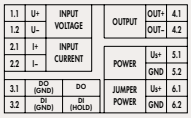
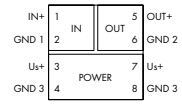
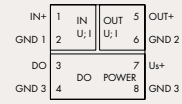
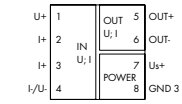
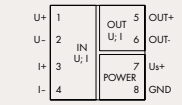
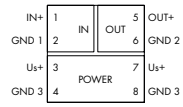
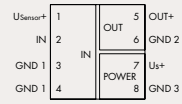
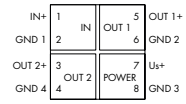
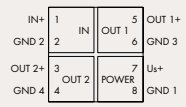
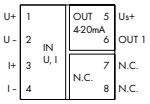
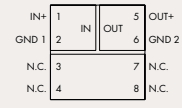
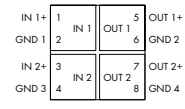
WAGO Isolation Amplifiers and Signal Conditioners

WAGO Isolation Amplifiers and Signal Conditioners

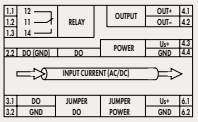
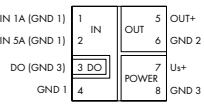
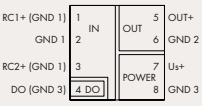
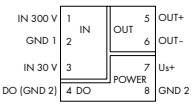
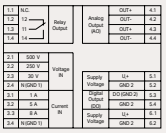
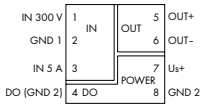
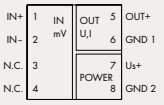
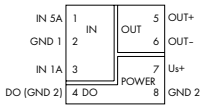
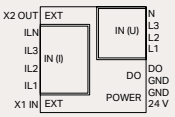
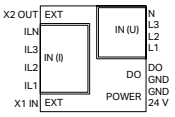
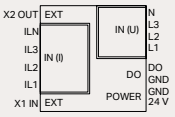
WAGO Isolation Amplifiers
Selection Guide

	Image	Description	Circuit Diagram	Input Signal			Power Supply U_S
				Current	Voltage	Bipolar Signals (I/U)	
	Isolation Amplifiers						
Isolation Amplifiers		Isolation Amplifier; Configurable; with Digital Output		0 … 1 mA 0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA 0 … 100 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V 0 … 220 V	±1 mA; ±10 mA; ±20 mA; ±100 mA ±1 V; ±10 V; ±30 V; ±100 V; ±200 V	24 VDC
		Isolation Amplifier; Configurable; with Zero/Span Adjustment		0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		24 VDC
		Isolation Amplifier; Configurable; with Digital Output		0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V	±20 mA ±10 V	24 VDC
		Isolation Amplifier; Configurable		±0,3 … ±100 mA	±60 mV … ±200 V	±0,3 … ±100 mA ±60 mV … ±200 V	24 VDC
		Bipolar Isolation Amplifier		0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V	±10 mA ±20 mA ±5 V ±10 V	24 VDC
		Isolation Amplifier; Pre-Configured		0 (4) … 20 mA 0 … 20 mA 4 … 20 mA	0 (2) … 10 V 0 … 10 V 0 … 10 V		24 VDC
Repeater Power Supply		Repeater Power Supply		0 … 20 mA 4 … 20 mA			24 VDC
Signal Splitters		Signal Splitter; with Current Output		0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		24 VDC
		Signal Splitter; with Voltage/Current Output		0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		24 VDC
Passive Isolators		Loop-Powered Isolation Amplifier		0 … 5 mA 0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 1 V 0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V	± 5 mA ±10 mA ± 20 mA ±1 V; ±5 V ±10 V ±20 V	via output circuit
		Passive Isolator; 1-Channel		0 (4) … 20 mA			via input circuit
		Passive Isolator; 2-Channel		2 x 0 (4) … 20 mA			via input circuit

Output Signal			Configuration	Specialty Functions	Item No.	Page
Current	Voltage	Bipolar Signals (I/U)				
0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V	±10 mA ± 20 mA ±5 V ±10 V	DIP switch; Interface configuration software/app/display	Digital output (DO); Clipping; Simulation	**2857-401**	250
0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		DIP switch	Zero/span adjustment	**857-400**	252
0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		DIP switch; Interface configuration software/app	Digital output (DO); Clipping	**857-401**	254
0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V	±10 mA ±20 mA ±5 V ±10 V	DIP switch	Clipping	**857-403**	256
0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V	±10 mA ± 20 mA ±5 V ±10 V	DIP switch	Zero/span adjustment	**857-409**	258
0 (4) … 20 mA					**857-411**	260
	0 (2) … 10 V				**857-412**	261
0 … 20 mA					**857-413**	262
4 … 20 mA					**857-414**	262
	0 … 10 V				**857-415**	263
	0 … 10 V				**857-416**	263
0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		DIP switch		**857-420**	264
2 x 0 (4) … 20 mA			DIP switch		**857-423**	266
2 x 0 … 20 mA 4 … 20 mA	2 x 0 … 10 V 2 … 10 V		DIP switch		**857-424**	268
4 … 20 mA			DIP switch	Zero/span adjustment	**857-450**	270
0 (4) … 20 mA					**857-451**	272
2 x 0 (4) … 20 mA					**857-452**	273

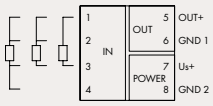
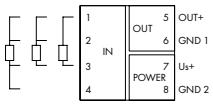
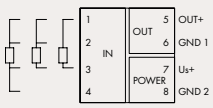
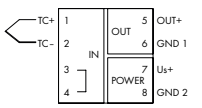
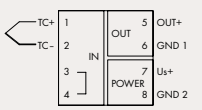
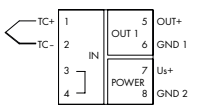
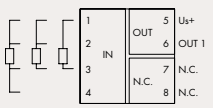
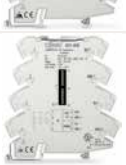
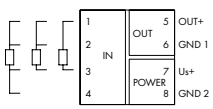
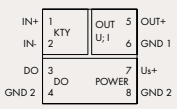
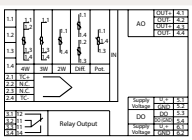
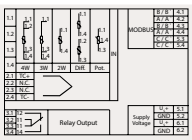
WAGO Current and Voltage Signal Conditioners
Selection Guide

Current and Voltage Signal Conditioners

Image	Description	Circuit Diagram	Input Signal			Power Supply U_S
			Current	Voltage	Bipolar Signals (I/U)	
Current and Voltage Signal Conditioners						
	Through-Hole Current Signal Conditioner		100 A AC/DC			24 VDC
	Current Signal Conditioner		1 A AC/DC 5 A AC/DC			24 VDC
	Current Signal Conditioner; for Rogowski Coils		Rogowski coils 500 AAC 2000 AAC			24 VDC
	Voltage Signal Conditioner		300 V AC/DC			24 VDC
	1-Phasen-Leistungsmessumformer		1 A AC/DC (IN 3.1); 5 A AC/DC (IN 3.2); 8 A AC/DC (IN 3.3)	500 VAC/VDC (IN 2.1); 300 VAC/VDC (IN 2.1); 250 VAC/VDC (IN 2.2); 50 VAC/VDC (IN 23)		24 VDC
	Power Signal Conditioner		300 V AC/DC (5 A)			24 VDC
	Milivolt Signal Conditioner			0 ... 200 mV 0 ... 1000 mV	±100 mV	24 VDC
	Current Signal Conditioner		0 ... 5 A AC/DC (IN 1; block arrangement); 0 ... 6 A AC/DC (IN 1; individual arrangement); 0 ... 1 A AC/DC (IN 2)			24 VDC
	3-Phase Power Measurement Module		4 x 1 AAC	3 x 300 VAC		24 VDC
	3-Phase Power Measurement Module		4 x 5 AAC	3 x 300 VAC		24 VDC
	3-Phase Power Measurement Module		Rogowski coils 4x 4000 AAC	3 x 300 VAC		24 VDC

Output Signal			Configuration	Specialty Functions	Item No.	Page
Current	Voltage	Bipolar Signals (I/U)				
0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V	±10 mA ± 20 mA ±5 V ±10 V	DIP switch; Interface configuration software/app/display	Digital output (DO); Clipping; Zero/span adjustment; Simulation	**2857-550**	274
0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		DIP switch; Interface configuration software/app	Digital output (DO); Clipping	**857-550**	276
0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		DIP switch; Interface configuration software/app	Digital output (DO); Clipping	**857-552**	280
0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		DIP switch; Interface configuration software/app	Digital output (DO); Clipping	**857-560**	282
		±24 mA ±12 V	Interface configuration software/display	Digital output (DO)	**2857-569**	286
0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		DIP switch; Interface configuration software/app	Digital output (DO); Clipping	**857-569**	288
0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		DIP switch; Interface configuration software/app	Clipping	**857-819**	284
0 … 10 mA; 2 … 10 mA; 0 … 20 mA; 4 … 20 mA (can be inverted, also bipolar)	0 … 5 V; 1 … 5 V; 0 … 10 V; 2 … 10 V (can be inverted, also bipolar)		DIP switch; Interface configuration software		**857-551**	278
			Interface configuration software		**2857-570/024-001**	290
			Interface configuration software		**2857-570/024-005**	292
			Interface configuration software		**2857-570/024-000**	294

WAGO Temperature Signal Conditioners
Selection Guide

	Image	Description	Circuit Diagram	Input Signal	Sensor Connection	Power Supply U_S
	Temperature Signal Conditioners					
Temperature Signal Conditioners		Temperature Signal Conditioner; for Pt and Resistance Sensors		Pt sensors: Pt100, Pt200, Pt500, Pt1000; Resistance sensors: 0 … 1 kΩ; 0 … 4.5 kΩ	2-, 3-, 4-wire connection	24 VDC
		Temperature Signal Conditioner; for Pt and Resistance Sensors		Pt sensors: Pt100, Pt200, Pt500, Pt1000; Resistance sensors: 0 … 1 kΩ; 0 … 4.5 kΩ	2-, 3-, 4-wire connection	24 VDC
		Temperature Signal Conditioner; for Pt46 and Cu53 Sensors		Pt46; Cu53	2-, 3-, 4-wire connection	24 VDC
		Temperature Signal Conditioner; for Thermocouples		Thermocouples: Type J, K		24 VDC
		Temperature Signal Conditioner; for Thermocouples		Thermocouples: Type J, K, E, R, N, S, T, B, S		24 VDC
		Temperature Signal Conditioner; for Thermocouples		Thermocouples: Type K, S, B, R		24 VDC
		Loop-Powered RTD Temperature Signal Conditioner		Pt sensors: Pt100, Pt200, Pt500, Pt1000; Resistance sensors: 0 … 1 kΩ; 0 … 4.5 kΩ	2-, 3-, 4-wire connection	via output circuit
		Temperature Signal Conditioner; for Ni Sensors		Ni sensors: Ni100, Ni120, Ni200, Ni500, Ni1000	2-, 3-, 4-wire connection	24 VDC
		Temperature Signal Conditioner; for KTY Sensors		KTY sensors	2-wire connection	24 VDC
		RTD/TC Temperature Signal Conditioner; Analog		RTD sensors; Potentiometers; Resistors; Thermocouples	2-, 3-, 4-wire connection; Differential measurement; Potentiometer	9.6 … 31.2 VDC
		RTD/TC Temperature Signal Conditioner; Serial		RTD sensors; Potentiometers; Resistors; Thermocouples	2-, 3-, 4-wire connection; Differential measurement; Potentiometer	9.6 … 31.2 VDC

Sensor Temperature Range	Output Signal			Configuration	Specialty Functions	Item No.	Page
	Current	Voltage	RS-485				
−200 … +850 °C	0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		DIP switch	Clipping	**857-800**	304
−200 … +850 °C	0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		DIP switch; Configuration software/app	Clipping	**857-801**	306
−200 … +300 °C (Pt46) 0 … +180 °C (Cu53)	0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		DIP switch		**857-808**	308
Type J: −150 … +1200 °C; Type K: −150 … +1350 °C	0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		DIP switch	Clipping	**857-810**	310
Type J: −150 … +1200 °C; Type K: −150 … +1350 °C	0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		DIP switch; Configuration software/app	Clipping	**857-811**	312
Type K: −150 … +1200 °C; Type S: 0 … +1600 °C; Type B: 600 … +1800 °C; Type R: 0 … +1600 °C	0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		DIP switch		**857-812**	314
−200 … +850 °C	4 … 20 mA 20 … 4 mA			DIP switch		**857-815**	416
	0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		DIP switch	Clipping	**857-818**	322
	0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V		DIP switch	Digital output (DO); Clipping	**857-820**	324
−200 … +850 °C; 0 … 10 kΩ; Type J: −210 … +1200 °C; Type K: −200 … +1372 °C	−24 … +24 mA (load impedance ≤ 600 Ω)	−12 … +12 V (load impedance ≥ 2 kΩ)		Configuration software/ display	Digital output DO; Relay with 1 changeover contact (250 VAC / 6 A); Simulation	**2857-535**	318
−200 … +850 °C; 0 … 10 kΩ; Type J: −210 … +1200 °C; Type K: −200 … +1372 °C			Modbus RTU	Configuration software/ display; Rotary encoder switch	Relay with 1 changeover contact (250 VAC / 6 A); Simulation	**2857-535/000-001**	320

WAGO Signal Conditioners with Specialty Functions
WAGO Threshold Value Switches
Selection Guide

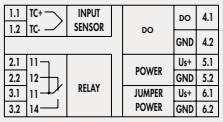
Image	Description	Circuit Diagrams	Input Signal Frequencies
Frequency Signal Conditioner			
	Frequency Signal Conditioner		Frequency signals; NAMUR/NPN or PNP sensors 0.1 … 120 kHz

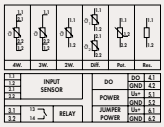
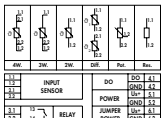
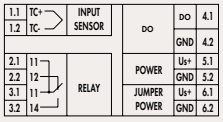
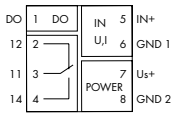
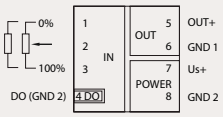
Image	Description	Circuit Diagrams	Input Signal Current	Voltage	Bipolar Signals (I/U)	Sensors
Threshold Value Switches						
	RTD Threshold Value Switch					0 … 100 kΩ; Pt100; Pt200; Pt500; Pt1000; Pt5000; Pt10,000; Pt10 … 20,000
	RTD Threshold Value Switch					0 … 100 kΩ; Pt100; Pt200; Pt500; Pt1000; Pt5000; Pt10.000; Pt10 … 20.000
	Thermocouple Threshold Value Switch					Type J, K, E, N, R, S, T, B, C
	Analog Threshold Value Switch		0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V; 1 … 5 V; 0 … 10 V; 2 … 10 V; 0 … 15 V; 0 … 30 V	±10 mA ±20 mA ±5 V ±10 V	

Image	Description	Circuit Diagrams	Input Signal Potentiometers	Resistors
Signal Conditioners with Specialty Functions				
	Potentiometer Signal Conditioner		0 … 100 kΩ	10 …100 kΩ

Power Supply U_S	Output Signal		Configuration	Specialty Functions	Item No.	Page
	Current	Voltage				
24 VDC	0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V	DIP switch; Interface configuration software/app	Clipping	**857-500**	328

Power Supply U_S	Output Signal		Configuration	Specialty Functions	Item No.	Page
	Relay (1 changeover contact)	Relay (1 make contact)				
24 VDC		250 VAC 6 A	DIP switch; Interface configuration software/app/display	Digital output DO; Relay with 1 make contact (250 VAC / 6 A); Simulation	**2857-533**	296
24 VDC		250 VAC 6 A	Interface configuration software/display	Digital output DO; Relay with 1 make contact (250 VAC / 6 A); Simulation	**2857-533/000-001**	298
24 VDC	250 VAC 6 A		DIP switch; Interface configuration software/app/display	Digital output DO; Relay with 1 changeover contact (250 VAC / 6 A); Simulation	**2857-534**	300
24 VDC	250 VAC 6 A		DIP switch; Push/slide switch; Interface configuration software/app	Digital output DO; Relay with 1 changeover contact (250 VAC/6 A)	**857-531**	302

Power Supply U_S	Output Signal		Configuration	Specialty Functions	Item No.	Page
	Current	Voltage				
24 VDC	0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V	DIP switch; Push/slide switch; Interface configuration software/app	Clipping	**857-809**	326

Approvals
Overview

Approvals											Item Description	Item Number	Page
		Marine Approvals											
IECEx	ATEX	PRS (Polski Rejestr Statkow)	NKK (Nippon Kaiji Kyokai)	GL (Germ Lloyd)	DNV (Det Norske Veritas)	BV (Bureau Veritas)	ANSI/ISA 12.12.01	UL 508	UL 61010-2-201				
Isolation Amplifiers													
								■			Isolation Amplifier; Configurable; with Digital Output	**2857-401**	250
■	■	■	■	■	■	■	■	■			Isolation Amplifier; Configurable; with Zero/Span Adjustment	**857-400**	252
		■		■		■	■	■			Isolation Amplifier; Configurable; with Digital Output	**857-401**	254
■	■						■	■			Isolation Amplifier; Configurable	**857-403**	256
■	■	■		■		■	■	■			Bipolar Isolation Amplifier	**857-409**	258
■	■	■	■	■	■	■	■	■			Isolation Amplifier; Pre-Configured	**857-411**	260
■	■	■	■	■	■	■	■	■			Isolation Amplifier; Pre-Configured	**857-412**	261
■	■	■	■	■	■	■	■	■			Isolation Amplifier; Pre-Configured	**857-413**	262
■	■	■	■	■	■	■	■	■			Isolation Amplifier; Pre-Configured	**857-414**	262
■	■	■	■	■	■	■	■	■			Isolation Amplifier; Pre-Configured	**857-415**	263
■	■	■	■	■	■	■	■	■			Isolation Amplifier; Pre-Configured	**857-416**	263
							■	■			Repeater Power Supply	**857-420**	264
■	■	■	■	■	■	■	■	■			Signal Splitter	**857-423**	266
											Signal Splitter (I/U)	**857-424**	268
■	■						■	■			Loop-Powered Isolation Amplifier	**857-450**	270
■	■	■	■	■	■	■	■	■			Passive Isolator; 1-Channel	**857-451**	272
■	■	■	■	■	■	■	■	■			Passive Isolator; 2-Channel	**857-452**	273
Current and Voltage Signal Conditioners													
										■	Through-Hole Current Signal Conditioner	**2857-550**	274
■	■	■		■		■	■	■			Current Signal Conditioner	**857-550**	276
■	■										Current Signal Conditioner; for Rogowski Coils	**857-552**	280
										■	Voltage Signal Conditioner	**857-560**	282
										■		**2857-569**	286
										■	Power Signal Conditioner	**857-569**	288
■	■	■	■	■	■	■	■	■			Milivolt Signal Conditioner	**857-819**	284
											Current Signal Conditioner	**857-551**	278
											3-Phase Power Signal Conditioner; 1 A	**2857-570/024-001**	290
											3-Phase Power Signal Conditioner; 5 A	**2857-570/024-005**	292
											3-Phase Power Signal Conditioner; RC	**2857-570/024-000**	294
Temperature Signal Conditioners													
■	■	■	■	■	■	■	■	■			Temperature Signal Conditioner; for Pt and Resistance Sensors	**857-800**	304
■	■	■	■	■	■	■	■	■			Temperature Signal Conditioner; for Pt and Resistance Sensors	**857-801**	306
■	■	■	■	■	■	■	■	■			Temperature Signal Conditioner; for Thermocouples	**857-810**	310
■	■	■	■	■	■	■	■	■			Temperature Signal Conditioner; for Thermocouples	**857-811**	312
							■	■			Temperature Signal Conditioner; for Thermocouples	**857-812**	314
■	■	■		■		■	■	■			Temperature Signal Conditioner; for Pt46 and Cu53 Sensors	**857-808**	308
										■	Loop-Powered RTD Temperature Signal Conditioner	**857-815**	316
■	■	■		■		■	■	■			Temperature Signal Conditioner; for Ni Sensors	**857-818**	322
■	■	■		■		■	■	■			Temperature Signal Conditioner; for KTY Sensors	**857-820**	324
										■	RTD/TC Temperature Signal Conditioner; Analog	**2857-535**	318
										■	RTD/TC Temperature Signal Conditioner; Serial	**2857-535/000-001**	320
Threshold Value Switches													
										■	RTD Threshold Value Switch	**2857-533**	296
										■		**2857-533/000-001**	298
											Thermocouple Threshold Value Switch	**2857-534**	300
		■	■	■	■	■		■			Analog Threshold Value Switch	**857-531**	302
Specialty Functions													
■	■	■		■		■	■	■			Frequency Signal Conditioner	**857-500**	328
		■		■		■	■	■			Potentiometer Signal Conditioner	**857-809**	326
Accessories													
■	■	■		■		■		■			Supply and Through Module	**857-979**	338
		■	■	■	■	■		■			Interface Adapter for System Wiring	**857-980**	337

Signs and Symbols

Specialty Functions:

Zero/span adjustment


Clipping capability

Digital output (DO)


Relay, 1 changeover contact


Relay, 1 make contact


Simulation

Configuration:


DIP switch


Rotary coding switch


Interface configuration software

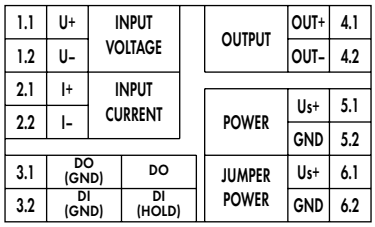

Interface configuration app


Interface configuration display


Push/slide switch

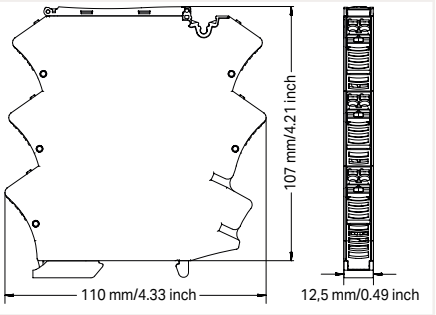
3

Isolation Amplifier; Configurable; with Digital Output
2857 Series



Isolation Amplifier; Bipolar current and voltage input signal; Bipolar current and voltage output signal; Digital output; Supply voltage: 24 VDC; Module width: 12.5 mm

	Item No.	Pack. Unit
	2857-401	1



Short description:
WAGO's isolation amplifier converts, amplifies, filters, and electrically isolates analog signals.

Features:
- Analog unipolar/bipolar signals at both input and output
- Digital signal output reacts to configured measurement range limits (configurable on/off switching delay and threshold value switch function with up to two threshold values)
- Digital HOLD input freezes the output signal
- Clipping capability provides analog signal limitation to output end values
- Adjustable software/hardware filter
- Input/output response simulation via configuration display
- Safe 3-way isolation with 4 kV test voltage per EN 61140

Note:
Additional setting options via interface configuration software/app

Configuration	
Configuration options	DIP switch; Interface configuration software; Interface configuration app; Configuration display
Input	
Input signal type	Voltage; Current
Input signal (voltage)	±1 V; 0 … 1 V; ±5 V; 0 … 5 V; 1 … 5 V; ±10 V; 0 … 10 V; 2 … 10 V; ±30 V; 0 … 30 V; ±100 V; 0 … 100 V; ±200 V; 0 … 220 V
Input signal (current)	±1 mA; 0 … 1 mA; ±10 mA; 0 … 10 mA; 2 … 10 mA; ±20 mA; 0 … 20 mA; 4 … 20 mA; ±100 mA; 0 … 100 mA
Input resistance (current input)	≤ 50 Ω
Input resistance (voltage input)	≥ 1MΩ
Input current (max.)	± 120 mA
Input voltage (max.)	±250 V
Input – Digital	
Hold signal	11.8 V … U_S
Output	
Output signal type	Current; Voltage
Output signal (voltage)	±5 V; 0 … 5 V; 1 … 5 V; ±10 V; 0 … 10 V; 2 … 10 V
Output signal (current)	±10 mA; 0 … 10 mA; 2 … 10 mA; ±20 mA; 0 … 20 mA; 4 … 20 mA
Load impedance (voltage output)	≥ 1 kΩ
Load impedance (current output)	≤ 600 Ω
Output – Digital	
Max. switching voltage (DO)	Supply voltage applied: −0.3 V
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 or 2 (adjustable)
Configurable rise/fall delay time (DO)	0 … 60 s (via software)
Signal Processing	
Limit frequency	10 kHz / 5 kHz / 100 Hz / 30 Hz (configurable via DIP switch or software)
Software filter; adjustable	Moving average value (filter level: 30)
Step response (typ.)	1 ms
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01%/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_S	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 70 mA (+ IDO)
Safety and Protection	
Test voltage (input/output/supply)	4 kV AC; 50 Hz; 1 min
Protection type	IP20
Connection Data	
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	*picoMAX*® 5.0
Solid conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Fine-stranded conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Strip length	9 … 10 mm / 0.35 … 0.39 inch
Geometric Data	
Width	12.5 mm / 0.492 inch
Height from upper-edge of DIN-rail	107 mm / 4.213 inch
Depth	110 mm / 4.331 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	85.9 g

» Configuration software Page 332
» Configuration app Page 333
» Configuration display Page 334
» Accessories Page 344

Specialty Functions:

Configuration via:

Environmental Requirements	
Surrounding air temperature (operation)	–40 … +70 °C
Surrounding air temperature (storage)	–40 … +85 °C

Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3; EN 50121-3-2
EMC emission of interference	EN 61000-6-4; EN 61326-2-3; EN 50121-3-2
Standards/specifications	EN 60664-1; EN 61373

3

2857-401

DIP Switch Adjustability

● = ON **Default**

DIP Switch S1

Input												
1	Signal	2	Polarity	3	4	5	Range / mA	Range / V	6	Inverted Characteristic	7	8	Limit Frequency
	Current		Unipolar				0 … 20	0 … 10		Not inverted			10 kHz
●	Voltage	●	Bipolar *	●			0 … 1	0 … 1	●	Inverted	●		5 kHz
					●		0 … 5	0 … 5				●	100 Hz
				●	●		0 … 10	1 … 5			●	●	30 Hz
						●	2 … 10	2 … 10					
				●		●	4 … 20	0 … 30					
					●	●	0 … 50	0 … 100					
				●	●	●	0 … 100	0 … 220					

DIP Switch S1

Output			
9	Signal	10	Polarity
	Current		Unipolar
●	Voltage	●	Bipolar *

DIP Switch S2

Output			
1	2	Range / mA	Range / V
		0 … 20	0 … 10
●		4 … 20	2 … 10
	●	0 … 10	0 … 5
●	●	2 … 10	1 … 5

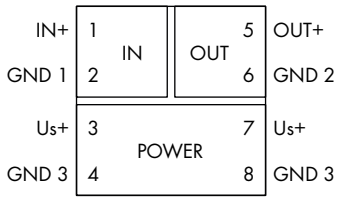
DIP Switch S2

Output				Digital Output (DO)		
3	4	Measuring Range Underflow	Measuring Range Overflow	5	6	
		Lower limit of output range -5% **	Upper limit of output range +2.5% **			Off
●		Lower limit of output range	Upper limit of output range +2.5%	●		DO U_s switching
	●	Lower limit of output range	Upper limit of output range		●	DO GND switching
●	●	Lower limit of output range -5%	Upper limit of output range +5%	●	●	Off

* Bipolar only applies to ranges starting with 0.

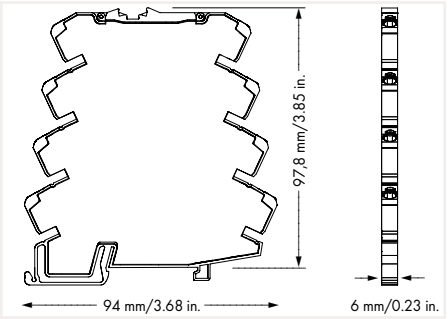
** acc. to NAMUR NE 43

Isolation Amplifier; Configurable; with Zero/Span Adjustment
857 Series



Isolation Amplifier; Current and voltage input signal; Current and voltage output signal; Zero/span adjustment; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-400	1



Short description:
WAGO's configurable isolation amplifier converts, amplifies, filters, and electrically isolates standard analog signals.

Features:
- Zero/span adjustment across the entire measurement range
- Calibrated measurement range switching
- Switchable limit frequency
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Specialty Functions:

Configuration via:

Configuration	
Configuration options	DIP switch
Input	
Input signal type	Voltage; Current
Input signal (voltage)	0 … 5 V; 1 … 5 V; 0 … 10 V; 2 … 10 V (calibrated switching)
Input signal (current)	0 … 20 mA; 4 … 20 mA (calibrated switching)
Input resistance (current input)	≤ 50 Ω
Input resistance (voltage input)	≥ 1MΩ
Input current (max.)	50 mA
Input voltage (max.)	30 V
Zero/span adjustment	±3 % of upper range value
Output	
Output signal type	Current; Voltage
Output signal (voltage)	0 … 5 V; 1 … 5 V; 0 … 10 V; 2 … 10 V (calibrated switching)
Output signal (current)	0 … 20 mA; 4 … 20 mA; 0 … 10 mA; 2 … 10 mA (calibrated switching)
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω
Signal Processing	
Limit frequency	100 Hz / 5 kHz (configurable via DIP switch)
Step response (typ.)	3.5 ms (100 Hz); 100 µs (5 kHz)
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Transmission error (max.)	≤ 0.2 % of upper-range value
Temperature coefficient	≤ 0.01%/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_S	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 25 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	36.8 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air 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

» Accessories Page 344

857-400

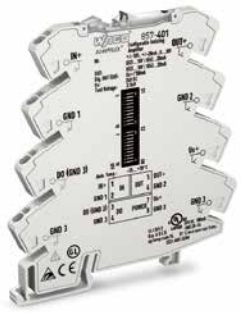
DIP Switch Adjustability

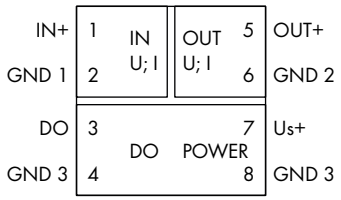
● = ON **Default**

DIP Switch S1 (2-fold) DIP Switch S2 (6-fold)

Input Signal			Output Signal						Max. Operating Frequency	
1	2		1	2	3	4	5		6	
●		0 … 20 mA						0 … 20 mA		5 kHz
						●		4 … 20 mA	●	100 Hz
			●	●				0 … 10 V		
			●	●		●		2 … 10 V		
			●	●	●			0 … 5 V		
			●	●	●	●		1 … 5 V		
●		4 … 20 mA					●	0 … 20 mA		
								4 … 20 mA		
			●	●			●	0 … 10 V		
			●	●				2 … 10 V		
			●	●	●		●	0 … 5 V		
			●	●	●			1 … 5 V		
	●	0 … 10 V						0 … 20 mA		
						●		4 … 20 mA		
			●	●				0 … 10 V		
			●	●		●		2 … 10 V		
			●	●	●			0 … 5 V		
			●	●	●	●		1 … 5 V		
	●	2 … 10 V					●	0 … 20 mA		
								4 … 20 mA		
			●	●			●	0 … 10 V		
			●	●				2 … 10 V		
			●	●	●		●	0 … 5 V		
			●	●	●			1 … 5 V		
		0 … 5 V						0 … 20 mA		
						●		4 … 20 mA		
			●	●				0 … 10 V		
			●	●		●		2 … 10 V		
			●	●	●			0 … 5 V		
			●	●	●	●		1 … 5 V		
		1 … 5 V					●	0 … 20 mA		
								4 … 20 mA		
			●	●			●	0 … 10 V		
			●	●				2 … 10 V		
			●	●	●		●	0 … 5 V		
			●	●	●			1 … 5 V		

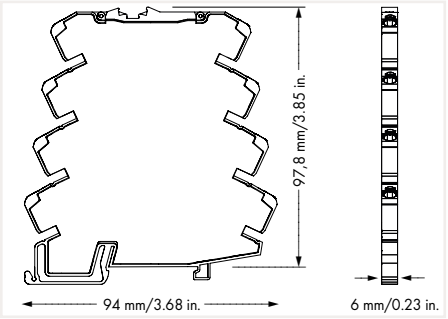
Isolation Amplifier; Configurable; with Digital Output
857 Series





Isolation Amplifier; Current and voltage input signal; Current and voltage output signal; Digital output; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-401	1



Short description:
WAGO's configurable isolation amplifier converts, amplifies, filters, and electrically isolates standard analog signals.

