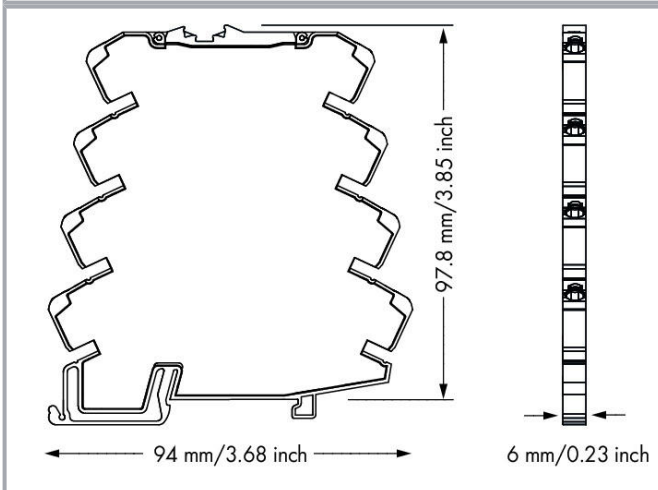
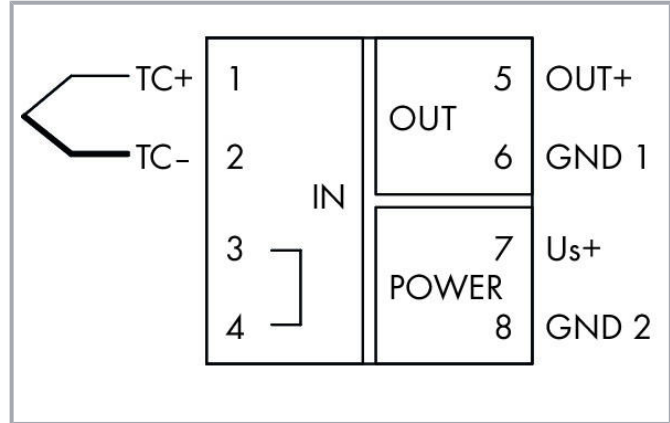
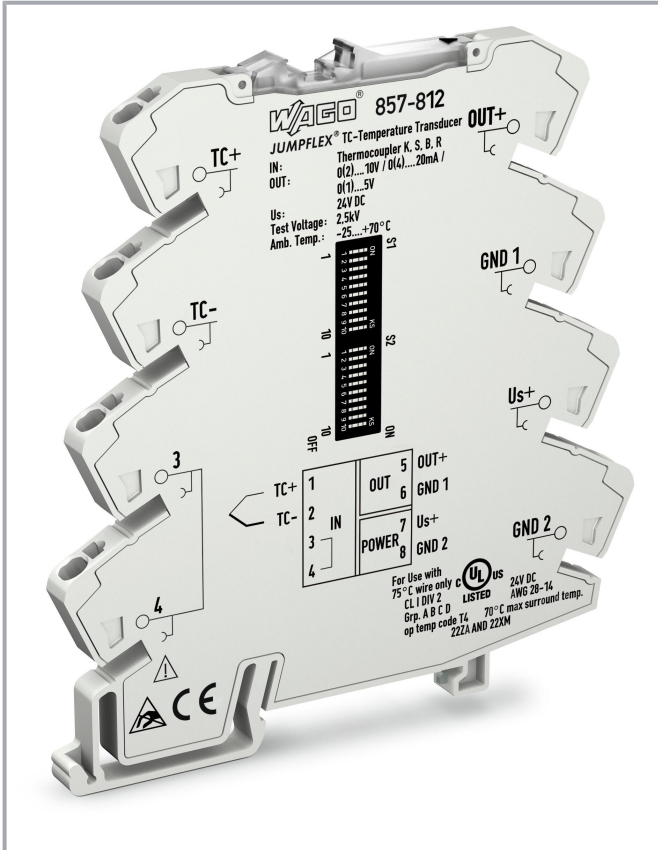


Data sheet | Item number: 857-812

Temperature signal conditioner; for thermocouples; Current and voltage output signal; Configuration via DIP switch; Supply voltage: 24 VDC; 6 mm module width



www.wago.com/857-812



Subject to changes. Please also observe the further product documentation!

