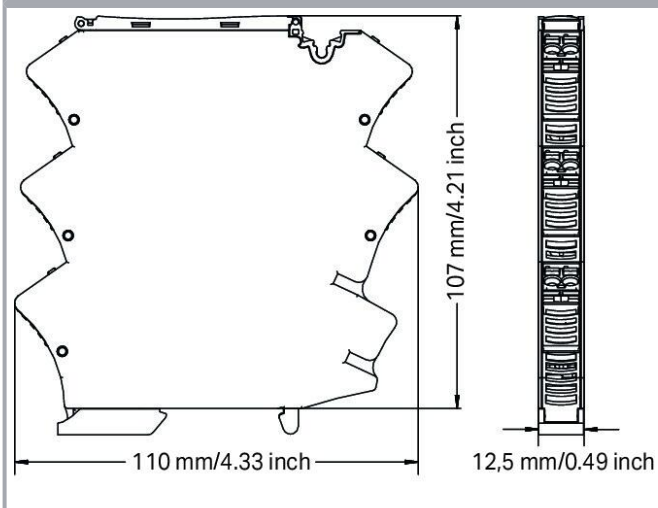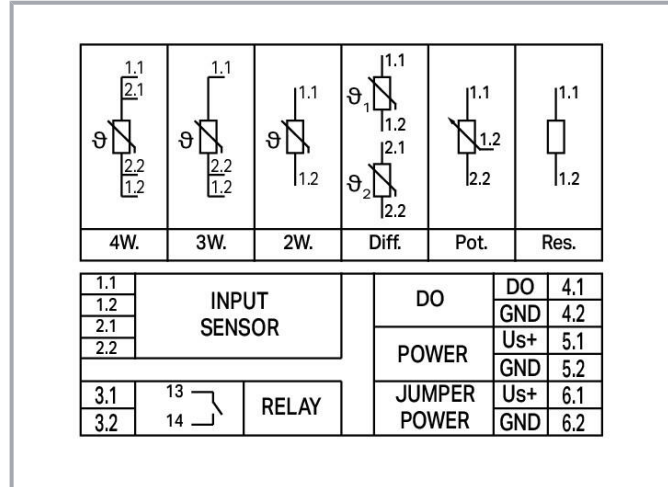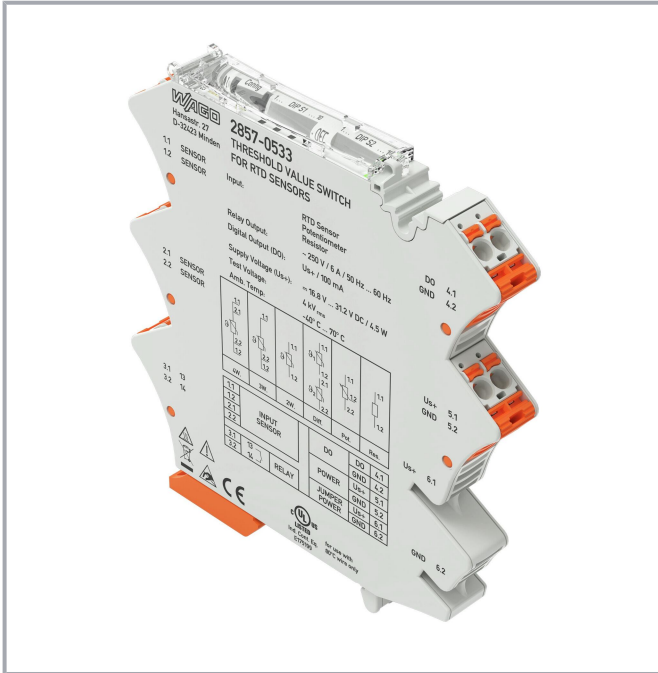# Data sheet | Item number: 2857-533

Threshold value switches; RTD sensors; 1 make contact; Digital output; Configuration via software; Supply voltage: 24 VDC; 12.5 mm module width

www.wago.com/2857-533

4W.	3W.	2W.	Diff.	Pot.	Res.

