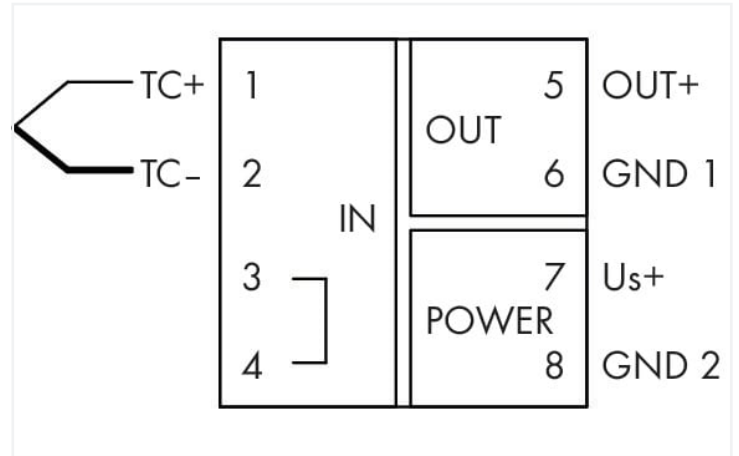
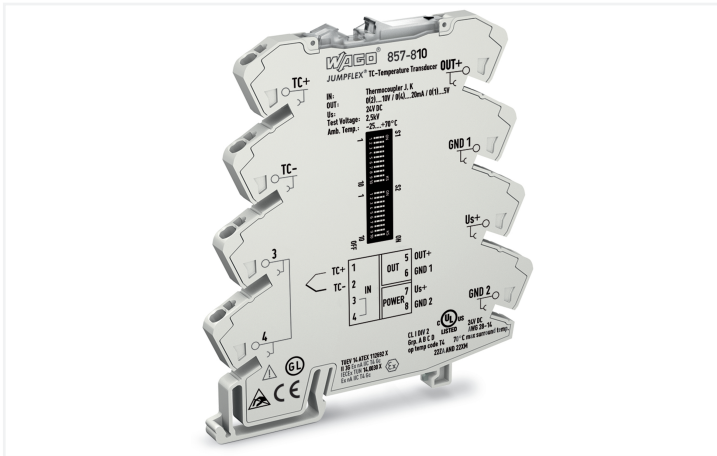


# Data Sheet | Item Number: 857-810

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

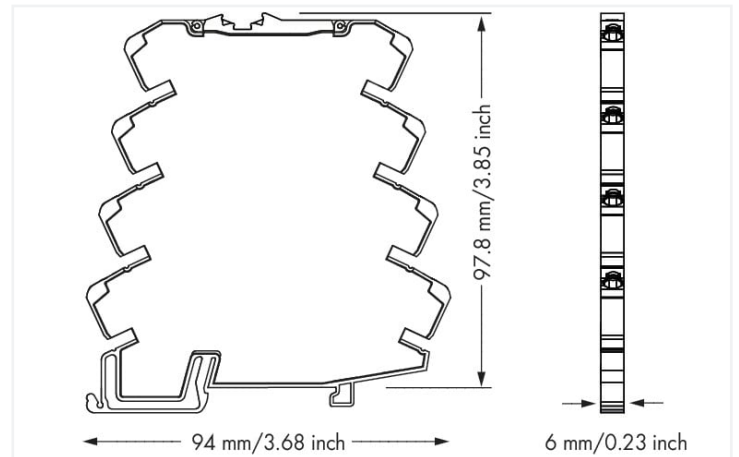
Cold Junction Compensation	Sensor type	Output signal	Measurement Range Underflow	Measurement Range Overflow	Wire Break
on	J	0...20 mA	Lower limit of output range - 5%	Upper limit of output range + 2.5%	Upper limit of output range + 5%
off	K	4...20 mA	Lower limit of output range	Upper limit of output range + 2.5%	Upper limit of output range + 5%
		0...10 mA	Lower limit of output range	Upper limit of output range + 2.5%	Upper limit of output range + 5%
		0...10 V	Lower limit of output range	Upper limit of output range	Upper 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 9 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	°F	°C	°F	°C	°C	°F	°C	°F	°C	°C	°F	°C	°F	°C	°C	°F	°C	°F	°C																				
0	32	100	212	1000	1832					225	437									625	1157									1025	1877								
-200	-328			0	32					250	482									650	1202									1050	1922								
-175	-283			10	50					275	527								675	1247									1075	1967									
-150	-253			20	68					300	572								700	1292									1100	2012									
-125	-193			30	86					325	617								725	1337									1125	2057									
-100	-143			40	104					350	662								750	1382									1150	2102									
-80	-119			50	122					375	707								775	1427									1175	2147									
-60	-94			60	140					400	752								800	1472									1200	2192									
-40	-70			70	158					425	797								825	1517									1225	2237									
-20	-4			80	176					450	842								850	1562									1250	2282									
0	32			90	194					475	887								875	1607									1275	2327									
20	68			100	212					500	932								900	1652									1300	2372									
40	104			120	237					525	977								925	1697									1325	2417									
60	140			150	302					550	1022								950	1742									1375	2462									
80	176			175	347					575	1067								975	1787									1425	2567									
100	212			200	392					600	1112								1000	1832									1400	2552									

