DO (DC O.K.) 4.1
GND (-) 4.2
GND (-) 4.3
DC 24 V (+) 4.4
DC 24 V (+) 6.1
GND (-) 6.2

3

JUMPFLEX® Signal Conditioners

Universal Isolation Amplifier

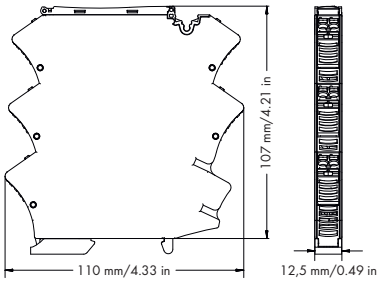
Configuration via:

DIP switch

Interface configuration software

Interface configuration app

Configuration display



1.1	U+	INPUT VOLTAGE	OUTPUT	OUT+	4.1
1.2	U-			OUT-	4.2
2.1	I+	INPUT CURRENT	POWER	Us+	5.1
2.2	I-			GND	5.2
3.1	DO (GND)	DO	JUMPER POWER	Us+	6.1
3.2	DI (GND)	DI (HOLD)		GND	6.2

Short description:
The Universal Isolation Amplifier converts, amplifies, filters and electrically isolates analog signals.

Features:

- Analog unipolar/bipolar signals at input/output
- A digital signal output reacts to configured measuring range limits (switching ON/OFF delay and threshold value switch function configurable with up to two threshold values).
- A 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 acc. to EN 61140

Description	Item No.	Pack. Unit
JUMPFLEX® **Signal Conditioner, for DIN 35 rail**	**2857-401**	1
Universal Isolation Amplifier		

Technical Data

Configuration:	
Configuration	DIP switch, interface configuration software, interface configuration app, configuration display
Input:	
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
	Voltage:
	± 1 V; 0 ... 1 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 resistance	≥ 1 MΩ (U input); ≤ 50 Ω (I input)
Max. operating frequency	10 kHz / 5 kHz / 100 Hz / 30 Hz (configurable via DIP switch)
Input – Digital:	
HOLD signal	11.8 V ... U_S
Output:	
Output signal	**Current:**
	± 10 mA; 0 ... 10 mA; 2 ... 10 mA;
	± 20 mA; 0 ... 20 mA; 4 ... 20 mA
	Voltage:
	± 5 V; 0 ... 5 V; 1 ... 5 V;
	± 10 V; 0 ... 10 V; 2 ... 10 V
Load impedance	**Current:** ≤ 600 Ω;
	Voltage: ≥ 1 kΩ
Overload capacity	-250 V; +250 V / -120 mA; +120 mA
Output – Digital:	
Max. switching voltage	Supply voltage applied -0.3 V
Max. continuous current I_{DO}	100 mA (no internal restriction)

Technical Data

General specifications:	
Nominal supply voltage V_S	24 VDC
Supply voltage range	16.8 V ... 31.2 V (-30 % ... +30 %)
Current consumption at 24 VDC	≤ 70 mA (+ IDO)
Response time (T_{10-90})	< 1 ms
Transmission error	≤ 0.1 % of the full scale value
Temperature coefficient	≤ 0.01 %/K
Environmental requirements:	
Ambient operating temperature	-40 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage	
(input/output/supply)	4 kV AC, 50 Hz, 1 min.
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S (*picoMAX*® 5.0)
Cross sections	solid/fine-stranded:
	0.2 ... 2.5 mm² / AWG 24 ... 12
Strip length	9 ... 10 mm / 0.35 ... 0.39 in
Dimensions and weight:	
Dimensions (mm) W x H x L	12.5 x 107 x 110
	Height from upper-edge of DIN 35 rail
Weight	86 g
Standards and approvals:	
Conformity marking	CE
Standards/Specifications	DIN EN 61010-1:2010;
	DIN EN 60664-1:2008;
	Safe isolation acc. to
	DIN EN 61140:2002; IEC 61000-6-2;
	IEC 61000-6-4
Accessories:	see pages 226 ... 236

DIP Switch Adjustability

● = ON

2857-401

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

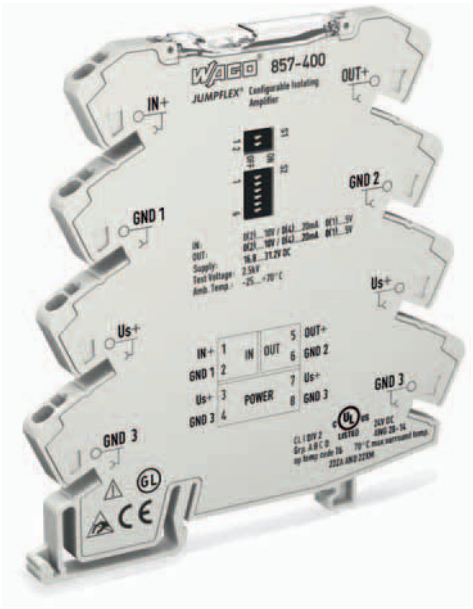
Output				Digital Output (DO)		
3	4	Measuring Range Underflow	Measuring Range Overflow	5	6	
		Lower limit of output range -5% **	Upper limit of output range +2.5% **			Off
●		Lower limit of output range	Upper limit of output range +2.5%	●		DO U_S switching
	●	Lower limit of output range	Upper limit of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

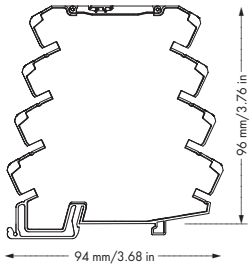
JUMPFLEX® Signal Conditioners

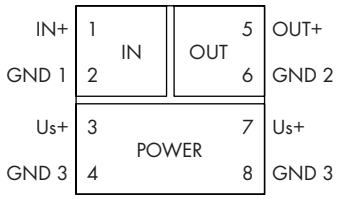
Isolation Amplifier, with Zero/Span Adjustment



Configuration via:

DIP switch





Short description:
The configurable 857-400 Isolation Amplifier is used to convert, amplify, filter and electrically isolate analog standard signals.

Characteristics:
- Zero/span adjustment across the entire measuring range
- Calibrated scale switching
- Switchable max. operating frequency
- Safe 3-way isolation with 2.5kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**857-400**	1
Isolation Amplifier, with Zero/Span Adjustment		

Technical Data

Configuration:	
Configuration	DIP switch
Input:	
Input signal	0 ... 20 mA, 4 ... 20 mA,
	0... 5 V, 0 ... 10 V, 2 ... 10 V, 1 ... 5 V
	(calibrated switchable)
Input resistance	≤ 50 Ω (In = mA)
	≥ 100 kΩ (In = V)
Output:	
Output signal	0 ... 20 mA, 4 ... 20 mA,
	0... 5 V, 0 ... 10 V, 2 ... 10 V, 1 ... 5 V
	(calibrated switchable)
Load impedance	600 Ω (Out = mA)
	2 kΩ (Out = V)
General specifications:	
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 25 mA
Max. operating frequency	100 Hz / 5 kHz
	(switchable via DIP switch)
Response time (T_{10-90})	< 3.5 ms / < 100 µs
Transmission error	≤ 0.1 % of the full scale value
Temperature coefficient	≤ 0.01 % /K
Zero/span adjustment	± 3% of upper range value

Technical Data

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	36.8 g
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
cULus ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
Shipbuilding	GL
Accessories	see pages 226 ... 236

DIP Switch Adjustability

● = ON

857-400

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

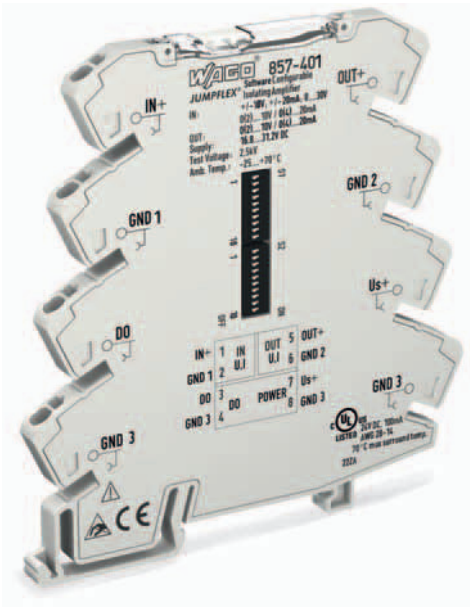
Input Signal			Output Signal						Max. Operating Frequency	
1	2		1	2	3	4	5		6	
●		0 ... 20 mA						0 ... 20 mA		5 kHz
						●		4 ... 20 mA	●	100 Hz
			●	●				0 ... 10 V		
			●	●		●		2 ... 10 V		
			●	●	●			0 ... 5 V		
			●	●	●	●		1 ... 5 V		
●		4 ... 20 mA					●	0 ... 20 mA		
								4 ... 20 mA		
	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

Default Settings

Input	0 ... 20 mA
Output	0 ... 20 mA
Max. Operating Frequency	5 kHz

JUMPFLEX® Signal Conditioners

Isolation Amplifier, configurable with Digital Output

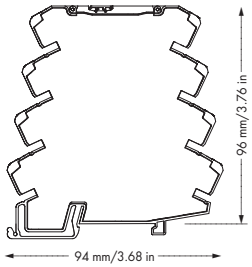


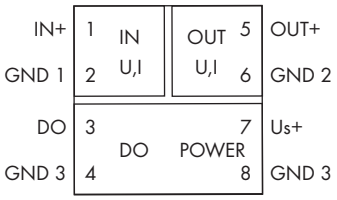
Configuration via:

DIP switch

Interface configuration software

Interface configuration app





Short description:
The software-configurable 857-401 Isolation Amplifier converts standard signals and amplifies, filters and electrically isolates analog standard signals.

Characteristics:
- PC configuration interface
- Digital switching output
- Calibrated scale switching
- Analog, unipolar and bipolar, standard signals at input
- Clipping capability allows analog standard signal limitation to upper range values.
- Safe 3-way isolation with 2.5kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**857-401**	1
Isolation Amplifier, configurable		
with Digital Output		

Technical Data

Configuration:	
Configuration	DIP switch, interface configuration
	software, interface configuration app
Input:	
Input signal	-20 ... +20mA, -10 ... +10V, 0 ... +30V *
Input resistance	≤ 200 Ω (I input)
	> 100 kΩ (U input)
Max. input signal	31.2 V (U_{IN}) 100 mA (I_{IN})
Output:	
Output signal	0 - 20mA, 4 - 20mA,
	0 - 5V, 1 - 5V, 0 - 10V, 2 - 10V,
	0 - 10mA, 2 - 10mA*
Load impedance	≤ 600 Ω (I output)
	≥ 2 kΩ (U output)
Step response	≤ 8ms
Output - Digital	
Max. switching voltage	Supply voltage applied
Max. continuous current	500 mA (up to 60 °C)
	100 mA (60 °C ... 70 °C)
General specifications:	
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 40 mA
Min. measuring span	1 V, 2 mA (configurable)
Max. Messspanne	30 V, 40 mA
Transmission error	≤ 0.1 % of upper range value
Temperature coefficient	≤ 0.01 % /K

Technical Data

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min.
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	42 g
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
Shipbuilding	GL
Accessories:	see pages 226 ... 236

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

DIP Switch Adjustability

● = ON

857-401

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

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

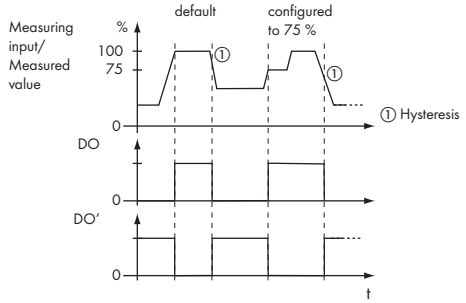
*acc. to NAMUR NE 43

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

Switching Behavior, Digital Output (DO)

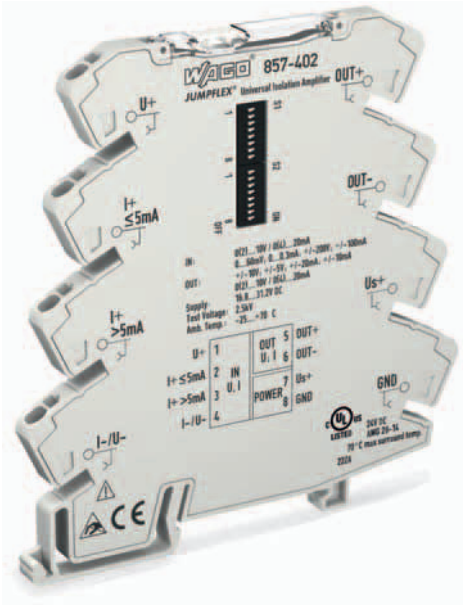


Default Settings

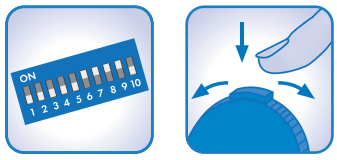
All DIP switches are in „OFF" position for delivery. This is the position used to parameterize the device via PC configuration software.	
Input	
Input signal	Voltage
Start value	0 V
End value	10 V
Output	
Output signal	Current
Start value	0 mA
End value	20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA
Digital output DO	not active

JUMPFLEX® Signal Conditioners

Universal Isolation Amplifier

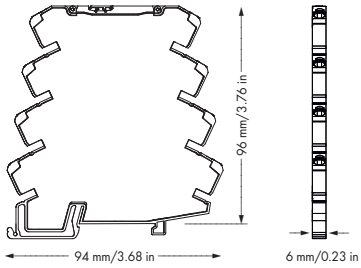


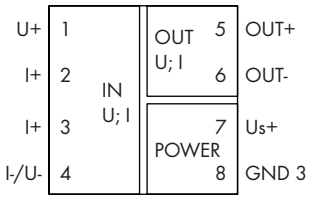
Configuration via:



DIP switch

Push/Slide Switch





Short description:
The universal 857-402 Isolation Amplifier converts unipolar and bipolar standard signals and amplifies, filters and electrically isolates analog standard signals.

Characteristics:
- Overload protection of current input using reversible fuse
- Zero/span adjustment across the entire measuring range (slide switch)
- Calibrated scale switching for all 456 signals
- Standard analog unipolar and bipolar signals, input/output
- Switchable max. operating frequency
- Clipping capability allows analog standard signal limitation to upper range values.
- Safe 3-way isolation with 2.5kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**857-402**	1
Universal Isolation Amplifier		

Technical Data

Configuration:	
Configuration	DIP switch, push/slide switch
Input:	
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
	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	approx. 1 MΩ (U input)
	≤ 5 mA approx. 100 Ω;
	> 5 mA approx. 10 Ω (I input)
Output:	
Output signal	**Voltage:**
	± 5 V, 0 ... 5 V, 1 ... 5 V,
	± 10 V, 0 ... 10 V, 2 ... 10 V
	Current:
	± 10 mA, 0 ... 10 mA, 2 ... 10 mA,
	± 20 mA, 0 ... 20 mA, 4 ... 20 mA
Load impedance	≤ 600 Ω (I output)
	≥ 1 kΩ (U output)

Technical Data

General specifications:	
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 40 mA
Max. operating frequency	100 Hz / 5 kHz
	(switchable via DIP switch)
Response time (T_{10-90})	< 3.5 ms / < 100 µs
Transmission error	≤ 0.08 % of upper range value
Temperature coefficient	≤ 0.01 % /K
Zero/span adjustment	Adjustable via push/slide switch
Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min.
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	54.3 g
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
Shipbuilding	GL
Accessories	see pages 226 ... 236

DIP Switch Adjustability

● = ON

857–402

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

More information on measurement range setting is available in 857-402 instruction leaflet.

DIP Switch S2

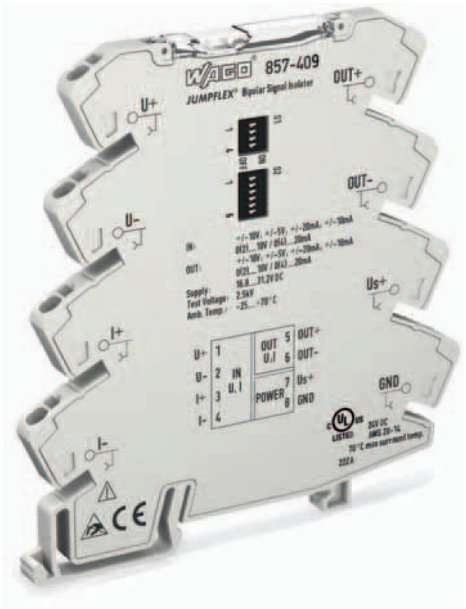
Output Signal Ranges						Reserve	Clipping		Rocker Switch Lock	
1	2	3	4	5		6	7		8	
					Default setting*			inactive (analog response)		switched off
		●			0 ... 10 V		●	active (limiting response)	●	switched on
		●		●	± 10 V					
		●	●		2 ... 10 V					
	●				0 ... 5 V					
	●			●	± 5 V					
	●		●		1 ...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

***Default setting**

Input	± 10 V
Output	± 10 V
Max. operating frequency	5 kHz
*The input and output range DIP switches must be readjusted when changing the default setting.	

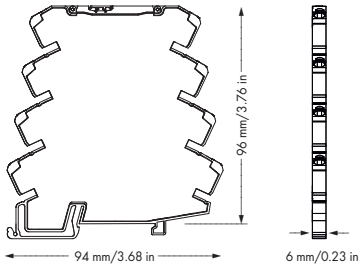
JUMPFLEX® Signal Conditioners

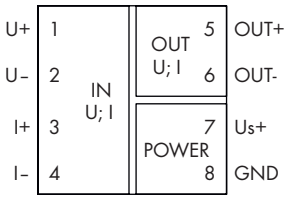
Bipolar Isolation Amplifier



Configuration via:

DIP switch





Short description:
The 857-409 Bipolar Isolation Amplifier converts unipolar and bipolar standard signals and amplifies, filters and electrically isolates analog standard signals.

Characteristics:
- Overload protection of current input using reversible fuse
- Zero/span adjustment across the entire measuring range
- Calibrated scale switching
- Standard analog unipolar and bipolar signals, input/output
- Switchable max. operating frequency
- Clipping capability allows analog standard signal limitation to upper range values.
- Safe 3-way isolation with 2.5kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**857-409**	1
Bipolar Isolation Amplifier		

Technical Data

Configuration:	
Configuration	DIP switch
Input:	
Input signal	**Voltage:**
	± 5V, 0 - 5V, 1 - 5V,
	± 10V, 0 - 10V, 2 - 10V
	Current:
	± 10mA, 0 - 10mA, 2 - 10mA,
	± 20mA, 0 - 20mA, 4 - 20mA
Input resistance	approx. 1MΩ (U input)
	approx. 50Ω (I input)
Output:	
Output signal	**Voltage:**
	± 5V, 0 - 5V, 1 - 5V,
	± 10V, 0 - 10V, 2 - 10V,
	Current:
	± 10mA, 0 - 10mA, 2 - 10mA,
	± 20mA, 0 - 20mA, 4 - 20mA
Load impedance	≤ 600 Ω (I output)
	≥ 2 kΩ (U output)
Overload capacity	32 V / 50 mA
Residual ripple	< 10mV eff
General specifications:	
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 25 mA
Max. operating frequency	100 Hz / > 5 kHz
	(switchable via DIP switch)
Response time (T_{10-90})	< 3.5ms / < 60µs
Transmission error	≤ 0.1 % of upper range value
Temperature coefficient	≤ 0.01% /K
Zero/span adjustment	± 5 % of upper range value
	(adjustable via zero/span potentiometer)

Technical Data

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	42 g
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
Shipbuilding	GL
Accessories	see pages 226 ... 236

DIP Switch Adjustability

● = ON

857-409

Dip Switch S1 (4-fold) **Dip Switch S2 (6-fold)**

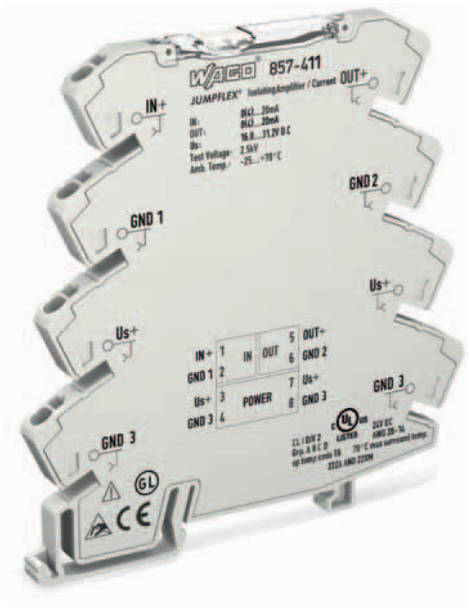
Input Signal					Output Signal						Max. Operating Frequency	
1	2	3	4		1	2	3	4	5		6	
●				± 20 mA				●		± 20 mA	●	5 kHz
●	●			± 10 mA			●	●		± 10 mA		100 Hz
●				± 10 V	●	●		●		± 10 V		
●	●			± 5 V	●	●	●	●		± 5 V		
				0 ... 20 mA						0 ... 20 mA		
		●		4 ... 20 mA					●	4 ... 20 mA		
	●			0 ... 10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

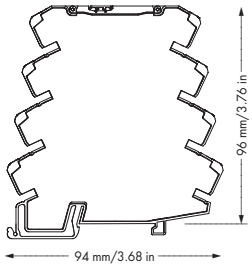
Default Settings

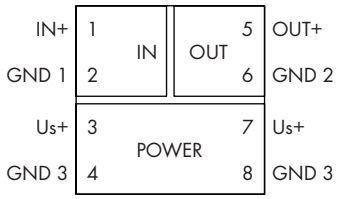
Input	± 10 V
Output	± 10 V
Max. Operating Frequency	5 kHz

JUMPFLEX® Signal Conditioners

Isolation Amplifiers, Fixed Setting for Voltage or Current Signals







Short description:
The pre-configured isolation amplifiers convert, amplify, filter and electrically isolate standard analog signals.

Characteristics:
- Input/Output: current/voltage signal
- Safe 3-way isolation with 2.5kV test voltage to EN 61140

Description	Input signal	Output signal	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**				
Isolation amplifier	0(4) ... 20 mA	0(4) ... 20 mA	**857-411**	1
Isolation amplifier	0(2) ... 10 V	0(2) ... 10 V	**857-412**	1
Isolation amplifier	0 ... 10 V	0 ... 20 mA	**857-413**	1
Isolation amplifier	0 ... 10 V	4 ... 20 mA	**857-414**	1
Isolation amplifier	0 ... 20 mA	0 ... 10 V	**857-415**	1
Isolation amplifier	4 ... 20 mA	0 ... 10 V	**857-416**	1

Technical Data

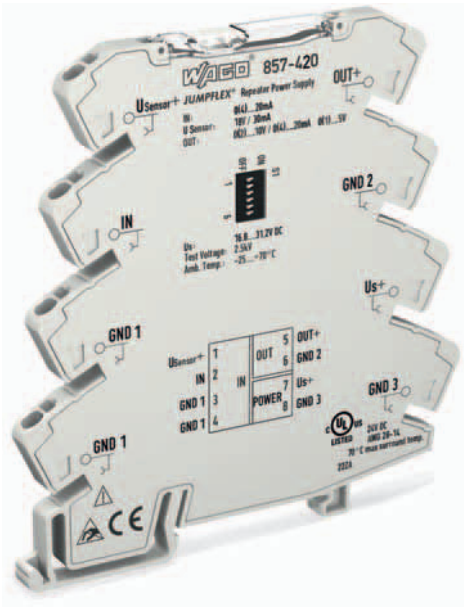
Input:	
Input signal	**857-411:** 0(4) ... 20 mA
	857-412: 0(2) ... 10 V
	857-413: 0 ... 10 V
	857-414: 0 ... 10 V
	857-415: 0 ... 20 mA
	857-416: 4 ... 20 mA
Input resistance	≤ 50 Ω (I input)
	≥ 100 kΩ (U input)
Overload capacity	30 V / 50 mA
Output:	
Output signal	**857-411:** 0(4) ... 20 mA
	857-412: 0(2) ... 10 V
	857-413: 0 ... 20 mA
	857-414: 4 ... 20 mA
	857-415: 0 ... 10 V
	857-416: 0 ... 10 V
Load impedance	≤ 600 Ω (I output)
	≥ 2 kΩ (U output)
General specifications:	
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 25 mA
Max. operating frequency	100 Hz
Response time (T_{10-90})	< 3.5 ms
Transmission error	≤ 0.1 % of upper range value
Temperature coefficient	≤ 0.01 % /K

Technical Data

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	49.2 g
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
cULus ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
Shipbuilding	GL
Accessories	see pages 226 ... 236

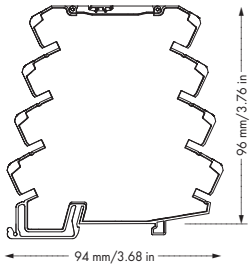
JUMPFLEX® Signal Conditioners

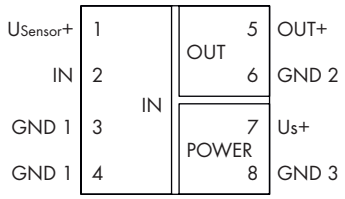
Repeater Power Supply, configurable with Current and Voltage Output



Configuration via:

DIP switch





Short description:
The 857-420 Repeater Power Supply links 2- or 3-wire transmitters located in the field. It provides the power required and transmits the analog signals in an electrically isolated way.

