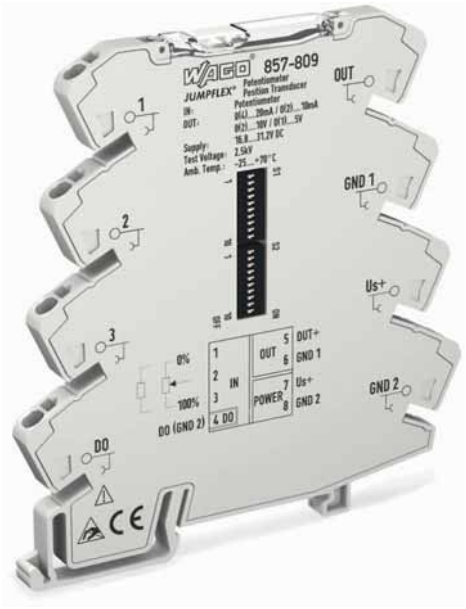
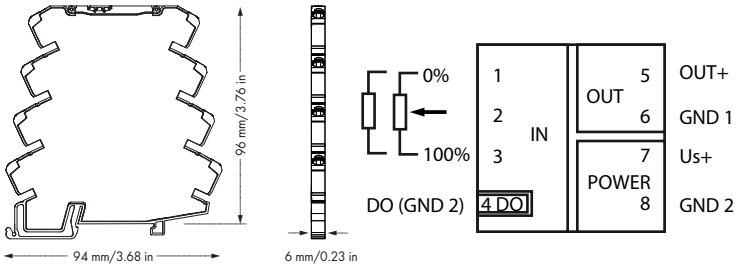
JUMPFLEX® Transducers

Potentiometer Position Transducer



Configuration via:

DIP Switches | PC Configuration Software | Smartphone App | Push/Slide Switch



Short description:
The 857-809 Potentiometer Position Transducer records resistance signals (e.g., from potentiometers), converting them into an analog standard signal. The device is supplied with 24VDC (nominal voltage). It is set via DIP switches or push and slide switch.

Features:
- PC configuration interface
- Calibrated measurement range switching
- Automatic potentiometer identification
- Safe 3-way isolation with 2.5 kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Transducer, for DIN 35 rail**	**857-809**	1
Potentiometer Position Transducer		

Technical Data

Configuration:	
Configuration	DIP switches, push/slide switch,
	PC configuration software, smartphone app
Input:	
Input signal	Potentiometers and resistors *
Input range	
Potentiometer	100 Ω ... 100 kΩ *
Resistors	10 Ω – 100 kΩ *
Max. potentiometer supply voltage	2.5 V
Min. measuring range	100 Ω
Output:	
Output signal	**Voltage:**
	0 – 10 V, 2 – 10 V, 0 – 5 V, 1 – 5 V *
	Current:
	0 – 20 mA, 4 – 20 mA,
	0 – 10 mA, 2 – 10 mA *
Load impedance	≤ 600 Ω (I output)
	≥ 2 kΩ (U output)
Step response	< 32 ms
Output - Digital	
Max. switching voltage	Supply voltage applied
Max. continuous current	100 mA
General specifications:	
Voltage supply V_S	24 V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 40 mA
Transmission error	≤ 0.1 % of upper range value
Temperature coefficient	≤ 0.01 %/K

Technical Data

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
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	CAGE CLAMP® S
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 / 0.37 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	49.2 g
Standards and approvals:	
UL 508	(pending)
ANSI/ISA 12.12.01	(pending)
Shipbuilding	GL
Accessories	see pages 268 ... 271

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

DIP Switch Adjustability

● = ON

857-809

DIP Switch S1 and S2

Input	
DIP S1	
1	
	Potentiometer
●	Resistor

Start Value					
DIP S1					Resistor Ω
2	3	4	5	6	
					0*
●					0
	●				10
●	●				11
		●			12
●		●			13
	●	●			15
●	●	●			16
			●		18
●			●		20
	●		●		22
●	●		●		24
		●	●		27
●		●	●		30
	●	●	●		33
●	●	●	●		36
				●	39
●				●	43
	●			●	47
●	●			●	51
		●		●	56
●		●		●	62
	●	●		●	68
●	●	●		●	75
			●	●	82
●			●	●	91
	●		●	●	40
●	●		●	●	50
		●	●	●	60
●		●	●	●	70
	●	●	●	●	80
●	●	●	●	●	90

End Value					
DIP S1				DIP S2	Resistor Ω
7	8	9	10	1	
					100000*
●					0
	●				10
●	●				11
		●			12
●		●			13
	●	●			15
●	●	●			16
			●		18
●			●		20
	●		●		22
●	●		●		24
		●	●		27
●		●	●		30
	●	●	●		33
●	●	●	●		36
				●	39
●				●	43
	●			●	47
●	●			●	51
		●		●	56
●		●		●	62
	●	●		●	68
●	●	●		●	75
			●	●	82
●			●	●	91
	●		●	●	40
●	●		●	●	50
		●	●	●	60
●		●	●	●	70
	●	●	●	●	80
●	●	●	●	●	90

*Default setting

DIP Switch S2

Factor of Initial Value			Factor of End Value			Output		Output Signal Range		
2	3		4	5		6		7	8	
		x1*			x1*		Current*			0 – 10 V/0 – 20 mA*
●		x10	●		x10	●	Voltage	●		2 – 10 V/4 – 20 mA
	●	x100		●	x100				●	0 – 5 V/0 – 10 mA
●	●	x1000	●	●	x1000			●	●	1 – 5 V/2 – 10 mA

