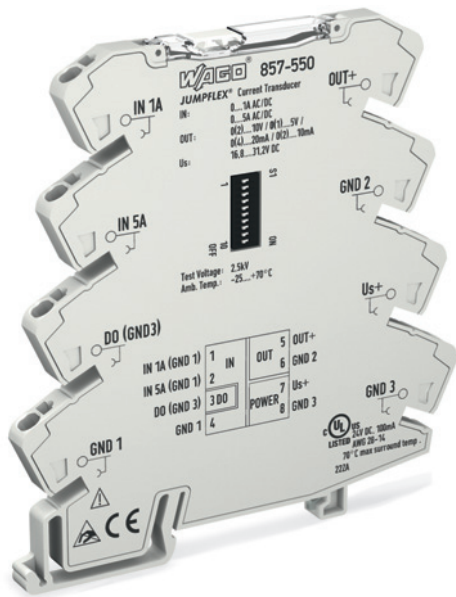
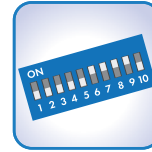


JUMPFLEX® Signal Conditioners

Current Signal Conditioner AC/DC 0 ... 1 A, 0 ... 5 A



Configuration via:



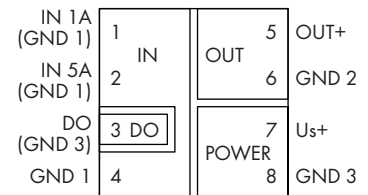
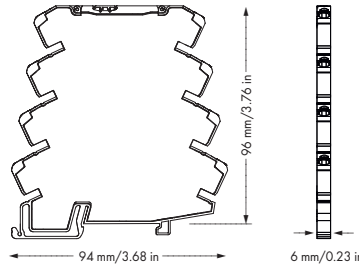
DIP switch



Interface configuration software



Interface configuration app



Short description:

The Current Signal Conditioner measures both 0–1 A and 0–5 A AC/DC currents, while converting the input signal to a standard analog signal at the output.

Features:

- PC configuration interface
- True RMS measurement or arithmetic mean value
- Digital switching output (configurable switching thresholds)
- Switchable filter function
- Switching between measuring ranges is calibrated
- Safe 3-way isolation with 2.5 kV test voltage acc. to EN 61140
- Extremely fast response times
- Measuring range overflow indication

Technical Data

Configuration:

Configuration: DIP switch, interface configuration software, interface configuration app

Input:

Input signal: 0 ... 1 A AC/DC; 0 ... 5 A AC/DC *
 Input resistance: 10 mΩ (5 A); 47 mΩ (1 A)
 Frequency range: 16 Hz ... 400 Hz
 Response threshold: < 0.5 % (of measuring range nominal)
 Current carrying capacity: 2 x I_N (continuous)

Output:

Output signal: **Voltage:** 0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V *
Current: 0 ... 10 mA, 2 ... 10 mA, 0 ... 20 mA, 4 ... 20 mA *
 Load impedance: ≤ 600 Ω (I output) **
 ≥ 2 kΩ (U output)
 ** Temperature range restrictions may occur.

Filter (T_{10/90}): 260 ms (DC), 600 ms (AC 50 Hz)

Output - Digital

Max. switching voltage: Supply voltage applied
 Max. continuous current: 500 mA (up to 60 °C)
 100 mA (60 °C ... 70 °C)

General specifications:

Nominal supply voltage V_S: 24 VDC
 Supply voltage range: V_S -30 % ... +30 %
 Current consumption at 24 VDC: ≤ 40 mA
 Measuring procedure: Arithmetic mean value *
 True RMS measurement (TRMS)
 Response time: 1.5 ms + signal cycle duration
 Max. response time: 60 ms
 Min. measuring span: 2 mA ... 1 A; 4 mA ... 5 A

Description

JUMPFLEX® Signal Conditioner, for DIN 35 rail
 Current Signal Conditioner

Item No.

857-550

Pack. Unit

1

Technical Data

General specifications:

Transmission error: ≤ 0.1 % typ. (≤ 0.4 % max.)
 Temperature coefficient: ≤ 0.01 % /K
 Linearity error: < 0.5 % (of measuring range nominal)

Environmental requirements:

Ambient operating temperature: -25 °C ... +70 °C (at nominal current)
 Storage temperature: -40 °C ... +85 °C

Safety and protection:

Test voltage (input/output/supply): 2.5 kV AC, 50 Hz, 1 min.