Characteristics:
- Power supply to SMART transmitters
- Calibrated scale switching
- Safe 3-way isolation with 2.5kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**857-420**	1
Repeater Power Supply, configurable with Current and Voltage Output		

Technical Data

Configuration:	
Configuration	DIP switch
Input:	
Input signal	0 ... 20 mA, 4 ... 20 mA
	(calibrated switchable)
Input resistance	≤ 50 Ω
Max. input current	50 mA
Transmitter supply	V_v = 18 V at 30 mA
Output:	
Output signal	0 ... 20 mA, 4 ... 20 mA,
	0... 5 V, 0 ... 10 V, 2 ... 10 V, 1 ... 5 V
	(calibrated switchable)
Load impedance	600 Ω (Out = mA)
	2 kΩ (Out = V)
Offset	< 20 µA / < 10 mV
Residual ripple	< 10mV eff
General specifications:	
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 45 mA
Max. operating frequency	100 Hz
Response time (T_{10-90})	< 3.5 ms
Transmission error	≤ 0.1 % of the full scale value
Temperature coefficient	≤ 0.01 % /K

Technical Data

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	46.7 g
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
Shipbuilding	GL
Accessories	see pages 226 ... 236

DIP Switch Adjustability

● = ON

857-420

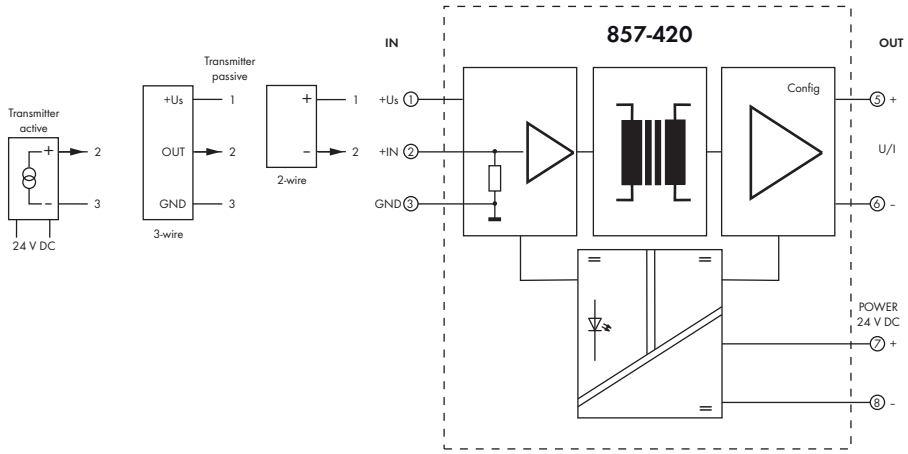
Dip Switch S1 (6-fold)

						Input Signal	Output Signal
1	2	3	4	5	6		
					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

Default Settings

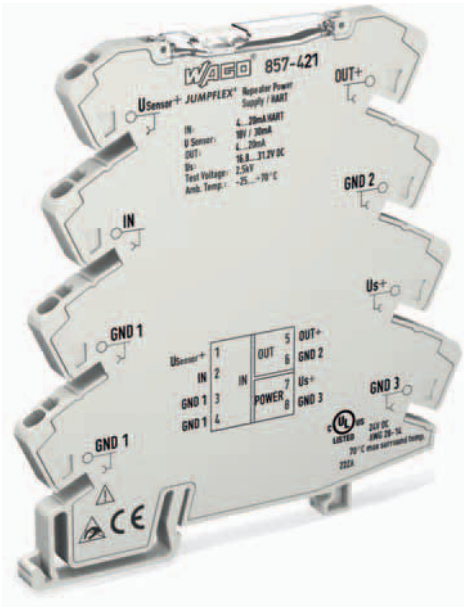
Input	0 ... 20 mA
Output	0 ... 20 mA
DIP 6	n.c.

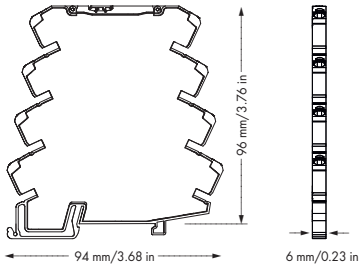
Connection assignment

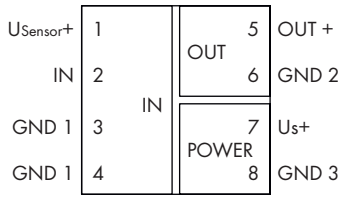


JUMPFLEX® Signal Conditioners

Repeater Power Supply, HART







Short description:
The 857-421 HART Repeater Power Supply links SMART transmitters located in the field. It provides the power required and transmits the analog signals in an electrically isolated way.

Characteristics:
- HART communication
- Power supply to SMART transmitters
- Safe 3-way isolation with 2.5kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**857-421**	1
Repeater power supply, HART		

Technical Data

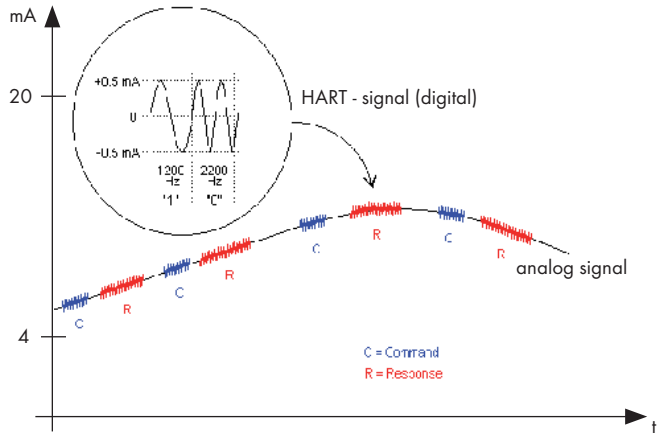
Input:	
Input signal	4 ... 20 mA
Input resistance	≤ 50 Ω
Transmitter supply	V_v = 18 V at 30 mA
Max. Eingangsstrom	Max. Speisestrom
Output:	
Output signal	4 ... 20 mA
Load impedance	230 - 600Ω
Offset	< 20 µA
Residual ripple	< 10mV eff
General specifications:	
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 45 mA
Max. operating frequency	100 Hz signal / ≥ 2.5 kHz HART
Response time (T_{10-90})	< 3.5 ms signal
Transmission error	≤ 0.1 % of the full scale value
Temperature coefficient	≤ 0.01 % /K

Technical Data

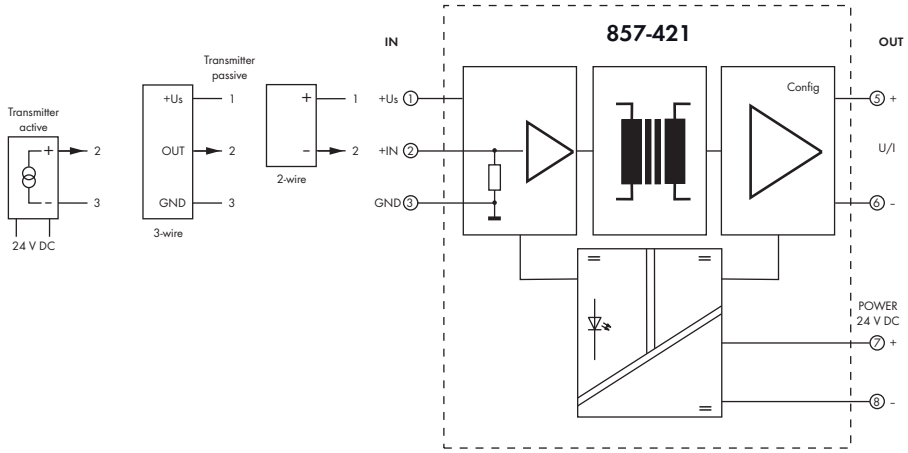
Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	47.8 g
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
Shipbuilding	GL
Accessories	see pages 226 ... 236

Simultaneous transmission of analog and digital signals

857-421

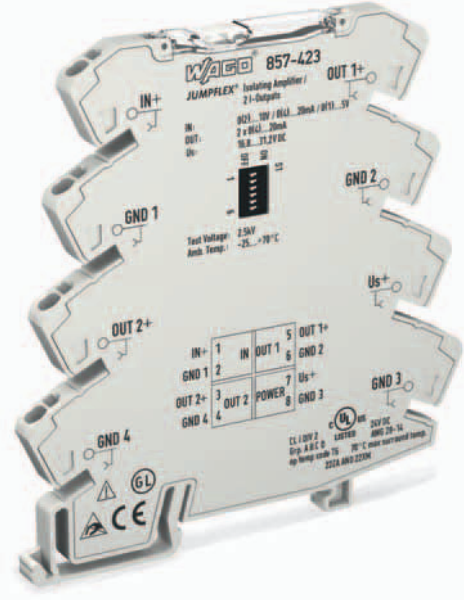


Connection assignment



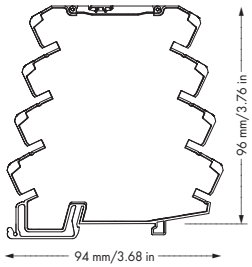
JUMPFLEX® Signal Conditioners

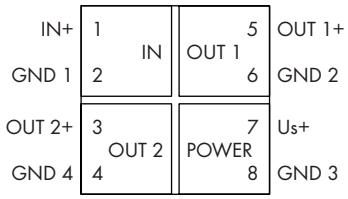
Signal Splitter with 2 configurable Current Outputs



Configuration via:

DIP switch





Short description:
The 857-423 Signal Splitter converts standard signals and amplifies, filters and electrically isolates analog standard signals.

Characteristics:
- Two configurable current outputs
- Calibrated scale switching
- Switchable max. operating frequency
- Safe 3-way isolation with 2.5kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35**	**857-423**	1
Signal Splitter with 2 configurable Current Outputs		

Technical Data

Configuration:	
Configuration	DIP switch
Input:	
Input signal	0 ... 20 mA, 4 ... 20 mA, 0... 5 V,
	0 ... 10 V, 2 ... 10 V, 1 ... 5 V
	(calibrated switchable)
Input resistance	≤ 50 Ω (In = mA)
	≥ 100 kΩ (In = V)
Output:	
Output signal	2 x 0(4) ... 20 mA
	(calibrated switchable)
Load impedance	2 x 300Ω
General specifications:	
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 35 mA
Max. operating frequency	100 Hz / 1 kHz
	(switchable via DIP switch)
Response time (T_{10-90})	< 3.5 ms / < 300 µs
Transmission error	≤ 0.1 % of the full scale value
Temperature coefficient	≤ 0.01 % /K

Technical Data

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	40.6 g
Standards and approvals:	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
Shipbuilding	GL (pending)
Accessories	see pages 226 ... 236

DIP Switch Adjustability

● = ON

857-423

Dip Switch S1 (6-fold)

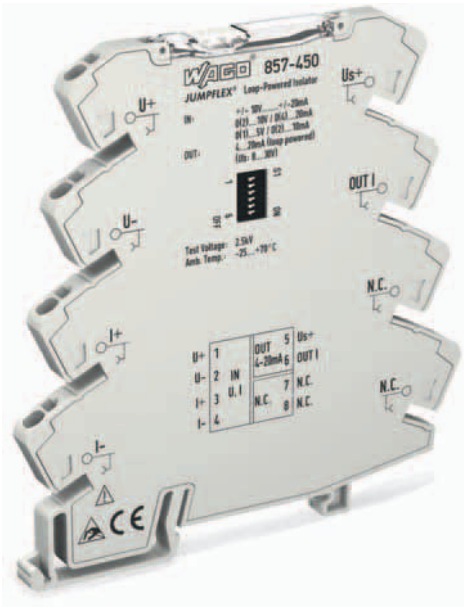
Input Signal				Max. Operating Frequency		Output Signal 1		Output Signal 2	
1	2	3		4		5		6	
●			0 ... 20 mA		1 kHz		0 ... 20 mA		0 ... 20 mA
●		●	4 ... 20 mA	●	100 Hz	●	4 ... 20 mA	●	4 ... 20 mA
	●		0 ... 10 V						
	●	●	2 ... 10 V						
			0 ... 5 V						
		●	1 ... 5 V						

Default Settings

Input	0 ... 20 mA
Output 1	0 ... 20 mA
Output 2	0 ... 20 mA
Max. Operating Frequency	1 kHz

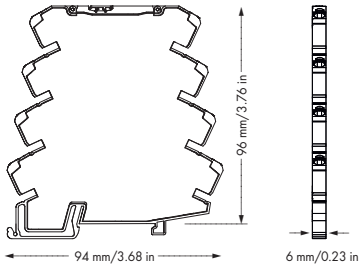
JUMPFLEX® Signal Conditioners

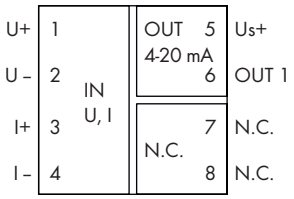
Loop-Powered Isolation Amplifier



Configuration via:

DIP switch





Short description:
The 857-450 Loop-Powered Isolation Amplifier converts analog, unipolar and bipolar, standard signals. It is also designed to amplify, filter and electrically isolate standard analog signals.

Characteristics:
- No additional supply voltage required
- Zero/span adjustment
- Analog, unipolar and bipolar, standard signals at input
- Calibrated scale switching
- Switchable max. operating frequency
- Safe 2-way isolation with 2.5 kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**857-450**	1
Loop-Powered Isolation Amplifier		

Technical Data

Configuration:	
Configuration	DIP switch
Input:	
Input signal	**Current:**
	± 5 mA, 0 ... 5 mA,
	± 10 mA, 0 ... 10 mA, 2 ... 10 mA,
	± 20 mA, 0 ... 20 mA, 4 ... 20 mA
	Voltage:
	± 1 V, 0 ... 1 V,
	± 5 V, 0 ... 5 V, 1 ... 5 V,
	± 10 V, 0 ... 10 V, 2 ... 10 V,
	± 20 V, ± 2 V, 0 ... 2 V
Input resistance	approx. 1 MΩ (U input)
	approx. 50 Ω (I input)
Output:	
Output signal	4 ... 20 mA
Load impedance	≤ 600 Ω
Overload capacity	30 V / 50 mA
General specifications:	
Supply voltage	8 ... 30 V, power is derived from the output
	circuit
Max. operating frequency	100 Hz / 30 Hz
	(switchable via DIP switch)
Response time (T_{10-90})	3.5 ms
Transmission error	≤ 0.1 % of upper range value
Temperature coefficient	≤ 0.01 % /K
Zero/span adjustment	± 5 % of upper range value

Technical Data

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min.
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 12
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	37 g
Standards and approvals:	
Conformity marking	CE
	UL 508
Shipbuilding	GL
Accessories	see pages 226 ... 236

DIP Switch Adjustability

● = ON

857-450

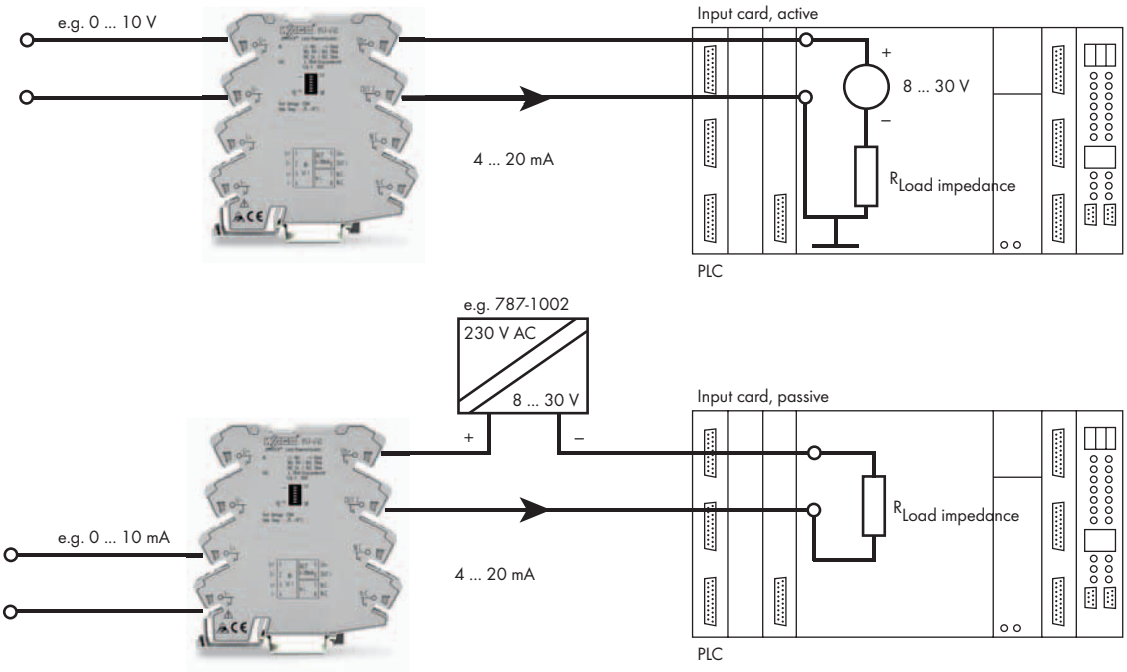
DIP switch (6 positions)

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				

Default setting

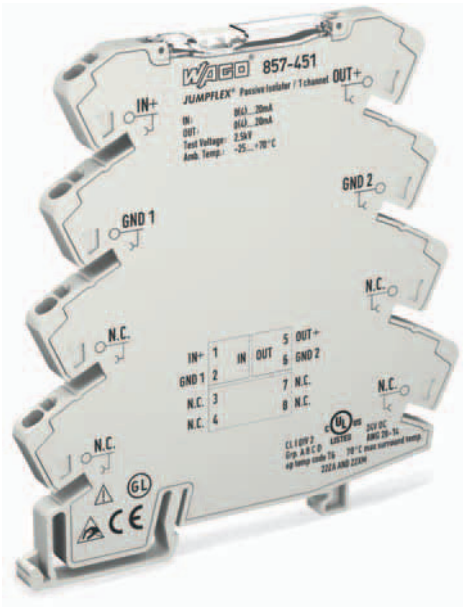
Input	4 ... 20 mA
Output	4 ... 20 mA
Max. operating frequency	100 Hz

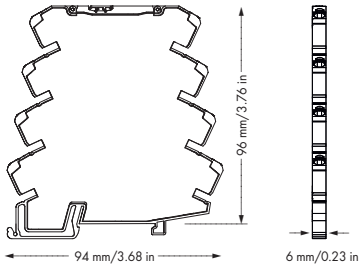
Wiring Material

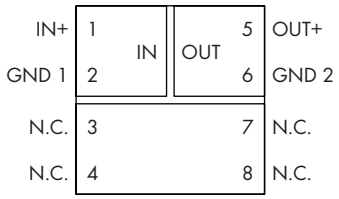


JUMPFLEX® Signal Conditioners

Passive Isolator, 1 Channel







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

Characteristics:
- No additional supply voltage required
- Safe 3-way isolation with 2.5kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**857-451**	1
Passive Isolator, 1 Channel		

Technical Data

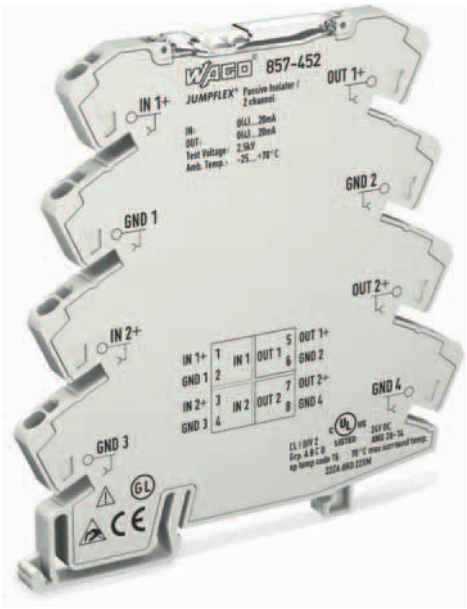
Input:	
Input signal	0(4) ... 20 mA
Responce current	< 200 µA
Voltage drop intput	< 2.0 V at 20 mA (output)
Max. input voltage	< 20 V
Max. input signal	40mA
Output:	
Output signal	0(4) ... 20 mA
Load impedance	≤ 600 Ω
	(Temperature range restrictions may occur)
General specifications:	
Max. operating frequency	100 Hz
Response time (T_{10-90})	< 3.5 ms
Transmission error	≤ 0.1 % of the full scale value
Load error	≤ 0.05 % of upper range value
	per 100 Ω load
Temperature coefficient	≤ 0.01 % /K

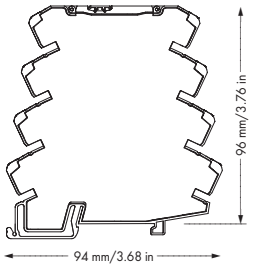
Technical Data

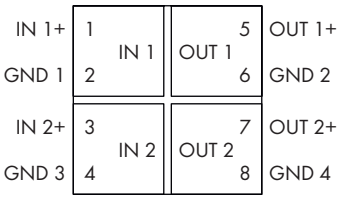
Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	33.8 g
Standards and approvals:	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
Shipbuilding	GL
Accessories	see pages 226 ... 236

JUMPFLEX® Signal Conditioners

Passive Isolator, 2 Channels







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

Characteristics:
- No additional supply voltage required
- Safe 3-way isolation with 2.5kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**857-452**	1
Passive Isolator, 2 Channels		

Technical Data

Input: *	
Input signal	0(4) ... 20 mA
Responce current	< 200 µA
Voltage drop intput	< 2.0 V at 20 mA (output)
Max. input voltage	< 20 V
Max. input signal	40mA
Output: *	
Output signal	0(4) ... 20 mA
Load impedance	≤ 600 Ω
	(Temperature range restrictions may occur)
General specifications:	
Max. operating frequency	100 Hz
Response time (T_{10-90})	< 3.5 ms
Transmission error	≤ 0.1 % of the full scale value
Load error	≤ 0.05 % of upper range value
	per 100 Ω load
Temperature coefficient	≤ 0.01 % /K

(* per channel)

Technical Data

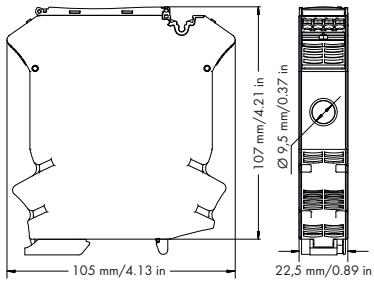
Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	37.8 g
Standards and approvals:	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
Shipbuilding	GL
Accessories	see pages 226 ... 236

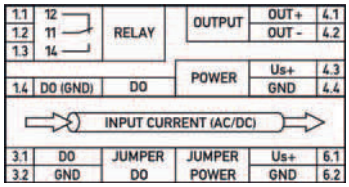
JUMPFLEX® Signal Conditioners

Current Signal Conditioner AC/DC 100 A

Configuration via:

DIP switch | Interface configuration software | Interface configuration app | Configuration display





Short description:
The 2857-550 Current Signal Conditioner measures AC/DC currents up to 100 A, while converting the measured current into an analog standard signal at the output.

