# ELR W3- 24DC/500AC- 9I-BR - Hybrid motor starter

2900795

https://www.phoenixcontact.com/us/products/2900795

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Hybrid motor starter for reversing 3~ AC motors up to 550 V AC, with 24 V DC input, 9 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 | 2900795 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | C470 |
| Product key | DK7424 |
| GTIN | 4046356550826 |
| Weight per piece (including packing) | 298.7 g |
| Weight per piece (excluding packing) | 217.18 g |
| Customs tariff number | 85371098 |
| Country of origin | DE |

# Technical data

## Product properties

| | |
|---|---|
| Product type | Hybrid motor starters |
| Product family | CONTACTRON |

## 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 | 14.6 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 |

## Output data

AC output

| | |
|---|---|
| Rated operating voltage $U_e$ | 500 V AC |
| Operating voltage range | 42 V AC ... 550 V AC |
| Rated operating current $I_e$ | 9 A (AC-51) |
| | 6.5 A (AC-53a) |
| Mains frequency | 50/60 Hz |
| Load current range | 1.5 A ... 9 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 mm² ... 2.5 mm² |
| Conductor cross-section flexible | 0.2 mm² ... 2.5 mm² |
| Conductor cross-section AWG | 24 ... 14 |
| Tightening torque | 0.5 Nm ... 0.6 Nm |
| | 5 $lb_f$-in. ... 7 $lb_f$-in. |

Load circuit

| | |
|---|---|
| Connection method | Screw connection |
| Stripping length | 8 mm |
| Screw thread | M3 |
| Conductor cross-section rigid | 0.2 mm² ... 2.5 mm² |
| Conductor cross-section flexible | 0.2 mm² ... 2.5 mm² |
| Conductor cross-section AWG | 24 ... 14 |
| Tightening torque | 0.5 Nm ... 0.6 Nm |
| | 5 $lb_f$-in. ... 7 $lb_f$-in. |

## Signaling

| | |
|---|---|
| Status display | LED (yellow) |
| Operating voltage display | Green LED |
| Error indication | Red LED |

## Dimensions

| | |
|---|---|
| Width | 22.5 mm |
| Height | 107 mm |
| Depth | 114 mm |

## Material specifications

| | |
|---|---|
| Flammability rating according to UL 94 (Housing) | V0 (Housing) |

## Environmental and real-life conditions

### Ambient conditions

| | |
|---|---|
| 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

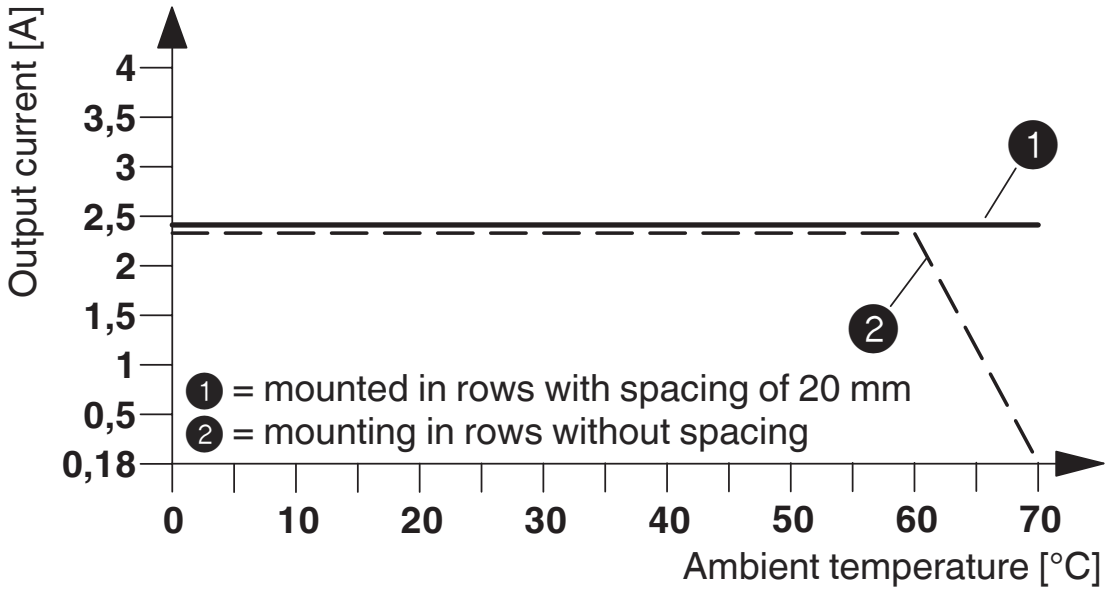
| | |
|---|---|
| Standards/regulations | IEC 60947-1 |

