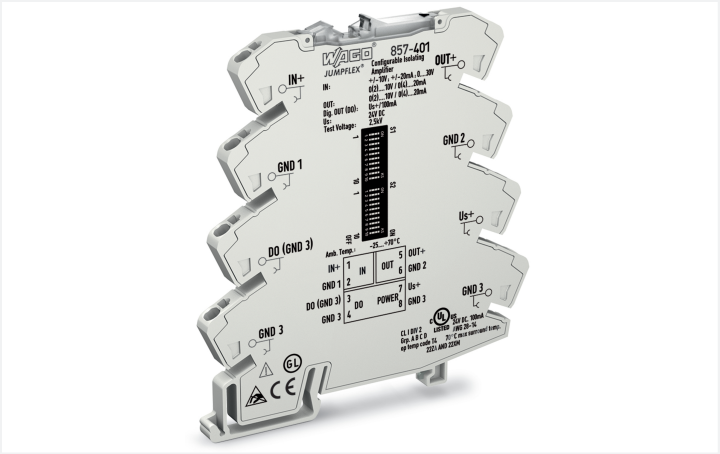
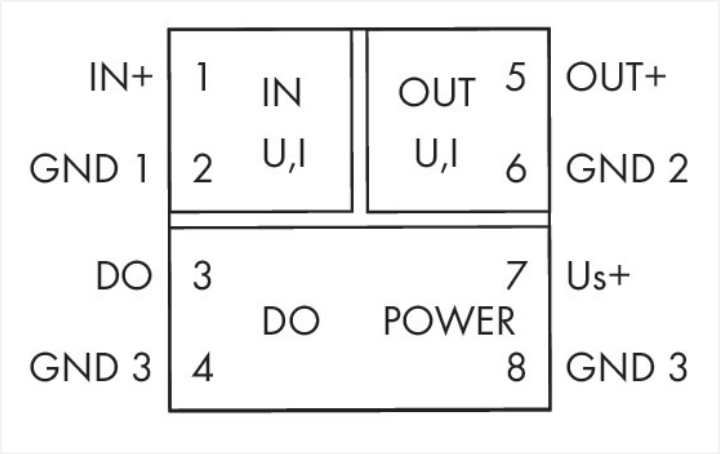
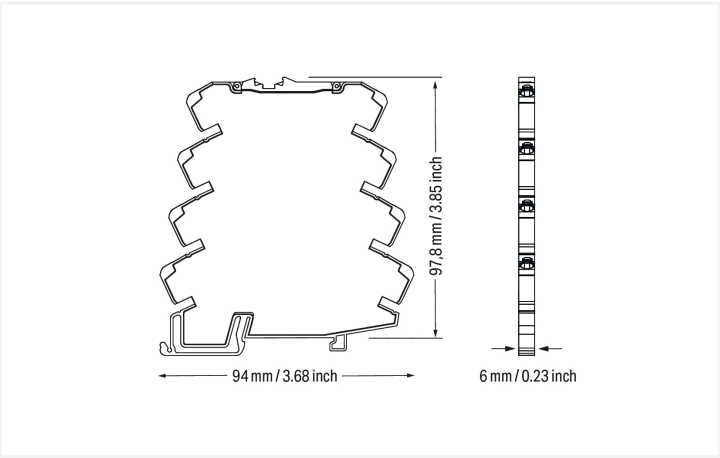
Data Sheet | Item Number: 857-401

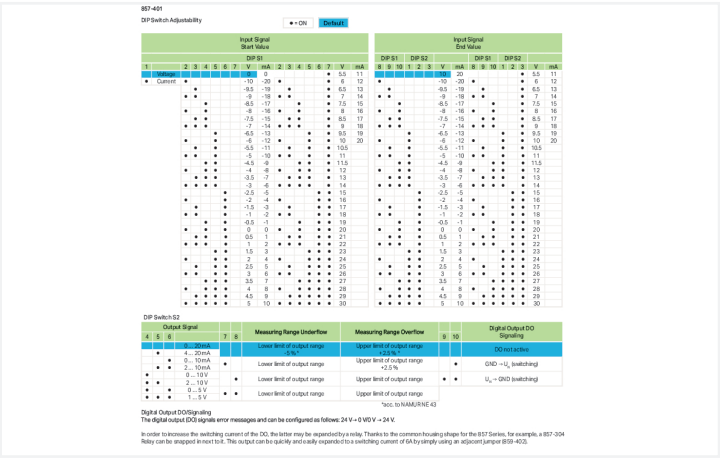
Isolation amplifier; Current and voltage input signal; Current and voltage output signal; Digital output; Supply voltage: 24 VDC; 6 mm module width; 2,50 mm²