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Do you have any questions about our products?
 We are always happy to take your call at +49 (571) 887-44222.



857-812
DIP Switch Adjustability

• = ON Default

| Cold Junction Compensation | | Sensor Type | | Output Signal | | 7 | 8 | Measurement Range Underflow | Measurement Range Overflow | Wire Break |
|----------------------------|-----|-------------|---|---------------|-----------|---|---|-----------------------------------|-------------------------------------|-----------------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | | | | | |
| • | Ein | • | K | • | 0...20 mA | • | • | Lower limit of output range - 5%* | Upper limit of output range + 2.5%* | Upper limit of output range + 5%* |
| • | Aus | • | S | • | 4...20 mA | • | • | Lower limit of output range | Upper limit of output range + 2.5% | Upper limit of output range + 5% |
| | | • | B | • | 0...10 mA | • | • | Lower limit of output range | Upper limit of output range | Upper limit of output range + 5% |
| | | • | R | • | 2...10 mA | • | • | Lower limit of output range | Upper limit of output range | Lower limit of output range |
| | | | | • | 0...10 V | • | • | Lower limit of output range | Upper limit of output range | Upper limit of output range + 5% |
| | | | | • | 2...10 V | • | • | Lower limit of output range | Upper limit of output range | Lower limit of output range |
| | | | | • | 0...5 V | • | • | Lower limit of output range | Upper limit of output range | Lower limit of output range |
| | | | | • | 1...5 V | • | • | Lower limit of output range | Upper limit of output range | Lower limit of output range |

DIP Switch S1 (8) n.c.
DIP Switch S1+S2

| Start Temperature | | | | | End Temperature | | | | | | | | | | | | | | | |
|-------------------|---|----|---|------|-----------------|---|----|---|----|----|------|---|----|---|----|----|------|------|----|----|
| S1 | | S2 | | | °C | | °F | | S2 | | °C | | °F | | S2 | | °C | | °F | |
| 10 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 5 | 6 | 7 | 8 | 9 | 10 | °C | °F | °C | °F |
| • | | | | 0 | | | | | | | 1000 | | | | | | 1000 | 1832 | | |
| • | | | | 50 | | | | | | | 0 | | | | | | 1050 | 1922 | | |
| • | | | | 100 | | | | | | | 50 | | | | | | 1100 | 2012 | | |
| • | | | | 150 | | | | | | | 100 | | | | | | 1150 | 2102 | | |
| • | | | | 200 | | | | | | | 150 | | | | | | 1200 | 2192 | | |
| • | | | | 250 | | | | | | | 200 | | | | | | 1250 | 2282 | | |
| • | | | | 300 | | | | | | | 250 | | | | | | 1300 | 2372 | | |
| • | | | | 350 | | | | | | | 300 | | | | | | 1350 | 2462 | | |
| • | | | | 400 | | | | | | | 350 | | | | | | 1400 | 2552 | | |
| • | | | | 450 | | | | | | | 400 | | | | | | 1450 | 2642 | | |
| • | | | | 500 | | | | | | | 450 | | | | | | 1500 | 2732 | | |
| • | | | | 550 | | | | | | | 500 | | | | | | 1550 | 2822 | | |
| • | | | | 600 | | | | | | | 550 | | | | | | 1600 | 2912 | | |
| • | | | | 650 | | | | | | | 600 | | | | | | 1650 | 3002 | | |
| • | | | | 700 | | | | | | | 650 | | | | | | 1700 | 3092 | | |
| • | | | | 750 | | | | | | | 700 | | | | | | 1750 | 3182 | | |
| • | | | | 800 | | | | | | | 750 | | | | | | 1800 | 3272 | | |
| • | | | | 850 | | | | | | | 800 | | | | | | | | | |
| • | | | | 900 | | | | | | | 850 | | | | | | | | | |
| • | | | | 950 | | | | | | | 900 | | | | | | | | | |
| • | | | | 1000 | | | | | | | 950 | | | | | | | | | |

* acc. to NAMUR NE 43

Item description

Short description:

This temperature signal conditioner records signals from thermocouples (type K, S, B, R) and converts the temperature signal into a standard analog signal at the output.

