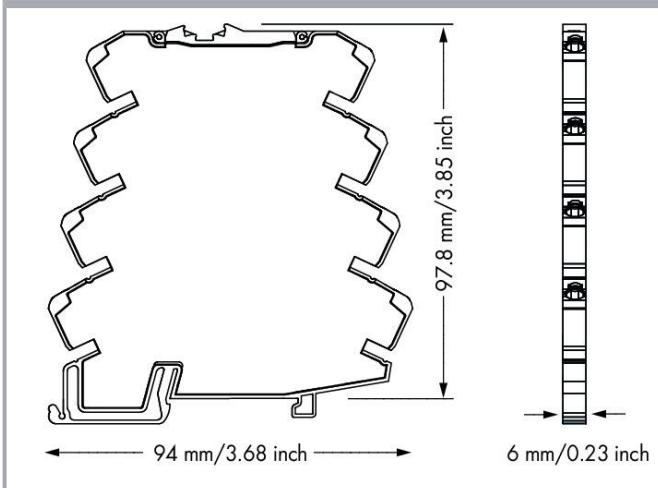
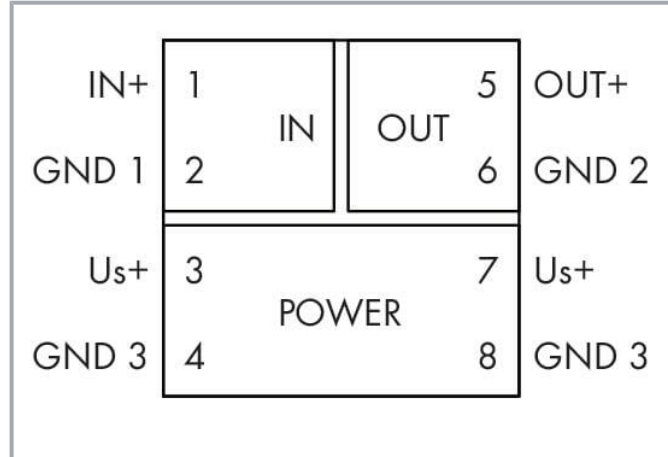
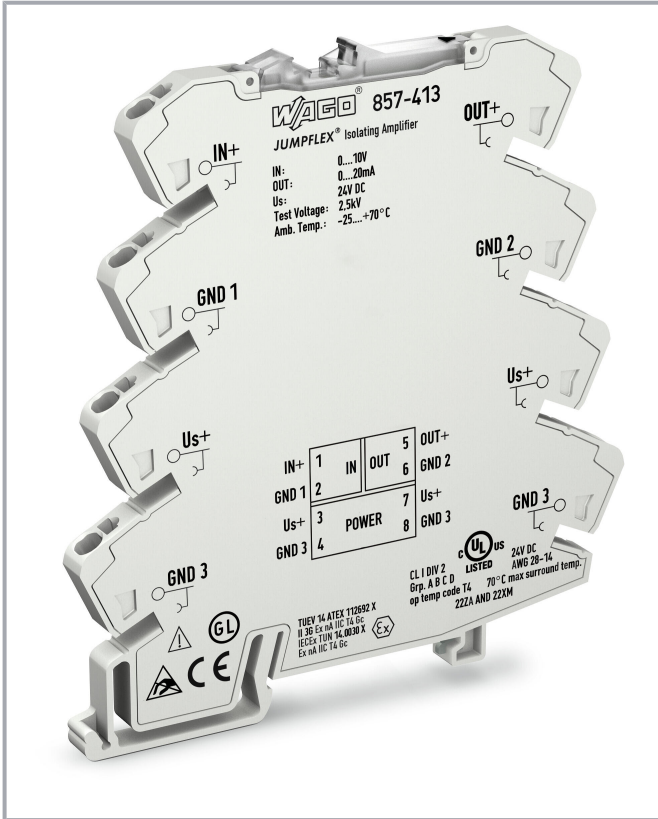


Data sheet | Item number: 857-413

Isolation amplifier; Voltage input signal; Current output signal; Supply voltage: 24 VDC; 6 mm module width; 2,50 mm<sup>2</sup>



[www.wago.com/857-413](http://www.wago.com/857-413)



Subject to changes. Please also observe the further product documentation!