## Mounting

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

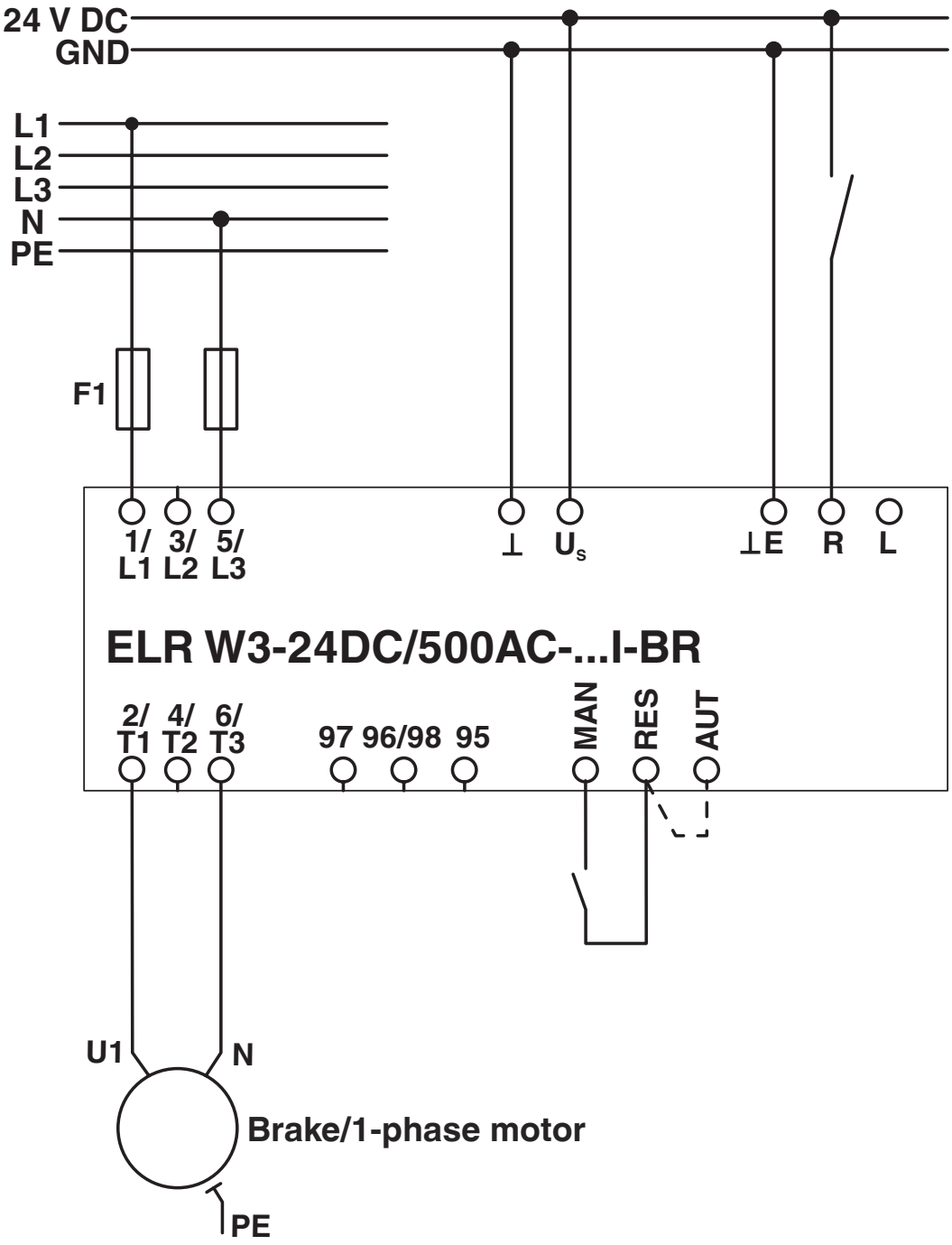
## Drawings

Diagram



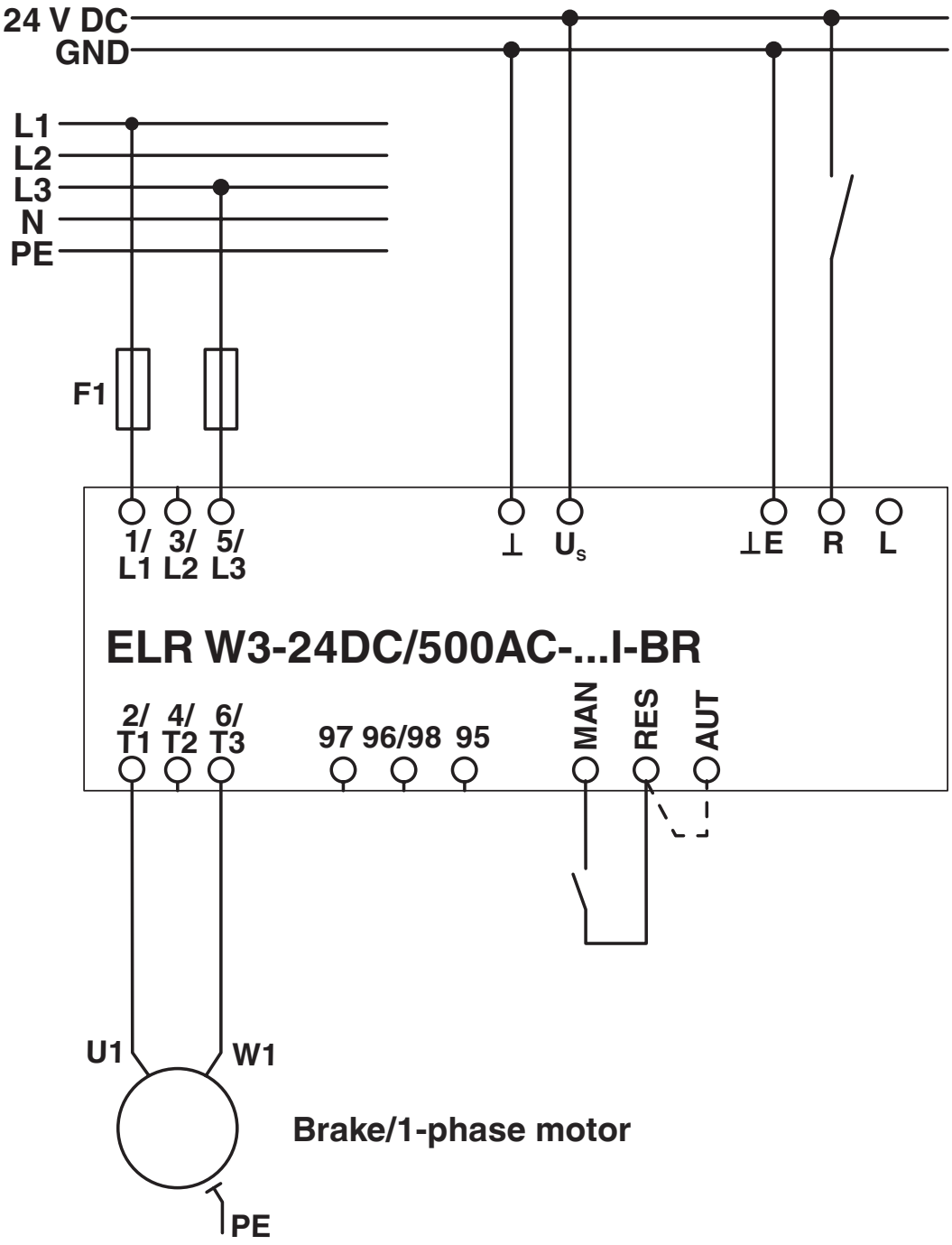

Derating diagram

Circuit diagram



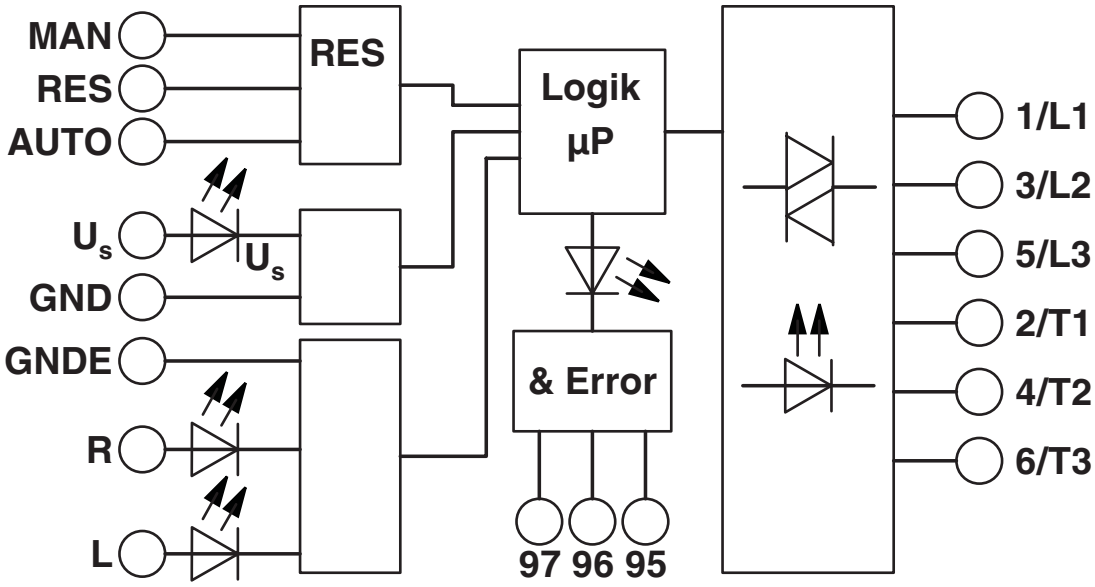

Example circuit for the connection of a brake or a 1-phase motor (L1 + N)

Circuit diagram




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

Block diagram



## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2900795

**CCC**
Approval ID: 2016010304871315

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-13.0 | 27370905 |
| ECLASS-15.0 | 27370905 |

### ETIM

| | |
|---|---|
| ETIM 10.0 | EC001037 |

### UNSPSC

| | |
|---|---|
| UNSPSC 21.0 | 25173900 |

## Environmental product compliance

EU RoHS

| | |
|---|---|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 7(a), 7(a)-I, 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) |
| SCIP | 59e6d6d1-9a55-4218-8f91-5a13ed897fb3 |


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