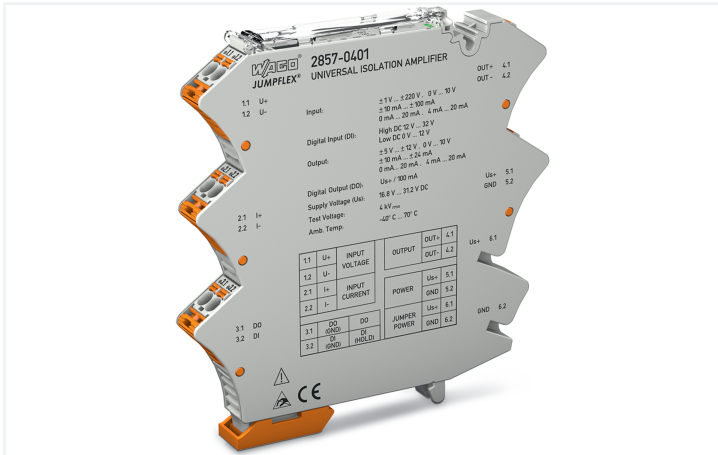


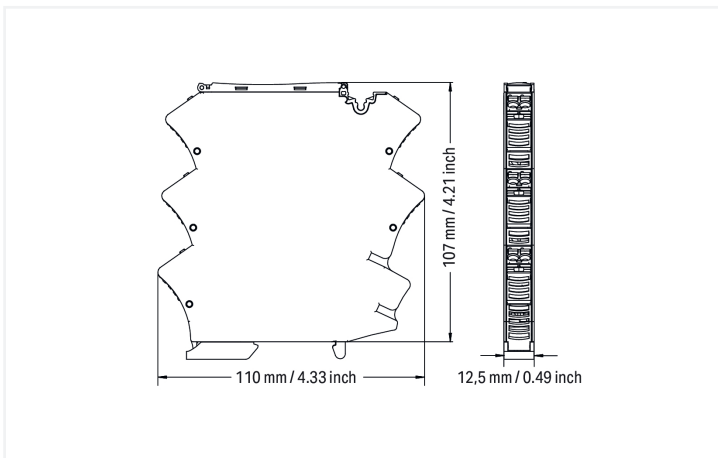
# Data Sheet | Item Number: 2857-401

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

<https://www.wago.com/2857-401>



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



2857-401  
DIP Switch Adjustability

• = ON    Default

DIP Switch S1														
1	Signal	2	Polarity	3	4	5	Range / mA	6	Range / V	7	8	Inverted Characteristic	9	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				DIP Switch S2			
9	Signal	10	Polarity	1	2	Range / mA	Range / V
•	Current	•	Unipolar	•	•	0...20	0...10
•	Voltage	•	Bipolar**	•	•	4...20	2...10
						0...10	0...5
						2...10	1...5

DIP Switch S2				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%**	•	•
•	•	Lower limit of output range	Upper limit of output range	•	•
•	•	Lower limit of output range -5%	Upper limit of output range +5%	•	•

\* Bipolar only applies to ranges starting with 0.  
\*\* acc. to NAMUR NE 43

## Short description:

WAGO's signal conditioner converts, amplifies, filters, and electrically isolates analog signals.

## Features:

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

## Notes

Note

This product is powered by 24 VDC, which can be bridged using lateral push-in type jumper bars: (6.1) U<sub>S</sub>+ (BR) and (6.2) GND 2 (BR). With this variant, it is necessary to ensure that the maximum permissible total current of 6 A is not exceeded. Additional setting options via the WAGO Interface Configuration Software

## Technical data

### Configuration

Configuration options	DIP switch WAGO Interface Configuration Software
-----------------------	---

### Input

Input signal type	Voltage (DC) Current (DC)
-------------------	------------------------------

Input signal (voltage)	±1 V 0 ... 1 V ±5 V 0 ... 5 V 1 ... 5 V ±10 V 0 ... 10 V 2 ... 10 V ±30 V 0 ... 30 V ±100 V 0 ... 100 V ±200 V 0 ... 220 V
------------------------	---

Input signal (current)	±1 mA 0 ... 1 mA ±10 mA 0 ... 10 mA 2 ... 10 mA ±20 mA 0 ... 20 mA 4 ... 20 mA ±100 mA 0 ... 100 mA
------------------------	--