WAGO GmbH & Co. KG  
 Hansastr. 27  
 32423 Minden  
 Phone: +49571 887-0 | Fax: +49571 887-169  
 Email: [info.de@wago.com](mailto:info.de@wago.com) | Web: [www.wago.com](http://www.wago.com)

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## Item description

### Short description:

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

### Features:

- Input/output: current or voltage signal
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

## Data

### Notes

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.)
------	---

## Technical data

### Configuration

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

### Input

Input signal type	Voltage
Input signal (voltage)	0 ... 10 V
Input resistance (voltage input)	$\geq 100 \text{ k}\Omega$
Input voltage (max.)	30 V

### Output (analog)

Output signal type	Current
Output signal (current)	0 ... 20 mA
Load impedance (current output)	$\leq 600 \Omega$

### Signal Processing

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

Subject to changes. Please also observe the further product documentation!



## Measurement Error

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

## Supply

Power supply type	24 VDC
Nominal supply voltage $U_S$	DC 24 V
Supply voltage range	±30 %
Current consumption at nominal supply voltage	≤ 25 mA

## Safety and protection

Protection type	IP20
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## Test voltage

Test voltage (input/output/supply)	AC 2.5 kV; 50 Hz; 1 min
------------------------------------	-------------------------

## 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

## 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

Fire load	0.418 MJ
Weight	36 g

Subject to changes. Please also observe the further product documentation!



## Environmental requirements

Ambient temperature (operation)	-25 ... +70 °C
Ambient temperature (storage)	-40 ... +85 °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 61000-6-4
Standards/specifications	DNV

## Commercial data

Product Group	6 (INTERFACE ELECTRONIC)
eCl@ss 10.0	27-21-01-20
eCl@ss 9.0	27-21-01-20
ETIM 8.0	EC002653
ETIM 7.0	EC002653
PU (SPU)	1 pcs
Packaging type	bag
Country of origin	DE
GTIN	4045454609870
Customs tariff number	85437090300

## Environmental Product Compliance

CAS-No.	7439-92-1
REACH Candidate List Substance	Lead
RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	6(c) 7(a) 7(c)-I 7(c)-II
SCIP notification number (Austria)	66afeff1-c006-45f3-a375-e0f794aec724
SCIP notification number (Belgium)	b05ca2e4-deaa-4347-adc8-9de5ef48076b
SCIP notification number (Bulgaria)	9442fb13-dbb2-4553-beda-ef14d17b8a1d
SCIP notification number (Czech Republic)	6d4d3e28-8982-47ec-8d4f-eddc2d593db4
SCIP notification number (Denmark)	631df92f-4d76-4c97-826f-ba3be190b5f3

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SCIP notification number (Finland)	026aff05-b167-4011-95f8-a1ea4d809a65
SCIP notification number (France)	ea2e5d3c-ae69-4c41-af92-cc4c2f3141db
SCIP notification number (Germany)	34ec7cb2-339f-41c1-9988-46a683522d51
SCIP notification number (Hungary)	b35e5180-649d-495e-9679-1315fc3d653b
SCIP notification number (Italy)	0adaa074-941e-4e7f-af94-cb475b6ec860
SCIP notification number (Netherlands)	a0bda81c-e0e4-4f06-8819-ac709ef8f2bb
SCIP notification number (Poland)	5dfa1aa7-f851-438c-a5b8-3584ab6b6e4f
SCIP notification number (Romania)	ca672219-9d73-4a5e-9e0c-2e62cc8d15e4
SCIP notification number (Sweden)	bf89f5cf-8f12-4f0a-b7de-3cc86142a90c

## Approvals / Certificates



### General approvals

Logo	Approval	Additional Approval Text	Certificate name
	<b>CCC</b> CNEX	CNCA-C23-01	2020312310000210 (Ex ec IIC T4 Gc)
	<b>EAC</b> Brjansker Zertifizierungsstelle	TP TC 020/2011	EAC_Certificate_RU_C- DE.AM02.B.00115_19

### Declarations of conformity and manufacturer's declarations

Logo	Approval	Additional Approval Text	Certificate name
	<b>EU-Declaration of Conformity</b> WAGO GmbH & Co. KG	-	-