Features:

- For thermocouples of type K, S, B and R
- Cold junction compensation (On/Off)
- Calibrated measurement range switching
- Detects a sensor wire break
- Detects measurement range underflow/overflow
- Clipping capability for analog signal limitation to output end values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Data

Technical data

Configuration

Configuration options

DIP switch

DIP switch

Subject to changes. Please also observe the further product documentation!

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Do you have any questions about our products?

We are always happy to take your call at +49 (571) 887-44222.

Input

| | |
|-------------------|------------|
| Input signal type | TC sensors |
|-------------------|------------|

Input – TC sensors

| | |
|------------------------------------|--|
| Sensor types (TC) | Type K Type S Type B Type R |
| Temperature measurement range (TC) | 0 ... 1200 °C (Type K); 0 ... 1600 °C (Type S); 600 ... 1800 °C (Type B); 0 ... 1600 °C (Type R) |
| Cold junction compensation | On/Off (Default: On) |
| Cold junction error | 3 K (typ. 2 K) |

Output – analog

| | |
|---------------------------------|--|
| Output signal type | Current Voltage |
| Output signal (voltage) | 0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V |
| Output signal (current) | 0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA |
| Load impedance (voltage output) | $\geq 2 \text{ k}\Omega$ |
| Load impedance (current output) | $\leq 600 \Omega$ |

Signal processing

| | |
|----------------------|--|
| Step response (typ.) | 60 ms (Cold junction compensation (OFF)); 120 ms (Cold junction compensation (ON)) |
|----------------------|--|

Measurement error

| | |
|--|--|
| Transmission error (typ.) | $\leq 0.1 \%$ at full measurement span |
| Transmission error for the set measurement range | $\leq (150 \text{ K}/\text{set measurement range [K]}) \%$ |
| Temperature coefficient | $\leq 0.04 \%/K$ |

Supply

| | |
|---|----------------------|
| Power supply type | 24 VDC |
| Nominal supply voltage U_S | DC 24 V |
| Supply voltage range | $\pm 30 \%$ |
| Power consumption at nominal supply voltage | $\leq 40 \text{ mA}$ |

Subject to changes. Please also observe the further product documentation!



Safety and protection

| | |
|-----------------|------|
| Protection type | IP20 |
|-----------------|------|

Test voltage

| | |
|------------------------------------|-------------------------|
| Test voltage (input/output/supply) | AC 2.5 kV; 50 Hz; 1 min |
|------------------------------------|-------------------------|

Connection data

| | |
|-------------------------|--|
| Connection technology | Push-in CAGE CLAMP® |
| Solid conductor | 0.08 ... 2.5 mm ² / 28 ... 14 AWG |
| Fine-stranded conductor | 0.34 ... 2.5 mm ² / 22 ... 14 AWG |
| Strip length | 9 ... 10 mm / 0.35 ... 0.39 inch |

Physical data

| | |
|-----------------------------------|---------------------|
| Width | 6 mm / 0.236 inch |
| Height | 94 mm / 3.701 inch |
| Depth from upper edge of DIN-rail | 97.8 mm / 3.85 inch |

Mechanical data

| | |
|---------------|-------------|
| Mounting type | DIN-35 rail |
|---------------|-------------|

Material data

| | |
|--------|--------|
| Weight | 35.7 g |
|--------|--------|

Environmental requirements

| | |
|---|--|
| Surrounding air temperature (operation) | -25 ... 70 °C |
| Surrounding air temperature (storage) | -40 ... 85 °C |
| Relative humidity | 5 ... 95 % (no condensation permissible) |
| Operating altitude (max.) | 2000 m |

Standards and specifications

| | |
|------------------------------|--------------|
| Conformity marking | CE |
| EMC immunity to interference | EN 61000-6-2 |
| EMC emission of interference | EN 61000-6-4 |


Subject to changes. Please also observe the further product documentation!

