Cannon

SURE-SEAL Series

ITT

ENGINEERED FOR LIFE

Reliability. Low Cost.

Performance. Delivery.

SURE-SEAL connectors – a series of low cost and environmentally sealed connectors.

The one-piece molded body and rugged multiple moisture seals make the SURE-SEAL connector a natural for applications whose outside contaminants must be excluded.

One of the many features of the SURE-SEAL connector is its simplicity. In addition to the contacts, only two other parts – the connector bodies – are required to complete the interconnect.

SURE-SEAL connectors were designed to meet the increased requirements for safety and reliability in the automotive field brought about by Department of Transportation regulations. These sealed connectors satisfy all of the parameters defined by automotive / industrial standards including vibration, shock, temperature cycling, salt water spray and immersion, petroleum derivatives, industrial gas, and most important low millivolt drop and low contact resistance.

Features

Low Installed Cost
SURE-SEAL connectors are designed to be terminated by the O.E.M.

Field Service
When necessary, SURE-SEAL connectors can be changed, modified or wired in the field.

One-Piece Molded Bodies
The SURE-SEAL connector incorporates a very simple one-piece molded body. No other parts – other than contacts – are needed to assemble a complete connector.

Low Cost Stamped Contacts
Without sacrificing quality, the cost of SURE-SEAL connectors is kept low with stamped contacts available on reels in a continuous strip for use on the industry accepted semi automatic crimp press with mini applicator. All contacts utilize a " B" type crimp.

Wide Wire Gage and Cable Accommodations
Ideally suited to be terminated on wires of size 0,4-1,5 mm^2 (AWG 14-20), wire sizes with insulation in the range of 1,4-1,8 for Mini Sure Seal, resp. 1,8 - 2,8 for Sure Seal, termination to multiconductor jacketed cables in the range of 5,3 to 12,4 mm diameter and can be terminated to five different wire ranges depending on contact arrangements with total environment sealing still assured.

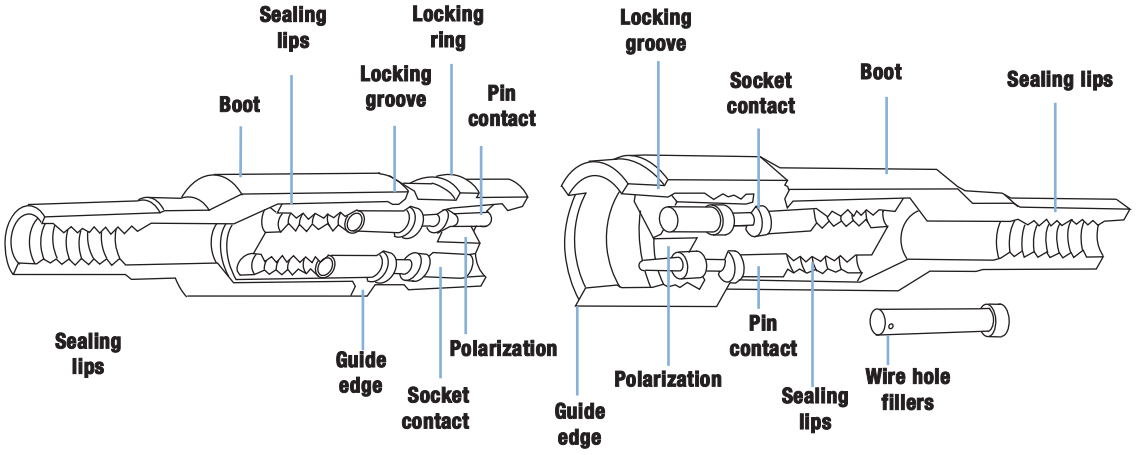
Polarized Against Mis-Mates
SURE-SEAL connector mating faces are constructed with two stepped planes; the plug and receptacle must be properly oriented in order for the contacts to engage. For " blind" mating a raised indexing rib and matching raised indexing spline has been added to the plug and receptacle.

Water Submersible
Not just splash proof, but truly submersible for short periods of time. SURE-SEAL fulfills the requirements according to IP68, IEC 60529. Note: Although SURE-SEAL can withstand submersion, it is not designed to be an underwater connector.

Resistant to Automotive/Commercial Environment
SURE-SEAL connectors are designed to meet temperatures from – 40° C to 105° C under conditions of high humidity severe vibration, ice and mud. Sealing integrity is still maintained with exposure to brake fluid, gasoline, diesel fuel, anti-freeze, ultra violet, ozone, steam cleaning under normal operating conditions.

Environment & Health
RoHS compliant

Design



ITT

Dimensions shown in mm
Specifications and dimensions subject to change

Interconnect Technologies & Solutions for the Transportation Industry

For over 90 years, ITT has been developing innovative solutions for harsh environment applications. We have a proven track record of demonstrating our expertise and commitment to the transportation industry, offering the broadest portfolio of interconnect products.

Our interconnect range include sealed circulars, plastic and metal shell bayonet coupling circulars, miniature metal shell circulars, PC board header connectors and sensor and direct device connectors. ITT is also a systems supplier, providing value-added module and harness assemblies.

In addition to the SURE-SEAL series, we also offer these connectivity solutions:

Cannon APD

In-line and bulkhead connectors are resistant to the harsh environmental conditions (contaminants, vibration and shock) and sealed up to IP69K.

Cannon CA-Bayonet

Signal and power connectors with exceptional sealing against the ingress of fluids and will withstand the effects of high vibrations.

Cannon Trident

Versatile range of electrical connectors based on a standard contact design. Options include: industrial grade, harsh environment and shielded circulars.

Cannon SLC/SLE

Environmentally sealed connector created for printed circuit board, black box, cable-to-cable or bulkhead applications.

	Connector Series Selection Table	Sure Seal	CLC	SLC	SLE	APD	Trident Rectangular	Trident Circular	MS E/F/R
									
General	Industrial/Commercial	O	O	O	O	O	O	O	O
	Military	-	-	-	-	-	-	-	O
	Standards/Associated Specifications	-	SAE J2030 USCar	SAE J2030 USCar	SAE J2030 USCar	ISO 15170	UL 1977 NFF 61-030 (TFR)	UL 1977 EN 61984	MIL-DTL-5015 VG 95342
	Number of Circuits	2 to 10	2 & 4	5, 8, 10 & 15	19 & 28	1 to 51	2 to 36	4 to 48	1 to 65
Electrical	Max. Operating Voltage	48 V DC	300 V AC	300 V AC	300 V AC	48 V DC High Voltage: 500 V DC/AC	250 V AC	250 V AC High Voltage: 500 V DC/AC	50 V DC
	Dielectric Withstanding Voltage (at sea level)	1200 V AC	1000 V AC	1000 V AC	1000 V AC	1000 V AC High Voltage: 3500 V AC	2000 V AC	2000 V AC High Voltage: 3500 V AC	3000 V AC
	Max. Current Rating @ 40°C	17 A	5 A	13 A	13 A	245 A	13 A	30 A	245 A
	EMI/RFI Shielding	-	-	-	-	-	-	O	O
Mechanical	Wire Gauge Range AWG	20 to 14	20 to 16	20 to 16	20 to 16	22 to 0	26 to 14	26 to 12	26 to 0
	Wire Gauge Range mm²	0,4 - 1,5 mm²	0,50 - 1,0 mm²	0,50 - 1,0 mm²	0,50 - 1,0 mm²	0,35 - 50 mm²	0,14 - 2,5 mm²	0,14 - 4,0 mm²	0,14 - 50 mm²
	Power & Signal Layouts	-	-	-	-	-	-	O	O
	Mating Cycles (max.)	100	25	25	25	50	500	500	100
	Type of Coupling	Ring Snap	Clip Lock	Snap Lock	Snap Lock	Bayonet	Snap Lock	Bayonet	Thread
	Mechanical Coding	-	-	-	O	O	O	O	-
Environmental	Environmental Sealing (mated condition)	IP 68 (1 bar / 12h)	IP 68	IP 68	IP 68	IP67 IP69k	IP 20	IP 67	IP 65
	Operating Temperature	-40°C to 105°C -40°F to 221°F	-40°C to 150°C -40°F to 302°F	-40°C to 150°C -40°F to 302°F	-40°C to 125°C -40°F to 257°F	-40°C to 125°C -40°F to 257°F	-55°C to 105°C -67°F to 221°F	-55°C to 125°C -67°F to 257°F	-55°C to 125°C -67°F to 257°F
	Shock Test (g's)	50	100	100	100	-	50	50	50
	Max. Vibration Resistance	10 - 55 Hz 1,5 mm	100 m/s² 10 g´s	100 m/s² 10 g´s	100 m/s² 10 g´s	300 m/s² 30 g's	100 m/s² 10 g´s	100 m/s² 10 g´s	100 m/s² 10 g´s
	Individual Wire Sealing	O	O	O	O	O	-	O	O
	Cable Jacket Sealing	O	-	-	-	O	-	O	O
	Shell Material	Nitril-Butadien Elastomer	Thermoplastic	Thermoplastic	Thermoplastic	Polyamide Plastic	Polyamide Plastic	Black Nylon or Zinc Alloy	Aluminum Alloy
Shell Plating	RoHS Nickel (48h salt spray)	-	-	-	-	-	-	O	O
	Cadmium (olive, 500h)	-	-	-	-	-	-	-	O
	RoHS Zinc Cobalt (black, 200h)	-	-	-	-	-	-	-	O
	Zinc Cobalt (green, 200h)	-	-	-	-	-	-	-	-
	RoHS Zinc Nickel (blue, 500h) BLUE GENERATION®	-	-	-	-	-	-	-	-
Contacts	Contact Plating	Tin or Silver	Tin or Gold	Tin or Gold	Tin or Gold	Tin, Silver or Gold	Tin or Gold	Tin or Gold	Silver or Gold
	Crimp, machined	O	O	O	O	O	O	O	-
	Crimp, stamped	O	O	O	O	O	O	O	-
	Solder	-	-	-	-	O	O	O	O
	Printed Circuit Solder	-	O	O	O	O	O	O	O
	Co-Ax	-	-	-	-	-	O	O	-
	Fiber Optic	-	-	-	-	-	-	-	-
	First-Mate Last-Break	-	-	-	-	-	O	O	O