### Approvals for marine applications

Logo	Approval	Additional Approval Text	Certificate name
	<b>BV</b> Bureau Veritas S.A.	Rules for class. of Steel Ships	40179_B0
	<b>DNV</b> DNV Germany GmbH	DNV-CG-0339, Aug. 2021	TAA00001D1
	<b>PRS</b>	-	TE/2186

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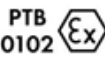





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Polski Rejestr Statków

/880590/18

## Approvals for hazardous areas

Logo	Approval	Additional Approval Text	Certificate name
	ATEX TUEV Nord Cert GmbH	EN 60079-0	TÜV_14_ATEX_112692_X (II 3 G Ex nA IIC T4 Gc)
	CCC CNEX	CNCA-C23-01	2020312310000210 (Ex ec IIC T4 Gc)
	EAC Brjansker Zertifizierungsstelle	TP TC 012/2011	EAC RU C-DE.AM02.B. 00144/19 (2 Ex nA IIC T4 Gc X)
	IECEX TUEV Nord Cert GmbH	IEC 60079-0	IECEX_TUN_14.0030_X
	UKEx WAGO GmbH & Co. KG	EN 60079-0	WAGO22UKEX004X
	UL Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS)	ANSI/ISA 12.12.01	E198726

## Optional accessories


## Interface module

## Interface adapters

	<b>Item no.: 857-980</b> Interface adapter; 16-pole; analog	<a href="http://www.wago.com/857-980">www.wago.com/857-980</a>
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## Power supplies

## Power supply unit














	<b>Item no.: 787-2852</b> Switched-mode power supply; 1-phase; 24 VDC output voltage; 1 A output current	<a href="http://www.wago.com/787-2852">www.wago.com/787-2852</a>
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## Jumpers














Jumper		
	<b>Item no.: 859-408</b> Jumper; for jumper slot; 8-way; insulated; light gray	<a href="http://www.wago.com/859-408">www.wago.com/859-408</a>
	<b>Item no.: 281-482</b> Jumper; 2-way; insulated; gray	<a href="http://www.wago.com/281-482">www.wago.com/281-482</a>
	<b>Item no.: 859-404/000-005</b> Jumper; for jumper slot; 4-way; insulated; red	<a href="http://www.wago.com/859-404/000-005">www.wago.com/859-404/000-005</a>
	<b>Item no.: 859-404/000-006</b> Jumper; for jumper slot; 4-way; insulated; blue	<a href="http://www.wago.com/859-404/000-006">www.wago.com/859-404/000-006</a>
	<b>Item no.: 859-405/000-005</b> Jumper; for jumper slot; 5-way; insulated; red	<a href="http://www.wago.com/859-405/000-005">www.wago.com/859-405/000-005</a>
	<b>Item no.: 859-405/000-029</b> Jumper; for jumper slot; 5-way; insulated; yellow	<a href="http://www.wago.com/859-405/000-029">www.wago.com/859-405/000-029</a>
	<b>Item no.: 859-405</b> Jumper; for jumper slot; 5-way; insulated; light gray	<a href="http://www.wago.com/859-405">www.wago.com/859-405</a>
	<b>Item no.: 859-404/000-029</b> Jumper; for jumper slot; 4-way; insulated; yellow	<a href="http://www.wago.com/859-404/000-029">www.wago.com/859-404/000-029</a>
	<b>Item no.: 859-406</b> Jumper; for jumper slot; 6-way; insulated; light gray	<a href="http://www.wago.com/859-406">www.wago.com/859-406</a>
	<b>Item no.: 859-405/000-006</b> Jumper; for jumper slot; 5-way; insulated; blue	<a href="http://www.wago.com/859-405/000-006">www.wago.com/859-405/000-006</a>
	<b>Item no.: 859-406/000-005</b> Jumper; for jumper slot; 6-way; insulated; red	<a href="http://www.wago.com/859-406/000-005">www.wago.com/859-406/000-005</a>
	<b>Item no.: 859-409/000-029</b> Jumper; for jumper slot; 9-way; insulated; yellow	<a href="http://www.wago.com/859-409/000-029">www.wago.com/859-409/000-029</a>
	<b>Item no.: 859-410/000-005</b> Jumper; for jumper slot; 10-way; insulated; red	<a href="http://www.wago.com/859-410/000-005">www.wago.com/859-410/000-005</a>

Subject to changes. Please also observe the further product documentation!

