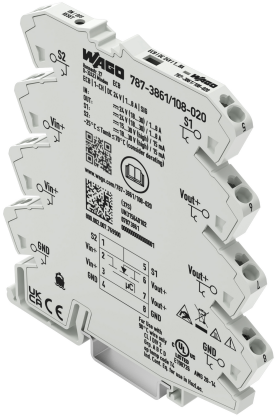
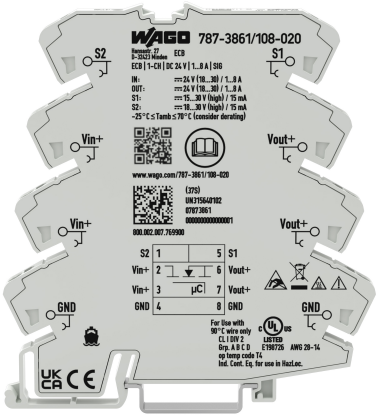
# Data Sheet | Item Number: 787-3861/108-020

Electronic circuit breaker; 1-channel; 24 VDC input voltage; adjustable 1 … 8 A; Signal contact

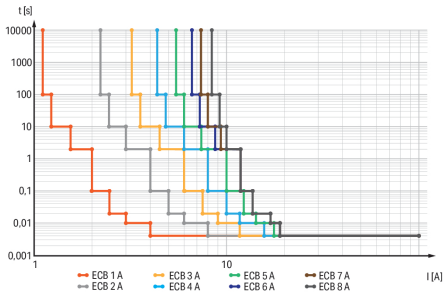
https://www.wago.com/787-3861/108-020

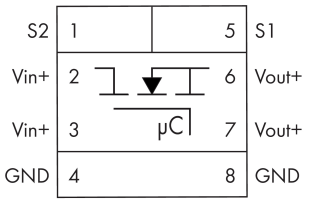


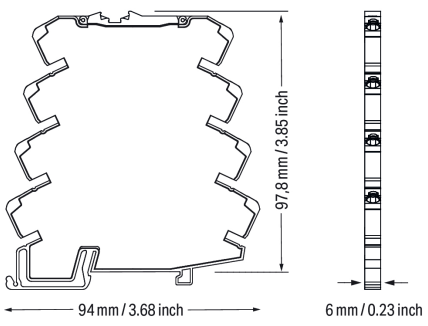






**Features:**

- Space-saving ECB with one channel
- Reliably and safely trips in the event of an overload and short circuit on the secondary side
- Switch-on capacity > 50,000 µF
- Enables the use of an economical, standard power supply
- Minimizes wiring via two voltage outputs and maximizes commoning options on both input and output sides (e.g., commoning of the output voltage on 857 and 2857 Series devices)
- Status signal – adjustable as single or group message
- Reset, switch on/off via remote input or local switch
- Prevents power supply overload due to total inrush current thanks to time-delayed switching on during interconnected operation

## Notes

| | |
|---|---|
| Note | The device is designed for use in SELV circuits.<br>Depending on the output current, please use the approved minimum conductor cross-sections. |

## Technical data

### Input

| | |
|---|---|
| Nominal input voltage $U_{i\,nom}$ | 24 VDC |
| Input voltage range | 18 … 30 VDC |

### Output

| | |
|---|---|
| Total number of channels (module) | 1 |
| Nominal output voltage $U_{o\,nom}$ | 1 x 24 VDC |
| Output voltage range | 18 … 30 VDC ($U_e$ - voltage drop) |
| Voltage drop | ≤ 80 mV (1 A); ≤ 160 mV (2 A); ≤ 240 mV (3 A); ≤ 320 mV (4 A); ≤ 150 mV (5 A); ≤ 180 mV (6 A); ≤ 210 mV (7 A); ≤ 240 mV (8 A) |
| Nominal output current $I_{o\,nom}$ | 1 x 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 A (adjustable) |
| Default Setting | DC 1 A; switched off |
| Trip time | 10 ms … 90 s (load-dependent) |
| Switch-on capacity | |
| Switch-on behavior | Time-delayed channel switching (load-dependent, min. 0 ms / max. 500 ms) |
| Switch-on threshold | DC 20.3 V |