Features:
- PC configuration interface
- Digital switching output
- Calibrated measurement range switching
- Unipolar/bipolar standard analog signals at input
- Switchable clipping
- Limitation of standard analog signals to upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Specialty Functions:

Configuration via:

» Configuration software	Page 332
» Configuration app	Page 333
» Accessories	Page 344

Configuration	
Configuration options	DIP switch; Interface configuration software; Interface configuration app
Input	
Input signal type	Voltage; Current
Input signal (voltage)	±10 V; 0 … 30 V
Input signal (current)	±20 mA
Input resistance (current input)	≤ 200 Ω
Input resistance (voltage input)	≥ 100 kΩ
Input current (max.)	22 mA
Input voltage (max.)	31 V
Measurement span (voltage)	1 V
Measurement span (current)	2 mA
Output	
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; 2 … 20 mA; 4 … 20 mA
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω
Output – Digital	
Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 (adjustable)
Signal Processing	
Step response (typ.)	8 ms
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01%/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_S	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA (+ IDO)
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	37 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air 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; EN 61326-1; EN 50121-3-2
EMC emission of interference	EN 61000-6-3; EN 61326-1
Standards/specifications	EN 61373

857-401

DIP Switch Adjustability

● = ON **Default**

Input Signal Start Value																	Input Signal End Value															
DIP S1									DIP S1								DIP S2								DIP S1			DIP S2				
1		2	3	4	5	6	7	V	mA	2	3	4	5	6	7	V	mA	8	9	10	1	2	3	V	mA	8	9	10	1	2	3	V	mA
	Voltage							0	0						●	5.5	11							10	20						●	5.5	11
●	Current	●						-10	-20	●					●	6	12	●						-10	-20	●					●	6	12
			●					-9.5	-19		●				●	6.5	13		●					-9.5	-19		●				●	6.5	13
		●	●					-9	-18	●	●				●	7	14	●	●					-9	-18	●	●				●	7	14
				●				-8.5	-17			●			●	7.5	15			●				-8.5	-17			●			●	7.5	15
		●		●				-8	-16	●		●			●	8	16	●		●				-8	-16	●		●			●	8	16
			●	●				-7.5	-15		●	●			●	8.5	17		●	●				-7.5	-15		●	●			●	8.5	17
		●	●	●				-7	-14	●	●	●			●	9	18	●	●	●				-7	-14	●	●	●			●	9	18
					●			-6.5	-13				●		●	9.5	19				●			-6.5	-13				●		●	9.5	19
		●			●			-6	-12	●			●		●	10	20	●			●			-6	-12	●			●		●	10	20
			●		●			-5.5	-11		●		●		●	10.5			●		●			-5.5	-11		●		●		●	10.5	
		●	●		●			-5	-10	●	●		●		●	11		●	●		●			-5	-10	●	●		●		●	11	
				●	●			-4.5	-9			●	●		●	11.5				●	●			-4.5	-9			●	●		●	11.5	
		●		●	●			-4	-8	●		●	●		●	12		●		●	●			-4	-8	●		●	●		●	12	
			●	●	●			-3.5	-7		●	●	●		●	13			●	●	●			-3.5	-7		●	●	●		●	13	
		●	●	●	●			-3	-6	●	●	●	●		●	14		●	●	●	●			-3	-6	●	●	●	●		●	14	
						●		-2.5	-5					●	●	15						●		-2.5	-5					●	●	15	
		●				●		-2	-4	●				●	●	16		●				●		-2	-4	●				●	●	16	
			●			●		-1.5	-3		●			●	●	17			●			●		-1.5	-3		●			●	●	17	
		●	●			●		-1	-2	●	●			●	●	18		●	●			●		-1	-2	●	●			●	●	18	
				●		●		-0.5	-1			●		●	●	19				●		●		-0.5	-1			●		●	●	19	
		●		●		●		0	0	●		●		●	●	20		●		●		●		0	0	●		●		●	●	20	
			●	●		●		0.5	1		●	●		●	●	21			●	●		●		0.5	1		●	●		●	●	21	
		●	●	●		●		1	2	●	●	●		●	●	22		●	●	●		●		1	2	●	●	●		●	●	22	
					●	●		1.5	3				●	●	●	23					●			1.5	3				●	●	●	23	
		●			●	●		2	4	●			●	●	●	24		●			●			2	4	●			●	●	●	24	
			●		●	●		2.5	5		●		●	●	●	25			●		●			2.5	5		●		●	●	●	25	
		●	●		●	●		3	6	●	●		●	●	●	26		●	●		●			3	6	●	●		●	●	●	26	
				●	●	●		3.5	7			●	●	●	●	27				●	●			3.5	7			●	●	●	●	27	
		●		●	●	●		4	8	●		●	●	●	●	28		●		●	●			4	8	●		●	●	●	●	28	
			●	●	●	●		4.5	9		●	●	●	●	●	29			●	●	●			4.5	9		●	●	●	●	●	29	
		●	●	●	●	●		5	10	●	●	●	●	●	●	30		●	●	●	●	●	●	5	10	●	●	●	●	●	●	30	

DIP Switch S2

Output Signal						Measuring Range Underflow	Measuring Range Overflow			Digital Output DO Signaling
4	5	6		7	8			9	10	
			0 ... 20 mA			Lower limit of output range -5 % *	Upper limit of output range +2.5 % *			DO not active
	●		4 ... 20 mA							
		●	0 ... 10 mA	●		Lower limit of output range	Upper limit of output range +2.5 %		●	GND → U_N (switching)
	●	●	2 ... 10 V							
●			0 ... 10 V		●	Lower limit of output range	Upper limit of output range	●	●	U_N → GND (switching)
●	●		2 ... 10 V							
●		●	0 ... 5 V	●	●	Lower limit of output range	Upper limit of output range			
●	●	●	1 ... 5 V							

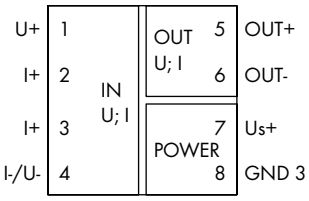
*acc. to NAMUR NE 43

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.

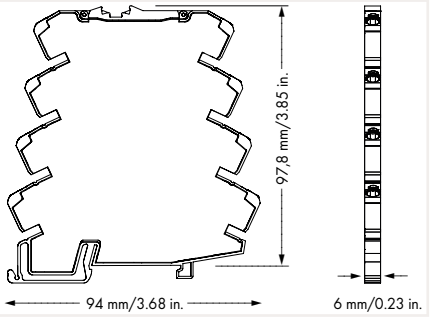
In order to increase the switching current of the DO, the latter may be expanded by a relay. Thanks to the common housing shape for the 857 Series, for example, a 857-304 Relay can be snapped in next to it. This output can be quickly and easily expanded to a switching current of 6A by simply using an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

Isolation Amplifier; Configurable; with Zero/Span Adjustment
857 Series



Isolation Amplifier; Current and voltage input signal; Bipolar current and voltage output signal; Zero/span adjustment; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-403	1



Short description:
This isolation amplifier converts standard unipolar/bipolar signals, as well as amplifies, filters and electrically isolates standard analog signals.

Features:
- Overload protection of current input via resettable fuse
- Calibrated measurement range switching for all 456 signals
- Unipolar/bipolar standard analog signals at both input/output
- Switchable limit frequency
- Clipping capability for analog signal limitation to output end values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Configuration	
Configuration options	DIP switch
Input	
Input signal type	Voltage; Current
Input signal (voltage)	±60 mV; 0 … 60 mV; ±100 mV; 0 … 100 mV; ±150 mV; 0 … 150 mV; ±300 mV; 0 … 300 mV; ±500 mV; 0 … 500 mV; ±1 V; 0 … 1 V; ±5 V; 0 … 5 V; 1 … 5 V; ±10 V; 0 … 10 V; 2 … 10 V; ±100 V; 0 … 100 V; ±200 V; 0 … 200 V
Input signal (current)	±0.3 mA; 0 … 0.3 mA; ±1 mA; 0 … 1 mA; ±5 mA; 0 … 5 mA; ±10 mA; 0 … 10 mA; 2 … 10 mA; ±20 mA; 0 … 20 mA; 4 … 20 mA; ±50 mA; 0 … 50 mA; ±100 mA; 0 … 100 mA
Input resistance (current input)	10 Ω (≥ 5 mA); 100 Ω (≤ 5 mA)
Input resistance (voltage input)	1 MΩ
Output	
Output signal type	Current; Voltage
Output signal (voltage)	±5 V; 0 … 5 V; 1 … 5 V; ±10 V; 0 … 10 V; 2 … 10 V
Output signal (current)	±10 mA; 0 … 10 mA; 2 … 10 mA; ±20 mA; 0 … 20 mA; 4 … 20 mA
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω
Signal Processing	
Limit frequency	100 Hz / 5 kHz (configurable via DIP switch)
Step response (typ.)	3.5 ms (100 Hz); 100 µs (5 kHz)
Measurement Error	
Transmission error (typ.)	≤ 0.08 % of upper-range value
Temperature coefficient	≤ 0.01%/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_S	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA
Safety and Protection	
Test voltage (input/output/supply)	3 kVAC; 50 Hz; 1 min
Line-to-neutral conductor voltage	200 VAC
Overvoltage category	II
Pollution degree	2
Insulation type (input/supply, analog output/relay outout)	Reinforced insulation
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	39.9 g

» Accessories Page 344

Specialty Functions:

Configuration via:

Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air temperature (storage)	–40 … +85 °C
Temperature range of connecting cable per UL 61010-2-201 (min.)	90 °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

3

857-403

DIP Switch Adjustability

● = ON Default

DIP Switch S1

Input Signal Ranges							Zero/Span Adjustment		Max. Operating Frequency	
1	2	3	4	5	6		7		8	
						Default setting*		Inactive		5 kHz
				●		0 … 60 mV	●	Active	●	100 Hz
				●	●	±60 mV				
			●			0 … 100 mV				
			●		●	±100 mV				
			●	●		0 … 150 mV				
			●	●	●	±150 mV				
		●				0 … 300 mV				
		●			●	±300 mV				
		●		●		0 … 500 mV				
		●		●	●	±500 mV				
		●	●			0 … 1 V				
		●	●		●	±1 V				
		●	●	●		0 … 5 V				
		●	●	●	●	±5 V				
	●					0 … 10 V				
	●				●	±10 V				
	●			●		0 … 50 V				
	●			●	●	±50 V				
	●		●			0 … 100 V				
	●		●		●	±100 V				
	●		●	●		0 … 200 V				
	●		●	●	●	±200 V				

DIP Switch S1

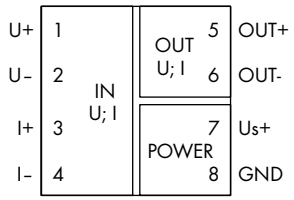
Input Signal Ranges						
1	2	3	4	5	6	
	●	●				0 … 0.3 mA
	●	●			●	±0.3 mA
	●	●		●		0 … 1 mA
	●	●		●	●	±1 mA
	●	●	●			0 … 5 mA
	●	●	●		●	±5mA
	●	●	●	●		0 … 10 mA
	●	●	●	●	●	±10 mA
●						0 … 20 mA
●					●	±20 mA
●				●		0 … 50 mA
●				●	●	±50 mA
●			●			0 … 100 mA
●			●		●	±100 mA
●		●				1 … 5 V
●		●		●		2 … 10 V
●		●	●			2 … 10 mA
●		●	●	●		4 … 20 mA

DIP Switch S2

Output Signal Ranges						Reserve	Clipping		Rocker Switch Lock	
1	2	3	4	5		6	7		8	
					Default setting*			inactive (analog response)		switched off
		●			0 … 10 V		●	active (limiting response)	●	switched on
		●		●	±10 V					
		●	●		2 … 10 V					
	●				0 … 5 V					
	●			●	±5 V					
	●		●		1 … 5 V					
	●	●			0 … 20 mA					
	●	●		●	±20 mA					
	●	●	●		4 … 20 mA					
●					0 … 10 mA					
●				●	±10 mA					
●			●		2 … 10 mA					

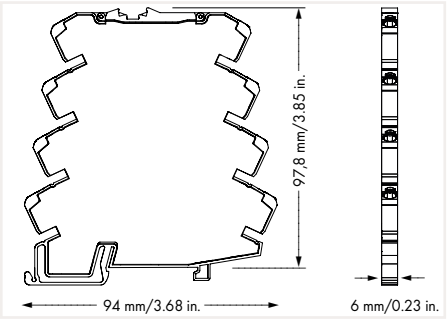
More information on measurement range setting is available in 857-402 instruction leaflet.
*The input and output range DIP switches must be readjusted when changing the default setting.

Isolation Amplifier; Configurable; with Zero/Span Adjustment
857 Series



Isolation Amplifier; Bipolar current and voltage input signal; Bipolar current and voltage output signal; Zero/span adjustment; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-409	1



Short description:
WAGO's bipolar isolation amplifier converts, amplifies, filters, and electrically isolates standard unipolar/bipolar analog signals.

Features:
- Overload protection of current input via resettable fuse
- Zero/span adjustment across the entire measurement range
- Calibrated measurement range switching
- Unipolar/bipolar standard analog signals at both input/output
- Switchable limit frequency
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Specialty Functions:

Configuration via:

Configuration	
Configuration options	DIP switch
Input	
Input signal type	Voltage; Current
Input signal (voltage)	±5 V; 0 … 5 V; 1 … 5 V; ±10 V; 0 … 10 V; 2 … 10 V
Input signal (current)	±10 mA; 0 … 10 mA; 2 … 10 mA; ±20 mA; 0 … 20 mA; 4 … 20 mA
Input resistance (current input)	≤ 50 Ω (approx.)
Input resistance (voltage input)	1 MΩ (approx.)
Input current (max.)	50 mA
Input voltage (max.)	32 V
Zero/span adjustment	±5 % of upper range value
Output	
Output signal type	Current; Voltage
Output signal (voltage)	±5 V; 0 … 5 V; 1 … 5 V; ±10 V; 0 … 10 V; 2 … 10 V
Output signal (current)	±10 mA; 0 … 10 mA; 2 … 10 mA; ±20 mA; 0 … 20 mA; 4 … 20 mA
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω
Residual ripple	≤ 10 mV (rms)
Signal Processing	
Limit frequency	100 Hz / 5 kHz (configurable via DIP switch)
Step response (typ.)	3.5 ms (100 Hz); 60 µs (5 kHz)
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01%/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_S	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 25 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	38.4 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air 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 61000-6-3

» Accessories Page 344

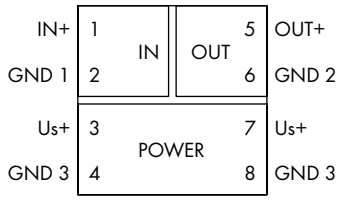
857-409

DIP Switch Adjustability

● = ON Default

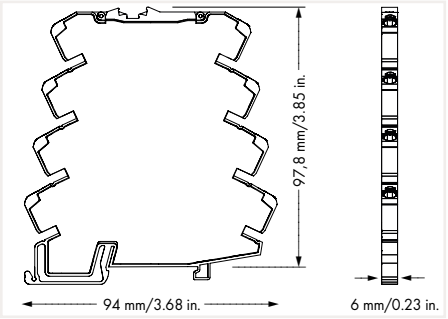
DIP Switch S1 (4-fold)					DIP Switch S2 (6-fold)							
Input Signal					Output Signal						Max. Operating Frequency	
1	2	3	4		1	2	3	4	5		6	
●				±20 mA				●		±20 mA		5 kHz
●	●			±10 mA			●	●		±10 mA	●	100 Hz
●				±10 V	●	●		●		±10 V		
●	●			±5 V	●	●	●	●		±5 V		
				0 ... 20 mA						0 ... 20 mA		
		●		4 ... 20 mA					●	4 ... 20 mA		
	●			0 ... 10 mA			●			0 ... 10 mA		
	●	●		2 ... 10 mA			●		●	2 ... 10 mA		
				0 ... 10 V	●	●				0 ... 10 V		
		●		2 ... 10 V	●	●			●	2 ... 10 V		
	●			0 ... 5 V	●	●	●			0 ... 5 V		
	●	●		1 ... 5 V	●	●	●		●	1 ... 5 V		

Isolation Amplifier; Pre-Configured; Current Input; Current Output
857 Series



Isolation Amplifier; Current input signal: 0 (4) ... 20 mA; Current output signal: 0 (4) ... 20 mA; Supply voltage: 24 VDC; Module width: 6 mm wide

	Item No.	Pack. Unit
	857-411	1



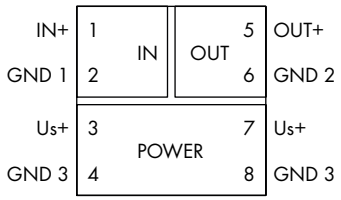
Short description:
WAGO's pre-configured isolation amplifier converts, amplifies, filters, and electrically isolates standard analog signals.

Features:
- Input/output: current or voltage signal
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Configuration	
Configuration options	Pre-configured
Input	
Input signal type	Current
Input signal (current)	0 ... 20 mA; 4 ... 20 mA
Input resistance (current input)	≤ 50 Ω
Input current (max.)	50 mA
Output	
Output signal type	Current
Output signal (current)	0 ... 20 mA; 4 ... 20 mA
Load impedance (current output)	≤ 600 Ω
Signal Processing	
Limit frequency	100 Hz
Step response (typ.)	3.5 ms
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01%/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_S	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 25 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	36.1 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 ... +70 °C
Surrounding air 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

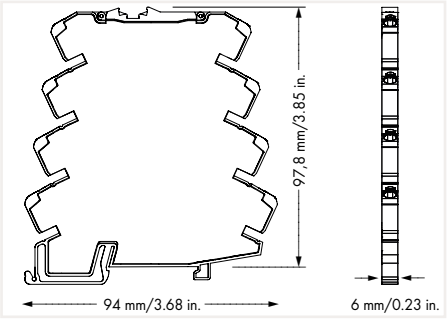
» Accessories Page 344

Isolation Amplifier; Pre-Configured; Voltage Input; Voltage Output
857 Series



Isolation Amplifier; Voltage input signal: 0 (2) ... 10 V; Voltage output signal: 0 (2) ... 10 V; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-412	1



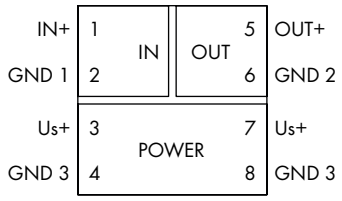
Short description:
WAGO's pre-configured isolation amplifier converts, amplifies, filters, and electrically isolates standard analog signals.

Features:
- Input/output: current or voltage signal
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Configuration	
Configuration options	Pre-configured
Input	
Input signal type	Voltage
Input signal (voltage)	0 ... 10 V; 2 ... 10 V
Input resistance (voltage input)	≥ 100 kΩ
Input voltage (max.)	30 V
Output	
Output signal type	Voltage
Output signal (voltage)	0 ... 10 V; 2 ... 10 V
Load impedance (voltage output)	≥ 2 kΩ
Signal Processing	
Limit frequency	100 Hz
Step response (typ.)	3.5 ms
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01%/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_S	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 25 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	35.6 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 ... +70 °C
Surrounding air 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

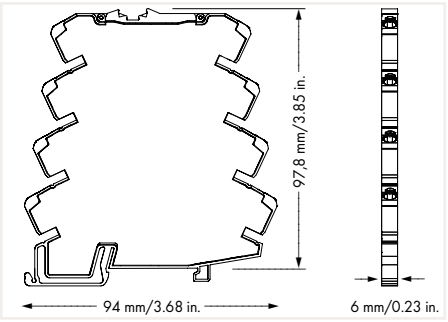
» Accessories Page 344

Isolation Amplifier; Pre-Configured; Voltage Input; Current Output
857 Series



Isolation Amplifier; Voltage input signal: 0 … 10 V; Supply voltage: 24 VDC; Module width: 6 mm

Output Signal	Item No.	Pack. Unit
0 … 20 mA	**857-413**	1
4 … 20 mA	**857-414**	1



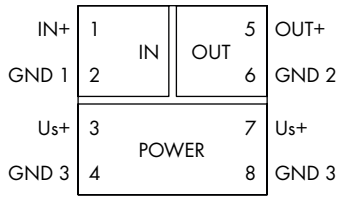
Short description:
WAGO's pre-configured isolation amplifier converts, amplifies, filters, and electrically isolates standard analog signals.

Features:
- Input/output: current or voltage signal
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Configuration	
Configuration options	Pre-configured
Input	
Input signal type	Voltage
Input signal (voltage)	0 … 10 V
Input resistance (voltage input)	≥ 100 kΩ
Input voltage (max.)	30 V
Output	
Output signal type	Current
Load impedance (current output)	≤ 600 Ω
Signal Processing	
Limit frequency	100 Hz
Step response (typ.)	3.5 ms
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01%/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_S	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 25 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	36.01 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air 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

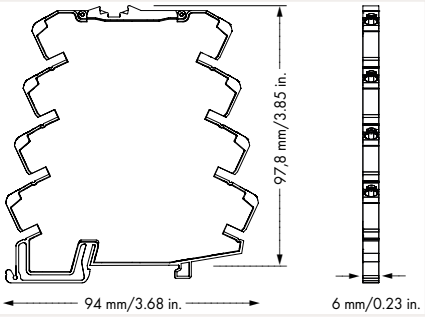
» Accessories Page 344

Isolation Amplifier; Pre-Configured; Current Input; Voltage Output
857 Series



Isolation Amplifier; Voltage output signal: 0 … 10 V; Supply voltage: 24 VDC; Module width: 6 mm

Input Signal	Item No.	Pack. Unit
0 … 20 mA	857-415	1
4 … 20 mA	857-416	1



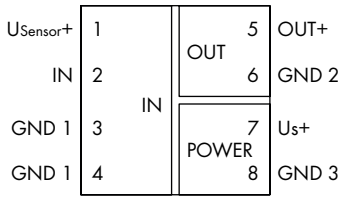
Short description:
WAGO's pre-configured isolation amplifier converts, amplifies, filters, and electrically isolates standard analog signals.

Features:
- Input/output: current or voltage signal
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Configuration	
Configuration options	Pre-configured
Input	
Input signal type	Current
Input resistance (current input)	≤ 50 Ω
Input current (max.)	50 mA
Output	
Output signal type	Voltage
Output signal (voltage)	0 … 10 V
Load impedance (voltage output)	≥ 2 kΩ
Signal Processing	
Limit frequency	100 Hz
Step response (typ.)	3.5 ms
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01%/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_S	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 25 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	35.31 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air 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

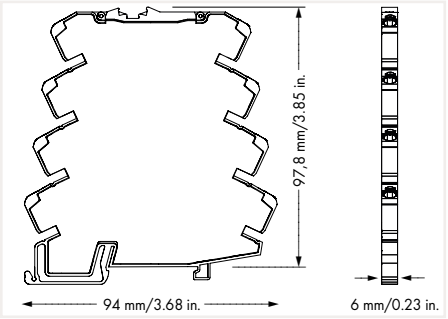
» Accessories Page 344

Isolation Amplifier; Configurable; with Current and Voltage Output
857 Series



Isolation Amplifier; Current input signal; Current and voltage output signal; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-420	1



Short description:
WAGO's repeater power supply provides the power required for 2- or 3-wire field transmitters, and electrically isolates analog signals.

Features:
- Power supply to SMART transmitters
- Calibrated measurement range switching
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Configuration via:

Configuration	
Configuration options	DIP switch
Input	
Input signal type	Current
Input signal (current)	0 … 20 mA; 4 … 20 mA
Input resistance (current input)	≤ 50 Ω
Input current (max.)	50 mA
Sensor supply	U_v = 18 V; 30 mA
Output	
Output signal type	Current; Voltage
Output signal (voltage)	0 … 5 V; 1 … 5 V; 0 … 10 V; 2 … 10 V (calibrated switching)
Output signal (current)	0 … 20 mA; 4 … 20 mA (calibrated switching)
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω
Offset	≤ 20 µA
Residual ripple	≤ 10 mV (rms)
Signal Processing	
Limit frequency	100 Hz
Step response (typ.)	3.5 ms
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01%/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_S	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 45 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	37 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air temperature (storage)	–40 … +85 °C
Relative humidity	5 … 95 % (no condensation permissible)
Operating altitude (max.)	2000 m
Standards and Specifications	
Conformity marking	CE

» Accessories Page 344

857-420

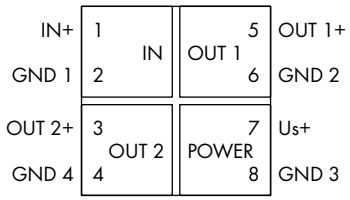
DIP Switch Adjustability

● = ON Default

DIP Switch S1 (6-fold)

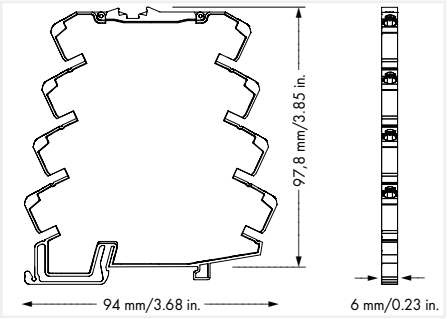
1	2	3	4	5	6	Input Signal	Output Signal
					n.c.	0 … 20 mA	0 … 20 mA
			●		n.c.	0 … 20 mA	4 … 20 mA
●	●				n.c.	0 … 20 mA	0 … 10 V
●	●		●		n.c.	0 … 20 mA	2 … 10 V
●	●	●			n.c.	0 … 20 mA	0 … 5 V
●	●	●	●		n.c.	0 … 20 mA	1 … 5 V
				●	n.c.	4 … 20 mA	0 … 20 mA
					n.c.	4 … 20 mA	4 … 20 mA
●	●			●	n.c.	4 … 20 mA	0 … 10 V
●	●				n.c.	4 … 20 mA	2 … 10 V
●	●	●		●	n.c.	4 … 20 mA	0 … 5 V
●	●	●			n.c.	4 … 20 mA	1 … 5 V

Isolation Amplifier; Configurable; with 2 Current Outputs
857 Series



Isolation Amplifier; Current and voltage input signal; 2x current output signal; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-423	1



Short description:
WAGO's signal splitter converts, amplifies, filters, and electrically isolates standard analog signals.

Features:
- Two configurable current outputs
- Calibrated measurement range switching
- Switchable limit frequency
- Safe 4-way isolation with 2.5 kV test voltage per EN 61140

Configuration via:

Configuration	
Configuration options	DIP switch
Input	
Input signal type	Voltage; Current
Input signal (voltage)	0 … 5 V; 1 … 5 V; 0 … 10 V; 2 … 10 V (calibrated switching)
Input signal (current)	0 … 20 mA; 4 … 20 mA (calibrated switching)
Input resistance (current input)	≤ 50 Ω
Input resistance (voltage input)	≥ 100 kΩ
Output	
Output signal type	Current
Output signal (current)	0 … 20 mA; 4 … 20 mA (calibrated switching)
Load impedance (current output)	≤ 300 Ω
Signal Processing	
Limit frequency	100 Hz / 1 kHz (configurable via DIP switch)
Step response (typ.)	3.5 ms (100 Hz); 300 µs (1 kHz)
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Transmission error (max.)	≤ 0.2 % of upper-range value
Temperature coefficient	≤ 0.01%/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_S	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 35 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	40.6 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air 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

» Accessories Page 344

857-423

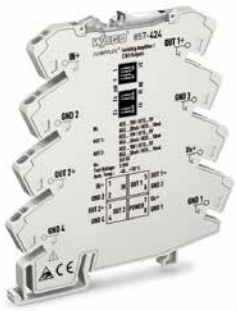
DIP Switch Adjustability

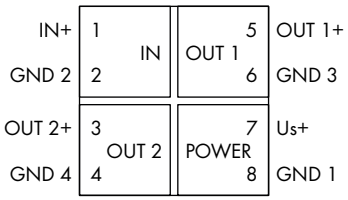
● = ON | Default

DIP Switch S1 (6-fold)

Input Signal				Max. Operating Frequency		Output Signal 1		Output Signal 2	
1	2	3		4		5		6	
●			0 … 20 mA		1 kHz		0 … 20 mA		0 … 20 mA
●		●	4 … 20 mA	●	100 Hz	●	4 … 20 mA	●	4 … 20 mA
	●		0 … 10 V						
	●	●	2 … 10 V						
			0 … 5 V						
		●	1 … 5 V						

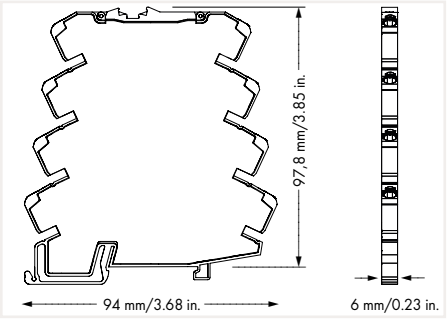
Isolation Amplifier; Configurable; with Current and Voltage Output
857 Series





Isolation Amplifier; Current and voltage input signal; Current and voltage output signal; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-424	1



Short description:
WAGO's signal splitter converts, amplifies, filters, and electrically isolates standard analog signals. In addition, the input signal is split into two separate outputs.

Features:
- Two configurable voltage/current outputs
- Switchable limit frequency
- Safe 4-way isolation with 3 kV test voltage per EN 61010-1

Configuration via:

Configuration	
Configuration options	DIP switch
Input	
Input signal type	Voltage; Current
Input signal (voltage)	0 … 5 V; 1 … 5 V; 0 … 1 V; 0 … 10 V; 2 … 10 V
Input signal (current)	0 … 10 mA; 2 … 10 mA; 0 … 20 mA; 4 … 20 mA
Input resistance (current input)	≤ 50 Ω
Input resistance (voltage input)	≥ 100 kΩ
Input current (max.)	50 mA
Input voltage (max.)	30 V
Output	
Output signal type	Voltage; Current
Output signal (voltage)	0 … 10 V; 2 … 10 V (calibrated switching)
Output signal (current)	0 … 10 mA; 2 … 10 mA; 0 … 20 mA; 4 … 20 mA (calibrated switching)
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω
Signal Processing	
Limit frequency	100 Hz / 1 kHz (configurable via DIP switch)
Step response (typ.)	3.5 ms (100 Hz); 300 µs (1 kHz)
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01%/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_S	24 VDC
Supply voltage range	-60 … +30 %
Power consumption at nominal supply voltage	≤ 35 mA (typ.; ≤ 250 mA max.)
Safety and Protection	
Measurement category per EN/UL 61010-2-030	CAT II (input)
Protection type	IP20
Test voltage (input/analog output 1/analog output 2/ supply)	3 kVAC; 50 … 60 Hz; 1 min
Insulation parameters per EN/UL 61010-1	
Line-to-neutral conductor voltage (AC) max.	300 V
Overvoltage category	II
Pollution degree	2
Insulation type (input/analog output 1/analog output 2/supply)	Reinforced insulation
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 inch
Cable type	Shielded cable
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	41.5 g

» Accessories Page 344

Environmental Requirements	
Surrounding air temperature (operation)	-40 … 70 °C (for single module; -40 … +60 °C for module assembly)
Surrounding air temperature (storage)	-40 … 85 °C
Temperature range of the connecting cable according to EN 61010-2-201	≥ ($T_{surrounding\ air}$ + 10 K)
Temperature range of connecting cable per UL 61010-2-201 (min.)	90 °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; EN 61326-1; EN 50121-3-2
EMC emission of interference	EN 61000-6-3; EN 61326-1; EN 50121-3-2
Standards/specifications	EN 61010-1; EN 61373

857-424

DIP Switch Adjustability

● = ON Default

DIP Switch S1 (4 positions)

Input Signal				Max. Operating Frequency	
1	2	3		4	
●			0 … 20 mA		> 1 kHz
●		●	4 … 20 mA	●	100 Hz
●	●		0 … 10 mA		
●	●	●	2 … 10 mA		
			0 … 10 V		
		●	2 … 10 V		
	●		0 … 5 V		
	●	●	1 … 5 V		

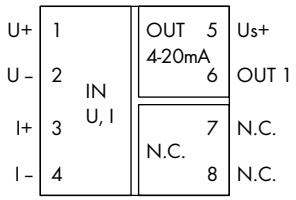
DIP Switch S2 (2 positions)

Output Signal 1		
1	2	
		0 … 10 V
●		2 … 10 V
	●	0 … 20 mA
●	●	4 … 20 mA

DIP Switch S3 (2 positions)

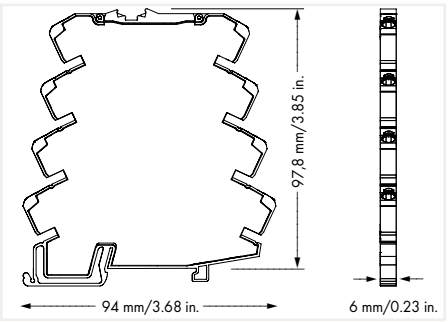
Output Signal 2		
1	2	
		0 … 10 V
●		2 … 10 V
	●	0 … 20 mA
●	●	4 … 20 mA

Loop-Powered Isolation Amplifier
857 Series



Loop-Powered Isolation Amplifier; Bipolar current and voltage input signal; Current output signal; Power via input; Module width: 6 mm

	Item No.	Pack. Unit
	857-450	1



Short description:
WAGO's loop-powered isolation amplifier converts, amplifies, filters, and electrically isolates standard unipolar/bipolar analog signals.