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.



Dimensions in mm

## Short description:

WAGO's 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 for analog signal limitation to output end values
- 3-way electrical isolation with 2.5 kV test voltage

Technical data	
<b>Configuration</b>	<b>Input</b>
Configuration options	DIP switch
	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)	$\geq 2 \text{ k}\Omega$
Load impedance (current output)	$\leq 600 \Omega$

### Signal processing

Step response (typ.)	60 ms (cold junction compensation Off) 120 ms (cold junction compensation On)
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### Measurement error

Transmission error (typ.)	$\leq 0.1\%$ at max. measurement span (type J, K)
Transmission error for the set measurement range	$\leq (150 \text{ K}/\text{set measurement range [K]}) \%$
Temperature coefficient	$\leq 0.04 \%/K$

### Power supply

Power supply type	24 VDC
Nominal supply voltage $U_s$	DC 24 V
Supply voltage range	$\pm 30 \%$
Current consumption at nominal supply voltage	$\leq 40 \text{ mA}$

### Safety and protection

Protection type	IP20	<b>Test voltage</b>	
		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 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 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)
eCl@ss 10.0	27-21-01-29
eCl@ss 9.0	27-20-02-06
ETIM 9.0	EC002919
ETIM 8.0	EC002919
PU (SPU)	1 pcs
Packaging type	Bag
Country of origin	DE
GTIN	4045454470135
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 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-dfddc192cdf7
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

**Environmental Product Compliance**

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)	7dccf9c7-af48-427e-8cf4-62ec1cfc9737
SCIP notification number (Netherlands)	9d300dab-2d6b-4501-8a24-bc26ad68f589
SCIP notification number (Poland)	0dd42d60-44a1-435a-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
UL Underwriters Laboratories Inc. (ORDINARY LOCATIONS)	UL 508	E175199 Sec.4


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

**Approvals for marine applications**



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

**Approvals for hazardous areas**




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 LOCATIONS)	ANSI/ISA 12.12.01	E198726

**Downloads**

**Environmental Product Compliance**

**Compliance Search**

Environmental Product Compliance 857-810 

## Documentation

Bid Text				Instruction Leaflet			
857-810	19.02.2019	xml 5.73 KB		CCC Ex (Additional information)	26.04.2023	pdf 140.99 KB	
857-810	20.02.2019	docx 17.11 KB		Messumformer und Trennverstärker		pdf 2348.53 KB	

## CAD/CAE-Data

CAD data	CAE data
2D/3D Models 857-810	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

