

# Hybrid motor starter - ELR H3-I-SC- 24DC/500AC-2



2900543

<https://www.phoenixcontact.com/pc/products/2900543>

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Hybrid motor starter for starting 3~ AC motors up to 500 V AC and 2.4 A output current, with 24 V DC control voltage, adjustable overload shutdown, and screw connection.

## Your advantages

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

## Commercial Data

|                                      |                    |
|--------------------------------------|--------------------|
| Item number                          | 2900543            |
| Packing unit                         | 1 pc               |
| Minimum order quantity               | 1 pc               |
| Product Key                          | CK7421             |
| Catalog Page                         | Page 35 (C-5-2019) |
| GTIN                                 | 4046356527682      |
| Weight per Piece (including packing) | 282.5 g            |
| Weight per Piece (excluding packing) | 217.18 g           |
| Customs tariff number                | 85371098           |
| Country of origin                    | DE                 |

# Hybrid motor starter - ELR H3-I-SC- 24DC/500AC-2



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## Technical Data

### Product properties

|                |                       |
|----------------|-----------------------|
| Product type   | Hybrid motor starter  |
| Operating mode | 100% operating factor |

### Electrical properties

|   |                         |
|---|-------------------------|
| Number of phases                                | 3                       |
| Motor starter type                              | Direct starter          |
| Maximum power dissipation for nominal condition | 2.2 W                   |
| Switching frequency                             | ≤ 2 Hz (Load-dependent) |
| Maximum power dissipation                       | 3.3 W                   |
| Minimum power dissipation                       | 1.1 W                   |
| Coordination type                               | 1                       |

### 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<br>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 (e. g., 230/400 V AC, 277/480 V AC)<br>Basic insulation (IEC 60947-1) at operating voltage 300 V AC ... 500 V AC |
| Isolation characteristics between the control input and control supply voltage to auxiliary circuit                        | Safe isolation (IEC 60947-1) in the auxiliary circuit ≤ 300 V AC  |

### Input data

#### Control

|                               |   |
|-------------------------------|---|
| Input name                    | Control input                             |
| 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)<br>19.2 V ("1" signal) |
| Typical turn-off time         | < 30 ms                                   |
| Protective circuit            | Reverse polarity protection               |

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2900543

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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)<br>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: floating change-over contact, signal contact |
| Contact type                                  | 1 changeover contact                                       |
| Switching capacity according to IEC 60947-5-1 | 3 A (230 V, AC15)<br>2 A (24 V, DC13)                      |

## Connection data

### 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  |
| Tightening torque                | 0.5 Nm ... 0.6 Nm<br>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 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  |
| Tightening torque                | 0.5 Nm ... 0.6 Nm<br>5 lb <sub>F</sub> -in. ... 7 lb <sub>F</sub> -in. |

## LED signaling

|                           |            |
|---------------------------|------------|
| Status display            | Yellow LED |
| Operating voltage display | Green LED  |

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|                  |         |
|------------------|---------|
| Error indication | Red LED |
|------------------|---------|

## Dimensions

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

## Material specifications

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

## 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                            |

## Approval data

### UKCA

|             |                |
|-------------|----------------|
| Certificate | UKCA-compliant |
|-------------|----------------|

### UL approval

|             |              |
|-------------|--------------|
| Certificate | NLDX.E228652 |
|-------------|--------------|

### UL data

|                    |  |
|--------------------|--|
| SCCR               | 100 kA (500 V AC (fuse: 30 A class CC/30 A class J (high fault)))      |
|                    | 5 kA (500 V AC (fuse: 20 A RK5 (standard fault)))                      |
| FLA                | 2.4 A (500 V AC)   |
| Group installation | 20 A (class RK5, SCCR 5kA, #24 - 14 AWG max. solid and stranded)       |
|                    | 30 A (class CC or J, SCCR 100kA, #24 - 14 AWG max, solid and stranded) |
| Category code      | NLDX / NRNT  |