Connection and type of mounting:

Wire connection: Push-in CAGE CLAMP®
 Cross sections: solid: 0.08 mm² ... 2.5 mm² / AWG 28 ... 14
 fine-stranded: 0.34 mm² ... 2.5 mm² / AWG 22 ... 14
 Strip lengths: 9 ... 10 mm / 0.35 ... 0.39 in

Dimensions and weight:

Dimensions (mm) W x H x L: 6 x 96 x 94
 Height from upper-edge of DIN 35 rail
 Weight: 50 g

Standards and approvals:

Conformity marking: CE
 UL 508
 ANSI/ISA 12.12.01: Class I, Div. 2, Grp. ABCD, T4
 Shipbuilding: GL, PRS, BV
 EMC immunity of interference: EN 61000-6-2
 EMC emission of interference: EN 61000-6-4
 Accessories: see pages 226 ... 236

(* Additional setting options via PC configuration software or smartphone app)

| Input Signal | | Measuring Method | | Filter | | Output Signal | | | |
|--------------|-----|------------------|-----------------------|--------|--------|---------------|---|---|-------------|
| 1 | | 2 | | 3 | | 4 | 5 | 6 | |
| | 5 A | | Mean square value | | off | | | | 0 ... 20 mA |
| ● | 1 A | ● | Arithmetic mean value | ● | active | | ● | | 4 ... 20 mA |

The filter function allows a low-pass filter to be switched on in order to mask or “smooth out” oscillating measured values (e.g., during trailing edge flows).

| | | | |
|---|---|---|-------------|
| ● | | | 0 ... 10 V |
| ● | ● | | 2 ... 10 V |
| | | ● | 0 ... 10 mA |
| | ● | ● | 2 ... 10 mA |
| ● | | ● | 0 ... 5 V |
| ● | ● | ● | 1 ... 5 V |

DIP Switch S1

| | | Measuring Range Underflow | Measuring Range Overflow | Overcurrent (Input Signal - End Value + 20%) | | | Digit Output DO Signaling |
|---|---|--------------------------------------|--|---|---|----|-------------------------------|
| 7 | 8 | | | | 9 | 10 | |
| | | Lower limit of measuring range -5 %* | Upper limit of measuring range +2.5 %* | Upper limit of measuring range +5 %* | | | DO not active |
| ● | | Lower limit of measuring range | Upper limit of measuring range +2.5 % | Upper limit of measuring range +5 % | ● | | DO U _S + switching |
| | ● | Lower limit of measuring range | Upper limit of measuring range | Lower limit of measuring range | ● | ● | DO GND switching |
| ● | ● | Lower limit of measuring range | Upper limit of measuring range | Upper limit of measuring range | | | |

*acc. to NAMUR NE 43

Digital Output DO/Signaling

The digital output (DO) signals error messages and can be configured as follows: 24 V → 0 V/0 V → 24 V.

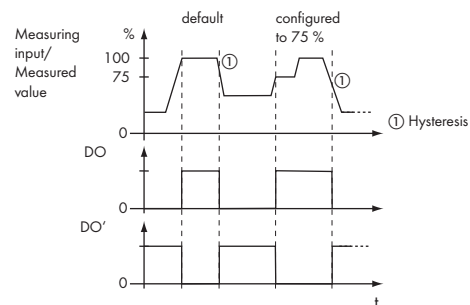
In order to increase the switching current of the DO, the latter may be expanded by a relay. Thanks to the contour uniformity of Series 857, for example, a 857-304 Relay can be snapped in next to it. This output can be quickly and easily expanded to a switching current of 6A by simply using an adjacent jumper (859-402).

Default Setting

All DIP switches are in "OFF" position for delivery.

| | |
|---------------------------|-------------------|
| Input | |
| Input Signal | 0 ... 5 A |
| Measuring Method | Mean square value |
| Filter | not active |
| Output | |
| Output Signal | 0 ... 20 mA |
| Measuring Range Underflow | 0 mA |
| Measuring Range Overflow | 20.5 mA |
| Overcurrent | 21 mA |
| Digital Output DO | not active |

Switching Behavior, Digital Output (DO)



Application example:

