P M8 L 5M	G.52
1849700000	SAI-6-F 4P M8 L 5M	G.6

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1851740000	SAI-4-F 3P M5 L5M	G.56
1851750000	SAI-8-F 4P M5 L5M	G.56
1851760000	SAI-8-F 3P M5 L5M	G.56
1851770000	SAI-4-F 4P M5 L5M	G.56
1852720000	SAIS-3-IDC (0,75) M12	D.23
1852730000	SAIB-3-IDC (0,75) M12	D.23
1852730000	SAIB-3-IDC (0,75) M12	D.5
1852740000	SAIS-4-IDC (0,75) M12	D.23
1852740000	SAIS-4-IDC (0,75) M12	D.5
1852750000	SAIB-4-IDC (0,75) M12	D.23
1854000000	SAI-4-M 5P M12 ZF	G.8
1854060150	SAIL-M5G-3P 1.5U	B.22
1855310000	SAI-K S5	D.27
1856110000	SAIE-M12B-5-0.5U-FP-M16	D.29
1856120000	SAIE-M12S-5-0.5U-PG9	D.30
1856130000	SAIE-M8B-3-0.5U-FP-M8	D.31
1856140000	SAIE-M8B-4-0.5U-FP-M8	D.31
1857550000	SAIL-M8W-3-X.XU	B.4
1857550150	SAIL-M8W-3-1.5U	B.18
1857550150	SAIL-M8W-3-1.5U	B.4
1857550300	SAIL-M8W-3-3.0U	B.4
1857550500	SAIL-M8W-3-5.0U	B.4
1857551000	SAIL-M8W-3-10U	B.4
1857560000	SAIL-M8W-4-X.XU	B.4
1857560150	SAIL-M8W-4-1.5U	B.18
1857560150	SAIL-M8W-4-1.5U	B.4
1857560300	SAIL-M8W-4-3.0U	B.4
1857560500	SAIL-M8W-4-5.0U	B.4
1857561000	SAIL-M8W-4-10U	B.4
1857660000	SAIL-M8GM8W-4-X.XU	B.5
1857660150	SAIL-M8GM8W-4-1.5U	B.32
1857660150	SAIL-M8GM8W-4-1.5U	B.5
1857660300	SAIL-M8GM8W-4-3.0U	B.5
1857660500	SAIL-M8GM8W-4-5.0U	B.5
1857661000	SAIL-M8GM8W-4-10U	B.5
1857670000	SAIL-M8WM8W-3-X.XU	B.5
1857670150	SAIL-M8WM8W-3-1.5U	B.32
1857670150	SAIL-M8WM8W-3-1.5U	B.5
1857670300	SAIL-M8WM8W-3-3.0U	B.5
1857670500	SAIL-M8WM8W-3-5.0U	B.5
1857671000	SAIL-M8WM8W-3-10U	B.5
1857680000	SAIL-M8WM8W-4-X.XU	B.5
1857680150	SAIL-M8WM8W-4-1.5U	B.32
1857680300	SAIL-M8WM8W-4-3.0U	B.5
1857680500	SAIL-M8WM8W-4-5.0U	B.5
1857681000	SAIL-M8WM8W-4-10U	B.5
1857690150	SAIL-VSA-M12W-1.5U	B.45
1857700150	SAIL-VSB-M12W-1.5U	B.46
1857710150	SAIL-VSBD-M12W-1.5U	B.46
1857720150	SAIL-VSC-M12W-1.5U	B.47
1857730150	SAIL-VSCD-M12W-1.5U	B.47
1859110000	SAI-4-SH 4P FC	G.19
1859110000	SAI-4-SH 4P FC	H.24
1859120000	SAI-8-SH 4P FC	G.19
1859120000	SAI-8-SH 4P FC	H.24
1859130000	SAI-4-SH 5P FC	G.19
1859130000	SAI-4-SH 5P FC	H.24
1859140000	SAI-8-SH 5P FC	G.19
1859140000	SAI-8-SH 5P FC	H.24

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1861090000	SAIE-M12S-4-0.5U-M16	D.29
1861100000	SAIE-M12S-8-0.5U-M16	D.29
1861120000	SAIE-M12B-4-0.5U-M16	D.29
1861140000	SAIE-M12B-8-0.5U-M16	D.29
1861160000	SAIE-M12S-4-0.5U-FP-M16	D.29
1861170000	SAIE-M12S-5-0.5U-FP-M16	D.29
1861180000	SAIE-M12S-8-0.5U-FP-M16	D.29
1861190000	SAIE-M12B-4-0.5U-FP-M16	D.29
1861210000	SAIE-M12B-8-0.5U-FP-M16	D.29
1861220000	SAIE-M12S-4-0.5U-PG9	D.30
1861220001	SAIE-M12S-4-0.5U-AEH-VA	C.33
1861230000	SAIE-M12S-5-0.5U-M16	D.29
1861240000	SAIE-M12S-8-0.5U-PG9	D.30
1861250000	SAIE-M12B-4-0.5U-PG9	D.30
1861270000	SAIE-M12B-8-0.5U-PG9	D.30
1861280000	SAIE-M8R-3-0.5U-FP-M8	D.31
1861290000	SAIE-M8R-4-0.5U-FP-M8	D.31
1861530000	SAI-8-M 5P Ex Z22	G.60
1861540000	SAI-4-S 5P CNOMO	G.21
1861550000	SAI-8-F 5P CNOMO 5M	G.21
1861560000	SAI-4-F 5P CNOMO 10M	G.21
1861570000	SAI-4-F 5P CNOMO 5M	G.21
1861580000	SAI-8-S 5P CNOMO	G.21
1861590000	SAI-8-F 5P CNOMO 10M	G.21
1861840000	SAI-6-M 5P Ex Z22	G.60
1861850000	SAI-4-M 5P Ex Z22	G.60
1862200000	WK-1/4"(Screwty)	I.5
1864730000	SAIS-3-IDC-M12B-COD	D.13
1864730000	SAIS-3-IDC-M12B-COD	D.13
1864740000	SAIB-3-IDC-M12B-COD	C.12
1864740000	SAIB-3-IDC-M12B-COD	D.13
1865310000	SAI-8-F 5P M12 5M VA	G.28
1865870150	SAIL-M12BG-8-1.5U	B.14
1865870300	SAIL-M12BG-8-3.0U	B.14
1865870500	SAIL-M12BG-8-5.0U	B.14
1865871000	SAIL-M12BG-8-10U	B.14
1867410150	SAIL-M12BG-3S1.5Q	B.16
1868350000	SAI-4-M 4P Exi Z1 OL	G.59
1868360000	SAI-4-M 4P Exi Z1 IL	G.59
1868370000	SAI-8-M 4P Exi Z1 IL	G.59
1868560000	DAE M12 PA short	C.73

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1871680000	SAI-8-S12 3P M8 L	G.6
1871700150	SAIL-M5G-4P-1.5U	B.22
1871710000	SAIS-3/7	D.5
1872440000	SAI-8-SHB 5P FC	G.22
1872460000	SAI-8-SHB 5P F13 FC	G.23
1873030000	SAIE-M5S-4-0.2U	D.31
1873040000	SAIE-M5B-4-0.2U	D.31
1873050000	SAIE-M5S-3-0.2U	D.31
1873060000	SAIE-M5B-3-0.2U	D.31
1873070000	SAIB-VSA-3P/250/9-OB	D.32
1873080000	SAIB-VSA-4P/250/9-OB	D.32
1873090000	SAIB-VSA-3P/250/11-OB	D.32
1873100000	SAIB-VSA-4P/250/11-OB	D.32
1873110000	SAIB-VSA-3P/230/9/LD	D.32
1873120000	SAIB-VSA-3P/24/9/LD	D.32
1873130000	SAIB-VSA-3P/230/9-H/OB	D.32
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1873170000	SAIB-VSB-3P/250/9-OB	D.32
1873180000	SAIB-VSB-3P/24/9/LD	D.32
1873190000	SAIB-VSBD-3P/250/9-OB	D.32
1873200000	SAIB-VSC-3P/250/7-OB	D.32
1873210000	SAIB-VSC-4P/250/7-OB	D.32
1873220000	SAIB-VSCD-3P/250/7-OB	D.32
1873230000	SAIB-VSCD-4P/250/7-OB	D.32
1873240150	SAIL-M5W-4P-1.5U	B.22
1873250150	SAIL-M5BG-4P-1.5U	B.22
1873260150	SAIL-M5BW-3P-1.5U	B.22
1873270150	SAIL-M5BW-4P-1.5U	B.22
1873280150	SAIL-M5W-3P-1.5U	B.22
1873290150	SAIL-M5BG-3P-1.5U	B.22
1873300150	SAIL-M12G-PB-1.5D	C.6
1873310150	SAIL-M12GM12G-PB-1.5D	C.7
1873320150	SAIL-M12BG-PB-1.5D	C.6
1873250000	SAIL-M8GM8W-3LX.U	B.5
1877250150	SAIL-M8GM8W-3L1.5U	B.34
1877250150	SAIL-M8GM8W-3L1.5U	B.5
1877250300	SAIL-M8GM8W-3L3.0U	B.5
1877250500	SAIL-M8GM8W-3L5.0U	B.5
1877251000	SAIL-M8GM8W-3L10U	B.5
1877440100	SAIM-M23-12P-AN-1.0M	H.22
1877950000	SAI-10-S12 3P M8 L	G.50
1877950000	SAI-10-S12 3P M8 L	G.6
1879710500	SAIL-M12BG-12-5.0U	B.14
1879711000	SAIL-M12BG-12-10U	B.14

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1906330000	SAIL-M12WM8W-3-X.XU	B.5
1906330150	SAIL-M12WM8W-3-1.5U	B.29
1906330150	SAIL-M12WM8W-3-1.5U	B.5
1906330300	SAIL-M12WM8W-3-3.0U	B.5
1906330500	SAIL-M12WM8W-3-5.0U	B.5
1906331000	SAIL-M12WM8W-3-10U	B.5
1906340000	SAIL-M12WM8W-4-X.XU	B.5
1906340150	SAIL-M12WM8W-4-1.5U	B.29
1906340150	SAIL-M12WM8W-4-1.5U	B.5
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1906400150	SAIL-M8BW-4L1.5U	B.20
1906410000	SAIL-M12GM12W-4-2LX.XU	B.8
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1906410500	SAIL-M12GM12W-4-2L5.0U	B.8
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1906430150	SAIL-M12GM8W-4L1.5U	B.31
1906450150	SAIL-M8GM8W-4L1.5U	B.34
1906470150	SAIL-M12G-3S1.5Q	B.16
1906480150	SAIL-M12G-4S1.5Q	B.16
1906500150	SAIL-M12W-3S1.5Q	B.16
1906520150	SAIL-M12W-5S1.5Q	B.16
1906540150	SAIL-M12BW-5S1.5Q	B.16
1906550000	SAI-AU M8 PB 16DI	E.10
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1906560150	SAIL-M8G-3S1.5U	B.21
1906570150	SAIL-M8G-4S1.5U	B.21
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1906590150	SAIL-M8W-4S1.5U	B.21
1906600150	SAIL-M8BG-3S1.5U	B.21
1906610150	SAIL-M8BG-4S1.5U	B.21
1906620150	SAIL-M8BW-3S1.5U	B.21
1906630150	SAIL-M8BW-4S1.5U	B.21
1906640000	SAI-AU M8 PB 16DI/8DO	E.10
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1906660000	SAI-AU M12 CAN 16DI/8DO	E.12
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1906850000	SAI-AU M12 IE 16DI	E.4
1906860000	SAI-AU M12 IE 16DI/8DO	E.24
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1906910000	SAI-AU M12 EIP 16DI/8DO	E.4
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1906940000	SAI-AU M8 EIP 16DI/8DO	E.4
1906950150	SAIL-M12BW-3S1.5Q	B.16
