

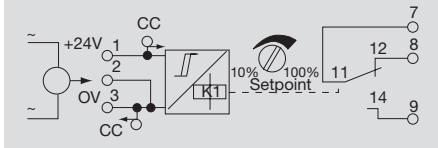
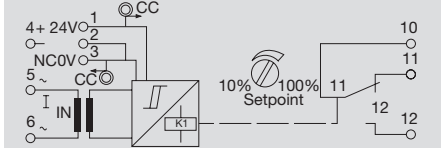
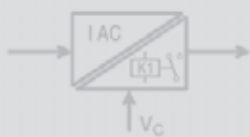
WAVESERIES - current monitoring

Relay output

- Current ranges adjustable via DIP switch
- Switchable hysteresis
- Operating or closed-circuit current principle

1/5/10 A AC

20/40/60 A AC



Technical data

Input	
Input current	0...1 A AC/ 0...5 A AC/ 0...10 A AC
Input frequency	50...60 Hz
max. current	100 A for 1 s
max. voltage	250 V AC
Sensor	Transforming (internally)
Diameter of entry	
Output	
Switching thresholds	adjustable 10...100% with front potentiometer
Hysteresis	5% or 10% of threshold value
Switching voltage, min./max.	6 V AC/DC /60 V DC/ 250 V AC
Switching current min./max.	100 mA /7 A
Continuous current	0.7 A DC / 3 A AC
Step response time	typ. 700 ms
Temperature coefficient	≤ 800 ppm/K
Status indicator	green LED
General data	
Supply voltage	24 V DC ± 10 %
Current consumption	8.3 mA (relay not triggered)/ 24 mA (relay triggered)
Current-carrying capacity of cross-connect.	≤ 2 A
Operating temperature/Storage temperature	0 °C...+50 °C /-20 °C...+70 °C
Default setting	0...5 A / 10% Hysteresis / operating current principle
Approvals	CE / cULus
Contact complement	1 changeover contact
Insulation coordination	
EMC standards	EN 55011, EN 61000-6
Rated voltage	300 V
Impulse withstand voltage	4 kV
Pollution severity	2
Overvoltage category	III
Clearance & creepage distance	≥ 3 mm
Isolation voltage input, output	4 kV _{eff} / 5 s

Screw connection		Tension clamp connection	
2.5 / 0.5 / 2.5	1.5 / 0.5 / 2.5	2.5 / 0.5 / 2.5	1.5 / 0.5 / 2.5
92.4 x 22.5 x 112.4	92.4 x 22.5 x 112.4	92.4 x 22.5 x 112.4	92.4 x 22.5 x 112.4
Tu=23°C, single module			

Screw connection		Tension clamp connection	
2.5 / 0.5 / 2.5	1.5 / 0.5 / 2.5	2.5 / 0.5 / 2.5	1.5 / 0.5 / 2.5
92.4 x 22.5 x 112.4	92.4 x 22.5 x 112.4	92.4 x 22.5 x 112.4	92.4 x 22.5 x 112.4
Tu=23°C, single module			

Dimensions	
Clamping range (rating- / min. / max.)	mm²
Length x width x height	mm
Note	

Screw connection		Tension clamp connection	
2.5 / 0.5 / 2.5	1.5 / 0.5 / 2.5	2.5 / 0.5 / 2.5	1.5 / 0.5 / 2.5
92.4 x 22.5 x 112.4	92.4 x 22.5 x 112.4	92.4 x 22.5 x 112.4	92.4 x 22.5 x 112.4
Tu=23°C, single module			

Screw connection		Tension clamp connection	
2.5 / 0.5 / 2.5	1.5 / 0.5 / 2.5	2.5 / 0.5 / 2.5	1.5 / 0.5 / 2.5
92.4 x 22.5 x 112.4	92.4 x 22.5 x 112.4	92.4 x 22.5 x 112.4	92.4 x 22.5 x 112.4
Tu=23°C, single module			