	<b>Item no.: 859-410/000-029</b> Jumper; for jumper slot; 10-way; insulated; yellow	<a href="http://www.wago.com/859-410/000-029">www.wago.com/859-410/000-029</a>
	<b>Item no.: 859-410</b> Jumper; for jumper slot; 10-way; insulated; light gray	<a href="http://www.wago.com/859-410">www.wago.com/859-410</a>
	<b>Item no.: 859-410/000-006</b> Jumper; for jumper slot; 10-way; insulated; blue	<a href="http://www.wago.com/859-410/000-006">www.wago.com/859-410/000-006</a>
	<b>Item no.: 859-403/000-005</b> Jumper; for jumper slot; 3-way; insulated; red	<a href="http://www.wago.com/859-403/000-005">www.wago.com/859-403/000-005</a>
	<b>Item no.: 859-402/000-029</b> Jumper; for jumper slot; 2-way; insulated; yellow	<a href="http://www.wago.com/859-402/000-029">www.wago.com/859-402/000-029</a>
	<b>Item no.: 859-403/000-029</b> Jumper; for jumper slot; 3-way; insulated; yellow	<a href="http://www.wago.com/859-403/000-029">www.wago.com/859-403/000-029</a>
	<b>Item no.: 859-403/000-006</b> Jumper; for jumper slot; 3-way; insulated; blue	<a href="http://www.wago.com/859-403/000-006">www.wago.com/859-403/000-006</a>
	<b>Item no.: 859-408/000-005</b> Jumper; for jumper slot; 8-way; insulated; red	<a href="http://www.wago.com/859-408/000-005">www.wago.com/859-408/000-005</a>
	<b>Item no.: 859-408/000-029</b> Jumper; for jumper slot; 8-way; insulated; yellow	<a href="http://www.wago.com/859-408/000-029">www.wago.com/859-408/000-029</a>
	<b>Item no.: 859-409</b> Jumper; for jumper slot; 9-way; insulated; light gray	<a href="http://www.wago.com/859-409">www.wago.com/859-409</a>
	<b>Item no.: 859-408/000-006</b> Jumper; for jumper slot; 8-way; insulated; blue	<a href="http://www.wago.com/859-408/000-006">www.wago.com/859-408/000-006</a>
	<b>Item no.: 859-403</b> Jumper; for jumper slot; 3-way; insulated; light gray	<a href="http://www.wago.com/859-403">www.wago.com/859-403</a>
	<b>Item no.: 859-409/000-005</b> Jumper; for jumper slot; 9-way; insulated; red	<a href="http://www.wago.com/859-409/000-005">www.wago.com/859-409/000-005</a>
	<b>Item no.: 859-404</b> Jumper; for jumper slot; 4-way; insulated; light gray	<a href="http://www.wago.com/859-404">www.wago.com/859-404</a>

Subject to changes. Please also observe the further product documentation!



	<b>Item no.: 859-409/000-006</b> Jumper; for jumper slot; 9-way; insulated; blue	<a href="http://www.wago.com/859-409/000-006">www.wago.com/859-409/000-006</a>
	<b>Item no.: 859-402/000-006</b> Jumper; for jumper slot; 2-way; insulated; blue	<a href="http://www.wago.com/859-402/000-006">www.wago.com/859-402/000-006</a>
	<b>Item no.: 859-402</b> Jumper; for jumper slot; 2-way; insulated; light gray	<a href="http://www.wago.com/859-402">www.wago.com/859-402</a>
	<b>Item no.: 859-402/000-005</b> Jumper; for jumper slot; 2-way; insulated; red	<a href="http://www.wago.com/859-402/000-005">www.wago.com/859-402/000-005</a>
	<b>Item no.: 859-406/000-006</b> Jumper; for jumper slot; 6-way; insulated; blue	<a href="http://www.wago.com/859-406/000-006">www.wago.com/859-406/000-006</a>
	<b>Item no.: 859-406/000-029</b> Jumper; for jumper slot; 6-way; insulated; signal yellow	<a href="http://www.wago.com/859-406/000-029">www.wago.com/859-406/000-029</a>
	<b>Item no.: 859-407/000-006</b> Jumper; for jumper slot; 7-way; insulated; blue	<a href="http://www.wago.com/859-407/000-006">www.wago.com/859-407/000-006</a>
	<b>Item no.: 859-407/000-005</b> Jumper; for jumper slot; 7-way; insulated; red	<a href="http://www.wago.com/859-407/000-005">www.wago.com/859-407/000-005</a>
	<b>Item no.: 859-407/000-029</b> Jumper; for jumper slot; 7-way; insulated; yellow	<a href="http://www.wago.com/859-407/000-029">www.wago.com/859-407/000-029</a>
	<b>Item no.: 859-407</b> Jumper; for jumper slot; 7-way; insulated; light gray	<a href="http://www.wago.com/859-407">www.wago.com/859-407</a>
<b>Terminal blocks</b>		
Supply module		
	<b>Item no.: 857-979</b> Supply and through module	<a href="http://www.wago.com/857-979">www.wago.com/857-979</a>
<b>Marking accessories</b>		
Marking strip		
	<b>Item no.: 2009-110</b> Marking strips; for Smart Printer; on reel; not stretchable; plain; snap-on type; white	<a href="http://www.wago.com/2009-110">www.wago.com/2009-110</a>
Marker		
	<b>Item no.: 2009-115</b> WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white	<a href="http://www.wago.com/2009-115">www.wago.com/2009-115</a>

