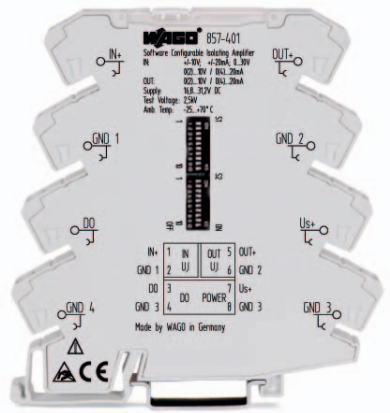
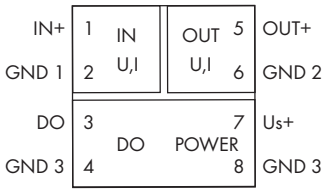
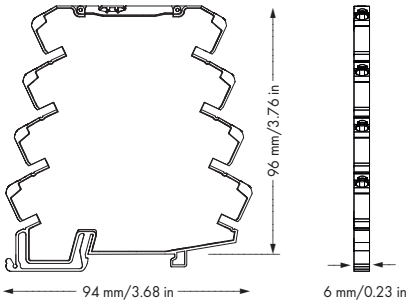
857-401

JUMPFLEX® Transducers

Isolation amplifier, configurable with digital output







Short description:
The software-configurable 857-401 Isolation Amplifier is used to convert, amplify, filter and electrically isolate analog standard signals. The device has a 3-way isolation with a 2.5kV test voltage. DIP switches accessible from the side can be used to configure the signals in both input and output.
In addition to standard signals, bipolar (± 10V, ± 20mA) and 0 to 30V signals can also be set on the input side. The analog output supports standard unipolar signals. In addition, the devices can be configured using FDT/DTM software. The software offers additional setting options such as special input and output signal combinations with intermediate values or inversion of the analog output. Measurement range switching is calibrated. A digital switching output is available that can also be configured using software.

The device is supplied with 24VDC, which can be commoned using lateral push-in type jumper bars in a quick and cost effective way. A green LED on the front panel indicates normal operation. The isolation amplifier meets the requirements for safe isolation of input, output and supply circuits with 2.5kV test voltage according to EN 61140.

Description	Item No.	Pack. Unit
Isolation amplifier, configurable with digital output	**857-401**	1

Accessories

Configuration software	- 759-370 FDT Frame Application
	- DTM (Device Tool Manager)
	Download: see www.wago.com
WAGO USB Service Cable	750-923
General accessories	see pages 222 - 223

Approvals

Shipbuilding	GL (pending)
cULus ANSI/ISA 12.12.01	Class I Div2 ABCD T4
Conformity marking	CE

General Specifications

Dimensions (mm) W x H x L	6 x 96 x 94
	Height from upper-edge of DIN 35 rail
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 ... 12
Stripped lengths	9 ... 10 mm / 0.37 in

Technical Data

Configuration	DIP switch or configuration software
Input signal	-10 ... +10 V, -20 ... +20 mA, 0 ... +30 V
Max. input signal	(31.2 V (U_{IN}) 100 mA (I_{IN})
Input resistance	≤ 200 Ω (I input)
	> 100 kΩ (U input)
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 (I output)
	≥ 2 kΩ (U output)
Step response	≤ 8 ms
Voltage supply V_N	24 V DC
Supply voltage range	16.8 V ... 31.2 V
Current input at 24 V DC	< 40 mA
Transmission error	< 0.1 % of upper range value
Temperature coefficient	0.01 % /K
Min. measuring span	1 V, 2 mA (configurable)
Output - Digital	
Max. switching voltage	Supply voltage applied
Max. continuous current	500 mA (up to 60 °C)
	100 mA (60 °C ... 70 °C)
Test voltage	
(input/output/supply)	2.5 kV AC, 50 Hz, 1 min.
Ambient operating temperature	-25 °C ... +70 °C
Storage temperature	-40 °C ... +85 °C

DIP Switch Adjustability

● = ON

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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	

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	

Output Signal Range						Measuring Range Overflow	Measuring Range Underflow		Measuring Range Overflow/ Measuring Range Underflow Signalisation*	DO	
4	5	6		7	8			9		10	
			0 ... 20 mA			Upper limit of output range +2.5%	Lower limit of output range -5%		DO Us+ switched		not active
	●		4 ... 20 mA					●	DO GND switched	●	active
		●	0 ... 10 mA	●		Upper limit of output range +2.5%	Lower limit of output range				
	●	●	2 ... 10 mA								
●			0 ... 10 V		●	Upper limit of output range	Lower limit of output range				
●	●		2 ... 10 V								
●		●	0 ... 5 V	●	●	Upper limit of output range	Lower limit of output range				
●	●	●	1 ... 5 V								

* related to input signal

Default Settings

In delivery status all DIP switches are in the position "OFF".

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

- not active