

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



2900567

<https://www.phoenixcontact.com/gb/products/2900567>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



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 emergency stop function to SIL 3/PL e and, screw connection.

Your advantages

- 22.5 mm wide
- Safety level in accordance with IEC 61508-1: SIL 3, ISO 13849: PL e
- Reduction in wiring
- Long service life
- Space saving
- 3-phase loop bridges
- Adjustable current for bimetal function
- Low-wear switching

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2900567 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DK7411 |
| Product key | DK7411 |
| GTIN | 4046356526135 |
| Weight per piece (including packing) | 295.4 g |
| Weight per piece (excluding packing) | 203.9 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 | 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 |
| | 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 |
| 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) |
| | 19.2 V ("1" signal) |
| Switching level | < 5 V DC (For EMERGENCY STOP) |

| | |
|-----------------------|-----------------------------|
| Typical turn-off time | < 30 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 | 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. |

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

UKCA

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

ATEX

| | |
|----------------|----------------------------------|
| Identification | ⊕ II (2) G [Ex e] [Ex d] [Ex px] |
| | ⊕ II (2) D [Ex t] [Ex p] |
| Certificate | PTB 07 ATEX 3145 |

UL approval

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

Safety Integrity Level (SIL, IEC 61508)

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

Safety Integrity Level (SIL, IEC 61508)

| | |
|----------------|------------------|
| Identification | 2 |
| Note | Motor protection |

Performance Level (ISO 13849)

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

Category (ISO 13849)

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

2900567

<https://www.phoenixcontact.com/gb/products/2900567>

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 |

Standards and regulations

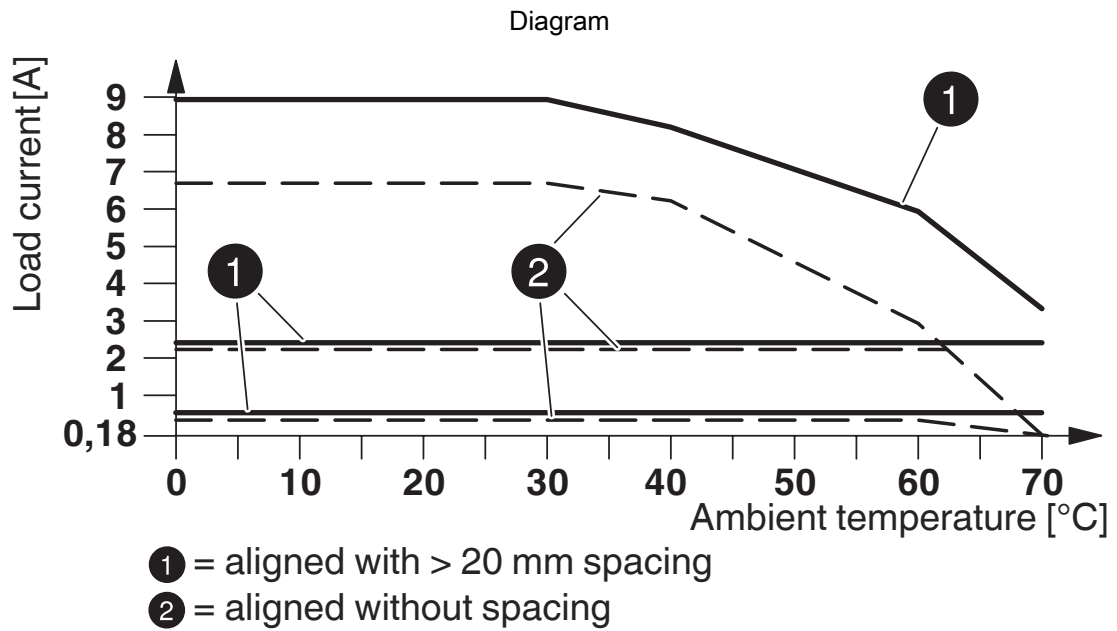
Standards/regulations

| | |
|-----------------------|---------------|
| 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 |
| Mounting position | vertical (horizontal DIN rail, motor output below) |

