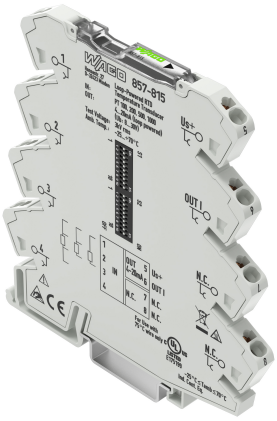
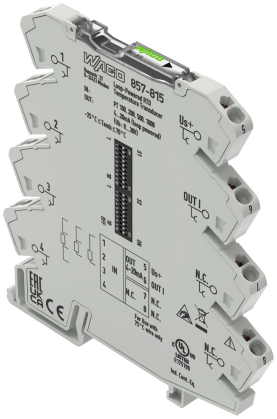
Data Sheet | Item Number: 857-815

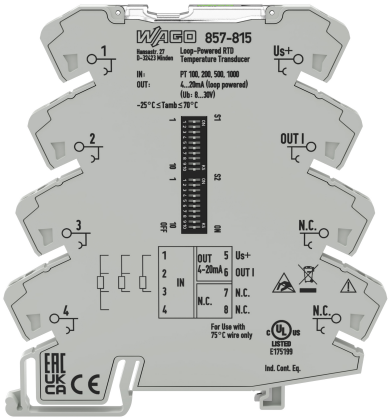
Temperature signal conditioner for RTD sensors; Current output signal; Power via output; 6 mm module width

https://www.wago.com/857-815

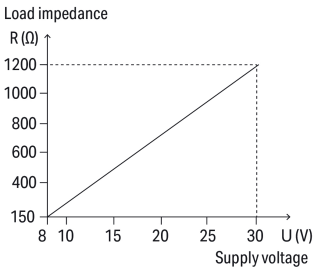




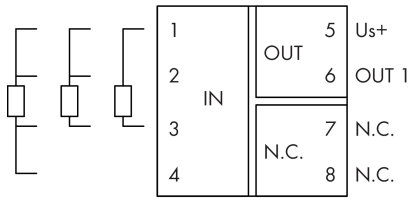


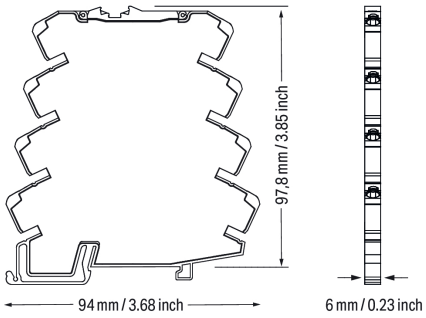


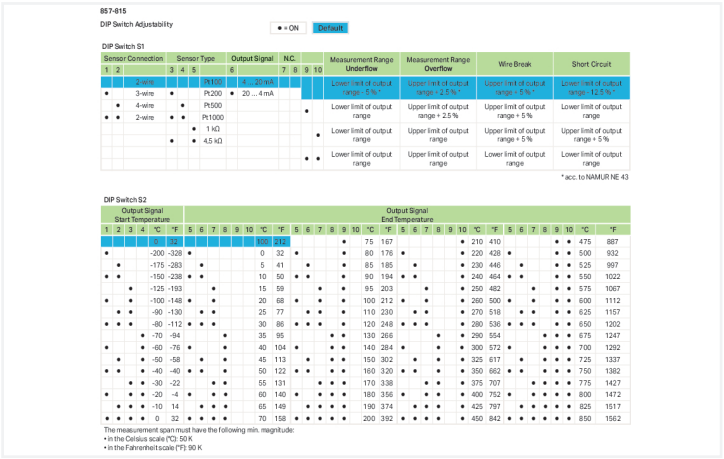




Derating







857-815

DIP Switch Adjustability

● = ON Default

DIP Switch S1

Sensor Connection 1	2	Sensor Type 3	4	5	Output Signal 6	N.C. 7	8	9	10	Measurement Range Underflow	Measurement Range Overflow	Wire Break	Short Circuit
		2-wire			Pt100					Lower limit of output range - 5 %*	Upper limit of output range + 2.5 %*	Upper limit of output range + 5 %*	Lower limit of output range - 12.5 %*
●		3-wire	●		Pt200	●	20 ... 4 mA						
	●	4-wire		●	Pt500				●	Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %	Lower limit of output range
●	●	2-wire	●	●	Pt1000								
				●	1 kΩ				●	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %	Upper limit of output range + 5 %
			●	●	4.5 kΩ								
						●	●			Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range