Features:
- No additional supply voltage required
- Zero/span adjustment
- Standard unipolar/bipolar analog signals at input
- Calibrated measurement range switching
- Switchable limit frequency
- Safe 2-way isolation with 2.5 kV test voltage per EN 61140

Specialty Functions:

Configuration via:

Configuration	
Configuration options	DIP switch
Input	
Input signal type	Voltage; Current
Input signal (voltage)	±1 V; 0 … 1 V; ±2 V; 0 … 2 V; ±5 V; 0 … 5 V; 1 … 5 V; ±10 V; 0 … 10 V; 2 … 10 V; ±20 V
Input signal (current)	±5 mA; 0 … 5 mA; ±10 mA; 0 … 10 mA; 2 … 10 mA; ±20 mA; 0 … 20 mA; 4 … 20 mA
Input resistance (current input)	≤ 50 Ω
Input resistance (voltage input)	≥ 1 mΩ
Input current (max.)	50 mA
Input voltage (max.)	30 V
Zero/span adjustment	±5 % of upper range value
Output	
Output signal type	Current
Output signal (current)	4 … 20 mA
Load impedance (current output)	≤ 600 Ω
Signal Processing	
Limit frequency	100 Hz / 30 Hz (configurable via DIP switch)
Step response (typ.)	3.5 ms
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01 %/K
Power Supply	
Power supply type	loop-powered (via output)
Supply voltage	8 … 30 VDC (power derived from the output circuit)
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	37.9 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air 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 61000-6-3

» Accessories Page 344

857-450

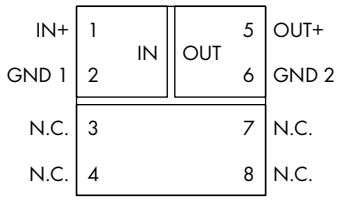
DIP Switch Adjustability

● = ON | Default

DIP switch (6 positions)

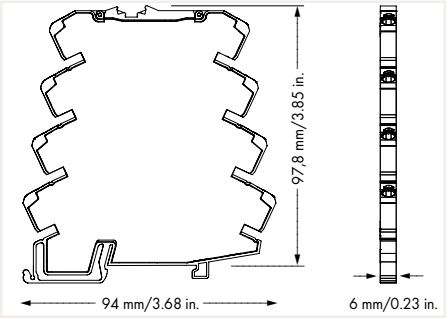
Input Signal							Output Signal	Max. Operating Frequency	
1	2	3	4	5				6	
					4 ... 20 mA	Current	4 ... 20 mA		100 Hz
●		●	●		0 ... 20 mA			●	30 Hz
●		●	●	●	±20 mA				
●		●			2 ... 10 mA				
●			●		0 ... 10 mA				
●			●	●	±10 mA				
●					0 ... 5 mA				
●				●	±5 mA				
	●	●	●		0 ... 20 V	Voltage			
	●	●	●	●	±20 V				
	●	●			2 ... 10 V				
	●		●		0 ... 10 V				
	●		●	●	±10 V				
	●				1 ... 5 V				
		●	●		0 ... 5 V				
		●	●	●	±5 V				
		●			0 ... 2 V				
		●		●	±2 V				
			●		0 ... 1 V				
			●	●	±1 V				

Passive Isolator; 1-Channel
857 Series



Passive Isolator; 1-channel; Current input signal; Current output signal; Power via input; Module width: 6 mm wide

	Item No.	Pack. Unit
	857-451	1



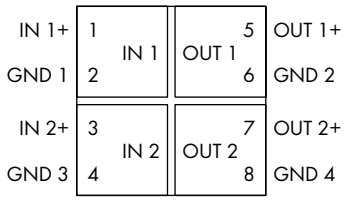
Short description:
WAGO's passive isolator (1-channel) electrically isolates and filters 0(4)–20 mA standard analog signals, while drawing power for signal transmission from the input circuit. The connected sensor supplies the passive isolator with the required power to energize the connected load.

Features:
- No additional supply voltage required
- Safe 2-way isolation with 2.5 kV test voltage per EN 61140

» Accessories Page 344

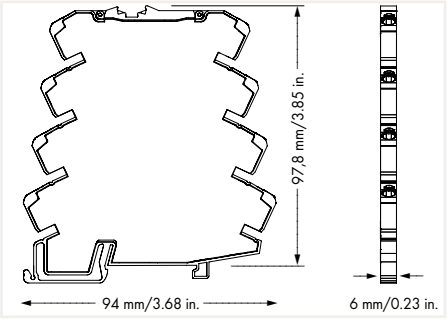
Configuration	
Configuration options	Pre-configured
Input	
Input signal type	Current
Input signal (current)	0 … 20 mA; 4 … 20 mA
Voltage drop at input	≤ 2.5 V at 20 mA (output)
Input current (max.)	40 mA
Input voltage (max.)	20 V
Response threshold	200 µA
Output	
Output signal type	Current
Output signal (current)	0 … 20 mA; 4 … 20 mA
Load impedance (current output)	≤ 600 Ω (temperature range restrictions may occur)
Signal Processing	
Limit frequency	100 Hz
Step response (typ.)	3.5 ms
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Load error	≤ 0.05 % (of upper-range value; per 100 Ω load)
Temperature coefficient	≤ 0.01 %/K
Supply	
Power supply type	passive (via input)
Safety and Protection	
Measurement category per EN/UL 61010-2-030	CAT II (input)
Line-to-neutral conductor voltage	AC 300 V
Overvoltage category	II
Pollution degree	2
Protection type	IP20
Test voltage	
Test voltage (input/output)	AC 3 kV; 50 Hz; 1 min
Test voltage (input/output) AC	3000 V
Test voltage (input/output) duration	1 min
Test voltage (input/output) frequency	50 Hz
Insulation parameters per EN/UL 61010-1	
Insulation type (input/analog output)	Reinforced insulation
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 inch
Cable type	Shielded cable
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	34.2 g
Environmental Requirements	
Surrounding air temperature (operation)	−25 … +70 °C
Surrounding air temperature (storage)	−40 … +85 °C
Temperature range of the connecting cable according to EN 61010-2-201	≥ ($T_{surrounding\ air}$ + 15 K)
Temperature range of connecting cable per UL 61010-2-201 (min.)	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

Passive Isolator; 2-Channel
857 Series



Passive Isolator; 2-channel; Current input signal; 2 x Current output signal; Power via input; Module width: 6 mm wide

	Item No.	Pack. Unit
	857-452	1



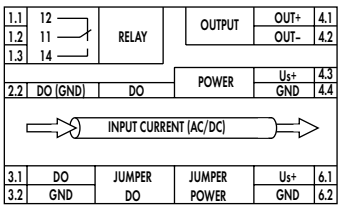
Short description:
WAGO's passive isolator (2-channel) electrically isolates and filters 0(4)–20 mA standard analog signals, while drawing power for signal transmission from the input circuit. The connected sensor supplies the passive isolator with the required power to energize the connected load.

Features:
- No additional supply voltage required
- Safe 2-way isolation with 2.5 kV test voltage per EN 61140

» Accessories Page 344

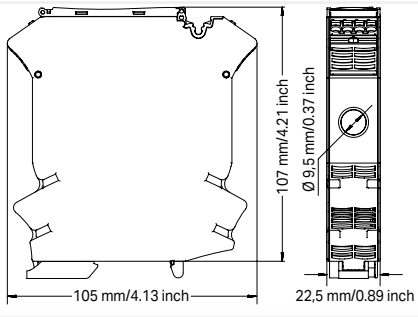
Configuration	
Configuration options	Pre-configured
Input	
Input signal type	Current
Input signal (current)	0 … 20 mA; 4 … 20 mA
Voltage drop at input	≤ 2.5 V at 20 mA (output)
Input current (max.)	40 mA
Input voltage (max.)	20 V
Response threshold	200 µA
Output	
Output signal type	Current
Output signal (current)	0 … 20 mA; 4 … 20 mA
Load impedance (current output)	≤ 600 Ω (temperature range restrictions may occur)
Signal Processing	
Limit frequency	100 Hz
Step response (typ.)	3.5 ms
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Load error	≤ 0.05 % (of upper-range value; per 100 Ω load)
Temperature coefficient	≤ 0.01 %/K
Supply	
Power supply type	passive (via input)
Safety and Protection	
Measurement category per EN/UL 61010-2-030	CAT II (input)
Line-to-neutral conductor voltage	AC 300 V
Overvoltage category	II
Pollution degree	2
Protection type	IP20
Test voltage	
Test voltage (input/output)	AC 3 kV; 50 Hz; 1 min
Test voltage (input/output) AC	3000 V
Test voltage (input/output) duration	1 min
Test voltage (input/output) frequency	50 Hz
Insulation parameters per EN/UL 61010-1	
Insulation type (input/analog output)	Reinforced insulation
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 inch
Cable type	Shielded cable
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	62 g
Environmental Requirements	
Surrounding air temperature (operation)	−25 … +70 °C
Surrounding air temperature (storage)	−40 … +85 °C
Temperature range of the connecting cable according to EN 61010-2-201	≥ ($T_{surrounding\ air}$ + 15 K)
Temperature range of connecting cable per UL 61010-2-201 (min.)	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

Current Signal Conditioner; Configurable; with Digital and Relay Output
2857 Series



Current Signal Conditioner; Current input signal: 100 A AC/DC; Current and voltage output signal; Digital and relay output; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	2857-550	1



Short description:
WAGO's current signal conditioner measures AC/DC currents up to 100 A and converts the measured current into a standard analog signal at the output.

Features:
- Both digital signal output and relay with changeover contact react to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values)
- Clipping capability provides analog signal limitation to output end values
- Adjustable software filter
- Input/output response simulation via configuration display
- Safe 3-way isolation with 3 kV test voltage per EN 61010-1

Note:
Additional setting options via interface configuration software/app

» Dip Switch configuration, see www.wago.com	
» Configuration software	Page 332
» Configuration app	Page 333
» Configuration display	Page 334
» Accessories	Page 344

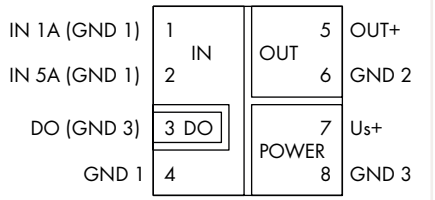
Configuration	
Configuration options	DIP switch; Interface configuration software; Interface configuration app; Configuration display
Input	
Input signal type	Current
Input signal (current)	0.5 … 100 AAC; −100 … +100 ADC
Frequency range	15 … 1000 Hz
Input current (max.)	100 A AC/DC
Response threshold	500 mA (AC); 250 mA (DC)
Resolution	10 mA
Output	
Output signal type	Current; Voltage
Output signal (voltage)	±5 V; 0 … 5 V; 1 … 5 V; ±10 V; 0 … 10 V; 2 … 10 V
Output signal (current)	±10 mA; 0 … 10 mA; 2 … 10 mA; ±20 mA; 0 … 20 mA; 4 … 20 mA
Load impedance (voltage output)	≥ 1 kΩ
Load impedance (current output)	≤ 600 Ω
Output – Digital	
Max. switching voltage (DO)	Supply voltage applied: −0.3 V
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 or 2 (adjustable)
Configurable rise/fall delay time (DO)	0 … 60 s (via software)
Output – Relay	
Number of changeover/switchover contacts	1
Contact material (relay)	AgNi + Au
Switching voltage (max.)	250 VAC
Limiting continuous current (relay; module assembly)	6 A (≤ 60 °C); 3 A (60 … +70 °C)
Dielectric strength, open contact (AC, 1 min)	1 kV_{rms}
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	4 ms
Bounce time (typ.)	8 ms
Number of switching thresholds (relay)	1 or 2 (adjustable)
Configurable rise/fall delay time (relay)	0 … 60 s (via software)
Signal Processing	
Measurement method	True RMS measurement; Arithmetic mean value
Limit frequency	3.3 kHz
Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	60 ms (DC; for software filter 3/default setting); 250 ms (AC)
Measurement Error	
Transmission error (max.)	≤ 1 % (of the full scale value)
Temperature coefficient	≤ 0.01 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 50 mA (+ IDO)
Safety and Protection	
Rated voltage of the measurement circuit connections per EN 61010-2-030	AC 300 V
Measurement category per EN/UL 61010-2-030	CAT II (input)
Protection type	IP20
Test voltage	
Test voltage (input/output/supply)	AC 3 kV; 50 Hz; 1 min
Test voltage (measurement circuit/relay output/supply/analog output)	3 kVAC; 50 … 60 Hz; 1 min
Test voltage (measurement circuit/relay output/supply/service interface)	3 kVAC; 50 … 60 Hz; 1 min
Test voltage (analog output/service interface)	2 kVAC; 50 … 60 Hz; 1 min

Specialty Functions:

Configuration via:

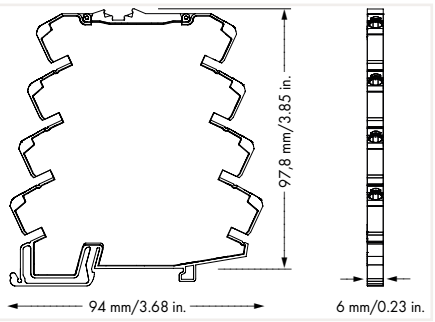
Insulation parameters per EN/UL 61010-1	
Line-to-neutral conductor voltage (AC) max.	300 V
Overvoltage category	II
Pollution degree	2
Insulation type (measurement circuit/relay output, supply, analog output and service interface)	Double insulation
Insulation type (analog output/service interface)	Basic insulation
Connection Data	
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	*picoMAX*® 5.0
Solid conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Fine-stranded conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Strip length	9 … 10 mm / 0.35 … 0.39 inch
Feedthrough for measurement conductor	9.5 mm Ø
Geometric Data	
Width	22.5 mm / 0.886 inch
Height from upper-edge of DIN-rail	107 mm / 4.213 inch
Depth	105 mm / 4.134 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	102.94 g
Environmental Requirements	
Surrounding air temperature (operation)	−40 … +70 °C
Surrounding air temperature (storage)	−40 … +85 °C
Temperature range of the connecting cable according to EN 61010-2-201	≥ ($T_{surrounding\ air}$ + 10 K)
Temperature range of connecting cable per UL 61010-2-201 (min.)	90 °C
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3; EN 50121-3-2
EMC emission of interference	EN 61000-6-4; EN 61326-2-3; EN 50121-3-2
Standards/specifications	EN 61010-1; EN 61373

Current Signal Conditioner; Configurable; with Digital Output
857 Series



Current Signal Conditioner; Current input signal: 5 A AC/DC; Current and voltage output signal; Digital output; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-550	1



Short description:
WAGO's current signal conditioner measures both 0–1 A and 0–5 A AC/DC currents, converting the input signal to an 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
- Calibrated measurement range switching
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140
- Extremely fast response times
- Measurement range overflow indication

Note:
Additional setting options via interface configuration software/app

Configuration	
Configuration options	DIP switch; Interface configuration software; Interface configuration app
Input	
Input signal type	Current
Input signal (current)	0 ...1 A AC/DC (IN 1); 0 ...5 A AC/DC (IN 2)
Frequency range	16 … 400 Hz
Input resistance (current input)	47 mΩ (IN 1); 10 mΩ (IN 2)
Input current (max.)	10 A (IN 1; 5 s); 15 A (IN 2; 5 s)
Response threshold	2 mA (IN 1); 4 mA (IN 2)
Output	
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 (temperature range restrictions may occur)
Load impedance (current output)	≤ 600 Ω (temperature range restrictions may occur)
Output – Digital	
Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 (adjustable)
Signal Processing	
Measurement method	True RMS measurement; Arithmetic mean value
Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	60 ms
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Transmission error (max.)	≤ 0.4 % of upper-range value
Temperature coefficient	≤ 0.01 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA (+ IDO)
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	64 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 °C … +70 °C (at nominal current)
Surrounding air 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

» Configuration software Page 332
» Configuration app Page 333
» Accessories Page 344

Specialty Functions:

Configuration via:

857-550

DIP Switch Adjustability

● = ON **Default**

DIP Switch S1

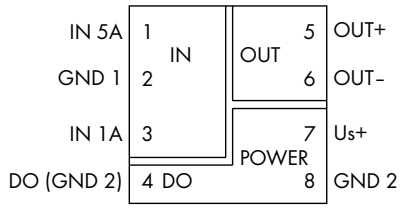
Input Signal		Measurement Method		Filter		Output Signal			
1		2		3		4	5	6	
	5 A		Mean square value		off				0 ... 20 mA
●	1 A	●	Arithmetic mean value	●	active		●		4 ... 20 mA
						●			0 ... 10 V
						●	●		2 ... 10 V
								●	0 ... 10 mA
							●	●	2 ... 10 mA
						●		●	0 ... 5 V
						●	●	●	1 ... 5 V

Filter:
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).

DIP Switch S1

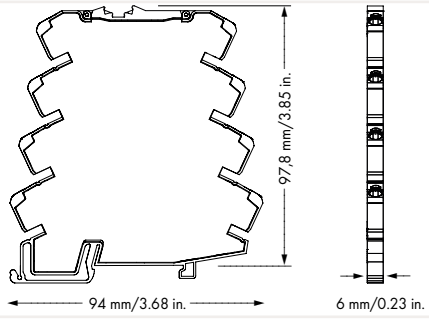
7	8	Measurement Range Underflow	Measurement Range Overflow	Overcurrent (Input Signal - End Value + 20%)	9	10	Digit Output DO Signaling
		Lower limit of measurement range -5 %*	Upper limit of measurement range +2.5 %*	Upper limit of measurement range +5 %*			DO not active
●		Lower limit of measurement range	Upper limit of measurement range +2.5 %	Upper limit of measurement range +5 %		●	DO U_s+ switching
	●	Lower limit of measurement range	Upper limit of measurement range	Lower limit of measurement range	●	●	DO GND switching
●	●	Lower limit of measurement range	Upper limit of measurement range	Upper limit of measurement range			*acc. to NAMUR NE 43

Current Signal Conditioner; Configurable; with Digital Output
Serie 857



Current Signal Conditioner; Current input signal: 5 A AC/DC; Current and voltage output signal; Digital output; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-551	1



Short description:
WAGO's current signal conditioner measures AC/DC currents up to 5 A, converting the input signal to a standard analog signal at the output.

Features:
- Two isolated measurement inputs for 1 and 5 A AC/DC
- RMS measurement or arithmetic mean value
- A digital signal output reacts to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values)
- Switchable filter function
- Safe 3-way isolation with 3 kV test voltage per DIN EN 61010-1

Notes:
- Additional setting options via interface configuration software
- In the present network, ensure that the neutral conductor is not dangerously active!

» Configuration software Page 332
» Accessories Page 344

Configuration	
Configuration options	DIP switch; Interface configuration software
Input	
Input signal type	Current
Input signal (current)	0 … 5 A AC/DC (IN 1; Individual arrangement); 0 … 6 A AC/DC (IN 1; Block arrangement)
Frequency range	16 … 200 Hz
Input resistance (current input)	47 mΩ (IN 1); 10 mΩ (IN 2)
Input current (max.)	15 A (IN 1; 5 s); 10 A (IN 3; 5 s)
Response threshold	10 mA (IN 1); 2 mA (IN 2)
Resolution	1 mA (IN 1); 0.5 mA (IN 2)
Output	
Output signal type	Current; Voltage
Output signal (voltage)	0 … 5 V; 1 … 5 V; 0 … 10 V; 2 … 10 V (can be inverted, also bipolar)
Output signal (current)	0 … 10 mA; 2 … 10 mA; 0 … 20 mA; 4 … 20 mA (can be inverted, also bipolar)
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω
Output – Digital	
Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 or 2 (adjustable)
Configurable rise/fall delay time (DO)	0 … 60 s (via software)
Signal Processing	
Measurement method	True RMS measurement; Arithmetic mean value
Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	60 ms (with software filter 3)
Step response (max.)	250 ms
Measurement Error	
Transmission error (max.)	≤ 0.5 % (of the full scale value)
Temperature coefficient	1-A-input: ≤ 0,01 %/K (typ.); ≤ 0,02 %/K (max.); 5-A-input: ≤ 0,02 %/K (typ.); ≤ 0,04 %/K (max.)
Power Supply	
Nominal supply voltage U_S	24 VDC (SELV)
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 50 mA (+ IDO)
Safety and Protection	
Measurement category per EN 61010-2-030	CAT II (input 300 VAC)
Note on insulation parameters	Danger: Configuration via the service interface must only be performed with a voltage-free measurement input! The digital output (DO) is at the potential of the supply
Protection type	IP20
Test voltage	
Test voltage (input/analog output/supply/service interface)	3 kVAC; 50 Hz; 1 min
Insulation parameters per EN 61010-1	
Line-to-neutral conductor voltage (AC) max.	300 V
Line-to-neutral conductor voltage (DC) max.	300 V
Overvoltage category	II
Pollution degree	2
Insulation type (input/analog output/supply/service interface)	Double insulation (impedance and basic insulation) Requirement: The GND 1 input is dangerous when active and the measurement is conducted as a low-side measurement!
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

Specialty Functions:

Configuration via:


Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	38.2 g
Environmental Requirements	
Surrounding air temperature (operation)	-40 °C … +70 °C (at nominal current)
Surrounding air temperature (storage)	−40 … +85 °C
Temperature range of the connecting cable according to EN 61010-2-201	≥ ($T_{surrounding\ air}$ + 34 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; EN 61326-1
EMC emission of interference	EN 61000-6-3; EN 61326-1
Standards/specifications	EN 61010-1

3

857-551

DIP Switch Adjustability

● = ON **Default**

DIP Switch S1

1	2	Input	3	Measurement Method	4	Filter
		5 A		Effective value (RMS)		off
	●	2.5 A	●	Arithmetic mean value (bipolar output)	●	active
●		1 A				
●	●	0.5 A				

DIP Switch S1

5	6	7	Output Signal Range (Bipolar for Arithmetic Mean Value)
			(+/-) 0 … 20 mA
	●		4 … 20 mA
●			(+/-) 0 … 10 V
●	●		2 … 10 V
		●	(+/-) 0 … 10 mA
	●	●	2 … 10 mA
●		●	(+/-) 0 … 5 V
●	●	●	1 … 5 V

DIP Switch S1

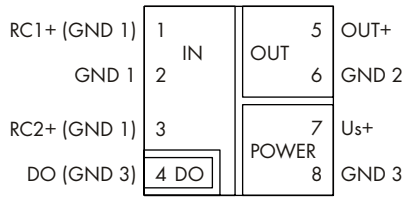
8	9	Measurement Range Underflow	Measurement Range Overflow	10	Digital Output DO Signaling
		Lower limit of measurement range +2.5 %*	Upper limit of measurement range -5 %*		DO U_s switching
●		Lower limit of measurement range +2.5 %	Upper limit of measurement range	●	DO GND switching
	●	Lower limit of measurement range	Upper limit of measurement range		
●	●	Lower limit of measuring range	Upper limit of measuring range -5 %		

*acc. to NAMUR NE 43

Filter
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).

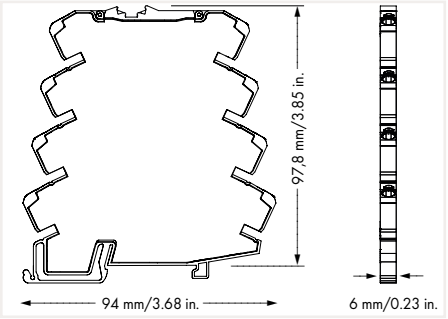
Digital Output DO/Signaling
The digital output (DO) signals error messages and can be configured as follows: 24 V → 0 V/0 V → 24 V.

Current Signal Conditioner; Configurable; Input for Rogowski Coils
857 Series



Current Signal Conditioner; Input for Rogowski coils; Current and voltage output signal; Digital output; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-552	1



Short description:
WAGO's rogowski signal conditioner records RMS values from alternating currents via Rogowski coil, converting the input signal into an standard analog signal on the output side.

Features:
- PC configuration interface
- Supports different Rogowski coil types
- Digital switching output (configurable switching thresholds)
- True RMS measurement (TRMS)
- Configurable output signal
- Configuration via DIP switch
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140
- No current bar interruption during installation
- Measurement range overflow indication

Note:
Additional setting options via interface configuration software/app

Configuration	
Configuration options	DIP switch; Interface configuration software; Interface configuration app
Input	
Input signal type	Voltage
Input signal (voltage)	50 Hz sinusoidal signals: 10.05 mVAC (RC1); 40.2 mVAC (RC2A); 90 mVAC (RC2B)
Sensitivity	RC2B: 22.5 mV/kA
Measurement range (current)	500 AAC (RC1); 2000 AAC (RC2A); 4000 AAC (RC2B)
Frequency range	50 Hz (sinusoidal signals)
Response threshold	≤ 1 % (of measurement range nominal value)
Resolution	250 mA (RC1); 1 A (RC2A); 1.5 A (RC2B)
Output	
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)	≥ 1 kΩ
Load impedance (current output)	≤ 600 Ω
Output – Digital	
Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 (adjustable)
Signal Processing	
Measurement method	True RMS measurement (TRMS)
Limit frequency	2 kHz
Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	60 ms
Measurement Error	
Transmission error (max.)	≤ 1 % (of the full scale value)
Temperature coefficient	≤ 0.01 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA (+ IDO)
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	35.1 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air temperature (storage)	–40 … +85 °C
Relative humidity	5 … 95 % (no condensation permissible)
Operating altitude (max.)	2000 m
Standards and Specifications	
Conformity marking	CE

» Configuration software	Page 332
» Configuration app	Page 333
» Accessories	Page 344

Specialty Functions:

Configuration via:

857-552

DIP Switch Adjustability

● = ON **Default**

DIP Switch S1

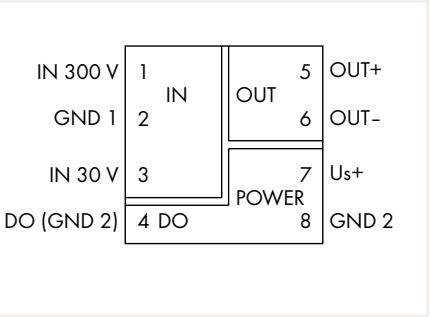
Input Signal		RC Configuration Input		Filter		Output Signal			
1		2		3		4	5	6	
	RC1 = RT500 from LEM		RC2A = RT2000 from LEM		off				0 ... 20 mA
●	RC2	●	RC2B = 22.5 mV/kA	●	active		●		4 ... 20 mA
						●			0 ... 10 V
						●	●		2 ... 10 V
								●	0 ... 10 mA
							●	●	2 ... 10 mA
						●		●	0 ... 5 V
						●	●	●	1 ... 5 V

Filter:
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).

DIP Switch S1

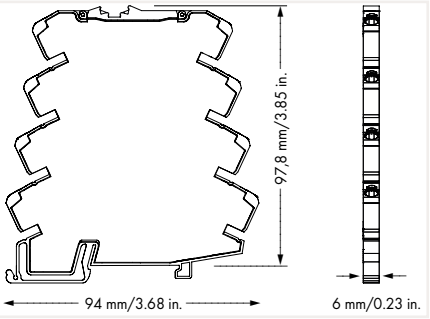
7	8	Measurement Range Underflow	Measurement Range Overflow	Overcurrent (Input Signal – End Value + 20%)	9	10	Digital Output DO Signaling
		Lower limit of measurement range +5 %*	Upper limit of measurement range +2.5 %*	Upper limit of measurement range +5 %*			DO not active
●		Lower limit of measurement range	Upper limit of measurement range +2.5 %	Upper limit of measurement range +5 %		●	DO U_s+ switching
	●	Lower limit of measurement range	Upper limit of measurement range	Lower limit of measurement range	●	●	DO GND switching
●	●	Lower limit of measurement range	Upper limit of measurement range	Upper limit of measurement range			*acc. to NAMUR NE 43

Voltage Signal Conditioner; Configurable; with Digital Output
857 Series



Voltage Signal Conditioner; Voltage input signal; Current and voltage output signal; Digital output; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-560	1



Short description:
WAGO's voltage signal conditioner measures AC/DC voltages up to 300 V, converting the input signal into a standard analog signal at the output.