Features:

- Both digital signal output and relay with changeover contact react to configured measuring range limits (switching ON/OFF delay and threshold value switch function configurable 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 4 kV test voltage acc. to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**2857-550**	1
Current Signal Conditioner AC/DC 100 A		

Technical Data

Configuration:	
Configuration	DIP switch, interface configuration software, interface configuration app, configuration display
Input:	
Input signal	500 mA ... 100 A (AC) / -100 A ... 100 A (DC)
Response threshold	250 mA (AC) / 500 mA (DC)
Resolution	10 mA
Frequency range	15 Hz ... 1000 Hz
Output:	
Output signal	**Current:** ± 10 mA; 0 ... 10 mA; 2 ... 10 mA; ± 20 mA; 0 ... 20 mA; 4 ... 20 mA **Voltage:** ± 5 V; 0 ... 5 V; 1 ... 5 V; ± 10 V; 0 ... 10 V; 2 ... 10 V
Overcurrent	0% or +5% (e.g., 10.5 V / 24 mA)
Measuring range overflow/underflow	0% or +2.5%
Load impedance	**Current:** ≤ 600 Ω; **Voltage:** ≥ 1 kΩ
Measuring procedure	True RMS measurement (TRMS) or Arithmetic mean value
Output – Digital:	
Max. switching voltage	Supply voltage applied -0.3 V
Max. continuous current I_{DO}	100 mA (no internal restriction)
Output – Relay:	
Contact type	1 changeover contact (1 u)
Contact material	AgNi (gold-plated)
Max. switching voltage	250 VAC
Max. continuous current	
(terminal blocks in a row)	6 A (up to 60 °C), 3 A (60 °C ... 70 °C)
Dielectric strength open contact (AC, 1 min)	1 kV_{rms}
Pull-in/drop-out/bounce time typ.	8 ms / 4 ms / 8 ms
General specifications:	
Nominal supply voltage V_S	24 VDC
Supply voltage range	16.8 V ... 31.2 V (-30 % ... +30 %)
Current consumption at 24 VDC	≤ 50 mA (+ I_{DO})

Technical Data

General specifications:	
Max. operating frequency	3.3 kHz
Response time	Signal cycle duration + 1 ms
Response time (T_{10-90})	max. 60 ms
Filter (T_{10-90})	Software filter: 600 ms
Linearity error	≤ 1 %
Measurement error	≤ 0,2 % (of the full scale value)
Temperature coefficient	≤ 0.01 %/K
Environmental requirements:	
Ambient operating temperature	-40 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min.
Test voltage (measuring circuit – output)	4 kV AC, 50 Hz, 1 min.
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S (*picoMAX*® 5.0)
Cross sections	solid/fine-stranded: 0.2 ... 2.5 mm² / AWG 24 ... 12
Strip length	9 ... 10 mm / 0.35 ... 0.39 in
Power cable feed-through	Ø 9.5 mm
Dimensions and weight:	
Dimensions (mm) W x H x L	22.5 x 107 x 105
	Height from upper-edge of DIN 35 rail
Weight	106 g
Standards and approvals:	
Conformity marking	CE
Standards/Specifications	DIN EN 61010-1:2010; DIN EN 60664-1:2008; Safe isolation acc. to DIN EN 61140:2002; IEC 61000-6-2; IEC 61000-6-4
Accessories:	see pages 226 ... 236

DIP Switch Adjustability

● = ON

2857-550

DIP Switch S1

Measuring Method		Filter		Analog Output Inverted		Output Signal (Bipolar for Arithmetic Mean Value)			
1		2		3		4	5	6	Analog Output
	True RMS		inactive		not inverted				(±) 0 ... 20 mA
●	Arithmetic mean value (bipolar output)	●	active	●	inverted		●		4 ... 20 mA
						●			(±) 0 ... 10 V
						●	●		2 ... 10 V
								●	(±) 0 ... 10 mA
							●	●	2 ... 10 mA
						●		●	(±) 0 ... 5 V
						●	●	●	1 ... 5 V

DIP Switch S1

		Measuring Range Underflow	Measuring Range Overflow	Overcurrent (Input Signal - End Value +20%)			Digital Output (DO)/ Relay
7	8				9	10	
		Lower measuring range -5% *	Upper measuring range +2.5% *	Upper measuring range +5%			Off
●		Lower measuring range	Upper measuring range +2.5%	Upper measuring range +5%	●		DO US+ switching – relay pulls in
	●	Lower measuring range	Upper measuring range	Lower measuring range		●	DO GND switching – relay drops out
●	●	Lower measuring range -5 %	Upper measuring range +5%	Upper measuring range	●	●	Off

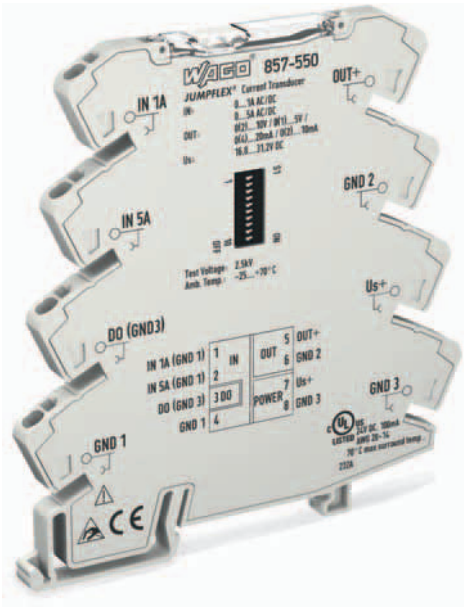
*acc. to NAMUR NE 43

DIP Switch S2

Lower Value						Upper value			
1	2	3	4	A / % (RMS)	A / % (arithmetic mean value)	5	6	7	A / %
				Software configuration (0)	Software configuration (-100)				Software configuration (100)
●				0	-100	●			100
	●			5	-75		●		90
●	●			8	-50	●	●		70
		●		10	-25			●	50
●		●		12	-10	●		●	30
	●	●		14	0		●	●	20
●	●	●		16	5	●	●	●	10
			●	18	10				
●			●	20	15				
	●		●	25	20				
●	●		●	30	25				
		●	●	35	30				
●		●	●	40	35				
	●	●	●	45	40				
●	●	●	●	50	50				

JUMPFLEX® Signal Conditioners

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

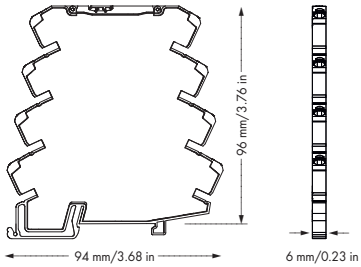


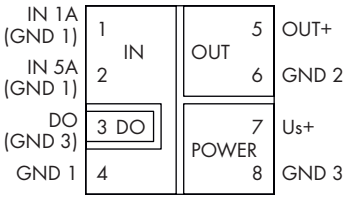
Configuration via:

DIP switch

Interface configuration software

Interface configuration app





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

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

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**857-550**	1
Current Signal Conditioner		

Technical Data

Configuration:	
Configuration	DIP switch, interface configuration
	software, interface configuration app
Input:	
Input signal	0 ... 1 A AC/DC; 0 ... 5 A AC/DC *
Input resistance	10 mΩ (5 A); 47 mΩ (1 A)
Frequency range	16 Hz ... 400 Hz
Response threshold	< 0.5 % (of measuring range nominal
Current carrying capacity	2 x I_N (continuous)
Output:	
Output signal	**Voltage:**
	0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V *
	Current:
	0 ... 10 mA, 2 ... 10 mA,
	0 ... 20 mA, 4 ... 20 mA *
Load impedance	≤ 600 Ω (I output) **
	≥ 2 kΩ (U output)
	** Temperature range restrictions may
	occur.
Filter (T_{10-90})	260 ms (DC), 600 ms (AC 50 Hz)
Output - Digital	
Max. switching voltage	Supply voltage applied
Max. continuous current	500 mA (up to 60 °C)
	100 mA (60 °C ... 70 °C)
General specifications:	
Nominal supply voltage V_S	24 VDC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 40 mA
Measuring procedure	Arithmetic mean value *
	True RMS measurement (TRMS)
Response time	1.5 ms + signal cycle duration
Max. response time	60 ms
Min. measuring span	2 mA ... 1 A; 4 mA ... 5 A

Technical Data

General specifications:	
Transmission error	≤ 0.1 % typ. (≤ 0.4 % max.)
Temperature coefficient	≤ 0.01 % /K
Linearity error	< 0,5 % (of measuring range nominal
Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C (at nominal current)
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage	
(input/output/supply)	2.5 kV AC, 50 Hz, 1 min.
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	50 g
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
Shipbuilding	GL
Accessories	see pages 226 ... 236

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

DIP Switch Adjustability

● = ON

857-550

DIP Switch S1

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

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

*acc. to NAMUR NE 43

Digital Output DO/Signaling

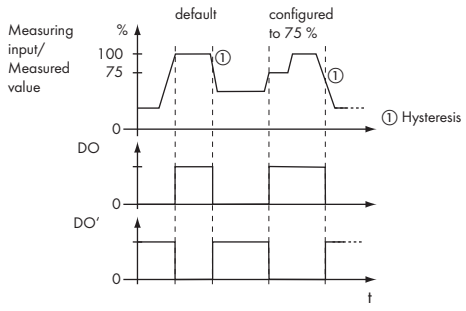
The digital output (DO) signals error messages and can be configured as follows: 24 V → 0 V/0 V → 24 V.

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

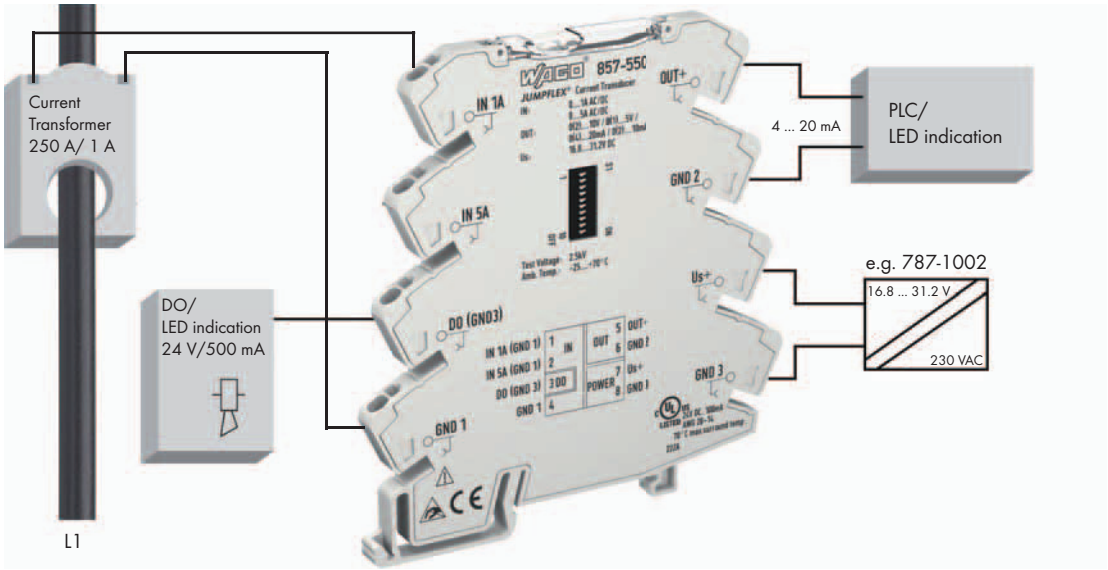
Default Setting

All DIP switches are in "OFF" position for delivery.	
Input	
Input Signal	0 ... 5 A
Measuring Method	Mean square value
Filter	not active
Output	
Output Signal	0 ... 20 mA
Measuring Range Underflow	0 mA
Measuring Range Overflow	20.5 mA
Overcurrent	21 mA
Digital Output DO	not active

Switching Behavior, Digital Output (DO)

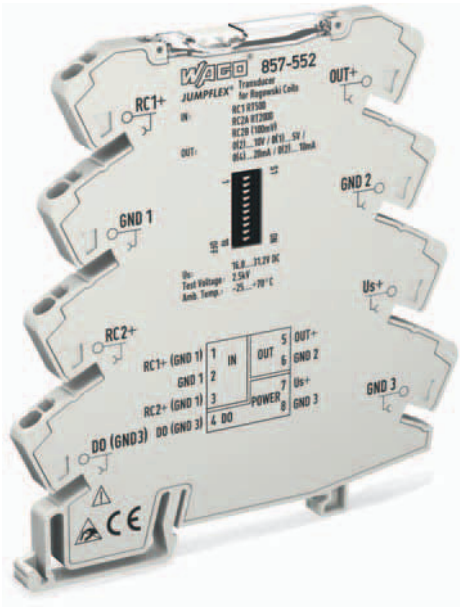


Application example:



JUMPFLEX® Signal Conditioners

Rogowski Signal Conditioner

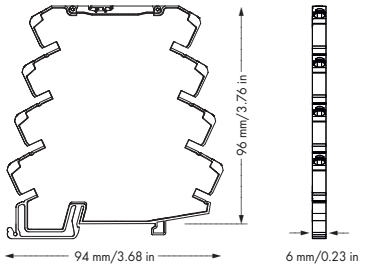


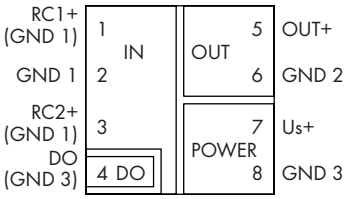
Configuration via:

DIP switch

Interface configuration software

Interface configuration app





Short description:
The Rogowski Signal Conditioner records RMS values from alternating currents via a Rogowski coil, converting the input signal into a standard analog signal on the output side.

Features:
- PC configuration interface
- Supports different types of Rogowski coils
- 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 acc. to EN 61140
- No current bar interruption during installation
- Measuring range overflow indication

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**857-552**	1
Rogowski Signal Conditioner		

Technical Data

Configuration:	
Configuration	DIP switch, interface configuration software, interface configuration app
Input:	
Input signal	RC1 500 A: Sensitivity 10.05 mV *
	RC2A 2000 A: Sensitivity 40.2 mV *
	RC2B: Sensitivity 100 mV *
	50/60 Hz sinusoidal and distorted sinusoidal signals (e.g. leading edge and
Frequency range	16 Hz ... 1000 Hz
Response threshold	< 1 % (of measuring range nominal value)
Output:	
Output signal	**Voltage:**
	0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V *
	Current: 0 ... 10 mA, 2 ... 10 mA,
	0 ... 20 mA, 4 ... 20 mA *
Overcurrent	0 % or +5 % (e. g. 10.5 V/21 mA)
Measuring range overflow/underflow	0 % or +2.5 %
Load impedance	Current ≤ 600 Ω, Voltage ≥ 1000 Ω
Measuring procedure	True RMS (TRMS)
Filter (T_{10-90})	600 ms (50 Hz)
Output - Digital	
Max. switching voltage	Supply voltage applied
Max. continuous current	500 mA
General specifications:	
Nominal supply voltage V_S	24 VDC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 40 mA
Resolution	500 A measuring range: 250 mA,
	2000 A measuring range: 1000 mA
Measuring procedure	True RMS (TRMS)
Response time	1.5 ms + signal cycle duration
Max. operating frequency	< 2 kHz
Response time (T_{10-90})	max. 60 ms

Technical Data

General specifications:	
Linearity error	≤ 0,1 %
Temperature coefficient	≤ 0.01 %/K
Measurement error	< 1 %
Line length	< 3 m (to the Rogowski coil)
Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C (at rated current)
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage	
(input/output/supply)	2.5 kV AC, 50 Hz, 1 min.
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded: 0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	36.2 g
Standards and approvals:	
Conformity marking	CE
Shipbuilding	
Accessories	see pages 226 ... 236
	Rogowski Coils see Section 4

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

DIP Switch Adjustability

● = ON

857-552

DIP Switch S1

Input Signal		RC Configuration Input		Filter		Output Signal			
1		2		3		4	5	6	
	RC1 = RT500 from LEM		RC2 = RT2000 from LEM		off				0 ... 20 mA
●	RC2	●	RC2 = 100 mV eff. => 1 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	Measuring Range Underflow	Measuring Range Overflow	Overcurrent (Input Signal - End Value + 20%)	9	10	Digital Output DO Signaling
		Lower limit of measuring range +5 %*	Upper limit of measuring range +2.5 %*	Upper limit of measuring range +5 %*			DO not active
●		Lower limit of measuring range	Upper limit of measuring range +2.5 %	Upper limit of measuring range +5 %		●	DO U_s+ switching
	●	Lower limit of measuring range	Upper limit of measuring range	Lower limit of measuring range	●	●	DO GND switching
●	●	Lower limit of measuring range	Upper limit of measuring range	Upper limit of measuring range			

Digital Output DO/Signaling

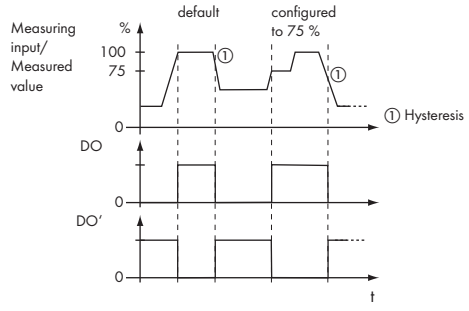
The digital output (DO) signals error messages and can be configured as follows: 24 V → 0 V/0 V → 24 V.

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

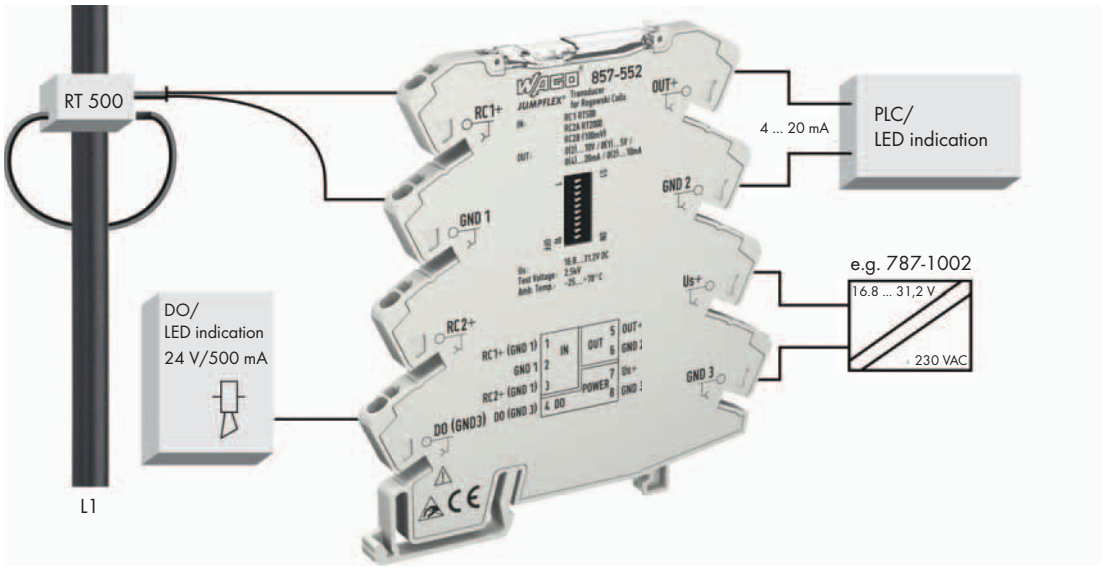
Default Setting

All DIP switches are in "OFF" position for delivery.	
Input	
Input Signal	RC1 500 A
Measuring Method	Mean square value
Filter	not active
Output	
Output Signal	0 ... 20 mA
Measuring Range Underflow	0 mA
Measuring Range Overflow	20.5 mA
Overcurrent	21 mA
Digital Output DO	not active

Switching Behavior, Digital Output (DO)

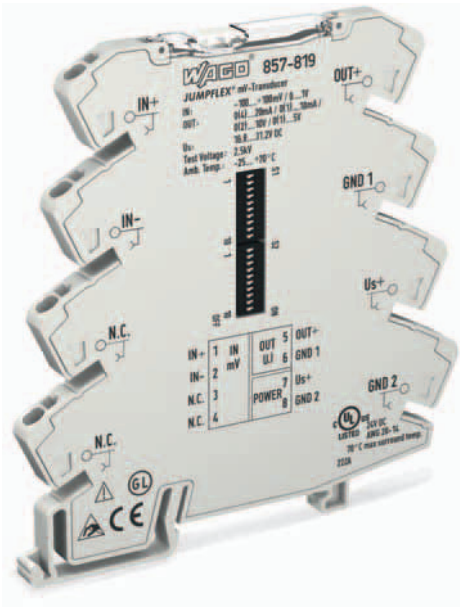


Application example:



JUMPFLEX® Signal Conditioners

Millivolt Signal Conditioner from -100 mV ... +100 mV and 0 mV ... 1000 mV

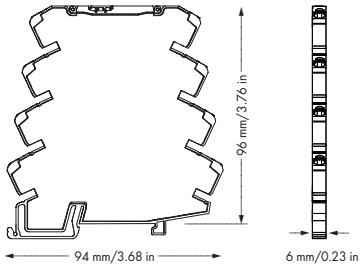


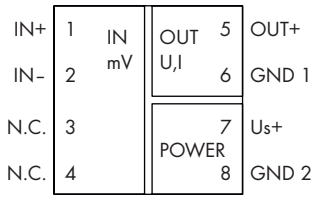
Configuration via:

DIP switch

Interface configuration software

Interface configuration app





Short description:
The 857-819 Millivolt Signal Conditioner converts input millivolt signals into an analog standard signal on the output side.

