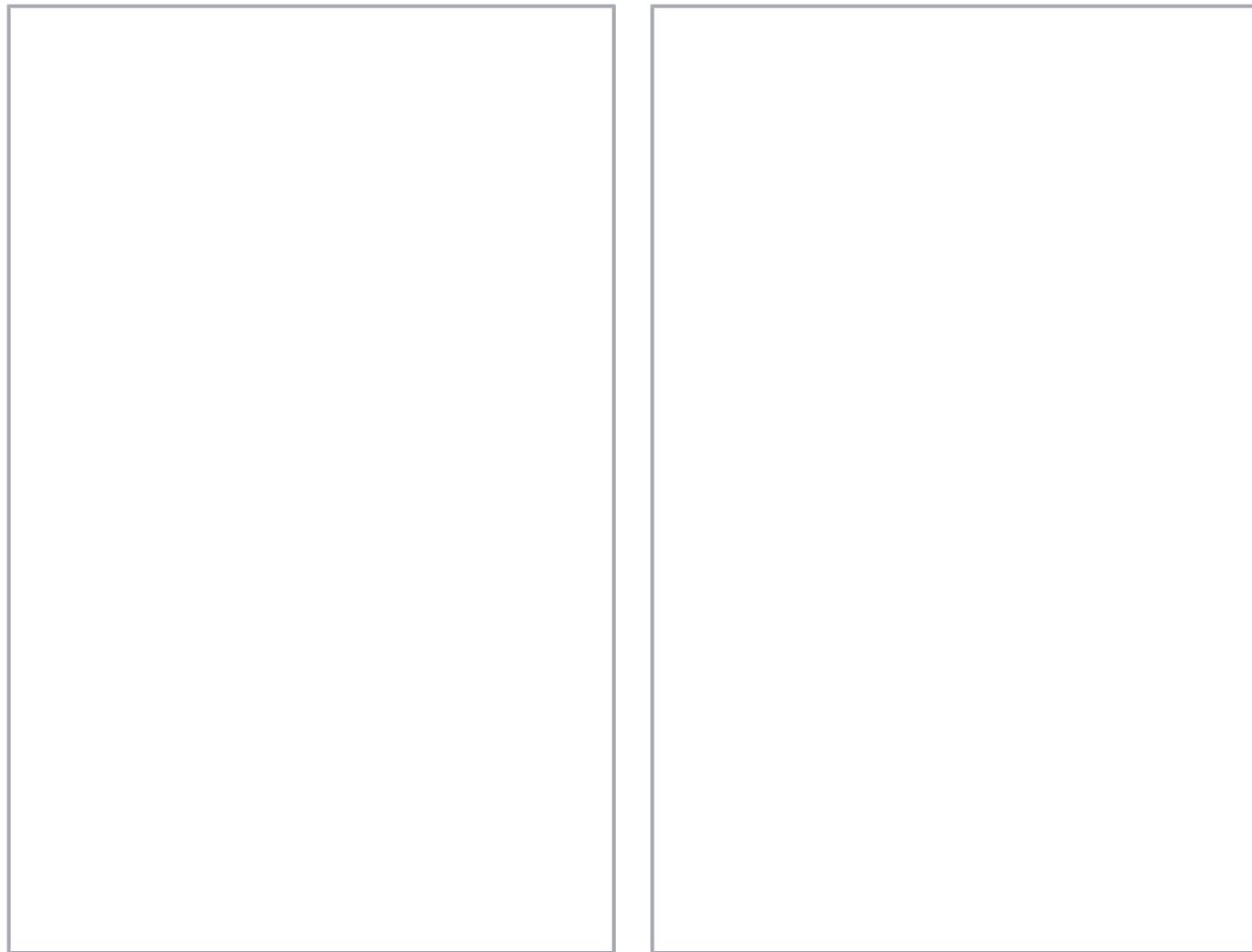


Data sheet | Item number: 2857-535

Temperature signal conditioner; Current and voltage output signal;

