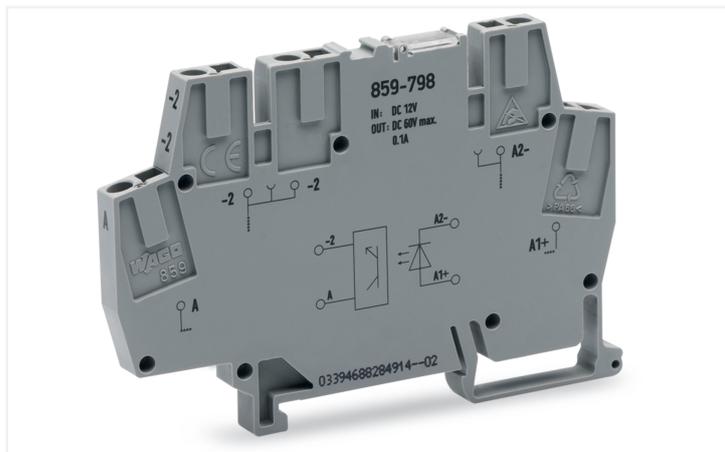


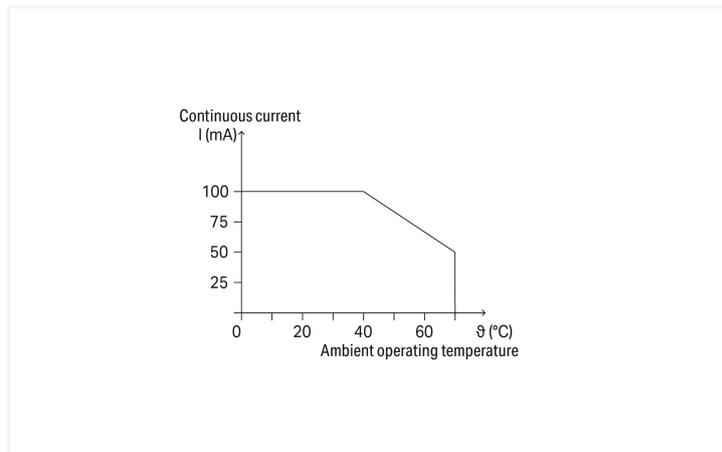
## Data Sheet | Item Number: 859-798

Optocoupler module; Nominal input voltage: 12 VDC; Output voltage range: 9 ... 60 VDC; Limiting continuous current: 0.1 A; 2-wire connection; Railway; Red status indicator; Module width: 6 mm; gray

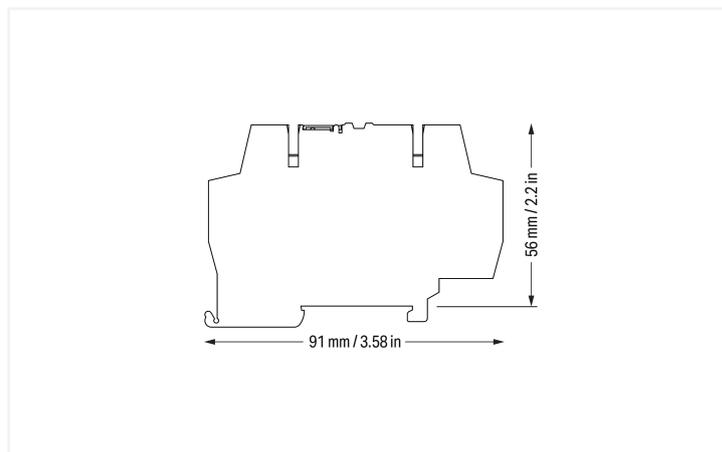
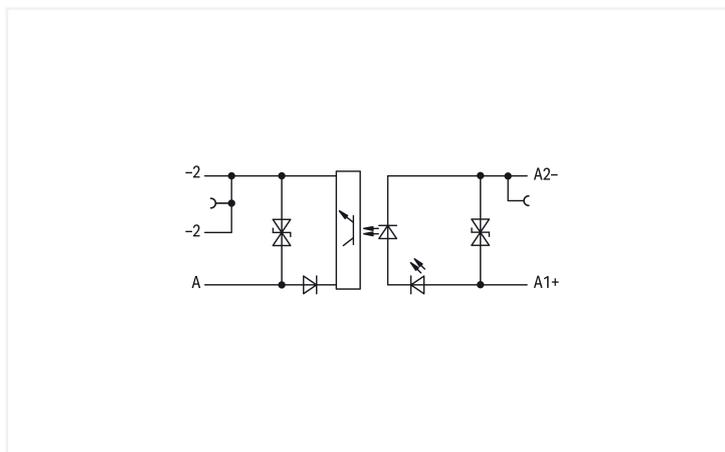
<https://www.wago.com/859-798>



