



**THE DATASHEET OF**  
**2297031**



## Solid-state reversing contactor - ELR W3- 24DC/500AC- 2I - 2297031

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"4 in 1" three-phase semiconductor reversing contactor with 24 V DC input, 2 A output current, emergency stop function, and adjustable overload shutdown.

### Product Features

- ✓ 22.5 mm wide
- ✓ Safety level according to IEC 61508-1: SIL 3, ISO 13849: PL e
- ✓ Long service life
- ✓ Reduction in wiring
- ✓ Space saving
- ✓ 3-phase loop bridges
- ✓ Bimetal function can be set up to 9 A



### Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	275.2 g
Custom tariff number	85371099
Country of origin	Germany

### Technical data

#### Input data

Input name	Device supply
Rated control circuit supply voltage $U_S$	24 V DC
Voltage range with reference to $U_S$	0.8 ... 1.25
Rated control supply current $I_S$	40 mA
Rated actuating voltage $U_C$	24 V DC
Voltage range with reference to $U_C$	0.8 ... 1.25
Rated actuating current $I_C$	5 mA

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## Technical data

### Input data

Protective circuit	Protection against polarity reversal Parallel polarity protection diode
	Surge protection
Typical response time	< 35 ms
Typical turn-off time	< 40 ms
Operating voltage display	Green LED
Status display	Yellow LED
Indication	Red LED
Input name	Control input right/left
Switching threshold	9.6 V ("0" signal)
	19.2 V ("1" signal)

### Output data load output

Nominal output voltage	500 V AC
Nominal output voltage range	42 V AC ... 550 V AC
Load current range	180 mA ... 2.4 A (see to derating)
Rated operating current at AC-51	2.4 A
Rated operating current at AC-53a	2.4 A
Leakage current	0 mA
Residual voltage	< 0.3 V
Surge current	100 A (t = 10 ms)
Protective circuit	Surge protection

### Output data reply output

Note	Confirmation 01: Floating PDT contact
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### Measuring technology and signaling contact

Measuring via	Current transformer for line current on L1 and L3
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### Connection data, control circuit

Connection name	Control circuits
Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section solid	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

### Connection data load circuit

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## Technical data

### Connection data load circuit

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Conductor cross section AWG	24 ... 14

### General

Test voltage input/output	4 kV <sub>rms</sub>
Mounting position	Vertical (horizontal DIN rail)
Assembly instructions	Can be aligned with spacing = 20 mm
Operating mode	100% operating factor
Designation	Standards/regulations
Standards/regulations	DIN EN 50178
	EN 60947
Designation	Power station requirements
Standards/regulations	DWR 1300 / ZXX01/DD/7080.8d
Designation	Air clearances and creepage distances between the power circuits
Standards/regulations	DIN EN 50178
Insulation	safe isolation
Pollution degree	2
Overvoltage category	III
Reversing frequency	≤ 2 Hz

### Dimensions

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

### Ambient conditions

Ambient temperature (operation)	-25 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Degree of protection	IP20

### UL data

SCCR	100 kA (480 V AC (fuse: 30 A class CC/30 A class J (high fault)))
	5 kA (480 V AC (fuse: 20 A RK5 (standard fault)))

### Standards and Regulations

Designation	Standards/regulations
Standards/regulations	DIN EN 50178

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## Technical data

### Standards and Regulations

	EN 60947
Designation	Power station requirements
Standards/regulations	DWR 1300 / ZXX01/DD/7080.8d
Designation	Air clearances and creepage distances between the power circuits
Standards/regulations	DIN EN 50178
Insulation	safe isolation
Pollution degree	2
Overvoltage category	III

## Classifications

### eCl@ss

eCl@ss 4.0	27371102
eCl@ss 4.1	27371102
eCl@ss 5.0	27371601
eCl@ss 5.1	27371601
eCl@ss 6.0	27371601
eCl@ss 7.0	27371601
eCl@ss 8.0	27371014

### ETIM

ETIM 2.0	EC000066
ETIM 3.0	EC000066
ETIM 4.0	EC000066
ETIM 5.0	EC002055

### UNSPSC

UNSPSC 6.01	30211915
UNSPSC 7.0901	39121514
UNSPSC 11	39121514
UNSPSC 12.01	39121514
UNSPSC 13.2	39121514

## Approvals

### Approvals

# Solid-state reversing contactor - ELR W3- 24DC/500AC- 2I - 2297031

## Approvals

Approvals

UL Listed / cUL Listed / GL / GL-SW / IEC EE CB Scheme / GL-SW / UL Listed / cUL Listed / IEC EE CB Scheme / EAC / EAC / GL / cULus Listed