Characteristics:
- PC configuration interface
- Calibrated scale switching
- Clipping capability allows analog standard signal limitation to upper range values
- Safe 3-way isolation with 2.5 kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**857-819**	1
Millivolt Signal Conditioner with Millivolt Input as well as Current and Voltage Output		

Technical Data

Configuration:	
Configuration	DIP switch, interface configuration software, interface configuration app
Input:	
Input signal	-100 mV ... +100 mV, 0 mV ... 200 mV, 0 mV ... 1000 mV * (in 100 mV increments)
Input resistance	> 1MΩ
Max. input signal	31.2V
Output:	
Output signal	0 ... 10 mA, 2 ... 10 mA, 0 ... 20 mA, 4 ... 20 mA, 0... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V *
Load impedance	≤ 600 Ω (I output) ≥ 2 kΩ (U output)
Step response	50ms
General specifications:	
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 40 mA
Min. measuring span	10 mV (configurable)
Transmission error	≤ 0.1 % of upper range value
Temperature coefficient	≤ 0.01 %/K

Technical Data

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm² ... 2.5 mm² / AWG 28 ... 14 fine-stranded: 0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	50 g
Standards and approvals:	
Conformity marking	CE
	UL 508
Shipbuilding	GL
Accessories	see pages 226 ... 236

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

3

DIP Switch Adjustability

● = ON

857-819

Input Start value																							
DIP S1																							
1	2	3	4	5	6	7	mV	1	2	3	4	5	6	7	mV	1	2	3	4	5	6	7	mV
									●				●		-34			●				●	34
●							-100	●	●				●		-32	●		●				●	36
	●						-98			●			●		-30		●	●				●	38
●	●						-96	●		●			●		-28	●	●	●				●	40
		●					-94		●	●			●		-26				●			●	42
●		●					-92	●	●	●			●		-24	●			●			●	44
	●	●					-90				●		●		-22		●		●			●	46
●	●	●					-88	●			●		●		-20	●	●		●			●	48
			●				-86		●		●		●		-18			●	●			●	50
●			●				-84	●	●		●		●		-16	●		●	●			●	52
	●		●				-82			●	●		●		-14		●	●	●			●	54
●	●		●				-80	●		●	●		●		-12	●	●	●	●			●	56
		●	●				-78		●	●	●		●		-10					●		●	58
●		●	●				-76	●	●	●	●		●		-8	●				●		●	60
	●	●	●				-74					●	●		-6		●			●		●	62
●	●	●	●				-72	●				●	●		-4	●	●			●		●	64
				●			-70		●			●	●		-2			●		●		●	66
●				●			-68	●	●			●	●		0	●		●		●		●	68
	●			●			-66			●		●	●		2		●	●		●		●	70
●	●			●			-64	●		●		●	●		4	●	●	●		●		●	72
		●		●			-62		●	●		●	●		6				●	●		●	74
●		●		●			-60	●	●	●		●	●		8	●			●	●		●	76
	●	●		●			-58				●	●	●		10		●		●	●		●	78
●	●	●		●			-56	●			●	●	●		12	●	●		●	●		●	80
			●	●			-54		●		●	●	●		14			●	●	●		●	82
●			●	●			-52	●	●		●	●	●		16	●		●	●	●		●	84
	●		●	●			-50			●	●	●	●		18		●	●	●	●		●	86
●	●		●	●			-48	●		●	●	●	●		20	●	●	●	●	●		●	88
		●	●	●			-46		●	●	●	●	●		22						●	●	90
●		●	●	●			-44	●	●	●	●	●	●		24	●					●	●	92
	●	●	●	●			-42							●	26		●				●	●	94
●	●	●	●	●			-40	●						●	28	●	●				●	●	96
					●		-38		●					●	30			●			●	●	98
●					●		-36	●	●					●	32	●		●			●	●	100

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

DIP Switch S2

<table>
<tr><th colspan="4">Output signal</th><th rowspan="2">9</th><th rowspan="2">10</th><th rowspan="2">Measuring Range Underflow</th><th rowspan="2">Measuring Range Overflow</th></tr>
<tr><th>6</th><th>7</th><th>8</th><th></th></tr>
<tr><td></td><td></td><td></td><td>0 ... 20 mA</td><td rowspan="2"></td><td rowspan="2"></td><td>Lower limit of output range - 5 % *</td><td>Upper limit of output range + 2,5 % *</td></tr>
<tr><td>●</td><td></td><td></td><td>4 ... 20 mA</td><td>(0 mA / 1,9 mA / 3,8 mA / 0 V / 0,95 V / 1,9 V)</td><td>(10,25 mA / 20,5 mA / 5,125 V / 10,25 V)</td></tr>
<tr><td></td><td>●</td><td></td><td>0 ... 10 mA</td><td rowspan="2">●</td><td rowspan="2"></td><td>Lower limit of output range</td><td>Upper limit of output range + 2,5 %</td></tr>
<tr><td>●</td><td>●</td><td></td><td>2 ... 10 mA</td><td>(0 mA / 2 mA / 4 mA / 0 V / 1 V / 2 V)</td><td>(10,25 mA / 20,5 mA / 5,125 V / 10,25 V)</td></tr>
<tr><td></td><td></td><td>●</td><td>0 ... 10 V</td><td rowspan="2"></td><td rowspan="2">●</td><td>Lower limit of output range</td><td>Upper limit of output range</td></tr>
<tr><td>●</td><td></td><td>●</td><td>2 ... 10 V</td><td>(0 mA / 2 mA / 4 mA / 0 V / 1 V / 2 V)</td><td>(10 mA / 20 mA / 5 V / 10 V)</td></tr>
<tr><td></td><td>●</td><td>●</td><td>0 ... 5 V</td><td rowspan="2">●</td><td rowspan="2">●</td><td>Lower limit of output range</td><td>Upper limit of output range</td></tr>
<tr><td>●</td><td>●</td><td>●</td><td>1 ... 5 V</td><td>(0 mA / 2 mA / 4 mA / 0 V / 1 V / 2 V)</td><td>(10 mA / 20 mA / 5 V / 10 V)</td></tr>
</table>

DIP Switch S2 (5) not connected

*acc. to NAMUR NE 43

Default Settings

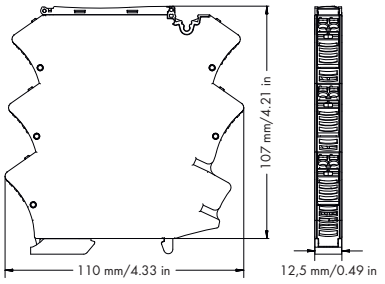
All DIP switches are in "OFF" position for delivery. This is the position used to parameterize the device via PC configuration software.	
Input signal	0 ... 100 mV
Output signal	0 ... 20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA

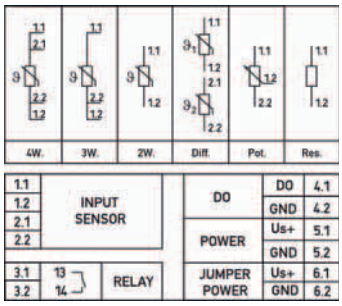
JUMPFLEX® Signal Conditioners

RTD Threshold Value Switch

Configuration via:

DIP switch | Interface configuration software | Interface configuration app | Configuration display





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 measuring range limits (switching ON/OFF delay and threshold value switch function configurable 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 acc. to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail** RTD Threshold Value Switch	**2857-533**	1

Technical Data

Configuration:	
Configuration	DIP switch, interface configuration software, interface configuration app, configuration display
Input:	
Input signal	RTD sensors, potentiometers and resistors
Sensor types	Pt100, Pt200, Pt500, Pt1000, Pt5000, Pt10000, Pt10 ... Pt20000 (expanded)
Sensor connection	2-, 3-, and 4-wire, Difference
Sensor supply current	< 0.5 mA
Temperature range	-200 °C ... +850 °C
Resistor input	0 ... 100 kΩ
Output:	
Output – Digital:	
Max. switching voltage	Supply voltage applied -0.3 V
Max. continuous current I_{DO}	100 mA (no internal restriction)
Number of switching tresholds	1 or 2
Configurable rise and fall delay time	0 ... 10 s (via DIP switch); 0 ... 60 s (expanded)
Output – Relay:	
Contact type	1 make contact (1 a)
Contact material	AgNi (gold-plated)
Max. switching voltage	250 VAC
Max. continuous current (terminal blocks in a row)	6 A (up to 60 °C), 3 A (60 °C ... 70 °C)
Dielectric strength open contact (AC, 1 min)	1 kV_{rms}
Pull-in/drop-out/bounce time typ.	8 ms / 4 ms / 8 ms
Number of switching tresholds	1 or 2
Configurable rise and fall delay time	0 ... 10 s (via DIP switch); 0 ... 60 s (expanded)

Technical Data

General specifications:	
Nominal supply voltage V_S	24 VDC
Supply voltage range	16.8 V ... 31.2 V (-30 % ... +30 %)
Current consumption at 24 VDC	≤ 40 mA + I_{DO}
Measurement error	± 1 K
Temperature coefficient	≤ 0.01 %/K
Environmental requirements:	
Ambient operating temperature	-40 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	4 kV AC, 50 Hz, 1 min.
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S (*picoMAX*® 5.0)
Cross sections	solid/fine-stranded: 0.2 ... 2.5 mm² / AWG 24 ... 12
Strip length	9 ... 10 mm / 0.35 ... 0.39 in
Dimensions and weight:	
Dimensions (mm) W x H x L	12.5 x 107 x 110
	Height from upper-edge of DIN 35 rail
Weight	86 g
Standards and approvals:	
Conformity marking	CE
Standards/Specifications	DIN EN 50178:1997 (Basic isolation); DIN EN 61010-1:2010; DIN EN 60664-1:2008; EN 61000-6-2; EN 61000-6-4
Accessories:	see pages 226 ... 236

DIP Switch Adjustability

● = ON

2857-533

DIP Switch S1

Sensor Type				Connection Technology			Hysteresis		Rise/Fall Delay Time Relay/ Digital Output (DO)					
1	2	3		4	5		6	T / K	7	8	9	t / s	10	Not assigned
			Pt100			2-wire		3				0		
●			Pt200	●		3-wire	●	5	●			1		
	●		Pt500		●	4-wire				●		2		
●	●		Pt1000	●	●	Difference			●	●		3		
		●	Pt5000								●	4		
●		●	Pt10000						●		●	5		
	●	●	Resistor							●	●	8		
●	●	●	Potentiometer						●	●	●	10		

DIP Switch S2

Starting Value								End Value							
1	2	3	4	5	Temperature / °C	Resistance / Ω	Potentiometer Position	6	7	8	9	10	Temperature / °C	Resistance / Ω	Potentiometer Position
					0	OFF	OFF						100	OFF	OFF
●					OFF	10	0 %	●					OFF	10	0 %
	●				-200	15	5 %		●				-200	15	5 %
●	●				-150	22	10 %	●	●				-150	22	10 %
		●			-100	33	15 %			●			-100	33	15 %
●		●			-50	47	20 %	●		●			-50	47	20 %
	●	●			-10	68	25 %		●	●			-10	68	25 %
●	●	●			10	100	30 %	●	●	●			10	100	30 %
			●		20	120	35 %				●		20	120	35 %
●			●		30	150	40 %	●			●		30	150	40 %
	●		●		40	220	45 %		●		●		40	220	45 %
●	●		●		50	330	50 %	●	●		●		50	330	50 %
		●	●		60	470	55 %			●	●		60	470	55 %
●		●	●		70	560	60 %	●		●	●		70	560	60 %
	●	●	●		80	680	65 %		●	●	●		80	680	65 %
●	●	●	●		90	1000	70 %	●	●	●	●		90	1000	70 %
				●	100	1200	75 %					●	100	1200	75 %
●				●	150	1500	80 %	●				●	150	1500	80 %
	●			●	200	2200	85 %		●			●	200	2200	85 %
●	●			●	250	3300	90 %	●	●			●	250	3300	90 %
		●		●	300	4700	95 %			●		●	300	4700	95 %
●		●		●	350	5600	100 %	●		●		●	350	5600	100 %
	●	●		●	400	6800	OFF		●	●		●	400	6800	OFF
●	●	●		●	450	10000	OFF	●	●	●		●	450	10000	OFF
			●	●	500	12000	OFF				●	●	500	12000	OFF
●			●	●	550	15000	OFF	●			●	●	550	15000	OFF
	●		●	●	600	22000	OFF		●		●	●	600	22000	OFF
●	●		●	●	650	33000	OFF	●	●		●	●	650	33000	OFF
		●	●	●	700	47000	OFF			●	●	●	700	47000	OFF
●		●	●	●	750	56000	OFF	●		●	●	●	750	56000	OFF
	●	●	●	●	800	68000	OFF		●	●	●	●	800	68000	OFF
●	●	●	●	●	850	100000	OFF	●	●	●	●	●	850	100000	OFF

Default Settings

Sensor Type	Pt100
Connection Technology	2-wire
Starting Value	0 °C
End Value	100 °C
Hysteresis	3 K
Rise/Fall Delay Time Relay/Digital Output (DO)	0 s

JUMPFLEX® Signal Conditioners

TC Threshold Value Switch

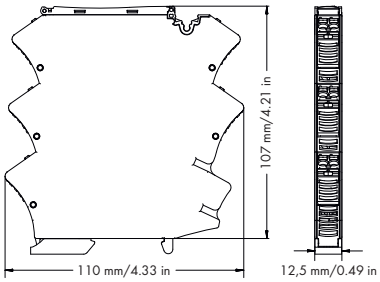
Configuration via:

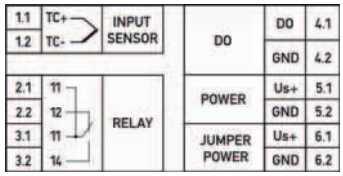
DIP switch

Interface configuration software

Interface configuration app

Configuration display





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 measuring range limits (switching ON/OFF delay and threshold value switch function configurable 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 acc. to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**2857-534**	1
TC Threshold Value Switch		

Technical Data

Configuration:	
Configuration	DIP switch, interface configuration software, interface configuration app, configuration display
Input:	
Input signal	Thermocouples
Sensor types	Thermocouple's type J, K, E, R, N, S, T, B, S
Temperature range	Type J: -210 °C ... +1200 °C
	Type K: -200 °C ... +1372 °C
Cold junction compensation	On/Off (Default: On)
Cold junction error	3 K (type 2 K)
Output:	
Output – Digital:	
Max. switching voltage	Supply voltage applied -0.3 V
Max. continuous current I_{DO}	100 mA (no internal restriction)
Number of switching tresholds	1 or 2
Configurable rise and	0 ... 10 s (via DIP switch);
fall delay time	0 ... 60 s (expanded)
Output – Relay:	
Contact type	1 changeover contact (1 u)
Contact material	AgNi (gold-plated)
Max. switching voltage	250 VAC
Max. continuous current	6 A (up to 60 °C),
(terminal blocks in a row)	3 A (60 °C ... 70 °C)
Dielectric strength open contact	
(AC, 1 min)	1 kV_{rms}
Pull-in/drop-out/bounce time typ.	8 ms / 4 ms / 8 ms
Number of switching tresholds	1 or 2
Configurable rise and	0 ... 10 s (via DIP switch);
fall delay time	0 ... 60 s (expanded)

Technical Data

General specifications:	
Nominal supply voltage V_S	24 VDC
Supply voltage range	16.8 V ... 31.2 V (-30 % ... +30 %)
Current consumption at 24 VDC	≤ 40 mA + I_{DO}
Measurement error	± 1 K
Temperature coefficient	≤ 0.01 %/K
Environmental requirements:	
Ambient operating temperature	-40 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage	
(input/output/supply)	4 kV AC, 50 Hz, 1 min.
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S (*picoMAX*® 5.0)
Cross sections	solid/fine-stranded:
	0.2 ... 2.5 mm² / AWG 24 ... 12
Strip length	9 ... 10 mm / 0.35 ... 0.39 in
Dimensions and weight:	
Dimensions (mm) W x H x L	12.5 x 107 x 110
	Height from upper-edge of DIN 35 rail
Weight	87 g
Standards and approvals:	
Conformity marking	CE
Standards/Specifications	DIN EN 50178:1997 (Basic isolation); DIN EN 61010-1:2010; DIN EN 60664-1:2008; EN 61000-6-2; EN 61000-6-4
Accessories:	see pages 226 ... 236

DIP Switch Adjustability

● = ON

2857-534

DIP Switch S1

Sensor Type Thermocouple					Cold Junction Compensation		Hysteresis		Rise/Fall Delay Time Relay/ Digital Output (DO)					
1	2	3	4	Type	5		6	T / K	7	8	9	t / s	10	Not assigned
				J		ON		3				0		
●				K	●	OFF	●	5	●			1		
	●			E						●		2		
●	●			R					●	●		3		
		●		N							●	4		
●		●		S					●		●	5		
	●	●		T						●	●	8		
●	●	●		B					●	●	●	10		
			●	C										

DIP Switch S2

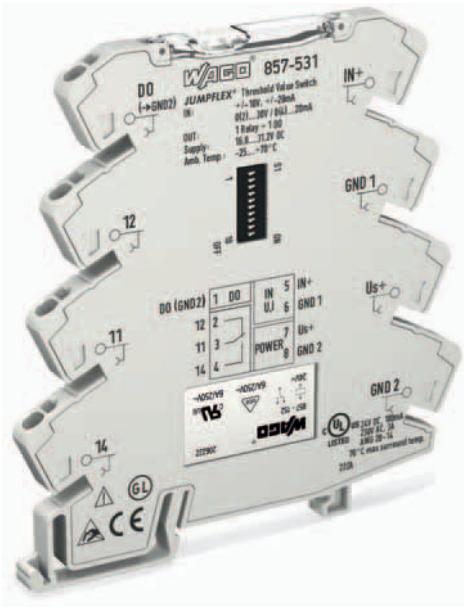
Lower Value						Upper Value					
1	2	3	4	5	Temperature / °C	6	7	8	9	10	Temperature / °C
					0						100
●					OFF	●					OFF
	●				-200		●				-200
●	●				-150	●	●				-150
		●			-100			●			-100
●		●			-50	●		●			-50
	●	●			50		●	●			50
●	●	●			100	●	●	●			100
			●		150				●		150
●			●		200	●			●		200
	●		●		250		●		●		250
●	●		●		300	●	●		●		300
		●	●		350			●	●		350
●		●	●		400	●		●	●		400
	●	●	●		450		●	●	●		450
●	●	●	●		500	●	●	●	●		500
				●	550					●	550
●				●	600	●				●	600
	●			●	650		●			●	650
●	●			●	700	●	●			●	700
		●		●	750			●		●	750
●		●		●	800	●		●		●	800
	●	●		●	850		●	●		●	850
●	●	●		●	900	●	●	●		●	900
			●	●	950				●	●	950
●			●	●	1000	●			●	●	1000
	●		●	●	1050		●		●	●	1050
●	●		●	●	1100	●	●		●	●	1100
		●	●	●	1150			●	●	●	1150
●		●	●	●	1200	●		●	●	●	1200
	●	●	●	●	1300		●	●	●	●	1300
●	●	●	●	●	1400	●	●	●	●	●	1400

Default Settings

Cold Junction Compensation	ON
Sensor Type	Thermocouple of type J
Lower Value	0 °C
Upper Value	100 °C
Hysteresis	3 K
Rise/Fall Delay Time Relay/Digital Output (DO)	0 s

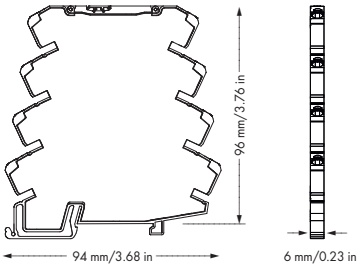
JUMPFLEX® Signal Conditioners

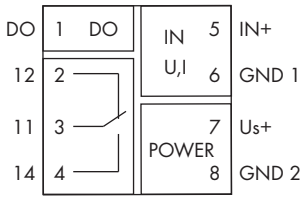
Threshold Value Switch with Analog Input and Changeover Relay Output



Configuration via:

DIP switch | Interface configuration software | Interface configuration app | Push/Slide Switch





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

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

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**857-531**	1
Threshold Value Switch with Analog Input,		
Changeover Relay Output and Digital Output		

Technical Data

Configuration:	
Configuration	DIP switch, push/slide switch, interface
	configuration software, interface
	configuration app
Input:	
Input signal	-10...+10V, -20...+20mA, 0...+30V *
Input resistance	≤ 200 Ω (I input)
	> 100 kΩ (U input)
Max. input signal	(31.2 V (U_{IN}) 100 mA (I_{IN})
Output:	
Output - Relay	
Contact type	1 changeover contact
Max. switching voltage	250 V AC
Max. continuous current (terminal	max. 6 A (to 60 °C),
blocks in a row)	2 A (60 to 70 °C)
Max. Switching power (resistive)	1250 VA AC
Anzahl der Schaltschwellen	1 or 2 (adjustable) *
Configurable rise and fall delay	
time	0 ... 10 s (via DIP switch),
	0 ... 30 s *
Output - Digital	
Max. switching voltage	Supply voltage applied
Max. continuous current	500 mA (to 60 °C)
	100 mA (60 to 70 °C)
General specifications:	
Response time	≤ 16ms
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 25 mA
Transmission error	≤ 0.1 % of upper range value
Temperature coefficient	≤ 0.01 %/K

Technical Data

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	49 g
Standards and approvals:	
Conformity marking	CE
UL 508	
Shipbuilding	GL
Accessories	see pages 226 ... 236

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

DIP Switch Adjustability

● = ON

857-531

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			

Default Settings

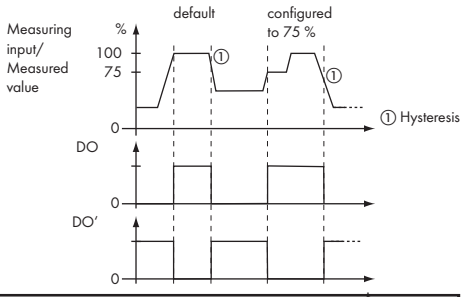
All DIP switches are in „OFF" position for delivery.	
Input	
Input range	± 10 V
Hysteresis	5 mV
Output	
Configurable rise/fall delay time	0 s
Digital output DO	not active

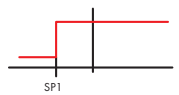
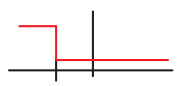
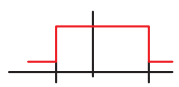
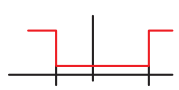
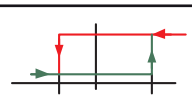
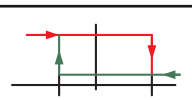
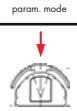
Push/Slide Switch Operation

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.

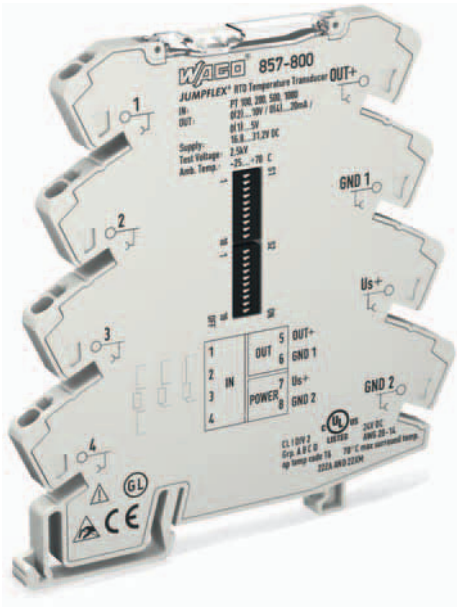
Switching Behavior, Digital Output (DO)



Switching Behavior	Configuration							
	Number of Switching Thresholds	Values for Switching T hresholds	Switching Threshold 1, Relay	Switching Threshold 2, Relay	Press for 1 sec. Yellow LED flashes	Red LED flashes briefly		No flashing LED
1 	1	S1	„On"	–				
2 	1	S1	„Off"	–				
3 	2	S1 < S2	„On"	„Off"				
4 	2	S1 < S2	„Off"	„On"				
5 	2	S1 > S2	„On"	„Off"				
6 	2	S1 > S2	„Off"	„On"				
Leave param. mode without storing a value	–	–	–	–				

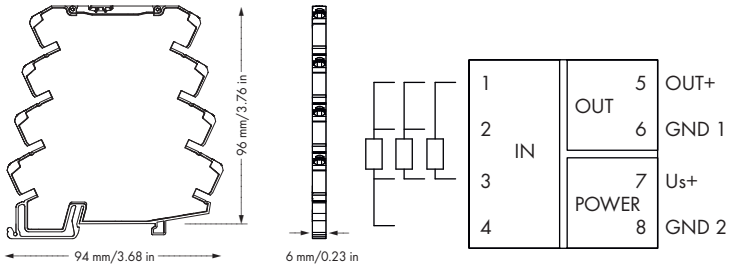
JUMPFLEX® Signal Conditioners

Temperature Signal Conditioner for Pt 00, Pt200, Pt500 and Pt1000 as well as Resistors 0 ... 1 kΩ; 0 ... 4.5 kΩ



Configuration via:

DIP switch



Short description:
The 857-800 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 on the output side.