Features:
- Two isolated measurement inputs for 30 and 300 V AC/DC
- RMS measurement or arithmetic mean value
- A digital signal output reacts to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values)
- Switchable filter function
- Safe 3-way isolation with 3 kV test voltage per DIN EN 61010-1

» Configuration software Page 332
» Configuration app Page 333
» Accessories Page 344

Configuration	
Configuration options	DIP switch; Interface configuration software; Interface configuration app
Input	
Input signal type	Voltage
Input signal (voltage)	300 V AC/DC (IN 1); 30 V AC/DC (IN 2)
Frequency range	10 … 100 Hz (AC)
Input resistance (voltage input)	≥ 300 kΩ
Response threshold	300 mV (IN 1); 30 mV (IN 2)
Resolution	30 mV (IN 1); 3 mV (IN 2)
Output	
Output signal type	Current; Voltage
Output signal (voltage)	0 … 5 V; 1 … 5 V; 0 … 10 V; 2 … 10 V (can be inverted, also bipolar)
Output signal (current)	0 … 10 mA; 2 … 10 mA; 0 … 20 mA; 4 … 20 mA (can be inverted, also bipolar)
Load impedance (voltage output)	≥ 1 kΩ
Load impedance (current output)	≤ 600 Ω
Output – Digital	
Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 or 2 (adjustable)
Configurable rise/fall delay time (DO)	0 … 60 s (via software)
Signal Processing	
Measurement method	RMS measurement; Arithmetic mean value
Limit frequency	2 kHz
Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	30 ms
Measurement Error	
Transmission error (max.)	≤ 0.5 % (of the full scale value)
Temperature coefficient	≤ 0.01 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 46 mA (+ IDO)
Safety and Protection	
Measurement category per EN/UL 61010-2-030	CAT II (input)
Note on insulation parameters	Danger: Configuration via the service interface must only be performed with a voltage-free measurement input! The digital output (DO) is at the potential of the supply
Protection type	IP20
Test voltage	
Test voltage (input/analog output/supply/service interface)	2.5 kVAC; 50 … 60 Hz; 1 min
Insulation parameters per EN/UL 61010-1	
Line-to-neutral conductor voltage (AC) max.	150 V
Overvoltage category	II
Pollution degree	2
Insulation type (input/analog output/supply/service interface)	Reinforced insulation
Insulation parameters per EN 61010-1	
Line-to-neutral conductor voltage (AC) max.	300 V
Overvoltage category	II
Pollution degree	2
Insulation type (input/analog output/supply/service interface)	Double insulation (impedance and basic insulation) Requirement: The GND 1 input is dangerous when active and the measurement is conducted as a low-side measurement!
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 inch

Specialty Functions:

Configuration via:

Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

Mechanical Data	
Mounting type	DIN-35 rail

Material Data	
Weight	40 g

Environmental Requirements	
Surrounding air temperature (operation)	–25 °C … +70 °C (at nominal current)
Surrounding air temperature (storage)	–40 … +85 °C
Temperature range of the connecting cable according to EN 61010-2-201	≥ (Tsurrounding air + 10 K)
Temperature range of connecting cable per UL 61010-2-201 (min.)	90 °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; EN 61326-2-3; EN 50121-3-2
EMC emission of interference	EN 61000-6-3; EN 61326-2-3; EN 50121-3-2
Standards/specifications	EN 61010-1; EN 61373

857-560

DIP Switch Adjustability

● = ON Default

DIP Switch S1

1	2	Input	3	Measurement Method	4	Filter
		300 V		Effective value (RMS)		off
	●	150 V	●	Arithmetic mean value (bipolar output)	●	active
●		30 V				
●	●	15 V				

DIP Switch S1

5	6	7	Output Signal Range (Bipolar for Arithmetic Mean Value)
			(+/-) 0 … 20 mA
	●		4 … 20 mA
●			(+/-) 0 … 10 V
●	●		2 … 10 V
		●	(+/-) 0 … 10 mA
	●	●	2 … 10 mA
●		●	(+/-) 0 … 5 V
●	●	●	1 … 5 V

DIP Switch S1

8	9	Measurement Range Underflow	Measurement Range Overflow	10	Digital Output DO/ Signaling
		Lower limit of measurement range -5 %*	Upper limit of measurement range +2.5 %*		DO V_s+ switching
●		Lower limit of measurement range	Upper limit of measurement range +2.5 %	●	DO GND switching
	●	Lower limit of measurement range	Upper limit of measurement range		
●	●	Lower limit of measurement range	Upper limit of measurement range		

*acc. to NAMUR NE 43

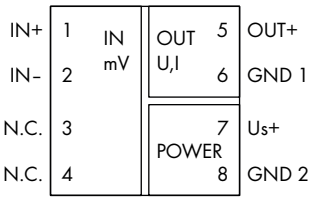
Filter

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).

Digital Output DO/Signaling

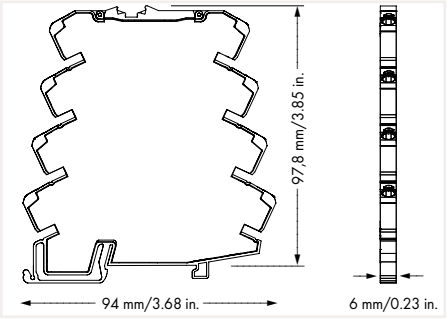
The digital output (DO) signals error messages and can be configured as follows: 24 V → 0 V/0 V → 24 V.

Voltage Signal Conditioner; Configurable
857 Series



Voltage Signal Conditioner; Bipolar voltage input signal; Current and voltage output signal; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-819	1



Short description:
WAGO's voltage signal conditioner converts millivolt signals (at the input) into a standard analog signal at the output.

Features:
- PC configuration interface
- Calibrated measurement range switching
- Switchable clipping
- Limitation of standard analog signal to upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Note:
Additional setting options via interface configuration software/app

Configuration	
Configuration options	DIP switch; Interface configuration software; Interface configuration app
Input	
Input signal type	Voltage
Input signal (voltage)	±100 mV; 0 … 200 mV; 0 … 300 mV; 0 … 400 mV; 0 … 500 mV; 0 … 600 mV; 0 … 700 mV; 0 … 800 mV; 0 … 900 mV; 0 … 1 V
Input resistance (voltage input)	≥ 1 mΩ
Input voltage (max.)	±31.2 VDC
Measurement span (voltage)	10 mV
Output	
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
Signal Processing	
Step response (typ.)	50 ms
Measurement Error	
Transmission error (typ.)	≤ 0.1 % at full measurement span
Temperature coefficient	≤ 0.01 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	36.3 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air 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

» Configuration software Page 332
» Configuration app Page 333
» Accessories Page 344

Specialty Functions:

Configuration via:

857-819

DIP Switch Adjustability

● = ON Default

Input Start Value																								Input End Value																															
DIP S1																								DIP S1			DIP S2					DIP S1			DIP S2					DIP S1			DIP S2					DIP S1			DIP S2				
1	2	3	4	5	6	7	mV	1	2	3	4	5	6	7	mV	1	2	3	4	5	6	7	mV	8	9	10	1	2	3	4	mV	8	9	10	1	2	3	4	mV	8	9	10	1	2	3	4	mV	8	9	10	1	2	3	4	mV
							0		•				•		-34			•				•	34								100		•				•		-34			•				•	34	•		•			•	•	100
•							-100	•	•				•		-32	•		•				•	36	•							-100	•	•				•		-32	•		•				•	36		•	•			•	•	200
	•						-98			•			•		-30		•	•				•	38		•						-98			•			•		-30		•	•				•	38	•	•	•			•	•	300
•	•						-96	•		•			•		-28	•	•	•				•	40	•	•						-96	•		•			•		-28	•	•	•				•	40				•		•	•	400
		•					-94		•	•			•		-26				•			•	42			•					-94		•	•			•		-26				•			•	42	•			•		•	•	500
•		•					-92	•	•	•			•		-24	•			•			•	44	•		•					-92	•	•	•			•		-24	•			•			•	44		•		•		•	•	600
	•	•					-90				•		•		-22		•		•			•	46		•	•					-90				•		•		-22		•		•			•	46	•	•		•		•	•	700
•	•	•					-88	•			•		•		-20	•	•		•			•	48	•	•	•					-88	•			•		•		-20	•	•		•			•	48			•	•		•	•	800
			•				-86		•		•		•		-18			•	•			•	50				•				-86		•		•		•		-18			•	•			•	50	•		•	•		•	•	900
•			•				-84	•	•		•		•		-16	•		•	•			•	52	•			•				-84	•	•		•		•		-16	•		•	•			•	52		•	•	•		•	•	1000
	•		•				-82			•	•		•		-14		•	•	•			•	54		•		•				-82			•	•		•		-14		•	•	•			•	54								
•	•		•				-80	•		•	•		•		-12	•	•	•	•			•	56	•	•		•				-80	•		•	•		•		-12	•	•	•	•			•	56								
		•	•				-78		•	•	•		•		-10					•		•	58			•	•				-78		•	•	•		•		-10					•		•	58								
•		•	•				-76	•	•	•	•		•		-8	•				•		•	60	•		•	•				-76	•	•	•	•		•		-8	•				•		•	60								
	•	•	•				-74					•	•		-6		•			•		•	62		•	•	•				-74					•	•		-6		•			•		•	62								
•	•	•	•				-72	•				•	•		-4	•	•			•		•	64	•	•	•	•				-72	•				•	•		-4	•	•			•		•	64								
				•			-70		•			•	•		-2			•		•		•	66					•			-70		•			•	•		-2			•		•		•	66								
•				•			-68	•	•			•	•		0	•		•		•		•	68	•				•			-68	•	•			•	•		0	•		•		•		•	68								
	•			•			-66			•		•	•		2		•	•		•		•	70		•			•			-66			•		•	•		2		•	•		•		•	70								
•	•			•			-64	•		•		•	•		4	•	•	•		•		•	72	•	•			•			-64	•		•		•	•		4	•	•	•		•		•	72								
		•		•			-62		•	•		•	•		6				•	•		•	74			•		•			-62		•	•		•	•		6				•	•		•	74								
•		•		•			-60	•	•	•		•	•		8	•			•	•		•	76	•		•		•			-60	•	•	•		•	•		8	•			•	•		•	76								
	•	•		•			-58				•	•	•		10		•		•	•		•	78		•	•		•			-58				•	•	•		10		•		•	•		•	78								
•	•	•		•			-56	•			•	•	•		12	•	•		•	•		•	80	•	•	•		•			-56	•			•	•	•		12	•	•		•	•		•	80								
			•	•			-54		•		•	•	•		14			•	•	•		•	82				•	•			-54		•		•	•	•		14			•	•	•		•	82								
•			•	•			-52	•	•		•	•	•		16	•		•	•	•		•	84	•			•	•			-52	•	•		•	•	•		16	•		•	•	•		•	84								
	•		•	•			-50			•	•	•	•		18		•	•	•	•		•	86		•		•	•			-50			•	•	•	•		18		•	•	•	•		•	86								
•	•		•	•			-48	•		•	•	•	•		20	•	•	•	•	•		•	88	•	•		•	•			-48	•		•	•	•	•		20	•	•	•	•	•		•	88								
		•	•	•			-46		•	•	•	•	•		22						•	•	90			•	•	•			-46		•	•	•	•	•		22						•	•	90								
•		•	•	•			-44	•	•	•	•	•	•		24	•					•	•	92	•		•	•	•			-44	•	•	•	•	•	•		24	•					•	•	92								
	•	•	•	•			-42							•	26		•				•	•	94		•	•	•	•			-42							•	26		•				•	•	94								
•	•	•	•	•			-40	•						•	28	•	•				•	•	96	•	•	•	•	•			-40	•						•	28	•	•				•	•	96								
					•		-38		•					•	30			•			•	•	98						•		-38		•					•	30			•			•	•	98								
•					•		-36	•	•					•	32	•		•			•	•	100	•					•		-36	•	•					•	32	•		•			•	•	100								

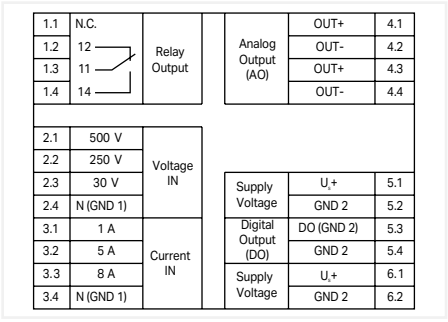
DIP Switch S2

Output Signal				9	10	Measurement Range Underflow	Measurement Range Overflow
6	7	8					
			0 … 20 mA			Lower limit of output range - 5 % *	Upper limit of output range + 2,5 % *
•			4 … 20 mA			(0 mA / 1.9 mA / 3.8 mA / 0 V / 0.95 V / 1.9 V)	(10.25 mA / 20.5 mA / 5.125 V / 10.25 V)
	•		0 … 10 mA	•		Lower limit of output range	Upper limit of output range + 2,5 %
•	•		2 … 10 mA			(0 mA / 2 mA / 4 mA / 0 V / 1 V / 2 V)	(10.25 mA / 20.5 mA / 5.125 V / 10.25 V)
		•	0 … 10 V		•	Lower limit of output range	Upper limit of output range
•		•	2 … 10 V			(0 mA / 2 mA / 4 mA / 0 V / 1 V / 2 V)	(10 mA / 20 mA / 5 V / 10 V)
	•	•	0 … 5 V	•	•	Lower limit of output range	Upper limit of output range
•	•	•	1 … 5 V			(0 mA / 2 mA / 4 mA / 0 V / 1 V / 2 V)	(10 mA / 20 mA / 5 V / 10 V)

DIP Switch S2 (5) not connected

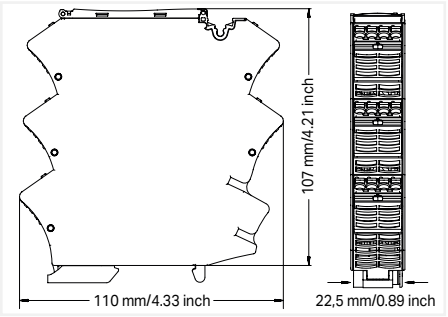
*acc. to NAMUR NE 43

1-Phase Power Signal Conditioner; with Digital Output; Configuration via Software
2857 Series



1-Phase Power Measurement Module;
Current and voltage input signal;
Current and voltage output signal;
Digital output; Configuration via software;
Supply voltage: 24 VDC

Item No.	Pack. Unit
2857-569	1



Short description:
Short description:
The WAGO 1-Phase Power Measurement Module monitors and reports signal states with up to two switching thresholds. The sensor and status information that is collected is also converted to a standard analog signal. Current, voltage, effective power, apparent power or reactive power can be selected as the measured variable. Additionally, both frequency and phase angle are displayed.

Features:
- A relay with changeover contact reacts to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values).
- Adjustable software filter
- Input/output response simulation via WAGO Configuration Display
- Analog unipolar/bipolar signals (current/voltage) at output
- Additional digital signal output for configured measurement range limits
- The digital output can be configured as a frequency generator or pulse output (S0 interface).

Note:
Additional setting options via WAGO Interface Configuration Software or WAGO Configuration Display

» Configuration software Page 332
» Configuration display Page 333
» Accessories Page 344

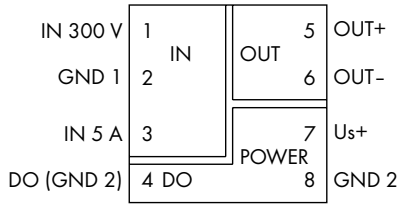
Configuration	
Configuration options	WAGO Interface Configuration Software; WAGO Configuration Display
Input	
Input signal type	Voltage; Current
Input signal (voltage)	500 V AC/DC (IN 2.1; per EN 61010-1); 300 V AC/DC (IN 2.1; per UL 61010-1); 250 V AC/DC (IN 2.2) ; 30 V AC/DC (IN 2.3)
Input signal (current)	1 A AC/DC (IN 3.1); 5 A AC/DC (IN 3. 2); 8 A AC/DC (IN 3. 3)
Frequency range	15 … 400 Hz (AC)
Input voltage (max.)	1.2 × U_N
Input current (max.)	1.2 × I_N (≤ 60 °C); 1 × I_N (60 … 70 °C)
Response threshold (voltage)	500 mV AC / 600 mV DC (IN 2.1); 50 mV AC / 500 mV DC (IN 2.2); 20 mV AC / 100 mV DC (IN 2.3)
Response threshold (current)	1.5 mA AC / 7.5 mA DC (IN 3.1); 3 mA AC / 10 mA DC (IN 3.2); 7.5 mA AC / 12 mA DC (IN 3.3)
Resolution (voltage)	50 mV (IN 2.1); 30 mV (IN 2.2); 5 mV (IN 2.3)
Resolution (current)	1 mA (for all measurement ranges)
Output – Analog	
Output signal type	Current; Voltage
Output signal (voltage)	±12 V (SELV)
Output signal (current)	±24 mA (SELV)
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω
Output – Digital	
Switching voltage (DO) (max.)	Supply voltage (applied): – 0.3 V
Continuous current (DO) (max.)	100 mA (no internal restriction)
Number of switching thresholds (DO)	2 (max.)
Configurable rise/fall delay time (DO)	0 … 60 s (via software)
Configurable functions (DO)	Disabled; U_S/GND switching; Threshold value switch; Frequency generator; Pulse output (S0 interface)
Output – Relays	
Number of changeover/switchover contacts	1
Switching voltage (max.)	250 VAC
Limiting continuous current (relay; module assembly)	6 A (≤ 60 °C); 3 A (60 … 70 °C)
Dielectric strength, open contact (AC, 1 min)	1 kV_{rms}
Number of switching thresholds (relay)	1 or 2 (adjustable)
Configurable rise/fall delay time (relay)	0 … 60 s (via software)
Signal Processing	
Measurement method	True RMS measurement (TRMS)
Measured variables (calculated)	Active power; Apparent power; Reactive power; Phase angle; Mains frequency
Limit frequency	2 kHz
Software filter (adjustable)	Folter level: 1 … 30
Step response (max.)	≤ 350 ms (default settings)
Measurement Error	
Transmission error (max.)	≤ 0.5 % for current and voltage (of the full scale value)
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC (SELV)
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 70 mA (+ I_{DO})
Safety and Protection	
Measurement category per EN/UL 61010-2-030	CAT III (input)
Overvoltage category	III
Note on insulation parameters	The digital output (DO) is at the potential of the supply. The service interface is at the potential of the analog output.
Protection type	IP20

Specialty Functions:

Configuration via:

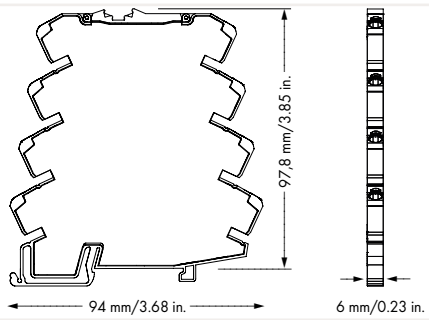
Test voltage	
Test voltage (input IN 2.1/relay output; per EN 61010-1)	5.4 kVAC ; 50 Hz; 5 s; 3.6 kVAC; 50 Hz; 1 min
Test voltage (input IN 2.1/relay output; per UL 61010-1)	3.51 kVAC; 60 Hz; 1 min
Test voltage (input/supply, analog output/relay output)	3.51 kVAC; 50 … 60 Hz; 1 min
Test voltage (supply/analog output)	3.6 kVAC; 50 … 60 Hz; 1 min
Insulation parameters per EN/UL 61010-1	
Line-to-neutral conductor voltage (AC) max.	300 V
Overvoltage category	III
Pollution degree	2
Insulation type (input/supply, analog output/relay output)	Reinforced insulation
Insulation parameters per EN 61010-1	
Line-to-neutral conductor voltage (AC) max.	600 V
Overvoltage category	III
Pollution degree	2
Insulation type (input IN 2.1/relay output)	Reinforced insulation
Insulation type (input/supply, analog output/relay output)	Double insulation (impedance and basic insulation) Requirement: The N (GND 1) input is dangerous when active!
Connection Data	
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	*picoMAX*® 5.0
Solid conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Fine-stranded conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Strip length	9 … 10 mm / 0.35 … 0.39 inch
Physical Data	
Width	22.5 mm / 0.886 inch
Height from upper-edge of DIN-rail	107 mm / 4.213 inch
Depth	110 mm / 4.331 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	149 g
Environmental Requirements	
Surrounding air temperature (operation)	−40 … +70 °C
Surrounding air temperature (storage)	−40 … +85 °C
Temperature range of connecting cable per EN 61010-2-201	≥ ($T_{surrounding\ air}$ + 10 K)
Temperature range of connecting cable per UL 61010-2-201	≥ 90 °C
Relative humidity	5 … 85 % (non-condensing)
Operating altitude (max.)	2000 m
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3
EMC emission of interference	EN 61000-6-3; EN 61326-2-3
Standards/Specifications	EN 61010-1; UL 61010-1; UL 61010-2-201

Power Signal Conditioner; Configurable; with Digital Output
857 Series



Power Signal Conditioner; 300 VAC / 5 A; Current and voltage output signal; Digital output; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-569	1



Short description:
WAGO's power signal conditioner measures both AC/DC voltages and currents, converting the input signal into a standard analog signal at the output. Measured value processing can be switched between RMS value or arithmetic mean value and between effective, apparent or reactive power, and phase angle.

Features:
- Two isolated measurement inputs for both AC/DC voltages and currents
- RMS measurement or arithmetic mean value
- A digital signal output reacts to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values)
- Switchable filter function
- Safe 3-way isolation with 3 kV test voltage per DIN EN 61010-1

» Configuration software	Page 332
» Configuration app	Page 333
» Accessories	Page 344

Configuration	
Configuration options	DIP switch; Interface configuration software; Interface configuration app
Input	
Input signal type	Voltage; Current
Input signal (voltage)	300 V AC/DC (IN 1)
Input signal (current)	0 …5 A AC/DC (IN 2)
Frequency range	15 … 70 Hz (AC)
Input resistance (current input)	≤ 10 mΩ
Input resistance (voltage input)	≥ 300 kΩ
Input current (max.)	10 A AC/DC (IN 2; permanent)
Input voltage (max.)	600 V (IN 1; permanent)
Response threshold	300 mV (IN 1); 10 mA (IN 2)
Resolution	30 mV (IN 1); 1 mA (IN 2)
Output	
Output signal type	Current; Voltage
Output signal (voltage)	0 … 5 V; 1 … 5 V; 0 … 10 V; 2 … 10 V (can be inverted, also bipolar)
Output signal (current)	0 … 10 mA; 2 … 10 mA; 0 … 20 mA; 4 … 20 mA (can be inverted, also bipolar)
Load impedance (voltage output)	≥ 1 kΩ
Load impedance (current output)	≤ 600 Ω
Output – Digital	
Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 or 2 (adjustable)
Configurable rise/fall delay time (DO)	0 … 60 s (via software)
Signal Processing	
Measurement method	RMS measurement; Arithmetic mean value
Limit frequency	2 kHz
Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	100 ms
Measurement Error	
Transmission error (max.)	≤ 0.5 % (of the full scale value)
Temperature coefficient	≤ 0.01 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 46 mA (+ IDO)
Safety and Protection	
Measurement category per EN/UL 61010-2-030	CAT II (input)
Note on insulation parameters	Danger: Configuration via the service interface must only be performed with a voltage-free measurement input! The digital output (DO) is at the potential of the supply
Protection type	IP20
Test voltage	
Test voltage (input/analog output/supply/service interface)	2.5 kVAC; 50 … 60 Hz; 1 min
Insulation parameters per EN/UL 61010-1	
Line-to-neutral conductor voltage (AC) max.	150 V
Overvoltage category	II
Pollution degree	2
Insulation type (input/analog output/supply/service interface)	Reinforced insulation
Insulation parameters per EN 61010-1	
Line-to-neutral conductor voltage (AC) max.	300 V
Overvoltage category	II
Pollution degree	2
Insulation type (input/analog output/supply/service interface)	Double insulation (impedance and basic insulation) Requirement: The GND 1 input is dangerous when active and the measurement is conducted as a low-side measurement!

Specialty Functions:

Configuration via:

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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	34 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 °C … +70 °C (at nominal current)
Surrounding air temperature (storage)	–40 … +85 °C
Temperature range of the connecting cable according to EN 61010-2-201	≥ ($T_{surrounding\ air}$ + 10 K)
Temperature range of connecting cable per UL 61010-2-201 (min.)	90 °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; EN 61326-2-3; EN 50121-3-2
EMC emission of interference	EN 61000-6-3; EN 61326-2-3; EN 50121-3-2
Standards/specifications	EN 61010-1; EN 61373

857-569

DIP Switch Adjustability

● = ON **Default**

DIP Switch S1

1	2	Measured Variable	3		4	Filter
		Effective power		Not assigned		Off
	●	Apparent power			●	Active
●		Reactive power				
●	●	Power factor				

DIP Switch S1

5	6	7	Output Signal Range
			0 … 20 mA
	●		4 … 20 mA
●			0 … 10 V
●	●		2 … 10 V
		●	0 … 10 mA
	●	●	2 … 10 mA
●		●	0 … 5 V
●	●	●	1 … 5 V

DIP Switch S1

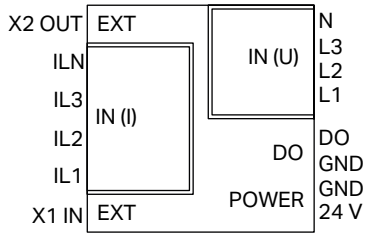
8	9	Measurement Range Underflow	Measurement Range Overflow	10	Digit Output DO/Signaling
		Lower limit of measurement range -5 %*	Upper limit of measurement range +2.5 %*		DO V_s+ switching
●		Lower limit of measurement range	Upper limit of measurement range +2.5 %	●	DO GND switching
	●	Lower limit of measurement range	Upper limit of measurement range		
●	●	Lower limit of measurement range	Upper limit of measurement range		

*acc. to NAMUR NE 43

Filter:
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).

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.

3-Phase Power Measurement Module; 3 x 400 / 690 V; 1 A; Modbus RTU
Serie 2857



3-Phase Power Measurement Module; 3 x 400 / 690 V; 1 A; Modbus RTU		
	Item No.	Pack. Unit
	2857-570/024-001	1

Short description:
WAGO's 3-phase power measurement module in a DIN-rail-mount enclosure measures electrical data in three-phase supply networks – remotely from the control level.
Measured variables such as active/apparent/reactive power, energy consumption, power factor, phase angle and frequency can be accessed via Modbus® Interface. In addition, the measured variables can be stored on a microSD card.

Features:
- Current measurement via 1A current transformer
- Mobile measurement and storage of measured values on microSD card
- Configuration and display of measured values during operation via configuration interface
- Compact device in DIN-rail-mount enclosure saves space used for building technology
- Communication of measured values via Modbus® Interface
- Configurable digital signal output as pulse output

Note:
- Additional setting options via interface configuration software

Specialty Functions:

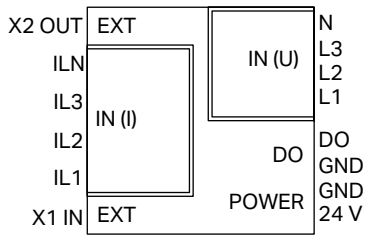
Configuration via:

Configuration	
Configuration options	Interface configuration software
Input	
Input signal type	Voltage; Current
Network configuration	3-phase power measurement with N-conductor (4 conductors); 3-phase power measurement with N-conductor (3 conductors)
Input signal (voltage)	400 VAC (U_{LN}); 690 VAC (U_{LL})
Input signal (current)	1 AAC (current transformer)
Frequency range	45 … 65 Hz (Harmonics analysis: 0 … 3.3 kHz)
Input resistance (voltage input)	1.5 MΩ
Input resistance (current input)	22 mΩ
Input voltage (max.)	400 VAC (U_{LN}); 690 VAC (U_{LL})
Input current (max.)	1 AAC
Response threshold	10 mA
Resolution (current)	10 mA
Output – Digital	
Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Configurable functions (DO)	Threshold value switch; S0 interface (pulse output)
Communication	
Communication	Modbus RTU
Interface	RS-485 (2-wire) via RJ-45
Number of participants (max.)	32
Addressing	Via interface configuration software
Signal Processing	
Measurement method	True RMS measurement (measured value acquisition with 8 kHz)
Measured variables (calculated)	Line-to-line voltage; Power output; Energy; Power factors; Mains frequency; Harmonic analysis (up to the 41st harmonic); Total harmonic distortion (THD)
Signal form	Any periodic signals (considering the threshold frequencies)
Limit frequency	15.9 kHz
Type of memory card	WAGO 758-879/000-3102 (microSD; 2 GB)
Measurement Error	
Transmission error (max.)	≤ 0.5 % for current and voltage (of the full scale value)
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_S	24 VDC (SELV)
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 50 mA (+ I_{DO})
Safety and Protection	
Test voltage (input/output/supply)	3.51 kV AC; 50 Hz; 1 min
Safe isolation (input/supply and communication)	Per EN 61010-1
Requirement (N input)	Shall not be dangerously active
Requirement (IL_x input)	Coils/converters with basic insulation
External/Neutral conductor voltage	600 V AC/DC
Overvoltage category	III
Pollution degree	2
Protection type	IP20

» Configuration software Page 332

Connection Data	
Connection type	Voltage
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	WAGO 804 Series
Solid conductor	0.25 … 2.5 mm² / 20 … 12 AWG
Fine-stranded conductor	0.25 … 2.5 mm² / 22 … 12 AWG
Strip length	10 … 11 mm / 0.39 … 0.43 inch
Connection type 2	Current/Power supply/DO
Connection technology 2	Push-in CAGE CLAMP®
WAGO Connector 2	WAGO 805 Series
Solid conductor 2	0.2 … 1.5 mm² / 24 … 16 AWG
Fine-stranded conductor 2	0.2 … 1.5 mm² / 24 … 16 AWG
Strip length 2	9 … 10 mm / 0.35 … 0.39 inch
Connection type 3	Modbus® communication
Connector	2 x RJ-45 (daisy chain configuration)
Geometric Data	
Width	72 mm / 2.835 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	115.6 g
Environmental Requirements	
Surrounding air temperature (operation)	−40 … +70 °C
Surrounding air temperature (storage)	−40 … +85 °C
Relative humidity	5 … 95 % (non-condensing)
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-3
Standards/specifications	EN 61010-1

3-Phase Power Measurement Module; 3 x 400 / 690 V; 5 A; Modbus RTU
Serie 2857



3-Phase Power Measurement Module; 3 x 400 / 690 V; 5 A; Modbus RTU		
	Item No.	Pack. Unit
	2857-570/024-005	1

Short description:
WAGO's 3-phase power measurement module in a DIN-rail-mount enclosure measures electrical data in three-phase supply networks – remotely from the control level. Measured variables such as active/apparent/reactive power, energy consumption, power factor, phase angle and frequency can be accessed via Modbus® Interface. In addition, the measured variables can be stored on a microSD card.

Features:
- Current measurement via 5A current transformer
- Mobile measurement and storage of measured values on microSD card
- Configuration and display of measured values during operation via configuration interface
- Compact device in DIN-rail-mount enclosure saves space used for building technology
- Communication of measured values via Modbus® Interface
- Configurable digital signal output as pulse output

Note:
- Additional setting options via interface configuration software

Specialty Functions:

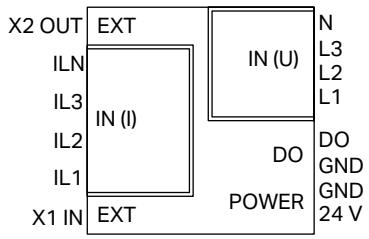
Configuration via:

Configuration	
Configuration options	Interface configuration software
Input	
Input signal type	Voltage; Current
Network configuration	3-phase power measurement with N-conductor (4 conductors); 3-phase power measurement with N-conductor (3 conductors)
Input signal (voltage)	400 VAC (U_{LN}); 690 VAC (U_{LL})
Input signal (current)	5 AAC (current transformer)
Frequency range	45 … 65 Hz (Harmonics analysis: 0 … 3.3 kHz)
Input resistance (voltage input)	1.5 MΩ
Input resistance (current input)	22 mΩ
Input voltage (max.)	400 VAC (U_{LN}); 690 VAC (U_{LL})
Input current (max.)	5 AAC
Response threshold	5 mA
Resolution (current)	0.15 mA
Output – Digital	
Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Configurable functions (DO)	Threshold value switch; S0 interface (pulse output)
Communication	
Communication	Modbus RTU
Interface	RS-485 (2-wire) via RJ-45
Number of participants (max.)	32
Addressing	Via interface configuration software
Signal Processing	
Measurement method	True RMS measurement (measured value acquisition with 8 kHz)
Measured variables (calculated)	Line-to-line voltage; Power output; Energy; Power factors; Mains frequency; Harmonic analysis (up to the 41st harmonic); Total harmonic distortion (THD)
Signal form	Any periodic signals (considering the threshold frequencies)
Limit frequency	15.9 kHz
Type of memory card	WAGO 758-879/000-3102 (microSD; 2 GB)
Measurement Error	
Transmission error (max.)	≤ 0.5 % for current and voltage (of the full scale value)
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_S	24 VDC (SELV)
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 50 mA (+ I_{DO})
Safety and Protection	
Test voltage (input/output/supply)	3.51 kV AC; 50 Hz; 1 min
Safe isolation (input/supply and communication)	Per EN 61010-1
Requirement (N input)	Shall not be dangerously active
Requirement (IL_x input)	Coils/converters with basic insulation
External/Neutral conductor voltage	600 V AC/DC
Overvoltage category	III
Pollution degree	2
Protection type	IP20

» Configuration software Page 332

Connection Data	
Connection type	Voltage
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	WAGO 804 Series
Solid conductor	0.25 … 2.5 mm² / 20 … 12 AWG
Fine-stranded conductor	0.25 … 2.5 mm² / 22 … 12 AWG
Strip length	10 … 11 mm / 0.39 … 0.43 inch
Connection type 2	Current/Power supply/DO
Connection technology 2	Push-in CAGE CLAMP®
WAGO Connector 2	WAGO 805 Series
Solid conductor 2	0.2 … 1.5 mm² / 24 … 16 AWG
Fine-stranded conductor 2	0.2 … 1.5 mm² / 24 … 16 AWG
Strip length 2	9 … 10 mm / 0.35 … 0.39 inch
Connection type 3	Modbus® communication
Connector	2 x RJ-45 (daisy chain configuration)
Geometric Data	
Width	72 mm / 2.835 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	115.6 g
Environmental Requirements	
Surrounding air temperature (operation)	−40 … +70 °C
Surrounding air temperature (storage)	−40 … +85 °C
Relative humidity	5 … 95 % (non-condensing)
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-3
Standards/specifications	EN 61010-1

3-Phase Power Measurement Module; 3 x 400 / 690 V; RC; Modbus RTU
Serie 2857



3-Phase Power Measurement Module; 3 x 400 / 690 V; RC; Modbus RTU		
	Item No.	Pack. Unit
	2857-570/024-000	1

Short description:
WAGO's 3-phase power measurement module in a DIN-rail-mount enclosure measures electrical data in three-phase supply networks – remotely from the control level. Measured variables such as active/apparent/reactive power, energy consumption, power factor, phase angle and frequency can be accessed via Modbus® Interface. In addition, the measured variables can be stored on a microSD card.