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Ex Approvals


ATEX / ATEX

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Approvals submitted

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## Approval details

UL Listed 


cUL Listed 

GL

GL-SW

IECEE CB Scheme 

GL-SW

UL Listed 

cUL Listed 

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## Approvals

IECEE CB Scheme

EAC

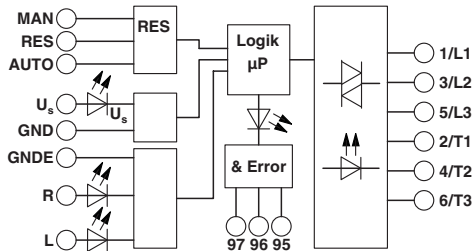
EAC

GL

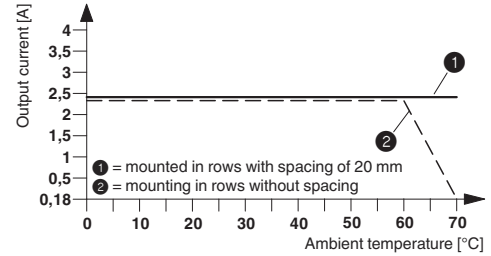
cULus Listed

## Drawings

Block diagram

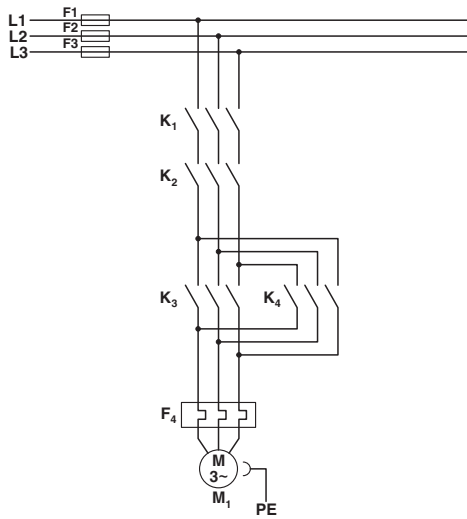


Diagram



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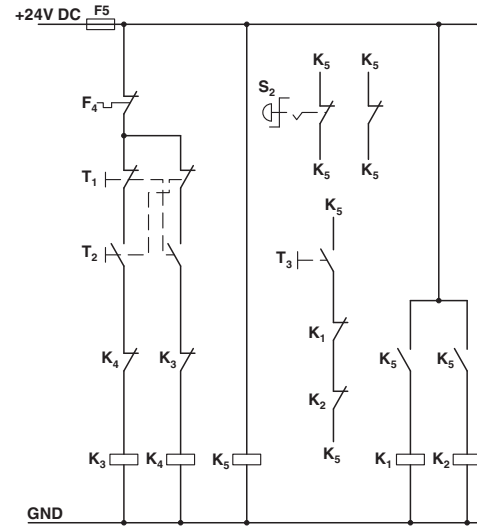
Circuit diagram



Conventional structure  
Main current path for reversing contactor according to category 3

- K1 + K2 = Emergency stop contactor
- K3 = Left contactor
- K4 = Right contactor
- F4 = Motor protection relay

Circuit diagram

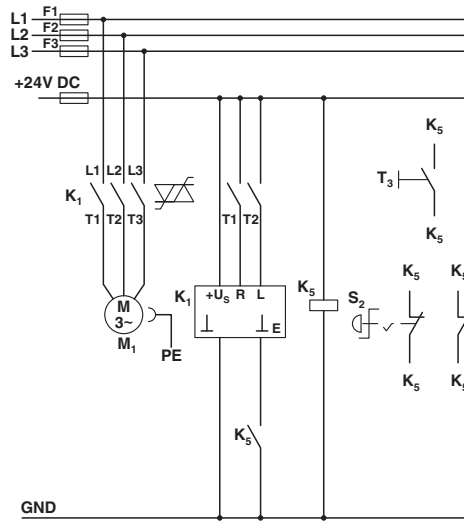


Conventional structure  
Control current path reversing contactor according to category 3

- K1 + K2 = Emergency stop contactor
- K3 = Left contactor
- K4 = Right contactor
- K5 = PSR SCP-24DC.../Safety relay
- T1 = Right, T2 = Left, T3 = Reset
- S2 = Emergency stop
- F4 = Motor protection relay

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Circuit diagram



### Structure with CONTACTRON

Main and control current path for '4 in 1' hybrid motor starter with reversing function according to category 3

K1 = '4 in 1' hybrid motor starter with reversing function


K5 = PSR SCP-24DC.../Safety relay

T1 = Right, T2 = Left, T3 = Reset

S2 = Emergency stop

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