Characteristics:
- For Pt100, Pt200, Pt500 and Pt1000 sensors, as well as resistors up to 4.5 kOhm
- 2-, 3-, and 4-wire connection technology
- Calibrated scale switching
- Sensor's wire break/short circuit
- Measuring range underflow/overflow
- Clipping capability allows analog standard signal limitation to upper range values
- Safe 3-way isolation with 2.5kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35**	**857-800**	1
Temperature Signal Conditioner for Pt 100, Pt 200, Pt 500 and Pt 1000 as well as Resistors 0 ... 1 kΩ; 0 ... 4.5 kΩ		

Technical Data

Configuration:	
Configuration	DIP switch
Input:	
Input signal	PT sensors and resistors
Sensor types	Pt100, Pt200, Pt500, Pt1000
Sensor connection	2-wire, 3-wire, 4-wire (switchable)
Temperature range	-200 °C ... +850 °C
Sensorspeisestrom	< 0.5 mA
Resistor input	0 ... 1 kΩ , 0 ... 4.5 kΩ
Output:	
Output signal	0 ... 20 mA, 4 ... 20 mA,
	0 ... 10 V, 2 ... 10 V,
	0... 5 V, 1 ... 5 V,
	0 ... 10 mA, 2 ... 10 mA
Load impedance	≤ 600 Ω (Out = mA)
	≥ 2 kΩ (Out = V)
Step response	180 ms (360 ms at 3-wire)
General specifications:	
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	< 40 mA
Min. measuring span	50 K (50 Ω)
Transmission error	≤ 0.1 % at max. measuring span
Transmission error of set measuring span	((10 K / set measuring span [K]) + 0.1) %
Temperature coefficient	≤ 0.02 % /K

Technical Data

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	42 g
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
cULus ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
Shipbuilding	GL
Accessories	see pages 226 ... 236

DIP Switch Adjustability

● = ON

857-800

DIP Switch S1

Wire connection			Sensor type				Output signal						Measuring range underflow	Measuring 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
																		●		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

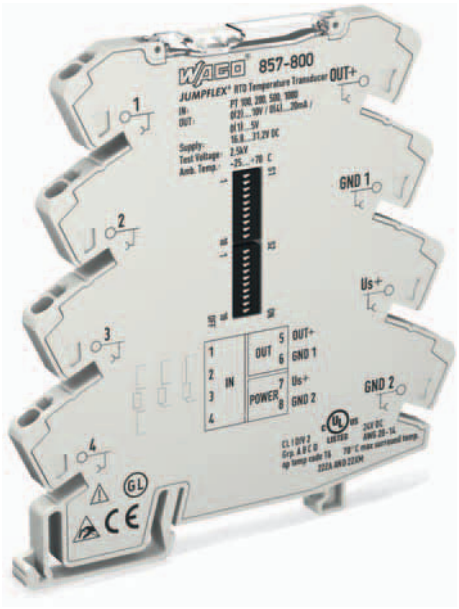
The minimum distance from the start temperature to the end temperature may not fall short of 50K degrees on the Celsius (C) scale or 122K degrees on the Fahrenheit (F) scale.

Default Settings

All DIP switches are in „OFF" position for delivery.	
Sensor connection	2-wire
Sensor type	Pt 100
Start temperature	0 °C
End temperature	100 °C
Output signal	0 ... 20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA
Wire break	21 mA
Short circuit	0 mA

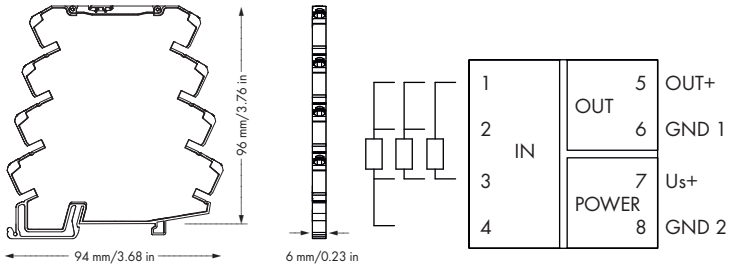
JUMPFLEX® Signal Conditioners

Temperature Signal Conditioner for Pt100, Pt200, Pt500 and Pt1000 * as well as Resistors 0 ... 1 kΩ; 0 ... 4.5 kΩ



Configuration via:

DIP switch



Short description:
The 857-801 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 on the output side..

Characteristics::
- 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
- Calibrated scale switching
- Sensor's wire break/short circuit
- Measuring range underflow/overflow
- Clipping capability allows analog standard signal limitation to upper range values.
- Safe 3-way isolation with 2.5kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35**	**857-801**	1
Temperature Signal Conditioner for		
Pt 100, Pt 200, Pt 500 and Pt 1000 as well as		
Resistors *		

Technical Data

Configuration:	
Configuration	DIP switch, interface configuration
	software, interface configuration app
Input:	
Input signal	PT sensors and resistors *
Sensor types	Pt100, Pt200, Pt500, Pt1000 *
Sensor connection	2-wire, 3-wire, 4-wire (switchable) *
Temperature range	-200 °C ... +850 °C
Sensorspeisestrom	< 0.5 mA
Resistor input	0 ... 1 kΩ , 0 ... 4.5 kΩ *
Output:	
Output signal	0 ... 20 mA, 4 ... 20 mA,
	0 ... 10 V, 2 ... 10 V,
	0... 5 V, 1 ... 5 V,
	0 ... 10 mA, 2 ... 10 mA *
Load impedance	≤ 600 Ω (Out = mA)
	≥ 2 kΩ (Out = V)
Step response	180 ms (360 ms at 3-wire)
General specifications:	
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	< 40 mA
Min. measuring span	50 K (50 Ω)
Transmission error	≤ 0.1 % at max. measuring span
Transmission error of set	
measuring span	((10 K / set measuring span [K]) + 0.1) %
Temperature coefficient	≤ 0.02 % /K

Technical Data

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	49.2 g
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
cULus ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
Shipbuilding	GL
Accessories	see pages 226 ... 236

(* Additional setting options as well as output signal inversion via PC configuration software or smartphone app)

DIP Switch Adjustability

● = ON

857-801

DIP Switch S1

Wire connection			Sensor type				Output signal						Measuring range underflow	Measuring 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
																		●		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

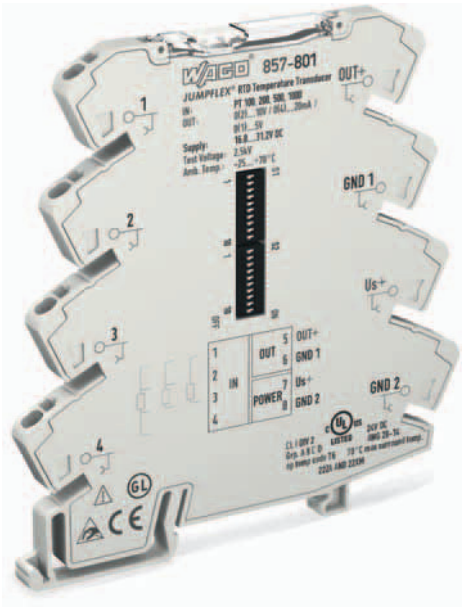
The minimum distance from the start temperature to the end temperature may not fall short of 50K degrees on the Celsius (C) scale or 122K degrees on the Fahrenheit (F) scale.

Default Settings

All DIP switches are in „OFF" position for delivery. This is the position used to parameterize the device via PC configuration software.	
Sensor connection	2-wire
Sensor type	Pt 100
Start temperature	0 °C
End temperature	100 °C
Output signal	0 ... 20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA
Wire break	21 mA
Short circuit	0 mA

JUMPFLEX® Signal Conditioners

Temperature Signal Conditioner for Thermocouples of Types J and K

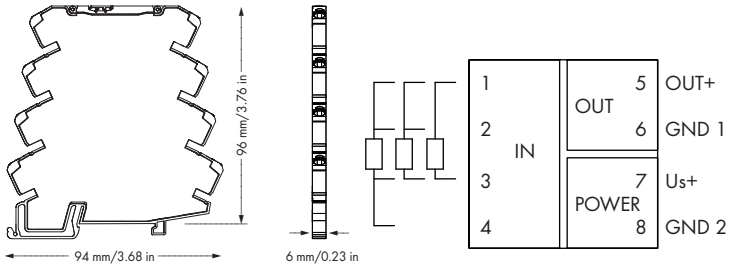


Configuration via:

DIP switch

Interface configuration software

Interface configuration app



Short description:
The 857-810 Thermocouple Temperature Signal Conditioner is suitable for the connection of type J and K thermocouples. On the output side, the thermocouple temperature signal conditioner converts the temperature signal into an analog standard signal.

Characteristics:
- For thermocouples of type J and K
- Cold junction compensation (on/off)
- Calibrated scale switching
- Sensor's wire break
- Measuring range underflow/overflow
- Clipping capability allows analog standard signal limitation to upper range values
- Safe 3-way isolation with 2.5kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35**	**857-810**	1
Temperature Signal Conditioner for Thermocouples of Types J and K		

Technical Data

Configuration:	
Configuration	DIP switch
Input:	
Input signal	Thermocouples
Sensor types	Thermocouples of types J and K
Temperature range	Type J: -150 °C ... +1200 °C
	Type K: -150 °C ... +1350 °C
Output:	
Output signal	0 ... 20 mA, 4 ... 20 mA,
	0 ... 10 V, 2 ... 10 V,
	0... 5 V, 1 ... 5 V,
	0 ... 10 mA, 2 ... 10 mA
Load impedance	≤ 600 Ω (Out = mA)
	≥ 2 kΩ (Out = V)
Cold junction compensation	on / off (default: on)
Cold junction error	3 K (typ. 2 K)
Step response	60 ms without cold junction compensation/
	120 ms with cold junction compensation
General specifications:	
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 40 mA
Min. measuring span	100 K (configurable)
Transmission error	≤ 0.1 % at max. measuring span (Typ J, K)
Transmission error of set	
measuring span	(150 K / set measuring span [K]) %
Temperature coefficient	≤ 0.04 % /K

Technical Data

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 24 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	44.7 g
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
cULus ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
Shipbuilding	GL
Accessories	see pages 226 ... 236

DIP Switch Adjustability

● = ON

857-810

DIP Switch S1

Cold junction compensation		Sensor type			Output signal						Measuring range underflow	Measuring 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
																		●		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

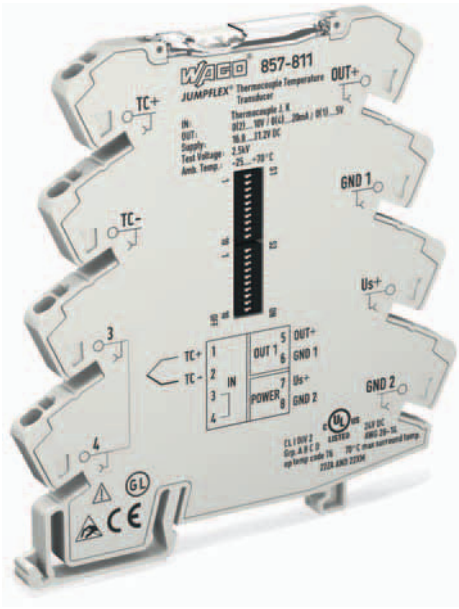
The minimum distance from the start temperature to the end temperature may not fall short of 100K degrees on the Celsius (C) scale or 212K degrees on the Fahrenheit (F) scale.

Default Settings

All DIP switches are in „OFF" position for delivery.	
Cold junction compensation	on
Thermocouple	Type J
Start temperature	0 °C
End temperature	1000 °C
Output signal	0 ... 20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA
Wire break	21 mA

JUMPFLEX® Signal Conditioners

Temperature Signal Conditioner for Thermocouples of Types J and K *

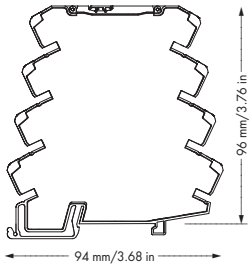


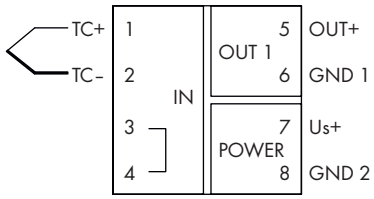
Configuration via:

DIP switch

Interface configuration software

Interface configuration app





Short description:
The 857-811 Thermocouple Temperature Signal Conditioner is suitable for the connection of type J and K thermocouples. On the output side, the thermocouple temperature signal conditioner converts the temperature signal into an analog standard signal.

Characteristics:
- PC configuration interface
- For thermocouples of type J and K (E, R, N, S, T, B, C)
- Cold junction compensation (on/off)
- Calibrated scale switching
- Sensor's wire break
- Measuring range underflow/overflow
- Clipping capability allows analog standard signal limitation to upper range values
- Safe 3-way isolation with 2.5kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35**	**857-811**	1
Temperature Signal Conditioner for Thermocouples of Types J and K *		

Technical Data

Configuration:	
Configuration	DIP switch, interface configuration
	software, interface configuration app
Input:	
Input signal	Thermocouples
Sensor types	Thermocouples of types J and K *
Temperature range	Type J: -150 °C ... +1200 °C
	Type K: -150 °C ... +1350 °C
Output:	
Output signal	0 ... 10 mA, 2 ... 10 mA,
	0 ... 20 mA, 4 ... 20 mA,
	0... 5 V, 1 ... 5 V,
	0 ... 10 V, 2 ... 10 V *
Load impedance	≤ 600 Ω (Out = mA)
	≥ 2 kΩ (Out = V)
Cold junction compensation	on / off (default: on) *
Cold junction error	3 K (typ. 2 K)
Step response	60 ms without cold junction compensation/
	120 ms with cold junction compensation
General specifications:	
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 40 mA
Min. measuring span	100 K (configurable)
Transmission error	≤ 0.1 % at max. measuring span (Typ J, K)
Transmission error of set	
measuring span	(150 K / set measuring span [K]) %
Temperature coefficient	≤ 0.04 % /K

Technical Data

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	49.2 g
Standards and approvals:	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
Shipbuilding	GL
Accessories	see pages 226 ... 236

(* Additional setting options as well as output signal inversion via PC configuration software or smartphone app)

DIP Switch Adjustability

● = ON

857-811

DIP Switch S1

Cold junction compensation		Sensor type			Output signal						Measuring range underflow	Measuring 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
																		●		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

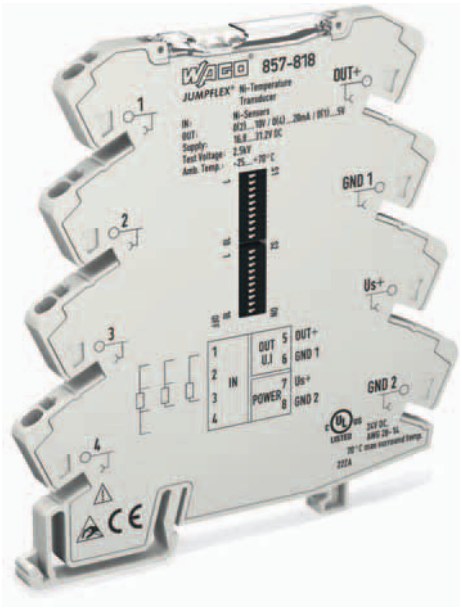
The minimum distance from the start temperature to the end temperature may not fall short of 100K degrees on the Celsius (C) scale or 212K degrees on the Fahrenheit (F) scale.

Default Settings

All DIP switches are in „OFF" position for delivery. This is the position used to parameterize the device via PC configuration software.	
Cold junction compensation	on
Thermocouple	Type J
Start temperature	0 °C
End temperature	1000 °C
Output signal	0 ... 20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA
Wire break	21 mA

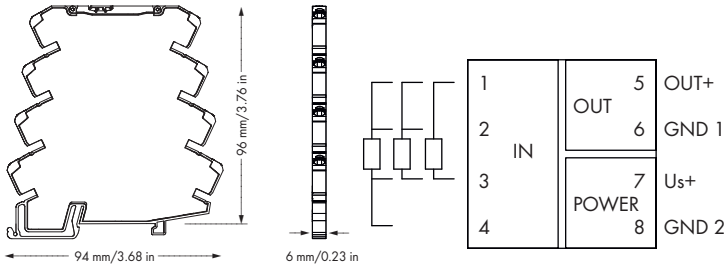
JUMPFLEX® Signal Conditioners

Ni Signal Conditioner for Ni 100, Ni 120, Ni 200, Ni 500, Ni 1000



Configuration via:

DIP switch



Short description:
The 857-818 Ni Signal Conditioner (Ni = nickel) records signals from Ni sensors featuring all standard characteristics. On the output side, the NI temperature signal conditioner converts the temperature signal into a standard analog signal.

Characteristics:
- For Ni100, Ni120, Ni200, Ni500 and Ni1000 sensors
- Calibrated scale switching
- Clipping capability allows analog standard signal limitation to upper range values
- Safe 3-way isolation with 2.5 kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35**	**857-818**	1
Ni Signal Conditioner for Ni100, Ni120, Ni200, Ni500, Ni1000		
with Temperature Coefficients: 6178 ppm/K (DIN 43760)		
5000 ppm/K; 6720 ppm/K; 6370 ppm/K		

Technical Data

Configuration:	
Configuration	DIP switch
Input:	
Input signal	Ni sensors
Max. input signal	± 31.2 V DC
Sensor types	Ni 100, Ni 120, Ni 200, Ni 500, Ni 1000
Sensor connection	2-wire, 3-wire, 4-wire (switchable)
Output:	
Output signal	0 ... 10 mA, 2 ... 10 mA, 0 ... 20 mA, 4 ... 20 mA, 0... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V
Load impedance	≤ 600 Ω (I output) ≥ 2 kΩ (U output)
Step response	< 60 ms at 2- and 4-conductor measurement < 120 ms at 3-conductor measurement
General specifications:	
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 40 mA
Transmission error	≤ 0.1 % of upper range value

Technical Data

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min.
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm² ... 2.5 mm² / AWG 28 ... 14 fine-stranded: 0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	50 g
Standards and approvals:	
Conformity marking	CE
	UL 508
Shipbuilding	GL
Accessories	see pages 226 ... 236

DIP Switch Adjustability

● = ON

857-818

DIP Switch S1

Connection Technology			Temperature Coefficient			Sensor Type			
1	2		3	4		5	6	7	
		2-conductor			6178 ppm/K				Ni 100
●		3-conductor	●		5000 ppm/K	●			Ni 120
	●	4-conductor		●	6720 ppm/K		●		Ni 200
			●	●	Reserve	●	●		Ni 500
								●	Ni 1000

DIP Switch S1

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
●			-60	●					0	●	●		●		100	●		●		●	200
	●		-50		●				10			●	●		110		●	●		●	210
●	●		-40	●	●				20	●		●	●		120	●	●	●		●	220
		●	-30			●			30		●	●	●		130				●	●	230
●		●	-20	●		●			40	●	●	●	●		140	●			●	●	240
	●	●	-10		●	●			50					●	150		●		●	●	250
●	●	●	0	●	●	●			60	●				●	160	●	●		●	●	260
							●		70		●			●	170			●	●	●	270
				●			●		80	●	●			●	180	●		●	●	●	280
					●		●		90			●		●	190		●	●	●	●	290
																●	●	●	●	●	300

DIP Switch S2

Output Signal						Measuring Range Underflow	Measuring 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 = 0V or 0mA

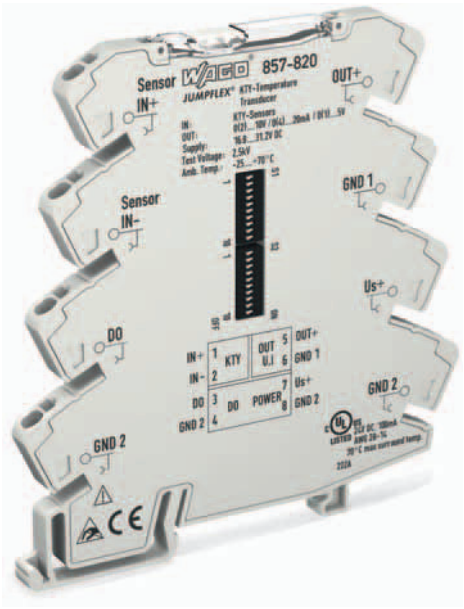
*[2] acc. to NAMUR NE 43

Default Setting

All DIP switches are in "OFF" position for delivery.	
Sensor connection	2-conductor
Sensor type	NI 100
Temperature coefficient	6178 ppm/K
Start temperature	0 °C
End temperature	100 °C
Output signal	0 ... 20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA
Wire break	21 mA
Short circuit	0 mA

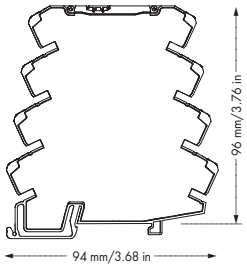
JUMPFLEX® Signal Conditioners

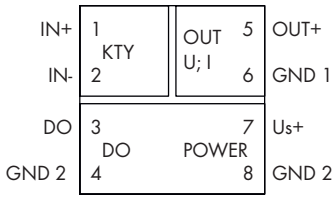
KTY Signal Conditioner



Configuration via:

DIP switch





Short description:
The 857-820 KTY Signal Conditioner records signals from KTY sensors featuring all standard characteristics. On the output side, the KTY temperature signal conditioner converts the temperature signal into a standard analog signal.