Input resistance (current input)	≤ 50 Ω
----------------------------------	--------

Input resistance (voltage input)	≥ 1 MΩ
----------------------------------	--------

Input current (max.)	±120 mA
----------------------	---------

Input voltage (max.)	±250 V
----------------------	--------

### Input (digital)

Hold signal	11.8 V ... U <sub>S</sub>
-------------	---------------------------

### Output (analog)

Output signal type	Voltage Current
--------------------	--------------------

Output signal (voltage)	±5 V 0 ... 5 V 1 ... 5 V ±10 V 0 ... 10 V 2 ... 10 V
-------------------------	---

Output signal (current)	±10 mA 0 ... 10 mA 2 ... 10 mA ±20 mA 0 ... 20 mA 4 ... 20 mA
-------------------------	--

Load impedance (voltage output)	≥ 1 kΩ
---------------------------------	--------

Load impedance (current output)	≤ 600 Ω
---------------------------------	---------

### Output (digital)

Switching voltage (DO) max.	Applied supply voltage – 0.3 V
-----------------------------	--------------------------------

Continuous current (DO) max.	100 mA (no internal restriction)
------------------------------	----------------------------------

Number of switching thresholds (DO)	1 or 2 (adjustable)
-------------------------------------	---------------------

Configurable rise/fall delay time (DO)	0 ... 60 s (via software)
--	---------------------------

Setting range (frequency generator)	0.3 ... 100 Hz
-------------------------------------	----------------

### Signal Processing

Limit frequency	10 kHz / 5 kHz / 100 Hz / 30 Hz (configurable via DIP switch or software)
-----------------	---

Software filter (adjustable)	Moving average value (filter level: 30)
------------------------------	---

Step response (typ.)	1 ms
----------------------	------

### Measurement Error

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

### Power Supply

Power supply type	24 VDC
Nominal supply voltage $U_S$	24 VDC
Supply voltage range	±30 %
Current consumption at nominal supply voltage	≤ 70 mA (+ $I_{D0}$ )

### Safety and protection

Rated Voltage	300 V
Protection type	IP20

### Test voltage

Test voltage (input/output/supply)	4 kVAC; 50 Hz; 1 min
------------------------------------	----------------------

### Insulation coordination

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

### Connection Data

Connection technology	Push-in CAGE CLAMP®
WAGO connector	<i>picoMAX</i> ® 5.0
Solid conductor	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Fine-stranded conductor	0.2 ... 2.5 mm <sup>2</sup> / 24 ... 12 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inches

### Physical data

Width	12.5 mm / 0.492 inches
Height	110 mm / 4.331 inches
Depth from upper-edge of DIN-rail	107 mm / 4.213 inches

### Mechanical data

Mounting type	DIN-35 rail
---------------	-------------

### Material data

Fire load	1.573 MJ
Weight	85.4 g

### Environmental requirements

Ambient temperature (operation)	-40 ... +70 °C (Individual arrangement; -40 ... +50 °C (block arrangement))
Ambient temperature (storage)	-40 ... +85 °C
Temperature range of connection cable	≥ (T <sub>ambient</sub> + 25 K)
Relative humidity	5 ... 95 % (no condensation permissible)

### Standards and Specifications

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

### Commercial data

Product Group	6 (INTERFACE ELECTRONIC)
PU (SPU)	1 pcs
Packaging type	Bag
Country of origin	DE
GTIN	4050821676966
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.	11120-22-2 1303-86-2 1317-36-8 7439-92-1 75980-60-8
REACH Candidate List Substance	Diboron trioxide Lead Lead monoxide Lead silicate Perfluorobutane sulfonic acid (PFBS) and its salts 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)	8eea55dc-b68f-431d-8ad6-71ab4685f8b7
SCIP notification number (Belgium)	cf65c928-b2ea-4b3a-9b99-3229eef5e8e5
SCIP notification number (Bulgaria)	54c1dd6b-7733-4b35-aa2c-d8a6e507aed1
SCIP notification number (Czech Republic)	b108bfe2-9898-4c87-ac03-4b07a6ae954b
SCIP notification number (Denmark)	5c819246-3d20-4f9e-a125-75caf6a910bd
SCIP notification number (Finland)	f21f8be5-efc4-4fe2-9317-1552603d7eb4
SCIP notification number (France)	7aa52ffe-9f09-44c5-a16e-15be89049f27
SCIP notification number (Germany)	b822b5ae-0257-4887-8a8b-2476207d28c9
SCIP notification number (Hungary)	f9e92535-69dc-449b-873d-f7eea3763dd6
SCIP notification number (Italy)	f22243c1-b45b-4045-9b6d-40040a0915a3
SCIP notification number (Netherlands)	3021d9c8-bb88-47d3-96b3-e0cf0f1775f0
SCIP notification number (Poland)	2681b81f-35e4-41ce-afc5-8e2ecbb312b4
SCIP notification number (Romania)	f9b8acf4-0d8d-48ce-9dd8-5079f9c063df
SCIP notification number (Sweden)	67b47a6d-1ea9-4395-a0db-912d3f2342c2

