

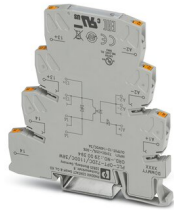
PLC-OPT- 72DC/110DC/3RW - Solid-state relay module



2900394

<https://www.phoenixcontact.com/us/products/2900394>

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PLC-INTERFACE for railway applications, consisting of basic terminal block with push-in connection and integrated miniature solid-state relay, range: $0.7 \times U_N$ to $1.25 \times U_N$, temperature range: -25°C to $+70^\circ\text{C}$, 1 N/O contact, input: 72 V DC, output: 12 - 140 V DC/3 A

Your advantages

- Shock resistance in accordance with DIN 50155 (requirements in accordance with EN 61373)
- Input voltage range of $0.7 - 1.25 \times U_N$
- Temperature range: $-25^\circ\text{C} \dots +70^\circ\text{C}$

Commercial Data

Item number	2900394
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to Order (non-returnable)
Sales Key	C461
Product Key	CK6233
Catalog Page	Page 417 (C-5-2019)
GTIN	4046356581547
Weight per Piece (including packing)	34.98 g
Weight per Piece (excluding packing)	31.89 g
Customs tariff number	85364900
Country of origin	DE

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Technical Data

Product properties

Product type	Solid-state relay module
Product family	PLC-INTERFACE
Application	Railway applications
Operating mode	100% operating factor

Insulation characteristics

Insulation	Basic insulation
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Insulation characteristics: Air clearances and creepage distances, input/output

Insulation	Basic insulation
Overvoltage category	III
Pollution degree	2

Electrical properties

Maximum power dissipation for nominal condition	0.4 W
Test voltage (Input/output)	2.5 kV AC (Input/output)

Air clearances and creepage distances, input/output

Rated insulation voltage	160 V
Rated surge voltage	4 kV

Input data

Nominal input voltage U_N	72 V DC
Input voltage range in reference to U_N	0.7 ... 1.25 ($t < 1 \text{ s} = 0.6 \dots 1.4 \times U_N$)
Input voltage range	50.4 V DC ... 90 V DC
Switching threshold "0" signal in reference to U_N	< 0.3
Switching threshold "1" signal in reference to U_N	> 0.6
Typical input current at U_N	5.5 mA
Typical response time	400 μs
Typical turn-off time	800 μs
Operating voltage display	Yellow LED
Protective circuit	Reverse polarity protection; Series polarity protection diode Surge protection
Surge voltage protection	> 150 V
Transmission frequency	50 Hz

Output data

Contact type	1 N/O contact
Design of digital output	electronic
Output nominal voltage	110 V DC
Output voltage range	12 V DC ... 140 V DC ($t < 1 \text{ s} = 1.40 \times U_N$)
Limiting continuous current	3 A (see derating curve)

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Surge voltage protection	> 150 V
Voltage drop at max. limiting continuous current	< 150 mV
Output circuit	2-conductor, floating
Protective circuit	Reverse polarity protection; Parallel polarity protection diode Surge protection

Connection data

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section solid	0.14 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.14 mm ² ... 2.5 mm ² 0.2 mm ² ... 2.5 mm ² (Single ferrule) 2x 0.5 mm ² ... 1 mm ² (TWIN ferrule)
Conductor cross section AWG	26 ... 14

Dimensions

Width	6.2 mm
Height	80 mm
Depth	86 mm

Material specifications

Flammability rating according to UL 94	V0 (Housing)
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Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C

Approval data

CE

Certificate	CE-compliant
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UKCA

Certificate	UKCA-compliant
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Corrosive gas test

Identification	ISA-S71.04. G3 Harsh Group EN 60068-2-60
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Shipbuilding approval

Certificate	TAE0000196
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DNV GL data

Temperature	D
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Humidity	A
Vibration	B
EMC	B
Enclosure	Required protection according to the Rules shall be provided upon installation on board

EMC data

Low Voltage Directive	Conformance with Low Voltage Directive
Electromagnetic compatibility	Conformance with EMC directive

Standards and regulations

Air clearances and creepage distances, input/output

Standards/regulations	IEC 60947-5-1
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Railway standard

Standards/regulations	DIN EN 50155 (in relevant parts)
Standards/regulations	DNVGL-CG-0339

Mounting

Mounting type	DIN rail mounting
Assembly instructions	in rows with zero spacing
Mounting position	any