Features:
- Current measurement via Rogowski Coils RC xxx
- Mobile measurement and storage of measured values on microSD card
- Configuration and display of measured values during operation via configuration interface
- Compact device in DIN-rail-mount enclosure saves space used for building technology
- Communication of measured values via Modbus® Interface
- Configurable digital signal output as pulse output

Note:
- Additional setting options via interface configuration software

Specialty Functions:

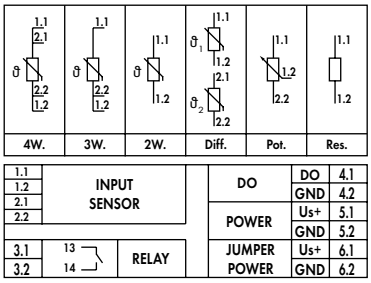
Configuration via:

Configuration	
Configuration options	Interface configuration software
Input	
Input signal type	Voltage; Current
Network configuration	3-phase power measurement with N-conductor (4 conductors); 3-phase power measurement with N-conductor (3 conductors)
Input signal (voltage)	400 VAC (U_{LN}); 690 VAC (U_{LL}); 90 mVAC (WAGO Rogowski Coils RC xxx)
Sensitivity	22.5 mV/kA (WAGO Rogowski Coils RC xxx)
Measurement range (current)	4000 AAC (WAGO Rogowski Coils RC xxx)
Frequency range	45 … 65 Hz (Harmonics analysis: 0 … 3.3 kHz)
Output – Digital	
Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Configurable functions (DO)	Threshold value switch; S0 interface (pulse output)
Communication	
Communication	Modbus RTU
Interface	RS-485 (2-wire) via RJ-45
Number of participants (max.)	32
Addressing	Via interface configuration software
Signal Processing	
Measurement method	True RMS measurement (measured value acquisition with 8 kHz)
Measured variables (calculated)	Line-to-line voltage; Power output; Energy; Power factors; Mains frequency; Harmonic analysis (up to the 41st harmonic); Total harmonic distortion (THD)
Signal form	Any periodic signals (considering the threshold frequencies)
Limit frequency	15.9 kHz
Type of memory card	WAGO 758-879/000-3102 (microSD; 2 GB)
Measurement Error	
Transmission error (max.)	≤ 0.5 % for current and voltage (of the full scale value)
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_S	24 VDC (SELV)
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 50 mA (+ I_{DO})
Safety and Protection	
Test voltage (input/output/supply)	3.51 kV AC; 50 Hz; 1 min
Safe isolation (input/supply and communication)	Per EN 61010-1
Requirement (N input)	Shall not be dangerously active
Requirement (IL_x input)	Coils/converters with basic insulation
External/Neutral conductor voltage	600 V AC/DC
Overvoltage category	III
Pollution degree	2
Protection type	IP20

» Configuration software Page 332

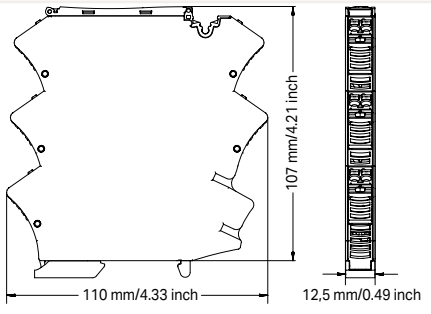
Connection Data	
Connection type	Voltage
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	WAGO 804 Series
Solid conductor	0.25 … 2.5 mm² / 20 … 12 AWG
Fine-stranded conductor	0.25 … 2.5 mm² / 22 … 12 AWG
Strip length	10 … 11 mm / 0.39 … 0.43 inch
Connection type 2	Current/Power supply/DO
Connection technology 2	Push-in CAGE CLAMP®
WAGO Connector 2	WAGO 805 Series
Solid conductor 2	0.2 … 1.5 mm² / 24 … 16 AWG
Fine-stranded conductor 2	0.2 … 1.5 mm² / 24 … 16 AWG
Strip length 2	9 … 10 mm / 0.35 … 0.39 inch
Connection type 3	Modbus® communication
Connector	2 x RJ-45 (daisy chain configuration)
Geometric Data	
Width	72 mm / 2.835 inch
Height from upper-edge of DIN-rail	55 mm / 2.165 inch
Depth	90 mm / 3.543 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	117.6 g
Environmental Requirements	
Surrounding air temperature (operation)	−40 … +70 °C
Surrounding air temperature (storage)	−40 … +85 °C
Relative humidity	5 … 95 % (non-condensing)
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-3
Standards/specifications	EN 61010-1

RTD Threshold Value Switch; Configurable
2857 Series



Threshold Value Switch; RTD sensors; Relay/1 make contact; Digital output; Supply voltage: 24 VDC; Module width: 12.5 mm

	Item No.	Pack. Unit
	2857-533	1



Short description:
WAGO's RTD threshold value switch for RTD sensors, potentiometers and resistors monitors and reports signals of up to two switching thresholds.

Features:
- Both digital signal output and relay with make contact react to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values)
- Configurable RTD factor
- Adjustable software filter
- Input/output response simulation via configuration display
- Safe 3-way isolation with 4 kV test voltage per EN 61140

Note:
Additional setting options via interface configuration software/app

Configuration	
Configuration options	DIP switch; Interface configuration software; Interface configuration app; Configuration display
Input	
Input signal type	Resistor; RTD sensors; Potentiometers
Input – RTD Sensors	
Sensor types (RTD)	Pt100; Pt200; Pt500; Pt1000; Pt5000; Pt10000; Pt10 … Pt20000
Sensor connection	2-wire; 3-wire; 4-wire; differential
Sensor power supply (RTD) max.	≤ 0.5 mA
Temperature measurement range (RTD)	−200 … +850 °C
Input – Resistors	
Input range (resistor)	0 … 100 kΩ
Input range (potentiometer)	0 … 100 kΩ
Output – Digital	
Max. switching voltage (DO)	Supply voltage applied: −0.3 V
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 or 2 (adjustable)
Configurable rise/fall delay time (DO)	0 … 60 s (via software)
Output – Relay	
Number of make contacts/switch-on contacts	1
Contact material (relay)	AgNi + Au
Switching voltage (max.)	250 VAC
Limiting continuous current (relay; module assembly)	6 A (≤ 60 °C); 3 A (60 … +70 °C)
Dielectric strength, open contact (AC, 1 min)	1 kV_{rms}
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	4 ms
Bounce time (typ.)	8 ms
Number of switching thresholds (relay)	1 or 2 (adjustable)
Configurable rise/fall delay time (relay)	0 … 60 s (via software)
Signal Processing	
Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	60 ms (2-wire); 360 ms (3-wire); 540 ms (4-wire); 360 ms (potentiometer)
Hysteresis	adjustable via DIP switch or software
Measurement Error	
Transmission error (max.)	±1 K
Temperature coefficient	≤ 0.01 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA (+ I_{DO})
Safety and Protection	
Rated voltage of the measurement circuit connections per EN 61010-2-030	AC 300 V
Measurement category per EN/UL 61010-2-030	CAT II (input)
Note on insulation parameters	Temperature sensors are not intended for use in dangerous circuits, provided the external temperature sensors used do not have basic insulation in accordance with EN/UL 61010-1 (300 VAC; overvoltage category II; pollution degree 2). The digital output (DO) is at the potential of the supply
Protection type	IP20
Test voltage	
Test voltage (input/relay output/supply)	4 kVAC; 60 Hz; 1 min
Test voltage (input/service interface)	3 kVAC; 60 Hz; 1 min
Test voltage (relay output/service interface)	4 kVAC; 60 Hz; 1 min
Test voltage (supply/service interface)	2.5 kVAC; 60 Hz; 1 min

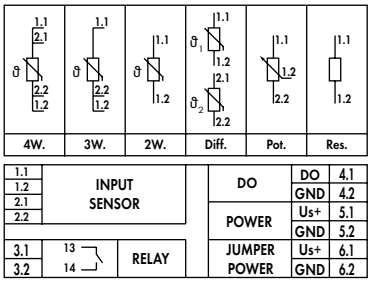
» DIP switch configuration, see www.wago.com
» Configuration software Page 332
» Configuration app Page 333
» Configuration display Page 334
» Accessories Page 344

Specialty Functions:

Configuration via:

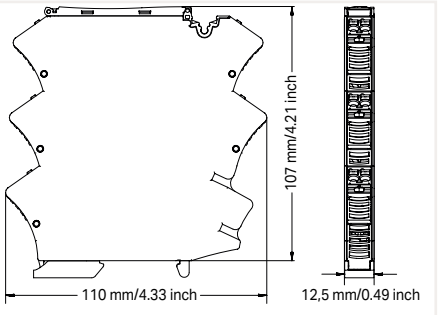
Insulation parameters per EN/UL 61010-1	
Line-to-neutral conductor voltage (AC) max.	300 V
Overvoltage category	II
Pollution degree	2
Insulation type (input, supply and service interface/ relay output)	Reinforced insulation
Insulation type (input/supply/service interface)	Basic insulation
Connection Data	
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	picoMAX® 5.0
Solid conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Fine-stranded conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Strip length	9 … 10 mm / 0.35 … 0.39 inch
Geometric Data	
Width	12.5 mm / 0.492 inch
Height from upper-edge of DIN-rail	107 mm / 4.213 inch
Depth	110 mm / 4.331 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	86.5 g
Environmental Requirements	
Surrounding air temperature (operation)	–40 … +70 °C
Surrounding air temperature (storage)	–40 … +85 °C
Temperature range of the connecting cable according to EN 61010-2-201	≥ ($T_{surrounding\ air}$ + 10 K)
Temperature range of connecting cable per UL 61010-2-201 (min.)	90 °C
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3; EN 50121-3-2
EMC emission of interference	EN 61000-6-4; EN 61326-2-3; EN 50121-3-2
Standards/specifications	EN 61010-1; EN 61373

RTD Threshold Value Switch; Configurable; for Railway Applications
2857 Series



Threshold value switch; RTD sensors; Relay/1 make contact; Digital output; Supply voltage: 24 VDC; Module width: 12.5 mm

	Item No.	Pack. Unit
	2857-533/000-001	1



Short description:
The WAGO RTD Threshold Value Switch for RTD sensors, potentiometers and resistors monitors and reports signals for up to two switching thresholds.

Features:
- Both digital signal output and relay with make contact react to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values).
- Configurable RTD factor
- Adjustable software filter
- Simulation of input/output response via WAGO Configuration Display or WAGO Interface Configuration Software
- Safe 3-way isolation with 4 kV test voltage per EN 61010-1
- For railway applications

Note:
This product is supplied with 24 VDC, which can be commoned using lateral push-in type jumper bars: (6.1) US+ (BR) and (6.2) GND 2 (BR). With this variant, it is necessary to ensure that the maximum permissible total current of 2 A is not exceeded.

» Configuration software	Page 332
» Configuration display	Page 334
» Accessories	Page 344

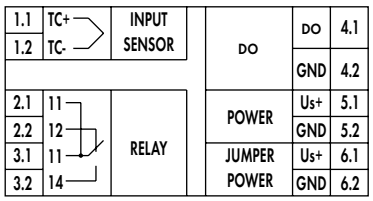
Configuration	
Configuration options	WAGO Interface Configuration Software; WAGO Configuration Display
Input	
Input signal type	Resistor; RTD sensors; Potentiometers
Input – RTD Sensors	
Sensor types (RTD)	Pt100; Pt200; Pt500; Pt1000; Pt5000; Pt10000; Pt10 … Pt20000
Sensor connection	2-wire; 3-wire; 4-wire; differential
Sensor power supply (RTD) (max.)	≤ 0.5 mA
Temperature measurement range (RTD)	−200 … +850 °C
Input – Resistors	
Input range (resistor)	0 … 100 kΩ
Input range (potentiometer)	0 … 100 kΩ
Output – Digital	
Switching voltage (DO) (max.)	Supply voltage (applied): −0.3 V
Continuous current (DO) (max.)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 or 2 (adjustable)
Configurable rise/fall delay time (DO)	0 … 60 s (via software)
Output – Relay	
Number of make/switch-on contacts	1
Contact material (relay)	AgNi + Au
Switching voltage (max.)	250 VAC
Limiting continuous current (relay; module assembly)	6 A (≤ 60 °C); 3 A (60 … +70 °C)
Dielectric strength, open contact (AC, 1 min)	1 kV_{rms}
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	4 ms
Bounce time (typ.)	8 ms
Number of switching thresholds (relay)	1 or 2 (adjustable)
Configurable rise/fall delay time (relay)	0 … 60 s (via software)
Signal Processing	
Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	60 ms (2-wire); 360 ms (3-wire); 540 ms (4-wire); 360 ms (potentiometer)
Measurement Error	
Transmission error (max.)	± 1 K
Temperature coefficient	≤ 0.01 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA (+ I_{DO})
Safety and Protection	
Rated voltage of the measurement circuit connections per EN 61010-2-030	AC 300 V
Measurement category per EN/UL 61010-2-030	CAT II (input)
Note on insulation parameters	Temperature sensors are not intended for use in dangerous circuits, provided the external temperature sensors used do not have basic insulation in accordance with EN/UL 61010-1 (300 VAC; overvoltage category II; pollution degree 2). The digital output (DO) is at the potential of the supply
Protection type	IP20
Test voltage	
Test voltage (input/relay output/supply)	4 kVAC; 60 Hz; 1 min
Test voltage (input/service interface)	3 kVAC; 60 Hz; 1 min
Test voltage (relay output/service interface)	4 kVAC; 60 Hz; 1 min
Test voltage (supply/service interface)	2.5 kVAC; 60 Hz; 1 min

Specialty Functions:

Configuration via:

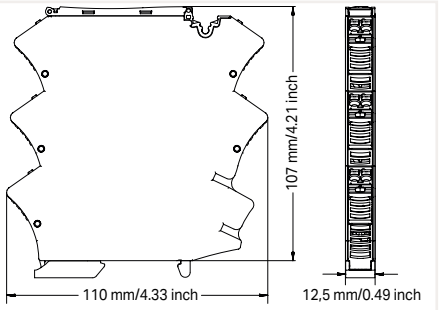
Insulation parameters per EN/UL 61010-1	
Line-to-neutral conductor voltage (AC) max.	300 V
Overvoltage category	II
Pollution degree	2
Insulation type (input, supply and service interface/ relay output)	Reinforced insulation
Insulation type (input/supply/service interface)	Basic insulation
Connection Data	
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	*picoMAX*® 5.0
Solid conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Fine-stranded conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Strip length	9 … 10 mm / 0.35 … 0.39 inch
Physical Data	
Width	12.5 mm / 0.492 inch
Height from upper-edge of DIN-rail	107 mm / 4.213 inch
Depth	110 mm / 4.331 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	86 g
Environmental Requirements	
Surrounding air temperature (operation)	−40 … +70 °C
Surrounding air temperature (storage)	−40 … +85 °C
Temperature range of connecting cable per EN 61010-2-201	≥ ($T_{surrounding\ air}$ +30 K)
Relative humidity	5 … 95 %
Operating altitude (max.)	2000 m
Environmental conditions per DIN EN 50155:2018-05	
Altitude	A1
Operating temperature class	OT3
Extended operating temperature at switch-on	ST1
Quick temperature changes	H1
Power supply interruptions	S1
Power supply switching classes	C2
Service life	L4 at 40 °C (max.)
Protective coatings for populated PCBs	PC2
Temporary supply voltage dips	Criterion B
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3; EN 50121-3-2
EMC emission of interference	EN 61000-6-4; EN 61326-2-3; EN 50121-3-2
Standards/Specifications	EN 61010-1; EN 61373

Threshold Value Switch; Thermocouples; Configurable
2857 Series



Threshold Value Switch; Thermocouple; Relay/1 changeover contact; Digital output; Supply voltage: 24 VDC; Module width: 12.5 mm

Item No.	Pack. Unit
2857-534	1



Short description:
WAGO's thermocouple threshold value switch for TC sensors monitors and reports signals of up to two switching thresholds.

Features:
- Both digital signal output and relay with changeover contact react to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values)
- Adjustable software filter
- Input/output response simulation via configuration display
- Safe 3-way isolation with 4 kV test voltage per EN 61140

Note:
Additional setting options via interface configuration software/app

» DIP switch configuration, see www.wago.com
» Configuration software Page 332
» Configuration app Page 333
» Configuration display Page 334
» Accessories Page 344

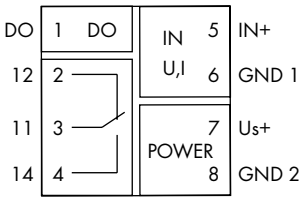
Configuration	
Configuration options	DIP switch; Interface configuration software; Interface configuration app; Configuration display
Input	
Input signal type	TC sensors
Input – TC Sensors	
Sensor types (TC)	Type J, K, E, N, R, S, T, B, C
Temperature measurement range (TC)	−210 … +1200 °C (Type J); −200 … +1372 °C (Type K)
Cold junction compensation	ON/OFF (default: ON)
Cold junction error	3 K (2 K typ.)
Output – Digital	
Max. switching voltage (DO)	Supply voltage applied: −0.3 V
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 or 2 (adjustable)
Configurable rise/fall delay time (DO)	0 … 60 s (via software)
Output – Relay	
Number of changeover/switchover contacts	1
Contact material (relay)	AgNi + Au
Switching voltage (max.)	250 VAC
Limiting continuous current (relay; module assembly)	6 A (≤ 60 °C); 3 A (60 … +70 °C)
Dielectric strength, open contact (AC, 1 min)	1 kV_{rms}
Pull-in time (typ.)	8 ms
Drop-out time (typ.)	4 ms
Bounce time (typ.)	8 ms
Number of switching thresholds (relay)	1 or 2 (adjustable)
Configurable rise/fall delay time (relay)	0 … 60 s (via software)
Signal Processing	
Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	60 ms (cold junction compensation OFF); 360 ms (cold junction compensation ON)
Hysteresis	adjustable via DIP switch or software
Measurement Error	
Transmission error (max.)	±1 K
Temperature coefficient	≤ 0.01 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA (+ I_{DO})
Safety and Protection	
Rated voltage of the measurement circuit connections per EN 61010-2-030	AC 300 V
Measurement category per EN/UL 61010-2-030	CAT II (input)
Note on insulation parameters	Temperature sensors are not intended for use in dangerous circuits, provided the external temperature sensors used do not have basic insulation in accordance with EN/UL 61010-1 (300 VAC; overvoltage category II; pollution degree 2). The digital output (DO) is at the potential of the supply
Protection type	IP20
Test voltage	
Test voltage (input/relay output/supply)	4 kVAC; 60 Hz; 1 min
Test voltage (input/service interface)	3 kVAC; 60 Hz; 1 min
Test voltage (relay output/service interface)	4 kVAC; 60 Hz; 1 min
Test voltage (supply/service interface)	2.5 kVAC; 60 Hz; 1 min
Insulation parameters per EN/UL 61010-1	
Line-to-neutral conductor voltage (AC) max.	300 V
Overvoltage category	II
Pollution degree	2
Insulation type (input, supply and service interface/ relay output)	Reinforced insulation
Insulation type (input/supply/service interface)	Basic insulation

Specialty Functions:

Configuration via:

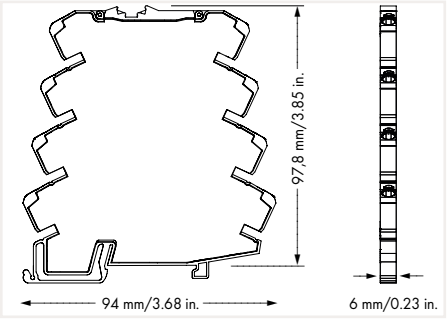
Connection Data	
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	*picoMAX*® 5.0
Solid conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Fine-stranded conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Strip length	9 … 10 mm / 0.35 … 0.39 inch
Geometric Data	
Width	12.5 mm / 0.492 inch
Height from upper-edge of DIN-rail	107 mm / 4.213 inch
Depth	110 mm / 4.331 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	63.9 g
Environmental Requirements	
Surrounding air temperature (operation)	−40 … +70 °C
Surrounding air temperature (storage)	−40 … +85 °C
Temperature range of the connecting cable according to EN 61010-2-201	≥ ($T_{surrounding\ air}$ + 10 K)
Temperature range of connecting cable per UL 61010-2-201 (min.)	90 °C
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3; EN 50121-3-2
EMC emission of interference	EN 61000-6-4; EN 61326-2-3; EN 50121-3-2
Standards/specifications	EN 61010-1; EN 61373

Threshold Value Switch; Configurable; with Analog Input and Changeover Relay Output
857 Series



Threshold Value Switch; Analog values; Relay/1 changeover contact; Digital output; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-531	1



Short description:
WAGO's threshold value switch for analog signals monitors standard analog signals and reports signals exceeding a preset threshold.

Features:
- PC configuration interface
- Digital switching output
- Changeover contact relay output
- Calibrated measurement range switching
- Threshold value configuration via DIP switch and teach-in function via push/slide switch
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Note:
Additional setting options via interface configuration software/app

» Configuration software	Page 332
» Configuration App	Page 333
» Accessories	Page 344

Configuration	
Configuration options	DIP switch; Interface configuration software; Interface configuration app; Push/slide switch
Input	
Input signal type	Voltage; Current
Input signal (voltage)	±10 V; 0 … 30 V
Input signal (current)	± 20 mA
Input resistance (current input)	≤ 200 Ω
Input resistance (voltage input)	≥ 100 kΩ
Input current (max.)	22 mA
Input voltage (max.)	31 V
Output – Digital	
Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 (adjustable)
Configurable rise/fall delay time (DO)	10 s
Output – Relay	
Number of changeover/switchover contacts	1
Switching voltage (max.)	250 VAC
Limiting continuous current (relay; module assembly)	6 A (≤ 60 °C); 2 A (60 … +70 °C)
Switching power (resistive) max.	1250 VA AC
Drop-out time (typ.)	4 ms
Number of switching thresholds (relay)	1 or 2 (adjustable)
Configurable rise/fall delay time (relay)	0 … 30 s (via software)
Signal Processing	
Step response (typ.)	16 ms
Hysteresis	adjustable via DIP switch or software
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 25 mA (+ IDO)
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	38.6 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air temperature (storage)	–40 … +85 °C
Relative humidity	5 … 85 % (no condensation permissible)
Operating altitude (max.)	2000 m
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61131-2; EN 61326-1
EMC emission of interference	EN 61000-6-4; EN 61131-2; EN 61326-1
Standards/specifications	EN 61373

Specialty Functions:

Configuration via:

857-531

DIP Switch Adjustability

● = ON Default

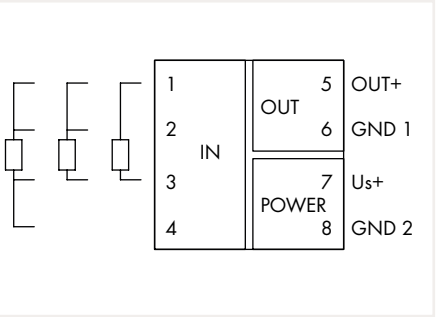
DIP-Switch S1

Input Signal Limits ±0.25 V; ±0.5 mA					Hysteresis	
1	2	3	4		5	
				±10 V		5 mV; 10 µA
	●			0 ... 10 V	●	10 mV, 20 µA
		●		2 ... 10 V		
	●	●		0 ... 5 V		
			●	1 ... 5 V		
	●		●	±5 V		
		●	●	0 ... 15 V		
	●	●	●	0 ... 30 V		
●				±20 mA		
●	●			0 ... 20 mA		
●		●		4 ... 20 mA		
●	●	●		0 ... 10 mA		
●			●	2 ... 10 mA		
●	●		●	±10 mA		

DIP Switch S1

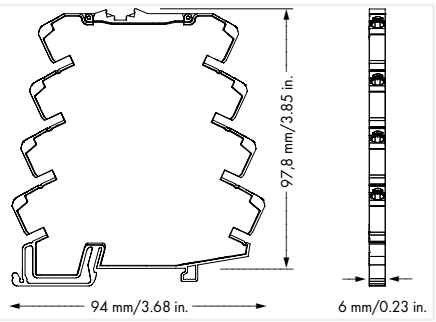
Configurable Rise/Fall Delay Time in sec.				Digital Output DO Signaling		
6	7	8		9	10	
			0			DO not active
●			1		●	GND → U_N (switching)
	●		2	●	●	U_N → GND (switching)
●	●		3			
		●	4			
●		●	5			
	●	●	8			
●	●	●	10			

Temperature Signal Conditioner; Configurable; for RTD Sensors
857 Series



Temperature Signal Conditioner for Pt Sensors; Current and voltage output signal; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-800	1



Short description:
WAGO's temperature signal conditioner records Pt100, Pt200, Pt500, and Pt1000 sensors, as well as resistors up to 4.5 kOhm, converting the temperature signal into a standard analog signal at the output.

Features:
- For Pt100, Pt200, Pt500 and Pt1000 sensors, as well as resistors up to 4.5 kOhm
- 2-, 3- and 4-wire connection technology
- Calibrated measurement range switching
- Detects sensor wire break/short circuit
- Detects measurement range underflow/overflow
- Switchable clipping
- Limitation of standard analog signal to upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Configuration	
Configuration options	DIP switch
Input	
Input signal type	Pt sensors; Resistor
Input – RTD Sensors	
Sensor types (RTD)	Pt100; Pt200; Pt500; Pt1000
Sensor connection	2-wire; 3-wire; 4-wire (switchable)
Sensor power supply (RTD) max.	≤ 0.5 mA
Temperature measurement range (RTD)	−200 … +850 °C
Input – Resistors	
Input range (resistor)	0 … 1 kΩ; 0 … 4.5 kΩ
Output	
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
Signal Processing	
Step response (typ.)	180 ms (2-wire); 360 ms (3-wire)
Measurement Error	
Transmission error (typ.)	≤ 0.1 % at full measurement span
Transmission error for the set measurement range	≤ ((10 K/set measurement range [K]) + 0.1) %
Temperature coefficient	≤ 0.02 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	35.3 g
Environmental Requirements	
Surrounding air temperature (operation)	−25 … +70 °C
Surrounding air 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

» Accessories Page 344

Specialty Functions:

Configuration via:

857-800

DIP Switch Adjustability

● = ON | Default

DIP Switch S1

Wire Connection			Sensor Type				Output Signal						Measurement Range Underflow	Measurement Range Overflow	Wire Break	Short Circuit
1	2		3	4	5		6	7	8		9	10				
		2 Leiter				Pt100				0 ... 20 mA			Lower limit of output range - 5 % *	Upper limit of output range + 2.5 % *	Upper limit of output range + 5 % *	Lower limit of output range - 12.5 % *
●		3 Leiter	●			Pt200	●			4 ... 20 mA						
	●	4 Leiter		●		Pt500		●		0 ... 10 mA	●		Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %	Lower limit of output range
			●	●		Pt1000	●	●		2 ... 10 mA						
					●	1 kΩ			●	0 ... 10 V		●	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %	Upper limit of output range + 5 %
			●		●	4,5 kΩ	●		●	2 ... 10 V						
								●	●	0 ... 5 V	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
							●	●	●	1 ... 5 V						

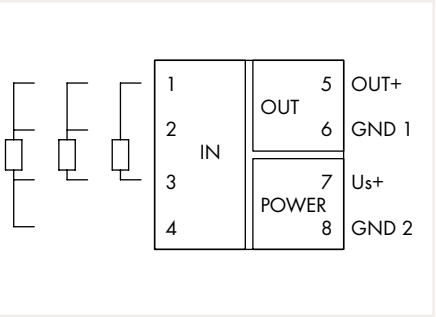
* acc. to NAMUR NE 43

DIP Switch S2

Start Temperature						End Temperature																									
1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F
				0	32							100	212					●		75	167						●	210	410					●	●	475	887
●				-200	-328	●						0	32	●				●		80	176	●					●	220	428	●				●	●	500	932
	●			-175	-283		●					5	41		●			●		85	185		●				●	230	446		●			●	●	525	997
●	●			-150	-238	●	●					10	50	●	●			●		90	194	●	●				●	240	464	●	●			●	●	550	1022
		●		-125	-193			●				15	59			●		●		95	203			●			●	250	482			●		●	●	575	1067
●		●		-100	-148	●		●				20	68	●		●		●		100	212	●		●			●	260	500	●		●		●	●	600	1112
	●	●		-90	-130		●	●				25	77		●	●		●		110	230		●	●			●	270	518		●	●		●	●	625	1157
●	●	●		-80	-112	●	●	●				30	86	●	●	●		●		120	248	●	●	●			●	280	536	●	●	●		●	●	650	1202
			●	-70	-94				●			35	95				●	●		130	266				●		●	290	554				●	●	●	675	1247
●			●	-60	-76	●			●			40	104	●			●	●		140	284	●			●		●	300	572	●			●	●	●	700	1292
	●		●	-50	-58		●		●			45	113		●		●	●		150	302		●		●		●	325	617		●		●	●	●	725	1337
●	●		●	-40	-40	●	●		●			50	122	●	●		●	●		160	320	●	●		●		●	350	662	●	●		●	●	●	750	1382
		●	●	-30	-22			●	●			55	131			●	●	●		170	338			●	●		●	375	707			●	●	●	●	775	1427
●		●	●	-20	-4	●		●	●			60	140	●		●	●	●		180	356	●		●	●		●	400	752	●		●	●	●	●	800	1472
	●	●	●	-10	14		●	●	●			65	149		●	●	●	●		190	374		●	●	●		●	425	797		●	●	●	●	●	825	1517
●	●	●	●	0	32	●	●	●	●			70	158	●	●	●	●	●		200	392	●	●	●	●		●	450	842	●	●	●	●	●	●	850	1562

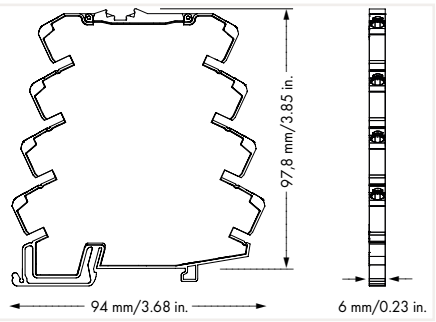
The minimum distance from the start temperature to the end temperature may not fall short of 50K degrees on the Celsius (C) scale or 122K degrees on the Fahrenheit (F) scale.

Temperature Signal Conditioner; Configurable; for RTD Sensors
857 Series



Temperature Signal Conditioner for Pt Sensors; Current and voltage output signal; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-801	1



Short description:
WAGO's temperature signal conditioner records Pt100, Pt200, Pt500, and Pt1000 sensors, as well as resistors up to 4.5 kOhm, converting the temperature signal into a standard analog signal at the output.