Approvals / Certificates

General approvals



Approval	Standard	Certificate Name
EAC GZO Almaty Standart	TP TC 020/2011	EAC CoC 03083

Declarations of conformity and manufacturer's declarations

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

Downloads

Environmental Product Compliance

Compliance Search

Environmental Product  
Compliance 2857-401



Documentation

Manual

WAGO Isolating Ampli-  
fiers



Bid Text

2857-401	20.02.2019	docx 17.46 KB	
2857-401	19.02.2019	xml 6.62 KB	
2857-401	20.02.2019	pdf 81.07 KB	

Instruction Leaflet

Messumformer, Univer-  
sal-Trennverstärker

pdf  
2273.28 KB



CAD/CAE-Data

CAD data

2D/3D Models  
2857-401



CAE data

EPLAN Data Portal  
2857-401



WSCAD Universe  
2857-401



ZUKEN Portal  
2857-401



## Runtime Software

### Firmware

2857-0401, Trennverstärker	V 03 24.04.2023	zip 486.45 KB	
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## 1 Compatible Products

### 1.1 Optional Accessories

#### 1.1.1 Communication

##### 1.1.1.1 Communication cable



**Item No.: 750-923/000-001**

Configuration cable; USB connector;  
Length: 5 m

#### 1.1.2 Installation

##### 1.1.2.1 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

#### 1.1.3 Jumper

##### 1.1.3.1 Jumper



**Item No.: 281-482**

Jumper; 2-way; insulated; gray



**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

#### 1.1.4 Marking

##### 1.1.4.1 Marker



**Item No.: 2009-141**

Micro-USB-Inline; 2000 pieces on roll; plain; snap-on type; white



**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

### 1.1.4.1 Marker



**Item No.: 793-501**

WMB marking card; as card; not stretchable; plain; snap-on type; white

**Item No.: 2009-115**

WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white

### 1.1.4.2 Marking strip



**Item No.: 2009-110**

Marking strips; for Smart Printer; on reel; not stretchable; plain; snap-on type; white

### 1.1.5 Power supply

#### 1.1.5.1 Power Supply



**Item No.: 787-2852**

Switched-mode power supply; 1-phase; 24 VDC output voltage; 1 A output current

### 1.1.6 Relay module

#### 1.1.6.1 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

### 1.1.7 Terminal blocks

#### 1.1.7.1 Supply module



**Item No.: 857-979**

Supply and through module

#### 1.1.7.2 Through terminal block



**Item No.: 857-979**

Supply and through module

## 1.1.8 Test and measurement

### 1.1.8.1 Testing accessories



**Item No.: 735-500**

WAGO Test pin; 1 mm Ø; 30 V AC / 60 V DC; CAT0; 1 A; 6 mm uninsulated; Test lead for soldering up to 0,5mm<sup>2</sup>

## 1.1.9 Tool

### 1.1.9.1 Operating tool



**Item No.: 210-720**

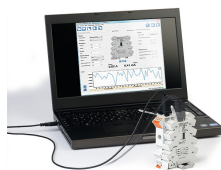
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured

## Installation Notes

### Configuring



Configuration via DIP switch



Configuration via WAGO Interface Configuration Software

### Conductor termination

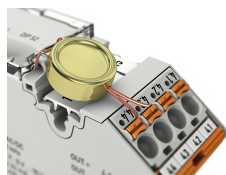


Pluggable connection technology



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

### Security



Lock-out seal option