Characteristics:
- Supports all standard KTY sensors
- Calibrated scale switching
- Clipping capability allows analog standard signal limitation to upper range values
- Safe 3-way isolation with 2.5 kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35**	**857-820**	1
KTY Signal Conditioner		

Technical Data

Configuration:	
Configuration	DIP switch
Input:	
Input signal	KTY sensors
Max. input signal	± 30 V DC
Sensor types	KTY81-110, KTY81-120, KTY81-150
	KTY82-110, KTY82-120, KTY82-150,
	KTY81-121, KTY82-121, KTY81-122,
	KTY82-122, KTY81-210, KTY81-220,
	KTY82-210, KTY82-220, KTY81-221,
	KTY82-221, KTY81-222, KTY82-222,
	KTY81-250, KTY82-250, KTY83-110,
	KTY83-120, KTY83-150, KTY83-121,
	KTY83-122, KTY83-151, KTY84-130,
	KTY84-150, KTY84-151, KTY16, KTY19,
	ST13, ST20
Sensor connection	2-conductor
Output:	
Output signal	0 ... 10 mA, 2 ... 10 mA,
	0 ... 20 mA, 4 ... 20 mA,
	0... 5 V, 1 ... 5 V,
	0 ... 10 V, 2 ... 10 V
Load impedance	≤ 600 Ω (I output)
	≥ 2 kΩ (U output)
Step response	< 50 ms
Output - Digital	
Max. switching voltage	Supply voltage applied
Max. continuous current	500 mA (up to 60 °C)
	100 mA (60 °C ... 70 °C)

Technical Data

General specifications:	
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 40 mA
Transmission error	≤ 0.1 % of upper range value
Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min.
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	50 g
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
Shipbuilding	GL
Accessories	see pages 226 ... 236

DIP Switch Adjustability

● = ON

857-820

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
●			-55	●					0	●	●		●		100	●		●		●	200
	●		-50		●				10			●	●		110		●	●		●	210
●	●		-40	●	●				20	●		●	●		120	●	●	●		●	220
		●	-30			●			30		●	●	●		130				●	●	230
●		●	-20	●		●			40	●	●	●	●		140	●			●	●	240
	●	●	-10		●	●			50					●	150		●		●	●	250
●	●	●	0	●	●	●			60	●				●	160	●	●		●	●	260
							●		70		●			●	170			●	●	●	270
				●			●		80	●	●			●	180	●		●	●	●	280
					●		●		90			●		●	190		●	●	●	●	290
																●	●	●	●	●	300

DIP Switch S1

Output Signal						Measuring Range Underflow	Measuring 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 = 0V or 0mA

*2 acc. to NAMUR NE 43

Default Setting

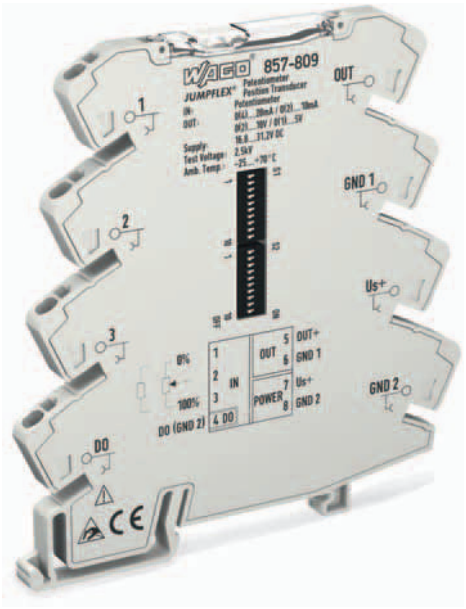
All DIP switches are in „OFF" position for delivery.	
Sensor type	KTY81-110, KTY81-120, KTY82-110, KTY82-120
Start temperature	0 °C
End temperature	100 °C
Output signal	0 ... 20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA
Wire break	21 mA
Short circuit	0 mA
Digital output	not active

DIP Switch S2

		Digital Output DO Signaling
9	10	
		DO not active
	●	DO Us+ switching
●	●	DO GND switching

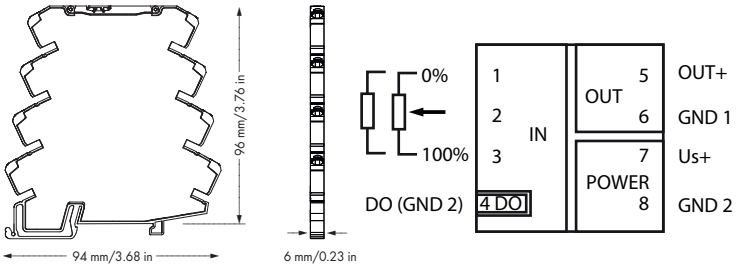
JUMPFLEX® Signal Conditioners

Potentiometer Position Signal Conditioner



Configuration via:

DIP switch | Interface configuration software | Interface configuration app | Push/Slide Switch



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

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

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

Technical Data

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

Technical Data

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min.
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² - 2.5 mm² / AWG 28 - 14
	fine-stranded:
	0.34 mm² - 2.5 mm² / AWG 22 - 14
Strip lengths	9 - 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	49.2 g
Standards and approvals:	
cULus UL 508	
Shipbuilding	GL
Accessories	see pages 226 ... 236

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

DIP Switch Adjustability

● = ON

857-809

DIP Switch S1 and S2

Input	
DIP S1	
1	
	Potentiometer
●	Resistor

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

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

*Default setting

DIP Switch S2

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

*Default setting

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

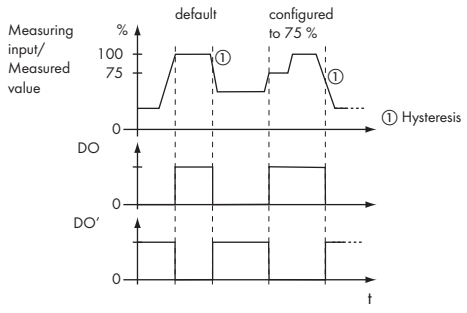
*1acc. to NAMUR NE 45

Digital Output DO/Signaling

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

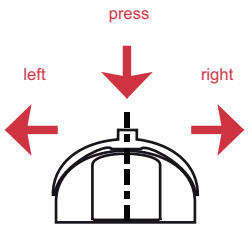
In order to increase the switching current of the DO, the latter may be expanded by a relay. Thanks to the contour uniformity of Series 857, for example, a 857-304 Relay can be snapped in next to it. This output can be quickly and easily expanded to a switching current of 6A by simply using an adjacent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

Switching Behavior, Digital Output (DO)



Push/Slide Switch Operation:

857-809



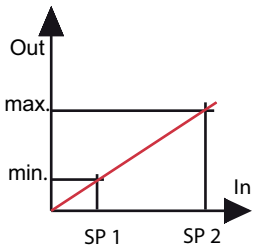
Operating push/slide switch:

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

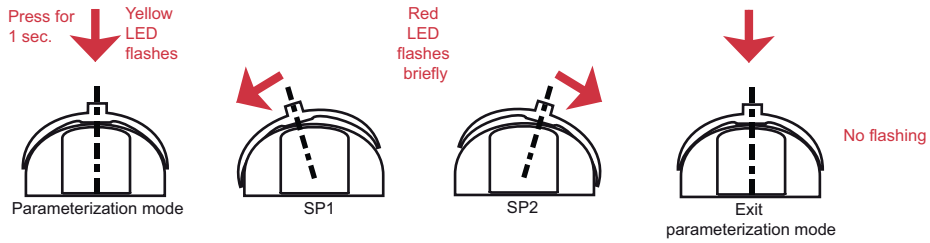
- Press PSS down until the yellow LED is flashing
- Set potentiometer to the minimum value
- Briefly push PSS to the left
- Red LED flashes briefly
- Set potentiometer to the maximum value
- Briefly push PSS to the right
- Red LED flashes briefly
- Briefly press PSS downward
- The yellow LED stops flashing

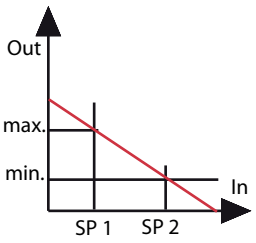
PSS = Push/slide switch

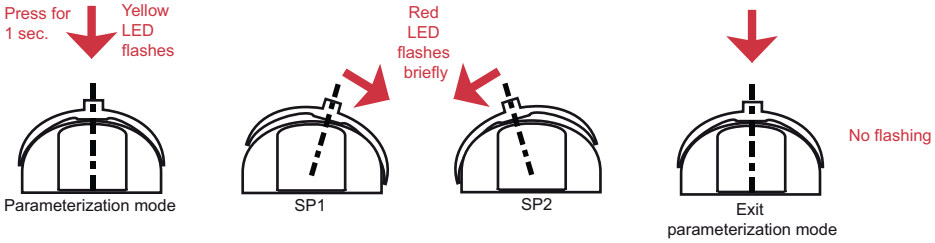
Transmission function



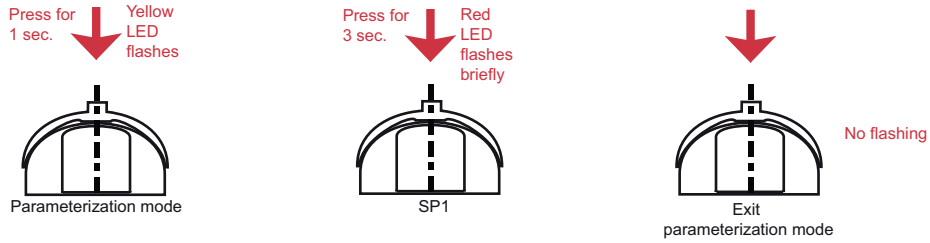
Configuration instructions





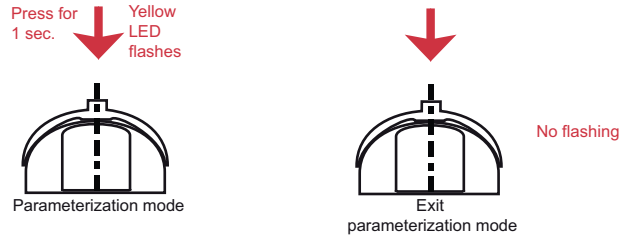


Delete set switching points

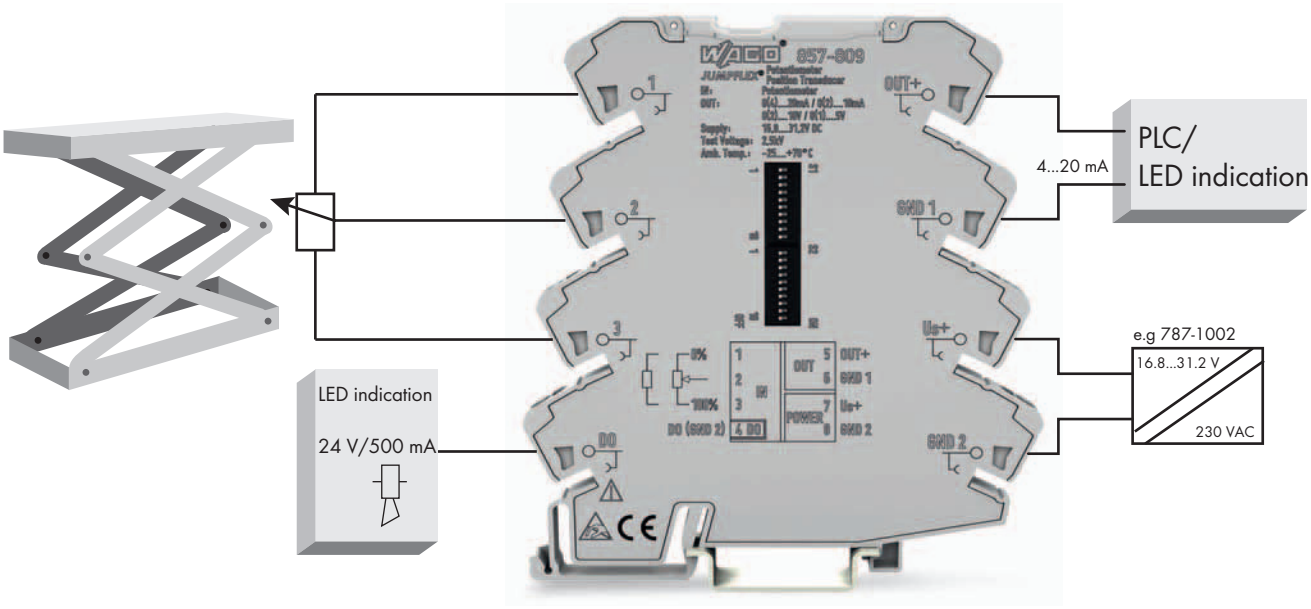


Exit parameterization mode without saving value.

SP = Switching points

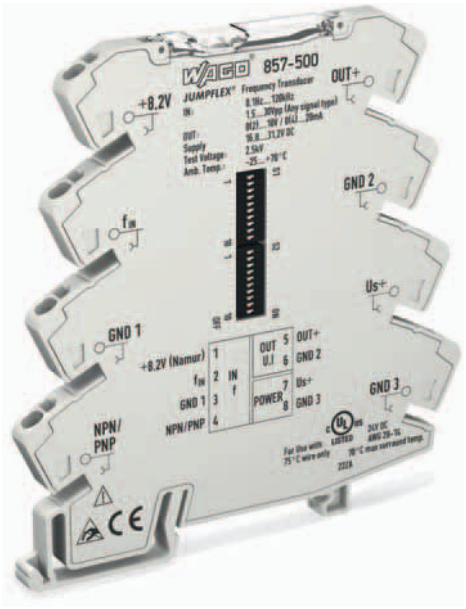


Application example:



JUMPFLEX® Signal Conditioners

Frequency Signal Conditioner 0.1 Hz ... 120 kHz

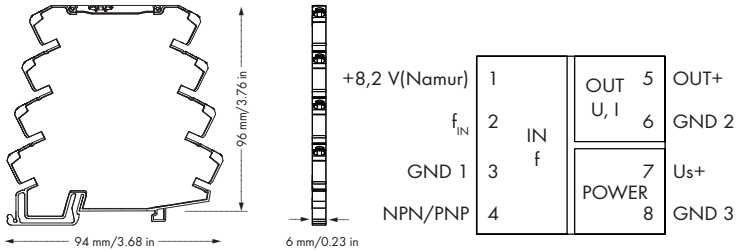


Configuration via:

DIP switch

Interface configuration software

Interface configuration app



Short description:
The 857-500 Frequency Signal Conditioner collects 0.1 – 120kHz signals from NAMUR, NPN or PNP sensors and converts them into analog standard signals.

Characteristics:
- PC configuration interface
- Signal acquisition from NAMUR, NPN or PNP sensors
- Calibrated scale switching
- Safe 3-way isolation with 2.5kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**857-500**	1
Frequency Signal Conditioner		

Technical Data

Configuration:	
Configuration	DIP switch, interface configuration software, interface configuration app
Input:	
Sensor types	-Frequency generators -NAMUR sensors -NPN/PNP transistor outputs without pull-up or pull-down resistor -mech. contact (dry contact)

Technical Data

Input for frequency generators or NPN/PNP transistor outputs with pull-up or pull-down resistor	
Frequency range	0.1 Hz ... 120 kHz
Signal level	1.5 V, 10 V, 20 V (switchable)
Max. input signal	± DC 31.2 V
Pulse length	≥ 1 µs
Signal form	Any
Coupling	AC/DC (AC above 10 Hz) (adjustable)
Min. measuring span	10 Hz
Input resistance	10 kΩ
Input for NAMUR sensors per DIN EN 50227	
Sensor supply	DC 8.2 V
Signal current (0)	≤ 1.2 mA
Signal current (1)	≥ 2.1 mA
Hysteresis	0.45 mA
Input resistance	< 600 Ω
Frequency range	0.1 Hz ... 1 kHz
Pulse length	≥ 500 µs
Min. measuring span	100 Hz
Short-circuit current	≤ 14 mA
Short-circuit monitoring	> 4.7 mA
Wire break monitoring	< 0.2 mA
Input for NPN/PNP transistor outputs without pull-up or pull-down resistor or mech. contact (dry contact)	
Frequency range	0.1 Hz ... 20 kHz
Pulse length	≥ 25 µs
Min. measuring span	10 Hz
Open-circuit voltage	5VDC
NPN_Residual voltage	< 1.5 V
PNP Switching voltage	> 7.5 V + residual voltage U_{CE} sat

Technical Data

Output:	
Output signal	**Voltage:**
	0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V
	Current:
	0 ... 10 mA, 2 ... 10 mA,
	0 ... 20 mA, 4 ... 20 mA
Load impedance	≤ 600 Ω (I output)
	≥ 2 kΩ (U output)
Conversion time	Gate time measurement method
	(> 400 Hz): < 20 ms
	Pulse time measurement method
	(< 400 Hz): < 200 µs + $T_{Cycle\ duration}$
General specifications:	
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 40 mA
Transmission error	≤ 0.1 % of upper range value
Temperature coefficient	≤ 0.01 % /K

General Specifications

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min.
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	38.7 g
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
Shipbuilding	GL
Accessories	see pages 226 ... 236

Refer to following pages for DIP Switch Table and Pin Assignments.

DIP Switch Adjustability

● = ON

857-500

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	
●					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

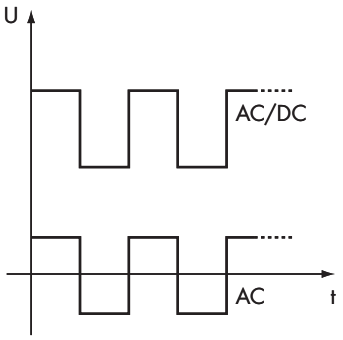


Figure 1: Coupling

Default Setting

Input:	
Input source	Frequency generator/transistor output with pull-up or pull-down resistor
Coupling	AC/DC
Signal level	> 1.5 V
Start value	100 Hz
End value	1000 Hz
Measuring technique	Gate time measurement method
Output:	
Output signal	Current
Start value	0 mA
End value	20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA

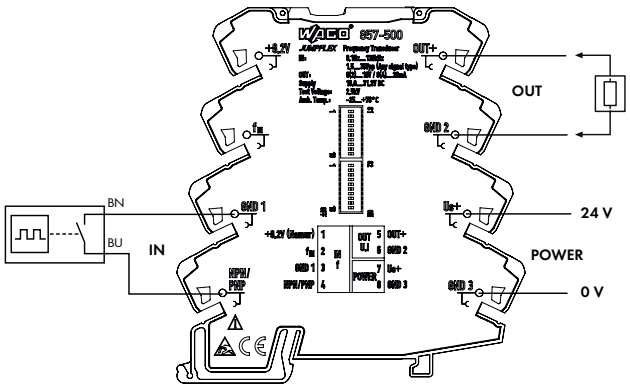
DIP Switch S2

Output Signal						Measuring Range Underflow	Measuring Range Overflow	Only for NAMUR Sensors	
6	7	8		9	10			Wire Break	Short Circuit
			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 %
	●		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						

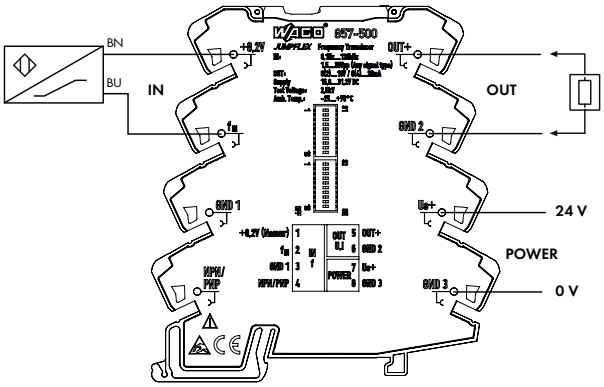
*acc. to NAMUR NE 43

857-500, Wiring Material

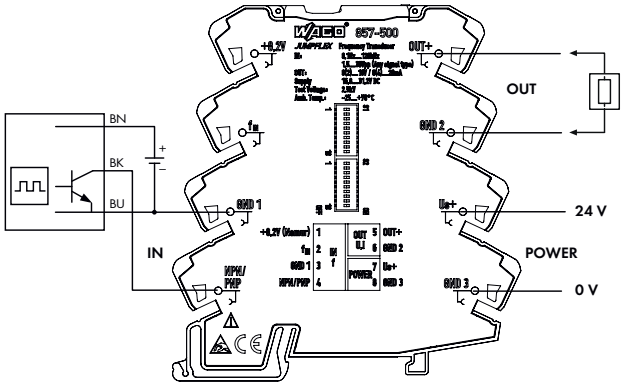
2-Conductor DC (Mechanical Contact)



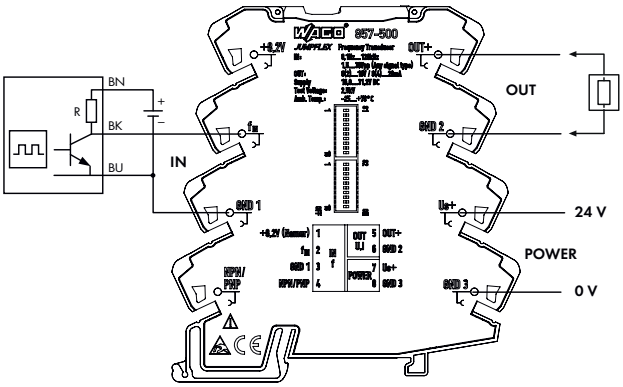
2-Conductor DC NAMUR Sensor



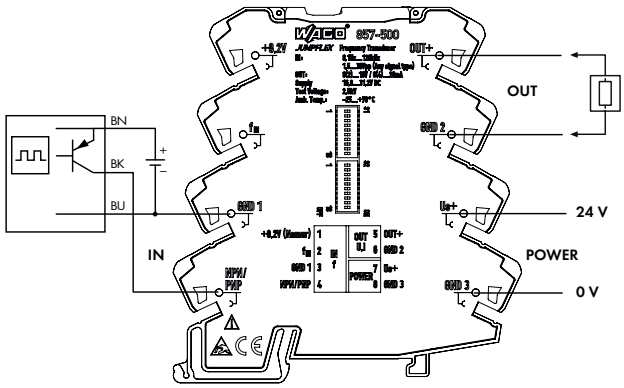
NPN Transistor Output



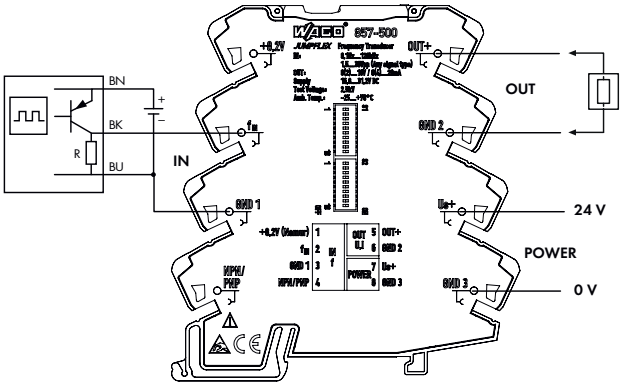
NPN Transistor Output with Pull-Up Resistor



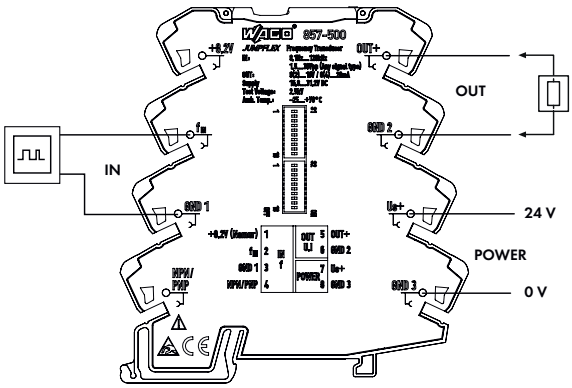
PNP Transistor Output



PNP Transistor Output with Pull-Down Resistor



Frequency Generator

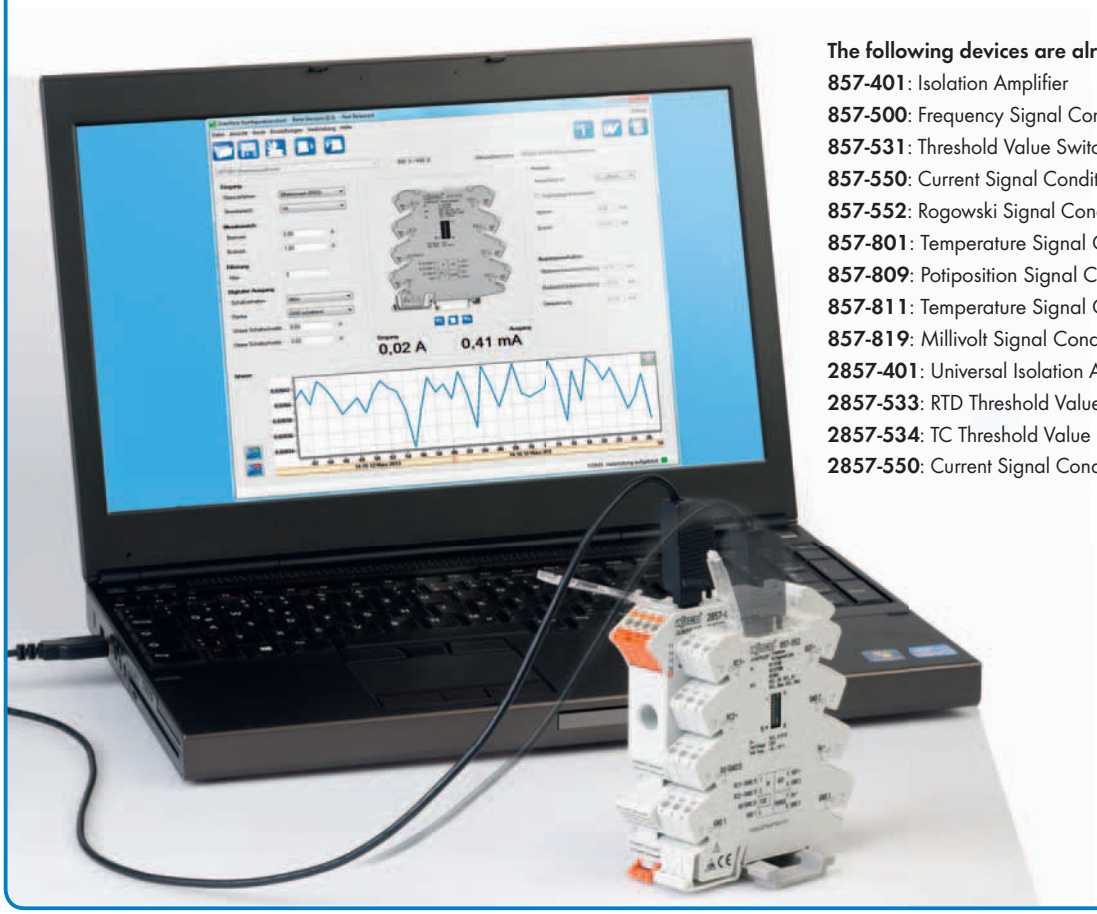


Interface Configuration Software

Interface Configuration Software – DIP Switch Alternative

Software features:
- Automatic module recognition
- Visualization of process values
- Parameterization of the digital switch output (threshold functionality)
- Communication via 750-923 WAGO USB Service Cable or WAGO 750-921 *Bluetooth*® Adapter

Description
Interface Configuration Software
Download: www.wago.com



The following devices are already supported:

857-401: Isolation Amplifier
857-500: Frequency Signal Conditioner
857-531: Threshold Value Switch
857-550: Current Signal Conditioner
857-552: Rogowski Signal Conditioner
857-801: Temperature Signal Conditioner for Pt Sensors
857-809: Potiposition Signal Conditioner
857-811: Temperature Signal Conditioner for TC Sensors
857-819: Millivolt Signal Conditioner
2857-401: Universal Isolation Amplifier
2857-533: RTD Threshold Value Switch
2857-534: TC Threshold Value Switch
2857-550: Current Signal Conditioner

Interface Configuration App

Interface Configuration App
DIP Switch Alternative

WAGO's Interface Configuration App brings the power of a PC-based configuration software to mobile end-user devices. WAGO's 857 Series signal conditioner's input and output parameters can be configured via finger swipe on an Android-based smartphone or tablet. Furthermore, both configuration data and actual measured values can be easily displayed.
WAGO's 750-921 *Bluetooth®* Adapter communicates between a smartphone and signal conditioner.