Color: ■ gray



Current-carrying capacity curve



### Notes

Note

Optocouplers and solid state relays are designed for use in signal processing networks that are not supplied directly by the low-voltage power supply network.

### Technical data

#### Control circuit

|                                  |                |
|----------------------------------|----------------|
| Nominal input voltage $U_N$      | 12 VDC         |
| Input voltage range (low level)  | 0 ... 4.8 VDC  |
| Input voltage range (high level) | 8.4 ... 15 VDC |
| Nominal input current at $U_N$   | 4 mA           |

#### Load circuit

|                             |                    |
|-----------------------------|--------------------|
| Circuit type                | 2-wire connection  |
| Limiting continuous current | 0.1 A              |
| Output voltage range        | 9 ... 60 VDC       |
| Voltage drop                | $\leq 2$ VDC       |
| Turn-on time                | $\leq 20$ $\mu$ s  |
| Turn-off time               | $\leq 120$ $\mu$ s |
| Switching frequency         | $\leq 1.5$ kHz     |

### Signaling

|                  |         |
|------------------|---------|
| Status indicator | Red LED |
|------------------|---------|

### Safety and protection

|   |  |
|---|--|
| Rated Voltage   | 300 V  |
| Overvoltage category  | II   |
| Pollution degree  | 2  |
| Dielectric strength (control/load circuit) (AC, 1 min)      | 2.5 kVrms  |
| Insulation type (control/load circuit)                      | Basic insulation   |
| Insulation type (between adjacent devices of the same type) | Reinforced insulation (safe isolation)                   |
| Insulation type (to adjacent devices of different types)    | Basic insulation   |
| Protection type   | IP20; in connected state or when using 859-525 end plate |

### Connection Data

|   |  |
|---|--|
| Connection technology                           | CAGE CLAMP®                                  |
| Solid conductor                                 | 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG |
| Fine-stranded conductor                         | 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 14 AWG |
| Fine-stranded conductor; with insulated ferrule | 0.08 ... 1.5 mm <sup>2</sup> / 28 ... 16 AWG |
| Strip length                                    | 5 ... 6 mm / 0.2 ... 0.24 inches             |

### Physical data

|                                   |                      |
|-----------------------------------|----------------------|
| Width                             | 6 mm / 0.236 inches  |
| Height                            | 91 mm / 3.583 inches |
| Depth from upper-edge of DIN-rail | 56 mm / 2.205 inches |

### Mechanical data

|                   |                                       |
|-------------------|---------------------------------------|
| Mounting type     | DIN-35 rail                           |
| Mounting position | horizontal (standing/lying); vertical |

### Material data

|                                    |  |
|------------------------------------|--|
| Note (material data)               | <a href="#">Information on material specifications can be found here</a> |
| Color                              | gray   |
| Insulation material (main housing) | Polyamide (PA66)   |
| Material group                     | I  |
| Flammability class per UL94        | V0   |
| Fire load                          | 0.313 MJ   |
| Weight                             | 17.6 g   |

