

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



2900552

<https://www.phoenixcontact.com/us/products/2900552>

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Hybrid motor starter for starting 3~ AC motors up to 550 V AC, with 24 V DC input, 2.4 A output current, and emergency stop function.

The figure shows the 9 A version

Your advantages

- 22.5 mm wide
- Low-wear switching
- Safety level in accordance with IEC 61508-1: SIL 3, ISO 13849: PL e
- Long service life
- Reduction in wiring up to 9 A
- Space saving
- 3-phase loop bridges

Commercial data

| | |
|--------------------------------------|--------------------------------|
| Item number | 2900552 |
| Packing unit | 1 pc |
| Note | Made to order (non-returnable) |
| Sales key | NULL |
| Product key | DK7411 |
| GTIN | 4046356527743 |
| Weight per piece (including packing) | 291.9 g |
| Weight per piece (excluding packing) | 204.8 g |
| Customs tariff number | 85371099 |
| Country of origin | DE |

Technical data

Product properties

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

Insulation characteristics: Air clearances and creepage distances between the power circuits

| | |
|----------------------|----------------|
| Insulation | safe isolation |
| Overvoltage category | III |
| Degree of pollution | 2 |

Electrical properties

| | |
|---------------------------|------------------------|
| Number of phases | 3 |
| Service life electrical | 3×10^7 cycles |
| Reversing frequency | ≤ 2 Hz |
| Maximum power dissipation | 3.3 W |
| Minimum power dissipation | 1.1 W |
| Coordination type | 1 |

Air clearances and creepage distances between the power circuits

| | |
|--------------------------|-------|
| Rated insulation voltage | 500 V |
| Rated surge voltage | 6 kV |

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; Parallel polarity protection diode |

Input data

Control

| | |
|-------------------------------|-------------------------------|
| Rated actuating voltage U_C | 24 V DC |
| Triggering voltage range | 19.2 V DC ... 30 V DC |
| Switching threshold | 9.6 V ("0" signal) |
| | 19.2 V ("1" signal) |
| Switching level | < 5 V DC (For EMERGENCY STOP) |
| Typical turn-off time | < 30 ms |

Output data

AC output

| | |
|-------------------------------|----------------------|
| Rated operating voltage U_e | 500 V AC |
| Operating voltage range | 42 V AC ... 550 V AC |

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| | |
|---|------------------------------------|
| 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 |
| Residual voltage | < 0.3 V |
| Protective circuit | Surge protection |

Acknowledge output

| | |
|------|--|
| Note | Confirmation 01: floating changeover contact |
|------|--|

Connection data

Control circuits

| | |
|----------------------------------|---|
| Connection method | Screw connection |
| Stripping length | 8 mm |
| Screw thread | M3 |
| Conductor cross-section rigid | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section AWG | 24 ... 14 |

Load circuit

| | |
|----------------------------------|---|
| Connection method | Screw connection |
| Stripping length | 8 mm |
| Screw thread | M3 |
| Conductor cross-section rigid | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section AWG | 24 ... 14 |

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

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

Approvals

Safety Integrity Level (SIL, IEC 61508)

| | |
|----------------|---------------|
| Identification | ≤ 3 |
| Note | Safe shutdown |

Performance Level (ISO 13849)

| | |
|----------------|---------------|
| Identification | e |
| Note | Safe shutdown |

Category (ISO 13849)

| | |
|----------------|---------------|
| Identification | ≤ 3 |
| Note | Safe shutdown |

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))) |
| FLA | 2.4 A (480 V) |

Standards and regulations

Standards/regulations

| | |
|-----------------------|--------------|
| Standards/regulations | DIN EN 50178 |
| | EN 60947 |

Power station requirements

| | |
|-----------------------|---------------------------|
| Standards/regulations | DWR 1300/ZXX01/DD/7080.8d |
|-----------------------|---------------------------|

