

ELR H3-I-SC-230AC/500AC-2 - Hybrid motor starter



2900544

<https://www.phoenixcontact.com/gb/products/2900544>

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Hybrid motor starter for starting 3~ AC motors up to 550 V AC, with 230 V AC input, 2.4 A output current, and adjustable overload shutdown.

Your advantages

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

Commercial data

| | |
|--------------------------------------|--------------------------------|
| Item number | 2900544 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Note | Made to order (non-returnable) |
| Sales key | DK7421 |
| Product key | DK7421 |
| GTIN | 4046356527699 |
| Weight per piece (including packing) | 292.9 g |
| Weight per piece (excluding packing) | 204.1 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 | Direct starter |
| Switching frequency | ≤ 2 Hz (Load-dependent) |
| Maximum power dissipation for nominal condition | 2.2 W |
| Switching frequency | ≤ 2 Hz (Load-dependent) |
| Maximum power dissipation | 4.7 W |
| Minimum power dissipation | 2.6 W |
| Coordination type | 1 |

Supply

| | |
|--|----------------------|
| Rated control circuit supply voltage U_S | 230 V AC |
| Control supply voltage range | 85 V AC ... 253 V AC |
| Rated control supply current I_S | 4 mA |
| Mains frequency | 50/60 Hz |
| Protective circuit | Surge protection |

Insulation characteristics

| | |
|--|---|
| Rated insulation voltage | 500 V |
| Rated surge voltage | 4 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 |
| | Safe isolation (EN 50178) at operating voltage ≤ 300 V AC |
| | Basic insulation (IEC 60947-1) at operating voltage 300 V AC ... 500 V AC |
| | Safe isolation (EN 50178) at operating voltage 300 ... 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 |
| | Safe isolation (EN 50178) in the auxiliary circuit ≤ 300 V AC |

Input data

Control

| | |
|-------------------------------|----------------------|
| Input name | Control input |
| Rated actuating voltage U_C | 230 V AC |
| Triggering voltage range | 85 V AC ... 253 V AC |
| Rated actuating current I_C | 7 mA (Input type 1) |
| Mains frequency | 50 Hz 60 Hz 50/60 Hz |

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| | |
|-----------------------|----------------------|
| Switching threshold | 44 V AC ("0" signal) |
| | 85 V AC ("1" signal) |
| Typical turn-off time | < 70 ms |

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: floating change-over contact, signal 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 ² ... 2.5 mm ² |
| Conductor cross-section flexible | 0.2 mm ² ... 2.5 mm ² |
| 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 mm ² ... 2.5 mm ² |
| Conductor cross-section flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section AWG | 24 ... 14 |
| Tightening torque | 0.5 Nm ... 0.6 Nm |
| | 5 lb _F -in. ... 7 lb _F -in. |

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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 (observe derating) |
| Ambient temperature (storage/transport) | -40 °C ... 80 °C |
| Altitude | ≤ 2000 m |

Approvals

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 note | alignable, for spacing see derating |

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Mounting position

vertical (horizontal DIN rail, motor output below)