## Standards and regulations

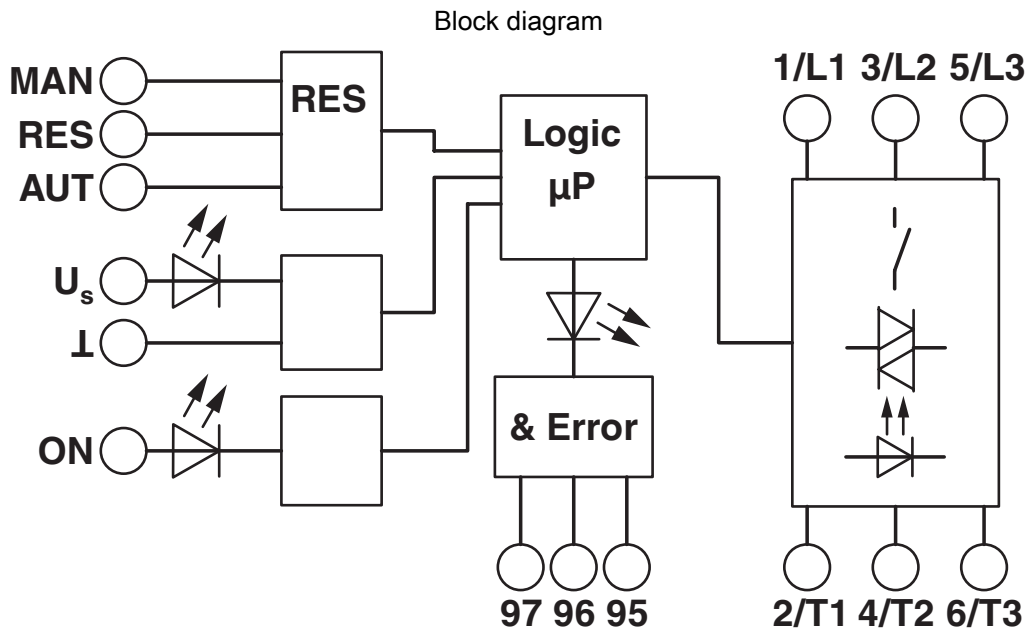
### Standards/regulations

|                       |               |
|-----------------------|---------------|
| Standards/regulations | IEC 60947-1   |
|                       | IEC 60947-4-2 |
|                       | IEC 61508     |
|                       | ISO 13849     |

## Mounting

|                       |  |
|-----------------------|--|
| Mounting type         | DIN rail mounting                                  |
| Assembly instructions | alignable, for spacing see derating                |
| Mounting position     | vertical (horizontal DIN rail, motor output below) |