1909500000	VG M16 - MS 1/EMV	C.73
1909860000	VG M16-1/K68	C.73
1909910000	VG M16-1/MS68	C.73
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1912110150	SAIL-ZW-M12BW-3L1.5U	B.37
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1920730000	SAIB 5/9-VA-B-COD	C.10
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1920970000	SAIBW-M8-3P(TL)	D.6
1920980000	SAIBW-M8-4P(TL)	D.19
1920980000	SAIBW-M8-4P(TL)	D.6
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1920990000	SAISW-M8-3P(TL)	D.6
1921000000	SAISW-M8-4P(TL)	D.19
1921000000	SAISW-M8-4P(TL)	D.6
1921010000	SAIBM-M8-3P(TL)	D.18
1921010000	SAIBM-M8-3P(TL)	D.6
1921020000	SAIBM-M8-4P(TL)	D.18
1921020000	SAIBM-M8-4P(TL)	D.6
1921030000	SAISM-M8-3P(TL)	D.18
1921030000	SAISM-M8-3P(TL)	D.6
1921040000	SAISM-M8-4P(TL)	D.18
1921040000	SAISM-M8-4P(TL)	D.6
1921050000	SAIS-5/7-(KV)	D.9
1921060000	SAIS-4/7-(KV)	D.9
1921070000	SAIB-5/7-(KV)	D.9
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1925300150	SAIL-M12GM12G-3-1.5V	B.6
1925300300	SAIL-M12GM12G-3-3.0V	B.6
1925300500	SAIL-M12GM12G-3-5.0V	B.6
1925301000	SAIL-M12GM12G-3-10V	B.6
1925310000	SAIL-M12GM12G-4-X.XV	B.6
1925310150	SAIL-M12GM12G-4-1.5V	B.25
1925310150	SAIL-M12GM12G-4-1.5V	B.6
1925310300	SAIL-M12GM12G-4-3.0V	B.6
1925310500	SAIL-M12GM12G-4-5.0V	B.6
1925311000	SAIL-M12GM12G-4-10V	B.6
1925320000	SAIL-M12GM12G-5-X.XV	B.7
1925320150	SAIL-M12GM12G-5-1.5V	B.25
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1925320300	SAIL-M12GM12G-5-3.0V	B.7
1925320500	SAIL-M12GM12G-5-5.0V	B.7
1925321000	SAIL-M12GM12G-5-10V	B.7
1925330150	SAIL-M12GM12G-2/4-1.5V	B.26
1925340000	SAIL-M12GM12W-3-X.XV	B.7
1925340150	SAIL-M12GM12W-3-1.5V	B.25
1925340150	SAIL-M12GM12W-3-1.5V	B.7
1925340300	SAIL-M12GM12W-3-3.0V	B.7
1925340500	SAIL-M12GM12W-3-5.0V	B.7
1925341000	SAIL-M12GM12W-3-10V	B.7
1925350000	SAIL-M12GM12W-4-X.XV	B.7
1925350150	SAIL-M12GM12W-4-1.5V	B.25
1925350150	SAIL-M12GM12W-4-1.5V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
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1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
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1925350300	SAIL-M12GM12W-4-3.0V	B.7
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1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
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1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
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1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
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1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M12GM12W-4-3.0V	B.7
1925350300	SAIL-M1	

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1926630300	SAIL-M12G-4-3.0Q	B.4
1926630500	SAIL-M12G-4-5.0Q	B.4
1926631000	SAIL-M12G-4-10Q	B.4
1926640000	SAIL-M12G-5-X.XQ	B.4
1926640150	SAIL-M12G-5-1.5Q	B.11
1926640150	SAIL-M12G-5-1.5Q	B.4
1926640300	SAIL-M12G-5-3.0Q	B.4
1926640500	SAIL-M12G-5-5.0Q	B.4
1926641000	SAIL-M12G-5-10Q	B.4
1926650000	SAIL-M12BW-3LX.XQ	B.8
1926650150	SAIL-M12BW-3L1.5Q	B.15
1926650150	SAIL-M12BW-3L1.5Q	B.8
1926650300	SAIL-M12BW-3L3.0Q	B.8
1926650500	SAIL-M12BW-3L5.0Q	B.8
1926651000	SAIL-M12BW-3L10Q	B.8
1926660000	SAIL-M12BW-4-2LX.XQ	B.8
1926660150	SAIL-M12BW-4-2L1.5Q	B.15
1926660150	SAIL-M12BW-4-2L1.5Q	B.8
1926660300	SAIL-M12BW-4-2L3.0Q	B.8
1926660500	SAIL-M12BW-4-2L5.0Q	B.8
1926661000	SAIL-M12BW-4-2L10Q	B.8
1926690150	SAIL-M12G-5S1.5Q	B.16
1926700000	SAIL-M12W-3-X.XQ	B.4
1926700150	SAIL-M12W-3-1.5Q	B.11
1926700150	SAIL-M12W-3-1.5Q	B.4