1.1	INPUT SENSOR		DO	DO	4.1
1.2				GND	4.2
2.1			POWER	Us+	5.1
2.2				GND	5.2
3.1	13	RELAY	JUMPER POWER	Us+	6.1
3.2	14			GND	6.2

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

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2857-533
DIP Switch Adjustability   • = ON   Default

DIP Switch S1

1	2	3	Sensor Type	4	5	Connection Technology	6	Hysteresis T / K	7	8	9	Rise/Fall Delay Relay/ DO t / s	10	Reserve
			Pt100			2-wire		3				0		
•			Pt200	•		3-wire	•	5	•			1		
	•		Pt500		•	4-wire				•		2		
•	•		Pt1000	•	•	Difference			•	•		3		
		•	Pt5000								•	4		
•		•	Pt10000						•		•	5		
	•	•	Resistance							•	•	8		
•	•	•	Potentiometer						•	•	•	10		

DIP Switch S2

1	2	3	4	5	Start Value Temperature / °C	Resistance / Ω	Potentiometer Position	6	7	8	9	10	End Value Temperature / °C	Resistance / Ω	Potentiometer Position
					0	OFF	OFF						100	OFF	OFF
•					OFF	10	0 %	•					OFF	10	0 %
	•				-200	15	5 %		•				-200	15	5 %
•	•				-150	22	10 %	•	•				-150	22	10 %
		•			-100	33	15 %			•			-100	33	15 %
•		•			-50	47	20 %	•		•			-50	47	20 %
	•	•			-10	68	25 %		•	•			-10	68	25 %
•	•	•			10	100	30 %	•	•	•			10	100	30 %
			•		20	120	35 %				•		20	120	35 %
•			•		30	150	40 %	•			•		30	150	40 %
	•		•		40	220	45 %		•		•		40	220	45 %
•	•		•		50	330	50 %	•	•		•		50	330	50 %
		•	•		60	470	55 %			•	•		60	470	55 %
•		•	•		70	560	60 %	•		•	•		70	560	60 %
	•	•	•		80	680	65 %		•	•	•		80	680	65 %
•	•	•	•		90	1000	70 %	•	•	•	•		90	1000	70 %
				•	100	1200	75 %					•	100	1200	75 %
•				•	150	1500	80 %	•				•	150	1500	80 %
	•			•	200	2200	85 %		•			•	200	2200	85 %
•	•			•	250	3300	90 %	•	•			•	250	3300	90 %
		•		•	300	4700	95 %			•		•	300	4700	95 %
•		•		•	350	5600	100 %	•		•		•	350	5600	100 %
	•	•		•	400	6800	OFF		•	•		•	400	6800	OFF
•	•	•		•	450	10000	OFF	•	•	•		•	450	10000	OFF
			•	•	500	12000	OFF				•	•	500	12000	OFF
•			•	•	550	15000	OFF	•			•	•	550	15000	OFF
	•		•	•	600	22000	OFF		•		•	•	600	22000	OFF
•	•		•	•	650	33000	OFF	•	•		•	•	650	33000	OFF
		•	•	•	700	47000	OFF			•	•	•	700	47000	OFF
•		•	•	•	750	56000	OFF	•		•	•	•	750	56000	OFF
	•	•	•	•	800	68000	OFF		•	•	•	•	800	68000	OFF
•	•	•	•	•	850	100000	OFF	•	•	•	•	•	850	100000	OFF

Item description

Short description:

WAGO's RTD threshold value switch for RTD sensors, potentiometers and resistors monitors and reports signals for up to two switching thresholds.

Features:

- Both digital signal output and relay with make contact react to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values).
- Configurable RTD factor
- Adjustable software filter
- Input/output response simulation via configuration display
- Safe three-way isolation with 4 kV test voltage per EN 61010-1

Data
Notes

Note

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

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- 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 2 A is not exceeded.

- Additional setting options via WAGO Interface Configuration Software or WAGO Interface Configuration App

Technical data

Configuration

Configuration options	DIP switch
	WAGO Interface Configuration Software
	WAGO Interface Configuration App
	WAGO Configuration Display

Input

Input signal type	Potentiometer
	Resistance
	RTD sensors
	Potentiometers
	Resistor

Input (RTD sensors)

Sensor types (RTD)	Pt100
	Pt200
	Pt500
	Pt1000
	Pt5000
	Pt10000
	Pt10 … Pt20000
Sensor power supply (RTD) max.	≤ 0.5 mA
Temperature measurement range (RTD)	-200 … 850°C

Input (resistors)