Commercial data


| | |
|-----------------------|---------------------------|
| Product Group | 6 (Interface Electronics) |
| PU (SPU) | 1 Each |
| Packaging type | bag |
| Country of origin | DE |
| GTIN | 4050821255291 |
| Customs tariff number | 85437090300 |

Approvals / Certificates

Ex-Approvals

| Logo | Approval | Additional Approval Text | Certificate name |
|--|---|--------------------------|------------------|
|  | UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS) | ANSI/ISA 12.12.01 | E198726 |

UL-Approvals


| Logo | Approval | Additional Approval Text | Certificate name |
|--|---|--------------------------|------------------|
|  | UL UL International Netherlands B.V. (ORDINARY LOCATIONS) | UL 508 | E175199 Sec.4 |

Optional accessories

Terminal blocks

| Through terminal block | | |
|---|---|--|
|  | Item no.: 857-979 Supply and through module | www.wago.com/857-979 |

Tool

| Operating tool | | |
|---|--|--|
|  | Item no.: 210-720 Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured | www.wago.com/210-720 |














Interface module

| Interface adapter | | |
|---|--|--|
|  | Item no.: 857-980 Interface adapter; 16-pole; analog | www.wago.com/857-980 |
















Jumpers

Subject to changes. Please also observe the further product documentation!














Jumper

| | | |
|--|---|--|
|  | Item no.: 859-408 Jumper; for jumper slot; 8-way; insulated; light gray | www.wago.com/859-408 |
|  | Item no.: 281-482 Jumper; insulated; gray | www.wago.com/281-482 |
|  | Item no.: 859-404/000-005 Jumper; for jumper slot; 4-way; insulated; red | www.wago.com/859-404/000-005 |
|  | Item no.: 859-404/000-006 Jumper; for jumper slot; 4-way; insulated; blue | www.wago.com/859-404/000-006 |
|  | Item no.: 859-405/000-005 Jumper; for jumper slot; 5-way; insulated; red | www.wago.com/859-405/000-005 |
|  | Item no.: 859-405/000-029 Jumper; for jumper slot; 5-way; insulated; yellow | www.wago.com/859-405/000-029 |
|  | Item no.: 859-405 Jumper; for jumper slot; 5-way; insulated; light gray | www.wago.com/859-405 |
|  | Item no.: 859-404/000-029 Jumper; for jumper slot; 4-way; insulated; yellow | www.wago.com/859-404/000-029 |
|  | Item no.: 859-406 Jumper; for jumper slot; 6-way; insulated; light gray | www.wago.com/859-406 |
|  | Item no.: 859-405/000-006 Jumper; for jumper slot; 5-way; insulated; blue | www.wago.com/859-405/000-006 |
|  | Item no.: 859-406/000-005 Jumper; for jumper slot; 6-way; insulated; red | www.wago.com/859-406/000-005 |
|  | Item no.: 859-409/000-029 Jumper; for jumper slot; 9-way; insulated; yellow | www.wago.com/859-409/000-029 |
|  | Item no.: 859-410/000-005 Jumper; for jumper slot; 10-way; insulated; red | www.wago.com/859-410/000-005 |

Subject to changes. Please also observe the further product documentation!







| | | |
|--|--|--|
|  | Item no.: 859-410/000-029 Jumper; for jumper slot; 10-way; insulated; yellow | www.wago.com/859-410/000-029 |
|  | Item no.: 859-410 Jumper; for jumper slot; 10-way; insulated; light gray | www.wago.com/859-410 |
|  | Item no.: 859-410/000-006 Jumper; for jumper slot; 10-way; insulated; blue | www.wago.com/859-410/000-006 |
|  | Item no.: 859-403/000-005 Jumper; for jumper slot; 3-way; insulated; red | www.wago.com/859-403/000-005 |
|  | Item no.: 859-402/000-029 Jumper; for jumper slot; 2-way; insulated; yellow | www.wago.com/859-402/000-029 |
|  | Item no.: 859-403/000-029 Jumper; for jumper slot; 3-way; insulated; yellow | www.wago.com/859-403/000-029 |
|  | Item no.: 859-403/000-006 Jumper; for jumper slot; 3-way; insulated; blue | www.wago.com/859-403/000-006 |
|  | Item no.: 859-408/000-005 Jumper; for jumper slot; 8-way; insulated; red | www.wago.com/859-408/000-005 |
|  | Item no.: 859-408/000-029 Jumper; for jumper slot; 8-way; insulated; yellow | www.wago.com/859-408/000-029 |
|  | Item no.: 859-409 Jumper; for jumper slot; 9-way; insulated; light gray | www.wago.com/859-409 |
|  | Item no.: 859-408/000-006 Jumper; for jumper slot; 8-way; insulated; blue | www.wago.com/859-408/000-006 |
|  | Item no.: 859-403 Jumper; for jumper slot; 3-way; insulated; light gray | www.wago.com/859-403 |
|  | Item no.: 859-409/000-005 Jumper; for jumper slot; 9-way; insulated; red | www.wago.com/859-409/000-005 |
|  | Item no.: 859-404 Jumper; for jumper slot; 4-way; insulated; light gray | www.wago.com/859-404 |
|  | | |

