

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!

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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

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- 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 commoned 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.
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Technical data

Configuration

Configuration options	WAGO Interface Configuration Software WAGO Interface Configuration App WAGO Configuration Display
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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
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	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 k Ω
Input range (potentiometer)	0 ... 10 k Ω
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 k Ω
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 kVrms
Number of switching thresholds (relay)	1 or 2 (adjustable)
Configurable rise/fall delay time (relay)	0 ... 60 s (via software)

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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.)	$\leq 0.1\%$ at full measurement span
Transmission error for the set measurement range	$\leq (100 \text{ K}/\text{set measurement range [K]})\%$
Temperature coefficient	$\leq 0.01\%/K$

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	$\leq 70 \text{ mA (+ } I_{DO})$

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

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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	2.168 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	≥ (T _{ambient} + 10 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

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Standards/specifications	EN 61010-1 EN 61373
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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

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

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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 www.wago.com/735-500

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 www.wago.com/857-304

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

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white

Item no.: 793-506WMB 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**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.: 281-482Jumper; 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**Item no.: 859-402/000-006**Jumper; for jumper slot; 2-way; insulated; blue 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**Downloads****Documentation****Manual**

WAGO Threshold Value Switches HTML	URL	Download
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Bid Text

2857-535 docx - Datei	2019 年2月20 日	docx 19.2 kB	Download
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2857-535 X81 - Datei	2019 年2月19 日	xml 8.5 kB	Download
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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
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Additional Information

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

Configuration and Commissioning Software

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

CAD data

2D/3D Models 2857-535	URL	Download
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CAE data

ZUKEN Portal 2857-535	URL	Download
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EPLAN Data Portal 2857-535	URL	Download
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Environmental Product Compliance

Compliance Search

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

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Lock-out seal option

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