## Drawings

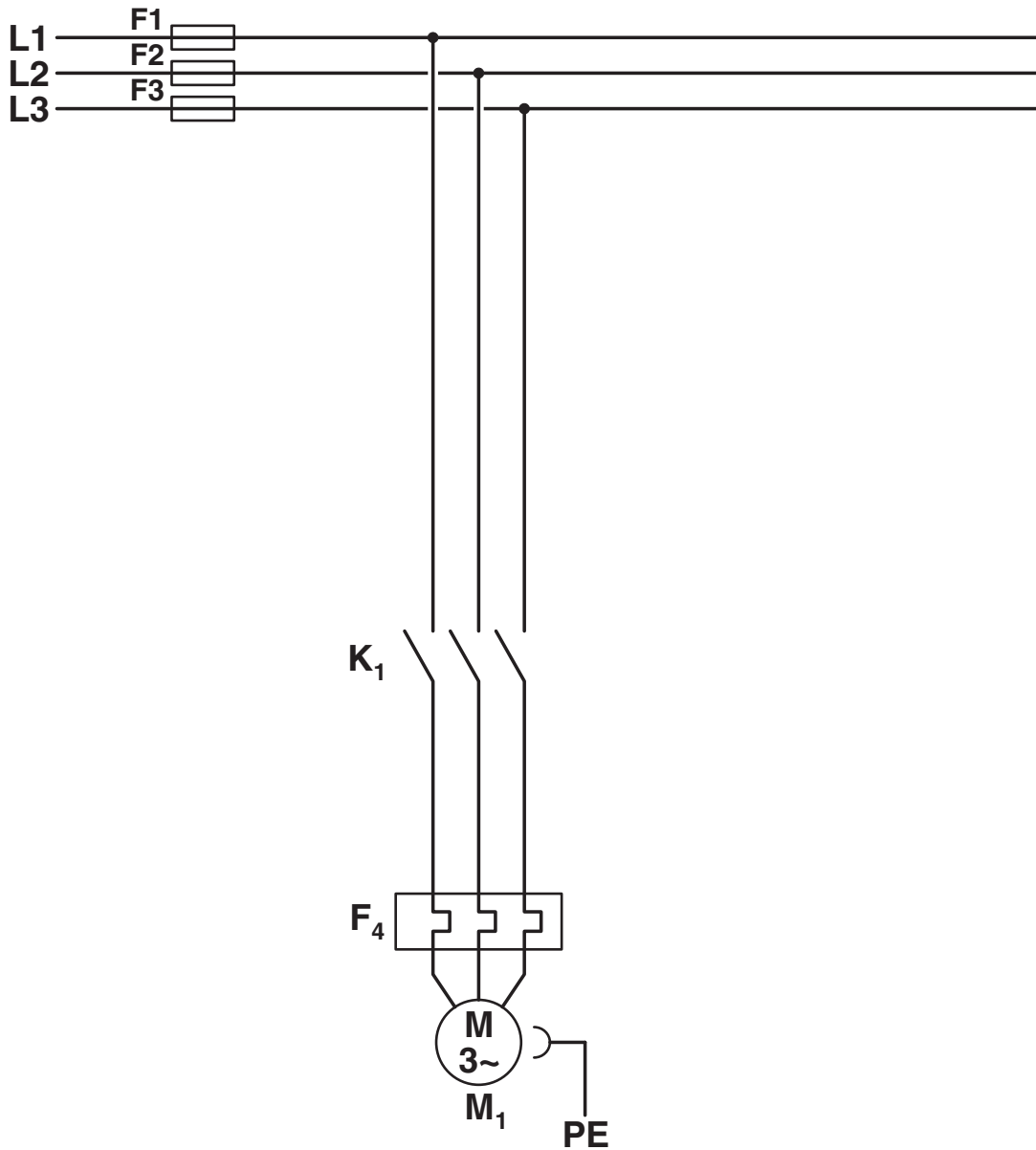


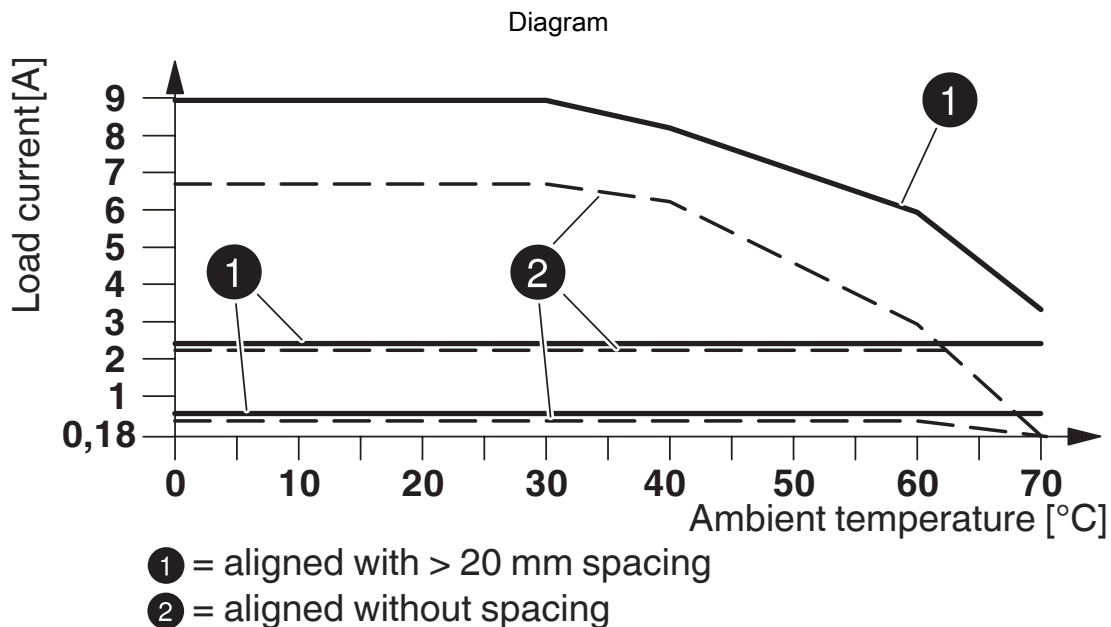
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Circuit diagram