Input range (resistor)	0 … 100 kΩ
Input range (potentiometer)	0 … 100 kΩ

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

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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 make/switch-on contacts	1
Contact material (relay)	AgNi + Au
Switching voltage (max.)	AC 250 V
Dielectric strength (open contact) (AC, 1 min)	1 kVrms
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	4 ms
Bounce time (typ.)	8 ms
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)
Hysteresis	Adjustable via DIP switch or software
Step response (typ.)	60 ms (2-wire); 360 ms (3-wire); 540 ms (4-wire); 360 ms (Potentiometer)

Measurement Error

Transmission error (max.)	± 1 K
Temperature coefficient	≤ 0.01 %/K

Supply

Power supply type	24 VDC
Nominal supply voltage U$_S$	DC 24 V
Supply voltage range	±30 %
Current consumption at nominal supply voltage	≤ 40 mA (+ I$_{DO}$)

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

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	Temperature sensors are not intended for use in dangerous circuits, provided the external temperature sensors used do not have basic insulation in accordance with EN/UL 61010-1 (300 VAC; overvoltage category II; pollution degree 2). The digital output (DO) is at the potential of the supply.
Protection type	IP20

Test voltage

Test voltage (input/relay output/supply)	4 kVAC; 60 Hz; 1 min
Test voltage (input/service interface)	3 kVAC; 60 Hz; 1 min
Test voltage (relay output/service interface)	4 kVAC; 60 Hz; 1 min
Test voltage (supply/service interface)	2.5 kVAC; 60 Hz; 1 min

Insulation parameters(UL)

Overvoltage category	II
Pollution degree	2
Insulation type (input, supply and service interface/relay output)	Reinforced insulation (safe isolation)
Insulation type (input/supply/service interface)	Basic insulation

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	12.5 mm / 0.492 inches
Height	110 mm / 4.331 inches
Depth from upper-edge of DIN-rail	107 mm / 4.213 inches

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

Mechanical Data

Mounting type	DIN-35 rail

Material Data

Fire load	1.573 MJ
Weight	86.5 g

Environmental requirements

Ambient temperature (operation)	-40 … +70 °C
Ambient temperature (storage)	-40 … +85 °C
Temperature range of connection cable	$\geq (T_{ambient} + 10\ K)$
Temperature range of connection cable (UL)	80 °C

Standards and specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3; EN 50121-3-2
EMC emission of interference	EN 61000-6-4; EN 61326-2-3; EN 50121-3-2
Standards/specifications	EN 50121-3-2 EN 61010-1 EN 61373

Commercial data

Product Group	6 (INTERFACE ELECTRONIC)
eCl@ss 10.0	27-37-18-10
eCl@ss 9.0	27-37-18-10
ETIM 8.0	EC001446
ETIM 7.0	EC001446
PU (SPU)	1 pcs
Packaging type	bag
Country of origin	DE
GTIN	4050821676973
Customs tariff number	90303370000

Environmental Product Compliance

CAS-No.	7439-92-1
	79-94-7

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

REACH Candidate List Substance	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol
	Lead
	Perfluorobutane sulfonic acid (PFBS) and its salts
RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	7(a)
	7(c)-I
	7(c)-II
SCIP notification number (Austria)	74786547-bcd8-488b-a048-1693a8b18cca
SCIP notification number (Belgium)	ffb611b9-5444-4a62-b054-8570178af749
SCIP notification number (Bulgaria)	8add25c6-36d7-4138-8ea5-b7efd33acf37
SCIP notification number (Czech Republic)	4ee6faaf-9c3f-4160-948e-45f36e5f4b31
SCIP notification number (Denmark)	c8abb83a-563c-4292-9918-f52fc2d1d224
SCIP notification number (Finland)	89dbde23-0f89-4fdc-bdc5-c8e6a3439aa9
SCIP notification number (France)	48756e62-ea95-41d4-92de-f7f55517b3c1
SCIP notification number (Germany)	5058fdd7-a366-4ffa-9b3b-8dc6348e2b84
SCIP notification number (Hungary)	82f09e33-e34b-4e40-98b9-b874bd553d43
SCIP notification number (Italy)	8c259720-65f2-4cda-9dac-c52a9f25a7cb
SCIP notification number (Netherlands)	36416f41-77cf-4ed4-a40d-cf1ce35b1982
SCIP notification number (Poland)	e7a99496-02e3-41a8-b694-9a7d4783b4b9
SCIP notification number (Romania)	b3329d19-6859-487d-beb7-abe55764f69c
SCIP notification number (Sweden)	ebde4c4d-1942-4fa6-909e-4ab17e211477

