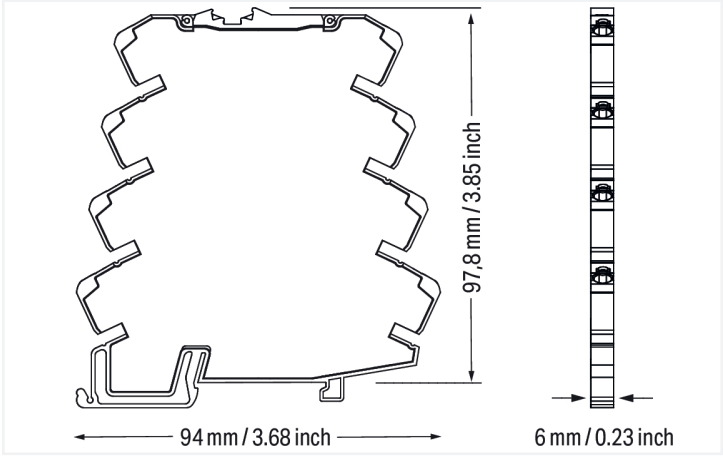
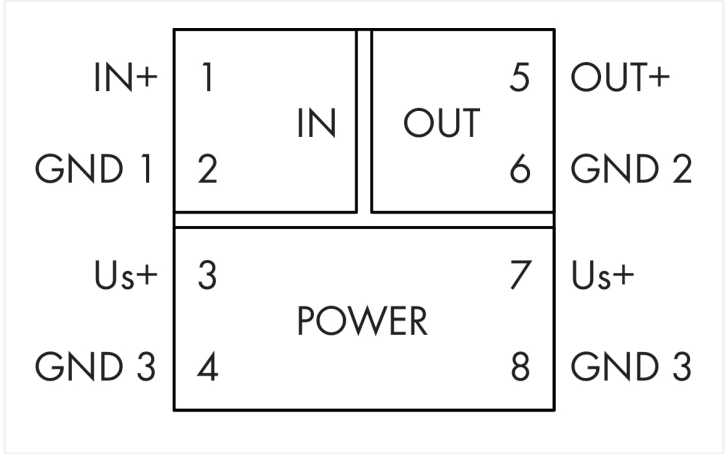
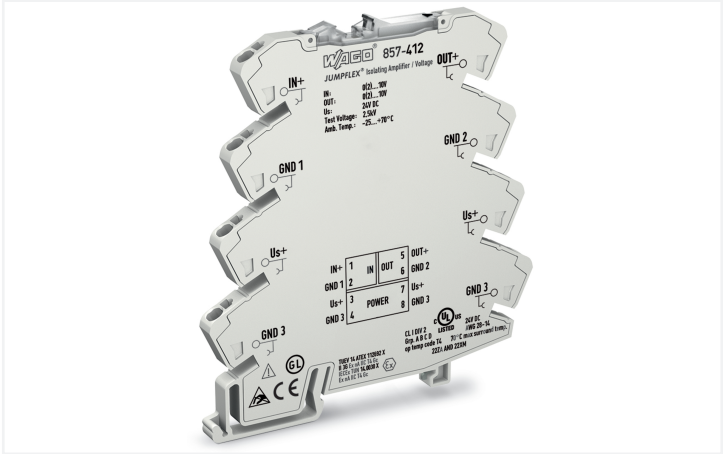


Data Sheet | Item Number: 857-412

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

<https://www.wago.com/857-412>



Short description:

This pre-configured signal conditioner converts, amplifies, filters and electrically isolates analog standard signals.

Features:

- Input/output: current or voltage signal
- 3-way electrical isolation with 3 kV test voltage

Notes	
Safety Information	Input and output must be safely isolated from any hazardous live parts!
Note	The 3 (Us+), 7 (Us+), 4 (GND 3) and 8 (GND 3) connections are internally commoned. Current carrying capacity between 3/4 and 7/8 connections: 1 A (max.)
	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	Voltage
Input signal (voltage)	0 ... 10 V 2 ... 10 V
Input resistance (voltage input)	≥ 100 kΩ
Input voltage (max.)	30 V



Output (analog)	
Output signal type	Voltage
Output signal (voltage)	0 ... 10 V 2 ... 10 V
Load impedance (voltage output)	≥ 2 kΩ