Ordering data

Type of connection	
Screw connection	
Tension clamp connection	
Note	

Type	Qty.	Order No.
WAS2 CMR 1/5/10A ac	1	8516560000
WAZ2 CMR 1/5/10A ac	1	8516570000
Note		

Type	Qty.	Order No.
WAS2 CMR 20/40/60A ac	1	8513340000
WAZ2 CMR 20/40/60A ac	1	8526600000
Note		

Accessories

Note

Cross-connectors for power supply and markers - see WAVE series accessories

Cross-connectors for power supply and markers - see WAVE series accessories

Analogue output

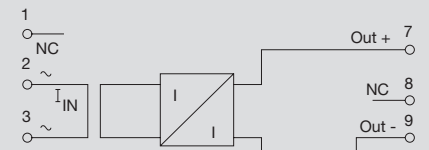
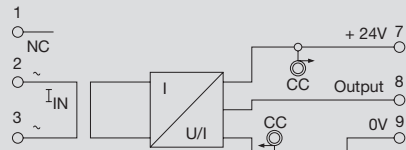
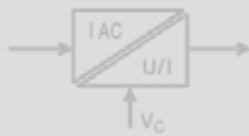
- Input and output ranges adjustable via DIP switch
- No calibration necessary

1/5/10 A AC



1/5/10 A AC 4...20 mA

Loop Powered



Technical data

Input

Input current
Input frequency
max. current
Voltage of measuring circuit
Sensor

Output

Output current/Output voltage
Offset current
Output signal limit
Load impedance, voltage/Current
Step response time
Accuracy
Temperature coefficient
Status indicator

General data

Supply voltage
Current consumption
Current-carrying capacity of cross-connect.
Operating temperature/Storage temperature
Default setting
Approvals

Insulation coordination

Standards
EMC standards
Rated voltage
Impulse withstand voltage
Pollution severity
Overvoltage category
Clearance & creepage distance
Isolation voltage input, output

Dimensions

Clamping range (rating- / min. / max.) mm²
Length x width x height mm

Note

0...1 A AC/ 0...5 A AC/ 0...10 A AC
50...60 Hz
100 A for 1s
250 V AC
Transforming (internally)

0(4)...20 mA / 0...10 V
max. 100 μ A
approx. 13 V resp. 24 mA
 $\geq 1 \text{ k}\Omega$ / $\leq 600 \Omega$
typ. 700 ms
0.5% FSR
 $\leq 200 \text{ ppm/K}$
LED ON: OK; FLASHING: signal out of range;
LED OFF: Error

24 V DC $\pm 10 \%$
40 mA at $I_{OUT} = 20 \text{ mA}$
 $\leq 2 \text{ A}$
0 °C...+50 °C / -20 °C...+70 °C
0...5 A AC, 4...20 mA
CE; cULus;

EN 50178 (protective separation)
EN 55011, EN 61000-6
300 V
6 kV
2
III
 $\geq 5,5 \text{ mm}$
4 kV_{eff} / 5 s

Screw connection

2.5 / 0.5 / 2.5
72 x 22.5 x 92.4

Tension clamp connection

1.5 / 0.5 / 2.5
72 x 22.5 x 92.4

Tu=23°C, single module

0...1 A AC/ 0...5 A AC/ 0...10 A AC
50...60 Hz
100 A for 1s
250 V AC
Transforming (internally)

4...20 mA (current loop) /
max. 100 μ A
approx. 24 mA
/ $\leq 600 \Omega$
typ. 700 ms
0.5 % FSR
 $\leq 200 \text{ ppm/K}$
LED ON: OK; FLASHING: signal out of range;
LED OFF: Error

13...30 V DC
0 °C...+50 °C / -20 °C...+70 °C
0...5 A AC, 4...20 mA
CE; cULus;

EN 50178 (protective separation)
EN 55011, EN 61000-6
300 V
6 kV
2
III
 $\geq 5,5 \text{ mm}$
4 kV_{eff} / 5 s