Approvals / Certificates

General approvals

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

Declarations of conformity and manufacturer's declarations

Logo	Approval	Additional Approval Text	Certificate name

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- -

Optional accessories

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

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

Terminal blocks

Supply module

Item no.: 857-979

Supply and through module

www.wago.com/857-979

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

Communication

Bluetooth

Item no.: 750-921

Bluetooth® Adapter

www.wago.com/750-921

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

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

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

Item no.: 793-506
WMB marking card; as card; MARKED; 41 ... 50 (10x); not stretchable; Horizontal marking; snap-on type; white

www.wago.com/793-506

Item no.: 793-566
WMB marking card; as card; MARKED; 1 ... 50 (2x); not stretchable; Horizontal marking; snap-on type; white

www.wago.com/793-566

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

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Item no.: 2009-141
Micro-WSB-Inline; 2000 pieces on roll; plain; snap-on type; white

www.wago.com/2009-141

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

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

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

Bid Text

2857-533 docx - Datei	2019 Feb 20	docx 19.3 kB	Download
2857-533 X81 - Datei	2019 Feb 19	xml 6.8 kB	Download

Instruction Leaflet

Signal Conditioner RTD Threshold Value Switch	V 2.0.0 2020 Sep 30	pdf 2.9 MB	Download

Additional Information

Disposal and Recycling	V 1.1.0	pdf	Download

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

Electrical and electronic equipment, Batteries, Packaging	2022 Aug 18	2.2 MB

Engineering-Software

Configuration and Commissioning Software

WAGO Interface Configuration Software G2 SMALL The full setup only includes the WAGO Interface Configuration Software G2.	1.00.10.01 2022 Jan 20	exe 31.0 MB	Download
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 Jan 20	exe 114.9 MB	Download

Runtime Software

Firmware

WAGO_FW2857-0533_V02.00.00	txt 889.8 kB	Download

CAD/CAE-Data

CAD data

2D/3D Models 2857-533	URL	Download

CAE data

WSCAD Universe 2857-533	URL	Download
EPLAN Data Portal 2857-533	URL	Download
ZUKEN Portal 2857-533	URL	Download

Environmental Product Compliance

Compliance Search

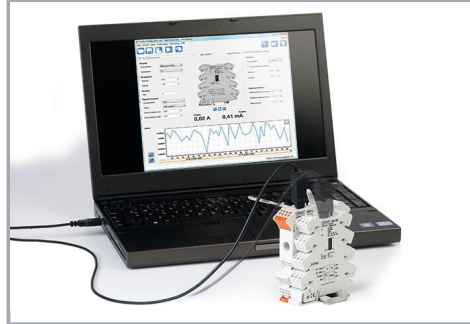|		
Environmental Product Compliance 2857-533 Threshold value switches; RTD sensors; 1 make contact; Digital output; Configuration via software; Supply voltage: 24 VDC; 12.5 mm module width	URL	Download

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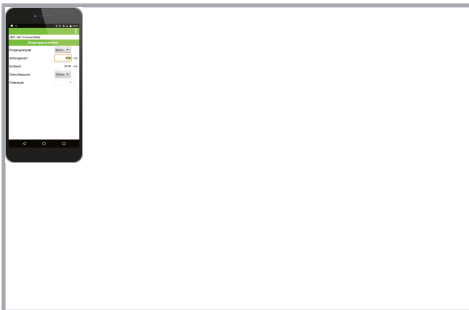
Installation Notes

Configuring

Configuration via DIP switch

Configuration via WAGO Interface
Configuration Software

Configuration via WAGO Interface
Configuration App

Configuration via WAGO Configuration Display
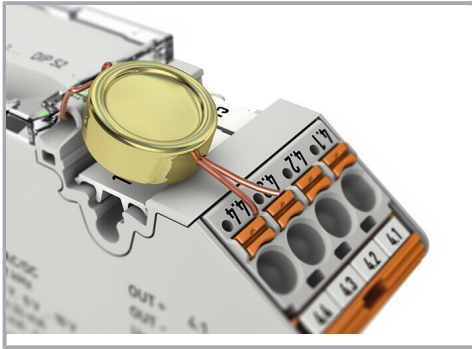
Conductor termination

Pluggable connection technology

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

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Security

Lock-out seal option

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