O Available - Not available

Dimensions shown in mm
Specifications and dimensions subject to change

CA Bayonet	CA-INDUSTRIAL	CA Triple Thread	CGL	KPT / KPSE	KPTC	PV	KJL	KJ	KJA
									
○	○	○	○	○	○	-	○	○	○
○	-	-	-	○	○	○	○	○	○
VG 95234	-	ISO 16750 VG 95234	DIN/VDE 0627 5.4.3 IEC 512-25-1 DIN/VDE 0100 Part 410	MIL-DTL-26482 Series 1, VG 95328	MIL-DTL-26482 Series 1, VG 95328	MIL-DTL 26482 Series 2	MIL-DTL-38999 Series I	MIL-DTL-38999 Series II	MIL-DTL-38999 Series III
1 to 85	2 to 55	1 to 85	3 to 11	2 to 61	2 to 61	3 to 61	3 to 128	3 to 128	3 to 128
50 V DC	50 V DC	50 V DC	700 V DC	50 V DC	50 V DC	500 V AC	1250 V AC	1250 V AC	1250 V AC
3000 V AC	2000 V AC	3000 V AC	7200 V AC	2300 V AC	2300 V AC	2300 V AC	2300 V AC	2300 V AC	2300 V AC
245 A	30 A	245 A	100 A	22 A	22 A	23 A	23 A	23 A	23 A
○	○	○	○	○	○	○	○	○	○
26 to 0	26 to 12	26 to 0	15 to 3	24 to 16	24 to 16	24 to 12	28 to 12	28 to 12	28 to 12
0,14 - 50 mm²	0,14 - 4,0 mm²	0,14 - 50 mm²	1,5 - 25 mm²	0,21 - 1,91 mm²	0,4 - 2,0 mm²	0,4 - 5,0 mm²	0,45 - 5,0 mm²	0,45 - 5,0 mm²	0,45 - 5,0 mm²
○	○	○	○	-	-	○	○	○	○
500	200	500	500	500	500	500	500	500	500
Reverse Bayonet	Reverse Bayonet	Triple Thread	Bayonet	Bayonet	Bayonet	Bayonet	Bayonet	Bayonet	Triple Thread
○	○	○	○	○	○	-	-	-	-
IP68 (1 bar / 16h) IP69k	IP68 (1 bar / 16h) IP69k	IP68 (1 bar / 16h) IP69k	IP 67	IP 68 (0,2 bar / 48h)	IP 68 (0,2 bar / 48h)	Environmental resitant acc. to EIA-364-02	Environmental resitant acc. to EIA-364-02	Environmental resitant acc. to EIA-364-02	Environmental resitant acc. to EIA-364-02
-55°C to 125°C -67°F to 257°F	-55°C to 125°C -67°F to 257°F	-55°C to 125°C -67°F to 257°F	-50°C to 140° C -58°F to 284°F	-55°C to 125°C -67°F to 257°F	-55°C to 125°C -67°F to 257°F	-55°C to 200°C -67°F to 392°F	-65°C to 200°C -85°F to 392°F	-65°C to 200°C -85°F to 392°F	-65°C to 200°C -85°F to 392°F
50	50	50	50	50	50	10	300	300	300
200 m/s² 20 g´s	100 m/s² 10 g´s	300 m/s² 30 g's	300 m/s² 30 g's	200 m/s² 20 g´s	200 m/s² 20 g´s	200 m/s² 20 g´s	300 m/s² 30 g's	10Hz - 500Hz Random: 43,7g	600m/s² 60g'
○	-	-	-	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○
Aluminum Alloy	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy
○	○	○	○	○	○	○	○	○	○
○	-	○	-	○	○	○	○	○	○
○	-	○	-	○	○	-	-	-	○
○	-	○	-	○	○	-	-	-	-
○	○	○	○	○	○	-	-	-	-
Silver or Gold	Tin or Gold	Silver or Gold	Silver or Gold	Gold	Gold	Gold	Gold	Gold	Gold
○	-	○	○	○ (KPSE)	○	○	○	○	○
-	○	-	-	-	-	-	-	-	-
○	-	○	○	○ (KPT)	○	-	-	-	○
○	-	○	-	○	○	○	○	○	○
-	-	-	-	○	-	○	○	○	○
-	-	-	-	-	-	○	○	○	○
○	-	○	-	○	○	-	-	-	-

Dimensions shown in mm
Specifications and dimensions subject to change

Table of Contents

Electrical Data

Operating Voltage	48 VDC*
Operating Current	see derating curve
Contact Resistance	10 Milliohms max.
Dielectric Withstanding Voltage	1200 VAC at sea level
Insulation Resistance	100 Megaohms min.

Wire Dimensions

Wire Range	0,4– 0,75 mm² (AWG 20–18)
Wire Insulation Sealing Range	1,4– 1,8 mmØ

Mechanical Data

No. of contacts per connector	2 to 4
Polarization	Stepped plane positive polarization and visual polarization
Contact Retention	30 N minimum
Durability	50 mating cycles with stamped contacts, tin-plated 100 mating cycles with machined contacts, silver-plated

Environmental Data

Temperature Range	-40°C to 105°C
Humidity Range	up to 95% r.h.
Sealing	IP 68 (100 kPa = 1 bar/12 h) (IEC 60529)
Salt Spray	100 h (DIN 50021, test SS)
Vibration	Sine wave 10-55 Hz, 1,5mm (IEC 60512-4, test 6d)
Physical Shock	Half sine 500 m/s², 11ms
Fluid Compatability	Fuel, engine oil, break fluid, detergent fluid and others
Ozone Resistance	50 pphm, 48 h (DIN 53509-1)

*Further information available upon request

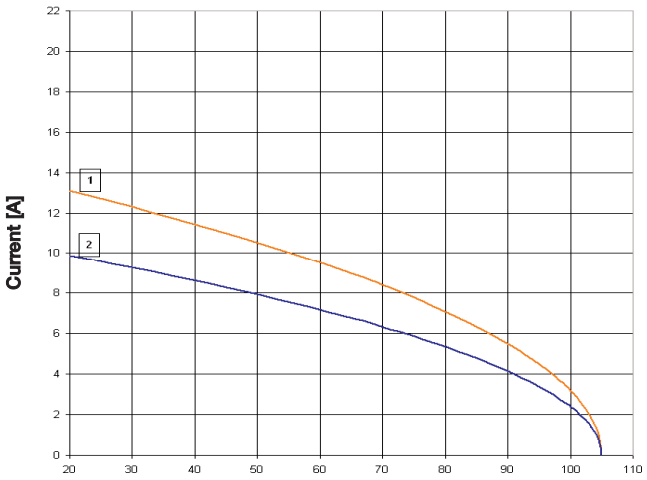
Materials and Finishes

Plug and Receptacle	Nitril-Butadien rubber
Contacts, stamped	Copper alloy, tin plating
Contacts, machined	Copper alloy, hard silver plating

Applications

Industrial Machinery
Rail
Construction & Cleaning Vehicles
Trucks & Busses
Cranes

Current rating - Mini SURE-SEAL



—1: 2-way connector, wire size 0,75mm²
—2: 2-way connector, wire size 0,4mm²

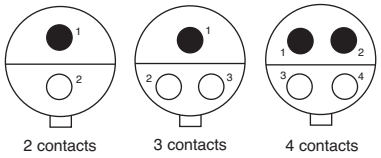
Connector fully equipped with stamped contacts

Dimensions shown in mm
Specifications and dimensions subject to change

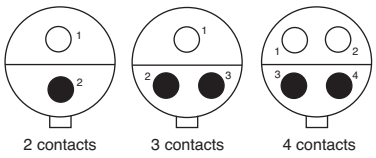
Contact Arrangements

● Pin ○ Socket

Plug

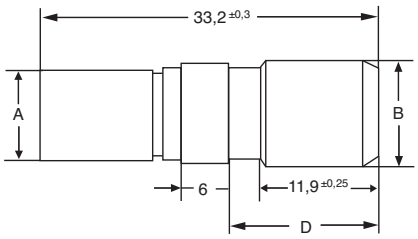


Receptacle

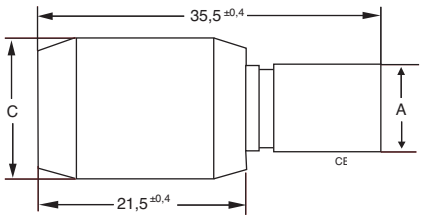


Part Numbers

Plug No. of contacts	Shell size	black
2	MSS 2 P	120-8552-100
3	MSS 3 P	120-8552-101
4	MSS 4 P	120-8552-102



Receptacle No. of contacts	Shell size	black
2	MSS 2 R	120-8551-100
3	MSS 3 R	120-8551-101
4	MSS 4 R	120-8551-102



