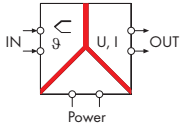


JUMPFLEX Series 857

**Temperature transducer for thermocouples
857-810**



Before installation and operation, please read the following instructions thoroughly and carefully. Incorrect installation may compromise safety in the event of a failure.

1. Safety Information

1.1 General information

Please observe the following:

- the applicable laws, standards and regulations
- the state of the art at the time of installation
- the operating instructions
- the engineering regulations
- the fact that operating instructions can only mention general regulations and that these must be observed

Before start-up, please check the device for any damage that may have occurred during shipping. The device must not be put into operation if there is mechanical damage present.

The devices described in these instructions must only be installed by a qualified electrician and must only be installed in electrical switchgear or in sealed enclosures. Improper use, or failure to follow the guidelines established in this document, will render the warranty/guarantee null and void. The devices must only be installed in dry, indoor areas.

Do not install the devices on or in the vicinity of easily inflammable materials.

2. Short Description

The Series 857-810 temperature transducer for thermocouples is suitable for the connection of type J and K thermocouples. On the output side, the temperature transducer for thermocouples converts the temperature signal into an analog standard signal. The following signals are available: 0 - 20 mA, 4 - 20 mA, 0 -10V, 2 - 10 V, 0 - 5 V, 1 - 5 V, 0 - 10 mA and 2 - 10 mA. The device has a 3-way isolation with a test voltage of 2.5 kV. The devices can be configured both via DIP switches that are accessible from the side of the housing. Switching the measuring ranges is done in a calibrated way. The device is supplied with 24 V DC, which can be commoned using lateral push-in type jumper bars in a quick and cost effective way.

3. Installation

CAUTION! High voltage can cause electric shock or burns.

De-energize the system and the device before installation.

Caution! Take protective measures against electrostatic discharge (ESD) when operating the modules.

The devices snap onto DIN 35 rails without tools.

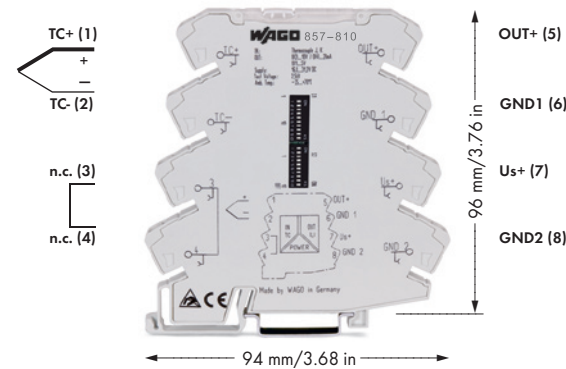
However, a simple screwdriver is required to unlock the snap-on mounting foot and remove the device from the carrier rail. Potentials can be commoned using 859 Series 2- to 10-way push-in type jumper bars (see accessories). The jumpers must be inserted prior to connecting the cables for ease of installation. Push down the jumpers until fully inserted (see installation instructions).

Use separators (item no. 209-191) between adjacent contacts for safe electrical isolation if the modules are alternately rotated 180 degrees when snapped onto the rail.

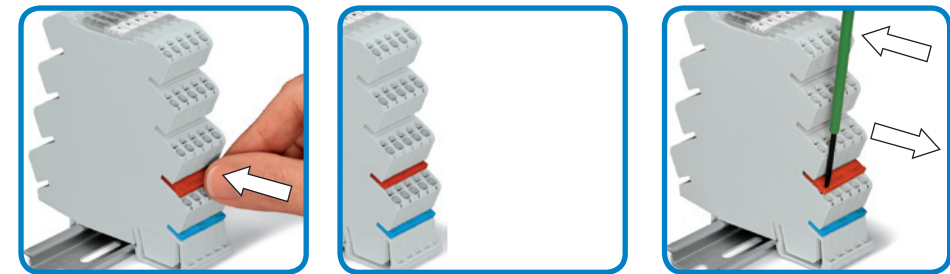
For secure fixing on the carrier rail, end stops (e.g., WAGO 249-116) must be mounted at the ends of a module assembly.

Observe the maximum admissible conductor cross-sections of the signal and power cables.

