

# ELR W3- 24DC/500AC- 2I-BR - Hybrid motor starter



2297109

<https://www.phoenixcontact.com/us/products/2297109>

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Hybrid motor starter for reversing 3~ AC motors up to 550 V AC, with 24 V DC input, 2.4 A output current, adjustable overload shutdown, and limited phase failure detection

## Your advantages

- 22.5 mm wide
- Reduction in wiring
- Long service life
- Space saving
- 3-phase loop bridges
- Adjustable current for bimetal function
- Low-wear switching

## Commercial data

Item number	2297109
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C470
Product key	DK7422
GTIN	4046356428347
Weight per piece (including packing)	301.6 g
Weight per piece (excluding packing)	300 g
Customs tariff number	85371098
Country of origin	DE

## Technical data

### Product properties

Product type	Hybrid motor starters
Product family	CONTACTRON
Operating mode	100% operating factor

### Electrical properties

Number of phases	3
Motor starter type	Reversing starter
Switching frequency	≤ 2 Hz (Load-dependent)
Switching frequency	≤ 2 Hz (Load-dependent)
Maximum power dissipation	3.3 W
Minimum power dissipation	1.1 W

### Supply

Rated control circuit supply voltage $U_S$	24 V DC
Control supply voltage range	19.2 V DC ... 30 V DC
Rated control supply current $I_S$	40 mA
Protective circuit	Surge protection
	Reverse polarity protection

### 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 and control supply voltage, and auxiliary circuit to the main circuit	Safe isolation (IEC 60947-1) at operating voltage ≤ 300 V AC
	Basic insulation (IEC 60947-1) at operating voltage 300 V AC ... 500 V AC
	Safe isolation (IEC 60947-1) in the auxiliary circuit ≤ 300 V AC

### 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
Rated actuating current $I_C$	5 mA (Input type 1)
Switching threshold	9.6 V ("0" signal)
	19.2 V ("1" signal)
Typical response time	< 35 ms
Typical turn-off time	< 40 ms
Protective circuit	Reverse polarity protection

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## Output data

### AC output

Rated operating voltage $U_e$	500 V AC
Operating voltage range	42 V AC ... 550 V AC
Rated operating current $I_e$	2.4 A (AC-51) 2.4 A (AC-53a)
Mains frequency	50/60 Hz
Load current range	180 mA ... 2.4 A (see to derating)
Trigger characteristic in acc. with IEC 60947-4-2	Class 10A
Cooling time	20 min (for auto reset)
Leakage current	0 mA
Protective circuit	Surge protection

### Acknowledge output

Note	Confirmation 01: floating changeover contact
Contact switching type	1 changeover contact
Switching capacity in accordance with IEC 60947-5-1	3 A (230 V, AC15) 2 A (24 V (DC13))

## 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)
Operating voltage display	Green LED

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Error indication	Red LED
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## Dimensions

Width	22.5 mm
Height	107 mm
Depth	114 mm

## Material specifications

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

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 70 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m