Features:
- PC configuration interface
- For Pt100, Pt200, Pt500 and Pt1000 sensors, as well as resistors up to 4.5 kOhm
- 2-, 3- and 4-wire connection technology
- Detects calibrated measurement range switching
- Detects sensor wire break/short circuit
- Measurement range underflow/overflow
- Switchable clipping
- Limitation of standard analog signal to upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Note:
Additional setting options as well as output signal inversion via interface configuration software or interface configuration app

Configuration	
Configuration options	DIP switch; Interface configuration software; Interface configuration app
Input	
Input signal type	Pt sensors; Resistor
Input – RTD Sensors	
Sensor types (RTD)	Pt100; Pt200; Pt500; Pt1000
Sensor connection	2-wire, 3-wire, 4-wire (switchable)
Sensor power supply (RTD) max.	≤ 0.5 mA
Temperature measurement range (RTD)	−200 … +850 °C
Measurement span (RTD) min.	50 K
Input – Resistors	
Input range (resistor)	0 … 1 kΩ; 0 … 4.5 kΩ
Measurement span (min.)	50 Ω
Output	
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
Signal Processing	
Step response (typ.)	180 ms (2-wire); 360 ms (3-wire)
Measurement Error	
Transmission error (typ.)	≤ 0.1 % at full measurement span
Transmission error for the set measurement range	≤ ((10 K/set measurement range [K]) + 0.1) %
Temperature coefficient	≤ 0.02 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	35.1 g
Environmental Requirements	
Surrounding air temperature (operation)	−25 … +70 °C
Surrounding air 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

» Configuration software Page 332
» Configuration App Page 333
» Accessories Page 344

Specialty Functions:

Configuration via:



857-801

DIP Switch Adjustability

● = ON | **Default**

DIP Switch S1

Wire Connection			Sensor Type				Output Signal						Measurement Range Underflow	Measurement Range Overflow	Wire Break	Short Circuit
1	2		3	4	5		6	7	8		9	10				
		2-wire				Pt100				0 ... 20 mA			Lower limit of output range - 5 % *	Upper limit of output range + 2.5 % *	Upper limit of output range + 5 % *	Lower limit of output range - 12.5 % *
●		3-wire	●			Pt200	●			4 ... 20 mA						
	●	4-wire		●		Pt500		●		0 ... 10 mA	●		Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %	Lower limit of output range
			●	●		Pt1000	●	●		2 ... 10 mA						
					●	1 kΩ			●	0 ... 10 V		●	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %	Upper limit of output range + 5 %
			●		●	4,5 kΩ	●		●	2 ... 10 V						
								●	●	0 ... 5 V	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
							●	●	●	1 ... 5 V						

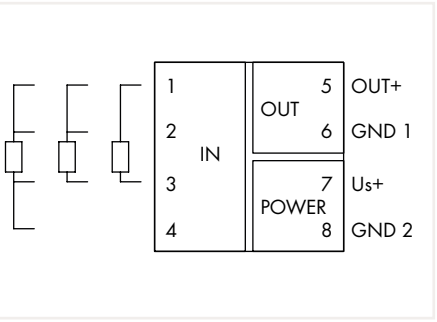
* acc. to NAMUR NE 43

DIP Switch S2

Start Temperature						End Temperature																									
1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F
				0	32							100	212					●		75	167						●	210	410					●	●	475	887
●				-200	-328	●						0	32	●				●		80	176	●					●	220	428	●				●	●	500	932
	●			-175	-283		●					5	41		●			●		85	185		●				●	230	446		●			●	●	525	997
●	●			-150	-238	●	●					10	50	●	●			●		90	194	●	●				●	240	464	●	●			●	●	550	1022
		●		-125	-193			●				15	59			●		●		95	203			●			●	250	482			●		●	●	575	1067
●		●		-100	-148	●		●				20	68	●		●		●		100	212	●		●			●	260	500	●		●		●	●	600	1112
	●	●		-90	-130		●	●				25	77		●	●		●		110	230		●	●			●	270	518		●	●		●	●	625	1157
●	●	●		-80	-112	●	●	●				30	86	●	●	●		●		120	248	●	●	●			●	280	536	●	●	●		●	●	650	1202
			●	-70	-94				●			35	95				●	●		130	266				●		●	290	554				●	●	●	675	1247
●			●	-60	-76	●			●			40	104	●			●	●		140	284	●			●		●	300	572	●			●	●	●	700	1292
	●		●	-50	-58		●		●			45	113		●		●	●		150	302		●		●		●	325	617		●		●	●	●	725	1337
●	●		●	-40	-40	●	●		●			50	122	●	●		●	●		160	320	●	●		●		●	350	662	●	●		●	●	●	750	1382
		●	●	-30	-22			●	●			55	131			●	●	●		170	338			●	●		●	375	707			●	●	●	●	775	1427
●		●	●	-20	-4	●		●	●			60	140	●		●	●	●		180	356	●		●	●		●	400	752	●		●	●	●	●	800	1472
	●	●	●	-10	14		●	●	●			65	149		●	●	●	●		190	374		●	●	●		●	425	797		●	●	●	●	●	825	1517
●	●	●	●	0	32	●	●	●	●			70	158	●	●	●	●	●		200	392	●	●	●	●		●	450	842	●	●	●	●	●	●	850	1562

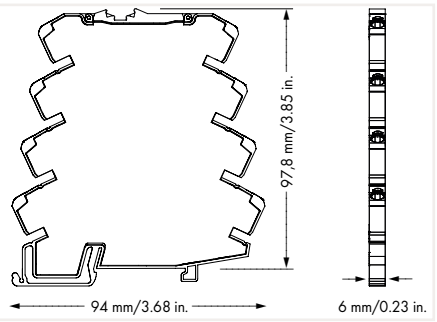
The minimum distance from the start temperature to the end temperature may not fall short of 50K degrees on the Celsius (C) scale or 122K degrees on the Fahrenheit (F) scale.

Temperature Signal Conditioner; Configurable; for RTD Sensors
857 Series



Temperature Signal Conditioner for RTD Sensors; Current and voltage output signal; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-808	1



Short description:
WAGO's temperature signal conditioner records signals from Pt46 and Cu53 sensors and converts the temperature signal into a standard analog signal at the output.

Features:
- 2-, 3- and 4-wire connection technology
- Calibrated measurement range switching
- Detects sensor wire break/short circuit
- Detects measurement range underflow/overflow
- Clipping function limits the standard analog signal to the upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Configuration via:

Configuration	
Configuration options	DIP switch
Input	
Input signal type	Pt sensors; Cu sensors
Input – RTD Sensors	
Sensor types (RTD)	Pt46; Cu53
Sensor connection	2-wire, 3-wire, 4-wire (switchable)
Sensor power supply (RTD) max.	≤ 0.5 mA
Temperature measurement range (RTD)	-200 … +300 °C (Pt46); 0 … +180 °C (Cu53)
Measurement span (RTD) min.	50 K
Output	
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
Signal Processing	
Step response (typ.)	180 ms (2-wire); 360 ms (3-wire)
Measurement Error	
Transmission error (typ.)	≤ 0.1 % at full measurement span
Transmission error for the set measurement range	≤ ((10 K/set measurement range [K]) + 0.1) %
Temperature coefficient	≤ 0.02 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	35.4 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air 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

» Accessories Page 344

857-808

DIP Switch Adjustability

● = ON | Default

DIP Switch S1

Wire Connection			Sensor Type				Output Signal						Measurement Range Underflow	Measurement Range Overflow	Wire Break	Short Circuit
1	2		3	4	5		6	7	8		9	10				
		2-wire				Pt46				0 ... 20 mA			Lower limit of output range - 5 % *	Upper limit of output range + 2.5 % *	Upper limit of output range + 5 % *	Lower limit of output range - 12.5 % *
●		3-wire	●			Cu53	●			4 ... 20 mA						
	●	4-wire						●		0 ... 10 mA	●		Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %	Lower limit of output range
							●	●		2 ... 10 V						
									●	0 ... 10 V		●	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %	Upper limit of output range + 5 %
							●		●	2 ... 10 V						
								●	●	0 ... 5 V	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
							●	●	●	1 ... 5 V						

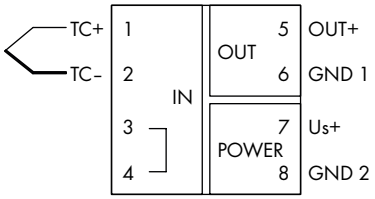
* acc. to NAMUR NE 43

DIP Switch S2

Start Temperature						End Temperature																			
1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F
				0	32							100	212					●		75	167						●	210	410
●				-200	-328	●						0	32	●				●		80	176	●					●	220	428
	●			-175	-283		●					5	41		●			●		85	185		●				●	230	446
●	●			-150	-238	●	●					10	50	●	●			●		90	194	●	●				●	240	464
		●		-125	-193			●				15	59			●		●		95	203			●			●	250	482
●		●		-100	-148	●		●				20	68	●		●		●		100	212	●		●			●	260	500
	●	●		-90	-130		●	●				25	77		●	●		●		110	230		●	●			●	270	518
●	●	●		-80	-112	●	●	●				30	86	●	●	●		●		120	248	●	●	●			●	280	536
			●	-70	-94				●			35	95				●	●		130	266				●		●	290	554
●			●	-60	-76	●			●			40	104	●			●	●		140	284	●			●		●	300	572
	●		●	-50	-58		●		●			45	113		●		●	●		150	302								
●	●		●	-40	-40	●	●		●			50	122	●	●		●	●		160	320								
		●	●	-30	-22			●	●			55	131			●	●	●		170	338								
●		●	●	-20	-4	●		●	●			60	140	●		●	●	●		180	356								
	●	●	●	-10	14		●	●	●			65	149		●	●	●	●		190	374								
●	●	●	●	0	32	●	●	●	●			70	158	●	●	●	●	●		200	392								

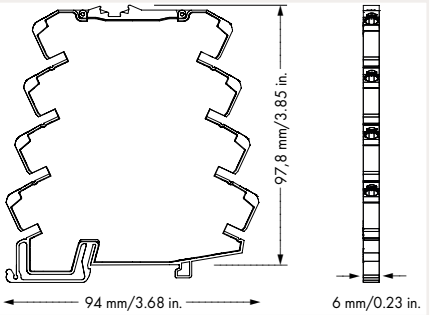
3

Temperature Signal Conditioner; Configurable; for Thermocouples
857 Series



Temperature Signal Conditioner for Thermocouples; Current and voltage output signal; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-810	1



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
- Switchable clipping
- Limitation of standard analog signal to upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Specialty Functions:

Configuration via:

Configuration	
Configuration options	DIP switch
Input	
Input signal type	TC sensors
Input – TC Sensors	
Sensor types (TC)	Type J; Type K
Temperature measurement range (TC)	−150 … +1200 °C (Type J); −150 … +1350 °C (Type K)
Measurement min. (TC)	100 K
Cold junction compensation	ON/OFF (default: ON)
Cold junction error	3 K (2 K typ.)
Output	
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
Signal Processing	
Step response (typ.)	60 ms (cold junction compensation OFF); 120 ms (cold junction compensation ON)
Measurement Error	
Transmission error (typ.)	≤ 0.1% at max. measurement span (type J, K)
Transmission error for the set measurement range	≤ (150 K/set measurement range [K]) %
Temperature coefficient	≤ 0.04 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	35.5 g
Environmental Requirements	
Surrounding air temperature (operation)	−25 … +70 °C
Surrounding air 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

» Accessories Page 344

857-810

DIP Switch Adjustability

● = ON | Default

DIP Switch S1

Cold Junction Compensation	Sensor type			Output signal						Measurement Range Underflow	Measurement Range Overflow	Wire Break
1	2	3		4	5	6		7	8			
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					
					●		0 ... 10 mA	●		Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %
				●	●		2 ... 10 mA					
						●	0 ... 10 V		●	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %
				●		●	2 ... 10 V					
					●	●	0 ... 5 V	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range
				●	●	●	1 ... 5 V					

DIP 9 and 10 n.c.

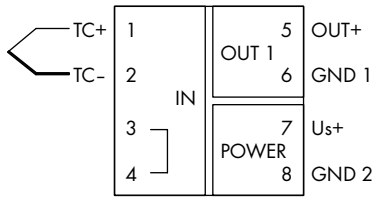
* acc. to NAMUR NE 43

DIP Switch S2

Start Temperature						End Temperature																									
1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F
				0	32							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	-283	●	●					20	68	●	●			●		300	572	●	●				●	700	1292	●	●			●	●	1100	2012
		●		-125	-193			●				30	86			●		●		325	617			●			●	725	1337			●		●	●	1125	2057
●		●		-100	-148	●		●				40	104	●		●		●		350	662	●		●			●	750	1382	●		●		●	●	1150	2102
	●	●		-90	-130		●	●				50	122		●	●		●		375	707		●	●			●	775	1427		●	●		●	●	1175	2147
●	●	●		-80	-112	●	●	●				60	140	●	●	●		●		400	752	●	●	●			●	800	1472	●	●	●		●	●	1200	2192
			●	-70	-94				●			70	158				●	●		425	797				●		●	825	1517				●	●	●	1225	2237
●			●	-60	-76	●			●			80	176	●			●	●		450	842	●			●		●	850	1562	●			●	●	●	1250	2282
	●		●	-50	-58		●		●			90	194		●		●	●		475	887		●		●		●	875	1607		●		●	●	●	1275	2327
●	●		●	-40	-40	●	●		●			100	212	●	●		●	●		500	932	●	●		●		●	900	1652	●	●		●	●	●	1300	2372
		●	●	-30	-22			●	●			125	257			●	●	●		525	977			●	●		●	925	1697			●	●	●	●	1325	2417
●		●	●	-20	-4	●		●	●			150	302	●		●	●	●		550	1022	●		●	●		●	950	1742	●		●	●	●	●	1350	2462
	●	●	●	-10	14		●	●	●			175	347		●	●	●	●		575	1067		●	●	●		●	975	1787		●	●	●	●	●	1375	2507
●	●	●	●	0	32	●	●	●	●			200	392	●	●	●	●	●		600	1112	●	●	●	●		●	1000	1832	●	●	●	●	●	●	1400	2552

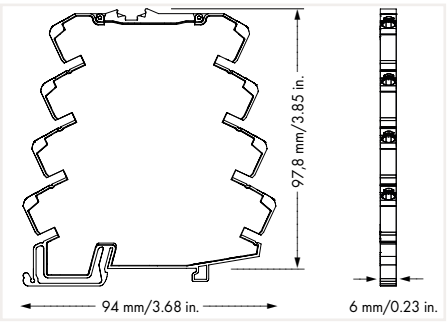
The minimum distance from the start temperature to the end temperature may not fall short of 100K degrees on the Celsius (C) scale or 212K degrees on the Fahrenheit (F) scale.

Temperature Signal Conditioner; Configurable; for Thermocouples
857 Series



Temperature Signal Conditioner for Thermocouples; Current and voltage output signal; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-811	1



Short description:
WAGO's temperature signal conditioner records signals from thermocouples of type J and K (E, R, N, S, T, B, C) and converts the temperature signal into a standard analog signal.

Features:
- PC configuration interface
- For thermocouples of type J and K (E, R, N, S, T, B, C)
- Cold junction compensation (ON/OFF)
- Calibrated measurement range switching
- Detects a sensor wire break
- Detects measurement range underflow/overflow
- Switchable clipping
- Limitation of standard analog signal to upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Note:
Additional setting options as well as output signal inversion via interface configuration software or interface configuration app

Configuration	
Configuration options	DIP switch; Interface configuration software; Interface configuration app
Input	
Input signal type	TC sensors
Input – TC Sensors	
Sensor types (TC)	Type J; Type K
Temperature measurement range (TC)	−150 … +1200 °C (Type J); −150 … +1350 °C (Type K)
Measurement min. (TC)	100 K
Cold junction compensation	ON/OFF (default: ON)
Cold junction error	3 K (2 K typ.)
Output	
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
Signal Processing	
Step response (typ.)	60 ms (cold junction compensation OFF); 120 ms (cold junction compensation ON)
Measurement Error	
Transmission error (typ.)	≤ 0.1% at max. measurement span (type J, K)
Transmission error for the set measurement range	≤ (150 K/set measurement range [K]) %
Temperature coefficient	≤ 0.04 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	36 g
Environmental Requirements	
Surrounding air temperature (operation)	−25 … +70 °C
Surrounding air 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

» Configuration software Page 332
» Configuration App Page 333
» Accessories Page 344

Specialty Functions:

Configuration via:



857-811

DIP Switch Adjustability

● = ON | **Default**

DIP Switch S1

Cold Junction Compensation		Sensor Type			Output Signal						Measurement Range Underflow	Measurement Range Overflow	Wire Break
1		2	3		4	5	6		7	8			
	ein			J				0 ... 20 mA			Lower limit of output range - 5 % *	Upper limit of output range + 2.5 % *	Upper limit of output range + 5 % *
●	aus	●		K	●			4 ... 20 mA					
						●		0 ... 10 mA	●		Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %
					●	●		2 ... 10 mA					
							●	0 ... 10 V		●	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %
					●		●	2 ... 10 V					
						●	●	0 ... 5 V	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range
					●	●	●	1 ... 5 V					

DIP 9 and 10 n.c.

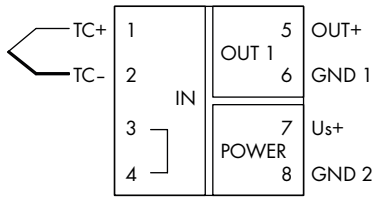
* acc. to NAMUR NE 43

DIP Switch S2

Start Temperature						End Temperature																									
1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F
				0	32							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	-283	●	●					20	68	●	●			●		300	572	●	●				●	700	1292	●	●			●	●	1100	2012
		●		-125	-193			●				30	86			●		●		325	617			●			●	725	1337			●		●	●	1125	2057
●		●		-100	-148	●		●				40	104	●		●		●		350	662	●		●			●	750	1382	●		●		●	●	1150	2102
	●	●		-90	-130		●	●				50	122		●	●		●		375	707		●	●			●	775	1427		●	●		●	●	1175	2147
●	●	●		-80	-112	●	●	●				60	140	●	●	●		●		400	752	●	●	●			●	800	1472	●	●	●		●	●	1200	2192
			●	-70	-94				●			70	158				●	●		425	797				●		●	825	1517				●	●	●	1225	2237
●			●	-60	-76	●			●			80	176	●			●	●		450	842	●			●		●	850	1562	●			●	●	●	1250	2282
	●		●	-50	-58		●		●			90	194		●		●	●		475	887		●		●		●	875	1607		●		●	●	●	1275	2327
●	●		●	-40	-40	●	●		●			100	212	●	●		●	●		500	932	●	●		●		●	900	1652	●	●		●	●	●	1300	2372
		●	●	-30	-22			●	●			125	257			●	●	●		525	977			●	●		●	925	1697			●	●	●	●	1325	2417
●		●	●	-20	-4	●		●	●			150	302	●		●	●	●		550	1022	●		●	●		●	950	1742	●		●	●	●	●	1350	2462
	●	●	●	-10	14		●	●	●			175	347		●	●	●	●		575	1067		●	●	●		●	975	1787		●	●	●	●	●	1375	2507
●	●	●	●	0	32	●	●	●	●			200	392	●	●	●	●	●		600	1112	●	●	●	●		●	1000	1832	●	●	●	●	●	●	1400	2552

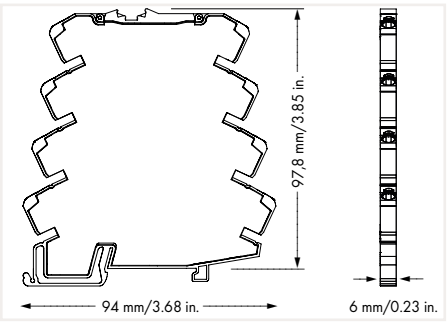
The minimum distance from the start temperature to the end temperature may not fall short of 100K degrees on the Celsius (C) scale or 212K degrees on the Fahrenheit (F) scale.

Temperature Signal Conditioner; Configurable; for Thermocouples
857 Series



Temperature Signal Conditioner for Thermocouples; Current and voltage output signal; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-812	1



Short description:
WAGO's temperature signal conditioner records signals from thermocouples (type K, S, B, R) and converts the temperature signal into a standard analog signal at the output.

Features:
- For thermocouples of type K, S, B and R
- Cold junction compensation (ON/OFF)
- Calibrated measurement range switching
- Detects a sensor wire break
- Detects measurement range underflow/overflow
- Clipping function limits the standard analog signal to the upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Configuration via:

Configuration	
Configuration options	DIP switch
Input	
Input signal type	TC sensors
Input – TC Sensors	
Sensor types (TC)	Type K, S, B, R
Temperature measurement range (TC)	0 … +1200 °C (Type K); 0 … +1600 °C (Type S); 600 … +1800 °C (Type B); 0 … +1600 °C (Type R)
Cold junction compensation	ON/OFF (default: ON)
Cold junction error	3 K (2 K typ.)
Output	
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
Signal Processing	
Step response (typ.)	60 ms (cold junction compensation OFF); 120 ms (cold junction compensation ON)
Measurement Error	
Transmission error (typ.)	≤ 0.1 % at full measurement span
Transmission error for the set measurement range	≤ (150 K/set measurement range [K]) %
Temperature coefficient	≤ 0.04 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	35.7 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air 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

» Accessories Page 344

857-812

DIP Switch Adjustability

● = ON | Default

DIP Switch S1

Cold Junction Compensation		Sensor Type			Output Signal						Measurement Range Underflow	Measurement Range Overflow	Wire Break
1		2	3		4	5	6		7	8			
	Ein			K				0 ... 20 mA			Lower limit of output range - 5 % *	Upper limit of output range + 2.5 % *	Upper limit of output range + 5 % *
●	Aus	●		S	●			4 ... 20 mA					
			●	B		●		0 ... 10 mA	●		Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %
		●	●	R	●	●		2 ... 10 mA					
							●	0 ... 10 V		●	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %
					●		●	2 ... 10 V					
						●	●	0 ... 5 V	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range
					●	●	●	1 ... 5 V					

DIP Switch S1 (9) n.c.

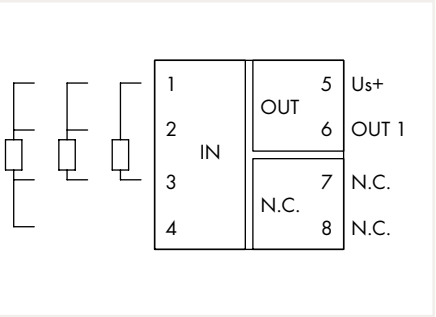
* acc. to NAMUR NE 43

DIP Switch S1+S2

Start Temperature							End Temperature												
S1	S2				°C	°F	S2						°C	°F	S2						°C	°F
10	1	2	3	4			5	6	7	8	9	10			5	6	7	8	9	10		
					0	32							1000	1832	●		●		●		1000	1832
●					50	122	●						0	32		●	●		●		1050	1922
	●				100	212		●					50	122	●	●	●		●		1100	2012
●	●				150	302	●	●					100	212				●	●		1150	2102
		●			200	392			●				150	302	●			●	●		1200	2192
●		●			250	482	●		●				200	392		●		●	●		1250	2282
	●	●			300	572		●	●				250	482	●	●		●	●		1300	2372
●	●	●			350	662	●	●	●				300	572			●	●	●		1350	2462
			●		400	752				●			350	662	●		●	●	●		1400	2552
●			●		450	842	●			●			400	752		●	●	●	●		1450	2642
	●		●		500	932		●		●			450	842	●	●	●	●	●		1500	2732
●	●		●		550	1022	●	●		●			500	932						●	1550	2822
		●	●		600	1112			●	●			550	1022	●					●	1600	2912
●		●	●		650	1202	●		●	●			600	1112		●				●	1650	3002
	●	●	●		700	1292		●	●	●			650	1202	●	●				●	1700	3092
●	●	●	●		750	1382	●	●	●	●			700	1292			●			●	1750	3182
				●	800	1472					●		750	1382	●		●			●	1800	3272
●				●	850	1562	●				●		800	1472								
	●			●	900	1652		●			●		850	1562								
●	●			●	950	1742	●	●			●		900	1652								
		●		●	1000	1832			●		●		950	1742								

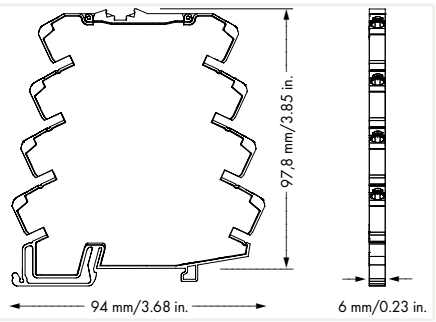
3

Temperature Signal Conditioner; Configurable; for RTD Sensors
857 Series



Temperature Signal Conditioner for RTD Sensors; Current and voltage output signal; Loop-powered RTD; Module width: 6 mm

	Item No.	Pack. Unit
	857-815	1



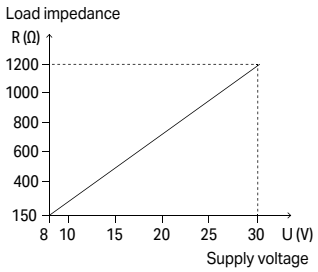
Short description:
WAGO's loop-powered RTD temperature signal conditioner records sensors (Pt100, Pt200, Pt500, Pt1000) and resistors up to 4.5 kΩ, converting the temperature signal into a standard analog signal at the output. The loop-powered RTD temperature signal conditioner provides safe isolation between input and output with 3 kV test voltage per EN 61010-1.

Features:
- No additional supply voltage required
- For Pt100, Pt200, Pt500 and Pt1000 sensors, as well as resistors up to 4.5 kOhm
- 2-, 3- and 4-wire connection technology
- Calibrated measurement range switching
- Detects sensor wire break/short circuit
- Safe 2-way isolation with 2.5 kV test voltage per EN 61010-1

Configuration via:

Configuration	
Configuration options	DIP switches
Input	
Input signal type	Pt sensors; resistor
Input current (max.)	50 mA
Input voltage (max.)	30 VDC
Input – RTD Sensors	
Sensor types (RTD)	Pt100; Pt200; Pt500; Pt1000
Sensor connection	2-wire, 3-wire, 4-wire (switchable)
Sensor power supply (RTD) max.	≤ 0.5 mA
Temperature measurement range (RTD)	−200 … +850 °C
Measurement span (RTD) min.	50 K
Input – Resistors	
Input range (resistor)	0 … 1 kΩ; 0 … 4.5 kΩ
Output	
Output signal type	Current
Output signal (current)	4 … 20 mA; 20 … 4 mA
Load impedance (current output)	See derating graph
Signal Processing	
Step response (typ.)	1000 ms
Measurement Error	
Transmission error (typ.)	≤ 0.1 % at full measurement span
Transmission error for the set measurement range	≤ ((40 K/set measurement range [K]) + 0.1) %
Temperature coefficient	≤ 0.02 %/K
Power Supply	
Power supply type	loop-powered (via output)
Supply voltage	8 … 30 VDC (power derived from the output circuit)
Safety and Protection	
Measurement category per EN/UL 61010-2-030	CAT II (input)
Protection type	IP20
Test voltage	
Test voltage (input/analog output)	3 kVAC; 50 … 60 Hz; 1 min
Insulation parameters per EN/UL 61010-1	
Line-to-neutral conductor voltage (AC) max.	150 V
Overvoltage category	II
Pollution degree	2
Insulation type (input/analog output)	Reinforced insulation
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	38.9 g
Environmental Requirements	
Surrounding air temperature (operation)	−25 … +70 °C (at nominal current)
Surrounding air temperature (storage)	−40 … +85 °C
Temperature range of the connecting cable according to EN 61010-2-201	≥ ($T_{surrounding\ air}$ + 10 K)
Temperature range of connecting cable per UL 61010-2-201 (min.)	90 °C
Relative humidity	5 … 95 % (no condensation permissible)
Operating altitude (max.)	2000 m

» Accessories Page 344



Derating

Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-1; EN 50121-3-2
EMC emission of interference	EN 61000-6-3; EN 61326-1; EN 50121-3-2
Standards/specifications	EN 61010-1; EN 61373

3

857-815

DIP Switch Adjustability

● = ON Default

DIP Switch S1

Sensor Connection			Sensor Type				Output Signal		N.C.				Measurement Range Underflow	Measurement Range Overflow	Wire Break	Short Circuit
1	2		3	4	5		6		7	8	9	10				
		2-wire				Pt100		4 ... 20 mA					Lower limit of output range - 5 % *	Upper limit of output range + 2.5 % *	Upper limit of output range + 5 % *	Lower limit of output range - 12.5 % *
●		3-wire	●			Pt200	●	20 ... 4 mA								
	●	4-wire		●		Pt500					●		Lower limit of output range	Upper limit of output range + 2.5 %	Upper limit of output range + 5 %	Lower limit of output range
●	●	2-wire	●	●		Pt1000										
					●	1 kΩ						●	Lower limit of output range	Upper limit of output range	Upper limit of output range + 5 %	Upper limit of output range + 5 %
			●		●	4,5 kΩ										
											●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range

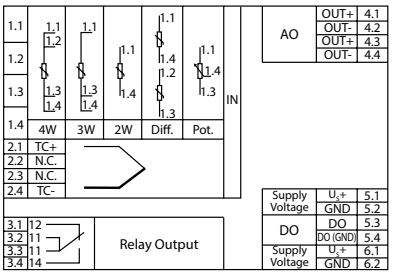
* acc. to NAMUR NE 43

DIP Switch S2

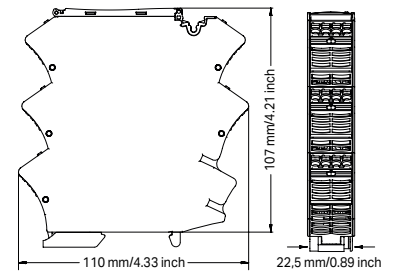
Output Signal Start Temperature						Output Signal End Temperature																									
1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F
				0	32							100	212					●		75	167						●	210	410					●	●	475	887
●				-200	-328	●						0	32	●				●		80	176	●					●	220	428	●				●	●	500	932
	●			-175	-283		●					5	41		●			●		85	185		●				●	230	446		●			●	●	525	997
●	●			-150	-238	●	●					10	50	●	●			●		90	194	●	●				●	240	464	●	●			●	●	550	1022
		●		-125	-193			●				15	59			●		●		95	203			●			●	250	482			●		●	●	575	1067
●		●		-100	-148	●		●				20	68	●		●		●		100	212	●		●			●	260	500	●		●		●	●	600	1112
	●	●		-90	-130		●	●				25	77		●	●		●		110	230		●	●			●	270	518		●	●		●	●	625	1157
●	●	●		-80	-112	●	●	●				30	86	●	●	●		●		120	248	●	●	●			●	280	536	●	●	●		●	●	650	1202
			●	-70	-94				●			35	95				●	●		130	266				●		●	290	554				●	●	●	675	1247
●			●	-60	-76	●			●			40	104	●			●	●		140	284	●			●		●	300	572	●			●	●	●	700	1292
	●		●	-50	-58		●		●			45	113		●		●	●		150	302		●		●		●	325	617		●		●	●	●	725	1337
●	●		●	-40	-40	●	●		●			50	122	●	●		●	●		160	320	●	●		●		●	350	662	●	●		●	●	●	750	1382
		●	●	-30	-22			●	●			55	131			●	●	●		170	338			●	●		●	375	707			●	●	●	●	775	1427
●		●	●	-20	-4	●		●	●			60	140	●		●	●	●		180	356	●		●	●		●	400	752	●		●	●	●	●	800	1472
	●	●	●	-10	14		●	●	●			65	149		●	●	●	●		190	374		●	●	●		●	425	797		●	●	●	●	●	825	1517
●	●	●	●	0	32	●	●	●	●			70	158	●	●	●	●	●		200	392	●	●	●	●		●	450	842	●	●	●	●	●	●	850	1562

The measurement span must have the following min. magnitude:
- in the Celsius scale (°C): 50 K
- in the Fahrenheit scale (°F): 90 K

Temperature Signal Conditioner; Configurable; for RTD and TC Sensors; Analog
2857 Series



RTD/TC Temperature Signal Conditioner; analog		
	Item No.	Pack. Unit
	2857-535	1



Short description:
WAGO's RTD TC temperature signal conditioner for RTD sensors, potentiometers, resistors and thermocouples monitors and reports signals of up to two switching thresholds. The sensor and status information that is collected is also converted to a standard analog signal.