https://www.wago.com/857-401









Short description:
This configurable signal conditioner converts, amplifies, filters and electrically isolates standard analog signals.
Digital switching output (DO):
The digital switching output (DO) allows signaling of a message. Two switching behaviors can be selected for the edge:
GND switching: For all values below the lower threshold or above the upper threshold, the digital output switches to “GND.”
U_s switching: For all values below the lower threshold or above the upper threshold, the digital output (DO) matches the supply voltage level.

The preset switching thresholds are 0% and 100% of the input measurement range. These thresholds can be adjusted via the PC configuration interface. The switching threshold hysteresis is 5 mV/5 µA.

Features:
- PC configuration interface
- Calibrated measurement range switching
- Analog unipolar and bipolar standard signals at the input
- Clipping capability
  for analog signal limitation to output end values
- 3-way electrical isolation with 2.5 kV test voltage

Notes

Safety Information	Input and output must be safely isolated from any hazardous live parts!
Note	Additional setting options via the WAGO Interface Configuration Software Terminals 4 (GND 3) and 8 (GND 3) are internally bridged. Current carrying capacity between terminals 4 and 8: max: 1 A

Technical data

Configuration

Configuration options	DIP switch WAGO Interface Configuration Software

Input

Input signal type	Voltage (DC) Current (DC)
Input signal (voltage)	±10 V 0 … 30 V
Input signal (current)	±20 mA
Input resistance (current input)	≤ 200 Ω
Input resistance (voltage input)	≥ 100 kΩ
Input current (max.)	22 mA
Input voltage (max.)	31 V
Measurement span (min.)	1 V
Measurement span (current) min.	2 mA

Output (analog)

Output signal type	Current Voltage
Output signal (voltage)	0 … 5 V 1 … 5 V 0 … 10 V 2 … 10 V
Output signal (current)	0 … 10 mA 2 … 10 mA 0 … 20 mA 4 … 20 mA
Load impedance (voltage output)	≥ 2 kΩ
Load impedance (current output)	≤ 550 Ω

Output (digital)

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

Signal Processing

Step response (typ.)	8 ms

Measurement Error

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

Power Supply

Power supply type	24 VDC (SELV)
Nominal supply voltage U_S	24 VDC
Supply voltage range	±30 %
Current consumption at nominal supply voltage	≤ 40 mA (+ I_{DO})

Safety and protection

Rated Voltage	300 V
Protection type	IP20

Test voltage

Test voltage (input/output/supply)	2.5 kVAC; 50 Hz; 1 min

Continued on next page

Insulation coordination

Overvoltage category	II
Pollution degree	2
Insulation type (input/analog output/supply)	Functional insulation
Insulation type (adjacent devices)	Reinforced insulation (safe isolation)

Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 … 2.5 mm² / 28 … 14 AWG
Fine-stranded conductor	0.34 … 2.5 mm² / 22 … 14 AWG
Strip length	9 … 10 mm / 0.35 … 0.39 inches

Physical data

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

Mechanical data

Mounting type	DIN-35 rail

Material data

Insulation material (main housing)	Polyamide (PA66)
Flammability class per UL94	V0
Fire load	0.418 MJ
Weight	37 g

Environmental requirements

Ambient temperature (operation)	-25 … +70 °C (Individual arrangement; -25 … +60 °C (block arrangement))
Ambient temperature (storage)	-40 … +85 °C
Temperature range of connection cable	≥ ($T_{ambient}$ + 10 K)
Relative humidity	5 … 95 % (no condensation permissible)
Operating altitude (max.)	2000 m

Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2; EN 61326-1; EN 50121-3-2
EMC emission of interference	EN 61326-1
Standards/specifications	DNV EN 50121-3-2 EN 61000-6-4 EN 61010-2-201 EN 61373