Air clearances and creepage distances between the power circuits

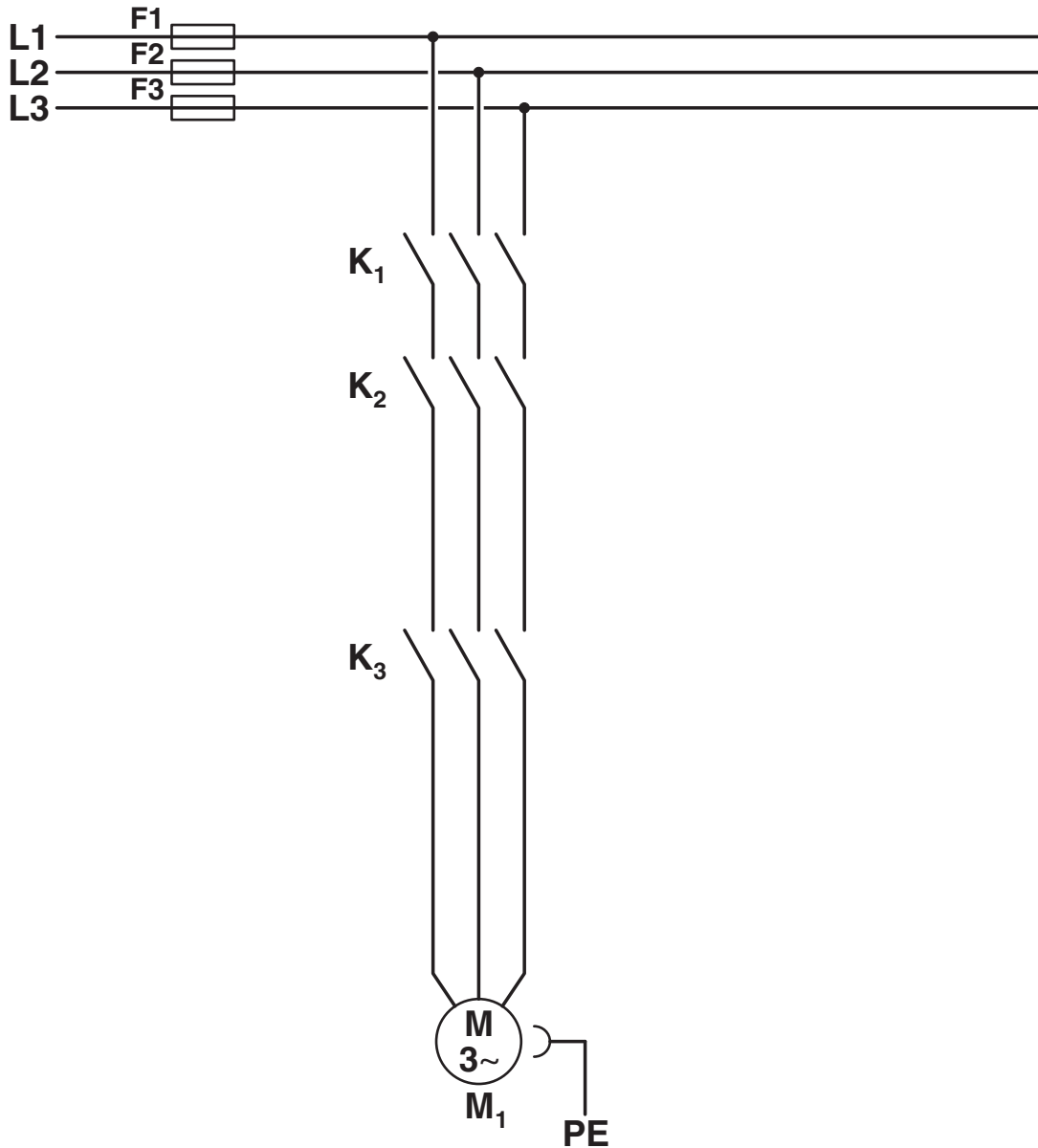
| | |
|-----------------------|--------------|
| Standards/regulations | DIN EN 50178 |
|-----------------------|--------------|