1.1.3.1 Jumper

 <p><b>Item No.: 859-402/000-029</b> Jumper; for jumper slot; 2-way; insulated; yellow</p>	 <p><b>Item No.: 859-403/000-006</b> Jumper; for jumper slot; 3-way; insulated; blue</p>	 <p><b>Item No.: 859-403</b> Jumper; for jumper slot; 3-way; insulated; light gray</p>	 <p><b>Item No.: 859-403/000-005</b> Jumper; for jumper slot; 3-way; insulated; red</p>
 <p><b>Item No.: 859-403/000-029</b> Jumper; for jumper slot; 3-way; insulated; yellow</p>	 <p><b>Item No.: 859-404/000-006</b> Jumper; for jumper slot; 4-way; insulated; blue</p>	 <p><b>Item No.: 859-404</b> Jumper; for jumper slot; 4-way; insulated; light gray</p>	 <p><b>Item No.: 859-404/000-005</b> Jumper; for jumper slot; 4-way; insulated; red</p>
 <p><b>Item No.: 859-404/000-029</b> Jumper; for jumper slot; 4-way; insulated; yellow</p>	 <p><b>Item No.: 859-405/000-006</b> Jumper; for jumper slot; 5-way; insulated; blue</p>	 <p><b>Item No.: 859-405</b> Jumper; for jumper slot; 5-way; insulated; light gray</p>	 <p><b>Item No.: 859-405/000-005</b> Jumper; for jumper slot; 5-way; insulated; red</p>
 <p><b>Item No.: 859-405/000-029</b> Jumper; for jumper slot; 5-way; insulated; yellow</p>	 <p><b>Item No.: 859-406/000-006</b> Jumper; for jumper slot; 6-way; insulated; blue</p>	 <p><b>Item No.: 859-406</b> Jumper; for jumper slot; 6-way; insulated; light gray</p>	 <p><b>Item No.: 859-406/000-005</b> Jumper; for jumper slot; 6-way; insulated; red</p>
 <p><b>Item No.: 859-406/000-029</b> Jumper; for jumper slot; 6-way; insulated; yellow</p>	 <p><b>Item No.: 859-407/000-006</b> Jumper; for jumper slot; 7-way; insulated; blue</p>	 <p><b>Item No.: 859-407</b> Jumper; for jumper slot; 7-way; insulated; light gray</p>	 <p><b>Item No.: 859-407/000-005</b> Jumper; for jumper slot; 7-way; insulated; red</p>
 <p><b>Item No.: 859-407/000-029</b> Jumper; for jumper slot; 7-way; insulated; yellow</p>	 <p><b>Item No.: 859-408/000-006</b> Jumper; for jumper slot; 8-way; insulated; blue</p>	 <p><b>Item No.: 859-408</b> Jumper; for jumper slot; 8-way; insulated; light gray</p>	 <p><b>Item No.: 859-408/000-005</b> Jumper; for jumper slot; 8-way; insulated; red</p>
 <p><b>Item No.: 859-408/000-029</b> Jumper; for jumper slot; 8-way; insulated; yellow</p>	 <p><b>Item No.: 859-409/000-006</b> Jumper; for jumper slot; 9-way; insulated; blue</p>	 <p><b>Item No.: 859-409</b> Jumper; for jumper slot; 9-way; insulated; light gray</p>	 <p><b>Item No.: 859-409/000-005</b> Jumper; for jumper slot; 9-way; insulated; red</p>
 <p><b>Item No.: 859-409/000-029</b> Jumper; for jumper slot; 9-way; insulated; yellow</p>			

1.1.4 Marking

1.1.4.1 Marker

 <p><b>Item No.: 793-5501</b> 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><b>Item No.: 793-502</b> WMB marking card; as card; MARKED; 1 ... 10 (10x); not stretchable; Horizontal marking; snap-on type; white</p>	 <p><b>Item No.: 793-566</b> WMB marking card; as card; MARKED; 1 ... 50 (2x); not stretchable; Horizontal marking; snap-on type; white</p>	 <p><b>Item No.: 793-503</b> WMB marking card; as card; MARKED; 11 ... 20 (10x); not stretchable; Horizontal marking; snap-on type; white</p>
 <p><b>Item No.: 793-504</b> WMB marking card; as card; MARKED; 21 ... 30 (10x); not stretchable; Horizontal marking; snap-on type; white</p>	 <p><b>Item No.: 793-505</b> WMB marking card; as card; MARKED; 31 ... 40 (10x); not stretchable; Horizontal marking; snap-on type; white</p>	 <p><b>Item No.: 793-506</b> WMB marking card; as card; MARKED; 41 ... 50 (10x); not stretchable; Horizontal marking; snap-on type; white</p>	 <p><b>Item No.: 793-501</b> WMB marking card; as card; not stretchable; plain; snap-on type; white</p>
 <p><b>Item No.: 2009-115</b> 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

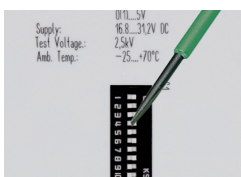


**Item No.: 210-720**

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.