Continued on next page

Commercial data

Product Group	6 (INTERFACE ELECTRONIC)
PU (SPU)	1 pcs
Packaging type	Bag
Country of origin	DE
GTIN	4045454828509
Customs tariff number	85437090300

Product Classification

UNSPSC	32101502
eCl@ss 10.0	27-21-01-20
eCl@ss 9.0	27-21-01-20
ETIM 9.0	EC002653
ETIM 10.0	EC002653
ECCN	NO US CLASSIFICATION

Environmental Product Compliance

CAS-No.	1303-86-2 1317-36-8 7439-92-1 75980-60-8 79-94-7 80-05-7
REACH Candidate List Substance	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol 4,4'-isopropylidenediphenol Diboron trioxide Lead Lead monoxide Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	6(c) 7(a) 7(c)-I 7(c)-II
SCIP notification number (Austria)	aff0c6db-2e8d-40df-bb25-c0857553add0
SCIP notification number (Belgium)	e213ff0d-2609-4996-8776-552c3940adb5
SCIP notification number (Bulgaria)	fda52b6c-252d-4865-8b7b-006d61ae0362
SCIP notification number (Czech Republic)	9e6dc05b-8858-42d0-8506-d974c363c8eb
SCIP notification number (Denmark)	9c7f385a-1237-4d96-b43d-39905b245808
SCIP notification number (Finland)	00ecaf4e-bf48-46a7-bd9f-4304f62b07de
SCIP notification number (France)	84768d73-a171-4ad6-b0bf-c06e4790b135
SCIP notification number (Germany)	ff05be1c-f993-4d8d-87f4-089b262c2e93
SCIP notification number (Hungary)	b6abe888-47d6-44d8-beb7-2bb65ab6ef95
SCIP notification number (Italy)	38b69325-eb5e-4b88-aa3f-bf9c997c1044
SCIP notification number (Netherlands)	02d3ec9a-5098-4436-ac58-bc00c2e94d3a
SCIP notification number (Poland)	eb1f3c08-d52f-4472-9c0d-af6649be66e7
SCIP notification number (Romania)	009dc6d9-a76a-43d2-9b7b-afcfef2a2776
SCIP notification number (Sweden)	3d18b596-90fd-4b86-b283-23e0a76d6d35

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Approvals / Certificates

General approvals

Approval	Standard	Certificate Name
EAC GZO Almaty Standart	TP TC 020/2011	EAC CoC 03081
UL Underwriters Laboratories Inc. (ORDINARY LOCATIONS)	UL 508	E175199 Sec.4

Declarations of conformity and manufacturer's declarations

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

Approvals for marine applications

Approval	Standard	Certificate Name
BV Bureau Veritas S.A.	Rules for class. of Steel Ships	40179_B0
DNV DNV Germany GmbH	DNV-CG-0339,Aug.2021	TAA00001D1

Approvals for hazardous areas

Approval	Standard	Certificate Name
UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS)	ANSI/ISA 12.12.01	E198726

Downloads

Environmental Product Compliance

Compliance Search

Environmental Product Compliance 857-401

Documentation

Manual

WAGO Isolating Amplifiers

Bid Text

857-401	18.07.2019	xml 6.65 KB
857-401	18.07.2019	docx 19.75 KB
857-401	18.07.2019	pdf 76.23 KB