1926700300	SAIL-M12W-3-3.0Q	B.4
1926700500	SAIL-M12W-3-5.0Q	B.4
1926701000	SAIL-M12W-3-10Q	B.4
1926710000	SAIL-M12W-4-X.XQ	B.4
1926710150	SAIL-M12W-4-1.5Q	B.11
1926710150	SAIL-M12W-4-1.5Q	B.4
1926710300	SAIL-M12W-4-3.0Q	B.4
1926710500	SAIL-M12W-4-5.0Q	B.4
1926711000	SAIL-M12W-4-10Q	B.4
1926720000	SAIL-M12W-5-X.XQ	B.4
1926720150	SAIL-M12W-5-1.5Q	B.11
1926720150	SAIL-M12W-5-1.5Q	B.4
1926720300	SAIL-M12W-5-3.0Q	B.4
1926720500	SAIL-M12W-5-5.0Q	B.4
1926721000	SAIL-M12W-5-10Q	B.4
1926760000	SAIL-M12BG-3-X.XQ	B.6
1926760150	SAIL-M12BG-3-1.5Q	B.11
1926760150	SAIL-M12BG-3-1.5Q	B.6
1926760300	SAIL-M12BG-3-3.0Q	B.6
1926760500	SAIL-M12BG-3-5.0Q	B.6
1926761000	SAIL-M12BG-3-10Q	B.6
1926770000	SAIL-M12BG-4-X.XQ	B.6
1926770150	SAIL-M12BG-4-1.5Q	B.11
1926770150	SAIL-M12BG-4-1.5Q	B.6
1926770300	SAIL-M12BG-4-3.0Q	B.6
1926770500	SAIL-M12BG-4-5.0Q	B.6
1926771000	SAIL-M12BG-4-10Q	B.6
1926780000	SAIL-M12BG-5-X.XQ	B.7
1926780150	SAIL-M12BG-5-1.5Q	B.11
1926780150	SAIL-M12BG-5-1.5Q	B.7
1926780300	SAIL-M12BG-5-3.0Q	B.7
1926780500	SAIL-M12BG-5-5.0Q	B.7
1926781000	SAIL-M12BG-5-10Q	B.7
1926820000	SAIL-M12BW-3-X.XQ	B.7
1926820150	SAIL-M12BW-3-1.5Q	B.11
1926820150	SAIL-M12BW-3-1.5Q	B.7
1926820300	SAIL-M12BW-3-3.0Q	B.7
1926820500	SAIL-M12BW-3-5.0Q	B.7
1926821000	SAIL-M12BW-3-10Q	B.7
1926830000	SAIL-M12BW-4-X.XQ	B.7
1926830150	SAIL-M12BW-4-1.5Q	B.11
1926830150	SAIL-M12BW-4-1.5Q	B.7
1926830300	SAIL-M12BW-4-3.0Q	B.7
1926830500	SAIL-M12BW-4-5.0Q	B.7
1926831000	SAIL-M12BW-4-10Q	B.7
1926840000	SAIL-M12BW-5-X.XQ	B.7
1926840150	SAIL-M12BW-5-1.5Q	B.11
1926840150	SAIL-M12BW-5-1.5Q	B.7
1926840300	SAIL-M12BW-5-3.0Q	B.7
1926840500	SAIL-M12BW-5-5.0Q	B.7
1926841000	SAIL-M12BW-5-10Q	B.7
1926890000	SAIL-M8GM8G-3-X.XQ	B.4
1926890150	SAIL-M8GM8G-3-1.5Q	B.32
1926890150	SAIL-M8GM8G-3-1.5Q	B.4
1926890300	SAIL-M8GM8G-3-3.0Q	B.4
1926890500	SAIL-M8GM8G-3-5.0Q	B.4
1926891000	SAIL-M8GM8G-3-10Q	B.4
1926900000	SAIL-M8GM8G-4-X.XQ	B.5
1926900150	SAIL-M8GM8G-4-1.5Q	B.32
1926900150	SAIL-M8GM8G-4-1.5Q	B.5
1926900300	SAIL-M8GM8G-4-3.0Q	B.5
1926900500	SAIL-M8GM8G-4-5.0Q	B.5
1926901000	SAIL-M8GM8G-4-10Q	B.5
1926910000	SAIL-M8GM8G-5-X.XQ	B.5
1926910150	SAIL-M8GM8G-5-1.5Q	B.32
1926910150	SAIL-M8GM8G-5-1.5Q	B.5
1926910300	SAIL-M8GM8G-5-3.0Q	B.5
1926910500	SAIL-M8GM8G-5-5.0Q	B.5
1926911000	SAIL-M8GM8G-5-10Q	B.5
1926920000	SAIL-M8GM8G-4-X.XQ	B.5
1926920150	SAIL-M8GM8G-4-1.5Q	B.32
1926920150	SAIL-M8GM8G-4-1.5Q	B.5
1926920300	SAIL-M8GM8G-4-3.0Q	B.5
1926920500	SAIL-M8GM8G-4-5.0Q	B.5
1926921000	SAIL-M8GM8G-4-10Q	B.5

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1926930000	SAIL-M8GM8W-3LX.XQ	B.5
1926930150	SAIL-M8GM8W-3L1.5Q	B.34
1926930150	SAIL-M8GM8W-3L1.5Q	B.5
1926930300	SAIL-M8GM8W-3L3.0Q	B.5
1926930500	SAIL-M8GM8W-3L5.0Q	B.5
1926931000	SAIL-M8GM8W-3L10Q	B.5
1926940150	SAIL-M8GM8W-4L1.5Q	B.34
1926950000	SAIL-M8WM8W-3-X.XQ	B.5
1926950150	SAIL-M8WM8W-3-1.5Q	B.5
1926950300	SAIL-M8WM8W-3-3.0Q	B.5
1926950500	SAIL-M8WM8W-3-5.0Q	B.5
1926951000	SAIL-M8WM8W-3-10Q	B.5
1926960000	SAIL-M8WM8W-4-X.XQ	B.5
1926960150	SAIL-M8WM8W-4-1.5Q	B.32
1926960150	SAIL-M8WM8W-4-1.5Q	B.5
1926960300	SAIL-M8WM8W-4-3.0Q	B.5
1926960500	SAIL-M8WM8W-4-5.0Q	B.5
1926961000	SAIL-M8WM8W-4-10Q	B.5
1926970000	SAIL-M8G-3-X.XQ	B.4
1926970150	SAIL-M8G-3-1.5Q	B.18
1926970150	SAIL-M8G-3-1.5Q	B.4
1926970300	SAIL-M8G-3-3.0Q	B.4
1926970500	SAIL-M8G-3-5.0Q	B.4
1926971000	SAIL-M8G-3-10Q	B.4
1926980000	SAIL-M8BG3-3-X.XQ	B.4
1926980150	SAIL-M8BG3-3-1.5Q	B.18
1926980150	SAIL-M8BG3-3-1.5Q	B.4
1926980300	SAIL-M8BG3-3-3.0Q	B.4