Mounting

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

Drawings

Circuit diagram



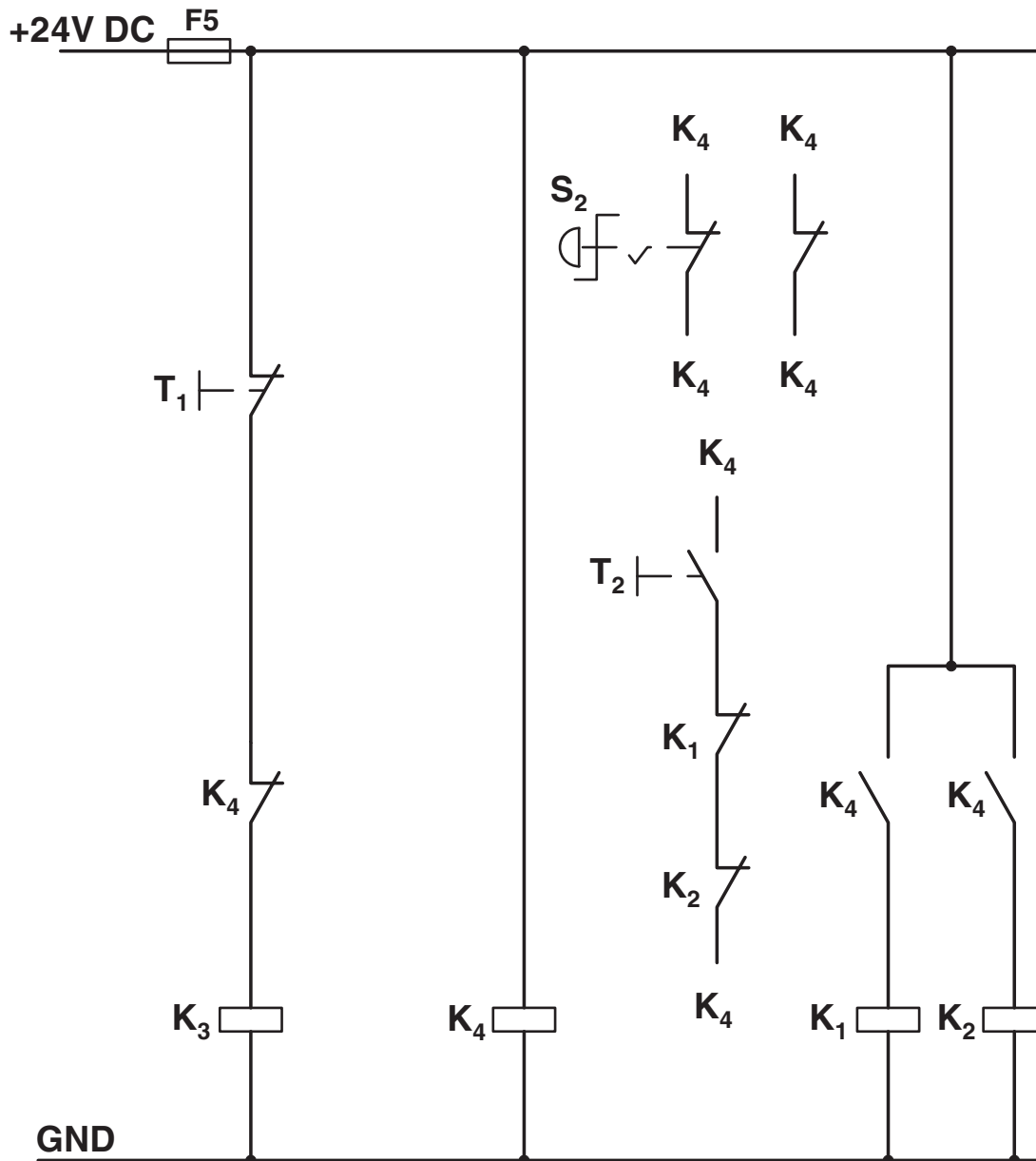
Conventional structure

Main current path for contactor according to category 3

K1 + K2 = Emergency stop contactor

K3 = Right contactor

Circuit diagram

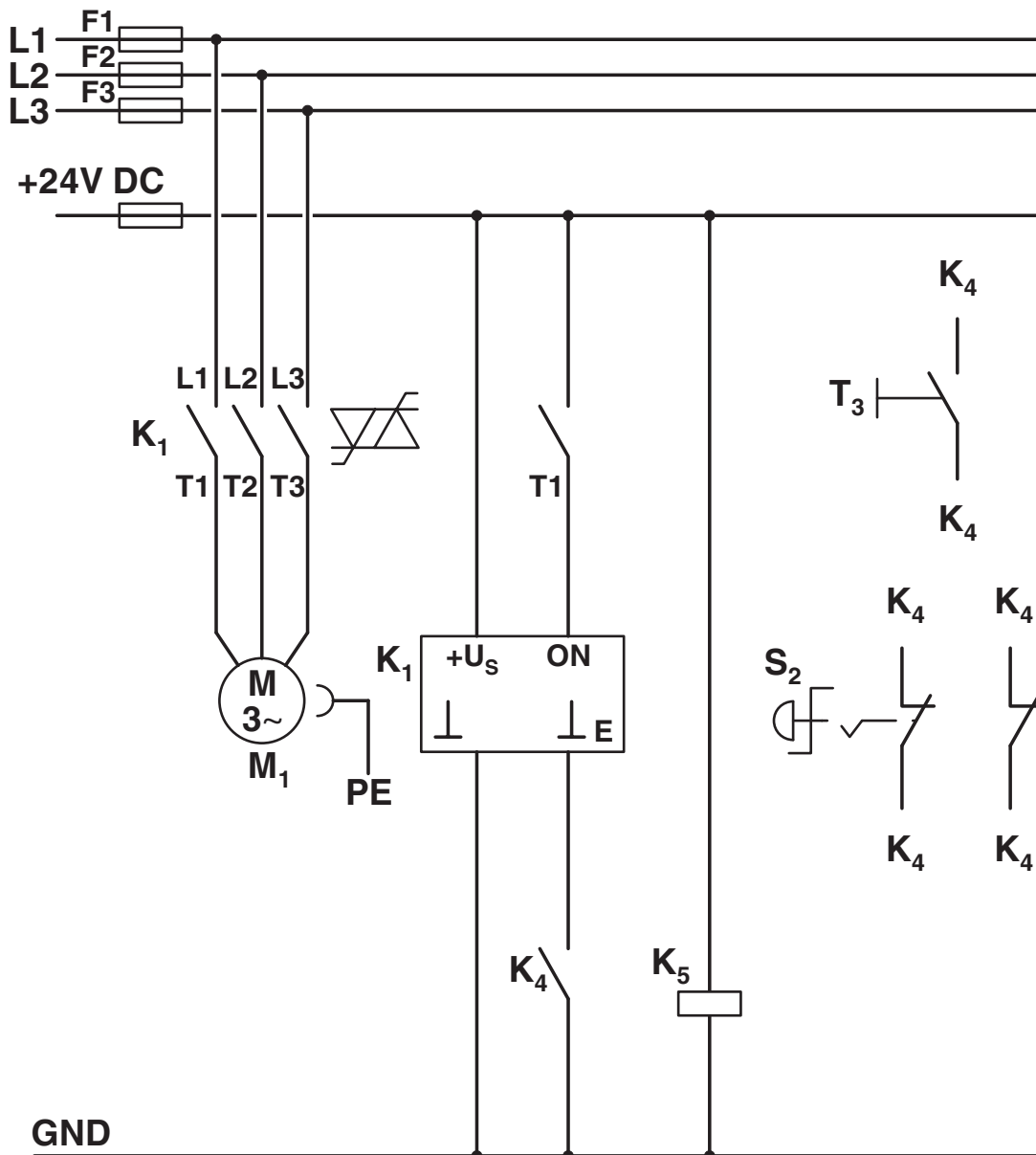


Conventional structure

Control current path for contactor according to category 3

- K1 + K2 = Emergency stop contactor
- K3 = Right contactor
- K4 = PSR SCP-24DC.../safety relay
- T1 = Right, T3 = Reset
- S2 = Emergency stop