Derating diagram

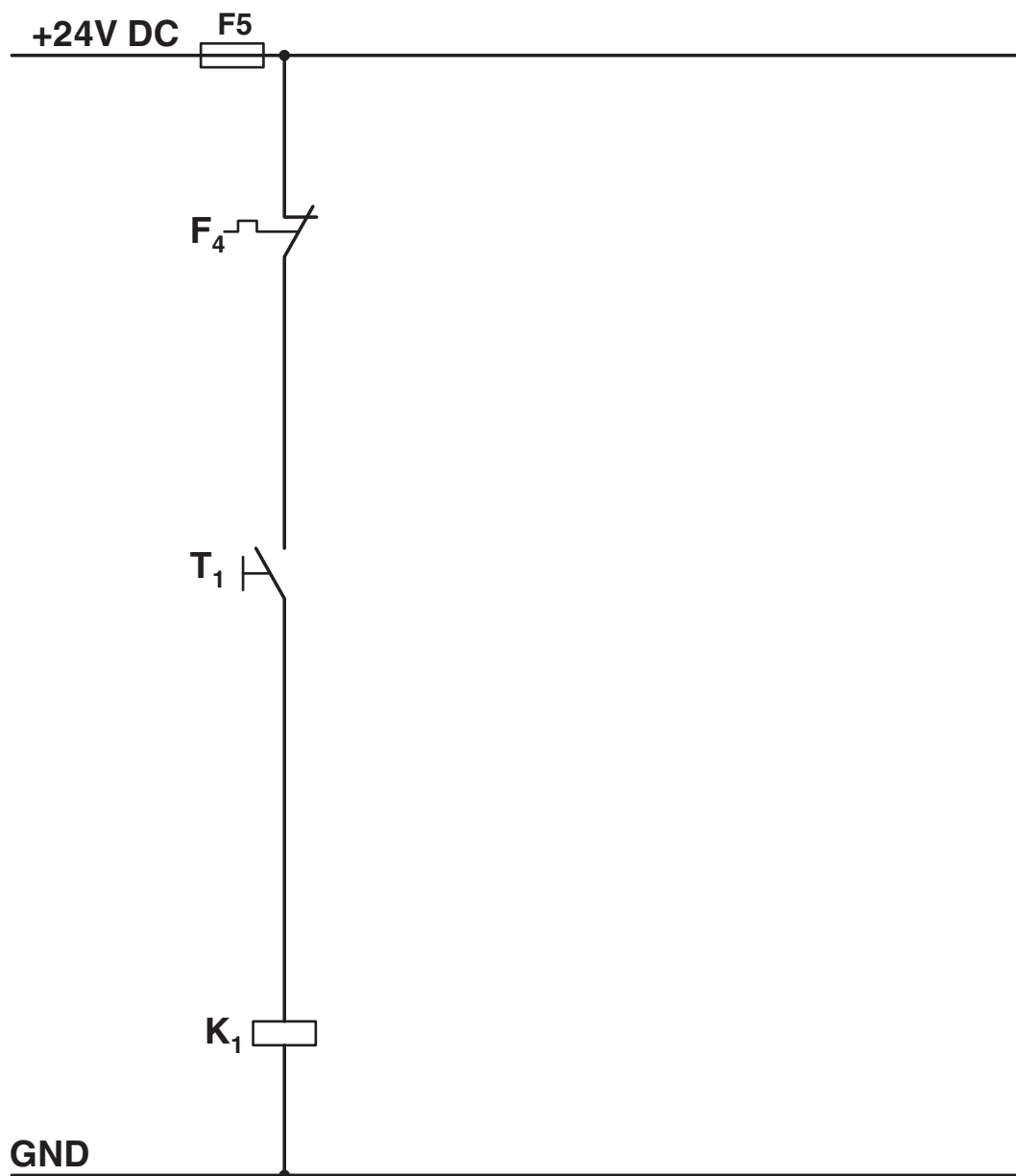
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Circuit diagram