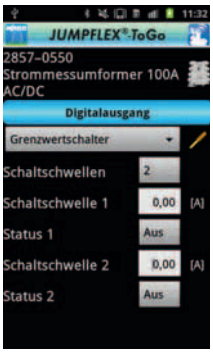
Description
WAGO Interface Configuration App (Android)
Download from Google Play

Device Information

Input Parameter

Output Parameter

Digital Output



Actual Value

The following devices are already supported:

857-401: Isolation Amplifier
857-500: Frequency Signal Conditioner
857-531: Threshold Value Switch
857-550: Current Signal Conditioner
857-552: Rogowski Signal Conditioner
857-801: Temperature Signal Conditioner for Pt Sensors
857-809: Potiposition Signal Conditioner
857-811: Temperature Signal Conditioner for TC Sensors
857-819: Millivolt Signal Conditioner

2857-401: Universal Isolation Amplifier
2857-533: RTD Threshold Value Switch
2857-534: TC Threshold Value Switch
2857-550: Current Signal Conditioner

JUMPFLEX®-ToGo

Download from Google Play

Configuration Display

Features:

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

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

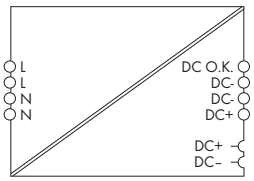
Technical Data

Environmental requirements:	
Ambient operating temperature	-20 °C ... +70 °C
Storage temperature	-30 °C ... +80 °C
Dimensions and weight:	
Dimensions (mm) W x H x L	22 x 13 x 59
Standards and approvals:	
Conformity marking	CE

Switched-Mode Power Supply in 2857 Series Housing

***EPSITRON*® Power for *JUMPFLEX*®**

Similiar to picture



- Primary switch mode power supply in 22.5 mm wide 2857 Series Housing, same profile as 2857 and 857 Series *JUMPFLEX*® Signal Conditioners
- Both 24 VDC and 0 V output voltage can be easily supplied to adjacent *JUMPFLEX*® 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 *JUMPFLEX*® Modules (pending)

Description	Item No.	Pack. Unit
Switched-mode power supply in 2857 Series housing, 24 VDC / 1 A	**787-2852**	1

Technical Data

Input:	
Nominal input voltage $V_{i\ nom}$	100 ... 240 VAC
Input voltage range	85 ... 264 VAC; 90 ... 370 VDC
Frequency	47 Hz ... 63 Hz; 0 Hz
Input current I_i	< 0.2 A (230 VAC, nominal load);
	< 0.9 A (90 VAC, nominal load)
Power factor	> 0.6 (230 VAC, nominal load,
	acc. to EN 61000-3-2)
Discharge current	< 1 mA (230 VAC)
Inrush current	< 30 A (230 VAC), limited
Mains failure hold-up time	120 ms (230 VAC)
Output:	
Nominal output voltage $V_{o\ nom}$	24 VDC (SELV)
Factory preset	24 VDC
Nominal load $P_{o\ nom}$	24 W
Output current I_o	1 ADC
Deviation, dynamic load change	
10 ... 90 %	< ± 1 %
Adjustment accuracy	< 2 %
Residual ripple	< 100 mV (peak-peak) at 20 MHz
Current limitation	1.1 x I_o typ.
Overload behavior	Constant current
Operational indication	Green LED (V_o > 21.5 V)
Efficiency/Power losses:	
Efficiency	86 % typ. (230 VAC, nominal load);
	84 % typ. (110 VAC, nominal load)
Power loss P_V	< 1 W (230 VAC, no load);
	4.3 W (230 VAC, nominal load)
Max. power loss P_V	4.6 W typ. (100 VAV / 24 VDC, 1 A)
Fuse protection:	
Internal fuse	2 AT
External fuse	Circuit breakers 6 A,
	B or C characteristic
Environmental Requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Relative humidity	30 % ... 85 % (no condensation
Derating	-2 %/K (> +60 °C)
Degree of pollution	2 (acc. to EN 50178)
Climatic category	3K3 (acc. to EN 60721)

Technical Data

Safety and protection:	
Test voltage	4.2 kV DC (input – output)
Protection class	II
Degree of protection	IP20 (acc. to EN 60529)
Overvoltage protection	Varistor (input side);
	internal protective circuit,
	< 29 ... 31 VDC (output side in case of an
	error)
Short circuit protection	yes
No-load proof	yes
Feedback voltage	max. 60 VDC
Parallel operation	yes, for 2 devices of the same type
Series connection	yes, for 2 devices of the same type
MTBF	> 500,000 h (at 25 °C)
	Calculation acc. to IEC 61709
Connection and type of mounting:	
Wire connection	Input/Output/Signaling:
	CAGE CLAMP® S (*picoMAX*® 5.0)
Cross sections	Input/Output/Signaling:
	solid/fine-stranded:
	0.2 ... 2.5 mm² / AWG 24 ... 10
Strip lengths	Input/Output/Signaling:
	9 ... 10 mm / 0.35 ... 0.39 in
Type of mounting	DIN-rail mount (EN 60715)
Dimensions and weight:	
Dimensions (mm) W x H x L	22.5 x 110 x 118
	Length from upper-edge of DIN 35 rail
Weight	195 g
Standards and approvals:	
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 *, GL * (* pending)

Bluetooth® Adapter

Application Example: 750 Series

Application Example: 857 Series

***Bluetooth*® Adapter in Connection with 750 Series**
The *Bluetooth*® Adapter wirelessly connects a notebook computer with Bluetooth® functionality to the service interface of the buscoupler/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 *JUMPFLEX*® Module.
As a cable substitute, the *Bluetooth*® Adapter allows communication between *JUMPFLEX*® Modules and 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 *JUMPFLEX*® module.

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

Approvals

Conformity marking	CE
Bluetooth	Bluetooth®-Zulassung

Technical Data

Data transfer rate	9600 ... 115000 bps
Frequency range	2.4 ... 2.4835 GHz (ISM band)
Type of communication	Point-to-point connection
Profiles supported	Serial Port Profile (SPP)
Version	2.1
Radio class	Class 2
RF output power	max. +4 dBm (class 2)
RF input sensitivity	typ. -82 dBm
Antenna	integrated
Ports	4-pole service connectors
Configuration	AT commands (e.g. via Hyper Terminal)
Function	Master or Slave
LED	Operating status
Operating temperature	-20 °C ... +60 °C
Current consumption (internal)	60 mA
Security authentification	PIN code or configurable access list
Security encryption	128-bit encryption
Dimensions (mm) W x H x L	15 x 50 x 19
Weight	7 g
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)

WAGO USB Communication Cable

The WAGO USB Communication Cable connects a PC (notebook) to either the service interface of the 857 Series Signal Conditioners and Relay Modules (JUMPFLEX), or to WAGO-I/O-SYSTEM buscouplers/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 greater):750-841 as from firmware version 12750-872/0020-0000 as from firmware version 2

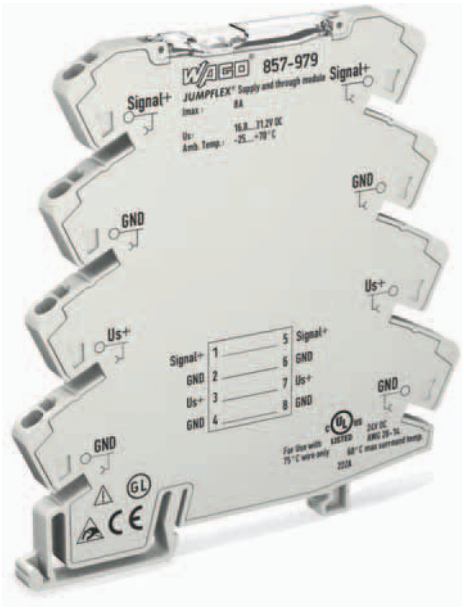
Description	Item No.	Pack. Unit
WAGO USB Communication Cable,		
length 2.5 m	**750-923**	1
WAGO USB Communication Cable,		
length 5 m	**750-923/000-001**	1

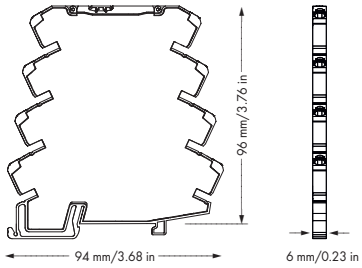
Technical Data	
USB specification	2.0 compatible/full-speed device
Operating system	Microsoft® Windows® 2000;
	Microsoft® Windows® XP Professional;
	Microsoft® Windows® Vista®;
	Microsoft® Windows® 7
Operating temperature	-25 °C ... +70 °C
Interface USB	Type A/m
Length	2.5 m (750-923)
	5 m (750-923/000-001)
Connector dimensions	
(WxHxD)	15 x 50 x 19
Test voltage	2.5 kV, 50 Hz, 1 min.
EMC: CE - immunity to interference	acc. to EN 61000-4-3, EN 61000-4-6
EMC: CE - emission of interference	acc. to EN 55022

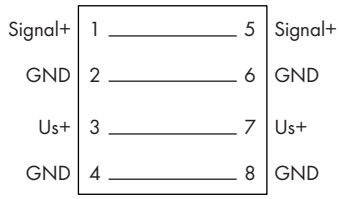
Approvals

Conformity marking	CE

Supply and Through Module







Short description:
The 857-979 Supply and Through Module transmits electrically isolated signals (e.g., in conjunction with the 857-980 Interface Adapter for analog signals). When used as a supply module, it transmits the power from the clamping points to the adjacent *JUMPFLEX*® modules via push-in type jumper bars.

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

Technical Data

General specifications:	
Max. voltage	33 V AC/DC
Current carrying capacity	8 A
Contact resistance	< 10 mΩ
Environmental Requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Connection and type of mounting:	
Wire connection	
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip length	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	27.5 g
Standards and approvals:	
Conformity marking	CE
UL 508	
ANSI/ISA 12.12.01	(pending)
Shipbuilding	GL (pending)

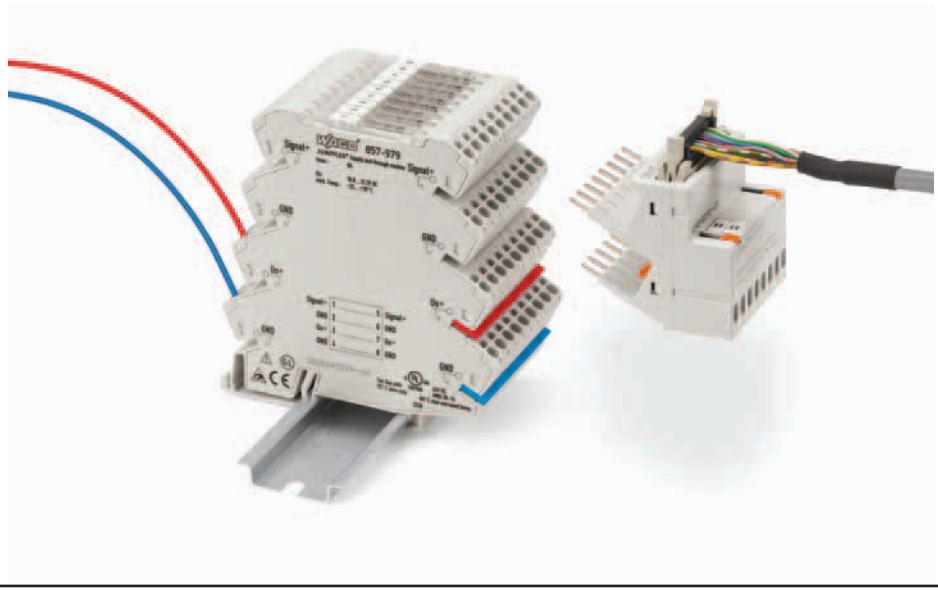
Technical Data

Application example:

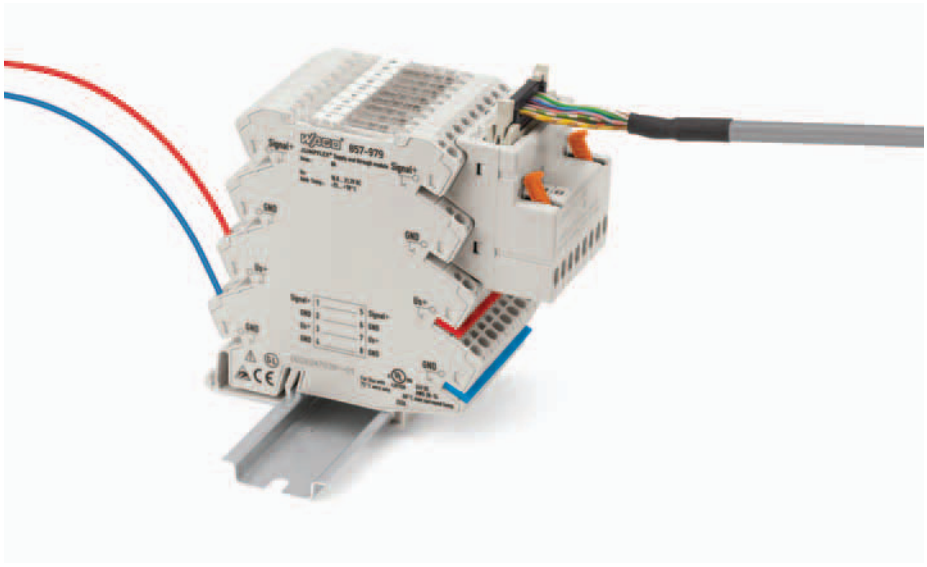
857-979

Power supply for 8 JUMPFLEX® modules with plugged interface adapter
- WAGO interface adapter, 857-980
- WAGO Interface Cable, 706-100/1602-200, 16-pole socket/open-ended
- Push-in type jumper bar, 9-way, 859-409

1



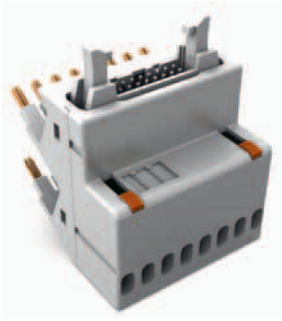
2

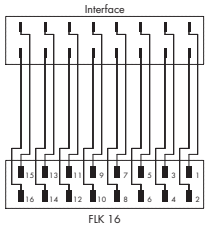


Interface Modules for System Wiring

Interface Adapters, 857 Series

	8-channel adapter with 16-pin ribbon cable connector Analog	





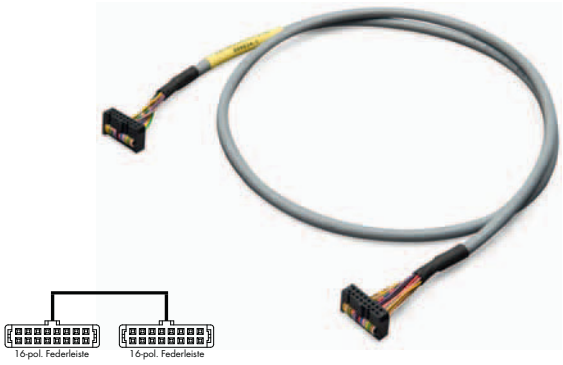
Description	Item No.	Pack. Unit	
8-channel adapter for system wiring	**857-980**	1	

Technical Data

Connection type, signal level	16-pin ribbon cable connector acc. to DIN 41651	
Performance level	3	
Contact resistance	≤ 20mΩ	
Current carrying capacity	1A	
Test voltage	500 V / 50 Hz / 1 min.	
Overvoltage category	III	
Degree of pollution	2	

WAGO Interface Cables

for Interface Adapters, 857 Series



The 16-pin WAGO Interface Cables transmit signals 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.

Suitable for system wiring when combined with the Interface Adapter (Item No. 857-980)

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

Description	Item No.	Pack. Unit
WAGO Interface Cable 16/16, 1m long	**706-753/301-100**	1
WAGO Interface Cable 16/16, 2m long	**706-753/301-200**	1
WAGO Interface Cable 16/16, 3m long	**706-753/301-300**	1

Technical Data

Ports	2 x 16-pole connector acc. to DIN 41651
Wire cross-section	0.14 mm^2 LiYY
Color coding	acc. to DIN VDE 47100
Current per channel	max. 1 A
Operating temperature	-25 °C ... +70 °C
Degree of protection	IP20
Length	1 m (706-753/301-100) 2 m (706-753/301-200) 3 m (706-753/301-300)

Description	Item No.	Pack. Unit
WAGO Interface Cable, 16-pole/ one free cable end, lenght 2 m	**706-100/1602-200**	1

Technical Data

Ports	16-pole HE 10 connector/ one free cable end
Wire cross-section	0.14 mm^2 LiYY
Color coding	acc. to DIN VDE 47100
Current per channel	max. 1 A
Operating temperature	-25 °C ... +70 °C
Degree of protection	IP20
Length	2 m

Accessories, 857 Series

Push-in type jumper bar

Commoning

Comb-style jumper bar

Description		Item No.	Pack. Unit
Push-in type jumper bars, light gray, insulated, 18 A	**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. suffix for colored push-in type jumper bars	**yellow**	**... /000-029**	
	red	**... /000-005**	
	blue	**... /000-006**	
Comb-style jumper bar, insulated	**2-way**	**281-482**	100

WMB Multi marking system

Marking

Description		Item No.	Pack. Unit
WMB Multi marking system	**plain**	**793-501**	5 cards
Marking software and printer/plotter see Section 11			
Marking	**1 ... 10 (10x)**	**793-502**	5 cards
	11 ... 20 (10x)	**793-503**	5 cards
	21 ... 30 (10x)	**793-504**	5 cards
	31 ... 40 (10x)	**793-505**	5 cards
	41 ... 50 (10x)	**793-506**	5 cards
	1 ... 50 (2x)	**793-566**	5 cards
10 strips with 10 markers, white with black printing			

Operating tool

WAGO *Bluetooth*® Adapter

WAGO USB service cable

Configuration

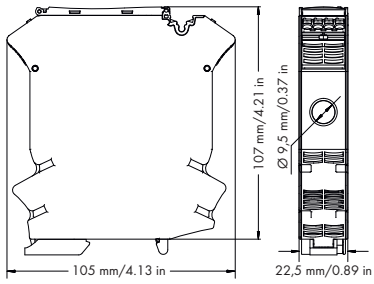
Description		Item No.	Pack. Unit
Operating tool, with partially insulated shaft	Type 2, blade (3.5 x 0.5) mm	**210-720**	1
WAGO USB service cable		**750-923**	1
WAGO *Bluetooth*® Adapter		**750-921**	1

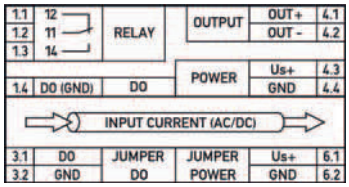
JUMPFLEX® Signal Conditioners

Current Signal Conditioner AC/DC 100 A

Configuration via:

DIP switch | Interface configuration software | Interface configuration app | Configuration display





Short description:
The 2857-550 Current Signal Conditioner measures AC/DC currents up to 100 A, while converting the measured current into an analog standard signal at the output.