Screw connection

2.5 / 0.5 / 2.5
72 x 22.5 x 92.4

Tension clamp connection

1.5 / 0.5 / 2.5
72 x 22.5 x 92.4

Tu=23°C, single module

Ordering data

Type of connection

Screw connection
Tension clamp connection

Type	Qty.	Order No.
WAS1 CMA 1/5/10A ac	1	8523400000
WAZ1 CMA 1/5/10A ac	1	8523410000

Type	Qty.	Order No.
WAS1 CMA LP 1/5/10A ac	1	8528650000
WAZ1 CMA LP 1/5/10A ac	1	8528660000

Note

Accessories

Note

Cross-connectors for power supply and markers - see WAVE series accessories

WAVESERIES - current monitoring

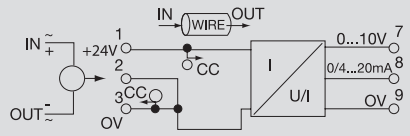
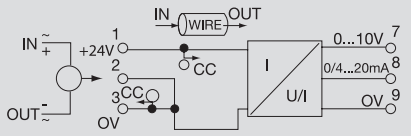
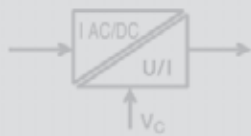
Analogue output

- Input and output ranges adjustable via DIP switch
- No calibration necessary

5/10 A AC/DC



20/25/30 A AC/DC



Technical data

Input	
Input current	0...5 A AC/DC / 0...10 A AC/DC
Input frequency	0...2 kHz (true RMS to DC converter)
max. current	depends on conductor cross-section
Voltage of measuring circuit	400 V AC, >400V AC depends on conductor insulation
Sensor	Hall sensor (internal)
Diameter of entry	8 mm
Output	
Output current/Output voltage	0(4)...20 mA / 0...10 V
Offset current	max. 150 µA
Output signal limit	approx. 13 V resp. 24 mA
Load impedance, voltage/Current	≥ 1 kΩ / ≤ 600 Ω
Step response time	typ. 700 ms
Accuracy	1 % FSR
Temperature coefficient	≤ 650 ppm/K
Status indicator	LED ON: OK; FLASHING: signal out of range; LED OFF: Error
General data	
Supply voltage	24 V DC ± 10 %
Current consumption	50 mA at I _{OUT} = 20 mA
Current-carrying capacity of cross-connect.	≤ 2 A
Operating temperature/Storage temperature	0 °C...+50 °C / -20 °C...+70 °C
Default setting	0...5 A, 4...20 mA
Approvals	CE / cULus
Insulation coordination	
Standards	EN 50178 (protective separation)
EMC standards	EN 55011, EN 61000-6
Rated voltage	300 V
Impulse withstand voltage	6 kV
Pollution severity	2
Overvoltage category	III
Clearance & creepage distance	≥ 5,5 mm
Isolation voltage input, output	4 kV _{eff} / 5 s
Dimensions	
Clamping range (rating- / min. / max.)	mm ²
Length x width x height	mm
Note	
Tu=23°C, single module	

Screw connection		Tension clamp connection	
2.5 / 0.5 / 2.5		1.5 / 0.5 / 2.5	
92.4 x 22.5 x 112.4		92.4 x 22.5 x 112.4	
Type		Qty.	
WAS2 CMA 5/10A uc		1	
WAZ2 CMA 5/10A uc		1	
Order No.		Order No.	
8526610000		8526620000	
Type		Qty.	
WAS2 CMA 20/25/30A uc		1	
WAZ2 CMA 20/25/30A uc		1	
Order No.		Order No.	
8545830000		8545840000	
Type		Qty.	
WAS2 CMA 20/25/30A uc		1	
WAZ2 CMA 20/25/30A uc		1	
Order No.		Order No.	
8545830000		8545840000	