Features:
- A relay with changeover contact reacts to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values)
- Configurable Pt factor
- Adjustable software filter
- Simulation of input/output response via interface configuration display
- Input of customer-specific sensors via interface configuration software
- Safe 3-way isolation with 3 kV test voltage per EN 61010-1
- Analog unipolar/bipolar signals (current/voltage) at output
- Additional digital signal output for configured measurement range limits
- Adjustable transfer characteristic

Configuration	
Configuration options	Interface configuration software; configuration display
Input	
Input signal type	RTD sensors; Potentiometers; Resistors; TC sensors
Input – RTD Sensors	
Sensor types (RTD)	Pt10 … Pt2000 (expandable)
Sensor connection	2-wire; 3-wire; 4-wire; differential; potentiometer
Sensor power supply (RTD) max.	≤ 0.5 mA
Temperature measurement range (RTD)	−200 … +850 °C
Measurement span (RTD) min.	50 K
Input – TC Sensors	
Sensor types (TC)	Type J, K, E, R, N, S, T, B, C
Temperature measurement range (TC)	-210 … +1200 °C (Type J); -200 … +1372 °C (Type K); -200 … +1000 °C (Type E); 250 … 1768 °C (Type R); -200 … +1300 °C (Type N); -50 … +1664 °C (Type S); -200 … +400 °C (Type T); 250 … 1820 °C (Type B); 0 … 2320 °C (Type C)
Measurement min. (TC)	100 K
Cold junction compensation	ON/OFF (default: ON)
Cold junction error	3 K (2 K typ.)
Input – Resistors	
Input range (resistor)	0 … 10 kΩ
Input range (potentiometer)	0 … 10 kΩ
Measurement span (min.)	50 Ω
Output	
Output signal type	Current; Voltage
Output signal (voltage)	±12 V
Output signal (current)	±24 mA
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 600 Ω
Output – Digital	
Max. switching voltage (DO)	Supply voltage applied: −0.3 V
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 or 2 (adjustable)
Configurable rise/fall delay time (DO)	0 … 60 s (via software)
Output – Relay	
Number of changeover/switchover contacts	1
Switching voltage (max.)	250 VAC
Limiting continuous current (relay; module assembly)	6 A (≤ 60 °C); 3 A (60 … +70 °C)
Dielectric strength, open contact (AC, 1 min)	1 kV_{rms}
Number of switching thresholds (relay)	1 or 2 (adjustable)
Configurable rise/fall delay time (relay)	0 … 60 s (via software)
Signal Processing	
Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	130 ms (2-wire); 700 ms (3-wire); 700 ms (4-wire); 600 ms (differential); 500 ms (potentiometer); 150 ms (cold junction compensation OFF); 400 ms (cold junction compensation ON)
Measurement Error	
Transmission error (typ.)	≤ 0.1 % at full measurement span
Transmission error for the set measurement range	≤ (100 K/set measurement range [K]) %
Temperature coefficient	≤ 0.01 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	−60 … +30 %
Power consumption at nominal supply voltage	≤ 70 mA (+ IDO)

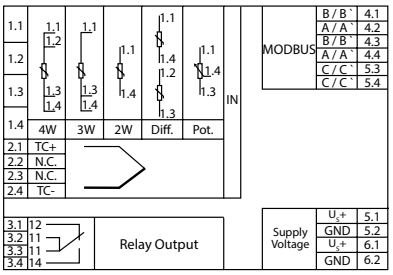
» Configuration software Page 332
» Configuration display Page 333
» Accessories Page 344

Specialty Functions:

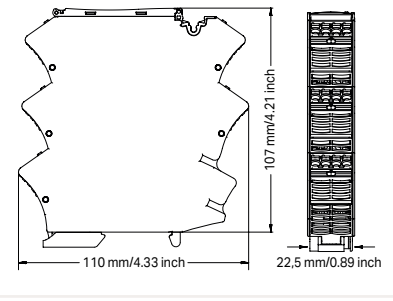
Configuration via:

Safety and Protection	
Rated voltage of the measurement circuit connections per EN 61010-2-030	AC 300 V
Measurement category per EN/UL 61010-2-030	CAT II (input)
Overvoltage category	II
Note on insulation parameters	The digital output (DO) is at the potential of the supply The service interface is at the potential of the analog output The DIN-rail contact (functional ground) is capacitively coupled to the analog ousput.
Protection type	IP20
Test voltage	
Test voltage (input/output/supply)	AC 3 kV; 50 Hz; 1 min
Test voltage (input/analog output/relay output/supply)	3 kVAC; 50 … 60 Hz; 1 min
Test voltage (input/DIN-rail contact/relay output/supply)	3 kVAC; 50 … 60 Hz; 1 min
Insulation parameters per EN/UL 61010-1	
Line-to-neutral conductor voltage (AC) max.	300 V
Overvoltage category	II
Pollution degree	2
Insulation type (input/analog output/relay output/supply)	Reinforced insulation
Insulation type (input/DIN-rail contact/relay output/supply)	Reinforced insulation
Connection Data	
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	*picoMAX*® 5.0
Solid conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Fine-stranded conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Strip length	9 … 10 mm / 0.35 … 0.39 inch
Geometric Data	
Width	22.5 mm / 0.886 inch
Height from upper-edge of DIN-rail	107 mm / 4.213 inch
Depth	110 mm / 4.331 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	126.9 g
Environmental Requirements	
Surrounding air temperature (operation)	–40 … +70 °C
Surrounding air temperature (storage)	–40 … +85 °C
Temperature range of the connecting cable according to EN 61010-2-201	≥ ($T_{surrounding\ air}$ + 10 K)
Temperature range of connecting cable per UL 61010-2-201 (min.)	90 °C
Relative humidity	5 … 95 % (non-condensing)
Operating altitude (max.)	2000 m
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3
EMC emission of interference	EN 61000-6-3; EN 61326-2-3
Standards/specifications	EN 61010-1; EN 61373

Temperature Signal Conditioner; Configurable; for RTD and TC Sensors; Serial
2857 Series



RTD/TC Temperature Signal Conditioner; serial		
	Item No.	Pack. Unit
	2857-535/000-001	1



Short description:
WAGO's RTD TC temperature signal conditioner for RTD sensors, potentiometers, resistors and thermocouples monitors and reports signals of up to two switching thresholds. The sensor and status information that is collected is also made available to a higher-order device (e.g., a PLC) via a bus connection.

Features:
- A relay with changeover contact reacts to configured measurement range limits (on/off switching delay and threshold value switch function can be configured with up to two threshold values)
- Configurable Pt factor
- Adjustable software filter
- Simulation of input/output response via interface configuration display
- Input of customer-specific sensors via the interface configuration software
- Safe 3-way isolation with 3 kV test voltage per EN 61010-1
- RS-485 interface with Modbus protocol at the output
- Terminating resistor can be adjusted at the output
- Adjustable transfer characteristic

Configuration	
Configuration options	Interface configuration software; Configuration display; Rotary encoder switch
Input	
Input signal type	RTD sensors; Potentiometers; Resistors; TC sensors
Input – RTD Sensors	
Sensor types (RTD)	Pt10 … Pt2000 (expandable)
Sensor connection	2-wire; 3-wire; 4-wire; differential; potentiometer
Sensor power supply (RTD) max.	≤ 0.5 mA
Temperature measurement range (RTD)	−200 … +850 °C
Measurement span (RTD) min.	50 K
Input – TC Sensors	
Sensor types (TC)	Type J, K, E, R, N, S, T, B, C
Temperature measurement range (TC)	-210 … +1200 °C (Type J); -200 … +1372 °C (Type K); -200 … +1000 °C (Type E); 250 … 1768 °C (Type R); -200 … +1300 °C (Type N); -50 … +1664 °C (Type S); -200 … +400 °C (Type T); 250 … 1820 °C (Type B); 0 … 2320 °C (Type C)
Measurement min. (TC)	100 K
Cold junction compensation	ON/OFF (default: ON)
Cold junction error	3 K (2 K typ.)
Input – Resistors	
Input range (resistor)	0 … 10 kΩ
Input range (potentiometer)	0 … 10 kΩ
Measurement span (min.)	50 Ω
Output – Relay	
Number of changeover/switchover contacts	1
Switching voltage (max.)	250 VAC
Limiting continuous current (relay; module assembly)	6 A (≤ 60 °C); 3 A (60 … +70 °C)
Dielectric strength, open contact (AC, 1 min)	1 kV_{rms}
Number of switching thresholds (relay)	1 or 2 (adjustable)
Configurable rise/fall delay time (relay)	0 … 60 s (via software)
Communication	
Communication	Modbus RTU
Interface	RS-485 (2-wire)
Number of participants (max.)	64
Signal Processing	
Software filter (adjustable)	Moving average value (filter level: 30)
Step response (typ.)	130 ms (2-wire); 700 ms (3-wire); 700 ms (4-wire); 600 ms (differential); 500 ms (potentiometer); 150 ms (cold junction compensation OFF); 400 ms (cold junction compensation ON)
Measurement Error	
Transmission error (typ.)	≤ 0.1 % at full measurement span
Transmission error for the set measurement range	≤ (100 K/set measurement range [K]) %
Temperature coefficient	≤ 0.01 %/K
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	−60 … +30 %
Power consumption at nominal supply voltage	≤ 50 mA

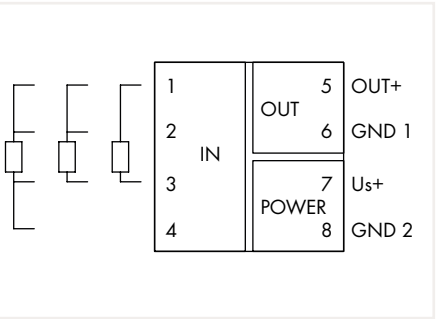
» Configuration software	Page 332
» Configuration display	Page 333
» Accessories	Page 344

Specialty Functions:

Configuration via:

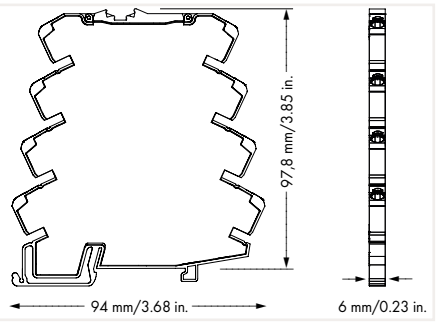
Safety and Protection	
Rated voltage of the measurement circuit connections per EN 61010-2-030	AC 300 V
Measurement category per EN/UL 61010-2-030	CAT II (input)
Overvoltage category	II
Note on insulation parameters	The service interface is at the potential of the analog output The DIN-rail contact (functional ground) is capacitively coupled to the analog ousput.
Protection type	IP20
Test voltage	
Test voltage (input/output/supply)	AC 3 kV; 50 Hz; 1 min
Test voltage (input/analog output/relay output/supply)	3 kVAC; 50 … 60 Hz; 1 min
Test voltage (input/DIN-rail contact/relay output/supply)	3 kVAC; 50 … 60 Hz; 1 min
Insulation parameters per EN/UL 61010-1	
Line-to-neutral conductor voltage (AC) max.	300 V
Overvoltage category	II
Pollution degree	2
Insulation type (input/analog output/relay output/supply)	Reinforced insulation
Insulation type (input/DIN-rail contact/relay output/supply)	Reinforced insulation
Connection Data	
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	*picoMAX*® 5.0
Solid conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Fine-stranded conductor	0.2 … 2.5 mm² / 24 … 12 AWG
Strip length	9 … 10 mm / 0.35 … 0.39 inch
Geometric Data	
Width	22.5 mm / 0.886 inch
Height from upper-edge of DIN-rail	107 mm / 4.213 inch
Depth	110 mm / 4.331 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	127.83 g
Environmental Requirements	
Surrounding air temperature (operation)	–40 … +70 °C
Surrounding air temperature (storage)	–40 … +85 °C
Temperature range of the connecting cable according to EN 61010-2-201	≥ ($T_{surrounding\ air}$ + 10 K)
Temperature range of connecting cable per UL 61010-2-201 (min.)	90 °C
Relative humidity	5 … 95 % (non-condensing)
Operating altitude (max.)	2000 m
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3
EMC emission of interference	EN 61000-6-3; EN 61326-2-3
Standards/specifications	EN 61010-1; EN 61373

Temperature Signal Conditioner; Configurable; for Ni Sensors
857 Series



Temperature Signal Conditioner for Ni Sensors; Current and voltage output signal; Supply voltage: 24 VDC; Module width: 6 mm

Item No.	Pack. Unit
857-818	1



Short description:
WAGO's Ni temperature signal conditioner (Ni = nickel) records signals from Ni sensors featuring all standard characteristics and converts the temperature signal into a standard analog signal at the output.

Features:
- For Ni100, Ni120, Ni200; Ni500 und Ni1000 sensors
- Calibrated measurement range switching
- Switchable clipping
- Limitation of standard analog signal to upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Specialty Functions:

Configuration via:

Configuration	
Configuration options	DIP switch
Input	
Input signal type	Ni sensors
Input voltage (max.)	±31.2 VDC
Input – RTD Sensors	
Sensor types (RTD)	Ni100; Ni120; Ni200; Ni500; Ni1000
Sensor connection	2-wire, 3-wire, 4-wire (switchable)
Output	
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
Signal Processing	
Step response (typ.)	60 ms (2-wire); 120 ms (3-wire); 30 ms (4-wire)
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	34.9 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air temperature (storage)	–40 … +85 °C
Relative humidity	5 … 95 % (non-condensing)
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

» Accessories Page 344

857-818

DIP Switch Adjustability

● = ON | Default

DIP Switch S1

Connection Technology			Temperature Coefficient			Sensor Type			
1	2		3	4		5	6	7	
		2-wire			6178 ppm/K *1				Ni100
●		3-wire	●		5000 ppm/K	●			Ni120
	●	4-wire		●	6720 ppm/K		●		Ni200
			●	●	6370 ppm/K	●	●		Ni500
								●	Ni1000

*1 6178 ppm/K acc. to DIN 4376

DIP Switch S1 DIP Switch S2

Start Temperature				End Temperature															
8	9	10	°C	1	2	3	4	5	T / °C	1	2	3	4	5	T / °C	1	2	3	4	5	T / °C
			0						100	●	●		●		100		●	●		●	210
●			-60	●					0			●	●		110	●	●	●		●	220
	●		-50		●				10	●		●	●		120				●	●	230
●	●		-40	●	●				20		●	●	●		130	●			●	●	240
		●	-30			●			30	●	●	●	●		140		●		●	●	250
●		●	-20	●		●			40					●	150	●	●		●	●	260
	●	●	-10		●	●			50	●				●	160			●	●	●	270
●	●	●	0	●	●	●			60		●			●	170	●		●	●	●	280
							●		70	●	●			●	180		●	●	●	●	290
				●			●		80			●		●	190	●	●	●	●	●	300
					●		●		90	●		●		●	200						

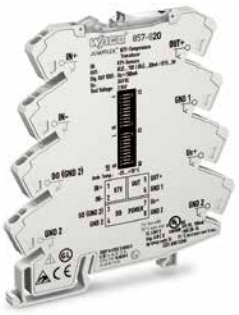
DIP Switch S2

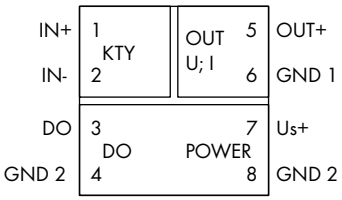
Output Signal						Measurement Range Underflow	Measurement Range Overflow	Wire Break	Short Circuit
6	7	8		9	10				
			0 ... 20 mA			Lower limit of output range -5 % **2	Upper limit of output range +2.5 %*2	Upper limit of output range +5 %*2	Lower limit of output range -12.5 % **2
●			4 ... 20 mA						
	●		0 ... 10 mA	●		Lower limit of output range	Upper limit of output range +2.5 %	Upper limit of output range +5 %	Lower limit of output range
●	●		2 ... 10 mA						
		●	0 ... 10 V		●	Lower limit of output range	Upper limit of output range	Upper limit of output range +5 %	Upper limit of output range +5 %
●		●	2 ... 10 V						
	●	●	0 ... 5 V	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
●	●	●	1 ... 5 V						

* but not when lower limit of output range = 0 V or 0 mA

*2 acc. to NAMUR NE 43

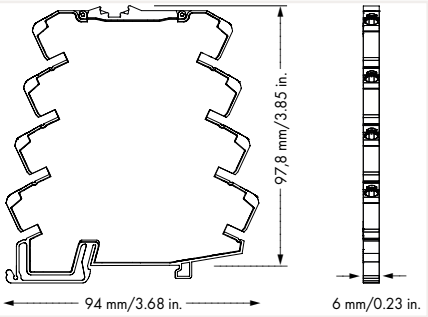
KTY Signal Conditioner; Configurable
857 Series





Temperature Signal Conditioner for KTY Sensors; Current and voltage output signal; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-820	1



Short description:
WAGO's KTY temperature signal conditioner records signals from KTY sensors featuring all standard characteristics and converts the temperature signal into a standard analog signal at the output.

Features:
- Supports all standard KTY sensors
- Calibrated measurement range switching
- Switchable clipping
- Limitation of standard analog signal to upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Specialty Functions:

Configuration via:

Configuration	
Configuration options	DIP switch
Input	
Input signal type	KTY sensors
Input voltage (max.)	±30 VDC
Input – KTY Sensors	
Sensor types (KTY)	KTY81-110; KTY81-120; KTY81-121; KTY81-122; KTY81-150; KTY81-210; KTY81-220; KTY81-221; KTY81-222; KTY81-250; KTY82-110; KTY82-120; KTY82-121; KTY82-122; KTY82-150; KTY82-220; KTY82-221; KTY82-222; KTY82-250; KTY83-110; KTY83-120; KTY83-121; KTY83-122; KTY83-150; KTY83-151; KTY84-130; KTY84-150; KTY84-151; KTY16; KTY19; ST13; ST20
Sensor connection	2-wire
Output	
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	
Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Signal Processing	
Step response (typ.)	50 ms
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Power Supply	
Power supply type	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	35.5 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air temperature (storage)	–40 … +85 °C
Relative humidity	5 … 95 % (non-condensing)
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

» Accessories Page 344

857-820

DIP Switch Adjustability

● = ON | Default

DIP Switch S1

Sensor Type				
1	2	3	4	
				KTY81-110, KTY81-120, KTY82-110, KTY82-120
●				KTY81-121, KTY82-121
	●			KTY81-122, KTY82-122
●	●			KTY81-150, KTY82-150
		●		KTY81-210, KTY81-220, KTY82-210, KTY82-220
●		●		KTY81-221, KTY82-221
	●	●		KTY81-222, KTY82-222
●	●	●		KTY81-250, KTY82-250
			●	KTY83-110, KTY83-120,
●			●	KTY83-121
	●		●	KTY83-122
●	●		●	KTY83-150
		●	●	KTY83-151
●		●	●	KTY84-130, KTY84-150
	●	●	●	KTY84-151
●	●	●	●	KTY16, KTY19, ST13, ST20

DIP Switch S2

Start Temperature				End Temperature														
1	2	3	°C	4	5	6	7	8	°C	4	5	6	7	8	°C	4	5	6	7	8	°C
			0						100	●	●		●		100		●	●		●	210
●			-55	●					0			●	●		110	●	●	●		●	220
	●		-50		●				10	●		●	●		120				●	●	230
●	●		-40	●	●				20		●	●	●		130	●			●	●	240
		●	-30			●			30	●	●	●	●		140		●		●	●	250
●		●	-20	●		●			40					●	150	●	●		●	●	260
	●	●	-10		●	●			50	●				●	160			●	●	●	270
●	●	●	0	●	●	●			60		●			●	170	●		●	●	●	280
							●		70	●	●			●	180		●	●	●	●	290
				●			●		80			●		●	190	●	●	●	●	●	300
					●		●		90	●		●		●	200						

DIP Switch S1

Output Signal				9	10	Measurement Range Underflow	Measurement Range Overflow	Wire Break	Short Circuit
6	7	8							
			0 ... 20 mA			Lower limit of output range -5 % **2	Upper limit of output range +2.5 %*2	Upper limit of output range 5 %*2	Lower limit of output range -12.5 % **2
●			4 ... 20 mA						
	●		0 ... 10 mA	●		Lower limit of output range	Upper limit of output range +2.5 %	Upper limit of output range +5 %	Lower limit of output range
●	●		2 ... 10 mA						
		●	0 ... 10 V		●	Lower limit of output range	Upper limit of output range	Upper limit of output range +5 %	Upper limit of output range +5 %
●		●	2 ... 10 V						
	●	●	0 ... 5 V	●	●	Lower limit of output range	Upper limit of output range	Lower limit of output range	Lower limit of output range
●	●	●	1 ... 5 V						

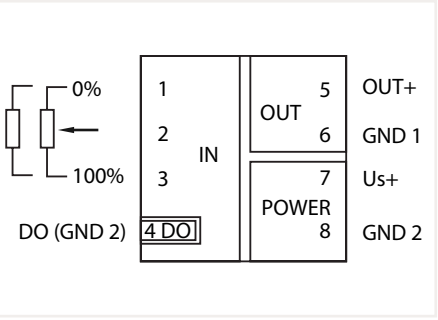
* but not when lower limit of output range = 0V or 0mA

*2 acc. to NAMUR NE 43

DIP Switch S2

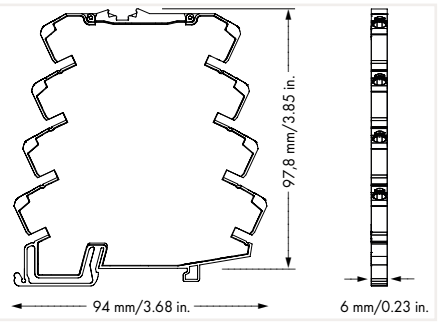
9	10	Digital Output DO Measurement Range Overflow Indication
		DO not active
	●	GND → U_N (rising)
●	●	U_N → GND (falling)

Potentiometer Signal Conditioner; Configurable
857 Series



Potentiometer Position Signal Conditioner; Current and voltage output signal; Digital output; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-809	1



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 potentiometer identification
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Note:
Additional setting options via interface configuration software/app

Configuration	
Configuration options	DIP switch; Interface configuration software; Interface configuration app; Push/slide switch
Input	
Input signal type	Potentiometer; Resistor
Input – Resistors	
Input range (resistor)	10 Ω ... 100 kΩ
Input range (potentiometer)	100 Ω ... 100 kΩ
Potentiometer supply voltage (max.)	2.5 V
Measurement range (min.)	100 Ω
Output	
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	
Max. switching voltage (DO)	Supply voltage applied
Max. continuous current (DO)	100 mA (no internal restriction)
Number of switching thresholds (DO)	1 (adjustable)
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
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA (+ IDO)
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	36.6 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 ... +70 °C
Surrounding air temperature (storage)	–40 ... +85 °C
Relative humidity	5 ... 95 % (non-condensing)
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

» Configuration software Page 332
» Configuration App Page 333
» Accessories Page 344

Specialty Functions:

Configuration via:

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

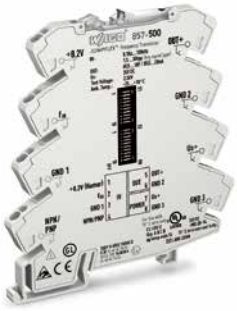
DIP Switch S2

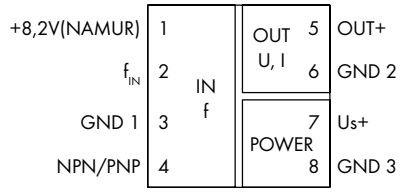
Factor of Initial Value			Factor of End Value			Output		Output Signal Range		
2	3		4	5		6		7	8	
		x1			x1		Current			0 ... 10 V/0 ... 20 mA
●		x10	●		x10	●	Voltage	●		2 ... 10 V/4 ... 20 mA
	●	x100		●	x100				●	0 ... 5 V/0 ... 10 mA
●	●	x1000	●	●	x1000			●	●	1 ... 5 V/2 ... 10 mA

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

* acc. to NAMUR NE 45

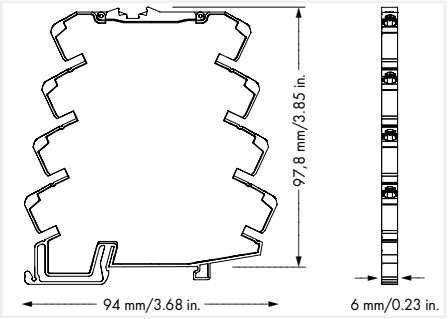
Frequency Signal Conditioner; Configurable
857 Series





Frequency Signal Conditioner; Current and voltage output signals; Supply voltage: 24 VDC; Module width: 6 mm

	Item No.	Pack. Unit
	857-500	1



Short description:
WAGO's frequency signal conditioner collects 0.1–120 kHz signals from NAMUR, NPN or PNP sensors and converts them into a standard analog signal.

Features:
- PC configuration interface
- Signal acquisition from NAMUR, NPN or PNP sensors
- Calibrated measurement range switching
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Specialty Functions:

Configuration via:

» Configuration software Page 332
» Configuration App Page 333
» Accessories Page 344

Configuration	
Configuration options	DIP switch; Interface configuration software; Interface configuration app
Input	
Input signal type	Frequency generators; NAMUR sensors; NPN/PNP transistor outputs; Mechanical contact (dry contact)
Input – Sensor Type 1	
Sensor type 1	Frequency generator; NPN/PNP transistor output with pull-up or pull-down resistor
Measurement range (frequency) 1	0.1 Hz … 120 kHz
Pulse length 1	≥ 1 µs
Measurement span 1 (min.)	10 Hz
Signal level	1.5 V; 10 V; 20 V (switchable)
Input voltage (max.)	±31.2 VDC
Signal form	Any
Coupling	AC/DC (adjustable; AC above 10 Hz)
Input resistance 1	10 kΩ
Input – Sensor Type 2	
Sensor type 2	NAMUR sensor per DIN EN 50227
Measurement range (frequency) 2	0.1 Hz … 1 kHz
Pulse length 2	≥ 500 µs
Measurement span 2 (min.)	10 Hz
Sensor supply	8.2 VDC
Signal current (0)	≤ 1.2 mA
Signal current (1)	≥ 2.1 mA
Hysteresis	0.45 mA
Short circuit monitoring	≥ 4.7 mA
Wire break monitoring	≤ 0.2 mA
Input resistance 2	≤ 600 Ω
Input – Sensor Type 3	
Sensor type 3	NPN/PNP transistor output without pull-up or pull-down resistor; Mechanical contact (dry contact)
Measurement range (frequency) 3	0.1 Hz … 20 kHz
Pulse length 3	≥ 25 µs
Measurement span 3 (min.)	100 Hz
Open-circuit voltage	5 VDC
NPN residual voltage	≤ 1.5 V
PNP switching voltage	≥ 7.5 V (+ residual voltage UCE sat)
Output	
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
Signal Processing	
Conversion time	Peak-time measurement method (> 400 Hz): < 20 ms; Pulse time measurement method (< 400 Hz): < 200 µs + $T_{Cycle\ duration}$
Measurement Error	
Transmission error (typ.)	≤ 0.1 % of upper-range value
Temperature coefficient	≤ 0.01 %/K
Power Supply	
Art der Versorgung	24 VDC
Nominal supply voltage U_s	24 VDC
Supply voltage range	±30 %
Power consumption at nominal supply voltage	≤ 40 mA
Safety and Protection	
Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min
Protection type	IP20
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 inch

Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Material Data	
Weight	36.2 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air temperature (storage)	–40 … +85 °C
Relative humidity	5 … 95 % (non-condensing)
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	EN 61373

Frequency Signal Conditioner; Configurable
857 Series

857-500

DIP Switch Adjustability

● = ON | Default

DIP Switch S1

Source Input			Coupling		Operation with Disturbed Frequency Signals for Acceptable Signal Level (applies only to f_{IN} input)			
1	2		3		4	5	High	Low
		Frequency generator or NPN/PNP transistor outputs with pull-up or pull-down resistor		AC/DC			> 1.5 V	< 0.4 V
●		NAMUR	●	AC (without DC), see Figure 1	●		> 10 V	< 8 V
	●	NPN/PNP transistor outputs without pull-up or pull-down resistor input Dry Contact				●	> 20 V	<16 V
					●	●	> 1.5 V	< 0.4 V

DIP Switch S1 / DIP Switch S2

Input Start Value					Frequency/Hz	Input End Value					Frequency/Hz
6	7	8	9	10		1	2	3	4	5	
					100						1000
●					0.1	●					0.1
	●				1		●				1
●	●				100	●	●				100
		●			200			●			200
●		●			300	●		●			300
	●	●			400		●	●			400
●	●	●			500	●	●	●			500
			●		600				●		600
●			●		700	●			●		700
	●		●		800		●		●		800
●	●		●		900	●	●		●		900
		●	●		1000			●	●		1000
●		●	●		2000	●		●	●		2000
	●	●	●		3000		●	●	●		3000
●	●	●	●		4000	●	●	●	●		4000
				●	5000					●	5000
●				●	6000	●				●	6000
	●			●	7000		●			●	7000
●	●			●	8000	●	●			●	8000
		●		●	9000			●		●	9000
●		●		●	10000	●		●		●	10000
	●	●		●	20000		●	●		●	20000
●	●	●		●	30000	●	●	●		●	30000
			●	●	40000				●	●	40000
●			●	●	50000	●			●	●	50000
	●		●	●	60000		●		●	●	60000
●	●		●	●	70000	●	●		●	●	70000
		●	●	●	80000			●	●	●	80000
●		●	●	●	90000	●		●	●	●	90000
	●	●	●	●	100000		●	●	●	●	100000
●	●	●	●	●	120000	●	●	●	●	●	120000

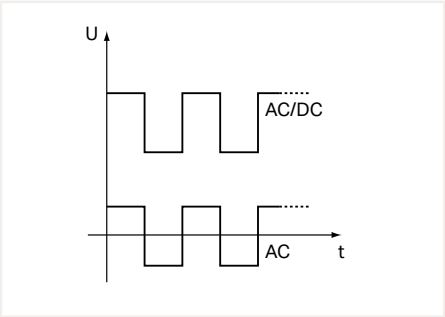


Figure 1: Coupling

DIP Switch S2

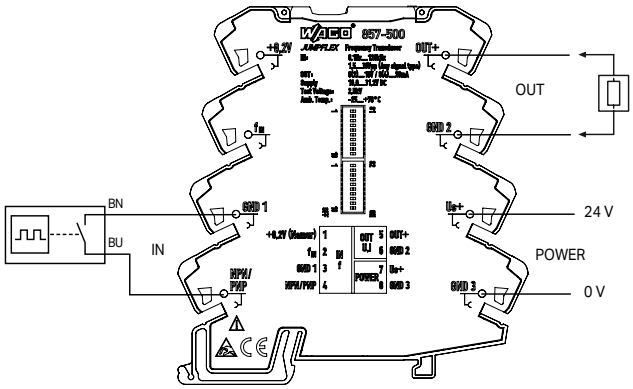
Output Signal					9	10	Measurement Range Underflow	Measurement Range Overflow	Only for NAMUR Sensors	
6	7	8							Wire Break	Short Circuit
			0 ... 20 mA	Current			Lower limit of output range* -5 %	Upper limit of output range* +2.5 %	Upper limit of output range* 5 %	Lower limit of output range * -12.5 %
	●		4 ... 20 mA							
		●	0 ... 10 mA		●		Lower limit of output range	Upper limit of output range +2.5 %	Upper limit of output range 5 %	Lower limit of output range
	●	●	2 ... 10 mA							
●			0 ... 10 V	Voltage		●	Lower limit of output range	Upper limit of output range	Upper limit of output range 5 %	Upper limit of output range 5 %
●	●		2 ... 10 V							
●		●	0 ... 5 V		●	●	Lower limit of output range	Upper limit of output range	Ausgangsbereichsanfang	Lower limit of output range
●	●	●	1 ... 5 V							

