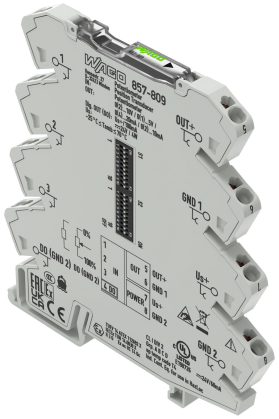
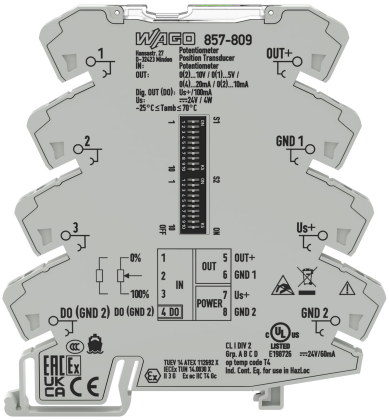
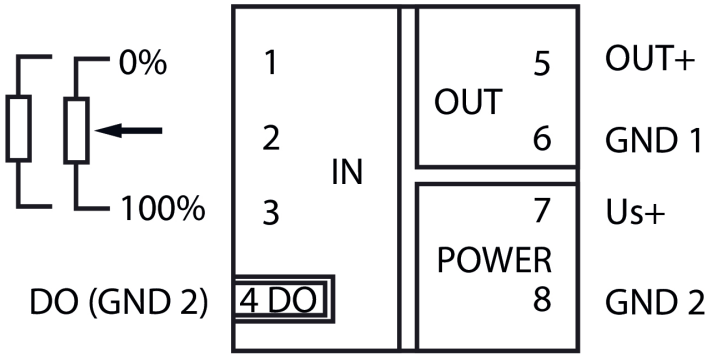
Data Sheet | Item Number: 857-809

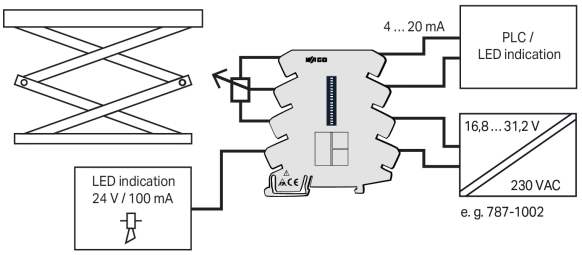
Potentiometer signal conditioner; Current and voltage output signal; Digital output; Configuration via software; Supply voltage: 24 VDC; 6 mm module width; 2,50 mm²

https://www.wago.com/857-809









857-809

DIP Switch Adjustability

● = ON Default

DIP Switch S1 und S2

Input		Start Value						End Value					
DIP S1		DIP S1					Resistor Ω	DIP S1				DIP S2	Resistor Ω
1		2	3	4	5	6		7	8	9	10	1	
	Potentiometer						0						100000
●	Resistor	●					0	●					0
			●				10		●				10
		●	●				11	●	●				11
				●			12			●			12
		●		●			13	●		●			13
			●	●			15		●	●			15
		●	●	●			16	●	●	●			16
					●		18				●		18
		●			●		20	●			●		20
			●		●		22		●		●		22
		●	●		●		24	●	●		●		24
				●	●		27			●	●		27
		●		●	●		30	●		●	●		30
			●	●	●		33		●	●	●		33
		●	●	●	●		36	●	●	●	●		36
						●	39					●	39
		●				●	43	●				●	43
			●			●	47		●			●	47
		●	●			●	51	●	●			●	51
				●		●	56			●		●	56
		●		●		●	62	●		●		●	62
			●	●		●	68		●	●		●	68
		●	●	●		●	75	●	●	●		●	75
					●	●	82				●	●	82
		●			●	●	91	●			●	●	91
			●		●	●	40		●		●	●	40
		●	●		●	●	50	●	●		●	●	50
				●	●	●	60			●	●	●	60
		●		●	●	●	70	●		●	●	●	70
			●	●	●	●	80		●	●	●	●	80
		●	●	●	●	●	90	●	●	●	●	●	90

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			2 ... 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