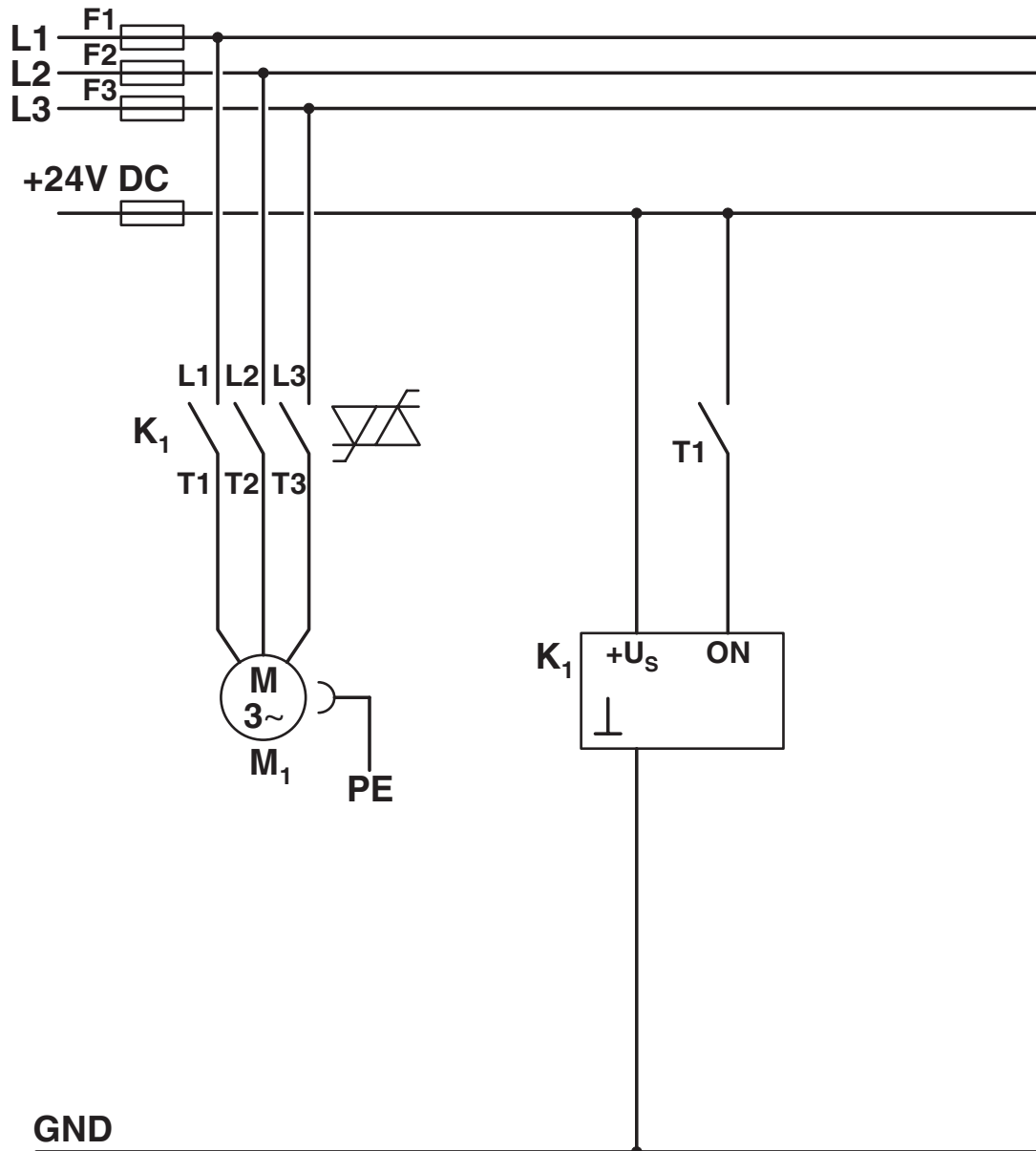


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Circuit diagram



# Hybrid motor starter - ELR H3-I-SC- 24DC/500AC-2



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## Approvals



**IECEE CB Scheme**

Approval ID: DE1-55728



**EAC**

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



**UL Listed**

Approval ID: FILE E 323771



**CCC**

Approval ID: 2016010304871315



**cUL Listed**

Approval ID: FILE E 323771



**cUL Listed**

Approval ID: FILE E 228652



**UL Listed**

Approval ID: FILE E 228652

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## Classifications

### ECLASS

|               |          |
|---------------|----------|
| ECLASS-9.0    | 27370905 |
| ECLASS-10.0.1 | 27370905 |
| ECLASS-11.0   | 27370905 |

### ETIM

|          |          |
|----------|----------|
| ETIM 8.0 | EC001037 |
|----------|----------|

### UNSPSC

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

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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" |