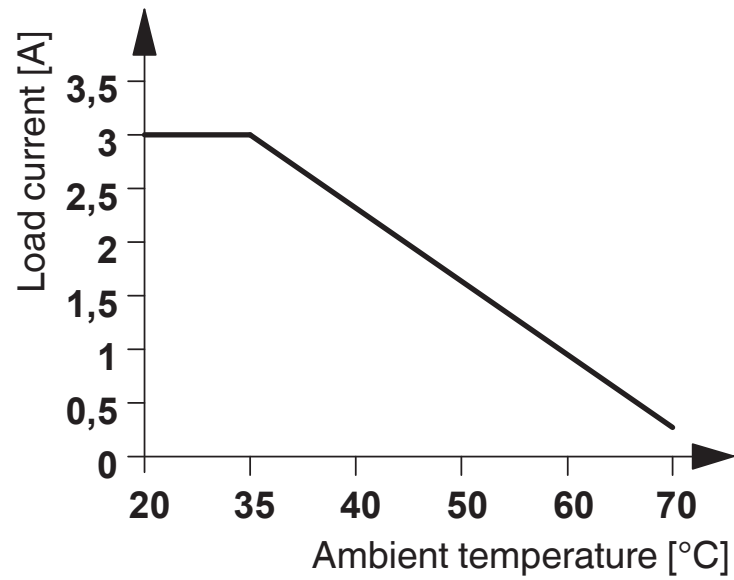
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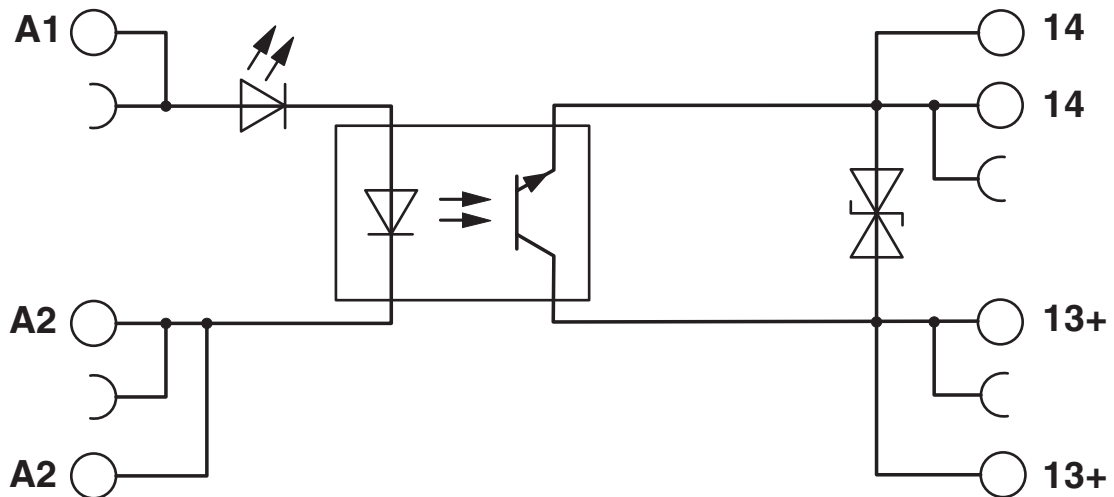
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Drawings

Diagram



Circuit diagram



PLC-OPT- 72DC/110DC/3RW - Solid-state relay module



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Approvals



cUL Recognized
Approval ID: FILE E 238705



UL Recognized
Approval ID: FILE E 238705



EAC
Approval ID: TR_TS_D_00573_c



EAC
Approval ID: RU*C-DE.*08.B.00010



UL Listed
Approval ID: FILE E 172140



cUL Listed
Approval ID: FILE E 172140

cULus Recognized

cULus Listed

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Classifications

ECLASS

ECLASS-9.0	27371604
ECLASS-10.0.1	27371604
ECLASS-11.0	27371604

ETIM

ETIM 8.0	EC001504
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UNSPSC

UNSPSC 21.0	39122300
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Environmental Product Compliance


REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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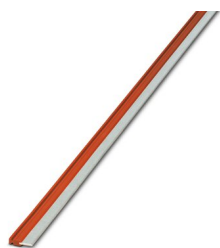
Accessories

 Note: Applying some accessories below might limit this product.