## Standards and regulations

### Standards/regulations

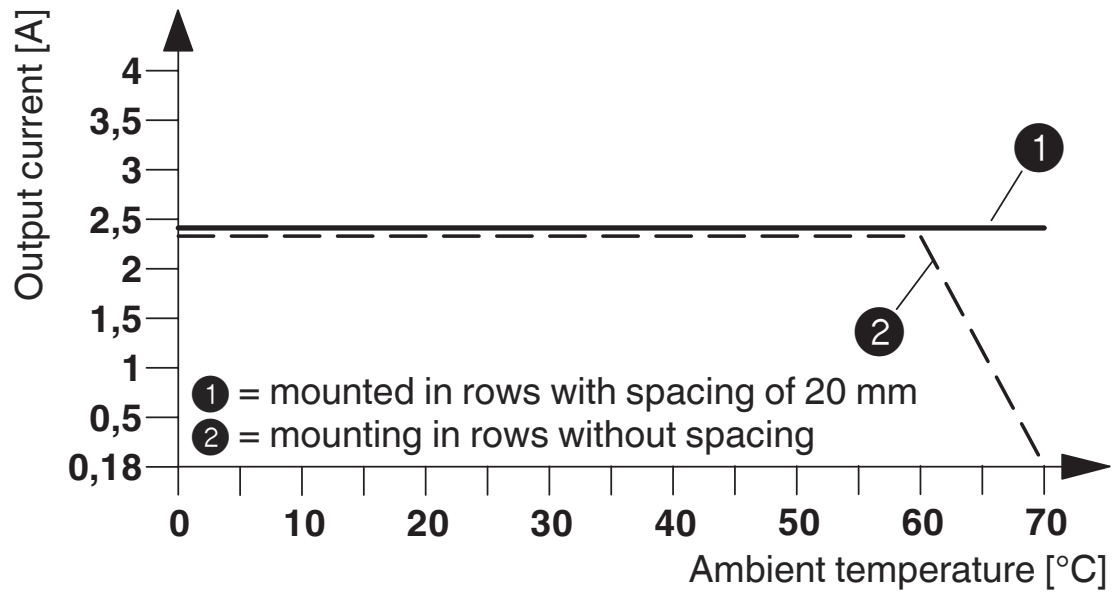
Standards/regulations	IEC 60947-1
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## Mounting

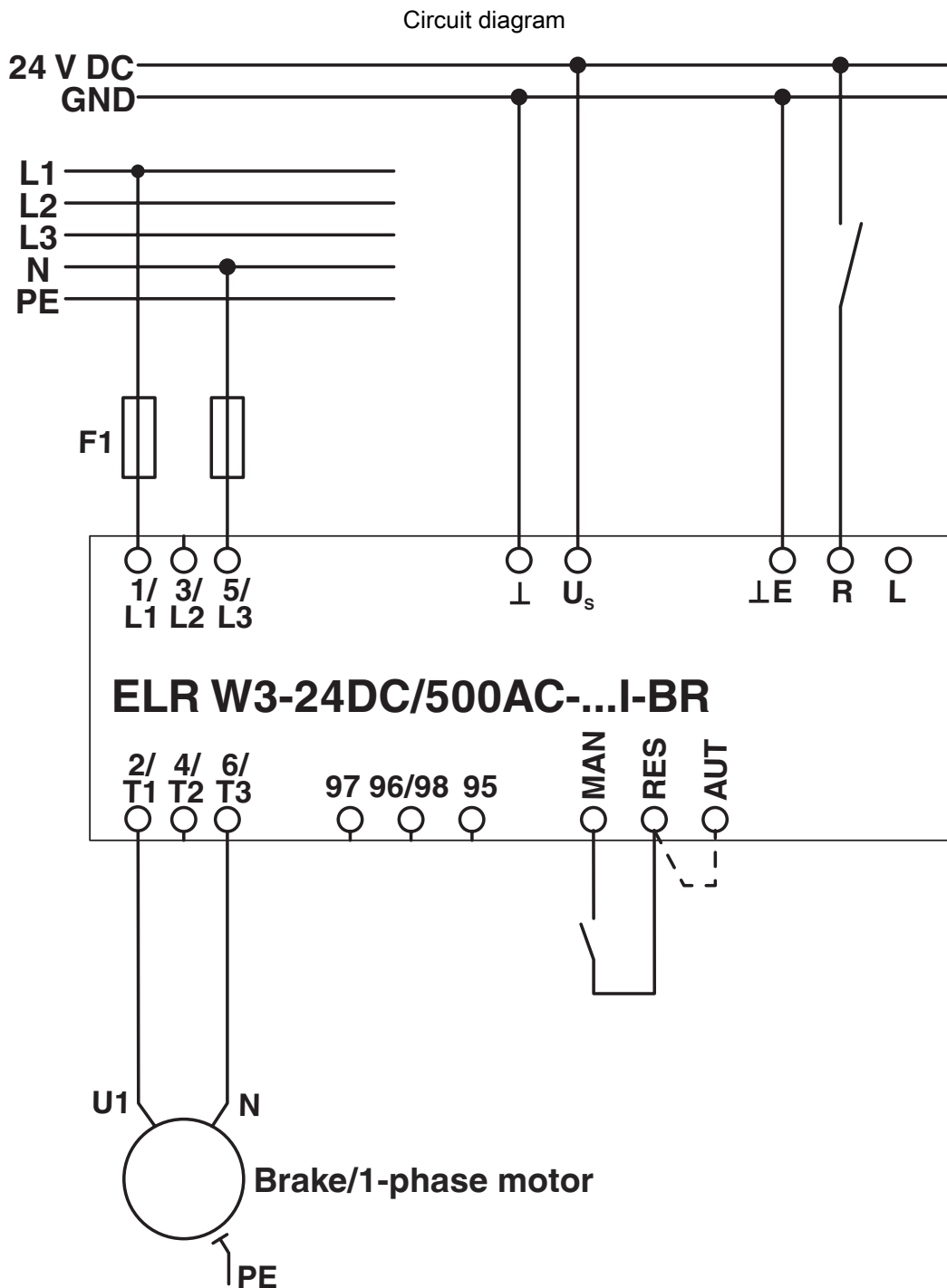
Mounting type	DIN rail mounting
Assembly note	can be aligned with spacing: see derating
Mounting position	Vertical (horizontal DIN rail)