# Hybrid motor starter - ELR H3-I-SC- 24DC/500AC-2



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## Accessories

### Plastic label

Plastic label - US-EMLP (15X5) - 0828790

<https://www.phoenixcontact.com/pc/products/0828790>



Plastic label, Card, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189

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### Plastic label

Plastic label - UC-EMLP (15X5) - 0819301

<https://www.phoenixcontact.com/pc/products/0819301>



Plastic label, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 10

# Hybrid motor starter - ELR H3-I-SC- 24DC/500AC-2



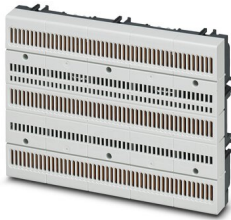
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<https://www.phoenixcontact.com/pc/products/2900543>

## Power distribution board

Power distribution board - EM-CPS-225 - 1002634

<https://www.phoenixcontact.com/pc/products/1002634>



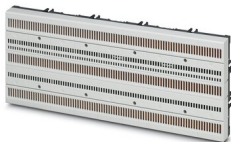
Modular power distribution board with CrossLink® interface, 125 A, 3-pos., touch-proof and protection against polarity reversal, width: 225 mm

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## Power distribution board

Power distribution board - EM-CPS-405 - 1002635

<https://www.phoenixcontact.com/pc/products/1002635>



Modular power distribution board with CrossLink® interface, 125 A, 3-pos., touch-proof and protection against polarity reversal, width: 405 mm

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## Connection module

Connection module - EM-CPS-TB3/63A - 1002633

<https://www.phoenixcontact.com/pc/products/1002633>



Connection module with integrated spring-loaded terminals for cables from 1.5 to 16 mm<sup>2</sup>, 3-pos., maximum 63 A

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## Adapter

Adapter - EM-CPS-DA-22,5F/16A - 1002668

<https://www.phoenixcontact.com/pc/products/1002668>



Device adapter with fuse holder for 16 A fuse (10x38/Class CC), CrossLink<sup>®</sup> interface and fixed DIN rail

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## Bridge

Bridge - BRIDGE- 2 - 2900746

<https://www.phoenixcontact.com/pc/products/2900746>

3-phase loop bridge for CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.



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## Bridge

Bridge - BRIDGE- 3 - 2900747

<https://www.phoenixcontact.com/pc/products/2900747>

3-phase loop bridge for 3 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.





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## Bridge

Bridge - BRIDGE- 4 - 2900748

<https://www.phoenixcontact.com/pc/products/2900748>

3-phase loop bridge for 4 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.



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## Bridge

Bridge - BRIDGE- 5 - 2900749

<https://www.phoenixcontact.com/pc/products/2900749>

3-phase loop bridge for 5 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.



# Hybrid motor starter - ELR H3-I-SC- 24DC/500AC-2



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## Bridge

Bridge - BRIDGE- 6 - 2900750

<https://www.phoenixcontact.com/pc/products/2900750>

3-phase loop bridge for 6 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.



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## Bridge

Bridge - BRIDGE- 7 - 2900751

<https://www.phoenixcontact.com/pc/products/2900751>

3-phase loop bridge for 7 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.



# Hybrid motor starter - ELR H3-I-SC- 24DC/500AC-2



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<https://www.phoenixcontact.com/pc/products/2900543>

## Bridge

Bridge - BRIDGE- 8 - 2900752

<https://www.phoenixcontact.com/pc/products/2900752>

3-phase loop bridge for 8 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.



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## Bridge

Bridge - BRIDGE- 9 - 2900753

<https://www.phoenixcontact.com/pc/products/2900753>

3-phase loop bridge for 9 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.



# Hybrid motor starter - ELR H3-I-SC- 24DC/500AC-2



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## Bridge

Bridge - BRIDGE-10 - 2900754

<https://www.phoenixcontact.com/pc/products/2900754>

3-phase loop bridge for 10 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.



