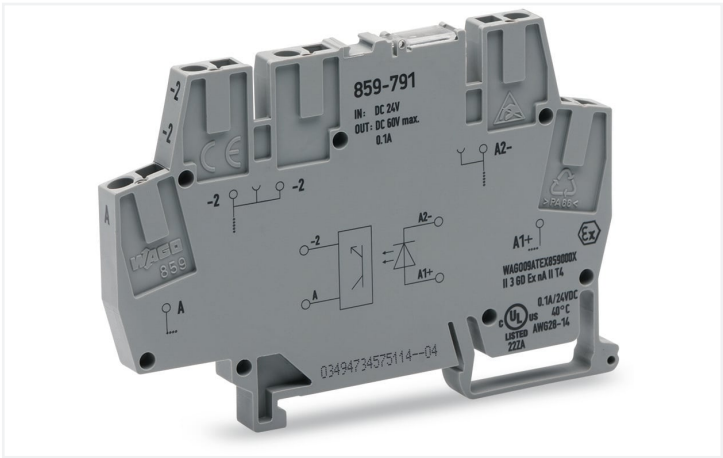


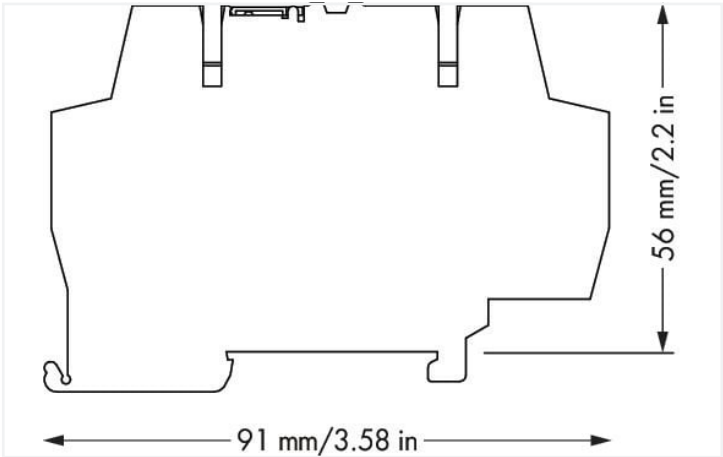
Data Sheet | Item Number: 859-791

Optocoupler module; Nominal input voltage: 24 VDC; Output voltage range: 20 ... 60 VDC; Limiting continuous current: 0.1 A; 2-wire connection; Railway; Module width: 6 mm; gray

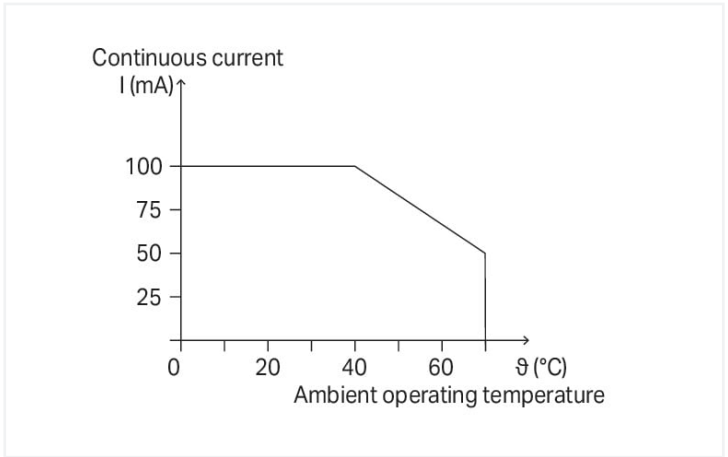
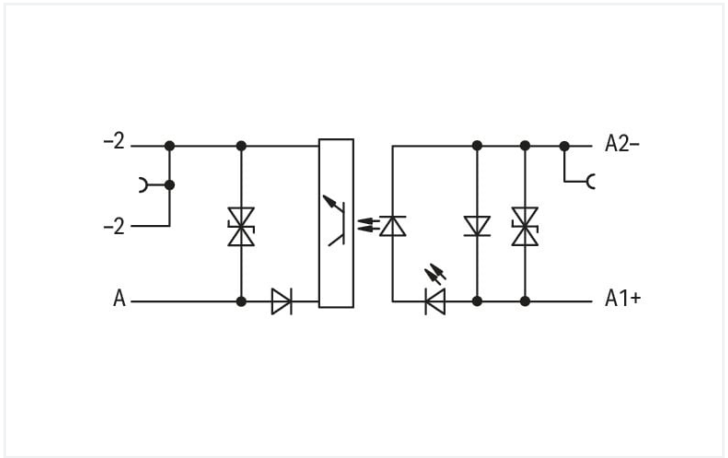
<https://www.wago.com/859-791>



Color: ■ gray



Dimensions in mm



Current-carrying capacity curve

Notes	
Note	Optocouplers and solid state relays are designed for use in signal processing networks, which are not supplied by the low-voltage power supply networks.