Instruction Leaflet

Signal Conditioners	V 2.0.0 24.01.2023	pdf 2162.69 KB

CAD/CAE-Data

CAD data

2D/3D Models 857-401

CAE data

EPLAN Data Portal
857-401

WSCAD Universe
857-401

ZUKEN Portal 857-401

1 Compatible Products

1.1 Optional Accessories

1.1.1 Cables and connectors

1.1.1.1 Communication cable

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

1.1.3 Interface module

1.1.3.1 Interface adapters

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

1.1.4 Jumper

1.1.4.1 Jumper

Item No.: 281-482
Jumper; 2-way; insulated; gray

Item No.: 859-410/000-006
Jumper; for jumper slot; 10-way; insulated; blue

Item No.: 859-410
Jumper; for jumper slot; 10-way; insulated; light gray

Item No.: 859-410/000-005
Jumper; for jumper slot; 10-way; insulated; red

Item No.: 859-410/000-029
Jumper; for jumper slot; 10-way; insulated; yellow

Item No.: 859-402/000-006
Jumper; for jumper slot; 2-way; insulated; blue

Item No.: 859-402
Jumper; for jumper slot; 2-way; insulated; light gray

Item No.: 859-402/000-005
Jumper; for jumper slot; 2-way; insulated; red

Item No.: 859-402/000-029
Jumper; for jumper slot; 2-way; insulated; yellow

Item No.: 859-403/000-006
Jumper; for jumper slot; 3-way; insulated; blue

Item No.: 859-403
Jumper; for jumper slot; 3-way; insulated; light gray

Item No.: 859-403/000-005
Jumper; for jumper slot; 3-way; insulated; red

Item No.: 859-403/000-029
Jumper; for jumper slot; 3-way; insulated; yellow

Item No.: 859-404/000-006
Jumper; for jumper slot; 4-way; insulated; blue

Item No.: 859-404
Jumper; for jumper slot; 4-way; insulated; light gray

Item No.: 859-404/000-005
Jumper; for jumper slot; 4-way; insulated; red

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1.1.4.1 Jumper

Item No.: 859-404/000-029
Jumper; for jumper slot; 4-way; insulated; yellow

Item No.: 859-405/000-006
Jumper; for jumper slot; 5-way; insulated; blue

Item No.: 859-405
Jumper; for jumper slot; 5-way; insulated; light gray

Item No.: 859-405/000-005
Jumper; for jumper slot; 5-way; insulated; red

Item No.: 859-405/000-029
Jumper; for jumper slot; 5-way; insulated; yellow

Item No.: 859-406/000-006
Jumper; for jumper slot; 6-way; insulated; blue

Item No.: 859-406
Jumper; for jumper slot; 6-way; insulated; light gray

Item No.: 859-406/000-005
Jumper; for jumper slot; 6-way; insulated; red

Item No.: 859-406/000-029
Jumper; for jumper slot; 6-way; insulated; yellow

Item No.: 859-407/000-006
Jumper; for jumper slot; 7-way; insulated; blue

Item No.: 859-407
Jumper; for jumper slot; 7-way; insulated; light gray

Item No.: 859-407/000-005
Jumper; for jumper slot; 7-way; insulated; red

Item No.: 859-407/000-029
Jumper; for jumper slot; 7-way; insulated; yellow

Item No.: 859-408/000-006
Jumper; for jumper slot; 8-way; insulated; blue

Item No.: 859-408
Jumper; for jumper slot; 8-way; insulated; light gray

Item No.: 859-408/000-005
Jumper; for jumper slot; 8-way; insulated; red

Item No.: 859-408/000-029
Jumper; for jumper slot; 8-way; insulated; yellow

Item No.: 859-409/000-006
Jumper; for jumper slot; 9-way; insulated; blue

Item No.: 859-409
Jumper; for jumper slot; 9-way; insulated; light gray

Item No.: 859-409/000-005
Jumper; for jumper slot; 9-way; insulated; red

Item No.: 859-409/000-029
Jumper; for jumper slot; 9-way; insulated; yellow

1.1.5 Marking

1.1.5.1 Marker

Item No.: 793-5501
WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type; white

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

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

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

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

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

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

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

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

Continued on next page

1.1.5.2 Marking strip

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

1.1.6 Power supply

1.1.6.1 Power Supply

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

1.1.7 Relay module

1.1.7.1 Relay module

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

1.1.8 Screwless end stop

1.1.8.1 Mounting accessories

Item No.: 249-117
Screwless end stop; 10 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray

Item No.: 249-197
Screwless end stop; 14 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray

Item No.: 249-116
Screwless end stop; 6 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray

1.1.9 Terminal blocks

1.1.9.1 Supply module

Item No.: 857-979
Supply and through module

1.1.9.2 Through terminal block

Item No.: 857-979
Supply and through module

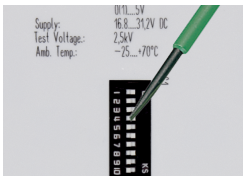
1.1.10 Tool

1.1.10.1 Operating tool

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

Installation Notes

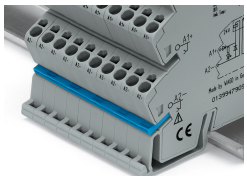
Configuring



Configuration via DIP switch

Configuration via WAGO Interface Configuration Software

Commoning



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