Measurements

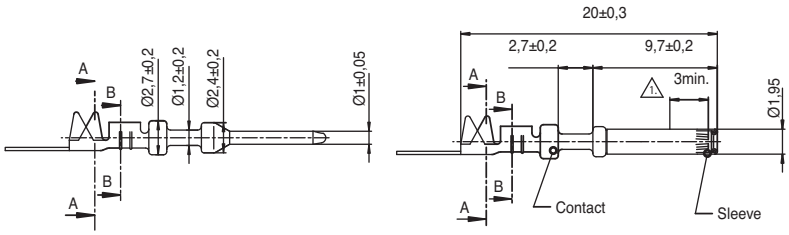
Shell size	ØA ± 0,15	ØB - 0,2	ØC - 0,3	ØD ± 0,3
MSS 2 P/R	8,2	9,6	13,4	16,3
MSS 3 P/R	8,8	10,4	14,4	13,4
MSS 4 P/R	8,8	11,0	15,0	13,4

Contacts, stamped

With insulation support

			Pins	Sockets	Wire hole fillers
Mini SURE-SEAL	0,4– 0,75 mm²	individual	330-8672-100	031-8703-100	225-1012-000
		on reels, 5000 pcs.	121348-0100	121347-0100	225-1012-000

Pin Socket Wire hole filler *

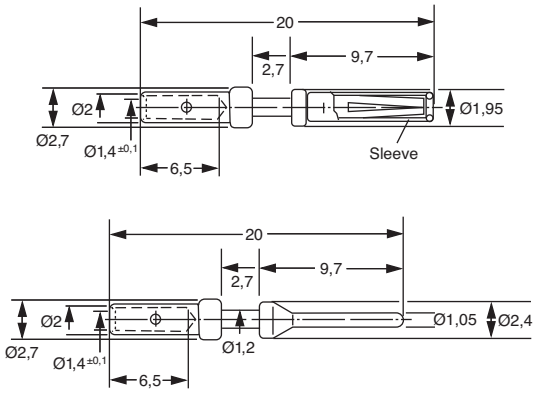


* Wire hole fillers are inserted into unused cavities instead of a contact in order to create a watertight sealing.

Contacts, machined

		Pins	Sockets	Wire hole fillers
Mini SURE-SEAL 0,4– 0,75 mm²	individual	330-8672-005	031-8703-052	225-1012-000

Pin Socket Wire hole filler *



* Wire hole fillers are inserted into unused cavities instead of a contact in order to create a watertight sealing.

Electrical Data

Operating Voltage	48 VDC*
Operating Current	see derating curve
Contact Resistance	10 Milliohms max.
Dielectric Withstanding Voltage	1200 VAC at sea level
Insulation Resistance	100 Megaohms min.

Wire Dimensions

Wire Range	0,75– 1,5 mm² (AWG 18–14) 0,5-1,0 mm² (AWG 20–16)
Wire insulation Sealing Range	1,8– 2,8 mmØ

Mechanical Data

No. of contacts per connector	2 to 10
Polarization	Stepped plane positive polarization and visual polarization
Contact Retention	35 N minimum
Durability	50 mating cycles with stamped contacts, tin-plated 100 mating cycles with machined contacts, silver-plated

Environmental Data

Temperature Range	-40°C to 105°C
Humidity Range	up to 95% r.h.
Sealing	IP 68 (100 kPa = 1 bar/12 h) (IEC 60529)
Salt spray	100 h (DIN 50021, test SS)
Vibration	Sine wave 10-55 Hz, 1,5mm (IEC 60512-4, test 6d)
Physical Shock	Half sine 500 m/s², 11ms
Fluid Compatability	Fuel, engine oil, break fluid, detergent fluid and others
Ozone Resistance	50 pphm, 48 h (DIN 53509-1)

*Further information available upon request

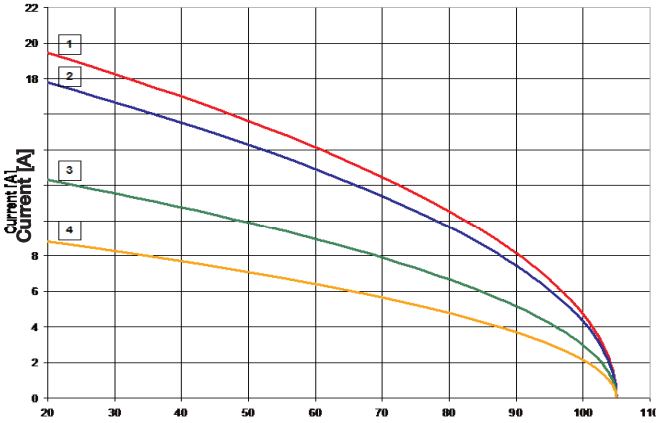
Materials and Finishes

Plug and Receptacle	Nitril-Butadien rubber
Contacts, stamped	Copper alloy, tin plating
Contacts, machined	Copper alloy, hard silver plating

Applications

Industrial Machinery
Rail
Construction & Cleaning Vehicles
Trucks & Busses
Cranes

Current rating - SURE-SEAL



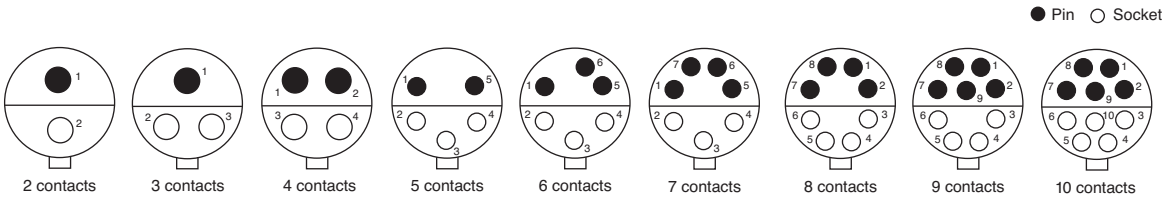
Ambient Temperature [°C]

—1: 2-way connector, wire size 1,5mm²
—2: 7-way connector, wire size 1,5mm²
—3: 2-way connector, wire size 0,5mm²
—4: 7-way connector, wire size 0,5mm²

Connector fully equipped with stamped contacts

Plug

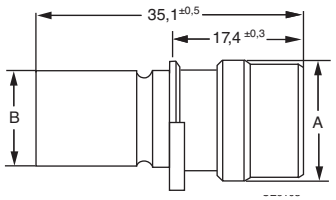
Contact Arrangements



Part Numbers

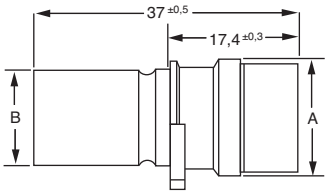
2, 3 and 4 Contacts

No. of contacts	Shell size	Part No.	A – 0,3	B – 0,3	Insulation Ø
2	SS2P	120-8552-000	13,9	10,9	1,8 – 2,8
3	SS3P	120-8552-001	15,2	12,3	1,8 – 2,8
4	SS4P	120-8552-002	15,2	12,3	1,8 – 2,8



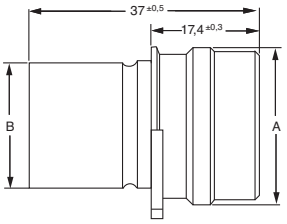
5, 6 and 7 Contacts

No. of contacts	Shell size	Part No.	A – 0,3	B – 0,3	Insulation Ø
5	SS5P	120-8552-005	25,3	20,2	1,8 – 2,8
6	SS6P	120-8552-006	25,3	20,2	1,8 – 2,8
7	SS7P	120-8552-007	25,3	20,2	1,8 – 2,8



8 to 10 Contacts

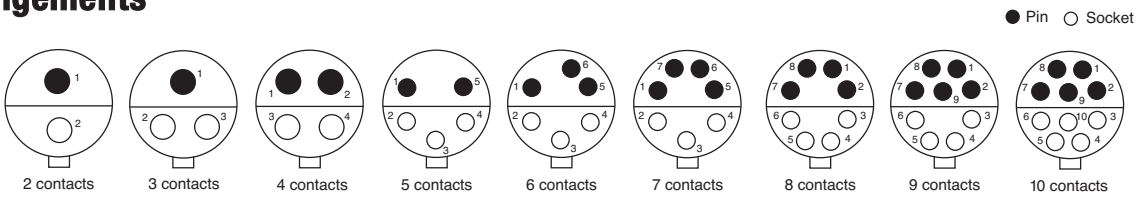
No. of contacts	Shell size	Part No.	A ± 0,3	B ± 0,2	Insulation Ø
8	SS8P	120-8552-308	28,55	23,5	1,8 – 2,8
9	SS9P	120-8552-309	28,55	23,5	1,8 – 2,8
10	SS10P	120-8552-310	28,55	23,5	1,8 – 2,8



Dimensions shown in mm
Specifications and dimensions subject to change

Plug with flange

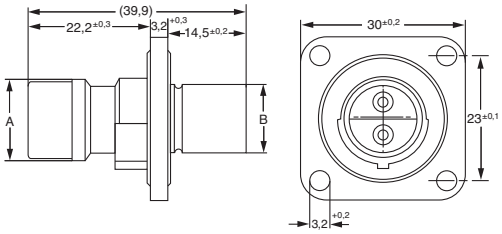
Contact Arrangements



Part Numbers

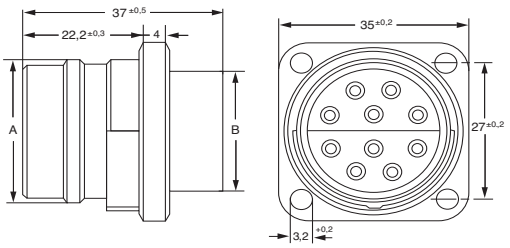
2, 3 and 4 Contacts

No. of contacts	Shell size	Part No.	A – 0,3	B – 0,3	Insulation Ø
2	SSF2P	120-8552-200	13,9	10,8	1,8 – 2,8
3	SSF3P	120-8552-201	15,2	12,3	1,8 – 2,8
4	SSF4P	120-8552-202	15,2	12,3	1,8 – 2,8