### Signaling and Communication

| | |
|---|---|
| Signaling | 1 x Status LED (green/yellow/red)<br>1 x Signal output (18 … 30 VDC, max. 0.015 A), default setting: tripped |
| Operation status indicator | Green LED (channel OK)<br>Red LED (channel switched off) |
| Remote input | 1 x Control input (15 … 30 VDC (active high); 0 … 5 VDC (active low); max. 0.015 A) |

### Efficiency/Power Losses

| | |
|---|---|
| Power loss $P_l$ | ≤ 0.4 W (no load) |
| Efficiency (typ.) | 98 % |

### Circuit Protection

| | |
|---|---|
| Internal fuse | T 10 A |

### Safety and protection

| | |
|---|---|
| Isolation voltage (connectors – housing) | 1.5 kVDC |
| Protection class | III |
| Protection type | IP20; per EN 60529 |
| Reverse voltage protection | No |
| Transient suppression (primary) | Suppressor diode (33 V) |
| Parallel operation of single channels | Not permitted |
| Series operation | No |
| MTBF | 807,840 h |

### Insulation coordination (UL)

| | |
|---|---|
| Overvoltage category | II |
| Pollution degree | 2 |

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## Insulation coordination

| | |
|---|---|
| Overvoltage category | II |
| Pollution degree | 2 |

## Connection Data

| | |
|---|---|
| Number of jumper slots | 8 |

### Connection 1

| | |
|---|---|
| Connection technology | Push-in CAGE CLAMP® |
| WAGO connector | WAGO 857 Series |
| Solid conductor | 0.08 … 2.5 mm² / 24 … 14 AWG |
| Fine-stranded conductor | 0.34 … 2.5 mm² / 22 … 14 AWG |
| Strip length | 9 … 10 mm / 0.35 … 0.39 inches |
| Note (conductor cross-section) | Depending on the output current, use the conductor cross-sections tested and approved by UL:<br>26 … 14 AWG (0.5 A);<br>24 … 14 AWG (1 A);<br>22 … 14 AWG (2 A);<br>20 … 14 AWG (3 A / 4 A);<br>18 … 14 AWG (5 A / 6 A);<br>16 … 14 AWG (7 A / 8 A) |

## 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 | 0.57 MJ |
| Weight | 55.7 g |

## Environmental requirements

| | |
|---|---|
| Ambient temperature (operation) | -25 … +70 °C |
| Ambient temperature (storage) | -40 … +85 °C |
| Relative humidity | 10 … 95 % (no condensation permissible) |
| Derating | No derating |
| Operating altitude | ≤ 2000 m (a.s.l.) |

## Standards and Specifications

| | |
|---|---|
| Conformity marking | CE; UKCA |
| Standards/specifications | EN 61000-6-2<br>EN 61000-6-3<br>UL 61010-2-201<br>DNV<br>UL 2367 |


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## Commercial data

| | |
|---|---|
| PU (SPU) | 1 pcs |
| Packaging type | Bag |
| Country of origin | IN |
| Customs tariff number | 85362010900 |