Technical data			
Control circuit		Load circuit	
Nominal input voltage U_N	DC 24 V	Circuit type	2-wire connection
Input voltage range	DC 16.8 ... 30 V	Limiting continuous current	0.2 A
Input voltage range (low level)	DC 0 ... 5 V	Nominal output voltage	DC 24 V
Input voltage range (high level)	DC 16 ... 30 V	Output voltage range	DC 3 ... 60 V
Nominal input current at U_N	5 mA	Voltage drop	≤ 1.5 VDC
Input current range	2 ... 7 mA	Leakage current at rated voltage	≤ 10 μ A
		Turn-on time	≤ 30 μ s
		Turn-off time	≤ 50 μ s
		Rise time (t_{10-90})	19 μ s
		Drop-out time (t_{90-10})	35 μ s
		Switching frequency	≤ 4 kHz

Signaling

Status indicator	Red LED
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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	0.2 ... 2.5 mm² / 24 ... 14 AWG
Fine-stranded conductor	0.14 ... 2.5 mm² / 26 ... 14 AWG
Fine-stranded conductor; with insulated ferrule	0.14 ... 1.5 mm² / 26 ... 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

Color	gray
Fire load	0.338 MJ
Weight	18.7 g

Environmental requirements

Ambient temperature (operation at U_N)	-40 ... +70 °C
Ambient temperature UL (operation at U_N)	-40 ... +40 °C
Ambient temperature (storage)	-40 ... +85 °C
Processing temperature	-25 ... +50 °C
Temperature range of connection cable	$\geq (T_{\text{ambient}} + 20 \text{ K})$
Relative humidity	5 ... 95 % (no condensation permissible)
Operating altitude (max.)	2000 m



Standards and specifications	
Standards/specifications	EN 61010-2-201 EN 61000-6-2 EN 61000-6-3 EN 50121-3-2 UL 508 ATEX

Commercial data	
Product Group	6 (INTERFACE ELECTRONIC)
eCl@ss 10.0	27-26-15-03
eCl@ss 9.0	27-26-15-03
ETIM 8.0	EC001504
ETIM 7.0	EC001504
PU (SPU)	10 pcs
Packaging type	Box
Country of origin	DE
GTIN	4055143606240
Customs tariff number	85365005000

Environmental Product Compliance	
CAS-No.	7439-92-1 79-94-7
REACH Candidate List Substance	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol Lead
RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	7(a) 7(c)-I
SCIP notification number (Austria)	4837b560-d9b1-4cfe-a7d8-eb50c2dbbe34
SCIP notification number (Belgium)	ce244fe2-831d-4838-ad8f-ac1f82b13030
SCIP notification number (Bulgaria)	3c0a4c51-5401-4a31-9f5f-845915215ff4
SCIP notification number (Czech Republic)	519fe424-d619-4e4c-876c-6216fc01e344
SCIP notification number (Denmark)	29302a6b-fb9c-461b-a6a3-c9deab4c3df7
SCIP notification number (Finland)	9c130c67-4c2d-4d66-9e1d-45ba2047f2c4
SCIP notification number (France)	1e8f375b-9376-4cc1-82e4-e7b8d13e18d9
SCIP notification number (Germany)	0a7f6c62-e075-4ba1-84a3-fe45b52f5185
SCIP notification number (Hungary)	3595ed46-a2e5-45b8-8562-0ec555a5b91a
SCIP notification number (Italy)	b913dfa1-a1ee-4858-93ff-40fe1f3dc068
SCIP notification number (Netherlands)	c34396a6-197c-4331-a887-b6a5a1f554c3
SCIP notification number (Poland)	3872d5c6-c77a-4f03-a340-6b7632263fda
SCIP notification number (Romania)	3189f07e-3977-4dea-9517-3bf7517b4e35
SCIP notification number (Sweden)	ea0d85d5-4d56-4b3c-99a2-f53442e691e4

Approvals / Certificates		
General approvals		Declarations of conformity and manufacturer's declarations
Approval	Standard	Certificate Name
EAC Brjansker Zertifizierungs- stelle	TP TC 020/2011	EAC_Certificate_RU_C- DE.AM02.B.00115_19
UL Underwriters Laboratories Inc. (ORDINARY LOCATI- ONS)	UL 508	E175199 Sec.4



Approvals for hazardous areas



Approval	Standard	Certificate Name
CCC CNEX	CNCA-C23-01	2021312304000982 (Ex ec IIC T4 Gc)
UKEx WAGO GmbH & Co. KG	EN 60079-0	WAGO22UKEX007X_ec
UL Underwriters Laboratories Inc. (HAZARDOUS LOCA- TIONS)	ANSI/ISA 12.12.01	E198726

Downloads

Environmental Product Compliance

Compliance Search
Environmental Product Compliance 859-791

Documentation

Bid Text			
859-791	19.02.2019	xml 3.86 KB	↓
859-791	20.02.2019	docx 15.35 KB	↓

Instruction Leaflet			
CCC Ex (Additional in- formation)	26.04.2023	pdf 132.68 KB	↓
Relay modules, Opto- coupler modules	V 2.0.0 19.01.2022	pdf 2066.27 KB	↓

CAD/CAE-Data

CAD data
2D/3D Models 859-791

CAE data
EPLAN Data Portal 859-791
WSCAD Universe 859-791
ZUKEN Portal 859-791



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 mm² / AWG 24; insulated; electro-tin plated; yellow



[Item No.: 216-322](#)
Ferrule; Sleeve for 0.34 mm² / 22 AWG; insulated; electro-tin plated; light turquoise



[Item No.: 216-221](#)
Ferrule; Sleeve for 0.5 mm² / 20 AWG; insulated; electro-tin plated; white



[Item No.: 216-222](#)
Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; gray



[Item No.: 216-223](#)
Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; red



[Item No.: 216-224](#)
Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; black

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



1.1.3.1 Jumper

 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; signal 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.: 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
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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 0,5mm²

1.1.6 Tool

1.1.6.1 Operating tool

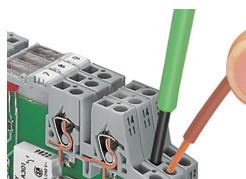


Item No.: 210-720

Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured

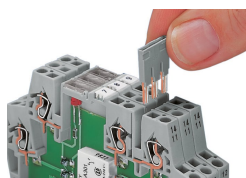
Installation Notes

Conductor termination



Conductor termination

Commoning



Easy commoning using adjacent jumpers

Marking



Marking via Mini-WSB Quick Marking System