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

* acc. to NAMUR NE 45

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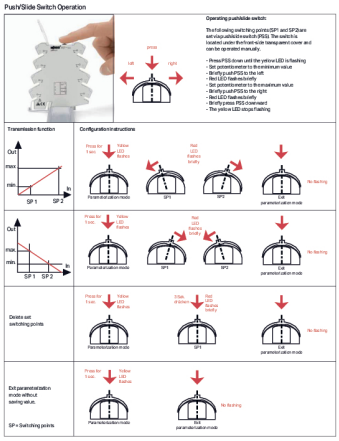
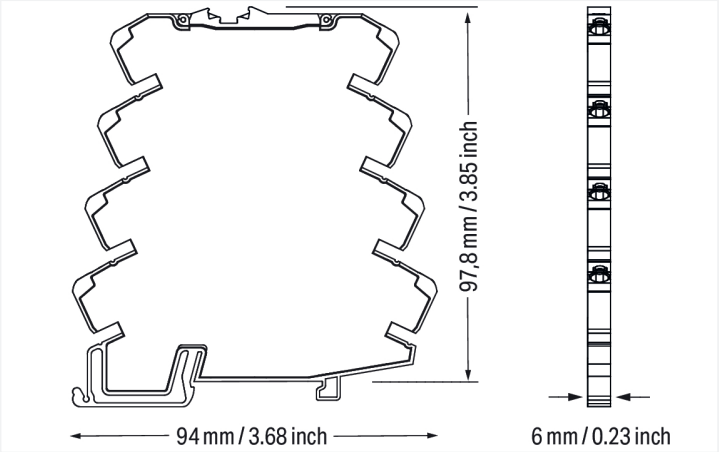
Push/Slide Switch Operation





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Short description:
WAGO's potentiometer signal conditioner records resistance signals (e.g., from potentiometers) and converts them into a standard analog signal. The device is supplied with 24 VDC (nominal voltage). It is set via DIP switch or push/slide switch.
Features:
- PC configuration interface
- Calibrated measurement range switching
- Automatic maximum value identification fot the connected potentiometer

Notes

Safety Information	Input and output must be safely isolated from any hazardous live parts!
Note	**Use shielded signal lines!** Only use shielded signal lines for analog input and output signals. Only then can you ensure that the accuracy and interference immunity specified for the device can be achieved, even in the presence of interference acting on the signal cable. Additional setting options via the WAGO Interface Configuration Software

 Continued on next page

Technical data

Configuration

Configuration options	DIP switch WAGO Interface Configuration Software Push/slide switch

Input

Input signal type	Potentiometer Resistance

Input (resistors)

Input range (resistor)	0 … 100 kΩ
Input range (potentiometer)	0 … 100 kΩ
Potentiometer supply voltage (max.)	2.5 V
Measurement span (min.)	100 Ω

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

Output (digital)

Switching voltage (DO) max.	Supply voltage applied
Continuous current (DO) max.	100 mA (no internal restriction)
Number of switching thresholds (DO)	2 (adjustable switching points)

Signal processing

Step response (typ.)	32 ms

Measurement error

Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01 %/K

Power supply

Power supply type	24 VDC (SELV)
Nominal supply voltage U_S	24 VDC
Supply voltage range	±30 %
Current consumption at nominal supply voltage	≤ 50 mA (+ I_{DO})
Power consumption (max.)	4 W
Power loss (max.) $P_{l\,(max.)}$	0.9 W

Safety and protection

Rated Voltage	300 V
Overvoltage category	II
Pollution degree	2
Protection type	IP20

Test voltage

Test voltage (input/output/supply)	2 kVAC; 50 Hz; 1 min

Insulation coordination

Insulation type (input/analog output/supply)	Functional insulation

 Continued on next page

Connection data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 … 2.5 mm² / 28 … 14 AWG
Fine-stranded conductor	0.34 … 2.5 mm² / 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

Material data

Insulation material (main housing)	Polyamide (PA66)
Flammability class per UL94	V0
Fire load	0.418 MJ
Weight	36.6 g

Environmental requirements

Ambient temperature (operation)	-25 … +70 °C
Ambient temperature (storage)	-40 … +85 °C
Temperature range of connection cable	≥ ($T_{ambient}$ + 9 K)
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 EN 61010-1

Commercial data

Product Group	6 (INTERFACE ELECTRONIC)
PU (SPU)	1 pcs
Packaging type	Bag
Country of origin	DE
GTIN	4050821480761
Customs tariff number	85437090300

 Continued on next page

Product classification

UNSPSC	32101513
eCl@ss 10.0	27-21-01-20
eCl@ss 9.0	27-21-01-20
ETIM 9.0	EC002653
ETIM 8.0	EC002653
ECCN	NO US CLASSIFICATION