* acc. to NAMUR NE 43

DIP Switch S2

Output Signal Start Temperature 1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	Output Signal End Temperature 5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F
				-50	-58							100	212						●	75	167						●	210	410					●	●	475	887
●				-200	-328	●						0	32	●					●	80	176	●					●	220	428	●				●	●	500	932
	●			-175	-283		●					5	41		●				●	85	185		●				●	230	446		●			●	●	525	997
●	●			-150	-238	●	●					10	50	●	●				●	90	194	●	●				●	240	464	●	●			●	●	550	1022
		●		-125	-193			●				15	59			●			●	95	203			●			●	250	482			●		●	●	575	1067
●		●		-100	-148	●		●				20	68	●		●			●	100	212	●		●			●	260	500	●		●		●	●	600	1112
	●	●		-90	-130		●	●				25	77		●	●			●	110	230		●	●			●	270	518		●	●		●	●	625	1157
●	●	●		-80	-112	●	●	●				30	86	●	●	●			●	120	248	●	●	●			●	280	536	●	●	●		●	●	650	1202
			●	-70	-94				●			35	95				●		●	130	266				●		●	290	554				●	●	●	675	1247
●			●	-60	-76	●			●			40	104	●			●		●	140	284	●			●		●	300	572	●			●	●	●	700	1292
	●		●	-50	-58		●		●			45	113		●		●		●	150	302		●		●		●	325	617		●		●	●	●	725	1337
●	●		●	-40	-40	●	●		●			50	122	●	●		●		●	160	320	●	●		●		●	350	662	●	●		●	●	●	750	1382
		●	●	-30	-22			●	●			55	131			●	●		●	170	338			●	●		●	375	707			●	●	●	●	775	1427
●		●	●	-20	-4	●		●	●			60	140	●		●	●		●	180	356	●		●	●		●	400	752	●		●	●	●	●	800	1472
	●	●	●	-10	14		●	●	●			65	149		●	●	●		●	190	374		●	●	●		●	425	797		●	●	●	●	●	825	1517
●	●	●	●	0	32	●	●	●	●			70	158	●	●	●	●		●	200	392	●	●	●	●		●	450	842	●	●	●	●	●	●	850	1562

The measurement span must have the following min. magnitude:
• in the Celsius scale (°C): 50 K
• in the Fahrenheit scale (°F): 90 K

Short description:
WAGO's loop-powered RTD temperature signal conditioner records sensors (Pt100, Pt200, Pt500, Pt1000) and resistors up to 4.5 kΩ, converting the temperature signal into a standard analog signal at the output.
The loop-powered RTD temperature signal conditioner provides safe isolation between input and output with 3 kV test voltage per EN 61010-1.

Features:
- No additional supply voltage required
- For Pt100, Pt200, Pt500 and Pt1000 sensors, as well as resistors up to 4.5 kOhm
- 2-, 3- and 4-wire connection technology
- Calibrated measurement range switching
- Detects a sensor wire break/short circuit

Notes

Safety Information	The signal conditioner must only be configured with the DIP switch in the de-energized state.
Note	**Use shielded signal cables!** Only use shielded signal cables for analog input and output signals. This ensures the device maintains its specified accuracy and immunity to interference, even when external disturbances affect the signal cable.

Technical data

Configuration

Configuration options	DIP switch

Input

Input signal type	Pt sensors Resistance

Input (RTD sensors)

Sensor types (RTD)	Pt100 Pt200 Pt500 Pt1000
Sensor connection	2-wire; 3-wire; 4-wire (switchable)
Sensor power supply (RTD) max.	≤ 0.5 mA
Temperature measurement range (RTD)	-200 … +850 °C
Measurement span (RTD) min.	50 K

Input (resistors)

Input range (resistor)	0 … 1 kΩ; 0 … 4.5 kΩ

Output (analog)

Output signal type	Current
Output signal (current)	4 … 20 mA 20 … 4 mA
Load impedance (current output)	See derating graphic

Signal Processing

Step response (typ.)	1000 ms

Measurement Error

Transmission error (typ.)	≤ 0.1 % at full measurement span
Transmission error for the set measurement range	≤ ((40 K/set measurement range [K]) + 0.1) %
Transmission error (under interference)	≤ 5 %
Temperature coefficient	≤ 0.02 %/K

