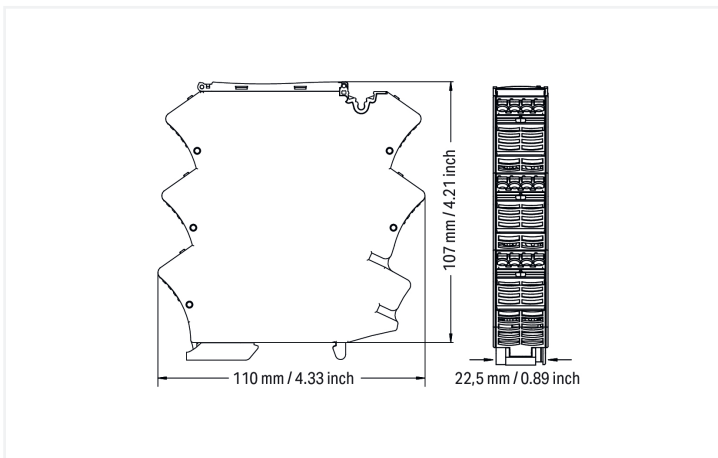
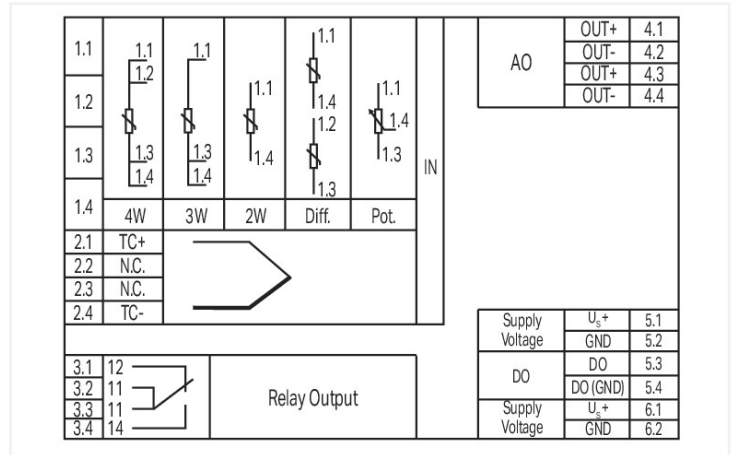
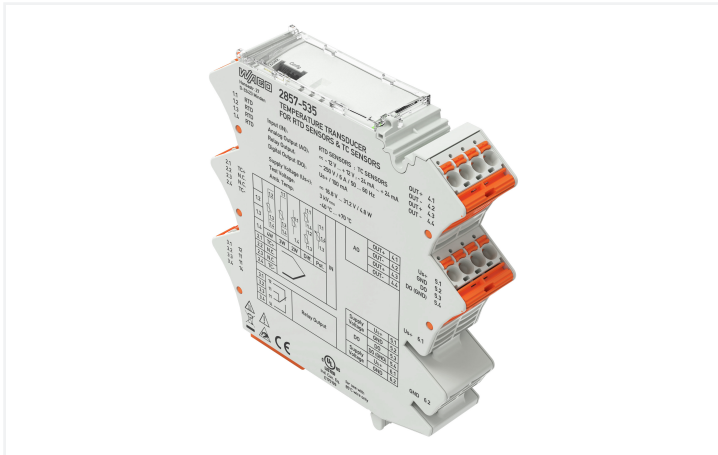


Data Sheet | Item Number: 2857-535

Temperature signal conditioner; Current and voltage output signal; Configuration via software; Supply voltage: 24 VDC

<https://www.wago.com/2857-535>



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
- Input of customer-specific sensors via the interface configuration software
- Safe 3-way isolation with 3 kV test voltage per EN 61010-1
- Analog unipolar/bipolar signals (current/voltage) at output
- Additional digital signal output for configured measurement range limits
- Adjustable transfer characteristic

Notes

Note	This product is powered by 24 VDC, which can be bridged using lateral push-in type jumper bars: (6.1) U _s + (BR) and (6.2) GND 2 (BR). With this variant, it is important to ensure that the maximum permissible total current of 1 A is not exceeded.
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Technical data

Configuration

Configuration options	WAGO Interface Configuration Software
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Input

Input signal type	RTD sensors Potentiometer Resistance TC sensors
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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 Type B Type C
Temperature measurement range (TC)	-200 ... 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.	Applied supply voltage - 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)

Number of changeover/switchover contacts	1
Switching Voltage, Max.	250 VAC
Dielectric strength (open contact) (AC, 1 min)	1 kVrms
Number of switching thresholds (relay)	1 or 2 (adjustable)
Configurable rise/fall delay time (relay)	0 ... 60 s (via software)

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 (difference) 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	24 VDC
Supply voltage range	-60 ... +30 %
Current consumption at nominal supply voltage	≤ 70 mA (+ I_{D0})

Safety and protection

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

Test voltage

Test voltage (input/output/supply)	3 kVAC; 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
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	<i>picoMAX</i> ® 5.0
Solid conductor	0.2 ... 2.5 mm ² / 24 ... 12 AWG
Fine-stranded conductor	0.2 ... 2.5 mm ² / 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
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Material data