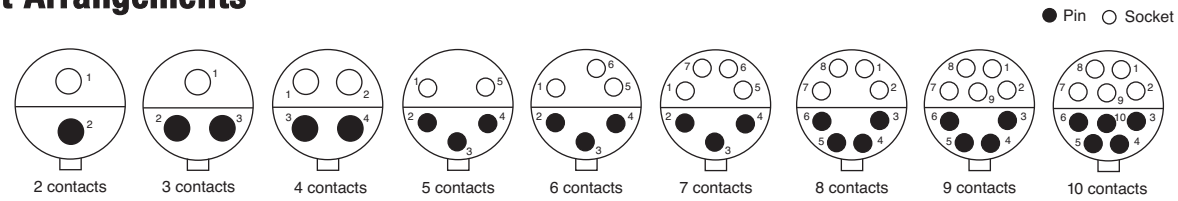
8, 9 and 10 Contacts

No. of contacts	Shell size	Part No.	A ± 0,3	B ± 0,2	Insulation Ø
8	SSF8P	120-8552-305	28,55	23,5	1,8 – 2,8
9	SSF9P	120-8552-306	28,55	23,5	1,8 – 2,8
10	SSF10P	120-8552-307	28,55	23,5	1,8 – 2,8



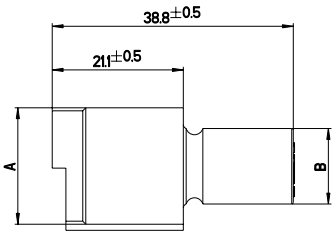
Receptacle

Contact Arrangements

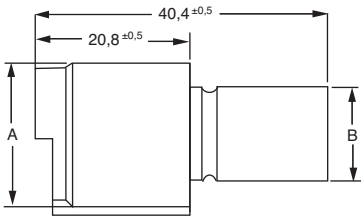


Part Numbers

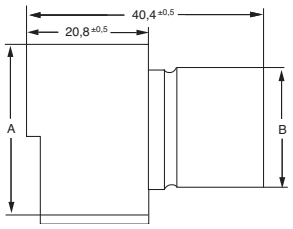
No. of contacts	Shell size	Part No.	A – 0,5	B – 0,3	Insulation Ø
2	SS2R	120-8551-000	18,0	10,9	1,8 – 2,8
3	SS3R	120-8551-001	18,9	12,3	1,8 – 2,8
4	SS4R	120-8551-002	18,9	12,3	1,8 – 2,8



No. of contacts	Shell size	Part No.	A – 0,5	B – 0,3	Insulation Ø
5	SS5R	120-8551-005	29,1	20,2	1,8 – 2,8
6	SS6R	120-8551-006	29,1	20,2	1,8 – 2,8
7	SS7R	120-8551-007	29,1	20,2	1,8 – 2,8



No. of contacts	Shell size	Part No.	A – 0,5	B ± 0,3	Insulation Ø
8	SS8R	120-8551-308	33,5	23,5	1,8 – 2,8
9	SS9R	120-8551-309	33,5	23,5	1,8 – 2,8
10	SS10R	120-8551-310	33,5	23,5	1,8 – 2,8



Dimensions shown in mm
Specifications and dimensions subject to change

Contacts, stamped

with insulation support		Pins	Sockets	Wire hole fillers
SURE-SEAL 0,5– 1,0 mm²	individual	330-8672-001	031-8703-001	225-0093-000
	on reels, 5000 pcs.	121348-0020	121347-0020	
SURE-SEAL 0,75– 1,5 mm²	individual	330-8672-000	031-8703-000	
	on reels, 5000 pcs.	121348-0010	121347-0010	

Pin Socket Wire hole filler *

* Wire hole fillers are inserted into unused cavities instead of a contact in order to create a watertight sealing.

Contacts, machined

without insulation support	Pins	Sockets	Wire hole fillers
SURE-SEAL 0,5– 1,0 mm²	330-8672-002	031-8703-050	225-0093-000
SURE-SEAL 0,75-1,5 mm²	330-8672-003	031-8703-051	

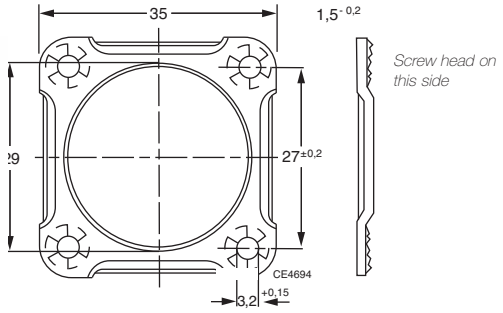
Pin Socket Wire hole filler *

* Wire hole fillers are inserted into unused cavities instead of a contact in order to create a watertight sealing.

Mounting plate

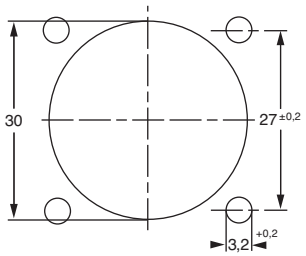
For SURE-SEAL with flange Steel, zinc finish

Order ref. 066-8516-002

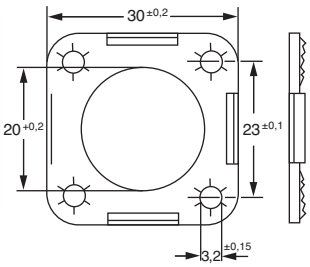


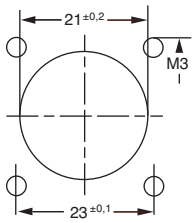
Mounting Dimensions

Front and rear panel mounting



Order ref. 066-8516-000

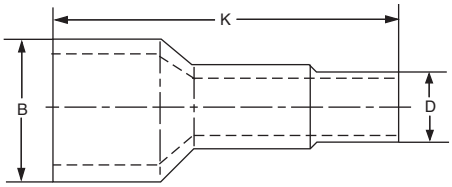




ITT

Dimensions shown in mm
Specifications and dimensions subject to change

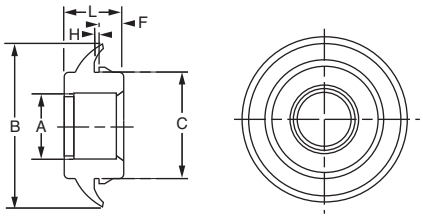
Accessories



Boot

Seals wired cable jackets to connector housing. It also provides abrasion resistance.

For connector size	Order ref.	B Ømax.	D Ømax.	outer cable Ø	K max.
2 contacts	317-1398-000	17,00	9,70	5,28 – 5,79	52,07
3/4 contacts	317-1397-000	15,80	9,70	5,59 – 6,10	52,50
3/4 contacts	317-1399-000	19,40	12,90	8,76 – 9,65	52,07
5/7 contacts	317-8657-000	27,60	12,50	7,20 – 8,40	62,00
8/9/10 cont.	317-8657-002	31,50	17,50	10,00 – 12,40	64,00



Grommet

Grommets enable panel mounting of either plugs or receptacle. It snaps into a hole of a panel so non-flanged plugs or receptacles can be mounted.

For connector size	Order ref.	A Ømax.	B Ømax.	C Ømax.	F max.	H	L max.
2 contacts	351-1640-000	10,41	32,39	19,18	5,84	1,40	17,53
3/4 contacts	351-1641-000	11,94	32,39	19,18	5,84	1,40	17,53
5/6/7 contacts	351-1633-000	19,43	55,88	36,70	8,00	1,65	20,57
8/9/10 cont.	351-1634-000	22,61	55,88	36,70	8,00	1,65	20,57

Wire Fillers

Wire hole fillers are inserted into unused cavities instead of a contact in order to create a watertight sealing.

Wire hole filler
Mini SURE-SEAL
Part Number 225-1012-000

Wire hole filler
SURE-SEAL
Part Number 225-0093-000

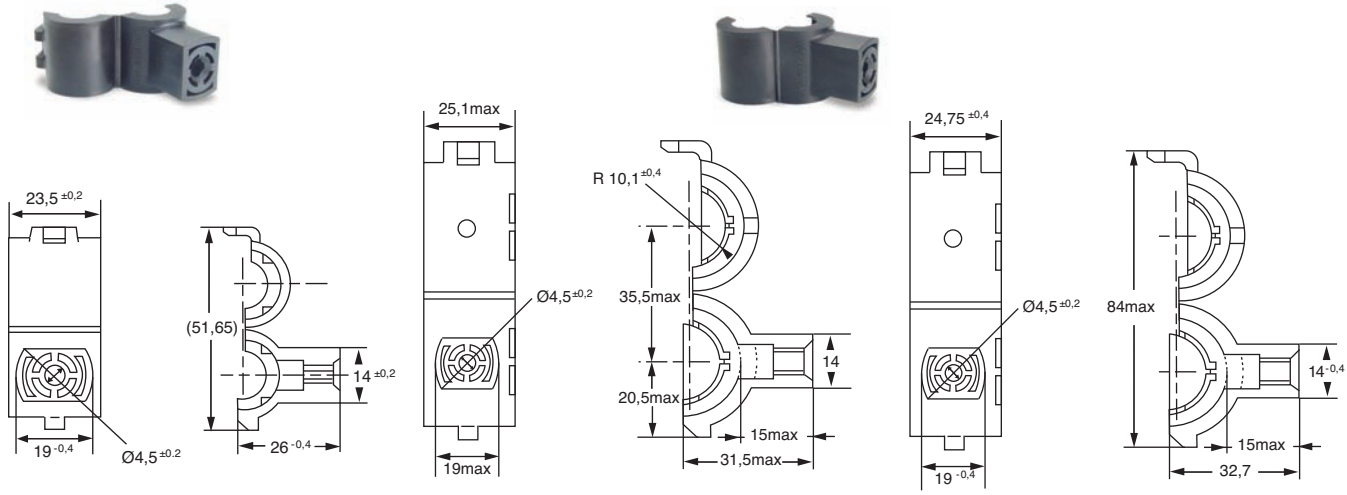
Dimensions shown in mm
Specifications and dimensions subject to change

Accessories Clip/Clamp

Clips/Clamps can be used as an extra lock to secure two connector halves. Due to its design it also offers the possibility for fixed mounting a mated pair by using a screw or a cable tie.