4. Dimensions / Terminal Assignment



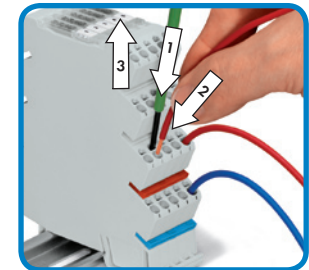
5. Installation Instructions



1. Push down jumper until fully inserted

2. Jumper is inserted

3. Remove the jumper *



4. Connect the wire *

* Please only use an insulated operating tool (item no. 210-720) 3.5 mm x 0.5 mm !

6. Technical Data

Input signal

Sensor types

Temperature range for type J

Temperature range for type K

Output signal

Load impedance I output

Load impedance V output

Step response

Cold junction compensation

Cold junction error

Error of transmission

at set measuring span

Temperature coefficient

Current consumption at V_N

Voltage supply V_N

Voltage supply range typ.

Extended voltage range

Test voltage

(input / output / supply)

Ambient operating temperature_{typ.}

Ext. ambient operating temperature

Storage temperature

Width

Dimensions (HxD)

Wire connection

solid "s"

fine-stranded "fst"

Stripped lengths

Approvals

Standards

EMC

Safe isolation

Isolation

Thermocouples

Thermocouple of type J, K (via DIP switch)

-150 °C - +1200 °C

-150 °C - +1350 °C

0 - 20 mA, 4 - 20 mA

0 - 10 V, 2 - 10 V

0 - 5 V, 1 - 5 V

0 - 10 mA, 2 - 10 mA

≤ 600 Ω

≥ 2 kΩ

120 ms with cold junction compensation

60 ms without cold junction compensation

on / off (default: on)

3 K (2Ktyp.)

< 0.1 % at full measuring span (type J, K)

(150 K / set measuring span [K]) %

0.04 % / K

≤ 40 mA

DC 24 V

19.2 V - 30.2 V

16.8 V - 31.2 V

AC 2.5 kV, 50 Hz, 1 min.

-20 °C - +65 °C

-25 °C - +70 °C

-40 °C - +85 °C

6.0 mm / 0.236 in

96 mm / 3.76 in x 94 mm / 3.68 in

CAGE CLAMP®S

0,2 mm² - 2,5 mm² / AWG 28-12

0,34 mm² - 2,5 mm² / AWG 22-12

9-10 mm / 0.37 in

CE, UL508 (E175199), GL

DIN EN 61326

Namur NE21, NE43

EN 61000-6-2

EN 61000-6-4

acc. to DIN EN 61140 by increased isolation
acc. to DIN EN 61010 part 1 up to AC/DC 300 V
for overvoltage category II and pollution degree 2
between all circuits
AC/DC 600 V for overvoltage category II and
pollution degree 2 acc. to DIN EN 61010 part 1
between all circuits.

7. LEDs and Error Indication

The LEDs (red / green), which are visible on the front, display the following states:

Green LED lights:

Red LED flashes with 2Hz:

Red LED flashes with 2Hz:

Red LED flashes with 8Hz:

Red LED lights:

Operating voltage applied

Measuring range underflow

Measuring range overflow

Wire break on the sensor side

Device failure, please send it back!

8. DIP Switch Adjustability

● = ON

DIP switch S1							
Cold junction compensation		Sensor type		Output signal			
1		2	3	4	5	6	7
on			J			0-20 mA	
● off		●	K	●		4-20 mA	
				●	●	0-10 mA	
				●	●	2-10 mA	
				●	●	0-10 V	
				●	●	2-10 V	
				●	●	0-5 V	
				●	●	1-5 V	

According to Namur NE 43

DIP switch S2											
Start temperature						End temperature					
1	2	3	4	°C	°F	5	6	7	8	9	10
●				-200	-328	●					
	●			-175	-283		●			●	
●				-150	-283	●	●				
		●		-125	-193			●			
●	●			-100	-148	●		●	●		
	●	●		-90	-130		●	●			
●	●	●		-80	-112	●	●	●			
			●	-70	-94						
●			●	-60	-76	●					
	●		●	-50	-58		●		●		
●	●		●	-40	-40	●	●				
		●	●	-30	-22			●	●		
●		●	●	-20	-4	●		●	●	●	
	●	●	●	-10	14		●	●	●		
●	●	●	●	0	32	●	●	●	●		

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.