Configuration via software; Supply voltage: 24 VDC

www.wago.com/2857-535



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

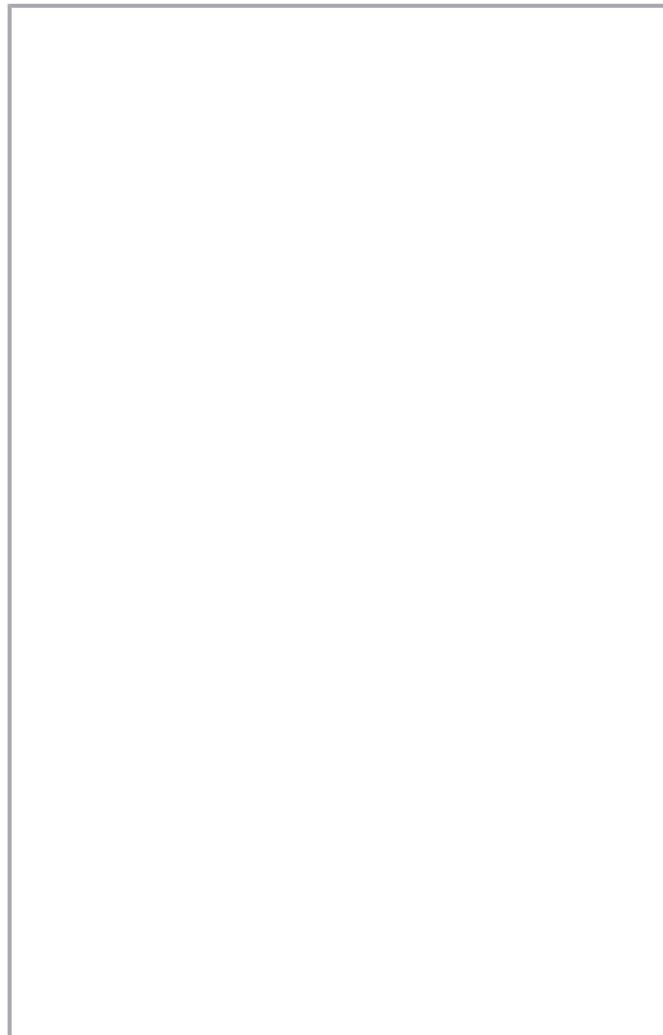
WAGO GmbH & Co. KG
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Item description

Short description:

WAGO's RTD TC temperature signal conditioner for RTD sensors, potentiometers, resistors and thermocouples monitors and reports signals for up to two switching thresholds. The sensor and status information that is collected is also converted to a standard analog signal.

Features:

- A relay with changeover contact reacts to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values).
- Configurable Pt factor
- Adjustable software filter
- Simulation of input/output response via interface configuration display
- Input of customer-specific sensors via the interface configuration software
- Safe 3-way isolation with 3 kV test voltage per EN 61010-1

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

- Analog unipolar/bipolar signals (current/voltage) at output
- Additional digital signal output for configured measurement range limits
- Adjustable transfer characteristic

Data Notes

Note

This product is supplied with 24 VDC, which can be commended using lateral push-in type jumper bars: (6.1) U_S⁺ (BR) and (6.2) GND 2 (BR). With this variant, it is necessary to ensure that the maximum permissible total current of 1 A is not exceeded.

Technical data

Configuration

Configuration options

WAGO Interface Configuration Software
WAGO Interface Configuration App
WAGO Configuration Display

Input

Input signal type

RTD sensors
Potentiometer
Resistance
TC sensors

Input (RTD sensors)

| | |
|-------------------------------------|---|
| Sensor types (RTD) | Pt10 ... Pt2000 (expandable) |
| Sensor connection | 2-wire; 3-wire; 4-wire; differential; potentiometer |
| Sensor power supply (RTD) max. | ≤ 0.5 mA |
| Temperature measurement range (RTD) | -200 ... 850°C |
| Measurement span (RTD) min. | 50 K |

Input (TC sensors)

Sensor types (TC)

Type J
Type K
Type E
Type R
Type N
Type S
Type T

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

| | Type B Type C |
|------------------------------------|--|
| Temperature measurement range (TC) | -210 ... 1200 °C (Type J); -200 ... 1372 °C (Type K); -200 ... 1000 °C (Type E); 250 ... 1768 °C (Type R); -200 ... 1300 °C (Type N); -50 ... 1664 °C (Type S); -200 ... 400 °C (Type T); 250 ... 1820 °C (Type B); 0 ... 2320 °C (Type C) |
| Measurement span (TC) min. | 100 K |
| Cold junction compensation | ON/OFF (default: ON) |
| Cold junction error | 3 K (typ. 2 K) |