Clamp

Clamps, plug and receptacle in mated condition



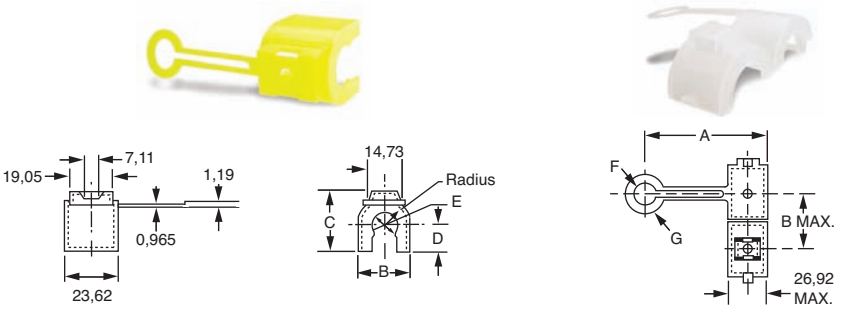
2, 3, 4 Contacts
Order Ref. 029-8514-001

5, 6, 7 Contacts
Order Ref. 029-8514-000

8, 9, 10 Contacts
Order Ref. 029-8514-004

Mounting Clip

Clamps, plug and receptacle in mated condition



2, 3, 4 Contacts

5-10 Contacts

Connector size	Color of clip	Order ref.	A max.	B	C	D	E Ø	F max.	G max.
2 contacts	Red	029-0263-000	–	22,61	25,40	10,67	10,7	–	–
3/4 contacts	Yellow	029-0262-000	–	23,62	26,67	11,43	12,19	–	–
5/6/7 contacts	Natural	026-0450-000	77,34	35,43	–	–	–	15,49	23,11
8/9/10 contacts	Black	026-0451-000	77,34	38,61	–	–	–	16,76	24,38

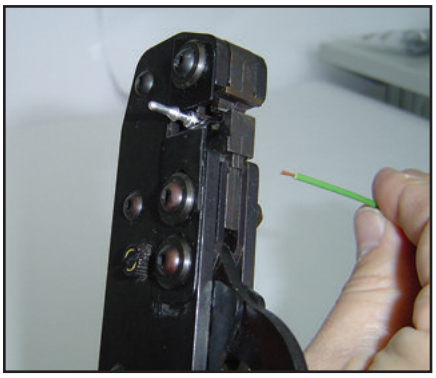
Hand Crimp Tool CCT

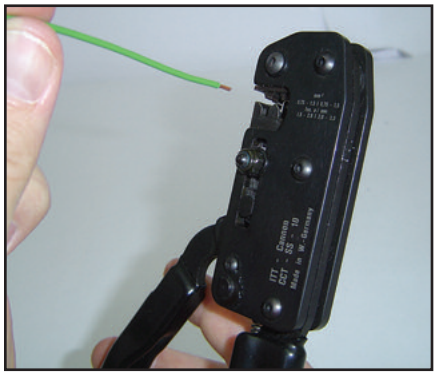
for stamped contacts

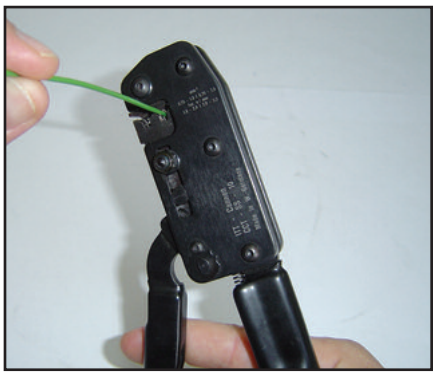
Crimp tool	Order no.	Contact size	Pin contact	Socket contact	Stripping length mm	Outer wire insulation Ø
CCT-MSS/SS-20	121586-0085	SS-20	330-8672-001	031-8703-001	3,6-3,8	1,8-2,4
CCT-MSS/SS-20	121586-0085	MSS-100	330-8672-100	031-8703-100	3,3-3,6	1,4-1,8
CCT-SS-10	121086-3225	SS-10	330-8672-000	031-8703-000	5,0-5,5	1,8-2,8

Instructions

- Strip wire (neither twist nor touch stripped section)

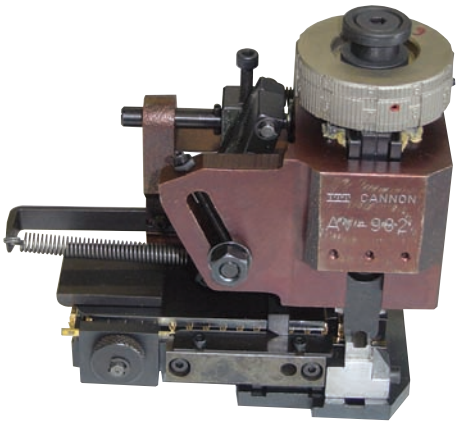






- Insert single contact in correct crimp profile and locate onto wire stop (refer to table for outer insulation diameter).
- Close hand crimp tool until it holds contact in place.
- Insert pre-stripped wire until light contact is made on wire stop, and lay wire into contact barrels.
- Fully close hand crimp tool until ratchet releases.
- Remove contact.
- Inspect crimped area visually.

Dimensions shown in mm
Specifications and dimensions subject to change



ITT Cannon Mini Applicator

for semi-automatic and automatic crimp machines

Cannon Mini Applicator can be exchanged easy, quick and effortless. The compact construction as well as the clamping device allow using the Mini Applicator with other crimp machines.

Technical Data

Lift	40 mm
Wire size to be processed	max 4mm^2
Installation dimension (lower dead center)	135.78 +/- 0,02 mm

Contacts

Contacts for the different connector series are available on reels. They can be terminated with the tool on the Basic Crimp Press TT (part number 121586-5225).

Quick Change Tool	Part Number	Contacts	Contacts per reel	Termination range mm^2
WWZ-EVS-SS-10	121586-5215	Sure Seal	5,000	0,75 - 1,5
WWZ-EVS-SS-20	121586-5216	Sure Seal	5,000	0,5 - 1,0
WWZ-EVS-MSS	121586-5214	Mini Sure Seal	5,000	0,4 - 0,75

Adjustments for the tools - please refer to the datasheet supplied with the tool.

Hand Crimp Tool M22520-1-01

for machined contacts

Crimp tool	Contacts	Contact Size	Positioner	Wire size Pin and Socket mm	AWG	Stripping Length mm
M22520-1-01 Part Number: 995-0001-585	330-8672-003 031-8703-051	SS10	120090-0114	0,75-1,5		6,5 $^{+0,3}$
	330-8672-009 330-8672-002 031-8703-050 031-8703-055	SS20	120090-0114	0,5-1,0		6,5 $^{+0,3}$
	330-8672-008 031-8703-054	SS	120090-0114		12-14	6,5 $^{+0,3}$
	330-8672-005 031-8703-052	MSS-100	120090-0114	0,4-0,75		5,2 $^{+0,2}$

Pneumatic Crimp Tool WA27F-CE

for machined contacts

This tool is designed for 8-indent crimps. For insertion and removal of contact insert please refer to tool description.

Specifications

Air pressure 5.7-6.3 bar
Weight 4 kg

Sequence

- Mount correct contact positioner.
- Adjust tool for correct wire size using reference gauge (refer to table).
- Place contact in correct positioner.
- Insert stripped wire into crimp bore hole of contact.

Order numbers

Crimp tool	Contacts	Contact Size	Positioner	Wire size Pin and Socket mm²	AWG	Stripping Length mm
WA27F-CE Part Number: 121586-5067	330-8672-003 031-8703-051	SS10	120090-0114	0,75-1,5		6,5 $^{+0,3}$
	330-8672-009 330-8672-002 031-8703-050 031-8703-055	SS20	120090-0114	0,5-1,0		6,5 $^{+0,3}$
	330-8672-008 031-8703-054	SS	120090-0114		12-14	6,5 $^{+0,3}$
	330-8672-005 031-8703-052	MSS-100	120090-0114	0,4-0,75		5,2 $^{+0,2}$

Bench Mount: BM-2 121586-5068
Foot Pedal: WA10 121586-5069

Dimensions shown in mm
Specifications and dimensions subject to change

Semi-Automatic Crimp Machine HACS-5

for machined contacts

Machined contacts can be terminated quickly and efficiently with the Cannon semi-automatic crimp machine HACS-5.

