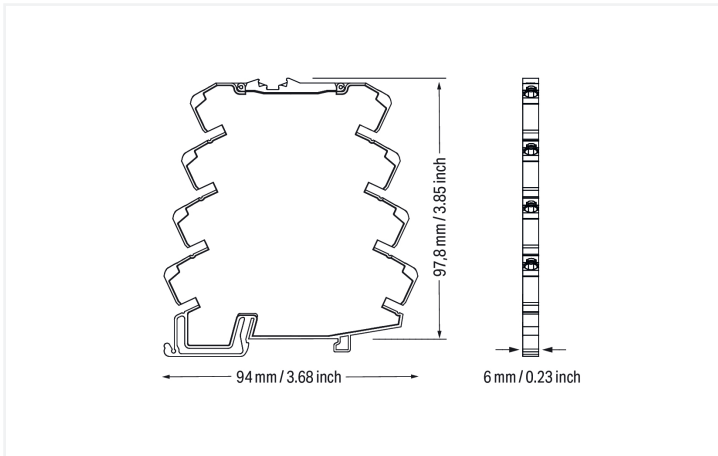
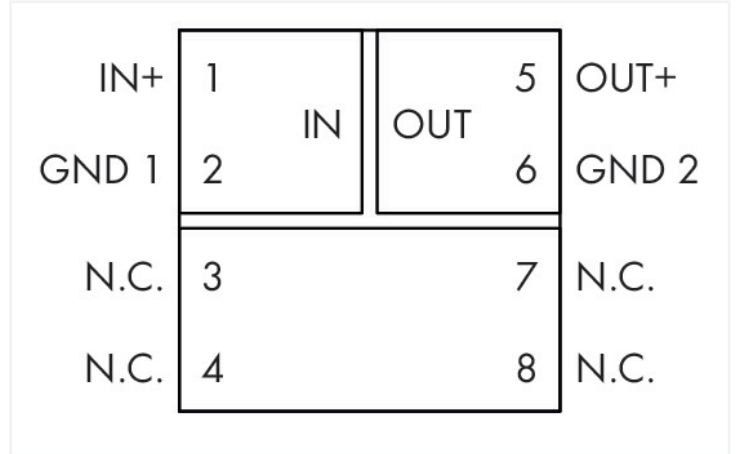
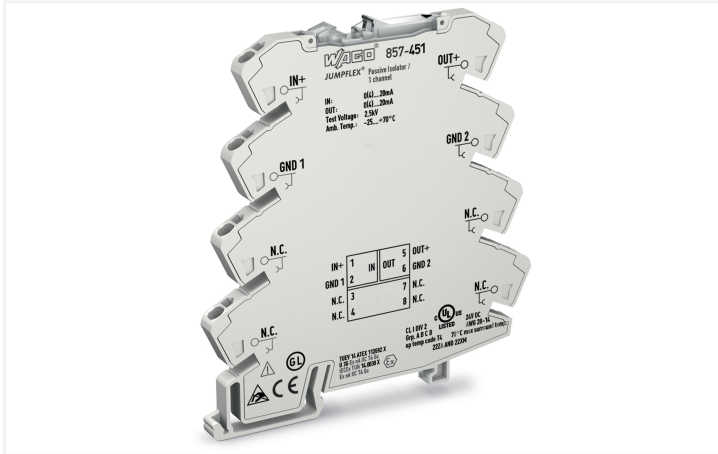


# Data Sheet | Item Number: 857-451

Passive isolator, 1-channel; Current input signal; Current output signal; Power via input; 6 mm module width; 2,50 mm<sup>2</sup>

<https://www.wago.com/857-451>



### Short description:

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

### Features:

- No additional supply voltage required
- 3-way electrical isolation with 2.5 kV test voltage

### Notes

Safety Information

Outputs must not be left open!

Note

#### Use shielded signal cables!

Only use shielded signal cables for analog input and output signals. This ensures the device maintains its specified accuracy and immunity to interference, even when external disturbances affect the signal cable.

## Technical data

### Configuration

Configuration options	Pre-configured
-----------------------	----------------

### Input

Input signal type	Current
Input signal (current)	0 ... 20 mA 4 ... 20 mA
Input current (max.)	40 mA
Input voltage (max.)	20 V
Response threshold	200 $\mu$ A

### Output (analog)

Output signal type	Current
Output signal (current)	0 ... 20 mA 4 ... 20 mA
Load impedance (current output)	$\leq$ 600 $\Omega$ Temperature range restrictions may occur.