### Environmental requirements

|  |  |
|--|--|
| Ambient temperature (operation at U <sub>N</sub> ) | -40 ... +70 °C                           |
| Ambient temperature (storage)                      | -40 ... +70 °C                           |
| Processing temperature                             | -25 ... +50 °C                           |
| Temperature range of connection cable              | ≥ (T <sub>ambient</sub> + 20 K)          |
| Relative humidity                                  | 5 ... 95 % (no condensation permissible) |
| Operating altitude (max.)                          | 2000 m                                   |

### Standards and Specifications

|                          |  |
|--------------------------|--|
| Standards/specifications | EN 61010-2-201<br>EN 61000-6-2<br>EN 61000-6-3<br>EN 50121-3-2<br>EN 61373 |
|--------------------------|--|

### Commercial data

|                       |                          |
|-----------------------|--------------------------|
| Product Group         | 6 (INTERFACE ELECTRONIC) |
| PU (SPU)              | 10 pcs                   |
| Packaging type        | Box                      |
| Country of origin     | DE                       |
| GTIN                  | 4055143606431            |
| Customs tariff number | 85365005000              |

### Product Classification

|             |                      |
|-------------|----------------------|
| UNSPSC      | 32101517             |
| eCl@ss 10.0 | 27-26-15-03          |
| eCl@ss 9.0  | 27-26-15-03          |
| ETIM 9.0    | EC001504             |
| ETIM 10.0   | EC001504             |
| ECCN        | NO US CLASSIFICATION |

### Environmental Product Compliance

|   |   |
|---|---|
| CAS-No.                                   | 1303-86-2<br>1317-36-8<br>7439-92-1<br>75980-60-8<br>79-94-7  |
| REACH Candidate List Substance            | 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol<br>Diboron trioxide<br>Lead<br>Lead monoxide<br>Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)- |
| RoHS Compliance Status                    | Compliant,With Exemption  |
| RoHS Exemption                            | 7(a)<br>7(c)-I<br>7(c)-II   |
| SCIP notification number (Austria)        | 493cedbf-c866-493b-9dd7-6aae82413ff2  |
| SCIP notification number (Belgium)        | 6903c7d5-76da-4c34-b819-d6ee9d08a7b1  |
| SCIP notification number (Bulgaria)       | f1fc584a-2799-4bc3-b2a6-ae8bd3e60344  |
| SCIP notification number (Czech Republic) | b786dccf-3a18-4c17-b892-f1632c497e6f  |
| SCIP notification number (Denmark)        | 400b44ee-8c14-4b64-b178-6981dfe65888  |
| SCIP notification number (Finland)        | 988574e8-d43e-4f3a-a781-e0491dd86733  |
| SCIP notification number (France)         | cc5ec0e9-b4a1-4527-b26a-8922b4055812  |
| SCIP notification number (Germany)        | 0ed8166e-824e-4288-b7ea-038f4113f4af  |
| SCIP notification number (Hungary)        | 1280df2f-43b4-4541-a56d-7ba2c64d71f6  |
| SCIP notification number (Italy)          | 08344cd9-9f24-4559-a993-d37db0382869  |
| SCIP notification number (Netherlands)    | de8c2f8d-db18-4bfd-9231-4471b012daa0  |
| SCIP notification number (Poland)         | 528f8968-e6df-4ecb-8b75-e6b265246b45  |
| SCIP notification number (Romania)        | 6991471e-de4c-4b2d-a185-4bf38bae3c84  |
| SCIP notification number (Sweden)         | 2efa87bf-f693-42fc-afc0-0a29562a9824  |

Approvals / Certificates

General approvals

Declarations of conformity and manufacturer's declarations



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

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

Downloads

Environmental Product Compliance

| Compliance Search                           |
|---|
| Environmental Product<br>Compliance 859-798 |