Input (resistors)

| | |
|-----------------------------|-------------|
| Input range (resistor) | 0 ... 10 kΩ |
| Input range (potentiometer) | 0 ... 10 kΩ |
| Measurement span (min.) | 50 Ω |

Output (analog)

| | |
|---------------------------------|--------------------|
| Output signal type | Current Voltage |
| Output signal (voltage) | ± 12 V |
| Output signal (current) | ±24 mA |
| Load impedance (voltage output) | ≥ 2 kΩ |
| Load impedance (current output) | ≤ 600 Ω |

Output (digital)

| | |
|--|----------------------------------|
| Switching voltage (DO) max. | Supply voltage (applied): -0.3 V |
| Continuous current (DO) max. | 100 mA (no internal restriction) |
| Number of switching thresholds (DO) | 1 or 2 (adjustable) |
| Configurable rise/fall delay time (DO) | 0 ... 60 s (via software) |

Output (relay)

| | |
|--|---------------------------|
| Dielectric strength (open contact) (AC, 1 min) | 1 kV _{rms} |
| Number of changeover/switchover contacts | 1 |
| Switching voltage (max.) | AC 250 V |
| Dielectric strength (open contact) (AC, 1 min) | 1 kV _{rms} |
| Number of switching thresholds (relay) | 1 or 2 (adjustable) |
| Configurable rise/fall delay time (relay) | 0 ... 60 s (via software) |

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

Signal Processing

| | |
|------------------------------|---|
| Software filter (adjustable) | Moving average value (filter level: 30) |
| Step response (typ.) | 130 ms (2-wire); 700 ms (3-wire); 700 ms (4-wire); 600 ms (Differential); 500 ms (Potentiometer); 150 ms (cold junction compensation (Off)); 400 ms (Cold junction compensation (ON)) |

Measurement Error

| | |
|--|---------------------------------------|
| Transmission error (typ.) | ≤ 0.1 % at full measurement span |
| Transmission error for the set measurement range | ≤ (100 K/set measurement range [K]) % |
| Temperature coefficient | ≤ 0.01 %/K |

Power supply

| | |
|---|-----------------------|
| Power supply type | 24 VDC |
| Nominal supply voltage U_S | DC 24 V |
| Supply voltage range | -60 ... +30 % |
| Current consumption at nominal supply voltage | ≤ 70 mA (+ I_{DO}) |

Safety and protection

| | |
|---|--|
| Rated voltage | 300 V |
| Rated voltage of the measurement circuit connections per EN 61010-2-030 | AC 300 V |
| Measurement category per EN/UL 61010-2-030 | CAT II (input) |
| Note on insulation parameters | The digital output (DO) is at the potential of the supply. The service interface is located on the analog output potential. The DIN-rail contact (functional ground) is capacitively coupled to the analog output. |
| Protection type | IP20 |

Test voltage

| | |
|---|-----------------------------|
| Test voltage (input/output/supply) | AC 3 kV; 50 Hz; 1 min |
| Test voltage (input/analog output/relay output/supply) | 3 kVAC; 50 ... 60 Hz; 1 min |
| Test voltage (input/DIN-rail contact/relay output/supply) | 3 kVAC; 50 ... 60 Hz; 1 min |

Insulation coordination (UL)

| | |
|----------------------|----|
| Overvoltage category | II |
| Pollution degree | 2 |

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

| | |
|--|--|
| Insulation type (input/analog output/relay output/supply) | Reinforced insulation (safe isolation) |
| Insulation type (input/DIN-rail contact/relay output/supply) | Reinforced insulation (safe isolation) |

Connection data

| | |
|-------------------------|------------------------------------|
| Connection technology | Push-in CAGE CLAMP® |
| WAGO connector | picoMAX® 5.0 |
| Solid conductor | 0.2 ... 2.5 mm² / 24 ... 12 AWG |
| Fine-stranded conductor | 0.2 ... 2.5 mm² / 24 ... 12 AWG |
| Strip length | 9 ... 10 mm / 0.35 ... 0.39 inches |

Physical data

| | |
|-----------------------------------|------------------------|
| Width | 22.5 mm / 0.886 inches |
| Height | 110 mm / 4.331 inches |
| Depth from upper-edge of DIN-rail | 107 mm / 4.213 inches |