Subject to changes. Please also observe the further product documentation!

| | | |
|--|---|---|
| | <p>Item no.: 859-409/000-006 Jumper; for jumper slot; 9-way; insulated; blue</p> | <p>www.wago.com/859-409/000-006</p> |
|  | <p>Item no.: 859-402/000-006 Jumper; for jumper slot; 2-way; insulated; blue</p> | <p>www.wago.com/859-402/000-006</p> |
|  | <p>Item no.: 859-402 Jumper; for jumper slot; 2-way; insulated; light gray</p> | <p>www.wago.com/859-402</p> |
|  | <p>Item no.: 859-402/000-005 Jumper; for jumper slot; 2-way; insulated; red</p> | <p>www.wago.com/859-402/000-005</p> |
|  | <p>Item no.: 859-406/000-006 Jumper; for jumper slot; 6-way; insulated; blue</p> | <p>www.wago.com/859-406/000-006</p> |
|  | <p>Item no.: 859-406/000-029 Jumper; for jumper slot; 6-way; insulated; signal yellow</p> | <p>www.wago.com/859-406/000-029</p> |
|  | <p>Item no.: 859-407/000-006 Jumper; for jumper slot; 7-way; insulated; blue</p> | <p>www.wago.com/859-407/000-006</p> |
|  | <p>Item no.: 859-407/000-005 Jumper; for jumper slot; 7-way; insulated; red</p> | <p>www.wago.com/859-407/000-005</p> |
|  | <p>Item no.: 859-407/000-029 Jumper; for jumper slot; 7-way; insulated; yellow</p> | <p>www.wago.com/859-407/000-029</p> |
|  | <p>Item no.: 859-407 Jumper; for jumper slot; 7-way; insulated; light gray</p> | <p>www.wago.com/859-407</p> |
| Marking accessories | | |
| Marking strip | | |
|  | <p>Item no.: 2009-110 Marking strips; for Smart Printer; on reel; not stretchable; plain; snap-on type; white</p> | <p>www.wago.com/2009-110</p> |
| Marker | | |
|  | <p>Item no.: 2009-115 WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white</p> | <p>www.wago.com/2009-115</p> |
|  | <p>Item no.: 793-501 WMB marking card; as card; not stretchable; plain; snap-on type; white</p> | <p>www.wago.com/793-501</p> |
|  | <p>Item no.: 793-502 WMB marking card; as card; MARKED; 1 ... 10 (10x); not stretchable; Horizontal marking; snap-on type;</p> | <p>www.wago.com/793-502</p> |




Subject to changes. Please also observe the further product documentation!

white

| | |
|--|--|
|  | Item no.: 793-503 WMB marking card; as card; MARKED; 11 ... 20 (10x); not stretchable; Horizontal marking; snap-on type; www.wago.com/793-503 white |
|  | Item no.: 793-504 WMB marking card; as card; MARKED; 21 ... 30 (10x); not stretchable; Horizontal marking; snap-on type; www.wago.com/793-504 white |
|  | Item no.: 793-505 WMB marking card; as card; MARKED; 31 ... 40 (10x); not stretchable; Horizontal marking; snap-on type; www.wago.com/793-505 white |
|  | Item no.: 793-506 WMB marking card; as card; MARKED; 41 ... 50 (10x); not stretchable; Horizontal marking; snap-on type; www.wago.com/793-506 white |
|  | Item no.: 793-566 WMB marking card; as card; MARKED; 1 ... 50 (2x); not stretchable; Horizontal marking; snap-on type; www.wago.com/793-566 white |
|  | Item no.: 793-5501 WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type; white; www.wago.com/793-5501 |