Documentation

| Bid Text |            |                  |  |
|----------|------------|------------------|--|
| 859-798  | 19.02.2019 | xml<br>3.86 KB   |  |
| 859-798  | 20.02.2019 | docx<br>15.40 KB |  |

| Instruction Leaflet                     |                       |                   |  |
|---|-----------------------|-------------------|--|
| Relay modules, Opto-<br>coupler modules | V 2.0.0<br>19.01.2022 | pdf<br>2066.27 KB |  |

CAD/CAE-Data

| CAD data             |
|----------------------|
| 2D/3D Models 859-798 |

| CAE data                     |
|------------------------------|
| EPLAN Data Portal<br>859-798 |
| WSCAD Universe<br>859-798    |
| ZUKEN Portal 859-798         |

1 Compatible Products

1.1 Optional Accessories

1.1.1 End plate

1.1.1.1 End plate



**Item No.: 859-525**  
End and intermediate plate; 1 mm thick;  
gray

1.1.1.2 Intermediate plate



**Item No.: 859-525**  
End and intermediate plate; 1 mm thick; gray

1.1.2 Ferrule

1.1.2.1 Ferrule



**Item No.: 216-321**  
Ferrule; Sleeve for 0.25 mm<sup>2</sup> / AWG 24; insulated; electro-tin plated; yellow



**Item No.: 216-322**  
Ferrule; Sleeve for 0.34 mm<sup>2</sup> / 22 AWG; insulated; electro-tin plated; light turquoise



**Item No.: 216-221**  
Ferrule; Sleeve for 0.5 mm<sup>2</sup> / 20 AWG; insulated; electro-tin plated; white



**Item No.: 216-222**  
Ferrule; Sleeve for 0.75 mm<sup>2</sup> / 18 AWG; insulated; electro-tin plated; gray



**Item No.: 216-223**  
Ferrule; Sleeve for 1 mm<sup>2</sup> / AWG 18; insulated; electro-tin plated; red



**Item No.: 216-224**  
Ferrule; Sleeve for 1.5 mm<sup>2</sup> / AWG 16; insulated; electro-tin plated; black



**Item No.: 216-124**  
Ferrule; Sleeve for 1.5 mm<sup>2</sup> / AWG 16; un-insulated; electro-tin plated

1.1.3 Jumper

1.1.3.1 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.: 859-402/000-005**  
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



**Item No.: 859-407/000-029**  
Jumper; for jumper slot; 7-way; insulated; yellow

1.1.3.1 Jumper



**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.: 2009-145**  
 Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white

**Item No.: 248-502**  
 Mini-WSB marking card; as card; MARKED; 1 ... 10 (10x); not stretchable; Horizontal marking; snap-on type; white

**Item No.: 248-503**  
 Mini-WSB marking card; as card; MARKED; 11 ... 20 (10x); not stretchable; Horizontal marking; snap-on type; white

**Item No.: 248-504**  
 Mini-WSB marking card; as card; MARKED; 21 ... 30 (10x); not stretchable; Horizontal marking; snap-on type; white



**Item No.: 248-506**  
 Mini-WSB marking card; as card; MARKED; 41 ... 50 (10x); not stretchable; Horizontal marking; snap-on type; white

**Item No.: 248-501**  
 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; white

1.1.4.2 Marking device



**Item No.: 210-110**  
 Fiber-tip pen

1.1.5 Test and measurement

1.1.5.1 Testing accessories



**Item No.: 859-500**  
 WAGO Test pin; 1 mm Ø; 30 V AC / 60 V DC; CAT0; 1 A; 10 mm uninsulated; Test lead for soldering up to 0,5mm<sup>2</sup>

1.1.6 Tool

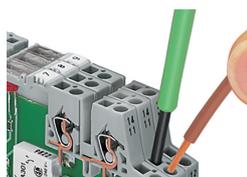
1.1.6.1 Operating tool



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

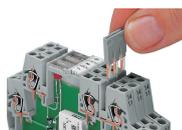
## Installation Notes

### Conductor termination



Conductor termination

### Commoning



Easy commoning using adjacent jumpers

### Marking



Marking via Mini-WSB Quick Marking System