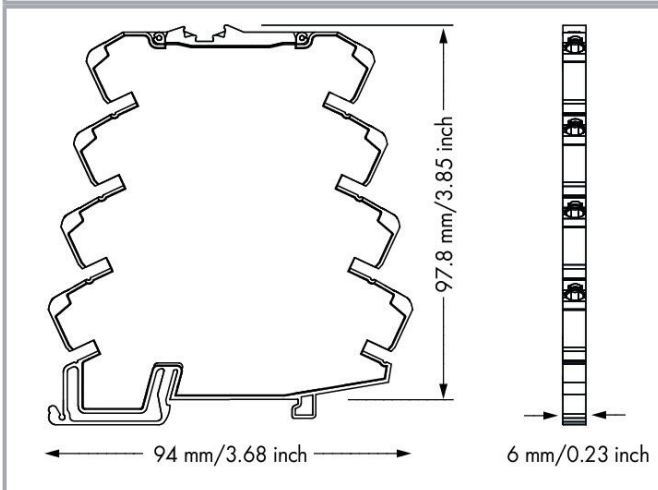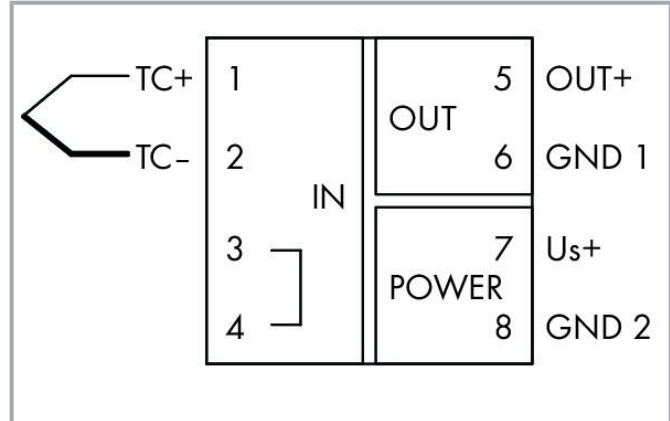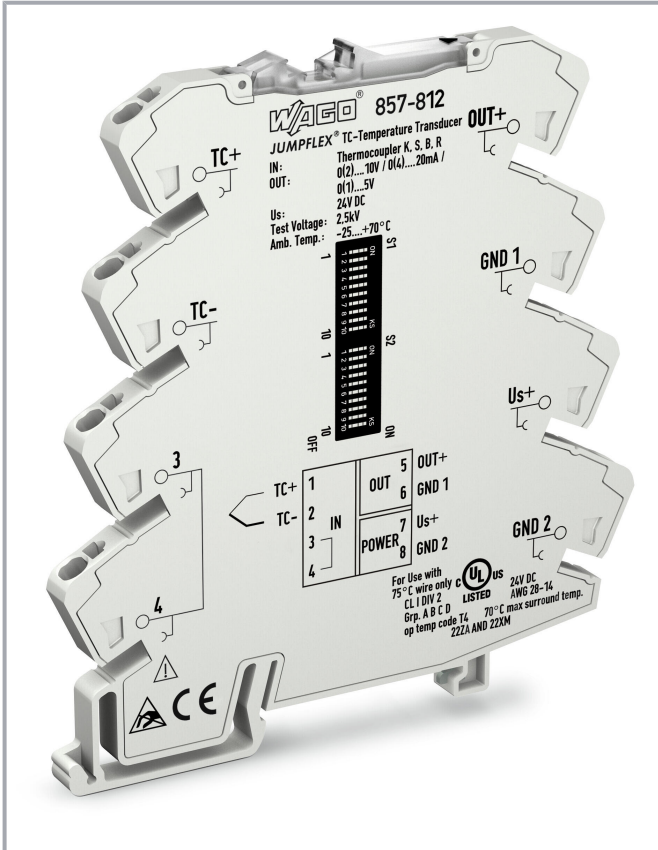# Data sheet | Item number: 857-812

