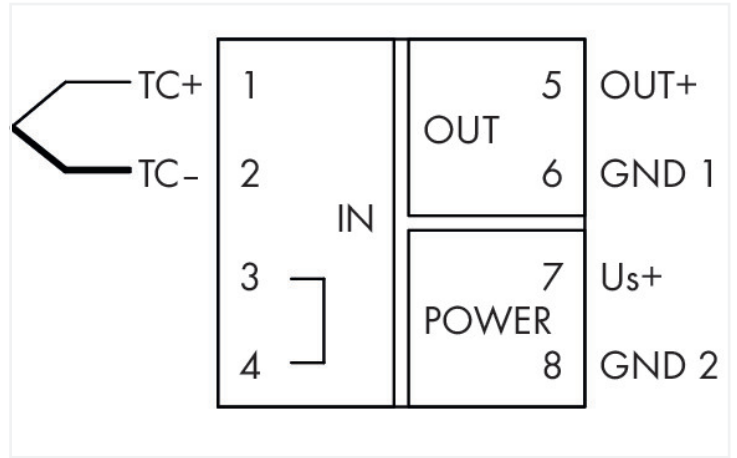
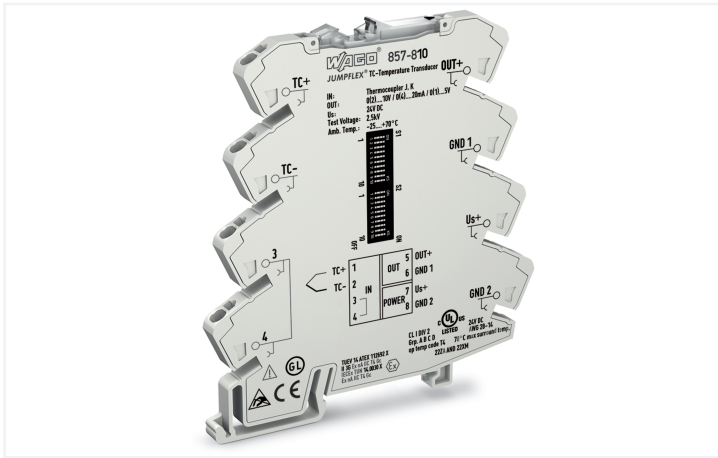


Data Sheet | Item Number: 857-810

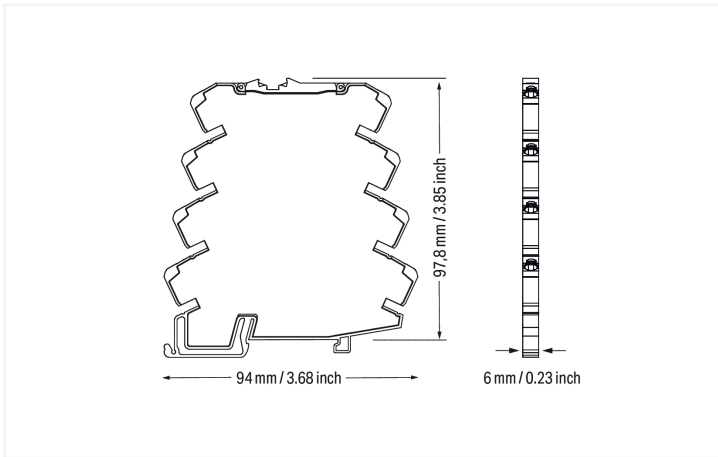
Temperature signal conditioner for thermocouples; Current and voltage output signal; Configuration via DIP switch; Supply voltage: 24 VDC; 6 mm module width; light gray



<https://www.wago.com/857-810>



Color: ■ light gray



857-810
DIP Switch Adjustability

DIP Switch S1

Cold Junction Compensation	Sensor type		Output signal	Measurement Range		Wire Break
	2	3		Underflow	Overflow	
on	J	K	0...20 mA	Lower limit of output range - 5.5%	Upper limit of output range + 2.5%	Upper limit of output range + 5.5%
off			4...20 mA	Lower limit of output range	Upper limit of output range + 2.5%	Upper limit of output range + 5.5%
			0...10 mA	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5%
			2...10 mA	Lower limit of output range	Upper limit of output range	Lower limit of output range - 5%
			0...10 V	Lower limit of output range	Upper limit of output range	Lower limit of output range - 5%
			2...10 V	Lower limit of output range	Upper limit of output range	Lower limit of output range
			0...5 V	Lower limit of output range	Upper limit of output range	Lower limit of output range
			1...5 V	Lower limit of output range	Upper limit of output range	Lower limit of output range

DIP S1 and 10 n.c.