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## Bridge

Bridge - BRIDGE- 2-1M - 2901542

<https://www.phoenixcontact.com/pc/products/2901542>

3-phase loop bridge for 2 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 1 m



# Hybrid motor starter - ELR H3-I-SC- 24DC/500AC-2



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<https://www.phoenixcontact.com/pc/products/2900543>

## Bridge

Bridge - BRIDGE- 3-1M - 2901655

<https://www.phoenixcontact.com/pc/products/2901655>

3-phase loop bridge for 3 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 1 m



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## Bridge

Bridge - BRIDGE- 4-1M - 2901658

<https://www.phoenixcontact.com/pc/products/2901658>

3-phase loop bridge for 4 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 1 m



# Hybrid motor starter - ELR H3-I-SC- 24DC/500AC-2



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<https://www.phoenixcontact.com/pc/products/2900543>

## Bridge

Bridge - BRIDGE- 5-1M - 2901544

<https://www.phoenixcontact.com/pc/products/2901544>

3-phase loop bridge for 5 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 1 m



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## Bridge

Bridge - BRIDGE- 6-1M - 2901649

<https://www.phoenixcontact.com/pc/products/2901649>

3-phase loop bridge for 6 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 1 m



# Hybrid motor starter - ELR H3-I-SC- 24DC/500AC-2



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<https://www.phoenixcontact.com/pc/products/2900543>

## Bridge

Bridge - BRIDGE- 2-3M - 2901543

<https://www.phoenixcontact.com/pc/products/2901543>

3-phase loop bridge for 2 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m



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## Bridge

Bridge - BRIDGE- 3-3M - 2901656

<https://www.phoenixcontact.com/pc/products/2901656>

3-phase loop bridge for 3 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m



# Hybrid motor starter - ELR H3-I-SC- 24DC/500AC-2



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## Bridge

Bridge - BRIDGE- 4-3M - 2901659

<https://www.phoenixcontact.com/pc/products/2901659>

3-phase loop bridge for 4 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m



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## Bridge

Bridge - BRIDGE- 5-3M - 2901545

<https://www.phoenixcontact.com/pc/products/2901545>

3-phase loop bridge for 5 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m





# Hybrid motor starter - ELR H3-I-SC- 24DC/500AC-2



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## Bridge

Bridge - BRIDGE- 6-3M - 2901697

<https://www.phoenixcontact.com/pc/products/2901697>

3-phase loop bridge for 6 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m



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## Bridge

Bridge - BRIDGE- 7-3M - 2901698

<https://www.phoenixcontact.com/pc/products/2901698>

3-phase loop bridge for 7 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m



# Hybrid motor starter - ELR H3-I-SC- 24DC/500AC-2



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## Bridge

Bridge - BRIDGE- 8-3M - 2901700

<https://www.phoenixcontact.com/pc/products/2901700>

3-phase loop bridge for 8 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m



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## Bridge

Bridge - BRIDGE- 9-3M - 2901701

<https://www.phoenixcontact.com/pc/products/2901701>

3-phase loop bridge for 9 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m



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## Bridge

Bridge - BRIDGE-10-3M - 2901702

<https://www.phoenixcontact.com/pc/products/2901702>

3-phase loop bridge for 10 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m



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## Bridge

Bridge - BRIDGE- 2- 2M/0,3M - 2909897

<https://www.phoenixcontact.com/pc/products/2909897>

3-phase loop bridge for 2 CONTACTRON modules, with screw connection and 22.5 mm housing width, cable length between the modules: 0.3 m, connecting cable: 2 m



# Hybrid motor starter - ELR H3-I-SC- 24DC/500AC-2



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## Bridge

Bridge - BRIDGE- 3- 2M/0,3M - 2909898

<https://www.phoenixcontact.com/pc/products/2909898>



3-phase loop bridge for 3 CONTACTRON modules, with screw connection and 22.5 mm housing width, cable length between the modules: 0.3 m, connecting cable: 2 m

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## Bridge

Bridge - BRIDGE- 4- 2M/0,3M - 2909899

<https://www.phoenixcontact.com/pc/products/2909899>



3-phase loop bridge for 4 CONTACTRON modules, with screw connection and 22.5 mm housing width, cable length between the modules: 0.3 m, connecting cable: 2 m

# Hybrid motor starter - ELR H3-I-SC- 24DC/500AC-2



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## Covering hood

Covering hood - BRIDGE COVER - 2906240

<https://www.phoenixcontact.com/pc/products/2906240>

The BRIDGE COVER covering hood is used to cover unused plugs on the CONTACTRON bridge that may subsequently be used to extend the system. The hood can be used with the screw and Push-in version of the bridge.



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