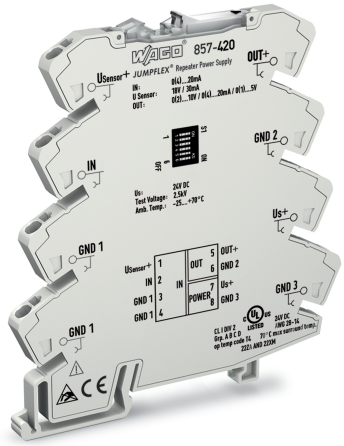
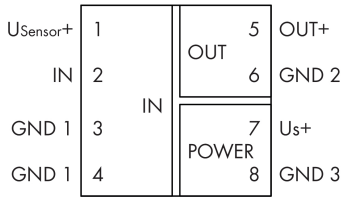
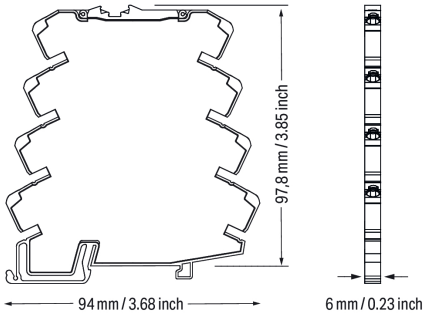
# Data Sheet | Item Number: 857-420

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

https://www.wago.com/857-420




857-420

DIP Switch Adjustability

● = ON  Default

DIP Switch S1 (6-fold)

| 1 | 2 | 3 | 4 | 5 | 6 | Input Signal | Output Signal |
|---|---|---|---|---|---|---|---|
| | | | | | n.c. | 0 ... 20 mA | 0 ... 20 mA |
| | | | ● | | n.c. | 0 ... 20 mA | 4 ... 20 mA |
| ● | ● | | | | n.c. | 0 ... 20 mA | 0 ... 10 V |
| ● | ● | | ● | | n.c. | 0 ... 20 mA | 2 ... 10 V |
| ● | ● | ● | | | n.c. | 0 ... 20 mA | 0 ... 5 V |
| ● | ● | ● | ● | | n.c. | 0 ... 20 mA | 1 ... 5 V |
| | | | | ● | n.c. | 4 ... 20 mA | 0 ... 20 mA |
| | | | | | n.c. | 4 ... 20 mA | 4 ... 20 mA |
| ● | ● | | | ● | n.c. | 4 ... 20 mA | 0 ... 10 V |
| ● | ● | | | | n.c. | 4 ... 20 mA | 2 ... 10 V |
| ● | ● | ● | | ● | n.c. | 4 ... 20 mA | 0 ... 5 V |
| ● | ● | ● | | | n.c. | 4 ... 20 mA | 1 ... 5 V |

**Short description:**

WAGO's isolation amplifier provides the power required for 2- or 3-wire field transmitters and electrically isolates analog signals.

**Features:**

- Power supply to SMART transmitters
- Calibrated measurement range switching
- 3-way electrical isolation with 2.5 kV test voltage

## Technical data

### Configuration

| | |
|---|---|
| Configuration options | DIP switch |

### Input

| | |
|---|---|
| Input signal type | Current |
| Input signal (current) | 0 ... 20 mA<br>4 ... 20 mA (calibrated, switchable) |
| Input resistance (current input) | ≤ 50 Ω |
| Sensor supply | $U_v$ = 18 V; 30 mA |
| Input current (max.) | 50 mA |

## Output (analog)

| | |
|---|---|
| Output signal type | Current<br>Voltage |
| Output signal (voltage) | 0 … 5 V<br>1 … 5 V<br>0 … 10 V<br>2 … 10 V (calibrated, switchable) |
| Output signal (current) | 0 … 20 mA<br>4 … 20 mA (calibrated, switchable) |
| Load impedance (voltage output) | ≥ 2 kΩ |
| Load impedance (current output) | ≤ 600 Ω |
| Offset | ≤ 20 µA |
| Residual ripple | ≤ 10 mV (rms) |

## Signal Processing

| | |
|---|---|
| Limit frequency | 100 Hz |
| Step response (typ.) | 3.5 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 | ≤ 45 mA |