DIP Switch S2

Start Temperature										End Temperature									
1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
°C	°C	°C	°C	°C	°C	°C	°C	°C	°C	°C	°C	°C	°C	°C	°C	°C	°C	°C	°C
0	32	100	152							225	437	625	1157						
-200	-328	0	32							250	482	650	1202						
-175	-283	10	50							275	527	675	1247						
-150	-253	20	68							300	572	700	1292						
-125	-193	30	86							325	617	725	1337						
-100	-148	40	104							350	662	750	1382						
-80	-130	50	122							375	707	775	1427						
-60	-112	60	140							400	752	800	1472						
-40	-94	70	158							425	797	825	1517						
-20	-76	80	176							450	842	850	1562						
0	-58	90	194							475	887	875	1607						
20	-40	100	212							500	932	900	1652						
40	-22	125	257							525	977	925	1697						
60	-4	150	302							550	1022	950	1742						
80	14	175	347							575	1067	975	1787						
100	32	200	392							600	1112	1000	1832						

The minimum distance from the start temperature to the end temperature may not fall short of 100K degrees on the Celsius (°C) scale or 212K degrees on the Fahrenheit (°F) scale.

Short description:

This temperature signal conditioner records signals from thermocouples (type J, K) and converts the temperature signal into a standard analog signal at the output.

Features:

- For type J and K thermocouples
- Cold junction compensation (On/Off)
- Calibrated measurement range switching
- Detects a sensor wire break
- Detects measurement range underflow/overflow
- Clipping capability: Limitation of the standard analog signal to the upper-range values
- 3-way electrical isolation with 2.5 kV test voltage

Technical data

Configuration

Configuration options	DIP switch
-----------------------	------------

Input

Input signal type	TC sensors
-------------------	------------

Input (TC sensors)

Sensor types (TC)	Type J Type K
Temperature measurement range (TC)	-200 ... 1200 °C (Type J) -200 ... 1350 °C (Type K)
Measurement span (TC) min.	100 K
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 max. measurement span (type J, K)
Transmission error for the set measurement range	≤ (150 K/set measurement range [K]) %
Temperature coefficient	≤ 0.04 %/K

Power Supply

Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Current consumption at nominal supply voltage	≤ 40 mA

Safety and protection

Protection type	IP20
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Test voltage

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
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Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm ² / 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
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Material data

Color	light gray
Insulation material (main housing)	Polyamide (PA66)
Flammability class per UL94	V0
Fire load	0.365 MJ
Weight	35.5 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
Standards/specifications	DNV

Commercial data

Product Group	6 (INTERFACE ELECTRONIC)
PU (SPU)	1 pcs
Packaging type	Bag
Country of origin	DE
GTIN	4045454470135
Customs tariff number	85437090300

Product Classification

UNSPSC	41111970
eCl@ss 10.0	27-21-01-29
eCl@ss 9.0	27-20-02-06
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 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)	694a8dfe-c43e-47d6-ad52-996c633f9655
SCIP notification number (Belgium)	296545de-031d-4d5e-a5a5-dfdcc192cdf7
SCIP notification number (Bulgaria)	c1b7b523-92f8-47da-850c-8c4c882c490d
SCIP notification number (Czech Republic)	e269576b-40b6-4b8e-a730-b20f6c4642ba
SCIP notification number (Denmark)	adf6ed2d-abff-4125-bf6c-c121e8fca395
SCIP notification number (Finland)	5021c540-639b-4fdb-88aa-4c5ba154c53e
SCIP notification number (France)	ca2c2545-875b-4634-b7a2-589c69c41520
SCIP notification number (Germany)	ba87344e-9f0c-4f92-8d9b-a3c90deeb4cc
SCIP notification number (Hungary)	62c2d5b3-a430-476c-810d-c2bfb1e4d555
SCIP notification number (Italy)	7dccb9c7-af48-427e-8cf4-62ec1cfc9737
SCIP notification number (Netherlands)	9d300dab-2d6b-4501-8a24-bc26ad68f589
SCIP notification number (Poland)	Odd42d60-44a1-435a-b52e-47b29f5d6be4
SCIP notification number (Romania)	64b5849a-efc7-4fa8-9d9c-d6e400e9cc32
SCIP notification number (Sweden)	be28f513-6c89-4361-b6f3-1dba6122eca2