Mechanical Data

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

Material Data

| | |
|-----------|----------|
| Fire load | 2.168 MJ |
| Weight | 126.9 g |

Environmental requirements

| | |
|--|--|
| Pollution degree | 2 |
| Ambient temperature (operation) | -40 ... +70 °C |
| Ambient temperature (storage) | -40 ... +85 °C |
| Temperature range of connection cable | $\geq (T_{\text{ambient}} + 10 \text{ K})$ |
| Temperature range of connection cable (UL) | 85 °C |
| Relative humidity | 5 ... 95 % (non-condensing) |
| Operating altitude (max.) | 2000 m |

Standards and specifications

| | |
|------------------------------|----------------------------|
| Conformity marking | CE |
| EMC immunity to interference | EN 61000-6-2; EN 61326-2-3 |
| EMC emission of interference | EN 61000-6-3; EN 61326-2-3 |

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

| | |
|--------------------------|------------------------|
| Standards/specifications | EN 61010-1 EN 61373 |
|--------------------------|------------------------|

Commercial data

| | |
|-----------------------|---------------|
| eCl@ss 10.0 | 27-21-01-29 |
| eCl@ss 9.0 | 27-21-01-29 |
| ETIM 8.0 | EC002919 |
| ETIM 7.0 | EC002919 |
| PU (SPU) | 1 pcs |
| Packaging type | bag |
| Country of origin | DE |
| GTIN | 4055143655507 |
| Customs tariff number | 85437090300 |

Environmental Product Compliance

| | |
|---|---|
| CAS-No. | 1303-86-2 1317-36-8 7439-92-1 75980-60-8 79-94-7 |
| REACH Candidate List Substance | 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol Diboron trioxide Lead Lead monoxide Perfluorobutane sulfonic acid (PFBS) and its salts Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)- |
| RoHS Compliance Status | Compliant,With Exemption |
| RoHS Exemption | 6(c) 7(a) 7(c)-I 7(c)-II |
| SCIP notification number (Austria) | beac9352-aef0-42a2-b7f0-a83392390cff |
| SCIP notification number (Belgium) | eeb9df68-9e28-4e3e-92ac-8ef9ab87c305 |
| SCIP notification number (Bulgaria) | 61e19286-b116-40e0-90e0-0d98747b35c6 |
| SCIP notification number (Czech Republic) | ccfdefc9-f0b3-4620-b412-b6adce9425b4 |
| SCIP notification number (Denmark) | 1d7e7fd7-5fa4-47bb-96ed-30ae8a6161f6 |
| SCIP notification number (Finland) | 4e130f44-9148-4325-97d7-6d58f5d97835 |
| SCIP notification number (France) | 30e01dd3-5b6f-498f-9b37-54a0502b9f9e |
| SCIP notification number (Germany) | ef2b2ca0-d8d7-4e0c-81db-287ee7497471 |
| SCIP notification number (Hungary) | 93a905b5-7155-4b52-8695-61a9c5ddcc08 |

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

| | |
|--|--------------------------------------|
| SCIP notification number (Italy) | 7a1074e6-72fb-4fec-bfaa-c1cebf85968f |
| SCIP notification number (Netherlands) | e6753189-be82-47d8-93e5-8cab3e2d142 |
| SCIP notification number (Poland) | 91684334-ada5-46cb-8352-31567b986a40 |
| SCIP notification number (Romania) | 9a8786ac-ee1e-477b-8851-a03a87e77e4a |
| SCIP notification number (Sweden) | b9aa1443-ef24-4f0e-a0f8-b04a5d1a7f4f |

Approvals / Certificates

General approvals

| Logo | Approval | Additional Approval Text | Certificate name |
|------|---|--------------------------|---|
| EAC | Brjansker Zertifizierungsstelle | TP TC 020/2011 | EAC_Certificate_RU_C-DE.AM02.B.00115_19 |
| EAC | Brjansker Zertifizierungsstelle | TP TC 004/2011 | EAC RU C-DE.AM02.B.00122/19 |
| UL | Underwriters Laboratories Inc. (ORDINARY LOCATIONS) | UL 61010-2-201 | E175199 |

Optional accessories

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 |
|----------------|--|--|

Power supplies

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

Communication

| | | |
|-----------|--|--|
| Bluetooth | Item no.: 750-921 Bluetooth® Adapter | www.wago.com/750-921 |
|-----------|--|--|