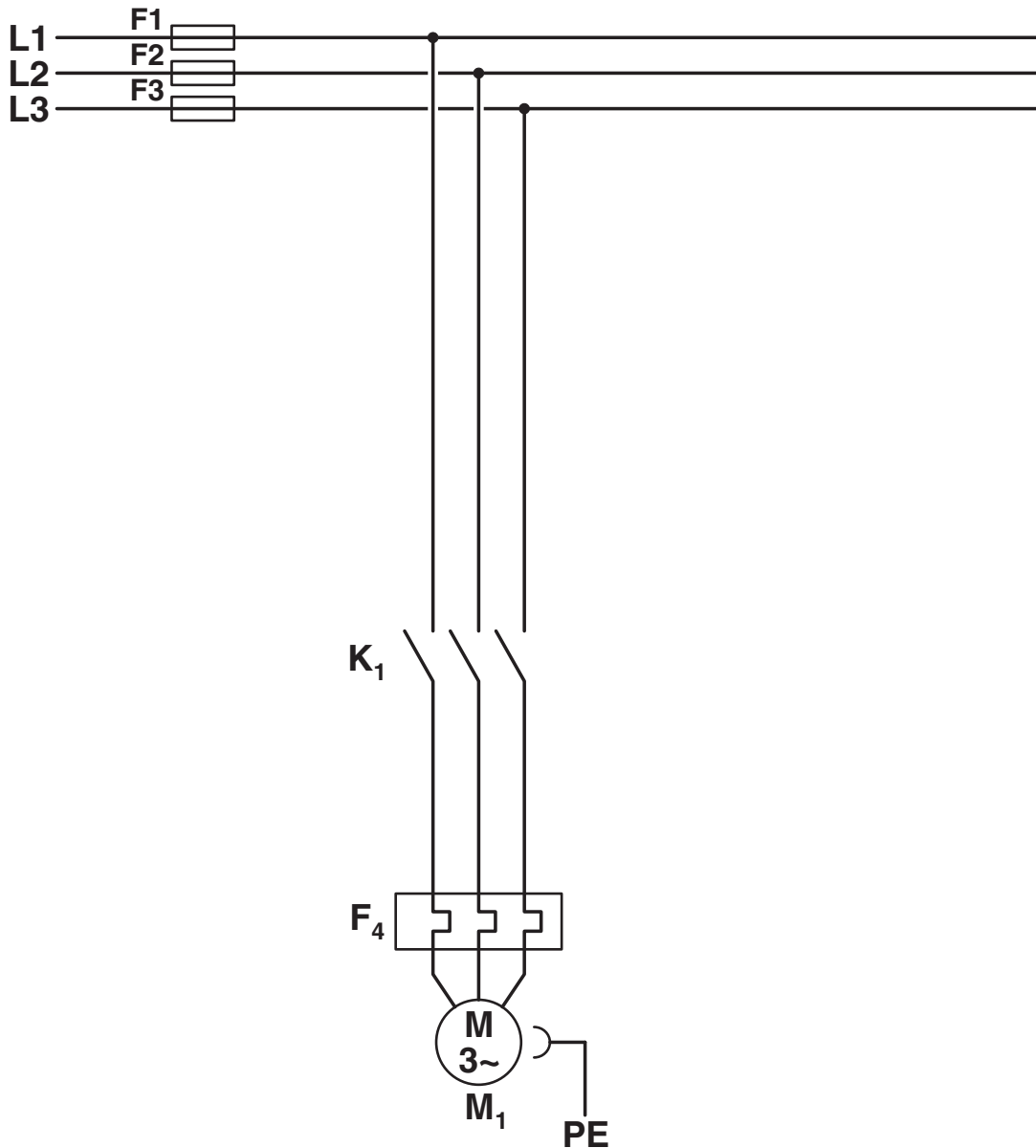
Drawings

Diagram



Derating diagram

Circuit diagram



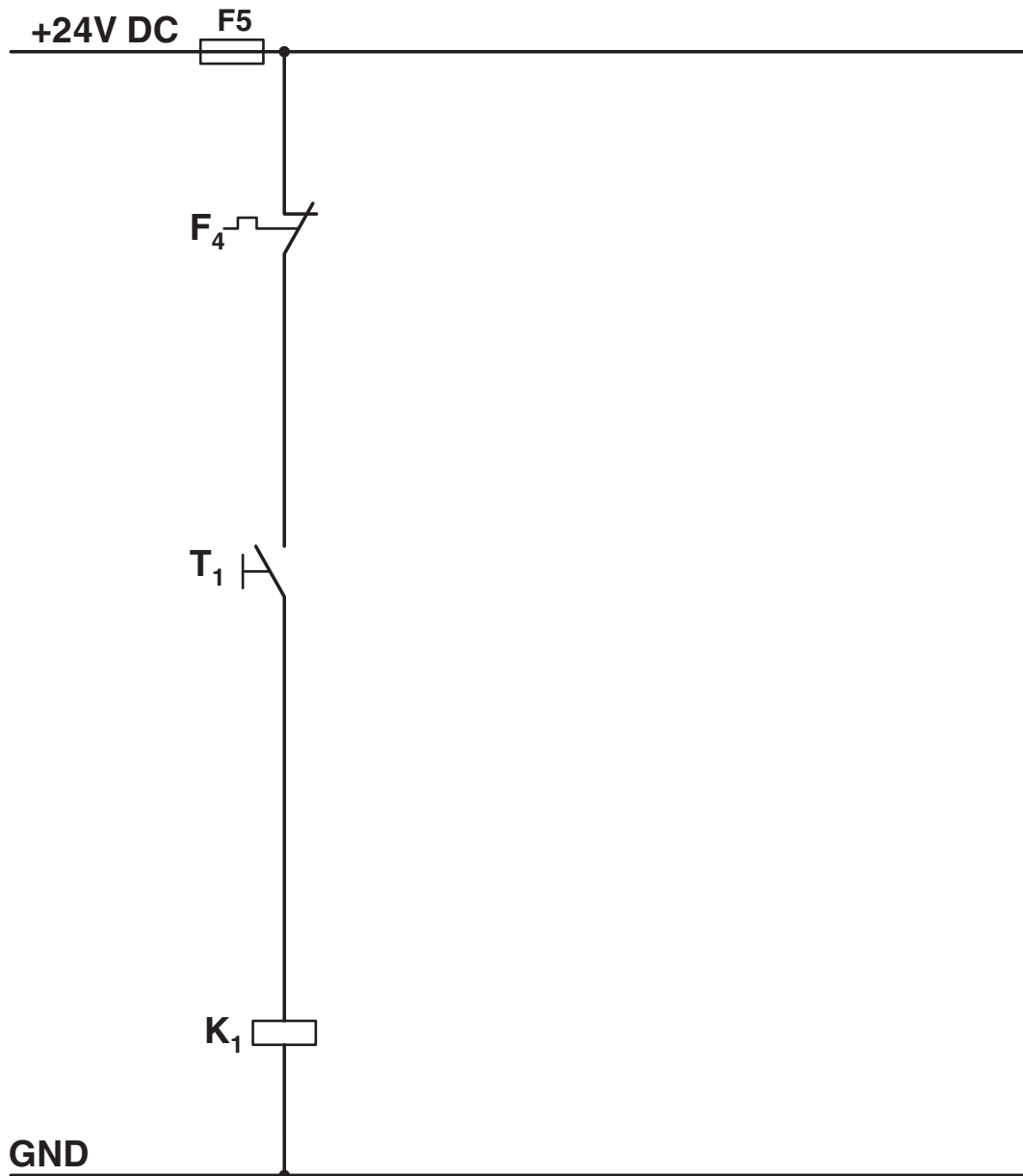
Conventional structure

Main current path reversing contactor

K1 = Reversing contactor

F4 = Motor protection relay

Circuit diagram



Conventional structure

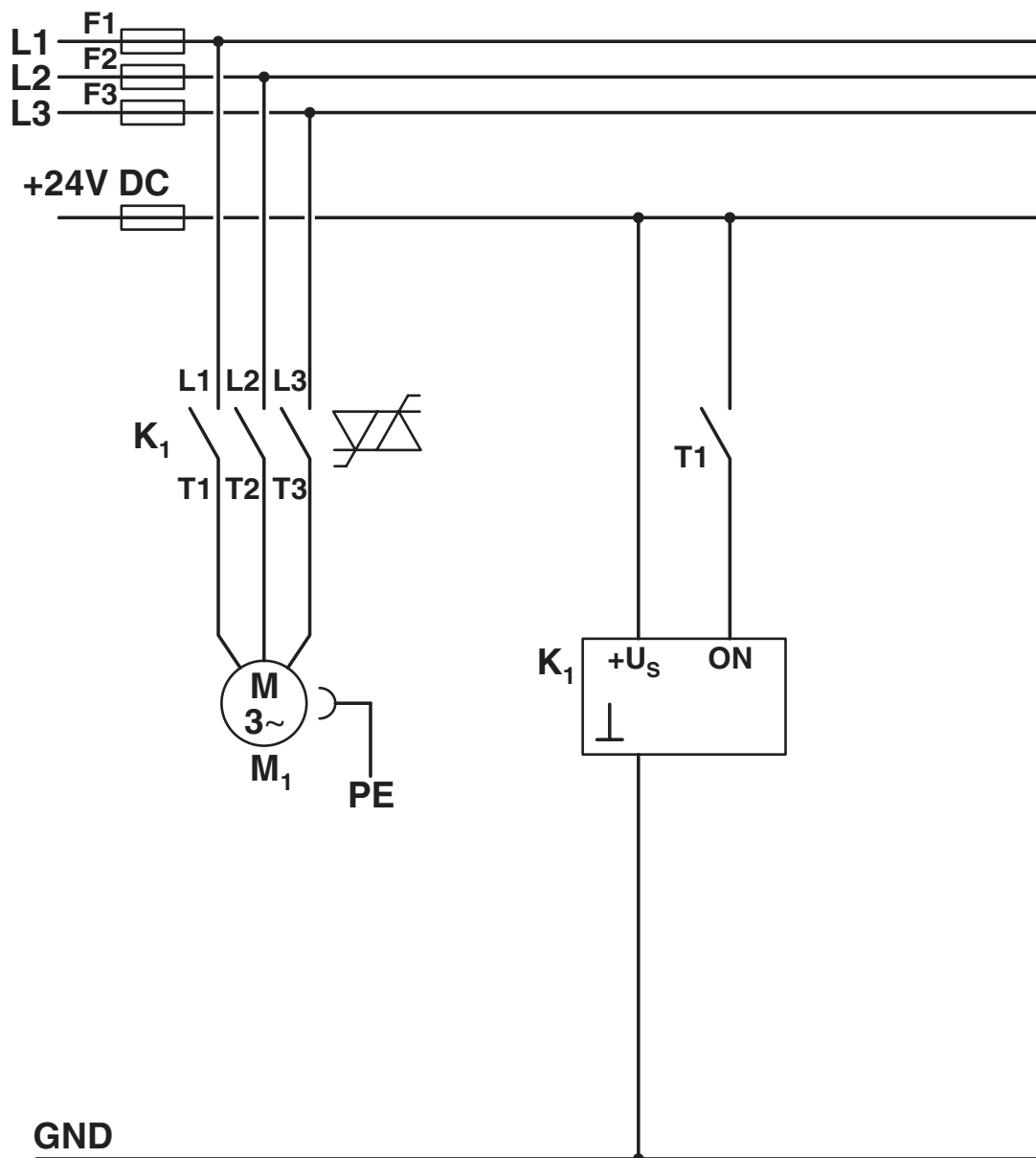
Control current path contactor