Subject to changes. Please also observe the further product documentation!



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

[www.wago.com/793-501](http://www.wago.com/793-501)



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

[www.wago.com/793-502](http://www.wago.com/793-502)



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

[www.wago.com/793-503](http://www.wago.com/793-503)



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

[www.wago.com/793-504](http://www.wago.com/793-504)



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

[www.wago.com/793-505](http://www.wago.com/793-505)



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

[www.wago.com/793-506](http://www.wago.com/793-506)



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

[www.wago.com/793-566](http://www.wago.com/793-566)



**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

[www.wago.com/793-5501](http://www.wago.com/793-5501)

## Mounting

### Mounting accessories



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

[www.wago.com/249-116](http://www.wago.com/249-116)



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

[www.wago.com/249-117](http://www.wago.com/249-117)



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

[www.wago.com/249-197](http://www.wago.com/249-197)

## Tool

### Operating tool



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

[www.wago.com/210-720](http://www.wago.com/210-720)

Subject to changes. Please also observe the further product documentation!



## Downloads Documentation

### Bid Text

857-413 pdf - Datei	2019 Jul 18	pdf 74.1 kB	Download
857-413 X81 - Datei	2019 Jul 18	xml 5.4 kB	Download
857-413 docx - Datei	2019 Jul 18	docx 18.7 kB	Download

### Instruction Leaflet

CCC Ex (Additional information) 857_***	2023 Apr 26	pdf 144.4 kB	Download
Messumformer und Trennverstärker 0(4)...20 mA / 0(4)...20 mA	V 1.2.1 2020 Jan 21	pdf 1.6 MB	Download

### Additional Information

Disposal and Recycling Electrical and electronic equipment, Batteries, Packaging	V 1.1.0 2022 Aug 18	pdf 2.2 MB	Download
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## CAD/CAE-Data

### CAE data

EPLAN Data Portal 857-413		URL	Download
ZUKEN Portal 857-413		URL	Download
WSCAD Universe 857-413		URL	Download

### CAD data

2D/3D Models 857-413		URL	Download
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## Environmental Product Compliance

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WAGO GmbH & Co. KG  
Hansastr. 27  
32423 Minden  
Phone: +49571 887-0 | Fax: +49571 887-169  
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## Compliance Search

Environmental Product Compliance 857-413

URL

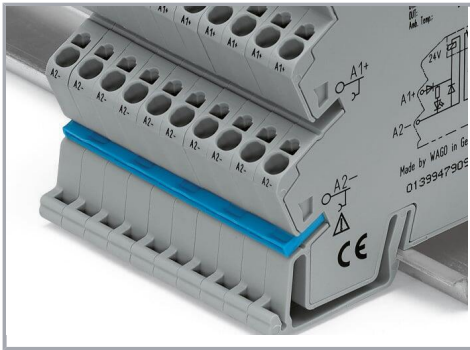
Download

Isolation amplifier; Voltage input signal; Current output signal; Supply voltage: 24 VDC; 6 mm module width; 2,50 mm<sup>2</sup>

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## Installation Notes

### Commoning



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

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