Temperature signal conditioner; for thermocouples; Current and voltage output signal; Configuration via DIP switch; Supply voltage: 24 VDC; 6 mm module width

www.wago.com/857-812

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

DIP Switch S1

857-812
DIP Switch Adjustability   ● = ON   Default

Cold Junction Compensation	Sensor Type		Output Signal						Measurement Range Underflow	Measurement Range Overflow	Wire Break
1	2	3	4	5	6		7	8			
Ein						K			Lower limit of output range - 5 % *	Upper limit of output range + 2.5 % *	Upper limit of output range + 5 % *
●	Aus	●		0 … 20 mA					Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %
		●	S	4 … 20 mA				●			
			●	B	0 … 10 mA	●			Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %
		●	●	R	2 … 10 mA	●	●				
					0 … 10 V	●		●	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %
				●	2 … 10 V	●					
				●	●	0 … 5 V	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range
				●	●	●	1 … 5 V				

DIP Switch S1 (9) n.c.   * acc. to NAMUR NE 43

DIP Switch S1+S2

Start Temperature							End Temperature																	
S1	S2				°C	°F	S2						°C	°F	S2						°C	°F
10	1	2	3	4			5	6	7	8	9	10			5	6	7	8	9	10		
					0	32							1000	1832	●		●			●	1000	1832
●					50	122	●						0	32						●	1050	1922
	●				100	212		●					50	122	●	●	●				1100	2012
●	●				150	302	●	●					100	212				●	●		1150	2102
		●			200	392			●				150	302	●			●	●		1200	2192
●		●			250	482	●		●				200	392		●		●	●		1250	2282
	●	●			300	572		●	●				250	482	●	●		●	●		1300	2372
●	●	●			350	662	●	●	●				300	572			●	●	●		1350	2462
			●		400	752				●			350	662	●		●	●	●		1400	2552
●			●		450	842	●			●			400	752		●	●	●	●		1450	2642
	●		●		500	932		●		●			450	842	●	●	●	●	●		1500	2732
●	●		●		550	1022	●	●		●			500	932						●	1550	2822
		●	●		600	1112			●	●			550	1022	●					●	1600	2912
●		●	●		650	1202	●		●	●			600	1112		●				●	1650	3002
	●	●	●		700	1292		●	●	●			650	1202	●	●				●	1700	3092
●	●	●	●		750	1382	●	●	●	●			700	1292			●			●	1750	3182
				●	800	1472					●		750	1382	●		●			●	1800	3272
●				●	850	1562	●				●		800	1472								
	●			●	900	1652		●			●		850	1562								
●		●		●	950	1742	●		●		●		900	1652								
			●	●	1000	1832				●	●		950	1742								

Item description

Short description:

WAGO's temperature signal conditioner records signals from thermocouples (type K, S, B, R) and converts the temperature signal into a standard analog signal at the output.

Features:

- For thermocouples of type K, S, B and R
- Cold junction compensation (On/Off)
- Calibrated measurement range switching
- Detects a sensor wire break
- Detects measurement range underflow/overflow
- Clipping capability for analog signal limitation to output end values
- 3-way electrical isolation with 2.5 kV test voltage

Data
Technical data

Configuration

Configuration options	DIP switch

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

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Input

Input signal type	TC sensors

Input (TC sensors)

Sensor types (TC)	Type K Type S Type B Type R
Temperature measurement range (TC)	0 … 1200 °C (Type K); 0 … 1600 °C (Type S); 600 … 1800 °C (Type B); 0 … 1600 °C (Type R)
Cold junction compensation	On/Off (Default: On)
Cold junction error	3 K (typ. 2 K)

Output (analog)

Output signal type	Current Voltage
Output signal (voltage)	0 … 5 V; 1 … 5 V; 0 … 10 V; 2 … 10 V
Output signal (current)	0 … 10 mA; 2 … 10 mA; 0 … 20 mA; 4 … 20 mA
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω

Signal Processing

Step response (typ.)	60 ms (cold junction compensation (Off)); 120 ms (cold junction compensation (ON))

Measurement Error

Transmission error (typ.)	≤ 0.1 % at full measurement span
Transmission error for the set measurement range	≤ (150 K/set measurement range [K]) %
Temperature coefficient	≤ 0.04 %/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

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

Safety and protection

Protection type	IP20

Test voltage

Test voltage (input/output/supply)	AC 2.5 kV; 50 Hz; 1 min

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

Mechanical Data

Mounting type	DIN-35 rail

Material Data

Fire load	0.42 MJ
Weight	35.7 g

Environmental requirements

Ambient temperature (operation)	-25 … +70 °C
Ambient temperature (storage)	-40 … +85 °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
EMC emission of interference	EN 61000-6-4

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

Commercial data

Product Group	6 (INTERFACE ELECTRONIC)
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	4050821255291
Customs tariff number	85437090300

Environmental Product Compliance

CAS-No.	7439-92-1 79-94-7
REACH Candidate List Substance	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol Lead
RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	6(c) 7(a) 7(c)-I 7(c)-II
SCIP notification number (Austria)	c0b6797a-cb4a-4c1f-a840-c0cd4f87a69d
SCIP notification number (Belgium)	63246099-99c4-43a6-adfd-84430887f462
SCIP notification number (Bulgaria)	ea9a922d-f667-4a28-ba1e-c99ddf8dd7e8
SCIP notification number (Czech Republic)	3b1b251c-a971-41aa-9196-9ca50fd3018f
SCIP notification number (Denmark)	8ef75f62-a4f0-4596-82a0-b4e0cc314863
SCIP notification number (Finland)	07b2346b-c450-4ded-aea1-546be2e4f794
SCIP notification number (France)	ba213564-10e1-4d25-aad4-fd5d5dc2fae7
SCIP notification number (Germany)	574b5988-3161-4ef7-be2b-3d31e6c52d56
SCIP notification number (Hungary)	fb09612d-0901-430e-92ab-7b4c0d594307
SCIP notification number (Italy)	286c091b-d3d4-4e26-b2bc-770b2ca8b326
SCIP notification number (Netherlands)	0df3ea2a-7dc3-4942-ab8e-065df1295860
SCIP notification number (Poland)	9ff286c8-d765-4fed-9cd7-c4854f426e04
SCIP notification number (Romania)	32bb11c8-e3ce-4868-b1db-f95c88597e37
SCIP notification number (Sweden)	9fee1f9a-d1d7-47cd-9f94-9f08e1d83ded

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

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

Declarations of conformity and manufacturer's declarations

Logo	Approval	Additional Approval Text	Certificate name
	EU-Declaration of Conformity WAGO GmbH & Co. KG	-	-

Approvals for hazardous areas

Logo	Approval	Additional Approval Text	Certificate name
	UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS)	ANSI/ISA 12.12.01	E198726

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

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

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

www.wago.com/249-197

Item no.: 249-197
Screwless end stop; 14 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray

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

Jumpers

Jumper

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

www.wago.com/859-408

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

www.wago.com/281-482

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

www.wago.com/859-404
/000-005

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

www.wago.com/859-404
/000-006

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

www.wago.com/859-405
/000-005

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

www.wago.com/859-405
/000-029

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

www.wago.com/859-405

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

www.wago.com/859-404
/000-029

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

www.wago.com/859-406

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

www.wago.com/859-405
/000-006

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

	Item no.: 859-406/000-005 Jumper; for jumper slot; 6-way; insulated; red	www.wago.com/859-406 /000-005
	Item no.: 859-409/000-029 Jumper; for jumper slot; 9-way; insulated; yellow	www.wago.com/859-409 /000-029
	Item no.: 859-410/000-005 Jumper; for jumper slot; 10-way; insulated; red	www.wago.com/859-410 /000-005
	Item no.: 859-410/000-029 Jumper; for jumper slot; 10-way; insulated; yellow	www.wago.com/859-410 /000-029
	Item no.: 859-410 Jumper; for jumper slot; 10-way; insulated; light gray	www.wago.com/859-410
	Item no.: 859-410/000-006 Jumper; for jumper slot; 10-way; insulated; blue	www.wago.com/859-410 /000-006
	Item no.: 859-403/000-005 Jumper; for jumper slot; 3-way; insulated; red	www.wago.com/859-403 /000-005
	Item no.: 859-402/000-029 Jumper; for jumper slot; 2-way; insulated; yellow	www.wago.com/859-402 /000-029
	Item no.: 859-403/000-029 Jumper; for jumper slot; 3-way; insulated; yellow	www.wago.com/859-403 /000-029
	Item no.: 859-403/000-006 Jumper; for jumper slot; 3-way; insulated; blue	www.wago.com/859-403 /000-006
	Item no.: 859-408/000-005 Jumper; for jumper slot; 8-way; insulated; red	www.wago.com/859-408 /000-005
	Item no.: 859-408/000-029 Jumper; for jumper slot; 8-way; insulated; yellow	www.wago.com/859-408 /000-029
	Item no.: 859-409 Jumper; for jumper slot; 9-way; insulated; light gray	www.wago.com/859-409
	Item no.: 859-408/000-006 Jumper; for jumper slot; 8-way; insulated; blue	www.wago.com/859-408 /000-006