Specifications

Power supply	220 V/Hz
Air pressure	min. 6 bar
Dimensions	600 x 600 mm
Weight	approx. 82 kg

For operating the machine and adjusting the crimp depth please refer to separate operating instructions

Crimp machine	Contacts	Contact Size	Wire size Pin and Socket mm²	AWG	Stripping Length mm
HACS-5-SS	330-8672-003 031-8703-051	SS10	0,75-1,5		6,5 +0,3
	330-8672-009 330-8672-002 031-8703-050 031-8703-055	SS20	0,5-1,0		6,5 +0,3
HACS-5-SS-12/14 *	330-8672-008 031-8703-054	SS		12-14	6,5 +0,3
HACS-5-MSS *	330-8672-005 031-8703-052	MSS-100	0,4-0,75		5,2 +0,2

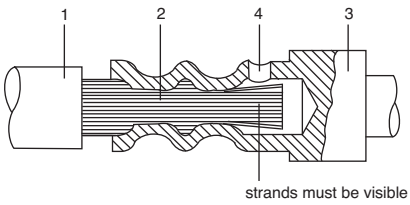
Spare indenter: 7011707 (121586-0038)

* available upon request

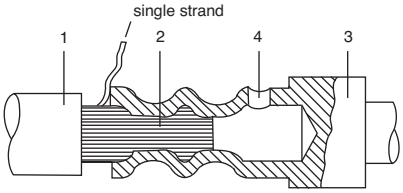
Visual Check

for machined contacts

Correct crimp



Incorrect crimp



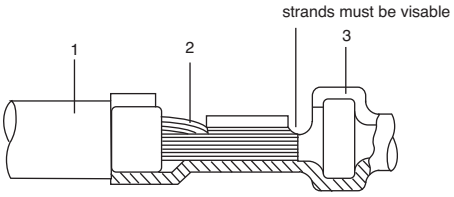
1 insulation 2 strands 3 contact 4 drill bore

Tensile strength according to DIN 41611, section 3

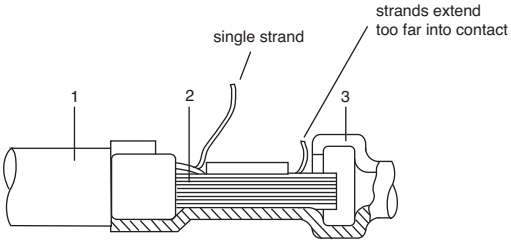
Micro sections

Enlargement of micro section allows for final judgement of crimp quality. This test is recommended whenever new tools or new types of wire are used.

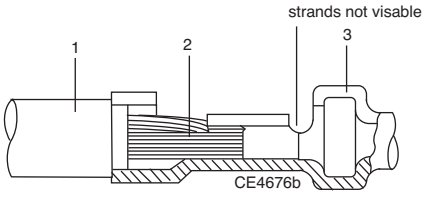
Correct crimp



Incorrect crimp



Incorrect crimp



1 insulation 2 strands 3 contact

Contact Insertion Tools

for machined contacts

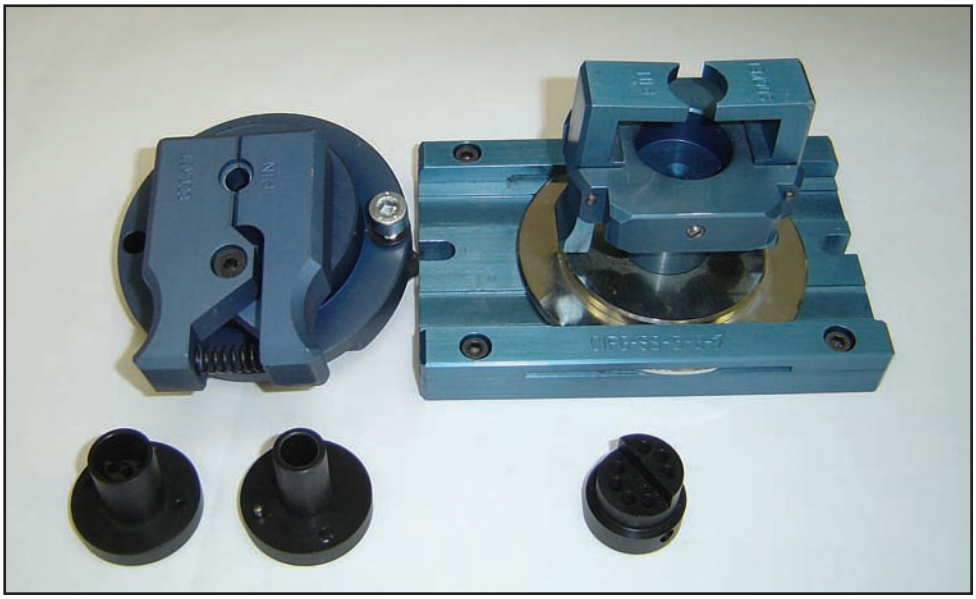
Support block for series production

Support block to install contacts in small and medium series. This support block consists of a basic body which can be equipped, according to individual requirements, with exchangeable insert for plugs and receptacles.

Please note: When required exchangeable inserts to be ordered separately.

Support block

for 2 to 10 way SURE-SEAL, SURE-SEAL with flange and for Mini SURE-SEAL 2 to 4 way.



No. of contacts	Basic tool to use for SURE-SEAL Standard Plug/Receptacle	Order No.	Plug with Flange	Order No.	Mini SURE SEAL	Order No.
2	CIFG-SS-2	121086-3022	CIF-SSF-2	121086-3057	CIF-MSS-2	121086-3021
3	CIFG-SS-3	121086-3019	CIF-SSF-3	121086-3058	CIF-MSS-3	121086-3077
4	CIFG-SS-4	121086-3020	CIF-SSF-4	121086-3059	CIF-MSS-4	121086-3078
5/6/7	CIFG-SS-5-6-7	121586-0080	CIF-SSF-5-6-7	*		
8/9/10	CIFG-SS-8-9-10	121086-3056	CIF-SSF-8-9-10	*		

*available upon request

No. of contact	Exchangeable inserts to use for SURE-SEAL Standard Plug	Plug with flange	Receptacle	Mini SURE-SEAL Plug	Receptacle
2	195-8508-000	195-8508-000	195-8508-001	195-8508-013	195-8508-014
3	195-8508-002	195-8508-002	195-8508-003	195-8508-015	195-8508-016
4	195-8508-004	195-8508-004	195-8508-005	195-8508-017	195-8508-018
5/6/7	195-8508-006	195-8508-006	195-8508-007		
8/9/10	195-8508-008	195-8508-008	195-8508-009		

Insertion Tool CIT

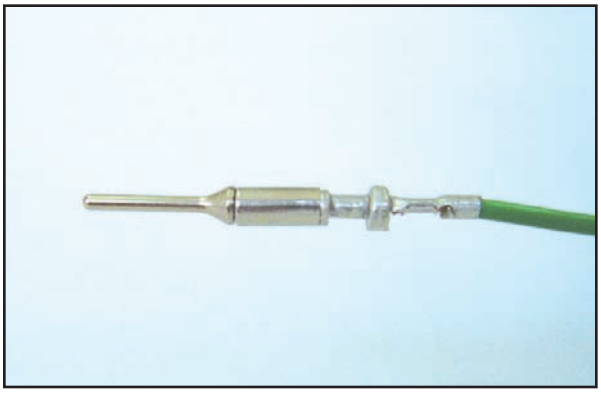
Hand insertion tool

Type of insulator	Description	Order No.	Outer insulation Ø
SS 2P + R to SS 10P + R SSF 8, 9, 10P	CITG-SS-1	121086-3025	1,8-2,8
SSF 2, 3, 4P	CIT-SSF-1	121086-3203	1,8-2,8
MSS 2, 3, 4P+R	CIT-MSS-1	121086-3023	1,4-1,8

Insertion tip

Type of insulator	Description	Order No.	Outer insulation Ø
SS 2P + R to SS 10P + R SSF 8, 9, 10P	CITG-SS-1-TIP	121586-0076	1,8-2,8
SSF 2, 3, 4P	CIT-SSF-1-TIP	121086-3202	1,8-2,8
MSS 2, 3, 4P+R	CIT-MSS-1-TIP	121586-0074	1,4-1,8

Handle
Order number: 204-8501-002



Contact holder tip

Type of insulator	Order No.	Outer insulation Ø
SS 2P + R to SS 10P + R SSF 8, 9, 10P	317-8666-005	1,8-2,8
SSF 2, 3, 4P	317-8666-007	1,8-2,8
MSS 2, 3, 4P+R	317-8666-002	1,4-1,8

Guiding pins have to be used for socket contacts. They are not necessary for Mini SURE-SEAL.

Order number: 317-8588-000

Approved lubricating fluid
Isopropyl alcohol
Cleaning solvent (e.g. HAKU 424, Chem. Fabrik Kluthe, Heidelberg, Germany)

Insertion Press CHPZ-240

A hand actuated insertion press can be used instead of a hand insertion tool. A manual assembly station consists of a press, a support block and a suitable insertion tip (refer to page 20-22). The CHPZ press, the required CIF... support block and the insertion tip must be ordered separately.