1926980500	SAIL-M8BG3-3-5.0Q	B.4
1926981000	SAIL-M8BG3-3-10Q	B.4
1926990000	SAIL-M8G-4-X.XQ	B.4
1926990150	SAIL-M8G-4-1.5Q	B.18
1926990150	SAIL-M8G-4-1.5Q	B.4
1926990300	SAIL-M8G-4-3.0Q	B.4
1926990500	SAIL-M8G-4-5.0Q	B.4
1926991000	SAIL-M8G-4-10Q	B.4
1927000000	SAIL-M8BG3-4-X.XQ	B.5
1927000150	SAIL-M8BG3-4-1.5Q	B.18
1927000300	SAIL-M8BG3-4-3.0Q	B.5
1927000500	SAIL-M8BG3-4-5.0Q	B.5
1927001000	SAIL-M8BG3-4-10Q	B.5
1927050000	SAIL-M8W-3-X.XQ	B.4
1927050150	SAIL-M8W-3-1.5Q	B.18
1927050150	SAIL-M8W-3-1.5Q	B.4
1927050300	SAIL-M8W-3-3.0Q	B.4
1927050500	SAIL-M8W-3-5.0Q	B.4
1927051000	SAIL-M8W-3-10Q	B.4
1927060000	SAIL-M8BW3-3-X.XQ	B.5
1927060150	SAIL-M8BW3-3-1.5Q	B.18
1927060150	SAIL-M8BW3-3-1.5Q	B.5
1927060300	SAIL-M8BW3-3-3.0Q	B.5
1927060500	SAIL-M8BW3-3-5.0Q	B.5
1927061000	SAIL-M8BW3-3-10Q	B.5
1927070000	SAIL-M8W-4-X.XQ	B.4
1927070150	SAIL-M8W-4-1.5Q	B.18
1927070150	SAIL-M8W-4-1.5Q	B.4
1927070300	SAIL-M8W-4-3.0Q	B.4
1927070500	SAIL-M8W-4-5.0Q	B.4
1927071000	SAIL-M8W-4-10Q	B.4
1927080000	SAIL-M8BW3-4-X.XQ	B.5
1927080150	SAIL-M8BW4-1.5Q	B.18
1927080150	SAIL-M8BW4-1.5Q	B.5
1927080300	SAIL-M8BW4-3.0Q	B.5
1927080500	SAIL-M8BW4-5.0Q	B.5
1927081000	SAIL-M8BW4-10Q	B.5
1927090000	SAIL-M8BW3-3LX.XQ	B.5
1927090150	SAIL-M8BW-3L1.5Q	B.20
1927090150	SAIL-M8BW-3L1.5Q	B.5
1927090300	SAIL-M8BW-3L3.0Q	B.5
1927090500	SAIL-M8BW-3L5.0Q	B.5
1927091000	SAIL-M8BW-3L10Q	B.5
1927100150	SAIL-M8BW-4L1.5Q	B.20
1927150000	SAIL-M8GM8G-3-X.XV	B.4
1927150150	SAIL-M8GM8G-3-1.5V	B.32
1927150150	SAIL-M8GM8G-3-1.5V	B.4
1927150300	SAIL-M8GM8G-3-3.0V	B.4
1927150500	SAIL-M8GM8G-3-5.0V	B.4
1927151000	SAIL-M8GM8G-3-10V	B.4
1927160000	SAIL-M8GM8G-4-X.XV	B.5
1927160150	SAIL-M8GM8G-4-1.5V	B.32
1927160150	SAIL-M8GM8G-4-1.5V	B.5
1927160300	SAIL-M8GM8G-4-3.0V	B.5
1927160500	SAIL-M8GM8G-4-5.0V	B.5
1927161000	SAIL-M8GM8G-4-10V	B.5
1927170000	SAIL-M8GM8W-3-X.XV	B.5
1927170150	SAIL-M8GM8W-3-1.5V	B.32
1927170150	SAIL-M8GM8W-3-1.5V	B.5
1927170300	SAIL-M8GM8W-3-3.0V	B.5
1927170500	SAIL-M8GM8W-3-5.0V	B.5
1927171000	SAIL-M8GM8W-3-10V	B.5
1927180000	SAIL-M8GM8W-4-X.XV	B.5
1927180150	SAIL-M8GM8W-4-1.5V	B.32
1927180150	SAIL-M8GM8W-4-1.5V	B.5
1927180300	SAIL-M8GM8W-4-3.0V	B.5
1927180500	SAIL-M8GM8W-4-5.0V	B.5
1927181000	SAIL-M8GM8W-4-10V	B.5
1927190000	SAIL-M8GM8W-3LX.XV	B.5
1927190150	SAIL-M8GM8W-3L1.5V	B.34
1927190150	SAIL-M8GM8W-3L1.5V	B.5

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1927190300	SAIL-M8GM8W-3L3.0V	B.5
1927190500	SAIL-M8GM8W-3L5.0V	B.5
1927191000	SAIL-M8GM8W-3L10V	B.5
1927200150	SAIL-M8GM8W-4L1.5V	B.34
1927210000	SAIL-M8WM8W-3-X.XV	B.5
1927210150	SAIL-M8WM8W-3-1.5V	B.32
1927210150	SAIL-M8WM8W-3-1.5V	B.5
1927210300	SAIL-M8WM8W-3-3.0V	B.5
1927210500	SAIL-M8WM8W-3-5.0V	B.5
1927211000	SAIL-M8WM8W-3-10V	B.5
1927220000	SAIL-M8WM8W-4-X.XV	B.5
1927220150	SAIL-M8WM8W-4-1.5V	B.32
1927220150	SAIL-M8WM8W-4-1.5V	B.5
1927220300	SAIL-M8WM8W-4-3.0V	B.5
1927220500	SAIL-M8WM8W-4-5.0V	B.5
1927221000	SAIL-M8WM8W-4-10V	B.5
1927230000	SAIL-M8G-3-X.XV	B.4
1927230150	SAIL-M8G-3-1.5V	B.18
1927230150	SAIL-M8G-3-1.5V	B.4
1927230300	SAIL-M8G-3-3.0V	B.4
1927230500	SAIL-M8G-3-5.0V	B.4
1927231000	SAIL-M8G-3-10V	B.4
1927240000	SAIL-M8BG3-3-X.XV	B.4
1927240150	SAIL-M8BG3-3-1.5V	B.18
1927240150	SAIL-M8BG3-3-1.5V	B.4
1927240300	SAIL-M8BG3-3-3.0V	B.4
1927240500	SAIL-M8BG3-3-5.0V	B.4
1927241000	SAIL-M8BG3-3-10V	B.4
1927250000	SAIL-M8G-4-X.XV	B.4
1927250150	SAIL-M8G-4-1.5V	B.18
1927250150	SAIL-M8G-4-1.5V	B.4
1927250300	SAIL-M8G-4-3.0V	B.4
1927250500	SAIL-M8G-4-5.0V	B.4
1927251000	SAIL-M8G-4-10V	B.4