Screw connection		Tension clamp connection	
2.5 / 0.5 / 2.5		1.5 / 0.5 / 2.5	
92.4 x 22.5 x 112.4		92.4 x 22.5 x 112.4	
Type		Qty.	
WAS2 CMA 20/25/30A uc		1	
WAZ2 CMA 20/25/30A uc		1	
Order No.		Order No.	
8545830000		8545840000	
Type		Qty.	
WAS2 CMA 20/25/30A uc		1	
WAZ2 CMA 20/25/30A uc		1	
Order No.		Order No.	
8545830000		8545840000	

Ordering data

Type of connection	Type	Qty.	Order No.
Screw connection	WAS2 CMA 5/10A uc	1	8526610000
Tension clamp connection	WAZ2 CMA 5/10A uc	1	8526620000
Note			

Accessories

Note
Cross-connectors for power supply and markers - see WAVE series accessories

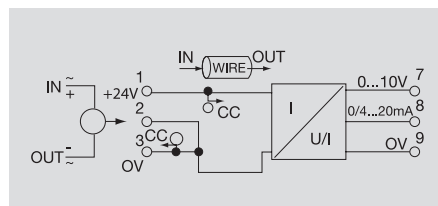
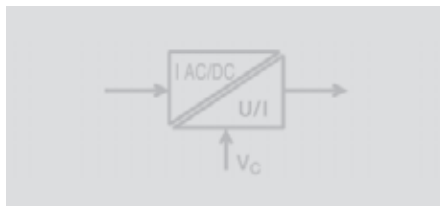
Note
Cross-connectors for power supply and markers - see WAVE series accessories

Note
Cross-connectors for power supply and markers - see WAVE series accessories

Analogue output

- Input and output ranges adjustable via DIP switch
- No calibration necessary

40/50/60 A AC/DC



Technical data

Input	
Input current	0...40 A AC/DC / 0...50 A AC/DC / 0...60 A AC/DC
Input frequency	0...2 kHz (true RMS to DC converter)
max. current	depends on conductor cross-section
Voltage of measuring circuit	400 V AC, >400V AC depends on conductor insulation
Sensor	Hall sensor (internal)
Diameter of entry	8 mm
Output	
Output current/Output voltage	0(4)...20 mA / 0...10 V
Offset current	max. 150 μ A
Output signal limit	approx. 13 V resp. 24 mA
Load impedance, voltage/Current	$\geq 1 \text{ k}\Omega$ / $\leq 600 \Omega$
Step response time	typ. 700 ms
Accuracy	1 % FSR
Temperature coefficient	$\leq 650 \text{ ppm/K}$
Status indicator	LED ON: OK; FLASHING: signal out of range; LED OFF: Error
General data	
Supply voltage	24 V DC $\pm 10 \%$
Current consumption	50 mA at $I_{OUT} = 20 \text{ mA}$
Current-carrying capacity of cross-connect.	$\leq 2 \text{ A}$
Operating temperature/Storage temperature	0 °C...+50 °C / -20 °C...+70 °C
Default setting	0...50 A, 4...20 mA
Approvals	CE / cULus
Insulation coordination	
Standards	EN 50178 (protective separation)
EMC standards	EN 55011, EN 61000-6
Rated voltage	300 V
Impulse withstand voltage	6 kV
Pollution severity	2
Overvoltage category	III
Clearance & creepage distance	$\geq 5,5 \text{ mm}$
Isolation voltage input, output	4 kV _{eff} / 5 s
Dimensions	
Clamping range (rating- / min. / max.)	mm ²
Length x width x height	mm
Note	
Tu=23°C, single module	
Screw connection	
2.5 / 0.5 / 2.5	1.5 / 0.5 / 2.5
92.4 x 22.5 x 112.4	92.4 x 22.5 x 112.4
Tension clamp connection	
Tu=23°C, single module	

Ordering data

Type of connection	Type	Qty.	Order No.
Screw connection	WAS2 CMA 40/50/60A uc	1	8513330000
Tension clamp connection	WAZ2 CMA 40/50/60A uc	1	8526590000
Note			

Accessories

Note
Cross-connectors for power supply and markers - see WAVE series accessories