Basic press:	CHPZ-240
Support block:	Refer to page 20
Insertion tip:	Refer to table
Wire holder (accessory):	121086-3210

Version A: Single insertion tip, also used for the hand insertion tool
B: Double insertion tip
C: Single insertion tip; can be turned twice by 120°
D: Single insertion tip; can be turned once by 180°

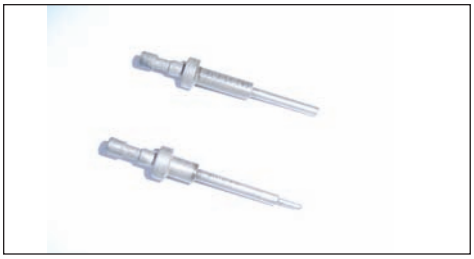
Parts subject to wear

Insertion tip

Type of contact	Order no.	Outer insulation Ø
SS-10	317-8666-007	1,8-2,8
SS-20	317-8666-007	1,8-2,8
MSS-100	317-8666-002	1,4-1,8

No. of contacts	Version A	Version B	Version C	Version D
2	• CIT-SSF-1-TIP ▪ CIT-MSS-1-TIP	• CIT-SSF-2-TIP ▪ CIT-MSS-2-TIP		
3	• CIT-SSF-1-TIP ▪ CIT-MSS-1-TIP		• CIT-SSF-3-TIP ▪ CIT-MSS-3-TIP	
4	• CIT-SSF-1-TIP ▪ CIT-MSS-1-TIP			• CIT-SSF-4-TIP ▪ CIT-MSS-4-TIP
5	• CIT-SSF-1-TIP			
6	• CIT-SSF-1-TIP			
7	• CIT-SSF-1-TIP			
8	• CIT-SSF-1-TIP			
9	• CIT-SSF-1-TIP			
10	• CIT-SSF-1-TIP			

• = Standard SURE-SEAL with flange ▪ = Mini SURE-SEAL (MSS)



Extraction Tools CET

Hand extraction tool

Type of insulator	Pin Contact Desc.	Pin Contact Order No.	Socket Contact Desc.	Socket Contact Order No.
SS 2 - 10P + R SSF 2, 3, 4P SSF 8, 9, 10P	CET-SS-P	121586-0121	CET-SS-S	121586-0122
MSS 2, 3, 4P+R	CET-MSS-P	121586-0123	CET-MSS-S	121586-0124

Spare tip

Type of insulator	Pin Contact Desc.	Pin Contact Order No.	Socket Contact Desc.	Socket Contact Order No.
SS 2 - 10P + R SSF 2, 3, 4P SSF 8, 9, 10P	CET-SS-P-TIP	121086-3207	CET-SS-S-TIP	121086-3189
MSS 2, 3, 4P+R	CET-MSS-P-TIP	121086-3191	CET-MSS-S-TIP	121086-3192

Handle
Order number: 204-8501-002

Auxiliary Tools CIEF and CIET

Auxiliary tools for repairs

Device for holding connectors during insertion and extraction of crimped contacts.

No. of contacts	Type of insulator	Description	Order no.
2, 3, 4	SS...P + R SSF...P	CIEF-SS-2-3-4	121086-3097
5, 6, 7	SS...P + R	CIEF-SS-5-6-7	121086-3098
8, 9, 10	SS...P + R SSF...P	CIEF-SS-8-9-10	121086-3179
2, 3, 4	MSS...P + R	CIEF-MSS-2-3-4	121086-3099

Guiding pins can be extracted by using a socket contact which is slightly tilted.

Kit for field repair work and prototype

Kit	No. of contacts	Type of insulator	Description	Order no.
1	2, 3, 4 2, 3, 4	SS...P + R SSF...P	CIET-SS-2-3-4-KIT-10	121086-3226
2	5, 6, 7	SS...P + R	CIET-SS-5-6-7-KIT-10	*
3*	8, 9, 10 8, 9, 10	SS...P + R SSF...P	CIET-SS-8-9-10-KIT-10	121086-3228
4	2, 3, 4 2, 3, 4	SS...P + R SSF...P	CIET-SS-2-3-4-KIT-20	121086-3229
5	5, 6, 7	SS...P + R	CIET-SS-5-6-7-KIT-20	*
6*	8, 9, 10 8, 9, 10	SS...P + R SSF...P	CIET-SS-8-9-10-KIT-20	*
7	2, 3, 4	SS...P + R	CIET-MSS-2-3-4-KIT	121086-3232

Contents

1 Operating instruction
1 CIEF Insertion and extraction holder
1 CIT Insertion tool
1 CET Extraction tool (socket contacts)
1 CET Extraction tool (pin contacts)
1 CCT Crimp tool

Lubricating fluid: Isopropyl alcohol
10 Guiding pins (not included for MSS)

* upon request

Dimensions shown in mm

Specifications and dimensions subject to change

Semi-Automatic Assembly Machine CBITA

for 2 to 10 way SURE-SEAL connectors.

Technical Data

Air pressure	min. 6 bar
Weight	approx. 60 kg
Power supply	220 V/50Hz

No. of contacts	Assembly machine
2	CBITA-SS-2
3	CBITA-SS-3
4	CBITA-SS-4
5	CBITA-SS-5
6	CBITA-SS-6
7	CBITA-SS-7
8	CBITA-SS-8
9	CBITA-SS-9
10	CBITA-SS-10

Parts subject to wear:

Guiding pin-Sensor release	121586-5229
Guiding pin-Foot pedal release	970-8606-022
Widening tip	252-7015-003

Wiring Instructions

Note: Insert accessories (e. g. Boot) prior to assembly.

Stripping lengths

For jacketed cables the following stripping lengths have to be adhered to.

No. of contacts	min. stripping lengths mm
2, 3, 4	40
5, 6, 7	45
8, 9, 10	50

Insertion contacts

SURE-SEAL connectors have a one-piece connector body made of rubber. Contacts are inserted from the rear side. They may only be inserted with the approved tools (refer to page 19-23).

Plug or receptacle must be sprayed with lubricating fluid before contact insertion.

Approved lubricating fluid

Manual insertion

Isopropyl alcohol
Cleaning solvent HAKU 1025-975 or HAKU 1025-800, Chem. Werke Kluthe Gottlieb-Daimler Straße 12, 69115 Heidelberg

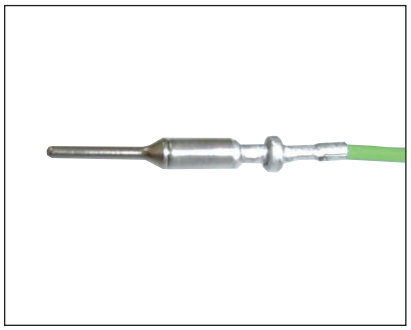
Semi-automatic insertion

CBITG...and CBITS-...Hellerine (HellermanTyton, Grosser Moorweg 45, 25436 Tomesch) for sprayer.

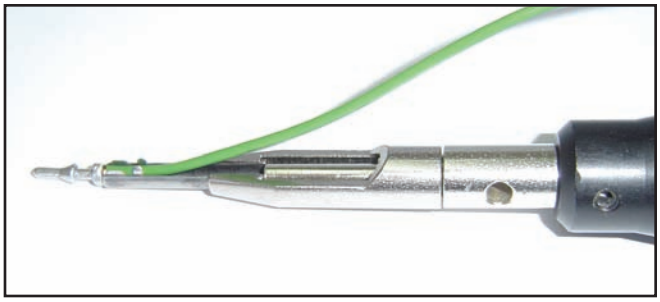
With hand insertion tools

Fasten supports (table, vice etc.)
An inclined position is recommended for easier assembly.

- Dip insulator in lubricating fluid and shake off excess fluid.
- Open fixing clip and place connector body into support block (refer to page 20).
- Insert cable resp. single wires into accessories (e. g. boot).
- Pay attention to correct sequence and position
- Install guiding pin 317-8588-000 (does not apply to Mini SURE-SEAL) in socket contact.



- Place contact in hand insertion tool. The contact shoulder has to touch the front side of the contact tip.

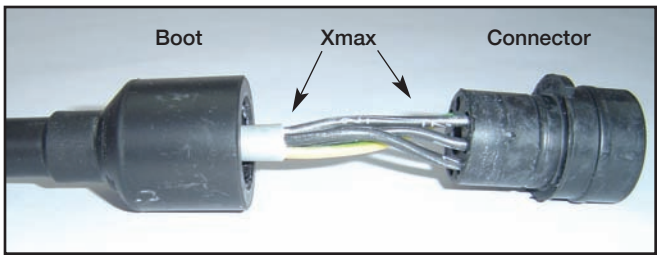


- Insert contact into the connector until it snaps in by applying constant pressure. Note: Make sure that the contact and tool are inserted parallel to the insulator axis. Do not tilt!

Note: Socket or pin contacts have to be inserted into the correct contact cavity.

- Remove guiding pins from the socket contacts!
- Mount accessories.
- Remove the terminated connector from support after insertion of all contacts and check correct fit and position of the contacts in the insulator.

Usage of jacketed cable with boot



No. of contacts	X max.
2, 3, 4	22
5, 6, 7	26

Dimensions shown in mm
Specifications and dimensions subject to change

Wiring Instructions

With CHPZ-240 hand lever insertion press

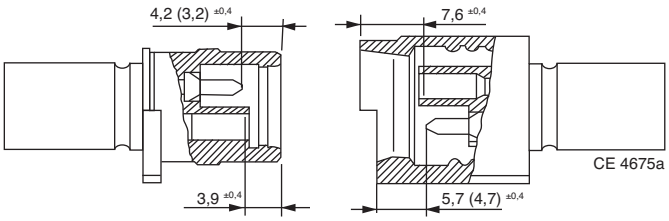
Mount correct support block and insertion tip to CHPZ-240 insertion press (refer to page 22).