## Product Classification

| | |
|---|---|
| UNSPSC | 39121601 |
| ETIM 9.0 | EC001440 |
| ETIM 10.0 | EC001440 |
| ECCN | NO US CLASSIFICATION |

## Environmental Product Compliance

| | |
|---|---|
| CAS-No. | 11120-22-2<br>1303-86-2<br>1317-36-8<br>7439-92-1<br>80-43-3 |
| REACH Candidate List Substance | Diboron trioxide<br>Lead<br>Lead monoxide<br>Lead silicate<br>Peroxide, bis(1-methyl-1-phenylethyl) |
| RoHS Compliance Status | Compliant,With Exemption |
| RoHS Exemption | 6(c)<br>7(a)<br>7(c)-I<br>7(c)-II |
| SCIP notification number (Austria) | b32c6b38-8acb-4713-ba41-a31e9089ed9f |
| SCIP notification number (Belgium) | 98ce4f37-7a53-47bb-8e75-f78fe7c0a170 |
| SCIP notification number (Bulgaria) | 3a6e9043-eb26-458e-bab1-c3c216570d55 |
| SCIP notification number (Czech Republic) | eb3aca50-2f42-4ff8-a48c-c2689192a43d |
| SCIP notification number (Denmark) | b71bc243-6a14-4104-8685-4afcaab2d81f |
| SCIP notification number (Finland) | d5168b8b-dfdd-4732-aaae-3bfaa59ec9f9 |
| SCIP notification number (France) | e8ebf949-b28b-4d9a-9e11-a681e960a351 |
| SCIP notification number (Germany) | 96ebdc4a-6d4a-4b95-947c-274f3d488737 |
| SCIP notification number (Hungary) | 2a464243-9905-4fff-bc55-2ffd254e9d5e |
| SCIP notification number (Italy) | 30bca2bc-5ac1-4dec-95d0-9582c48d5f74 |
| SCIP notification number (Netherlands) | 1edc6ced-04aa-44f5-a4b9-d16e8c935329 |
| SCIP notification number (Poland) | 864b9dfe-fa85-40dd-8514-69fa1aca7fe7 |
| SCIP notification number (Romania) | f6023abb-54ce-461f-87bb-20fa6de4be7a |
| SCIP notification number (Sweden) | 2f5c1de5-de39-4215-866a-90168d171204 |

## Approvals / Certificates

### General approvals

| Approval | Standard | Certificate Name |
|---|---|---|
| EAC<br>GZO Almaty Standart | TP TC 020/2011 | EAC CoC 03081 |
| UL<br>Underwriters Laboratories Inc. (ORDINARY LOCATIONS) | UL 61010-2-201 | UL E175199 Vol.3 Sec.5 |
| UR<br>Underwriters Laboratories Inc. | - | E175199 |

### Declarations of conformity and manufacturer's declarations

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


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## Approvals for marine applications

| Approval | Standard | Certificate Name |
|---|---|---|
| DNV<br>DNV Germany GmbH | DNV-CG-0339,Aug.2021 | TAA00001D1 |

## Approvals for hazardous areas

| Approval | Standard | Certificate Name |
|---|---|---|
| UL<br>Underwriters Laboratories Inc. (HAZARDOUS LOCA-TIONS) | UL 121201 | E198726 |

## Downloads

### Environmental Product Compliance

**Compliance Search**

Environmental Product Compliance
787-3861/108-020

### Documentation

**Manual**

| | | |
|---|---|---|
| Product Manual Electron-ic circuit breaker | V 1.0.0<br>25.03.2024 | pdf<br>7471.95 KB |

**Instruction Leaflet**

| | | |
|---|---|---|
| Electronic Circuit Breaker | V 1.1.1<br>11.09.2023 | pdf<br>2491.12 KB |

### CAD/CAE-Data

**CAD data**

2D/3D Models
787-3861/108-020

## 1 Compatible Products

### 1.1 Optional Accessories

#### 1.1.1 Jumper

##### 1.1.1.1 Jumper



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.: 859-402/000-029
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


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### 1.1.1.1 Jumper



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

## 1.1.2 Marking

### 1.1.2.1 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


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### 1.1.2.2 Marking strip



Item No.: 2009-110
Marking strips; for Smart Printer; on reel; not stretchable; plain; snap-on type; white

## 1.1.3 Potential distribution

### 1.1.3.1 Potential Distribution Module



Item No.: 787-3861/000-1000
Potential distribution module; 1 potential; with 8 clamping points 0V; Conductor cross-section up to 2.5 mm²



Item No.: 787-3861/000-2000
Potential distribution module; 1 potential; with 8 clamping points 24V; Conductor cross-section up to 2.5 mm²



Item No.: 787-3861/000-3000
Potential distribution module; 2 potentials; with 4 clamping points each (0V / 24V); Conductor cross-section up to 2.5 mm²

## 1.1.4 Tool

### 1.1.4.1 Operating tool



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