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

Operating data	
Current consumption	≤ 25 mA

Safety and protection			
Rated Voltage	300 V	Test voltage	3 kVAC; 50 Hz; 1 min
Protection type	IP20		

Insulation coordination	
Overvoltage category	II
Pollution degree	2
Insulation type (input IN 2.1/relay output)	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	0.363 MJ
Weight	35.6 g

Environmental requirements	
Ambient temperature (operation)	-25 ... +70 °C
Ambient temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C
Temperature range of connection cable	≥ (T _{ambient} + 25 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
EMC emission of interference	EN 61000-6-4
Standards/specifications	EN 61010-1 UL 508

Commercial data	
Product Group	6 (INTERFACE ELECTRONIC)
PU (SPU)	1 pcs
Packaging type	Bag
Country of origin	DE
GTIN	4045454471309
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 8.0	EC002653
ECCN	NO US CLASSIFICATION

Environmental Product Compliance	
CAS-No.	1303-86-2 1317-36-8 7439-92-1 75980-60-8
REACH Candidate List Substance	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)	ea9905d9-dd39-4427-a795-254278c09f8e
SCIP notification number (Belgium)	4b738452-4977-4af9-9aaf-ef41e3bb2eea
SCIP notification number (Bulgaria)	c5dfb54e-8cf7-4efd-82a7-9175592951b9
SCIP notification number (Czech Republic)	e3c5e78e-87f0-4022-ba04-4797129ddc12
SCIP notification number (Denmark)	fce12377-0557-4b21-9439-99554bc995fa



Environmental Product Compliance	
SCIP notification number (Finland)	2be5d354-f861-4897-880e-58acb5aecd10
SCIP notification number (France)	0fd92282-b633-4c27-ac35-47f0b79265ca
SCIP notification number (Germany)	fcc600bd-eef5-4520-ad8b-694dd42b04cf
SCIP notification number (Hungary)	5f74e66d-8252-41fa-b0b4-546399855ebf
SCIP notification number (Italy)	b767196c-afdb-4720-8608-c3c3c8d3b71c
SCIP notification number (Netherlands)	add308f0-0cb3-4e25-8f3d-e06ae5cf3b15
SCIP notification number (Poland)	c154edb9-f830-4428-94e1-1e15b1c436e7
SCIP notification number (Romania)	8fecf5a4-2498-4570-8fb7-0d76a1ba7b18
SCIP notification number (Sweden)	77c83d89-058b-4c02-921c-1e7ba56819ca

Approvals / Certificates											
General approvals		Declarations of conformity and manufacturer's declarations									
											
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									
		<table><tr><th>Approval</th><th>Standard</th><th>Certificate Name</th></tr><tr><td>EU-Declaration of Conformity WAGO GmbH & Co. KG</td><td>-</td><td>-</td></tr><tr><td>UK-Declaration of Conformity WAGO GmbH & Co. KG</td><td>-</td><td>-</td></tr></table>	Approval	Standard	Certificate Name	EU-Declaration of Conformity WAGO GmbH & Co. KG	-	-	UK-Declaration of Conformity WAGO GmbH & Co. KG	-	-
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_B0
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 857-412	



Documentation				
Bid Text				Instruction Leaflet
857-412	18.07.2019	xml 5.28 KB		CCC Ex (Additional information) 26.04.2023 pdf 140.99 KB
857-412	18.07.2019	docx 18.19 KB		Messumformer und Trennverstärker V 1.2.1 21.01.2020 pdf 1589.43 KB
857-412	18.07.2019	pdf 72.47 KB		

CAD/CAE-Data	
CAD data	CAE data
2D/3D Models 857-412 	EPLAN Data Portal 857-412
	WSCAD Universe 857-412
	ZUKEN Portal 857-412

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



1.1.3.1 Jumper

 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
 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 module



Item No.: 857-979

Supply and through module

1.1.6.2 Through terminal block



Item No.: 857-979

Supply and through module

1.1.7 Tool

1.1.7.1 Operating tool

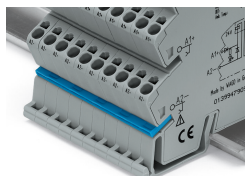


Item No.: 210-720

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.