Power Supply

Power supply type	Loop-powered (via output)
Supply voltage	8 … 30 VDC (Power is derived from the output circuit.)
Power loss (max.) $P_{l\,(max.)}$	0.7 W

Safety and protection

Rated Voltage	300 V; 150 V (UL)
Measurement category per EN/UL 61010-2-030	CAT II (input)
Protection type	IP20

Test voltage

Test voltage (input/analog output)	3 kVAC; 50 … 60 Hz; 1 min

Insulation coordination (UL)

Overvoltage category	II
Pollution degree	2
Insulation type (input/analog output)	Reinforced insulation (safe isolation)

Insulation coordination

Overvoltage category	II
Pollution degree	2
Insulation type (input/analog output/supply)	Reinforced insulation (safe isolation)

Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 … 2.5 mm² / 28 … 14 AWG
Fine-stranded conductor	0.34 … 2.5 mm² / 22 … 14 AWG
Strip length	9 … 10 mm / 0.35 … 0.39 inches

Physical data

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

Continued on next page

Mechanical data

Mounting type	DIN-35 rail

Material data

Insulation material (main housing)	Polyamide (PA66)
Flammability class per UL94	V0
Fire load	0.527 MJ
Weight	38.9 g

Environmental requirements

Ambient temperature (operation)	-25 … +70 °C
Ambient temperature (storage)	-40 … +85 °C
Temperature range of connection cable	≥ ($T_{ambient}$ + 10 K)
Temperature range of the connection cable (UL)	75 °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; EN 61326-1; EN 50121-3-2
EMC emission of interference	EN 61000-6-3; EN 61326-1; EN 50121-3-2
Standards/specifications	EN 61010-1 EN 61373

Commercial data

PU (SPU)	1 pcs
Packaging type	Bag
Country of origin	DE
GTIN	4055143475648
Customs tariff number	85437090300

Product Classification

UNSPSC	41111970
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

RoHS Compliance Status	Compliant,No Exemption
SCIP notification number (Austria)	830a7e26-28ea-4705-ab6e-226f9c633520
SCIP notification number (Belgium)	63788937-7a1f-4563-936a-f01960202294
SCIP notification number (Bulgaria)	7573483d-d923-4363-9064-ce0784b75504
SCIP notification number (Czech Republic)	17fdd5aa-0c9d-4035-8fac-fb4e34ddac7f
SCIP notification number (Denmark)	f6a88738-2c30-4e26-8f7e-78d92a8961e5
SCIP notification number (Finland)	b4ce184e-8252-4b06-b805-6aa2c771805f
SCIP notification number (France)	7d65f4e8-4b0d-4e4d-922c-5b4b37ec9f15
SCIP notification number (Germany)	7eda7375-97a9-4708-8499-ee382843832f
SCIP notification number (Hungary)	eef5d1bb-60c8-4a7b-815f-42f57a0b5106
SCIP notification number (Italy)	9d811551-d172-4095-9c09-acc10881822b

Continued on next page

Environmental Product Compliance

SCIP notification number (Netherlands)	5b4bce60-08c5-43bc-b361-c0de92c2e4da
SCIP notification number (Poland)	05d900c2-b348-49b3-9862-d1595b7b0a8f
SCIP notification number (Romania)	5914960a-62a8-45a9-95fc-a9ee80aab951
SCIP notification number (Sweden)	d4592a7f-9ffa-4c4d-9de5-be795739849b

Approvals / Certificates

General approvals

Approval	Standard	Certificate Name
EAC GZO Almaty Standart	TP TC 004/2011	EAC CoC 03078
EAC GZO Almaty Standart	TP TC 020/2011	EAC CoC 03081
UL Underwriters Laboratories Inc. (ORDINARY LOCATIONS)	UL 61010-2-201	E175199

Declarations of conformity and manufacturer's declarations

Approval	Standard	Certificate Name
EU-Declaration of Conformity WAGO GmbH & Co. KG	-	-
UK-Declaration of Conformity WAGO GmbH & Co. KG	-	-

Downloads

Environmental Product Compliance

Compliance Search

Environmental Product Compliance 857-815

Documentation

Manual

WAGO Temperature Signal Conditioners

Bid Text

857-815	19.02.2019	xml 5.60 KB
857-815	20.02.2019	docx 17.98 KB

Instruction Leaflet

Temperature signal conditioner for RTD sensors; Current output signal; Power via output	V 2.0.0 29.09.2020	pdf 2278.39 KB

Continued on next page

CAD/CAE-Data

CAD data	CAE data
2D/3D Models 857-815	EPLAN Data Portal 857-815
	WSCAD Universe 857-815
	ZUKEN Portal 857-815

1 Compatible Products

1.1 Optional Accessories

1.1.1 Installation

1.1.1.1 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

1.1.2 Interface module

1.1.2.1 Interface adapters



Item No.: 857-980
Interface adapter; 16-pole; analog

1.1.3 Jumper

1.1.3.1 Jumper



Item No.: 281-482
Jumper; 2-way; insulated; gray



Item No.: 859-410/000-006
Jumper; for jumper slot; 10-way; insulated; blue



Item No.: 859-410
Jumper; for jumper slot; 10-way; insulated; light gray



Item No.: 859-410/000-005
Jumper; for jumper slot; 10-way; insulated; red



Item No.: 859-410/000-029
Jumper; for jumper slot; 10-way; insulated; yellow



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



Item No.: 859-403/000-006
Jumper; for jumper slot; 3-way; insulated; blue



Item No.: 859-403
Jumper; for jumper slot; 3-way; insulated; light gray



Item No.: 859-403/000-005
Jumper; for jumper slot; 3-way; insulated; red



Item No.: 859-403/000-029
Jumper; for jumper slot; 3-way; insulated; yellow



Item No.: 859-404/000-006
Jumper; for jumper slot; 4-way; insulated; blue



Item No.: 859-404
Jumper; for jumper slot; 4-way; insulated; light gray



Item No.: 859-404/000-005
Jumper; for jumper slot; 4-way; insulated; red

Continued on next page

1.1.3.1 Jumper



Item No.: 859-404/000-029
Jumper; for jumper slot; 4-way; insulated; yellow



Item No.: 859-405/000-006
Jumper; for jumper slot; 5-way; insulated; blue



Item No.: 859-405
Jumper; for jumper slot; 5-way; insulated; light gray



Item No.: 859-405/000-005
Jumper; for jumper slot; 5-way; insulated; red



Item No.: 859-405/000-029
Jumper; for jumper slot; 5-way; insulated; yellow



Item No.: 859-406/000-006
Jumper; for jumper slot; 6-way; insulated; blue



Item No.: 859-406
Jumper; for jumper slot; 6-way; insulated; light gray



Item No.: 859-406/000-005
Jumper; for jumper slot; 6-way; insulated; red



Item No.: 859-406/000-029
Jumper; for jumper slot; 6-way; insulated; yellow



Item No.: 859-407/000-006
Jumper; for jumper slot; 7-way; insulated; blue



Item No.: 859-407
Jumper; for jumper slot; 7-way; insulated; light gray



Item No.: 859-407/000-005
Jumper; for jumper slot; 7-way; insulated; red



Item No.: 859-407/000-029
Jumper; for jumper slot; 7-way; insulated; yellow

Item No.: 859-408/000-006
Jumper; for jumper slot; 8-way; insulated; blue

Item No.: 859-408
Jumper; for jumper slot; 8-way; insulated; light gray

Item No.: 859-408/000-005
Jumper; for jumper slot; 8-way; insulated; red



Item No.: 859-408/000-029
Jumper; for jumper slot; 8-way; insulated; yellow

Item No.: 859-409/000-006
Jumper; for jumper slot; 9-way; insulated; blue

Item No.: 859-409
Jumper; for jumper slot; 9-way; insulated; light gray

Item No.: 859-409/000-005
Jumper; for jumper slot; 9-way; insulated; red



Item No.: 859-409/000-029
Jumper; for jumper slot; 9-way; insulated; yellow

1.1.4 Marking

1.1.4.1 Marker

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

Continued on next page

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 Terminal blocks

1.1.6.1 Supply and through module



Item No.: 857-979
Supply and through module

1.1.7 Tool

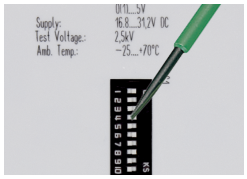
1.1.7.1 Operating tool



Item No.: 210-720
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured

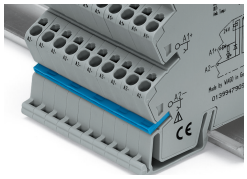
Installation Notes

Configuring



Configuration via DIP switch

Commoning



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