1927260000	SAIL-M8BG3-4-X.XV	B.5
1927260150	SAIL-M8BG3-4-1.5V	B.18
1927260150	SAIL-M8BG3-4-1.5V	B.5
1927260300	SAIL-M8BG3-4-3.0V	B.5
1927260500	SAIL-M8BG3-4-5.0V	B.5
1927261000	SAIL-M8BG3-4-10V	B.5
1927310000	SAIL-M8W-3-X.XV	B.4
1927310150	SAIL-M8W-3-1.5V	B.18
1927310150	SAIL-M8W-3-1.5V	B.4
1927310300	SAIL-M8W-3-3.0V	B.4
1927310500	SAIL-M8W-3-5.0V	B.4
1927311000	SAIL-M8W-3-10V	B.4
1927320000	SAIL-M8BW3-3-X.XV	B.5
1927320150	SAIL-M8BW3-3-1.5V	B.18
1927320150	SAIL-M8BW3-3-1.5V	B.5
1927320300	SAIL-M8BW3-3-3.0V	B.5
1927320500	SAIL-M8BW3-3-5.0V	B.5
1927321000	SAIL-M8BW3-3-10V	B.5
1927330000	SAIL-M8W-4-X.XV	B.4
1927330150	SAIL-M8W-4-1.5V	B.18
1927330150	SAIL-M8W-4-1.5V	B.4
1927330300	SAIL-M8W-4-3.0V	B.4
1927330500	SAIL-M8W-4-5.0V	B.4
1927331000	SAIL-M8W-4-10V	B.4
1927340000	SAIL-M8BW3-4-X.XV	B.5
1927340150	SAIL-M8BW4-1.5V	B.18
1927340150	SAIL-M8BW4-1.5V	B.5
1927340300	SAIL-M8BW4-3.0V	B.5
1927340500	SAIL-M8BW4-5.0V	B.5
1927341000	SAIL-M8BW4-10V	B.5
1927350000	SAIL-M8BW3-3LX.XV	B.5
1927350150	SAIL-M8BW-3L1.5V	B.20
1927350150	SAIL-M8BW-3L1.5V	B.5
1927350300	SAIL-M8BW-3L3.0V	B.5
1927350500	SAIL-M8BW-3L5.0V	B.5
1927351000	SAIL-M8BW-3L10V	B.5
1927360150	SAIL-M8BW-4L1.5V	B.20

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1932380000	SAI-6-S 3P M8 L OL	G.50
1933640000	SAIH-PB-2X0.34-PVC	C.9
1934200000	PB SUB-D-27 TERM PS	C.15
1935610000	SAIBW-4/7-(KV)	D.9
1937950000	SAIL-M8GM12G-3-X.XU	B.6
1937960150	SAIL-M8GM12G-3-1.5U	B.6
1937960300	SAIL-M8GM12W-3-3.0U	B.6
1937960500	SAIL-M8GM12W-3-5.0U	B.6
1937951000	SAIL-M8GM12G-3-10U	B.6
1937960000	SAIL-M8GM12W-3-X.XU	B.7
1937960150	SAIL-M8GM12W-3-1.5U	B.7
1937960300	SAIL-M8GM12W-3-3.0U	B.7
1937960500	SAIL-M8GM12W-3-5.0U	B.7

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1938230000	SAIL-M8GM12G-3-X.XV	B.6
1938230150	SAIL-M8GM12G-3-1.5V	B.6
1938230300	SAIL-M8GM12G-3-3.0V	B.6
1938230500	SAIL-M8GM12G-3-5.0V	B.6
1938231000	SAIL-M8GM12G-3-10V	B.6
1938240000	SAIL-M8GM12W-3-X.XV	B.7
1938240150	SAIL-M8GM12W-3-1.5V	B.7
1938240300	SAIL-M8GM12W-3-3.0V	B.7
1938240500	SAIL-M8GM12W-3-5.0V	B.7
1938241000	SAIL-M8GM12W-3-10V	B.7
1938250000	SAIL-M8WM12W-3-X.XV	B.7
1938250150	SAIL-M8WM12W-3-1.5V	B.7
1938250300	SAIL-M8WM12W-3-3.0V	B.7
1938250500	SAIL-M8WM12W-3-5.0V	B.7
1938251000	SAIL-M8WM12W-3-10V	B.7
1938260000	SAIL-M8GM12G-4-X.XV	B.6
1938260150	SAIL-M8GM12G-4-1.5V	B.6
1938260300	SAIL-M8GM12G-4-3.0V	B.6
1938260500	SAIL-M8GM12G-4-5.0V	B.6
1938261000	SAIL-M8GM12G-4-10V	B.6
1938270000	SAIL-M8GM12W-4-X.XV	B.7
1938270150	SAIL-M8GM12W-4-1.5V	B.7
1938270300	SAIL-M8GM12W-4-3.0V	B.7
1938270500	SAIL-M8GM12W-4-5.0V	B.7
1938271000	SAIL-M8GM12W-4-10V	B.7
1938280000	SAIL-M8WM12W-4-X.XV	B.7
1938280150	SAIL-M8WM12W-4-1.5V	B.7
1938280300	SAIL-M8WM12W-4-3.0V	B.7
1938280500	SAIL-M8WM12W-4-5.0V	B.7
1938281000	SAIL-M8WM12W-4-10V	B.7
1938300000	SAI-SSA-PG7	D.34
1938550000	SAI-AU M12 PB GW 16DI	E.30
1938550000	SAI-AU M12 PB GW 16DI	E.31
1938550000	SAI-AU M12 PB GW 16DI	E.4
1938570000	SAI-AU M12 DN GW 16DI	E.32
1938570000	SAI-AU M12 DN GW 16DI	E.33
1938570000	SAI-AU M12 DN GW 16DI	E.4
1938580000	SAI-AU M12 IE GW 16DI	E.34
1938580000	SAI-AU M12 IE GW 16DI	E.35
1938580000	SAI-AU M12 IE GW 16DI	E.4
1938600000	SAI-AU M8 SB 8DI	E.31
1938600000	SAI-AU M8 SB 8DI	E.33
1938600000	SAI-AU M8 SB 8DI	E.35
1938600000	SAI-AU M8 SB 8DI	E.36
1938600000	SAI-AU M8 SB 8DI	E.4
1938610000	SAI-AU M12 SB 8DI	E.31
1938610000	SAI-AU M12 SB 8DI	E.33
1938610000	SAI-AU M12 SB 8DI	E.35
1938610000	SAI-AU M12 SB 8DI	E.36
1938610000	SAI-AU M12 SB 8DI	E.4