Circuit diagram



Structure with CONTACTRON

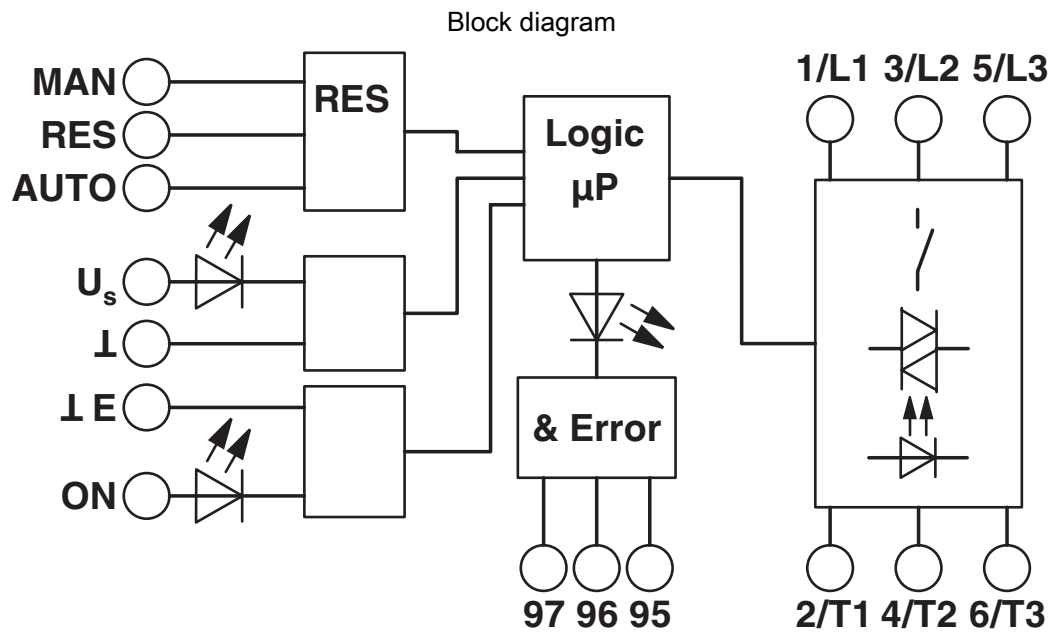
Main and control current path for '2 in 1' hybrid motor starter according to category 3

K1 = '2 in 1' hybrid motor starter

K4 = PSR SCP-24DC.../safety relay

T1 = Right, T3 = Reset

S2 = Emergency stop



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Environmental product compliance

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.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

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