## Safety and protection

| | |
|---|---|
| Protection type | IP20 |

## Test voltage

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

## 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 | 0.489 MJ |
| Weight | 37 g |

 Continued on next page

## 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 |
| Standards/specifications | DNV |

## Commercial data

| | |
|---|---|
| Product Group | 6 (INTERFACE ELECTRONIC) |
| PU (SPU) | 1 pcs |
| Packaging type | Bag |
| Country of origin | DE |
| GTIN | 4045454471330 |
| 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

| | |
|---|---|
| CAS-No. | 1303-86-2<br>1317-36-8<br>7439-92-1<br>75980-60-8 |
| REACH Candidate List Substance | Diboron trioxide<br>Lead<br>Lead monoxide<br>Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)- |
| RoHS Compliance Status | Compliant,With Exemption |
| RoHS Exemption | 6(c)<br>7(a)<br>7(c)-I<br>7(c)-II<br>7c |
| SCIP notification number (Austria) | 47593164-c4bd-4ccc-a4b1-02255ba1b769 |
| SCIP notification number (Belgium) | 45855355-0f1b-4c01-b8f3-b149d72a420f |
| SCIP notification number (Bulgaria) | d43a9b05-a8b7-4ef7-80dd-e2efca7e95c1 |
| SCIP notification number (Czech Republic) | 425b7eca-3492-436c-95af-5799c6c41572 |
| SCIP notification number (Denmark) | 8de4bab4-8162-41ba-8861-d43ecc914994 |
| SCIP notification number (Finland) | 8f7a5e13-6852-41de-863e-78c9a289130f |
| SCIP notification number (France) | bda94e16-8a03-4402-aa8e-d55ee9091c70 |
| SCIP notification number (Germany) | b822bbec-8555-4354-a97a-7f2f11cfcfda |
| SCIP notification number (Hungary) | 41bf7e6b-f8ec-412f-9d54-28407803d56e |
| SCIP notification number (Italy) | b9660c43-5cf3-4c7e-8d86-9df3263a64f3 |
| SCIP notification number (Netherlands) | 0458d684-8c64-4839-8eb2-d3294e4930b7 |
| SCIP notification number (Poland) | 658b5e51-6300-4938-a3f6-cc1d085898b9 |
| SCIP notification number (Romania) | 66fd79cb-9d5b-4eb6-8763-01185619c07b |
| SCIP notification number (Sweden) | ac690304-f0b1-4d15-8d80-e050a9c76b65 |

 Continued on next page

## Approvals / Certificates

### General approvals

| Approval | Standard | Certificate Name |
|---|---|---|
| EAC<br>GZO Almaty Standart | TP TC 020/2011 | EAC CoC 03081 |

### Declarations of conformity and manufacturer's declarations

| Approval | Standard | Certificate Name |
|---|---|---|
| EU-Declaration of Conformity<br>WAGO GmbH & Co. KG | - | - |

### Approvals for marine applications

| Approval | Standard | Certificate Name |
|---|---|---|
| DNV<br>DNV Germany GmbH | DNV-CG-0339,Aug.2021 | TAA00001D1 |
| PRS<br>Polski Rejestr Statków | - | TE/1098/880590/23 |

### Approvals for hazardous areas

| Approval | Standard | Certificate Name |
|---|---|---|
| UL<br>Underwriters Laboratories Inc. (HAZARDOUS LOCATIONS) | ANSI/ISA 12.12.01 | E198726 |

## Downloads

### Environmental Product Compliance

**Compliance Search**

Environmental Product Compliance 857-420

## Documentation

**Bid Text**

| | | | |
|---|---|---|---|
| 857-420 | 19.02.2019 | xml<br>5.33 KB | |
| 857-420 | 20.02.2019 | docx<br>16.65 KB | |

**Instruction Leaflet**

| | | |
|---|---|---|
| Messumformer und Trennverstärker | pdf<br>1415.25 KB | |

## CAD/CAE-Data

**CAD data**

2D/3D Models 857-420

**CAE data**

EPLAN Data Portal 857-420

WSCAD Universe 857-420

ZUKEN Portal 857-420


Continued on next page

# 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

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

 Continued on next page

### 1.1.3.1 Jumper

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


Continued on next page

### 1.1.6 Terminal blocks

#### 1.1.6.1 Supply and through module

Item No.: 857-979
Supply and through module

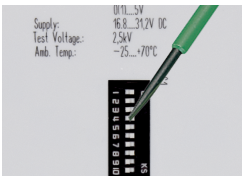
### 1.1.7 Tool

#### 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

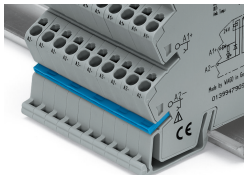
## Installation Notes

### Configuring




Configuration via DIP switch

### Commoning



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