1938630000	SAI-AU M8 SB 8DIO	E.31
1938630000	SAI-AU M8 SB 8DIO	E.33
1938630000	SAI-AU M8 SB 8DIO	E.35
1938630000	SAI-AU M8 SB 8DIO	E.36
1938630000	SAI-AU M8 SB 8DIO	E.4
1938640000	SAI-AU M12 SB 8DIO	E.31
1938640000	SAI-AU M12 SB 8DIO	E.33
1938640000	SAI-AU M12 SB 8DIO	E.35
1938640000	SAI-AU M12 SB 8DIO	E.36
1938640000	SAI-AU M12 SB 8DIO	E.4
1938660000	SAI-AU M8 SB 8DO 2A	E.31
1938660000	SAI-AU M8 SB 8DO 2A	E.33
1938660000	SAI-AU M8 SB 8DO 2A	E.35
1938660000	SAI-AU M8 SB 8DO 2A	E.36
1938660000	SAI-AU M8 SB 8DO 2A	E.4
1938680000	SAI-AU M12 SB 8DO 2A	E.31
1938680000	SAI-AU M12 SB 8DO 2A	E.33
1938680000	SAI-AU M12 SB 8DO 2A	E.35
1938680000	SAI-AU M12 SB 8DO 2A	E.36
1938680000	SAI-AU M12 SB 8DO 2A	E.4
1938690000	SAI-AU M12 SB 4AI	E.31
1938690000	SAI-AU M12 SB 4AI	E.33
1938690000	SAI-AU M12 SB 4AI	E.35
1938690000	SAI-AU M12 SB 4AI	E.37
1938690000	SAI-AU M12 SB 4AI	E.4
1938700000	SAI-AU M12 SB 4AO	E.31
1938700000	SAI-AU M12 SB 4AO	E.33
1938700000	SAI-AU M12 SB 4AO	E.35
1938700000	SAI-AU M12 SB 4AO	E.37
1938700000	SAI-AU M12 SB 4AO	E.4
1938710000	SAI-AU M12 SB 4PT100	E.31
1938710000	SAI-AU M12 SB 4PT100	E.33
1938710000	SAI-AU M12 SB 4PT100	E.35
1938710000	SAI-AU M12 SB 4PT100	E.4
1938710000	SAI-AU M12 SB 4PT100	E.40
1938720000	SAI-AU M12 SB 4Thermo	E.31
1938720000	SAI-AU M12 SB 4Thermo	E.33
1938720000	SAI-AU M12 SB 4Thermo	E.35
1938720000	SAI-AU M12 SB 4Thermo	E.39
1938720000	SAI-AU M12 SB 4Thermo	E.4
1938730000	SAI-AU M12 SB 2Counter	E.31
1938730000	SAI-AU M12 SB 2Counter	E.33
1938730000	SAI-AU M12 SB 2Counter	E.35
1938730000	SAI-AU M12 SB 2Counter	E.38
1938730000	SAI-AU M12 SB 2Counter	E.4
1939170000	SAI-SCREWTY TOOL BOX	I.6
1939180000	SAI-SCREWTY BOX	I.6
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1939410150	SAIL-M12BG-VA-2/4-1.5U	B.13

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1948480150	SAIL-M8GM8WR-3-1.5U	B.33
1948490150	SAIL-M8WM8WR-3-1.5U	B.33
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1948510150	SAIL-M8GM8WR-4-1.5U	B.33
1948520150	SAIL-M8WM8WR-4-1.5U	B.33
1948530150	SAIL-M8BGR-4-1.5U	B.19
1948540150	SAIL-M8BWR-4-1.5U	B.19
1948550150	SAIL-M8GM8GR-3-1.5Q	B.33
1948560150	SAIL-M8GM8WR-3-1.5Q	B.33
1948570150	SAIL-M8WM8WR-3-1.5Q	B.33
1948580150	SAIL-M8GM8GR-4-1.5Q	B.33
1948590150	SAIL-M8GM8WR-4-1.5Q	B.33
1948600150	SAIL-M8WM8WR-4-1.5Q	B.33
1948610150	SAIL-M8BGR-3-1.5Q	B.19
1948620150	SAIL-M8BWR-3-1.5Q	B.19
1948630150	SAIL-M8BGR-4-1.5Q	B.19
1948640150	SAIL-M8BWR-4-1.5Q	B.19
1948650150	SAIL-M8GM8GR-3-1.5V	B.33
1948660150	SAIL-M8GM8WR-3-1.5V	B.33
1948670150	SAIL-M8WM8WR-3-1.5V	B.33
1948680150	SAIL-M8GM8GR-4-1.5V	B.33
1948690150	SAIL-M8GM8WR-4-1.5V	B.33
1948700150	SAIL-M8WM8WR-4-1.5V	B.33
1948710150	SAIL-M8BGR-3-1.5V	B.19
1948720150	SAIL-M8BWR-3-1.5V	B.19
1948730150	SAIL-M8BGR-4-1.5V	B.19
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1962280150	SAIL-M12GM8W-4L1.5Q	B.31
1962290150	SAIL-M12GM8W-3L1.5V	B.31
1962300150	SAIL-M12GM8W-4L1.5V	B.31
1962610000	SAISW-5/7-(KV)	D.9
1962620000	SAISW-4/7-(KV)	D.9
1962630000	SAIBW-5/7-(KV)	D.9
1963910150	SAIL-M12GM12W-4-3L1.5U	B.27
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1963940150	SAIL-M12BW-4-3L1.5U	B.15
1963950150	SAIL-M12BW-4-3L1.5Q	B.15
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1964300150	SAIL-ZW-M8BW-3-1.5U	B.39
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1968570150	SAIL-M12BW-4-1.5T	B.11
1968580150	SAIL-M12BG-4-1.5T	B.11
1968590150	SAIL-M12BG-3-1.5T	B.11