Environmental Product Compliance

CAS-No.	1303-86-2 1317-36-8 7439-92-1 79-94-7 80-05-7
REACH Candidate List Substance	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol 4,4'-isopropylidenediphenol Diboron trioxide Lead Lead monoxide
RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	6(c) 7(a) 7(c)-I 7(c)-II
SCIP notification number (Bulgaria)	852b910c-257c-472c-a61b-3693d1584e48
SCIP notification number (Czech Republic)	ca15a22b-2053-43e4-b99b-5ae3cefb73bd

Approvals / Certificates

General approvals

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

Declarations of conformity and manufacturer's declarations

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

Approvals for hazardous areas

Approval	Standard	Certificate Name
ATEX TUEV Nord Cert GmbH	EN 60079-0	TUEV14ATEX112692X (II 3G Ex ec IIC T4 Gc)
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

 Continued on next page

Downloads

Environmental Product Compliance

Compliance Search
Environmental Product Compliance 857-809

Documentation

Manual

WAGO Signal Conditioners with Special Functions	

Bid Text

857-809	19.02.2019	xml 5.97 KB	
857-809	20.02.2019	docx 17.66 KB	

Instruction Leaflet

CCC Ex (Additional information)	26.04.2023	pdf 140.99 KB	
Potipositionsmessumformer		pdf 2579.65 KB	

CAD/CAE-Data

CAD data

2D/3D Models 857-809

CAE data

EPLAN Data Portal 857-809
WSCAD Universe 857-809
ZUKEN Portal 857-809

1 Compatible Products

1.1 Optional Accessories

1.1.1 Cables and connectors

1.1.1.1 Communication cable

Item No.: 750-923/000-001
Configuration cable; USB connector; Length: 5 m

 Continued on next page

1.1.2 Communication

1.1.2.1 Communication cable

Item No.: 750-923
Configuration cable; USB connector; Length: 2.5 m

1.1.3 Interface module

1.1.3.1 Interface adapters

Item No.: 857-980
Interface adapter; 16-pole; analog

1.1.4 Jumper

1.1.4.1 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

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1.1.4.1 Jumper

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

1.1.5 Marking

1.1.5.1 Marker

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

Item No.: 793-502
WMB marking card; as card; MARKED; 1 ... 10 (10x); not stretchable; Horizontal marking; snap-on type; white

Item No.: 793-566
WMB marking card; as card; MARKED; 1 ... 50 (2x); not stretchable; Horizontal marking; snap-on type; white

Item No.: 793-503
WMB marking card; as card; MARKED; 11 ... 20 (10x); not stretchable; Horizontal marking; snap-on type; white

Item No.: 793-504
WMB marking card; as card; MARKED; 21 ... 30 (10x); not stretchable; Horizontal marking; snap-on type; white

Item No.: 793-505
WMB marking card; as card; MARKED; 31 ... 40 (10x); not stretchable; Horizontal marking; snap-on type; white

Item No.: 793-506
WMB marking card; as card; MARKED; 41 ... 50 (10x); not stretchable; Horizontal marking; snap-on type; white

Item No.: 793-501
WMB marking card; as card; not stretchable; plain; snap-on type; white

Item No.: 2009-115
WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white

1.1.5.2 Marking strip

Item No.: 2009-110
Marking strips; for Smart Printer; on reel; not stretchable; plain; snap-on type; white

1.1.6 Power supply

1.1.6.1 Power supply

Item No.: 787-2852
Switched-mode power supply; 1-phase; 24 VDC output voltage; 1 A output current

 Continued on next page

1.1.7 Relay module

1.1.7.1 Relay module

Item No.: 857-304
Relay module; Nominal input voltage: 24 VDC; 1 changeover contact; Limiting continuous current: 6 A; Yellow status indicator; Module width: 6 mm; gray

1.1.8 Screwless end stop

1.1.8.1 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

1.1.9 Terminal blocks

1.1.9.1 Supply module

Item No.: 857-979
Supply and through module

1.1.9.2 Through terminal block

Item No.: 857-979
Supply and through module

1.1.10 Tool

1.1.10.1 Operating tool

Item No.: 210-720
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured

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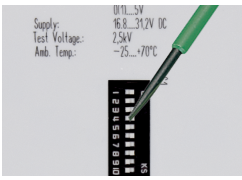
Installation Notes

Configuring

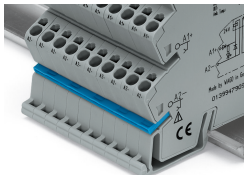


Configuration via DIP switch

Configuration via WAGO Interface Configuration Software

Configuration via push/slide switch

Commoning



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