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	Item no.: 859-403 Jumper; for jumper slot; 3-way; insulated; light gray	www.wago.com/859-403
	Item no.: 859-409/000-005 Jumper; for jumper slot; 9-way; insulated; red	www.wago.com/859-409 /000-005
	Item no.: 859-404 Jumper; for jumper slot; 4-way; insulated; light gray	www.wago.com/859-404
	Item no.: 859-409/000-006 Jumper; for jumper slot; 9-way; insulated; blue	www.wago.com/859-409 /000-006
	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
	Item no.: 859-406/000-006 Jumper; for jumper slot; 6-way; insulated; blue	www.wago.com/859-406 /000-006
	Item no.: 859-406/000-029 Jumper; for jumper slot; 6-way; insulated; signal yellow	www.wago.com/859-406 /000-029
	Item no.: 859-407/000-006 Jumper; for jumper slot; 7-way; insulated; blue	www.wago.com/859-407 /000-006
	Item no.: 859-407/000-005 Jumper; for jumper slot; 7-way; insulated; red	www.wago.com/859-407 /000-005
	Item no.: 859-407/000-029 Jumper; for jumper slot; 7-way; insulated; yellow	www.wago.com/859-407 /000-029
	Item no.: 859-407 Jumper; for jumper slot; 7-way; insulated; light gray	www.wago.com/859-407

Interface module

Interface adapters

	Item no.: 857-980	

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

www.wago.com/857-980

Interface adapter; 16-pole; analog

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

Terminal blocks

Supply module

Item no.: 857-979

Supply and through module

www.wago.com/857-979

Downloads
Documentation

Bid Text

857-812

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857-812 X81 - Datei	2019 Feb 19	xml 5.8 kB	Download

Instruction Leaflet

Messumformer und Trennverstärker TemperaturmessumformerThermoelemente Typ K, S, B und R, DIP-Schalter		pdf 1.5 MB	Download

Additional Information

Disposal and Recycling Electrical and electronic equipment, Batteries, Packaging	V 1.1.0 2022 Aug 18	pdf 2.2 MB	Download

CAD/CAE-Data

CAD data

2D/3D Models 857-812	URL	Download

CAE data

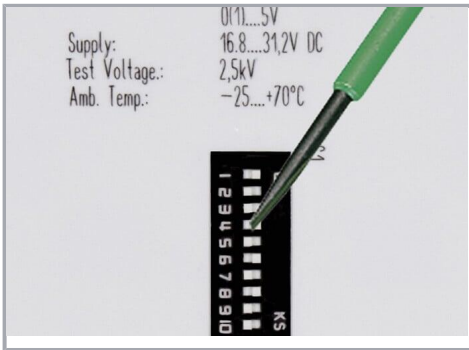| EPLAN Data Portal 857-812	URL	Download
WSCAD Universe 857-812	URL	Download
ZUKEN Portal 857-812	URL	Download

Environmental Product Compliance

Compliance Search

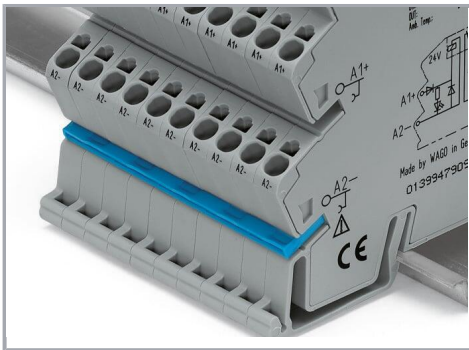| Environmental Product Compliance 857-812 Temperature signal conditioner; for thermocouples; Current and voltage output signal; Configuration via DIP switch; Supply voltage: 24 VDC; 6 mm module width	URL	Download

Installation Notes

Configuring

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

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Configuration via DIP switch

Commoning

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

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

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