### Output (voltage tap)

Voltage drop	$\leq$ 2.5 V (at 20 mA at the output)
--------------	---------------------------------------

### Signal Processing

Limit frequency	100 Hz
Step response (typ.)	3.5 ms

### Measurement Error

Transmission error (typ.)	$\leq$ 0.1 % of upper-range value
Load error	$\leq$ 0.05 % of upper-range value; per 100 $\Omega$ load
Temperature coefficient	$\leq$ 0.01 %/K

### Power Supply

Power supply type	Passive (via input)
-------------------	---------------------

## Safety and protection

Rated Voltage	300 V
Measurement category per EN/UL 61010-2-030	CAT II (input)
Overvoltage category	II
Pollution degree	2
Protection type	IP20

### Test voltage

Test voltage (input/output)	3 kVAC; 50 Hz; 1 min
-----------------------------	----------------------

### Insulation coordination (UL)

Insulation type (input/analog output)	Reinforced insulation (safe isolation)
---------------------------------------	--

## Connection Data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inches
Cable type	Shielded cable

### 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	0.495 MJ
Weight	24.7 g

### Environmental requirements

Ambient temperature (operation)	-25 ... +70 °C
Ambient temperature (storage)	-40 ... +85 °C
Temperature range of connection cable	$\geq (T_{\text{ambient}} + 15 \text{ K})$
Temperature range of the connection cable (UL)	70 °C
Relative humidity	5 ... 95 % (no condensation permissible)
Operating altitude (max.)	2000 m

### Standards and Specifications

Conformity marking	CE
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-3
Standards/specifications	EN 61010-1 DNV

### Commercial data

Product Group	6 (INTERFACE ELECTRONIC)
PU (SPU)	1 pcs
Packaging type	Bag
Country of origin	DE
GTIN	4045454471323
Customs tariff number	85437090300

### Product Classification

UNSPSC	39121008
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**

RoHS Compliance Status Compliant, No Exemption

**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	-	-
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_CO
DNV DNV Germany GmbH	DNV-CG-0339, Aug. 2021	TAA00001D1

**Approvals for hazardous areas**



Approval	Standard	Certificate Name
ATEX TUEV Nord Cert GmbH	EN 60079-0	TUEV14ATEX112692X (II 3G Ex ec IIC T4 Gc)
CCC CNEX	CNCA-C23-01	2020312310000210 (Ex ec IIC T4 Gc)
IECEx TUEV Nord Cert GmbH	-	IECEX TUN14.0030X
UKEx WAGO GmbH & Co. KG	EN 60079-0	WAGO22UKEX004X
UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS)	ANSI/ISA 12.12.01	E198726

**Downloads**

**Environmental Product Compliance**

Compliance Search
Environmental Product Compliance 857-451

**Documentation**

Manual
WAGO Isolating Amplifiers

Bid Text
857-451 <span style="float: right;">docx 16.26 KB </span>
857-451 <span style="float: right;">xml 4.81 KB </span>

## Instruction Leaflet

CCC Ex (Additional information)	26.04.2023	pdf 140.99 KB	
Messumformer und Trennverstärker	V 2.0.0 07.07.2021	pdf 2484.96 KB	

## CAD/CAE-Data

CAD data	CAE data
2D/3D Models 857-451	EPLAN Data Portal 857-451
	WSCAD Universe 857-451
	ZUKEN Portal 857-451

## 1 Compatible Products

### 1.1 Optional Accessories

#### 1.1.1 Installation

##### 1.1.1.1 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

#### 1.1.2 Interface module

##### 1.1.2.1 Interface adapters



**Item No.: 857-980**

Interface adapter; 16-pole; analog

#### 1.1.3 Jumper

##### 1.1.3.1 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

1.1.3.1 Jumper



**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



**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

1.1.4 Marking

1.1.4.1 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

### 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 Terminal blocks

#### 1.1.6.1 Supply and through module



**Item No.: 857-979**

Supply and through module

### 1.1.7 Tool

#### 1.1.7.1 Operating tool

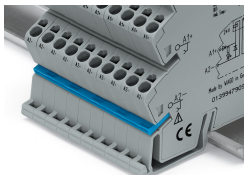


**Item No.: 210-720**

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

## Installation Notes

### Commoning



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