Features:

- Both digital signal output and relay with changeover contact react to configured measuring range limits (switching ON/OFF delay and threshold value switch function configurable 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 4 kV test voltage acc. to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail** Current Signal Conditioner AC/DC 100 A	**2857-550**	1

Technical Data

Configuration:	
Configuration	DIP switch, interface configuration software, interface configuration app, configuration display
Input:	
Input signal	500 mA ... 100 A (AC) / -100 A ... 100 A (DC)
Response threshold	250 mA (AC) / 500 mA (DC)
Resolution	10 mA
Frequency range	15 Hz ... 1000 Hz
Output:	
Output signal	**Current:** ± 10 mA; 0 ... 10 mA; 2 ... 10 mA; ± 20 mA; 0 ... 20 mA; 4 ... 20 mA **Voltage:** ± 5 V; 0 ... 5 V; 1 ... 5 V; ± 10 V; 0 ... 10 V; 2 ... 10 V
Overcurrent	0% or +5% (e.g., 10.5 V / 24 mA)
Measuring range overflow/underflow	0% or +2.5%
Load impedance	**Current:** ≤ 600 Ω; **Voltage:** ≥ 1 kΩ
Measuring procedure	True RMS measurement (TRMS) or Arithmetic mean value
Output – Digital:	
Max. switching voltage	Supply voltage applied -0.3 V
Max. continuous current I_{DO}	100 mA (no internal restriction)
Output – Relay:	
Contact type	1 changeover contact (1 u)
Contact material	AgNi (gold-plated)
Max. switching voltage	250 VAC
Max. continuous current	
(terminal blocks in a row)	6 A (up to 60 °C), 3 A (60 °C ... 70 °C)
Dielectric strength open contact (AC, 1 min)	1 kV_{rms}
Pull-in/drop-out/bounce time typ.	8 ms / 4 ms / 8 ms
General specifications:	
Nominal supply voltage V_S	24 VDC
Supply voltage range	16.8 V ... 31.2 V (-30 % ... +30 %)
Current consumption at 24 VDC	≤ 50 mA (+ I_{DO})

Technical Data

General specifications:	
Max. operating frequency	3.3 kHz
Response time	Signal cycle duration + 1 ms
Response time (T_{10-90})	max. 60 ms
Filter (T_{10-90})	Software filter: 600 ms
Linearity error	≤ 1 %
Measurement error	≤ 0,2 % (of the full scale value)
Temperature coefficient	≤ 0.01 %/K
Environmental requirements:	
Ambient operating temperature	-40 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min.
Test voltage (measuring circuit – output)	4 kV AC, 50 Hz, 1 min.
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S (*picoMAX*® 5.0)
Cross sections	solid/fine-stranded: 0.2 ... 2.5 mm² / AWG 24 ... 12
Strip length	9 ... 10 mm / 0.35 ... 0.39 in
Power cable feed-through	Ø 9.5 mm
Dimensions and weight:	
Dimensions (mm) W x H x L	22.5 x 107 x 105
	Height from upper-edge of DIN 35 rail
Weight	106 g
Standards and approvals:	
Conformity marking	CE
Standards/Specifications	DIN EN 61010-1:2010; DIN EN 60664-1:2008; Safe isolation acc. to DIN EN 61140:2002; IEC 61000-6-2; IEC 61000-6-4
Accessories:	see pages 226 ... 236

DIP Switch Adjustability

● = ON

2857-550

DIP Switch S1

Measuring Method		Filter		Analog Output Inverted		Output Signal (Bipolar for Arithmetic Mean Value)			
1		2		3		4	5	6	Analog Output
	True RMS		inactive		not inverted				(±) 0 ... 20 mA
●	Arithmetic mean value (bipolar output)	●	active	●	inverted		●		4 ... 20 mA
						●			(±) 0 ... 10 V
						●	●		2 ... 10 V
								●	(±) 0 ... 10 mA
							●	●	2 ... 10 mA
						●		●	(±) 0 ... 5 V
						●	●	●	1 ... 5 V

DIP Switch S1

		Measuring Range Underflow	Measuring Range Overflow	Overcurrent (Input Signal - End Value +20%)			Digital Output (DO)/ Relay
7	8				9	10	
		Lower measuring range -5% *	Upper measuring range +2.5% *	Upper measuring range +5%			Off
●		Lower measuring range	Upper measuring range +2.5%	Upper measuring range +5%	●		DO US+ switching – relay pulls in
	●	Lower measuring range	Upper measuring range	Lower measuring range		●	DO GND switching – relay drops out
●	●	Lower measuring range -5 %	Upper measuring range +5%	Upper measuring range	●	●	Off

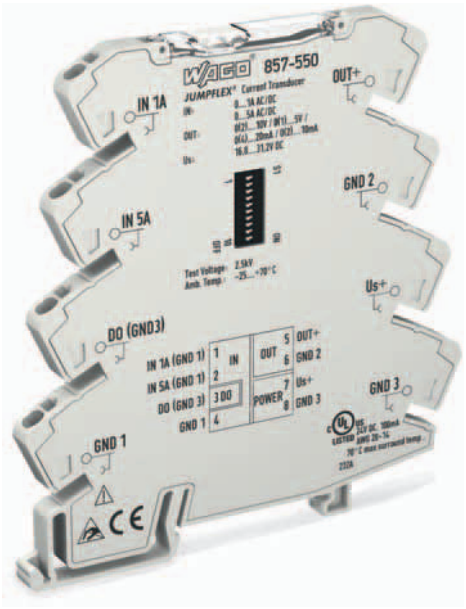
*acc. to NAMUR NE 43

DIP Switch S2

Lower Value						Upper value			
1	2	3	4	A / % (RMS)	A / % (arithmetic mean value)	5	6	7	A / %
				Software configuration (0)	Software configuration (-100)				Software configuration (100)
●				0	-100	●			100
	●			5	-75		●		90
●	●			8	-50	●	●		70
		●		10	-25			●	50
●		●		12	-10	●		●	30
	●	●		14	0		●	●	20
●	●	●		16	5	●	●	●	10
			●	18	10				
●			●	20	15				
	●		●	25	20				
●	●		●	30	25				
		●	●	35	30				
●		●	●	40	35				
	●	●	●	45	40				
●	●	●	●	50	50				

JUMPFLEX® Signal Conditioners

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

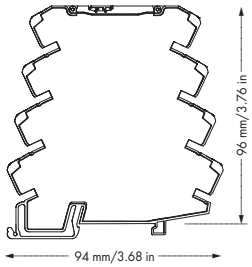


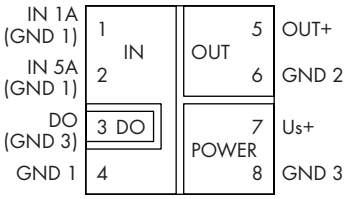
Configuration via:

DIP switch

Interface configuration software

Interface configuration app





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

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

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**857-550**	1
Current Signal Conditioner		

Technical Data

Configuration:	
Configuration	DIP switch, interface configuration
	software, interface configuration app
Input:	
Input signal	0 ... 1 A AC/DC; 0 ... 5 A AC/DC *
Input resistance	10 mΩ (5 A); 47 mΩ (1 A)
Frequency range	16 Hz ... 400 Hz
Response threshold	< 0.5 % (of measuring range nominal
Current carrying capacity	2 x I_N (continuous)
Output:	
Output signal	**Voltage:**
	0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V *
	Current:
	0 ... 10 mA, 2 ... 10 mA,
	0 ... 20 mA, 4 ... 20 mA *
Load impedance	≤ 600 Ω (I output) **
	≥ 2 kΩ (U output)
	** Temperature range restrictions may
	occur.
Filter (T_{10-90})	260 ms (DC), 600 ms (AC 50 Hz)
Output - Digital	
Max. switching voltage	Supply voltage applied
Max. continuous current	500 mA (up to 60 °C)
	100 mA (60 °C ... 70 °C)
General specifications:	
Nominal supply voltage V_S	24 VDC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 40 mA
Measuring procedure	Arithmetic mean value *
	True RMS measurement (TRMS)
Response time	1.5 ms + signal cycle duration
Max. response time	60 ms
Min. measuring span	2 mA ... 1 A; 4 mA ... 5 A

Technical Data

General specifications:	
Transmission error	≤ 0.1 % typ. (≤ 0.4 % max.)
Temperature coefficient	≤ 0.01 % /K
Linearity error	< 0,5 % (of measuring range nominal
Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C (at nominal current)
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage	
(input/output/supply)	2.5 kV AC, 50 Hz, 1 min.
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid:
	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded:
	0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	50 g
Standards and approvals:	
Conformity marking	CE
cULus UL 508	
Shipbuilding	GL
Accessories	see pages 226 ... 236

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

DIP Switch Adjustability

● = ON

857-550

DIP Switch S1

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

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

*acc. to NAMUR NE 43

Digital Output DO/Signaling

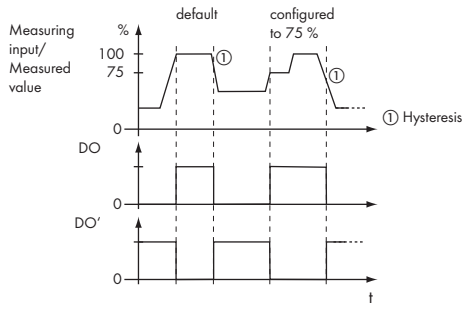
The digital output (DO) signals error messages and can be configured as follows: 24 V → 0 V/0 V → 24 V.

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

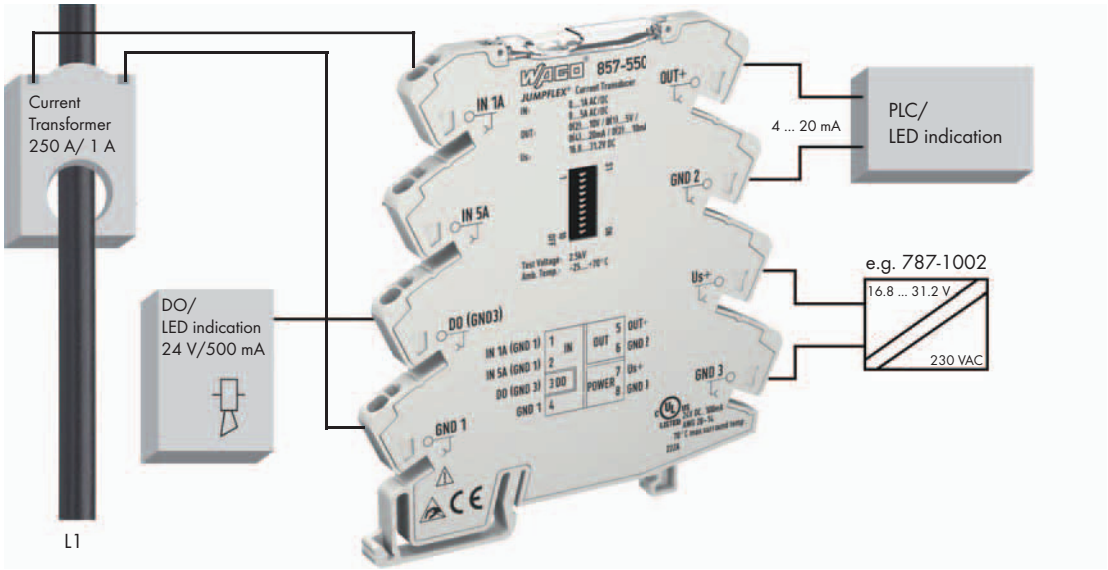
Default Setting

All DIP switches are in "OFF" position for delivery.	
Input	
Input Signal	0 ... 5 A
Measuring Method	Mean square value
Filter	not active
Output	
Output Signal	0 ... 20 mA
Measuring Range Underflow	0 mA
Measuring Range Overflow	20.5 mA
Overcurrent	21 mA
Digital Output DO	not active

Switching Behavior, Digital Output (DO)

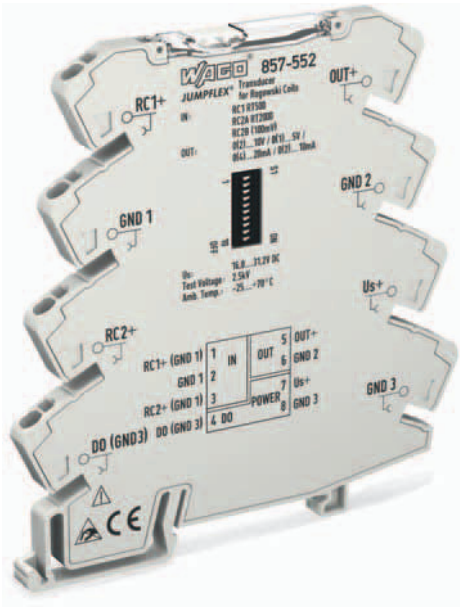


Application example:



JUMPFLEX® Signal Conditioners

Rogowski Signal Conditioner

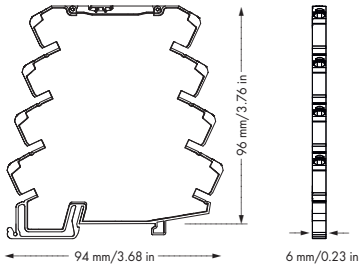


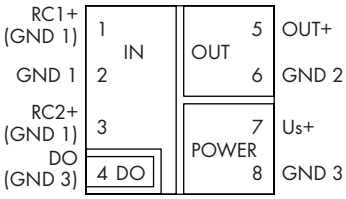
Configuration via:

DIP switch

Interface configuration software

Interface configuration app





Short description:
The Rogowski Signal Conditioner records RMS values from alternating currents via a Rogowski coil, converting the input signal into a standard analog signal on the output side.

Features:
- PC configuration interface
- Supports different types of Rogowski coils
- 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 acc. to EN 61140
- No current bar interruption during installation
- Measuring range overflow indication

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**857-552**	1
Rogowski Signal Conditioner		

Technical Data

Configuration:	
Configuration	DIP switch, interface configuration software, interface configuration app
Input:	
Input signal	RC1 500 A: Sensitivity 10.05 mV *
	RC2A 2000 A: Sensitivity 40.2 mV *
	RC2B: Sensitivity 100 mV *
	50/60 Hz sinusoidal and distorted sinusoidal signals (e.g. leading edge and
Frequency range	16 Hz ... 1000 Hz
Response threshold	< 1 % (of measuring range nominal value)
Output:	
Output signal	**Voltage:**
	0 ... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V *
	Current: 0 ... 10 mA, 2 ... 10 mA,
	0 ... 20 mA, 4 ... 20 mA *
Overcurrent	0 % or +5 % (e. g. 10.5 V/21 mA)
Measuring range overflow/underflow	0 % or +2.5 %
Load impedance	Current ≤ 600 Ω, Voltage ≥ 1000 Ω
Measuring procedure	True RMS (TRMS)
Filter (T_{10-90})	600 ms (50 Hz)
Output - Digital	
Max. switching voltage	Supply voltage applied
Max. continuous current	500 mA
General specifications:	
Nominal supply voltage V_S	24 VDC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 40 mA
Resolution	500 A measuring range: 250 mA,
	2000 A measuring range: 1000 mA
Measuring procedure	True RMS (TRMS)
Response time	1.5 ms + signal cycle duration
Max. operating frequency	< 2 kHz
Response time (T_{10-90})	max. 60 ms

Technical Data

General specifications:	
Linearity error	≤ 0,1 %
Temperature coefficient	≤ 0.01 %/K
Measurement error	< 1 %
Line length	< 3 m (to the Rogowski coil)
Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C (at rated current)
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage	
(input/output/supply)	2.5 kV AC, 50 Hz, 1 min.
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm² ... 2.5 mm² / AWG 28 ... 14
	fine-stranded: 0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	36.2 g
Standards and approvals:	
Conformity marking	CE
Shipbuilding	
Accessories	see pages 226 ... 236
	Rogowski Coils see Section 4

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

DIP Switch Adjustability

● = ON

857-552

DIP Switch S1

Input Signal		RC Configuration Input		Filter		Output Signal			
1		2		3		4	5	6	
	RC1 = RT500 from LEM		RC2 = RT2000 from LEM		off				0 ... 20 mA
●	RC2	●	RC2 = 100 mV eff. => 1 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

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

Digital Output DO/Signaling

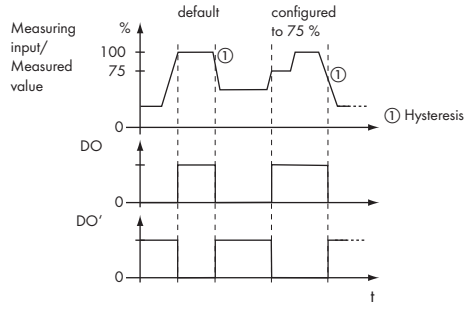
The digital output (DO) signals error messages and can be configured as follows: 24 V → 0 V/0 V → 24 V.

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

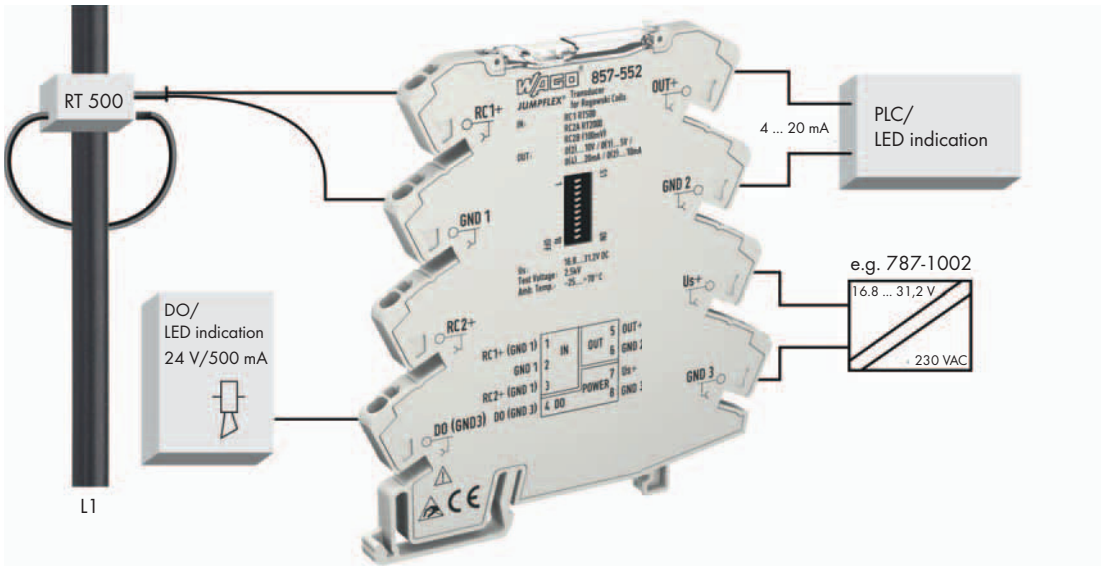
Default Setting

All DIP switches are in "OFF" position for delivery.	
Input	
Input Signal	RC1 500 A
Measuring Method	Mean square value
Filter	not active
Output	
Output Signal	0 ... 20 mA
Measuring Range Underflow	0 mA
Measuring Range Overflow	20.5 mA
Overcurrent	21 mA
Digital Output DO	not active

Switching Behavior, Digital Output (DO)

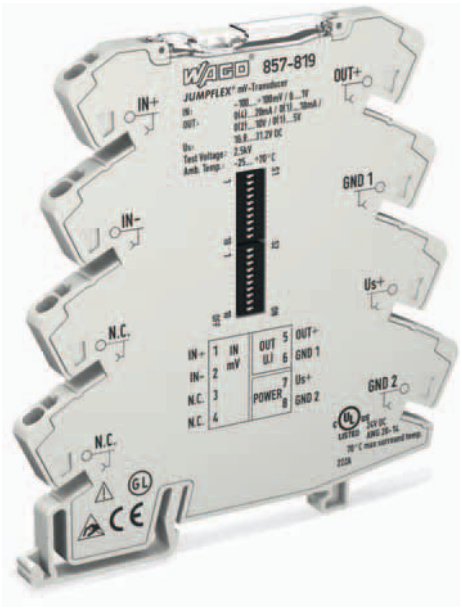


Application example:



JUMPFLEX® Signal Conditioners

Millivolt Signal Conditioner from -100 mV ... +100 mV and 0 mV ... 1000 mV

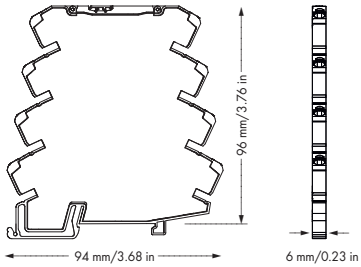


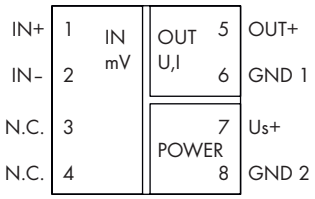
Configuration via:

DIP switch

Interface configuration software

Interface configuration app





Short description:
The 857-819 Millivolt Signal Conditioner converts input millivolt signals into an analog standard signal on the output side.

Characteristics:
- PC configuration interface
- Calibrated scale switching
- Clipping capability allows analog standard signal limitation to upper range values
- Safe 3-way isolation with 2.5 kV test voltage to EN 61140

Description	Item No.	Pack. Unit
***JUMPFLEX*® Signal Conditioner, for DIN 35 rail**	**857-819**	1
Millivolt Signal Conditioner with Millivolt Input as well as Current and Voltage Output		

Technical Data

Configuration:	
Configuration	DIP switch, interface configuration software, interface configuration app
Input:	
Input signal	-100 mV ... +100 mV, 0 mV ... 200 mV, 0 mV ... 1000 mV * (in 100 mV increments)
Input resistance	> 1MΩ
Max. input signal	31.2V
Output:	
Output signal	0 ... 10 mA, 2 ... 10 mA, 0 ... 20 mA, 4 ... 20 mA, 0... 5 V, 1 ... 5 V, 0 ... 10 V, 2 ... 10 V *
Load impedance	≤ 600 Ω (I output) ≥ 2 kΩ (U output)
Step response	50ms
General specifications:	
Nominal supply voltage V_S	24V DC
Supply voltage range	16.8 V ... 31.2 V
Current consumption at 24 V DC	≤ 40 mA
Min. measuring span	10 mV (configurable)
Transmission error	≤ 0.1 % of upper range value
Temperature coefficient	≤ 0.01 %/K

Technical Data

Environmental requirements:	
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C
Safety and protection:	
Test voltage (input/output/supply)	2.5 kV AC, 50 Hz, 1 min
Connection and type of mounting:	
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm² ... 2.5 mm² / AWG 28 ... 14 fine-stranded: 0.34 mm² ... 2.5 mm² / AWG 22 ... 14
Strip lengths	9 ... 10 mm / 0.37 in
Dimensions and weight:	
Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
Weight	50 g
Standards and approvals:	
Conformity marking	CE
UL 508	
Shipbuilding	GL
Accessories	see pages 226 ... 236

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

DIP Switch Adjustability

● = ON

857-819

Input Start value																							
DIP S1																							
1	2	3	4	5	6	7	mV	1	2	3	4	5	6	7	mV	1	2	3	4	5	6	7	mV
									●				●		-34			●				●	34
●							-100	●	●				●		-32	●		●				●	36
	●						-98			●			●		-30		●	●				●	38
●	●						-96	●		●			●		-28	●	●	●				●	40
		●					-94		●	●			●		-26				●			●	42
●		●					-92	●	●	●			●		-24	●			●			●	44
	●	●					-90				●		●		-22		●		●			●	46
●	●	●					-88	●			●		●		-20	●	●		●			●	48
			●				-86		●		●		●		-18			●	●			●	50
●			●				-84	●	●		●		●		-16	●		●	●			●	52
	●		●				-82			●	●		●		-14		●	●	●			●	54
●	●		●				-80	●		●	●		●		-12	●	●	●	●			●	56
		●	●				-78		●	●	●		●		-10					●		●	58
●		●	●				-76	●	●	●	●		●		-8	●				●		●	60
	●	●	●				-74					●	●		-6		●			●		●	62
●	●	●	●				-72	●				●	●		-4	●	●			●		●	64
				●			-70		●			●	●		-2			●		●		●	66
●				●			-68	●	●			●	●		0	●		●		●		●	68
	●			●			-66			●		●	●		2		●	●		●		●	70
●	●			●			-64	●		●		●	●		4	●	●	●		●		●	72
		●		●			-62		●	●		●	●		6				●	●		●	74
●		●		●			-60	●	●	●		●	●		8	●			●	●		●	76
	●	●		●			-58				●	●	●		10		●		●	●		●	78
●	●	●		●			-56	●			●	●	●		12	●	●		●	●		●	80
			●	●			-54		●		●	●	●		14			●	●	●		●	82
●			●	●			-52	●	●		●	●	●		16	●		●	●	●		●	84
	●		●	●			-50			●	●	●	●		18		●	●	●	●		●	86
●	●		●	●			-48	●		●	●	●	●		20	●	●	●	●	●		●	88
		●	●	●			-46		●	●	●	●	●		22						●	●	90
●		●	●	●			-44	●	●	●	●	●	●		24	●					●	●	92
	●	●	●	●			-42							●	26		●				●	●	94
●	●	●	●	●			-40	●						●	28	●	●				●	●	96
					●		-38		●					●	30			●			●	●	98
●					●		-36	●	●					●	32	●		●			●	●	100

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

DIP Switch S2

Output signal				9	10	Measuring Range Underflow	Measuring 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

Default Settings

All DIP switches are in "OFF" position for delivery. This is the position used to parameterize the device via PC configuration software.	
Input signal	0 ... 100 mV
Output signal	0 ... 20 mA
Measuring range underflow	0 mA
Measuring range overflow	20.5 mA