- Dip connector body into lubricating fluid and shake off excess fluid. Open fixing clip and place connector body in support block (refer to page 20).
- Insert wire into accessories. Pay attention to correct sequence and position (refer to illustration page 25).
- Insert guiding pins 317-8588-000 (only for Standard SURE-SEAL) into socket contacts (refer to illustration page 25).
- Place contact into insertion tip. Contact shoulder has to be flush with lower edge of the contact tip.
- Adjust height of hand lever press: For first insertion loosen stop at the upper end of the press. Move down lever slowly and steadily and adjust stop until contact is in the correct position (refer to page 21). Tighten stop. This adjustment may be used for both socket and pin contacts. After this adjustment the lever is simply pressed until stop is reached. Remove terminated connector from support after all contacts are inserted.
- Check fit and position of contacts in insulator.
- Remove guiding pins from socket contacts.
- Assemble accessories.

For Assembly Machines CBITG and CBITS

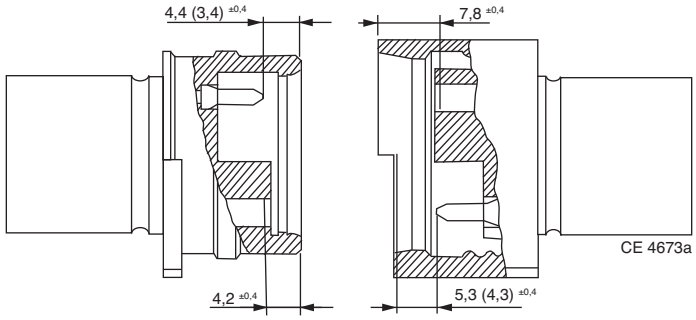
refer to seperate operating instructions

Standard SURE-SEAL



Plug 2 to 4 contacts

Receptacle 2 to 4 contacts

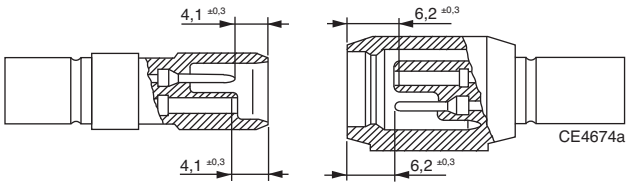


Plug 5 to 10 contacts

Receptacle 5 to 10 contacts

Different dimensions for machined contacts are given in paranthesis.

Mini SURE-SEAL



MSS plug 2 to 4 contacts

MSS receptacle 2 to 4 contacts

Part Number Index

Product Safety Information

THIS NOTE MUST BE READ IN CONJUNCTION WITH THE PRODUCT DATA SHEET/CATALOG. FAILURE TO OBSERVE THE ADVICE IN THIS INFORMATION SHEET AND THE OPERATING CONDITIONS SPECIFIED IN THE PRODUCT DATA SHEET/ CATALOG COULD RESULT IN HAZARDOUS SITUATIONS.

1. MATERIAL CONTENT AND PHYSICAL FORM

Electrical connectors do not usually contain hazardous materials. They contain conducting and non-conducting materials and can be divided into two groups.

a) Printed circuit types and low cost audio types which employ all plastic insulators and casings.

b) Rugged, Fire Barrier and High Reliability types with metal casings and either natural rubber, synthetic rubber, plastic or glass insulating materials. Contact materials vary with type of connector and also application and are usually manufactured from either: Copper, copper alloys, nickel, alumel, chromel or steel. In special applications, other alloys may be specified.

2. FIRE CHARACTERISTICS AND ELECTRIC SHOCK HAZARD

There is no fire hazard when the connector is correctly wired and used within the specified parameters. Incorrect wiring or assembly of the connector or careless use of metal tools or conductive fluids, or transit damage to any of the component parts may cause electric shock or burns. Live circuits must not be broken by separating mated connectors as this may cause arcing, ionization and burning. Heat dissipation is greater at maximum resistance in a circuit. Hot spots may occur when resistance is raised locally by damage, e.g. cracked or deformed contacts, broken strands of wire. Local overheating may also result from the use of the incorrect application tools or from poor quality soldering or slack screw terminals. Overheating may occur if the ratings in the product Data Sheet/Catalog are exceeded and can cause breakdown of insulation and hence electric shock. If heating is allowed to continue it intensifies by further increasing the local resistance through loss of temper of spring contacts, formation of oxide film on contacts and wires and leakage currents through carbonization of insulation and tracking paths. Fire can then result in the presence of combustible materials and this may release noxious fumes. Overheating may not be visually apparent. Burns may result from touching overheated components.

3. HANDLING

Care must be taken to avoid damage to any component parts of electrical connectors during installation and use. Although there are normally no sharp edges, care must be taken when handling certain components to avoid injury to fingers. Electrical connectors may be damaged in transit to the customers, and damage may result in creation of hazards. Products should therefore be examined prior to installation/use and rejected if found to be damaged.

4. DISPOSAL

Incineration of certain materials may release noxious or even toxic fumes.

5. APPLICATION

Connectors with exposed contacts should not be selected for use on the current supply side of an electrical circuit, because an electric shock could result from touching exposed contacts on an unmated connector. Voltages in excess of 30 V ac or 42.5 V dc are potentially hazardous and care should be taken to ensure that such voltages cannot be transmitted in any way to exposed metal parts of the connector body. The connector and wiring should be checked, before making live, to have no damage to metal parts or insulators, no solder blobs, loose strands, conducting lubricants, swarf, or any other undesired conducting particles. Circuit resistance and continuity check should be made to make certain that there are no high resistance joints or spurious conducting paths. Always use the correct application tools as specified in the Data Sheet/Catalog. Do not permit untrained personnel to wire, assemble or tamper with connectors. For operation voltage please see appropriate national regulations.

IMPORTANT GENERAL INFORMATION

(i) Air and creepage paths/Operating voltage. The admissible operating voltages depend on the individual applications and the valid national and other applicable safety regulations.

For this reason the air and creepage path data are only reference values. Observe reduction of air and creepage paths due to PC board and/or harnessing.

(ii) Temperature

All information given are temperature limits. The operation temperature depends on the individual application.

(iii) Other important information

Cannon continuously endeavors to improve their products. Therefore, Cannon products may deviate from the description, technical data and shape as shown in this catalog and data sheets.

Product Warranty

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As a world leader in circular, filter, and hermetic connectors, ITT can leverage its design and manufacturing expertise to fit virtually any application. Our expertise includes fast positive mating for a wide range of military applications, as well as numerous sizes and contact configurations for various harsh environments. Our wide variety of fiber optic products include hybrid contacts, multi-channel, rack and panel, and hi-rel assemblies, including MIL and ARINC standard solutions.ITT can meet numerous specs, including NATO and MIL standards.

www.ittcannon.com/circulars • www.ittcannon.com/filter • www.ittcannon.com/hermetics • www.ittcannon.com/fiberoptics

D-Subminiature Connectors

Cannon invented D-sub connectors in 1952. Our family of D-Subs now includes combinations of signal, power and RF, as well as severe service sealed connectors. Cannon D-Subs are available with an extensive line of backshells and accessories and are one of the most economical shielded connector solutions available. ITT D-Sub connectors are qualified to the MIL-DTL-24308 specification.

www.ittcannon.com/dsubs

Microminiature Connectors

Developed first by Cannon in the 1960' s, Interconnect Solutions microminiature connectors offer high performance and reliability with exceptional versatility. Available in rectangular, circular, and strip configurations for countless applications, many of our connectors meet or exceed applicable requirements of the MIL-DTL-83513 specification.

www.ittcannon.com/micro

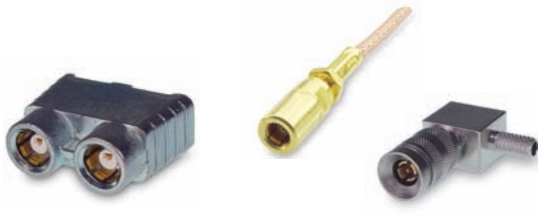
Rack and Panel Connectors

Initially pioneered by Cannon during the 1930s, Interconnect Solutions is the world leader in rack and panel connectors, offering unmatched variety of shell configurations and insert arrangements, materials, plating, and contact options. Many of our standard and custom designs meet the stringent requirements of ARINC 600, ARINC 404 (MIL-C-81659), and MIL-DTL-83733 standards.

www.ittcannon.com/rackandpanel

RF Connectors

ITT Interconnect Solutions has been providing interconnect products to the Microwave and RF industry since 1963 (formerly The Sealectro Corporation). The RF 50 & 75 Ohm product lines cover UHF band through Ku band requirements. These connectors and cable assemblies are available with a thread type, snap type, bayonet type or slide on coupling method. The frequencies range from DC to 18+ GHz.



www.ittcannon.com/RF50 • www.ittcannon.com/RF75

Transportation

The ITT ICS interconnect range includes sealed circular and rectangular connectors in metal or plastic shells. These configurations include board to cable or cable to cable/ bulkhead applications. Both signal and power contacts can be combined in various layouts. All product lines within the Transportation segment offer very low contact resistance providing maximum signal integrity.

www.ittcannon.com/transportation

ITT Interconnect Solutions is an international manufacturer and supplier of connectors including circular, rectangular, fiber optic, RF, power and high voltage, audio, PMCIA, Compact Flash Card, enclosures, cable assemblies, and application specific custom solutions. The Interconnect Solutions portfolio includes the brands Cannon, VEAM, and BIW. As a worldwide leader in connector technology for nearly a century, ITT offers one of the broadest product offerings, six sigma manufacturing capability, Value Based Product Development with exceptional engineering capability, and an extensive sales, distribution, and customer support network.

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