Fire load	2.158 MJ
Weight	126.7 g

Environmental requirements

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 the 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
Standards/specifications	EN 61010-1 EN 61373

Commercial data

PU (SPU)	1 pcs
Packaging type	Bag
Country of origin	DE
GTIN	4055143655507
Customs tariff number	85437090300

Product Classification

UNSPSC	41113630
eCl@ss 10.0	27-21-01-29
eCl@ss 9.0	27-21-01-29
ETIM 9.0	EC002919
ETIM 10.0	EC002919
ECCN	NO US CLASSIFICATION

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)	ccdfec9-f0b3-4620-b412-b6adce9425b4
SCIP notification number (Denmark)	1d7e7fd7-5fa4-47bb-96ed-30ae8a6161f6
SCIP notification number (Finland)	4e130f44-9148-4325-97d7-6d58f5d97835

Environmental Product Compliance

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
SCIP notification number (Italy)	7a1074e6-72fb-4fec-bfaa-c1cebf85968f
SCIP notification number (Netherlands)	e6753189-be82-47d8-93e5-8cabc3e2d142
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



Approval	Standard	Certificate Name
EAC GZO Almaty Standart	TP TC 020/2011	EAC CoC 03083
EAC GZO Almaty Standart	TP TC 004/2011	EAC CoC 03084
UL Underwriters Laboratories Inc. (ORDINARY LOCATIONS)	UL 61010-2-201	E175199

Downloads

Environmental Product Compliance

Compliance Search
Environmental Product Compliance 2857-535 ↓

Documentation

Manual
WAGO Threshold Value Switches ↓

Bid Text			
2857-535	19.02.2019	xml 8.25 KB	↓
2857-535	20.02.2019	docx 18.75 KB	↓

Instruction Leaflet			
Signal Conditioner; RTD TC Temperature Signal Conditioner; Analog	V 1.0.0 30.09.2020	pdf 2608.75 KB	↓

CAD/CAE-Data

CAD data	CAE data
2D/3D Models 2857-535	EPLAN Data Portal 2857-535
	ZUKEN Portal 2857-535

1 Compatible Products

1.1 Optional Accessories

1.1.1 Communication

1.1.1.1 Communication cable



[Item No.: 750-923/000-001](#)
 Configuration cable; USB connector;
 Length: 5 m

1.1.2 Installation

1.1.2.1 Mounting accessories



[Item No.: 249-117](#)
 Screwless end stop; 10 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray



[Item No.: 249-197](#)
 Screwless end stop; 14 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray



[Item No.: 249-116](#)
 Screwless end stop; 6 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray

1.1.3 Jumper

1.1.3.1 Jumper



[Item No.: 281-482](#)
 Jumper; 2-way; insulated; gray



[Item No.: 859-402/000-006](#)
 Jumper; for jumper slot; 2-way; insulated; blue



[Item No.: 859-402](#)
 Jumper; for jumper slot; 2-way; insulated; light gray



[Item No.: 859-402/000-005](#)
 Jumper; for jumper slot; 2-way; insulated; red



[Item No.: 859-402/000-029](#)
 Jumper; for jumper slot; 2-way; insulated; yellow

1.1.4 Marking

1.1.4.1 Marker



Item No.: 2009-141

Micro-USB-Inline; 2000 pieces on roll; plain; snap-on type; 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



Item No.: 793-502

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



Item No.: 793-566

WMB marking card; as card; MARKED; 1 ... 50 (2x); not stretchable; Horizontal marking; snap-on type; white



Item No.: 793-503

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



Item No.: 793-504

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



Item No.: 793-505

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



Item No.: 793-506

WMB marking card; as card; MARKED; 41 ... 50 (10x); not stretchable; Horizontal marking; snap-on type; white



Item No.: 793-501

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



Item No.: 2009-115

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

1.1.4.2 Marking strip



Item No.: 2009-110

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

1.1.5 Power supply

1.1.5.1 Power Supply



Item No.: 787-2852

Switched-mode power supply; 1-phase; 24 VDC output voltage; 1 A output current

1.1.6 Relay module

1.1.6.1 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; gray

1.1.7 Terminal blocks

1.1.7.1 Supply module



Item No.: 857-979

Supply and through module

1.1.7.2 Through terminal block



Item No.: 857-979

Supply and through module

1.1.8 Test and measurement

1.1.8.1 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

1.1.9 Tool

1.1.9.1 Operating tool

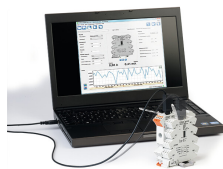


Item No.: 210-720

Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured

Installation Notes

Configuring



Configuration via WAGO Interface Configuration Software

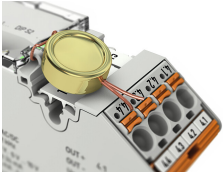
Conductor termination



Pluggable connection technology

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

Security



Lock-out seal option