Configuration display

| | | |
|-----------------------|--|--|
| Configuration display | Item no.: 2857-900 Configuration display | www.wago.com/2857-900 |
|-----------------------|--|--|

Communication cable

| | | |
|---------------------|---|--|
| Communication cable | Item no.: 750-923 Configuration cable; USB connector; Length: 2.5 m | www.wago.com/750-923 |
|---------------------|---|--|

| | |
|---|--|
| Item no.: 750-923/000-001 Configuration cable; USB connector; Length: 5 m | www.wago.com/750-923/000-001 |
|---|--|

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

Testing and measuring

Testing accessories

Item no.: 735-500

WAGO Test pin; 1 mm Ø; 30 V AC / 60 V DC; CAT0; 1 A; 6 mm uninsulated; Test lead for soldering up to 0,5mm²

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

Relay module

Relay module

Item no.: 857-304

Relay module; Nominal input voltage: 24 VDC; 1 changeover contact; Limiting continuous current: 6 A; Yellow status indicator; Module width: 6 mm; 2,50 mm²; gray

Terminal blocks

Supply module

Item no.: 857-979

Supply and through module

www.wago.com/857-979

Marking accessories

Marking strip

Item no.: 2009-110

Marking strips; for Smart Printer; on reel; not stretchable; plain; snap-on type; white

www.wago.com/2009-110

Marker

Item no.: 2009-115

WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white

www.wago.com/2009-115

Item no.: 793-501

WMB marking card; as card; not stretchable; plain; snap-on type; white

www.wago.com/793-501

Item no.: 793-502

WMB marking card; as card; MARKED; 1 ... 10 (10x); not stretchable; Horizontal marking; snap-on type; white

www.wago.com/793-502

Item no.: 793-503

WMB marking card; as card; MARKED; 11 ... 20 (10x); not stretchable; Horizontal marking; snap-on type; white

www.wago.com/793-503

Item no.: 793-504

WMB marking card; as card; MARKED; 21 ... 30 (10x); not stretchable; Horizontal marking; snap-on type; white

www.wago.com/793-504

Item no.: 793-505

WMB marking card; as card; MARKED; 31 ... 40 (10x); not stretchable; Horizontal marking; snap-on type; white

www.wago.com/793-505

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

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 www.wago.com/793-5501
type; white

Item no.: 2009-141

Micro-WSB-Inline; 2000 pieces on roll; plain; snap-on type; white

www.wago.com/2009-141

Jumpers

Jumper

Item no.: 281-482

Jumper; 2-way; insulated; gray

www.wago.com/281-482

Item no.: 859-402/000-029

Jumper; for jumper slot; 2-way; insulated; yellow

[www.wago.com/859-402
/000-029](http://www.wago.com/859-402/000-029)

Item no.: 859-402/000-006

Jumper; for jumper slot; 2-way; insulated; blue

[www.wago.com/859-402
/000-006](http://www.wago.com/859-402/000-006)

Item no.: 859-402

Jumper; for jumper slot; 2-way; insulated; light gray

www.wago.com/859-402

Item no.: 859-402/000-005

Jumper; for jumper slot; 2-way; insulated; red

[www.wago.com/859-402
/000-005](http://www.wago.com/859-402/000-005)

Downloads

Documentation

Manual

WAGO Threshold Value Switches

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2857-535

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Instruction Leaflet

| | | | |
|---|------------------------|---------------|--------------------------|
| Signal Conditioner; RTD TC Temperature Signal Conditioner; Analog | V 1.0.0 2020 年9月30日 | pdf 2.7 MB | Download |
|---|------------------------|---------------|--------------------------|

Additional Information

| | | | |
|---|-------------|--------|--------------------------|
| Disposal and Recycling | V 1.1.0 | pdf | Download |
| Electrical and electronic equipment, Batteries, Packaging | 2022 年8月18日 | 2.2 MB | |

Engineering-Software

Configuration and Commissioning Software

| | | | |
|--|-------------|----------|--------------------------|
| WAGO Interface Configuration Software G2 FULL | 1.00.10.01 | exe | Download |
| The full setup, in addition to the WAGO Interface Configuration Software G2, includes the installation for the Microsoft .NET Framework. | 2022 年1月20日 | 114.9 MB | |
| WAGO Interface Configuration Software G2 SMALL | 1.00.10.01 | exe | Download |
| The full setup only includes the WAGO Interface Configuration Software G2. | 2022 年1月20日 | 31.0 MB | |