## Drawings

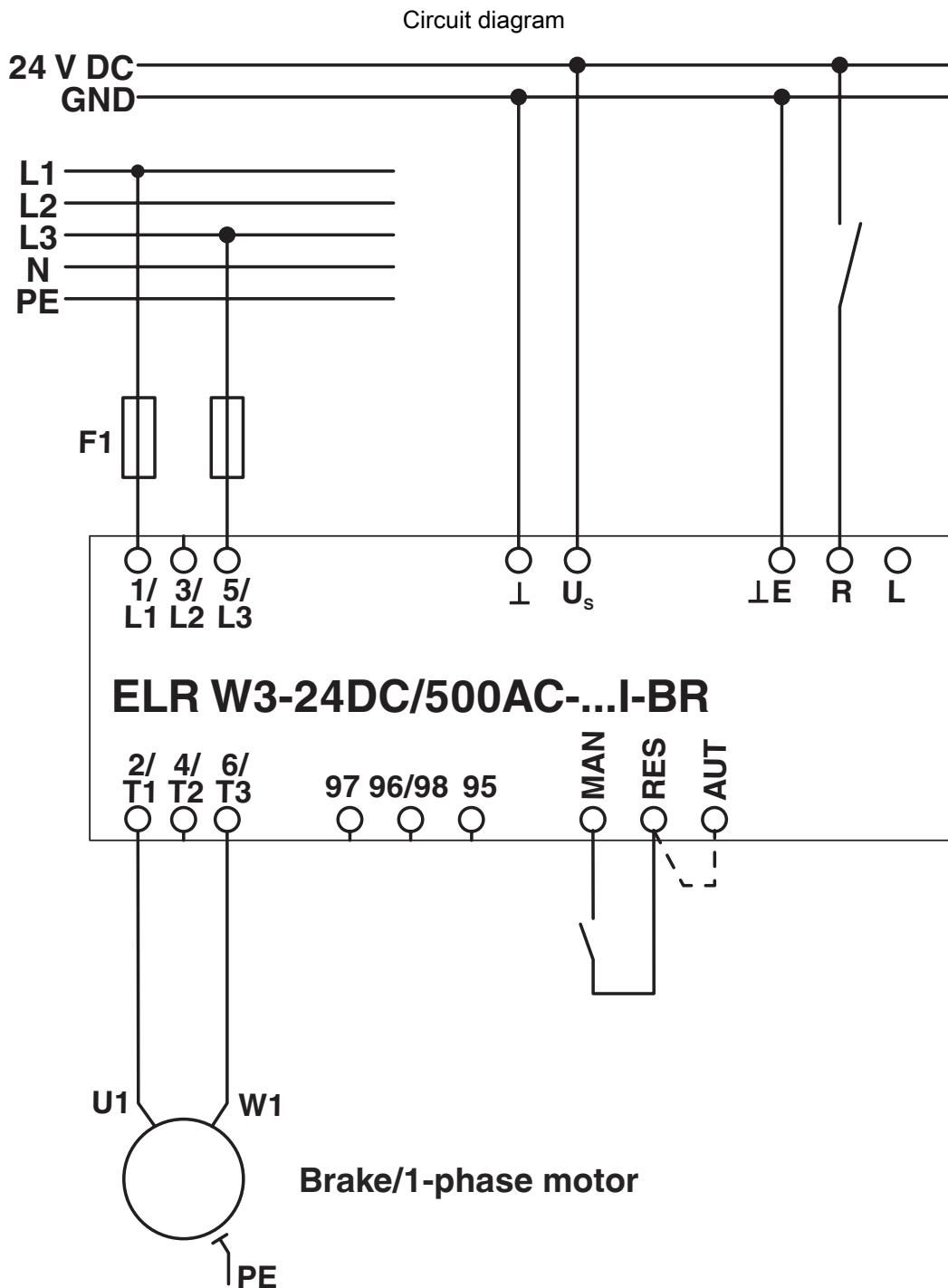
Diagram



Derating diagram



Example circuit for the connection of a brake or a 1-phase motor (L1 + N)



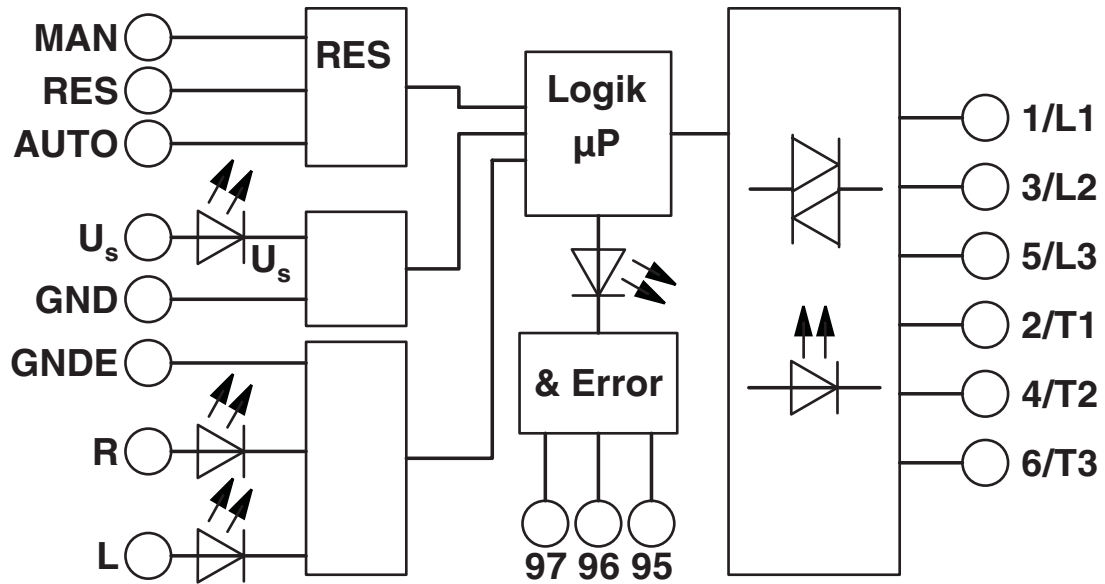
Example circuit for the connection of a brake or a 1-phase motor (L1 + L3)

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Block diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2297109>



**EAC**

Approval ID: RU\*C-DE.\*08.B.00520\*



**CCC**

Approval ID: 2016010304871315

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## Classifications

### ECLASS

ECLASS-13.0	27370905
ECLASS-15.0	27370905

### ETIM

ETIM 10.0	EC001037
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### UNSPSC

UNSPSC 21.0	25173900
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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.)	1-Methyl-2-pyrrolidone (NMP)(CAS: 872-50-4)
	Lead(CAS: 7439-92-1)
	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol(CAS: 79-94-7)
SCIP	691b943a-eeec-4213-a48f-3ca24220efc4

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