*acc. to NAMUR NE 43

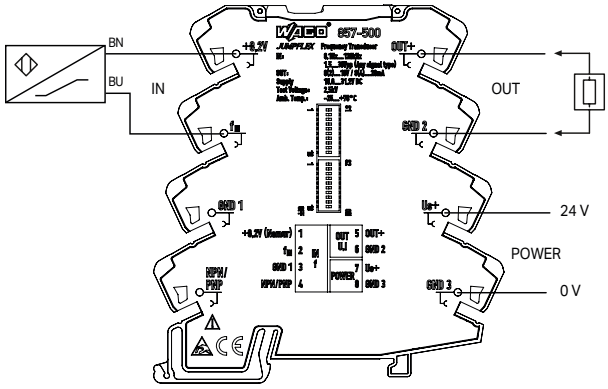
857-500

Wiring Material

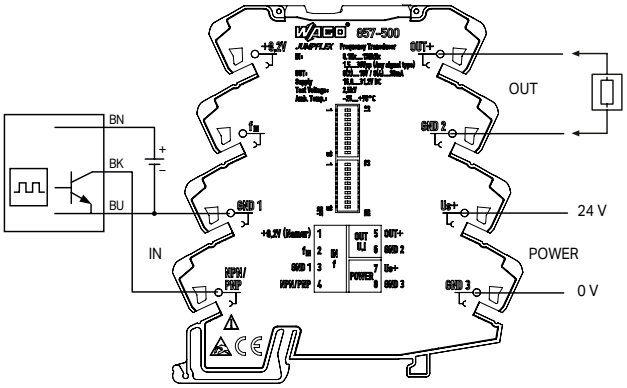
2-Wire DC (Mechanical Contact)



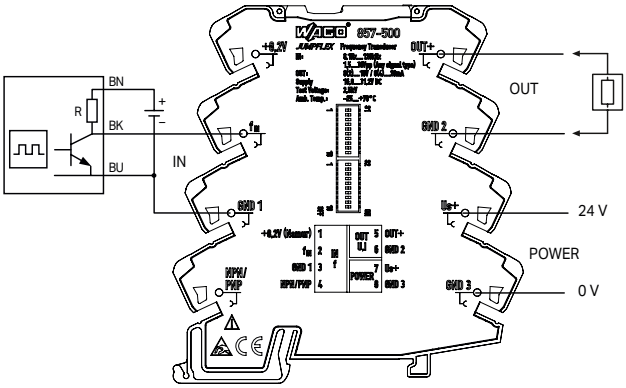
2-Wire DC NAMUR Sensor



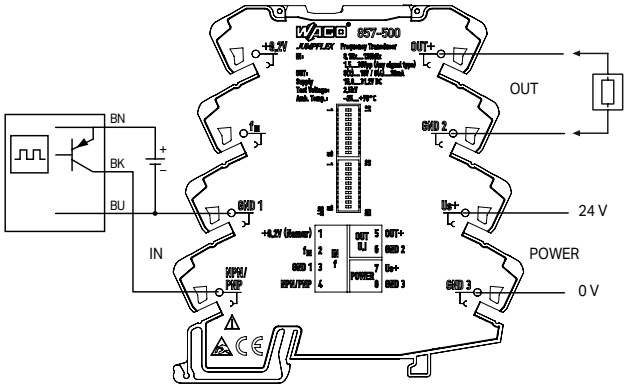
NPN Transistor Output



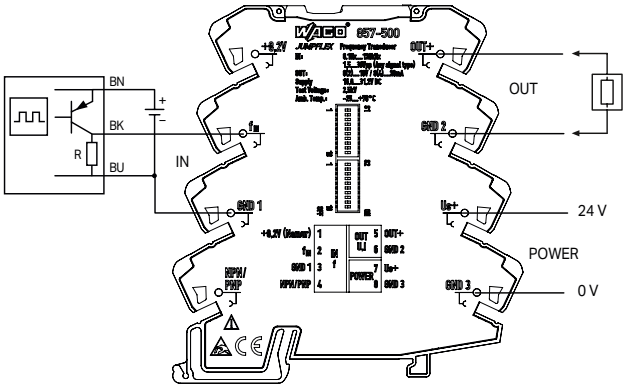
NPN Transistor Output with Pull-Up Resistor



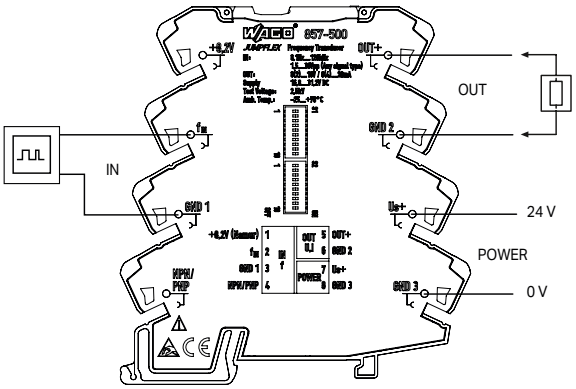
PNP Transistor Output



PNP Transistor Output with Pull-Down Resistor



Frequency Generator



Interface Configuration Software

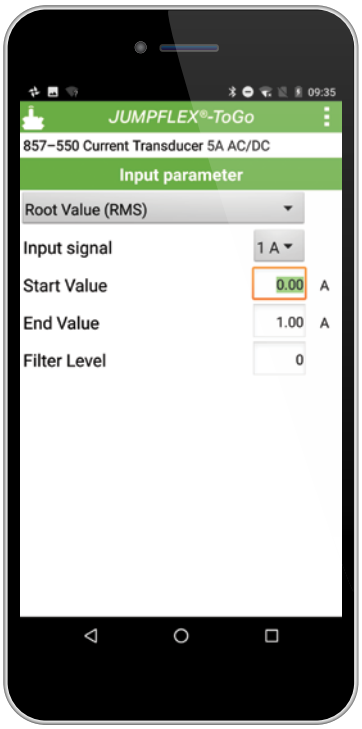
All signal conditioners offer user-friendly configuration at a glance using the interface configuration software.

All devices marked with the software symbol can be configured accordingly via the software.

Software features:
- Simulation of input and output parameters (2857 Series)
- Automatic module recognition
- Configuration and visualization of process values
- Parameterization of the digital switch output (threshold functionality)
- Communication via WAGO USB Service Cable (750-923) or WAGO *Bluetooth*® Adapter (750-921), pluggable on both series
- Creation of configuration reports
- Backup of configuration settings

Free software download at:
www.wago.com/configuration-software

JUMPFLEX®-ToGo Configuration App



(Android smartphone)

The *JUMPFLEX*®-ToGo App brings the power of PC-based configuration software to your Android mobile device.

All devices marked with the app symbol can be configured accordingly via the app.

App features:
- Configuration of input and output parameters with a stroke of the finger
- Simple display of configuration data and current value
- Communication via WAGO *Bluetooth*® Adapter (750-921)

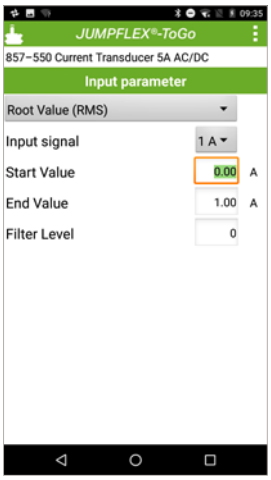
3

WAGO INTERFACE

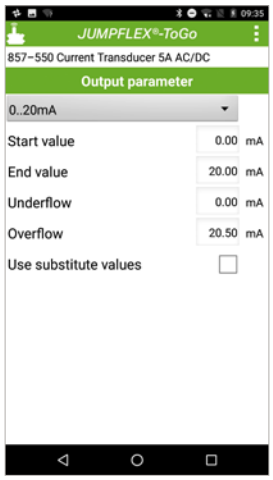
Free download from Google Play Store

Bluetooth® Adapter, 750-921

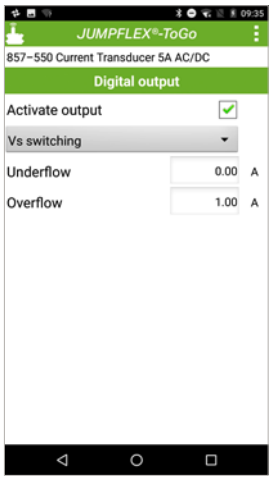
Device information



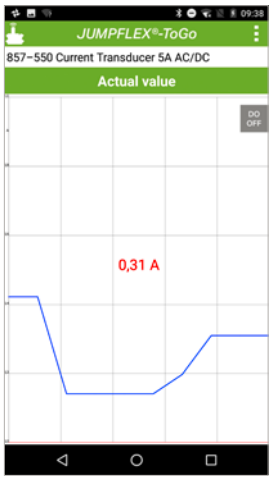
Input parameters



Output parameters



Digital output



Actual value

Configuration Display
2857 Series

3

Configuration Display		
	Item No.	Pack. Unit
	2857-900	1

Features:
- Easy mounting on 2857 Series devices
- Automatic module recognition
- Capacitive user interface with slider function
- Intuitive menu navigation
- Multicolor backlight for status indication
- Device configuration and process value visualization
- Easy copying of device configuration

All devices marked with the display symbol can be configured accordingly via the display.

Operating Data	
Operating voltage	3.3 VDC
Power consumption	≤ 60 mA
Geometric Data	
Width	22 mm / 0.866 inch
Height	13 mm / 0.512 inch
Depth	59 mm / 2.323 inch
Mechanical Data	
Mounting type	Pluggable module
Material Data	
Weight	24.3 g
Environmental Requirements	
Surrounding air temperature (operation)	–20 … +70 °C
Surrounding air temperature (storage)	–30 … +80 °C
Relative humidity	10 … 90 % (non-condensing)
Operating altitude (max.)	2000 m
Standards and Specifications	
Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-2-3; EN 50121-3-2
EMC emission of interference	EN 61000-6-4; EN 61326-2-3; EN 50121-3-2
Standards/specifications	EN 61373

Housing width: 22.5 mm Housing width: 12.5 mm

Bluetooth® Adapter
750 Series

Bluetooth® Adapter		
	Item No.	Pack. Unit
	750-921	1

Technical Data

Security encryption	128-bit encryption
Radio technology	*Bluetooth*® 2.1
Frequency band	ISM band, 2402 … 2483 MHz
Security authentication	Pin code or configurable access list
Supported profiles	Serial Port Profile (SPP)
Type of communication	Peer-to-peer connection
Coexistence	Frequency hopping spread spectrum (FHSS); Adaptive frequency hopping (AFH); Adaptive transmission power with configurable upper limit; Configurable channel blacklist; Supports coexistence optimized inquiry (transmission time ≤ 0.1 s; transmission cycle ≥ 2.9 s)
Transmission range	20 m in open air (Class 2)
Antenna	Integrated
Receiver sensitivity	-82 dBm
Configuration options	AT commands (e.g., via HyperTerminal)
Current consumption (system supply)	60 mA
Indicators	Operating mode

Connection Data

Contact type	4-pole male connector
Connection type	4-pole male connector

Geometric Data

Width	15 mm / 0.591 inch
Height	50 mm / 1.969 inch
Depth	19 mm / 0.748 inch

Material Data

Color	light gray
Weight	16.6 g
Conformity marking	CE

Environmental Requirements

Surrounding air temperature (operation)	–20 … +60 °C
Protection type	IP20

Bluetooth® Adapter in Connection with 750 Series
The *Bluetooth*® Adapter wirelessly connects a notebook computer with *Bluetooth*® functionality to the service interface of the coupler/controller. It also provides an active connection to a programmable fieldbus controller.

As a cable substitute, the *Bluetooth*® Adapter allows communication between two fieldbus controllers, as well as between fieldbus couplers/controllers via WAGO software tools (e.g., WAGO-I/O-*CHECK*, WAGO-I/O-*PRO*).

Configurable coexistence properties ensure trouble-free operation in the presence of other radio systems.

Bluetooth® Adapter in Connection with 857 Series
The *Bluetooth*® Adapter wirelessly connects a notebook computer with *Bluetooth*® functionality to the service interface of a configurable 857 Series Module.

As a cable substitute, the *Bluetooth*® adapter allows communication between modules and the WAGO software tool (WAGOframe) or configuration app for Android-based end-devices.

If required, adapter configuration may be performed via AT commands.

The adapter is supplied via both service interface and power supply of coupler/controller or module.

Application example: 750 Series

Application example: 857 Series

WAGO USB Communication Cable
750 Series

3

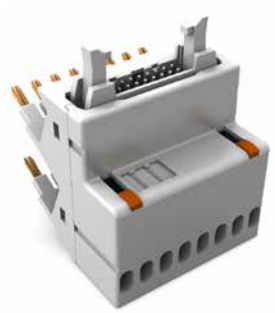
Configuration Cable; USB connection		
Length	Item No.	Pack. Unit
2.5 m	750-923	1
5.0 m	750-923/000-001	1

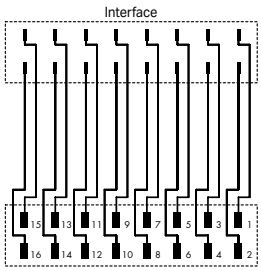
The WAGO USB Communication Cable connects a PC (notebook) to both the service interface of the 857/2857 Series Signal Conditioners and the configuration interface of WAGO's I/O fieldbus couplers/controllers.

Notice:
Using the WAGO 759-923 USB Communication Cable in combination with select programmable fieldbus controllers requires the specific firmware versions listed below (or higher):
750-841: version 12 and higher
750-872/0020-0000: version 2 and higher

Technical Data	
Connection type	4-pole male connector; USB plug (type A)
Number of poles	4
Supported operating systems	Windows XP (SP3 or higher); Windows 7 ; Windows 10
Geometric Data	
Width	15 mm / 0.591 inch
Height	50 mm / 1.97 inch
Depth	19 mm / 0.748 inch
Mechanical Data	
Weight	64.8 g
Color	black
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Protection type	IP20
EMC immunity to interference	Per EN 61000-4-3, EN 61000-4-6
EMC emission of interference	Per EN 55022

Interface Adapter
857 Series





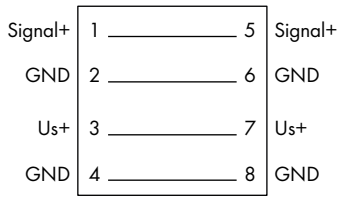
16-pole male connector

Interface Adapter; with 16-pole ribbon cable connector (DIN 41651); analog

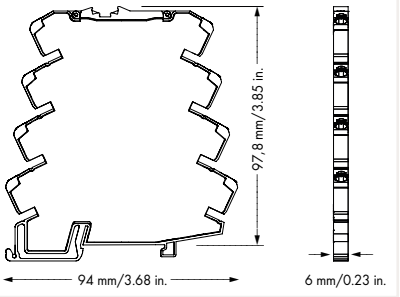
Item No.	Pack. Unit
857-980	1

Electrical Data	
Inputs/Outputs	8-channel analog input or output
Circuit type	Analog
Limiting continuous current	1 A
Contact resistance	≤ 20 mΩ
Safety and Protection	
Pollution degree	2
Overvoltage category	III
Test voltage	500 VAC; 50 Hz; 1 min
Connection Data	
Connection type 1	System
Pole number 1	16
Connector 1	DIN 41651 male connector
Performance level 1	3
Connection type 2	Field
Pole number 2	16
Design 2	Plug for jumper slot
Mechanical Data	
Mounting type	Pluggable module
Material Data	
Weight	41.4 g
Environmental Requirements	
Surrounding air temperature (operation)	–20 … +70 °C
Surrounding air temperature (storage)	–40 … +85 °C
Relative humidity	5 … 95 % (no condensation permissible)
Operating altitude (max.)	2000 m

Supply and Through Module
857 Series



Supply and Through Module		
	Item No.	Pack. Unit
	857-979	25



Short description:
WAGO's supply and through module transmits electrically isolated signals, e.g., in conjunction with the 857-980 Interface Adapter for analog signals (Item No. 857-980). When used as a supply module, it transmits the power from the connected clamping points to the adjacent modules via push-in type jumper bars.

Electrical Data	
Operating voltage	≤ 33 V AC/DC
Continuous current (max.)	8 A
Contact resistance	≤ 10 Ω
Safety and Protection	
Protection type	IP20
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 inch
Geometric Data	
Width	6 mm / 0.236 inch
Height from upper-edge of DIN-rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch
Mechanical Data	
Mounting type	DIN-35 rail
Protection type	IP20
Material Data	
Weight	28.8 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air temperature (storage)	–40 … +85 °C
Relative humidity	5 … 95 % (no condensation permissible)
Operating altitude (max.)	2000 m
Standards and Specifications	
Conformity marking	CE

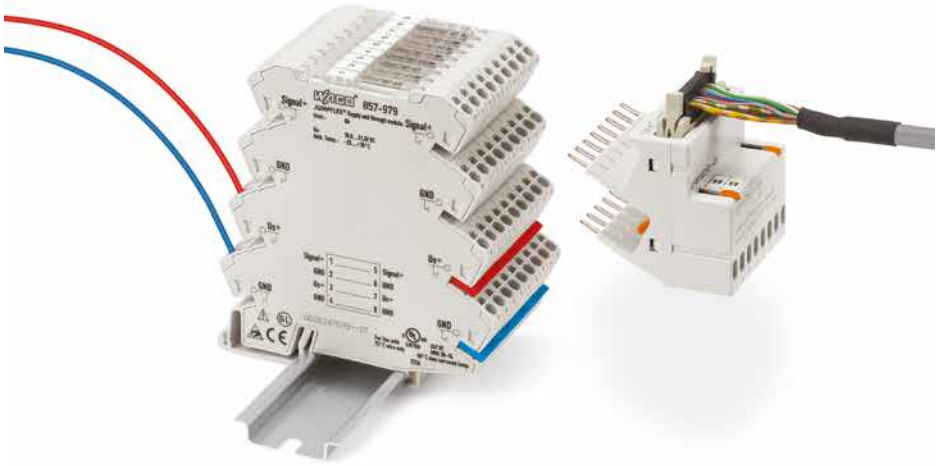
857-979

Application example:

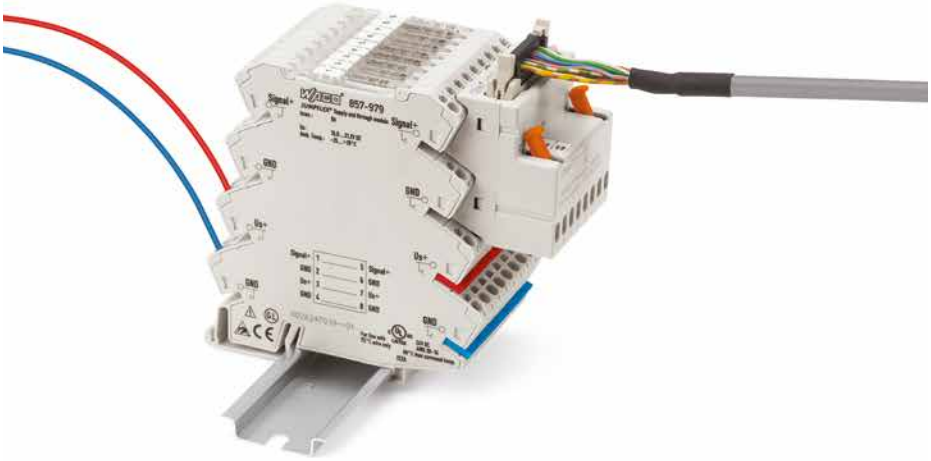
Power supply for 8 modules with plugged interface adapter

•WAGO interface adapter, 857-980
•WAGO ribbon cable, 706-100/1602-200, 16-pole socket/open-ended
•Push-in type jumper bar, 9-way, 859-409

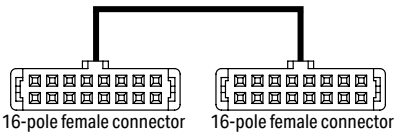
1



2



Connection Cable; Paired with an Interface Adapter
706 Series



Connection Cable; 16-pole; DIN 41651 connector; 16-pole; DIN 41651 connector; Conductor cross section: 0.14 mm²/24 AWG		
Length	**Item No.**	Pack. Unit
1 m	**706-753/301-100**	1
2 m	**706-753/301-200**	1
3 m	**706-753/301-300**	1

WAGO's 16-pole connection cables transmit the signal one-to-one from the 16-pole connector and are available in 1-, 2- and 3-meter lengths. Signal transmission from the 857-980 Interface Adapter is also possible.
They are suitable for system wiring when paired with WAGO's Interface Adapter (Item No. 857-980).

Note:
When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

Electrical Data	
Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A
Safety and Protection	
Degree of protection	IP20
Connection Data	
Connection type 1	System
Pole number 1	16
Pluggable connectors	Pluggable connector per DIN 41651; Female connector
Connection type 2	System
Pole number 2	16
Connector 2	Pluggable connector per DIN 41651; Female connector
Cable type	LiYY
Wire cross-section	0.14 mm²
Color code	per DIN VDE 47100
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C

Connection Cable; Paired with an Interface Adapter
706 Series

Connection Cable; 16-pole;
DIN 41651 connector; open-ended; Conductor cross section: 0.14 mm²/24 AWG; UR components

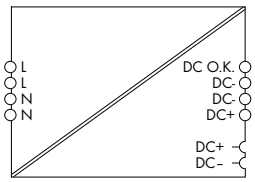
Length	Item No.	Pack. Unit
2 m	706-100/1602-200	1

Color Coding acc. to DIN VDE 47100		HE 10 16-pole Contact Number
white		1
brown		2
green		3
yellow		4
gray		5
pink		6
blue		7
red		8
black		9
violet		10
gray/pink		11
red/blue		12
white/green		13
brown/green		14
white/yellow		15
yellow/brown		16

Note:
When using more than 10 wires, the maximum current per wire must be reduced to 0.7 A.

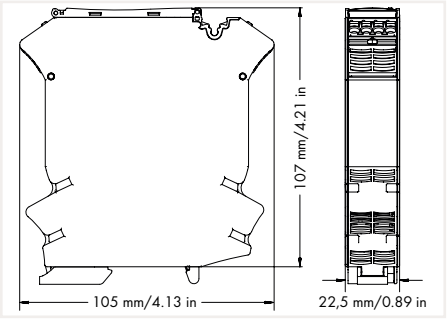
Electrical Data	
Operating voltage	≤ 35 VDC
Current per wire (max.)	1 A
Safety and Protection	
Degree of protection	IP20
Connection Data	
Connectors	1 x 16-pole connector per DIN 41651; open-ended
Color code	DIN VDE 47100
Wire cross section	0.14 mm²/24 AWG LiYY
Physical Data	
Cable length	2 m
Material Data	
Weight	202 g
Environmental Requirements	
Surrounding air temperature (operation)	−25 … +70 °C

Switched-Mode Power Supply in 2857 Series Housing
787 Series



Switched-Mode Power Supply; for signal conditioners; 1-phase; Output voltage: 24 VDC; Output current: 1 A

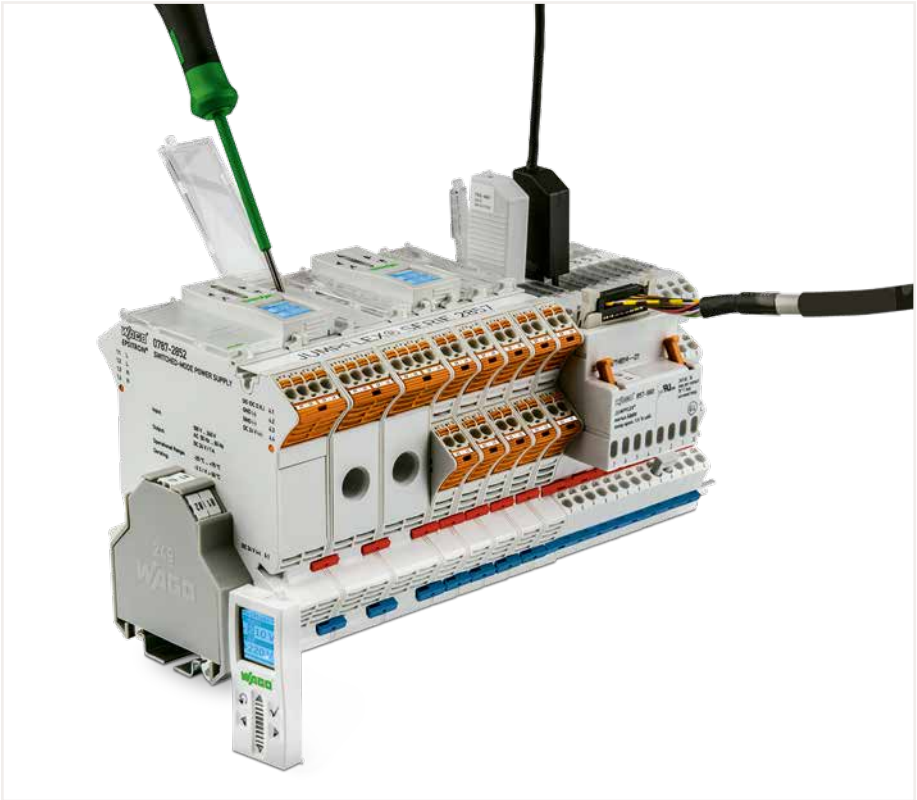
	Item No.	Pack. Unit
	787-2852	1



- Switched-mode power supply in 22.5 mm wide 2857 Series housing, same profile as 2857 and 857 Series Signal Conditioners
- Both 24 VDC and 0 V output voltage can be easily supplied to adjacent modules via 859-4xx Jumpers
- Pluggable *picoMAX*® connection technology
- Natural convection cooling
- DC OK message as active signal output (24 VDC; 20 mA)
- Integrated redundancy diode enables easy fail-safe power supply via parallel connection of two power supplies
- Approvals for worldwide applications with modules (pending)

Input	
Phases	1
Nominal input voltage $U_{i\,nom}$	100 … 240 VAC
Input voltage range	85 … 264 VAC; 120 … 372 VDC
Nominal mains frequency range	47 … 63 Hz; 0 Hz
Input current I_i	≤ 0.28 A (240 VAC; nominal load); ≤ 0.49 A (100 VAC; nominal load)
Discharge current	≤ 1 mA
Inrush current	≤ 30 A
Power factor	≥ 0.6 (230 VAC, nominal load; per EN 61000-3-2)
Power factor correction (PFC)	None
Mains failure hold-up time	≥ 20 ms (100 VAC)
Output	
Nominal output voltage $U_{o\,nom}$	24 VDC (SELV)
Default setting	24 VDC
Nominal output current $I_{o\,nom}$	1 A
Nominal output power	24 W
Adjustment accuracy	≤ 2 %
Deviation; Dynamic load change: 10 … 90 %	≤ 1 %
Residual ripple	≤ 100 mV (peak-to-peak)
Current limitation	1.1 x $I_{o\,nom}$ typ.
Overload behavior	Constant current
Signaling and Communication	
Signaling	1 x DC OK LED (green); 1 x Overload LED (red); 1 x active DC OK signal output (24 VDC; 20 mA)
Status indication	Green LED (U_o > 21.5 V); Red LED (overload)
Efficiency/Power Losses	
Power loss P_l	≤ 1 W (230 VAC; no load); ≤ 4.3 W (230 VAC; nominal load)
Power loss (max.) $P_{l\,max.}$	≤ 5 W (100 VAC / 24 VDC; 1 A)
Efficiency (typ.)	86 % (230 VAC; nominal load); 84 % (110 VAC, nominal load);
Fuse Protection	
Internal fuse	T 2 A / 250 VAC
Recommended backup fusing	Circuit breaker: 6 A, 10 A, 16 A; Tripping characteristic: B or C
Safety and Protection	
Isolation voltage (pri.-sec.)	4.242 kVDC
Pollution degree	2
Protection class	II
Protection type	IP20 (per EN 60529)
Feedback voltage	≤ 60 VDC
Transient suppression (primary)	Varistor
Overvoltage protection (secondary)	Internal protective circuit; ≤ 29 … 31 VDC (in the event of a fault)
Short-circuit-protected	Yes
Open-circuit-proof	Yes
Parallel operation	Yes, for two devices of the same type
Series operation	Yes, for two devices of the same type
MTBF	> 500,000 h (at +25 °C per IEC 61709)
Connection Data	
Number of jumper slots	4
Connection type 1	Input/output/signaling
Connection technology	Push-in CAGE CLAMP®
WAGO Connector	*picoMAX*® 5.0
Solid conductor	0.2 … 2.5 mm² / 24 … 10 AWG
Fine-stranded conductor	0.2 … 2.5 mm² / 24 … 10 AWG
Strip length	9 … 10 mm / 0.35 … 0.39 inch
Geometric Data	
Width	22.5 mm / 0.89 inch
Height from upper-edge of DIN-rail	107 mm / 4.21 inch
Depth	105 mm / 4.13 inch

Mechanical Data	
Mounting type	DIN-35 rail (EN 60715)
Material Data	
Weight	200 g
Environmental Requirements	
Surrounding air temperature (operation)	–25 … +70 °C
Surrounding air temperature (storage)	–25 … +85 °C
Relative humidity	5 … 96 % (no condensation permissible)
Derating	–2 %/K (> +60 °C)
Climatic category	3K3 (per EN 60721)
Standards and Specifications	
Conformity marking	CE
Standards/specifications	EN 61000-6-2; EN 61000-6-3; EN 60950-1; UL 60950*; cULus 508*; ANSI-ISA 12.12.01 (Class I Div 2)*; ATEX/IEC Ex*; DNV GL (*pending)



Application example

Accessories

Push-in type jumper bar; light gray; insulated; 18 A		
Description	Item No.	Pack. Unit
2-way	859-402	200 (8x25)
3-way	859-403	200 (8x25)
4-way	859-404	200 (8x25)
5-way	859-405	200 (8x25)
6-way	859-406	100 (4x25)
7-way	859-407	100 (4x25)
8-way	859-408	100 (4x25)
9-way	859-409	100 (4x25)
10-way	859-410	100 (4x25)

Item no. suffixes for colored push-in type jumper bars		
	Item No.	
yellow	.../000-029	
red	.../000-005	
blue	.../000-006	

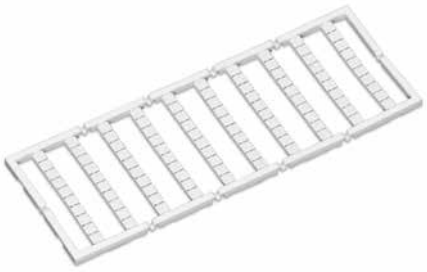
Comb-style jumper bar; insulated		
	Item No.	Pack. Unit
2-way	281-482	100

Operating tool with a partially insulated shaft; Type 2; Blade: 3.5 x 0.5 mm		
	Item No.	Pack. Unit
	210-720	1

End stop		
Width	Item No.	Pack. Unit
6 mm	249-116	1
10 mm	249-117	1
14 mm	249-197	1

Test pin		
	Item No.	Pack. Unit
	735-500	1

Marking



WMB Multi Marking System		
Marking	**Item No.**	Pack. Unit
plain	**793-501**	5 cards
1 ...10 (10 x)	**793-502**	5 cards
11 ... 20 (10 x)	**793-503**	5 cards
21 ... 30 (10 x)	**793-504**	5 cards
31 ... 40 (10 x)	**793-505**	5 cards
41 ... 50 (10 x)	**793-506**	5 cards
1 ... 50 (2 x)	**793-566**	5 cards

Marking Strip for TOPJOB® S; white; plain; 11 mm wide		
	Item No.	Pack. Unit
50 m reel	**2009-110**	1