CAD/CAE-Data

CAD data

| | | |
|-----------------------|---------------------|--------------------------|
| 2D/3D Models 2857-535 | URL | Download |
|-----------------------|---------------------|--------------------------|

CAE data

| | | |
|----------------------------|---------------------|--------------------------|
| ZUKEN Portal 2857-535 | URL | Download |
| EPLAN Data Portal 2857-535 | URL | Download |

Environmental Product Compliance

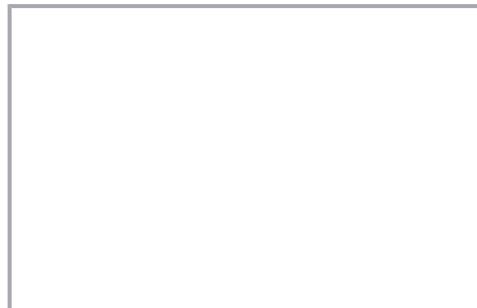
Compliance Search

| | | |
|---|---------------------|--------------------------|
| Environmental Product Compliance 2857-535 | URL | Download |
| Temperature signal conditioner; Current and voltage output signal; Configuration via software; Supply voltage: 24 VDC | | |

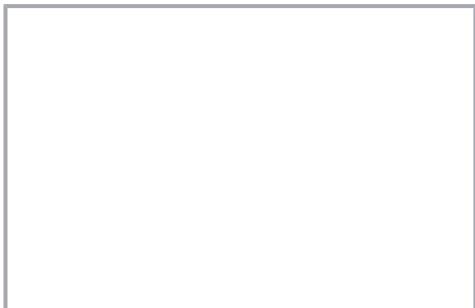
Subject to changes. Please also observe the further product documentation!

Installation Notes

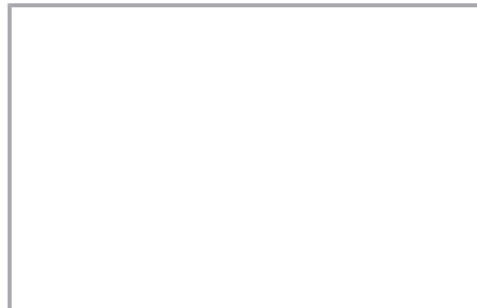
Configuring



Configuration via WAGO Interface Configuration Software

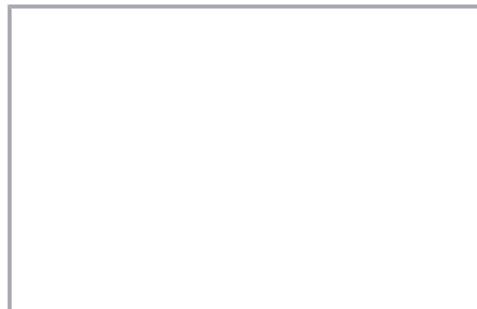


Configuration via WAGO Interface Configuration App

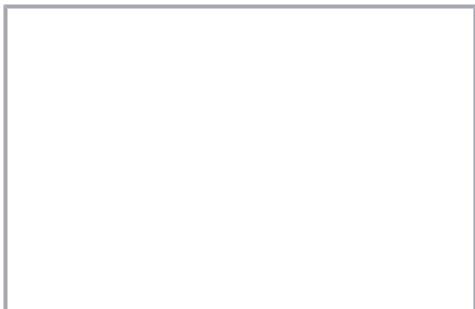


Configuration via WAGO Configuration Display

Conductor termination



Pluggable connection technology



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

Security

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

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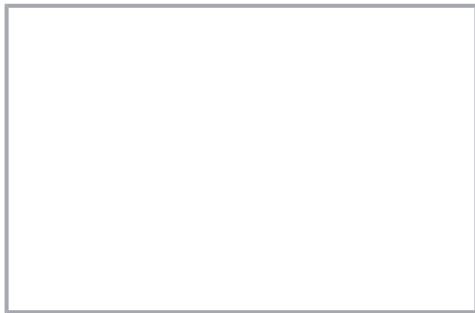
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Lock-out seal option

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