

# ELR 3- 24DC/500AC- 2 - Solid-state contactor



2297196

<https://www.phoenixcontact.com/us/products/2297196>

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Three-phase solid-state contactor with 24 V DC input, 2 A output current, zero voltage switch, optionally with thermal fuse.

## Your advantages

- Optional thermal fuse
- Stable and short switching times
- Noise and wear-free switching
- Long service life
- Integrated protection circuit
- High switching frequency

## Commercial data

Item number	2297196
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	C472
Product key	DK7211
GTIN	4046356172851
Weight per piece (including packing)	420.1 g
Weight per piece (excluding packing)	420.1 g
Customs tariff number	85364190
Country of origin	DE

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## Technical data

### Product properties

Product type	Solid-state contactor
Operating mode	100% operating factor

### Electrical properties

Number of phases	3
Switching frequency	≤ 10 Hz
Test voltage (Input/output)	5 kV <sub>rms</sub> (50 Hz, 60 s)
Switching frequency	≤ 10 Hz

### Insulation characteristics

Rated insulation voltage	500 V
Rated surge voltage	6 kV
Overvoltage category	III
Degree of pollution	2
Insulation characteristics between the control input voltage to the main circuit	Basic insulation

### Input data

#### Control

Input name	Control input right/left
Rated actuating voltage $U_C$	24 V DC
Triggering voltage range	19.2 V DC ... 30 V DC
Voltage range with reference to $U_C$	0.8 ... 1.25 0.8 ... 1.25
Rated actuating current $I_C$	8.3 mA
Switching threshold	9.6 V ("0" signal) 19.2 V ("1" signal)
Protective circuit	Reverse polarity protection; Suppressor diode Surge protection
Error indication	Red LED
Status display	LED (yellow)

### Output data

#### AC output

Rated operating voltage $U_e$	500 V AC
Operating voltage range	48 V AC ... 575 V AC
Rated operating current at AC-51	2 A
Rated operating current at AC-53a	2 A
Peak offstate voltage	1200 V
Mains frequency	40 Hz ... 100 Hz

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Load current range	100 mA ... 2 A (see to derating)
Leakage current	6 mA
Residual voltage	< 1.5 V
Surge current	200 A (t = 10 ms)
Max. load value	250 A <sup>2</sup> s
Protective circuit	RCV circuit
Surge voltage protection	> 575 V AC

## Connection data

### Control circuits

Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross-section rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section AWG	24 ... 14
Tightening torque	0.5 Nm ... 0.6 Nm 5 lb <sub>f</sub> -in. ... 7 lb <sub>f</sub> -in.

### Load circuit

Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross-section rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section AWG	24 ... 14
Tightening torque	0.5 Nm ... 0.6 Nm 5 lb <sub>f</sub> -in. ... 7 lb <sub>f</sub> -in.

## Signaling

Status display	LED (yellow)
Error indication	Red LED

## Dimensions

Width	40 mm
Height	99 mm
Depth	114.5 mm

## Environmental and real-life conditions

### Ambient conditions

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

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## Approvals

### UL approval

Certificate	NMFT.E323771
	NRNT.E172140

### UL data

SCCR	5 kA (20 A RK5 (standard fault) fuse)
FLA	2 A (at 500 V, AC Resistance)
	2 A (at 500 V, AC General USE)
	2 A (at 500 V, AC Resistance Air Heating)

## Standards and regulations

### Standards/regulations

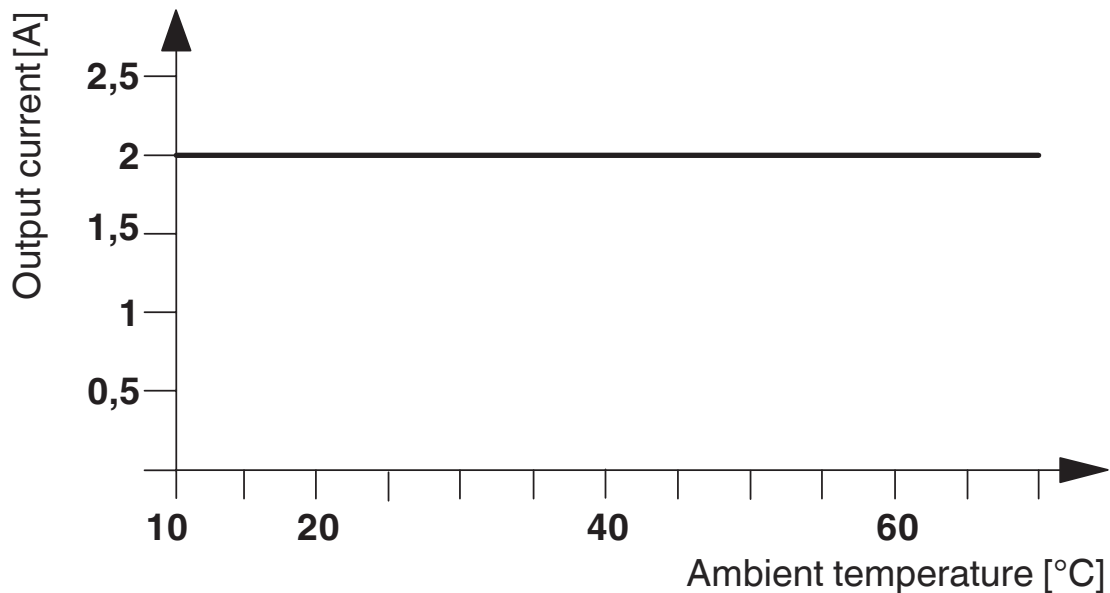
Standards/regulations	DIN EN 50178
	EN 60947

## Mounting

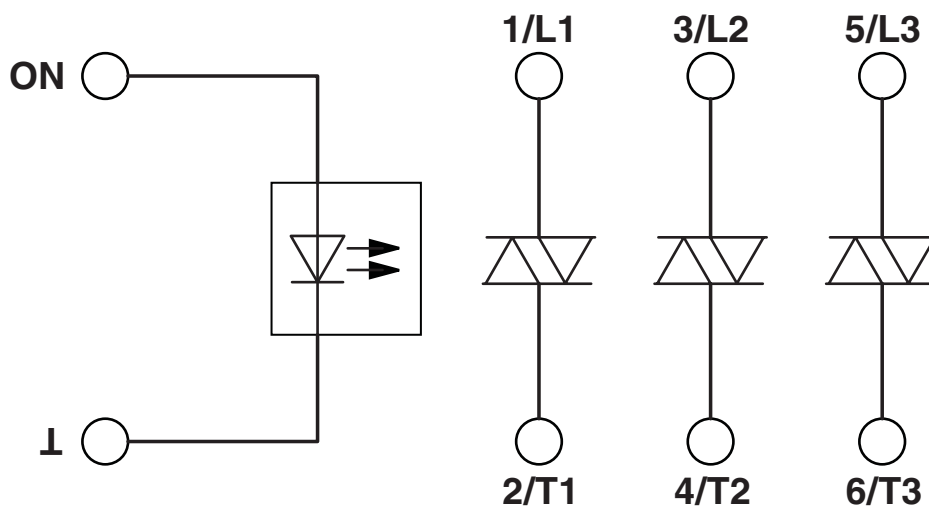
Mounting type	DIN rail mounting
Assembly note	can be aligned with spacing = 20 mm
Mounting position	Vertical (horizontal DIN rail)

## Drawings

Diagram



Block diagram



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## Classifications

### UNSPSC

UNSPSC 21.0	39122333
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

### China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

### EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)