Drawings



Derating diagram

Circuit diagram



Conventional structure

Main current path for contactor according to category 3

K1 + K2 = Emergency stop contactor

K3 = Right contactor

F4 = Motor protection relay

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
- F4 = Motor protection relay

Circuit diagram



Structure with CONTACTRON

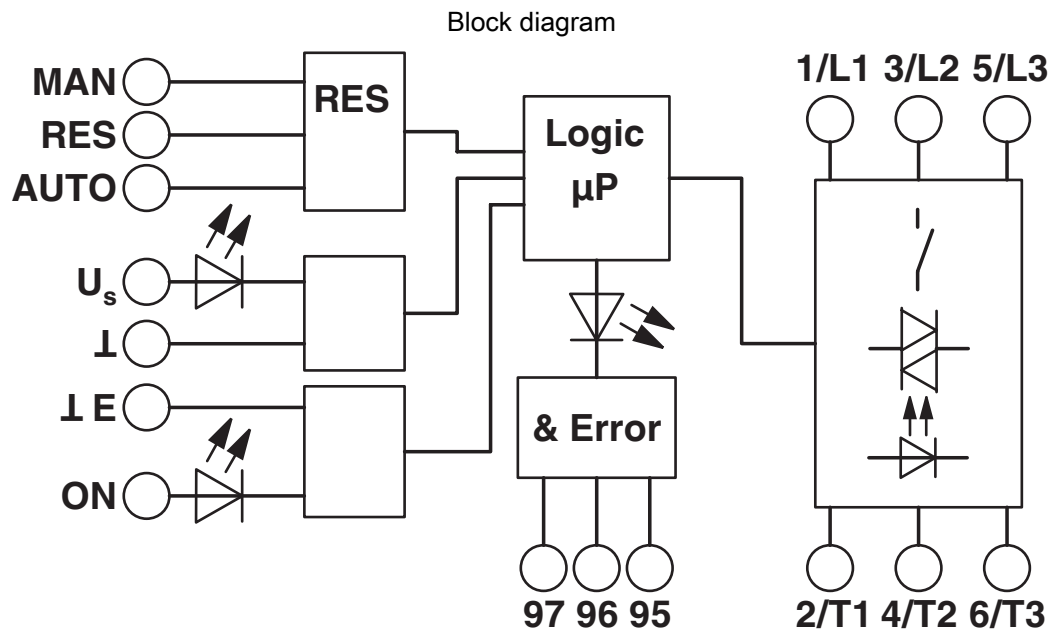
Main and control current path for '3 in 1' hybrid motor starter according to category 3

K1 = '3 in 1' hybrid motor starter

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

T1 = Right, T3 = Reset

S2 = Emergency stop



2900567

<https://www.phoenixcontact.com/gb/products/2900567>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/gb/products/2900567>



IECEE CB Scheme
Approval ID: DE1-55728



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



DNV GL
Approval ID: TAA00002HK



UL Listed
Approval ID: FILE E 323771



CCC
Approval ID: 2016010304871315



cUL Listed
Approval ID: FILE E 323771



cUL Listed
Approval ID: E228652



UL Listed
Approval ID: E228652



CCC
Approval ID: 2024010304672817



ATEX
Approval ID: PTB 07 ATEX 3145

2900567

<https://www.phoenixcontact.com/gb/products/2900567>

Classifications

ECLASS

| | |
|-------------------|----------|
| ECLASS-13.0 | 27370905 |
| ECLASS-15.0 | 27370905 |
| ECLASS-15.0 ASSET | 27250101 |

ETIM

| | |
|----------|----------|
| ETIM 9.0 | EC001037 |
|----------|----------|

UNSPSC

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

2900567

<https://www.phoenixcontact.com/gb/products/2900567>

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.) | Lead(CAS: 7439-92-1) |
| SCIP | 9768ffaa-10dd-46e0-b4c3-6fe95499cb7a |

Phoenix Contact 2025 © - all rights reserved

<https://www.phoenixcontact.com>

PHOENIX CONTACT Ltd
 Halesfield 13, Telford
 Shropshire, TF7 4PG
 01952 681700
info@phoenixcontact.co.uk