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1975450000	SAI-AU M8 PB 8DI8DO 2A	E.10
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1981900030	SAIL-M8GM8G-4S-0.3Q-SB	C.61
1981900100	SAIL-M8GM8G-4S-1.0Q-SB	C.61
1981900150	SAIL-M8GM8G-4S-1.5Q-SB	C.61
1981900300	SAIL-M8GM8G-4S-3.0Q-SB	C.61
1981900500	SAIL-M8GM8G-4S-5.0Q-SB	C.61
1981901000	SAIL-M8GM8G-4S-10Q-SB	C.61
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1981902000	SAIL-M8GM8G-4S-20Q-SB	C.61
1981910150	SAIL-M8BG-4S-1.5Q-SB	C.61
1981910300	SAIL-M8BG-4S-3.0Q-SB	C.61
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8564100000	FBCon PA CG 2way	C.37
8564110000	FBCon PA CG 4way	C.38
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8564200000	FBCon PA CG 4way Ex	C.54
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8564310000	FBCon PA CG/M12 8way	C.39
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9456100150	SAIL-M12G-4-1.5U	B.4
9456100300	SAIL-M12G-4-3.0U	B.4
9456100500	SAIL-M12G-4-5.0U	B.4
9456101000	SAIL-M12G-4-10U	B.4
9456140150	SAIL-M12BG-5S1.5Q	B.16
9456150000	SAIL-M8BW-4-X.XU	B.5
9456150150	SAIL-M8BW-4-1.5U	B.18
9456150150	SAIL-M8BW-4-1.5U	B.5
9456150300	SAIL-M8BW-4-3.0U	B.5
9456150500	SAIL-M8BW-4-5.0U	B.5
9456151000	SAIL-M8BW-4-10U	B.5
9456170150	SAIL-VSCD-M12G-1.5U	B.47
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9456190000	SAI-4-F 4P PUR 5M	G.6
9456190000	SAI-4-F 4P PUR 5M	G.9
9456190002	SAI-4-FMM-4P M12 5M	G.31
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9456200002	SAI-4-FMM-4P M12 10M	G.31
9456200002	SAI-4-FMM-4P M12 10M	G.32
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9456210000	SAI-4-F 4P PUR 15M	G.9
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9456230000	SAI-4-F 4P PUR 20M	G.9
9456240150	SAIL-VSCD-1.5U	B.47
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9456330000	SAI-4-F 5P PUR 5M	G.6
9456330000	SAI-4-F 5P PUR 5M	G.9
9456340000	SAI-4-F 5P PUR 10M	G.6
9456340000	SAI-4-F 5P PUR 10M	G.9
9456350000	SAI-4-F 5P PUR 15M	G.6
9456350000	SAI-4-F 5P PUR 15M	G.9
9456370000	SAI-4-F 5P PUR 20M	G.6
9456370000	SAI-4-F 5P PUR 20M	G.9
9456380000	SAIL-M12BW-4-2LX.XU	B.8
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9456380500	SAIL-M12BW-4-2L5.0U	B.8
9456381000	SAIL-M12BW-4-2L10U	B.8
9456460000	SAI-6-F 4P PUR 3M	G.9
9456470000	SAI-6-F 4P PUR 5M	G.6
9456470000	SAI-6-F 4P PUR 5M	G.9
9456480000	SAI-6-F 4P PUR 10M	G.6
9456480000	SAI-6-F 4P PUR 10M	G.9
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9456500000	SAIL-M12WM12G-5-X.XU	B.7
9456500150	SAIL-M12WM12G-5-1.5U	B.7
9456500300	SAIL-M12WM12G-5-3.0U	B.7
9456500500	SAIL-M12WM12G-5-5.0U	B.7
9456501000	SAIL-M12WM12G-5-10U	B.7
9456510000	SAI-6-F 4P PUR 20M	G.6
9456510000	SAI-6-F 4P PUR 20M	G.9
9456600000	SAI-6-F 5P PUR 3M	G.9
9456610000	SAI-6-F 5P PUR 5M	G.6
9456610000	SAI-6-F 5P PUR 5M	G.9
9456620000	SAI-6-F 5P PUR 10M	G.6
9456620000	SAI-6-F 5P PUR 10M	G.9
9456630000	SAI-6-F 5P PUR 15M	G.6
9456630000	SAI-6-F 5P PUR 15M	G.9
9456650000	SAI-6-F 5P PUR 20M	G.6
9456650000	SAI-6-F 5P PUR 20M	G.9
9456660000	SAIL-M12GM8G-4-X.XU	B.5
9456660150	SAIL-M12GM8G-4-1.5U	B.29
9456660150	SAIL-M12GM8G-4-1.5U	B.5
9456660300	SAIL-M12GM8G-4-3.0U	B.5
9456660500	SAIL-M12GM8G-4-5.0U	B.5
9456661000	SAIL-M12GM8G-4-10U	B.5
9456670000	SAIL-M12GM8W-4-X.XU	B.5
9456670150	SAIL-M12GM8W-4-1.5U	B.29
9456670150	SAIL-M12GM8W-4-1.5U	B.5
9456670300	SAIL-M12GM8W-4-3.0U	B.5
9456670500	SAIL-M12GM8W-4-5.0U	B.5
9456671000	SAIL-M12GM8W-4-10U	B.5
9456690000	SAIL-M12W-3-X.XU	B.4
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