FBST 500-PLC RD - Continuous plug-in bridge

2966786

<https://www.phoenixcontact.com/us/products/2966786>



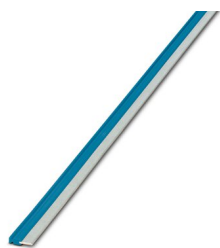
Continuous plug-in bridge, length: 500 mm, color: red

 Max. current carrying capacity: 32 A

FBST 500-PLC BU - Continuous plug-in bridge

2966692

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Continuous plug-in bridge, length: 500 mm, color: blue

 Max. current carrying capacity: 32 A

PLC-OPT- 72DC/110DC/3RW - Solid-state relay module

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FBST 500-PLC GY - Continuous plug-in bridge

2966838

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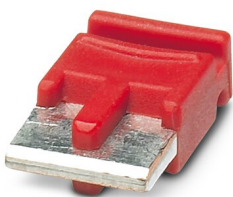
Continuous plug-in bridge, length: 500 mm, color: gray

 Max. current carrying capacity: 32 A

FBST 6-PLC RD - Single plug-in bridge

2966236

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Single plug-in bridge, number of positions: 2, length: 6 mm, color: red

 Max. current carrying capacity: 6 A

PLC-OPT- 72DC/110DC/3RW - Solid-state relay module

2900394

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FBST 6-PLC BU - Single plug-in bridge

2966812

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Single plug-in bridge, number of positions: 2, length: 6 mm, color: blue



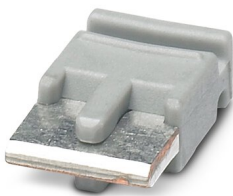
 Max. current carrying capacity: 6 A


FBST 6-PLC GY - Single plug-in bridge

2966825

<https://www.phoenixcontact.com/us/products/2966825>

Single plug-in bridge, number of positions: 2, length: 6 mm, color: gray



 Max. current carrying capacity: 6 A

PLC-OPT- 72DC/110DC/3RW - Solid-state relay module



2900394

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FBST 8-PLC GY - Single plug-in bridge

2967688

<https://www.phoenixcontact.com/us/products/2967688>

Single plug-in bridge, number of positions: 2, length: 8 mm, color: gray



 Max. current carrying capacity: 6 A

PLC-ESK GY - Power terminal block

2966508

<https://www.phoenixcontact.com/us/products/2966508>

Power terminal block, for the input of up to four potentials, for mounting on NS 35/7.5



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PLC-ATP BK - Separating plate

2966841

<https://www.phoenixcontact.com/us/products/2966841>



Separating plate, 2 mm thick, required at the start and end of a PLC terminal strip. Furthermore, it is used for: visual separation of groups, safe isolation of different voltages of neighboring PLC relays in acc. with DIN VDE 0106-101, isolation

SZF 1-0,6X3,5 - Screwdriver

1204517

<https://www.phoenixcontact.com/us/products/1204517>



Actuation tool, for ST terminal blocks, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip

PLC-OPT- 72DC/110DC/3RW - Solid-state relay module



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NS 35/ 7,5 PERF 2000MM - DIN rail perforated

0801733

<https://www.phoenixcontact.com/us/products/0801733>



DIN rail perforated, acc. to EN 60715, material: Steel, galvanized, passivated with a thick layer, Standard profile, color: silver, Pack of 25 (50 m)

NS 35/ 7,5 UNPERF 2000MM - DIN rail, unperforated

0801681

<https://www.phoenixcontact.com/us/products/0801681>



DIN rail, unperforated, acc. to EN 60715, material: Steel, galvanized, passivated with a thick layer, Standard profile, color: silver, Pack of 25 (50 m)

PLC-OPT- 72DC/110DC/3RW - Solid-state relay module



2900394

<https://www.phoenixcontact.com/us/products/2900394>

NS 35/ 7,5 WH PERF 2000MM - DIN rail perforated

1204119

<https://www.phoenixcontact.com/us/products/1204119>



DIN rail perforated, acc. to EN 60715, material: Steel, Galvanized, white passivated, Standard profile, color: silver, Pack of 25 (50 m)

NS 35/ 7,5 WH UNPERF 2000MM-VPE 10 - DIN rail, unperforated

1204122

<https://www.phoenixcontact.com/us/products/1204122>



DIN rail, unperforated, acc. to EN 60715, material: Steel, Galvanized, white passivated, Standard profile, color: silver, Pack of 10 (20 m)

PLC-OPT- 72DC/110DC/3RW - Solid-state relay module



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NS 35/ 7,5 AL UNPERF 2000MM - DIN rail, unperforated

0801704

<https://www.phoenixcontact.com/us/products/0801704>



DIN rail, unperforated, acc. to EN 60715, material: Aluminum, uncoated, Standard profile, color: silver, Pack of 25 (50 m)