Approvals / Certificates

General approvals **Declarations of conformity and manufacturer's declarations**



Approval	Standard	Certificate Name
EAC GZO Almaty Standart	TP TC 020/2011	EAC CoC 03081

Approval	Standard	Certificate Name
EU-Declaration of Confor- mity WAGO GmbH & Co. KG	-	-

Approvals for marine applications

Approvals for hazardous areas



Approval	Standard	Certificate Name
BV Bureau Veritas S.A.	Rules for class. of Steel Ships	40179_B0
DNV DNV Germany GmbH	DNV-CG-0339,Aug.2021	TAA00001D1



Approval	Standard	Certificate Name
CCC CNEX	CNCA-C23-01	2020312310000210 (Ex ec IIC T4 Gc)
IECEX TUEV Nord Cert GmbH	-	IECEX TUN14.0030X
UKEx WAGO GmbH & Co. KG	EN 60079-0	WAGO22UKEX004X
UL Underwriters Laboratories Inc. (HAZARDOUS LOCA- TIONS)	ANSI/ISA 12.12.01	E198726

Downloads

Environmental Product Compliance

Compliance Search			
Environmental Product Compliance 857-810			↓

Documentation

Bid Text			
857-810	19.02.2019	xml 5.73 KB	↓
857-810	20.02.2019	docx 17.11 KB	↓

Instruction Leaflet			
CCC Ex (Additional information)	26.04.2023	pdf 140.99 KB	↓
Messumformer und Trennverstärker		pdf 2348.53 KB	↓

CAD/CAE-Data

CAD data	
2D/3D Models 857-810	↓

CAE data	
EPLAN Data Portal 857-810	↓
WSCAD Universe 857-810	↓
ZUKEN Portal 857-810	↓

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



[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

			
<p>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</p>	<p>Item No.: 793-502 WMB marking card; as card; MARKED; 1 ... 10 (10x); not stretchable; Horizontal marking; snap-on type; white</p>	<p>Item No.: 793-566 WMB marking card; as card; MARKED; 1 ... 50 (2x); not stretchable; Horizontal marking; snap-on type; white</p>	<p>Item No.: 793-503 WMB marking card; as card; MARKED; 11 ... 20 (10x); not stretchable; Horizontal marking; snap-on type; white</p>
			
<p>Item No.: 793-504 WMB marking card; as card; MARKED; 21 ... 30 (10x); not stretchable; Horizontal marking; snap-on type; white</p>	<p>Item No.: 793-505 WMB marking card; as card; MARKED; 31 ... 40 (10x); not stretchable; Horizontal marking; snap-on type; white</p>	<p>Item No.: 793-506 WMB marking card; as card; MARKED; 41 ... 50 (10x); not stretchable; Horizontal marking; snap-on type; white</p>	<p>Item No.: 793-501 WMB marking card; as card; not stretchable; plain; snap-on type; white</p>
			
<p>Item No.: 2009-115 WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white</p>			


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 module



Item No.: 857-979
Supply and through module

1.1.6.2 Through terminal block



Item No.: 857-979
Supply and through module

1.1.7 Tool

1.1.7.1 Operating tool

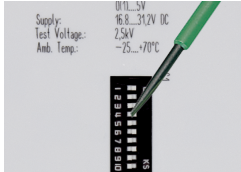


Item No.: 210-720

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

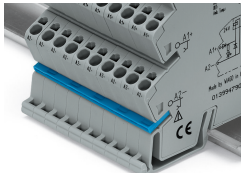
Installation Notes

Configuring



Configuration via DIP switch

Commoning



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