Mounting

Mounting accessories

| | |
|--|--|
|  | Item no.: 249-116 Screwless end stop; 6 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray www.wago.com/249-116 |
|  | Item no.: 249-117 Screwless end stop; 10 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray www.wago.com/249-117 |
|  | Item no.: 249-197 Screwless end stop; 14 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray www.wago.com/249-197 |

Power supplies

Power supply

| | |
|--|---|
|  | Item no.: 787-2852 Switched-mode power supply; 1-phase; 24 VDC output voltage; 1 A output current; - www.wago.com/787-2852 |
|--|---|

Downloads

Documentation

Bid Text

| | | | |
|-------------|--------------|--------|----------|
| 857-812 | 2019. 2. 19. | xml | Download |
| X81 - Datei | | 5.8 kB | |

Subject to changes. Please also observe the further product documentation!



| | | | |
|-------------------------|--------------|-----------------|----------|
| 857-812 docx - Datei | 2019. 2. 20. | docx 17.7 kB | Download |
|-------------------------|--------------|-----------------|----------|

Instruction Leaflet

| | | | |
|--|--|---------------|----------|
| Messumformer und Trennverstärker TemperaturmessumformerThermoelemente Typ K, S, B und R, DIP-Schalter | | pdf 1.5 MB | Download |
|--|--|---------------|----------|

Additional Information

| | | | |
|--|---------|-----------------|----------|
| Disposal; Electrical and electronic equipment, Packaging | V 1.0.0 | pdf 265.8 kB | Download |
|--|---------|-----------------|----------|

CAD/CAE-Data

CAD data

| | | | |
|----------------------|--|-----|----------|
| 2D/3D Models 857-812 | | URL | Download |
|----------------------|--|-----|----------|

CAE data

| | | | |
|---------------------------|--|-----|----------|
| EPLAN Data Portal 857-812 | | URL | Download |
|---------------------------|--|-----|----------|

| | | | |
|------------------------|--|-----|----------|
| WSCAD Universe 857-812 | | URL | Download |
|------------------------|--|-----|----------|

| | | | |
|----------------------|--|-----|----------|
| ZUKEN Portal 857-812 | | URL | Download |
|----------------------|--|-----|----------|

Environmental Product Compliance

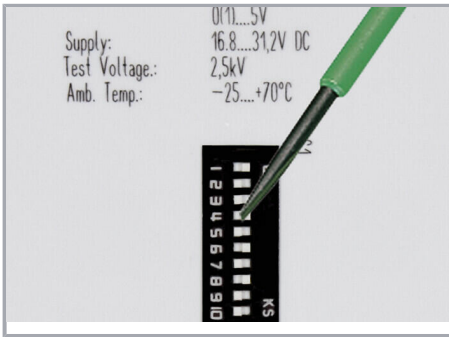
Compliance Search

| | | | |
|---|--|-----|----------|
| Environmental Product Compliance 857-812 Temperature signal conditioner; for thermocouples; Current and voltage output signal; Configuration via DIP switch; Supply voltage: 24 VDC; 6 mm module width | | URL | Download |
|---|--|-----|----------|

Installation Notes

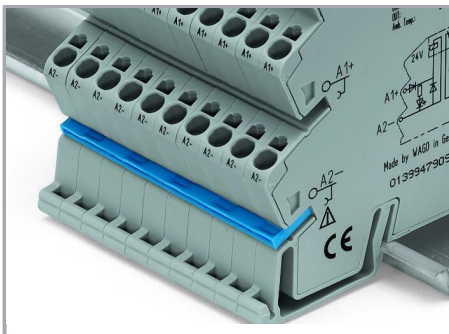
Configuration

Subject to changes. Please also observe the further product documentation!



Configuration via DIP switch

Commoning



Commoning, not discrete wiring – Same outline allows use of a single in-line, push-in jumper.

Subject to changes. Please also observe the further product documentation!