NS 35/ 7,5 ZN PERF 2000MM - DIN rail perforated

1206421

<https://www.phoenixcontact.com/us/products/1206421>



DIN rail perforated, acc. to EN 60715, material: Steel, galvanized, Standard profile, color: silver, Pack of 25 (50 m)

PLC-OPT- 72DC/110DC/3RW - Solid-state relay module

2900394

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NS 35/ 7,5 ZN UNPERF 2000MM - DIN rail, unperforated

1206434

<https://www.phoenixcontact.com/us/products/1206434>



DIN rail, unperforated, acc. to EN 60715, material: Steel, galvanized, Standard profile, color: silver, Pack of 25 (50 m)

NS 35/ 7,5 CU UNPERF 2000MM-VPE 10 - DIN rail, unperforated

0801762

<https://www.phoenixcontact.com/us/products/0801762>



DIN rail, unperforated, acc. to EN 60715, material: Copper, uncoated, Standard profile, color: copper-colored, Pack of 10 (20 m)

PLC-OPT- 72DC/110DC/3RW - Solid-state relay module

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NS 35/ 7,5 CAP - End cap

1206560

<https://www.phoenixcontact.com/us/products/1206560>

DIN rail end piece, for DIN rail NS 35/7.5



NS 35/15 PERF 2000MM - DIN rail perforated

1201730

<https://www.phoenixcontact.com/us/products/1201730>

DIN rail perforated, similar to EN 60715, material: Steel, galvanized, passivated with a thick layer, Standard profile, color: silver, Pack of 25 (50 m)



PLC-OPT- 72DC/110DC/3RW - Solid-state relay module

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NS 35/15 UNPERF 2000MM - DIN rail, unperforated

1201714

<https://www.phoenixcontact.com/us/products/1201714>



DIN rail, unperforated, similar to EN 60715, material: Steel, galvanized, passivated with a thick layer, Standard profile, color: silver, Pack of 25 (50 m)

NS 35/15 WH PERF 2000MM - DIN rail perforated

0806602

<https://www.phoenixcontact.com/us/products/0806602>



DIN rail perforated, similar to EN 60715, material: Steel, Galvanized, white passivated, Standard profile, color: white, Pack of 25 (50 m)

PLC-OPT- 72DC/110DC/3RW - Solid-state relay module



2900394

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NS 35/15 WH UNPERF 2000MM-VPE 10 - DIN rail, unperforated

1204135

<https://www.phoenixcontact.com/us/products/1204135>



DIN rail, unperforated, similar to EN 60715, material: Steel, Galvanized, white passivated, Standard profile, color: silver, Pack of 10 (20 m)

NS 35/15 AL UNPERF 2000MM - DIN rail, unperforated

1201756

<https://www.phoenixcontact.com/us/products/1201756>



DIN rail, unperforated, similar to EN 60715, material: Aluminum, uncoated, Standard profile, color: silver

PLC-OPT- 72DC/110DC/3RW - Solid-state relay module

2900394

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NS 35/15 ZN PERF 2000MM - DIN rail perforated

1206599

<https://www.phoenixcontact.com/us/products/1206599>



DIN rail perforated, similar to EN 60715, material: Steel, galvanized, Standard profile, color: silver, Pack of 25 (50 m)

NS 35/15 ZN UNPERF 2000MM - DIN rail, unperforated

1206586

<https://www.phoenixcontact.com/us/products/1206586>



DIN rail, unperforated, similar to EN 60715, material: Steel, galvanized, Standard profile, color: silver, Pack of 25 (50 m)

PLC-OPT- 72DC/110DC/3RW - Solid-state relay module



2900394

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NS 35/15 CU UNPERF 2000MM-VPE 10 - DIN rail, unperforated

1201895

<https://www.phoenixcontact.com/us/products/1201895>



DIN rail, unperforated, similar to EN 60715, material: Copper, uncoated, Standard profile, color: copper-colored, Pack of 10 (20 m)

NS 35/15 CAP - End cap

1206573

<https://www.phoenixcontact.com/us/products/1206573>

DIN rail end piece, for DIN rail NS 35/15



PLC-OPT- 72DC/110DC/3RW - Solid-state relay module



2900394

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NS 35/15-2,3 UNPERF 2000MM-VPE 10 - DIN rail, unperforated

1201798

<https://www.phoenixcontact.com/us/products/1201798>



DIN rail, unperforated, acc. to EN 60715, material: Steel, galvanized, passivated with a thick layer, Standard profile 2.3 mm, color: silver, Pack of 10 (20 m)

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