K1 = Right contactor

T1 = Right

F4 = Motor protection relay

Circuit diagram



Structure with CONTACTRON

Main and control current path for '2 in 1' hybrid motor starter

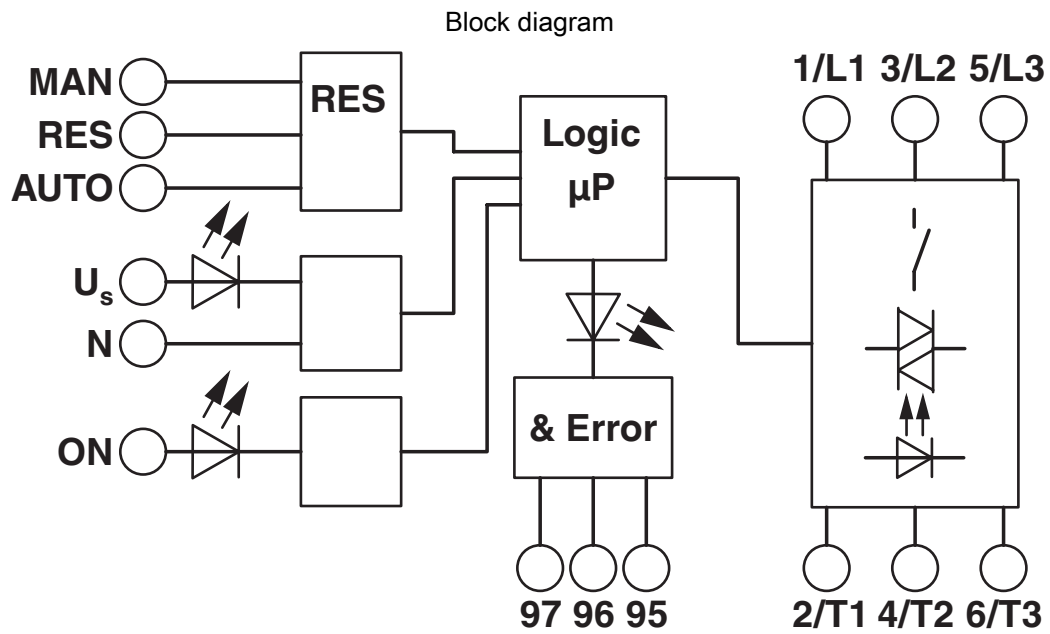
K1 = '2 in 1' hybrid motor starter

T1 = Right

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Classifications

ECLASS

ECLASS-13.0

27370905

UNSPSC

UNSPSC 21.0

25173902

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Environmental product compliance

EU RoHS

| | |
|---|--------------------|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 6(c), 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.) | Lead(CAS: 7439-92-1) |
|-------------------------------------|----------------------|

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