*Default setting

9	10	Measuring Range Underflow	Measuring Range Overflow	Wire Break
		Upper limit of output range*1 +2.5 %	Lower limit of output range*1 -5 %	Upper limit of output range*1 +5 %
●		Upper limit of output range +2.5 %	Lower limit of output range	Upper limit of output range +5 %
	●	Upper limit of output range	Lower limit of output range	Upper limit of output range +5 %
●	●	Upper limit of output range	Lower limit of output range	Lower limit of output range

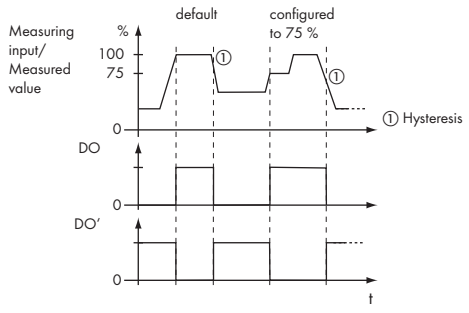
*1acc. to NAMUR NE 45

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.

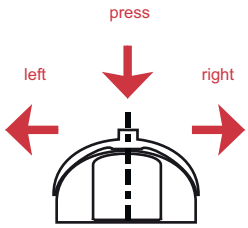
In order to increase the switching current of the DO, the latter may be expanded by a relay. Thanks to the contour uniformity of Series 857, for example, a 857-304 Relay can be snapped in next to it. This output can be quickly and easily expanded to a switching current of 6A by simply using an adjacent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

Switching Behavior, Digital Output (DO)



Push/Slide Switch Operation:

857-809



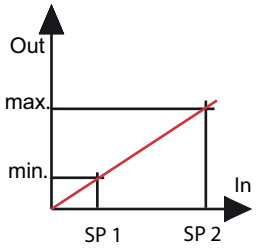
Operating push/slide switch:

The following switching thresholds (SP1 and SP2) are set via push/slide switch. The switch is located under the front-side transparent cover and can be operated manually.

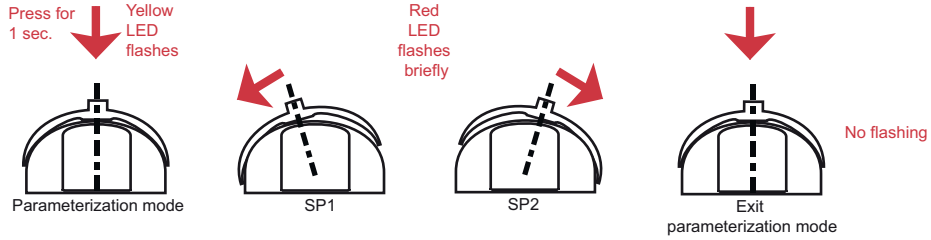
- Press PSS down until the yellow LED is flashing
- Set potentiometer to the minimum value
- Briefly push PSS to the left
- Red LED flashes briefly
- Set potentiometer to the maximum value
- Briefly push PSS to the right
- Red LED flashes briefly
- Briefly press PSS downward
- The yellow LED stops flashing

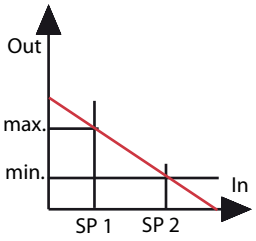
PSS = Push/slide switch

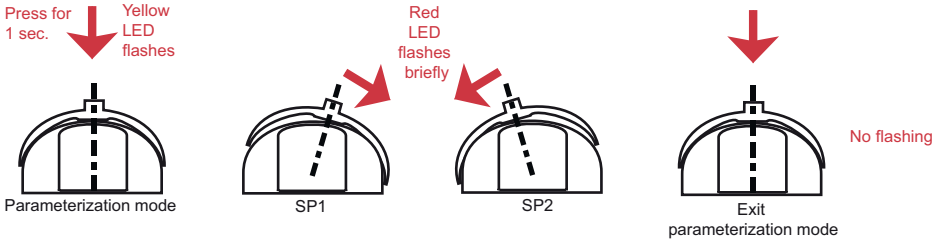
Transmission function



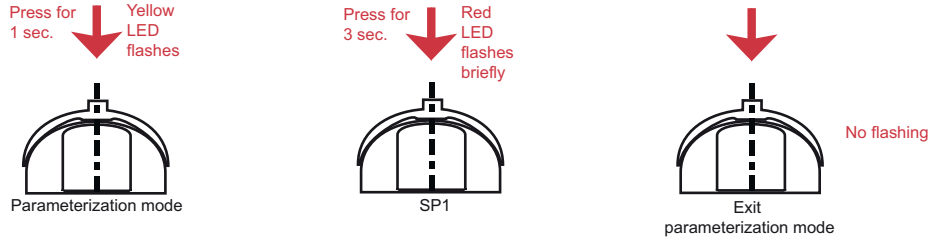
Configuration instructions





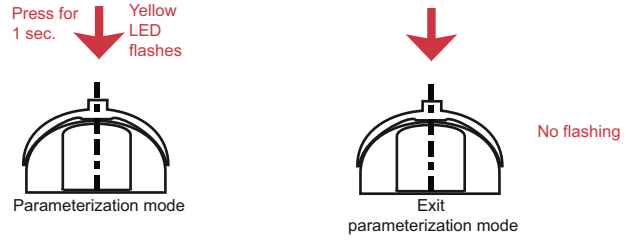


Delete set switching points



Exit parameterization mode without saving value.

SP = Switching points



Application example: