# ELR H5-IS-PT- 24DC/500AC-9-P - Hybrid motor starter

2909567

https://www.phoenixcontact.com/us/products/2909567

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Hybrid motor starter as an alternative to a conventional reversing contactor. Reverses 3~ AC motors up to 9 A, provides motor protection and emergency stop up to SIL 3/PL e. Group shut-down, supply, and relay extension possible via DIN rail connector.

## Product description

The modular 3-phase hybrid motor starter with reversing function and current monitoring provides the following functions: - Forward running - Reverse running - Motor overload protection - Emergency stop to performance level PLe (TÜV certified) Additional advantages are provided by using the DIN rail connector adapter (Item No. 2203861): - Emergency stop of the enable signal is also possible via the DIN rail connector, e.g. via a safety relay (PSR DC38...) - Power can also be supplied via the DIN rail connector by a system power supply (e. g., QUINT4-SYS...) or via the PCB connector IMC 1,5/ 5-ST-3,81, Item No. 1857919 - Optional relay module (e. g., EM-2RSC/21AU-R/L-P, Item No. 2908701) provides additional status information Thanks to the internal interlocking circuit and load wiring, wiring expense is reduced to a minimum.

## Commercial data

| | |
|---|---|
| Item number | 2909567 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | C470 |
| Product key | DK7474 |
| GTIN | 4055626425498 |
| Weight per piece (including packing) | 256.62 g |
| Weight per piece (excluding packing) | 233.11 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 | Reversing starter |
| Switching frequency | ≤ 2 Hz (Load-dependent) |
| Switching frequency | ≤ 2 Hz (Load-dependent) |
| Maximum power dissipation | 7 W |
| Minimum power dissipation | 0.88 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 $I_S$ | 60 mA |
| Protective circuit | Surge protection |
| | Reverse polarity protection; Parallel polarity protection diode |

### Insulation characteristics

| | |
|---|---|
| Rated insulation voltage | 550 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) |
| 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 |

### Emergency tripping

| | |
|---|---|
| Operate threshold | > 60 A |
| Response time | < 0.5 s |

## Input data

### Control

| | |
|---|---|
| Input name | Control input: right/left and enable input |
| Note | The enable input is compatible with signals with blanking (semiconductor output signals with test pulse with max. 3 ms duration),<br>unblanking pulses of max. 4 ms are tolerated without adversely affecting the safety function. |
| Rated actuating voltage $U_C$ | 24 V DC |

| | |
|---|---|
| Triggering voltage range | 19.2 V DC ... 30 V DC |
| Rated actuating current $I_C$ | 7 mA |
| 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 $I_e$ | 9 A |
| | 7 A |
| Mains frequency | 50/60 Hz |
| Load current range | 1.5 A ... 9 A |
| Trigger characteristic in acc. with IEC 60947-4-2 | Class 10 (≤ 3 A) |
| | Class 10A (> 3 A) |
| Cooling time | 20 min (for auto reset) |
| Leakage current | 0 mA |
| Protective circuit | Surge protection; Varistor |

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 | 2 A (24 V, DC13) |

## Connection data

Control circuits

| | |
|---|---|
| Connection method | Push-in connection |
| Stripping length | 10 mm |
| 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 |

Load circuit

| | |
|---|---|
| Connection method | Push-in connection |
| Stripping length | 10 mm |
| 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 |

## Signaling

| | |
|---|---|
| Status display | Yellow LED |

| | |
|---|---|
| Operating voltage display | Green LED |
| Error indication | Red LED |

## Dimensions

| | |
|---|---|
| Width | 22.5 mm |
| Height | 107.5 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 |
| | NRNT.E172140 |

### 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 |

### CCC

| | |
|---|---|
| Identification | GB/T 14048.6-2016 |
| Certificate | 2024010304672814 |

### 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 | 7.6 A (480 V AC) |
| Group installation | 20 A (class RK5, SCCR 5kA (480 V AC), #24 - 14 AWG max. solid and stranded) |
| | 30 A (class CC or J, SCCR 100kA (480 V AC), #24 - 14 AWG max, solid and stranded) |
| Category code | NLDX / NRNT |
| Horsepower ratings | 2 hp (208 V AC) |
| | 2 hp (230 V AC) |
| | 2 hp (240 V AC) |
| | 5 hp (480 V AC) |
| Ambient temperature (operation) | -25 °C ... 55 °C |

## Standards and regulations

Standards/regulations

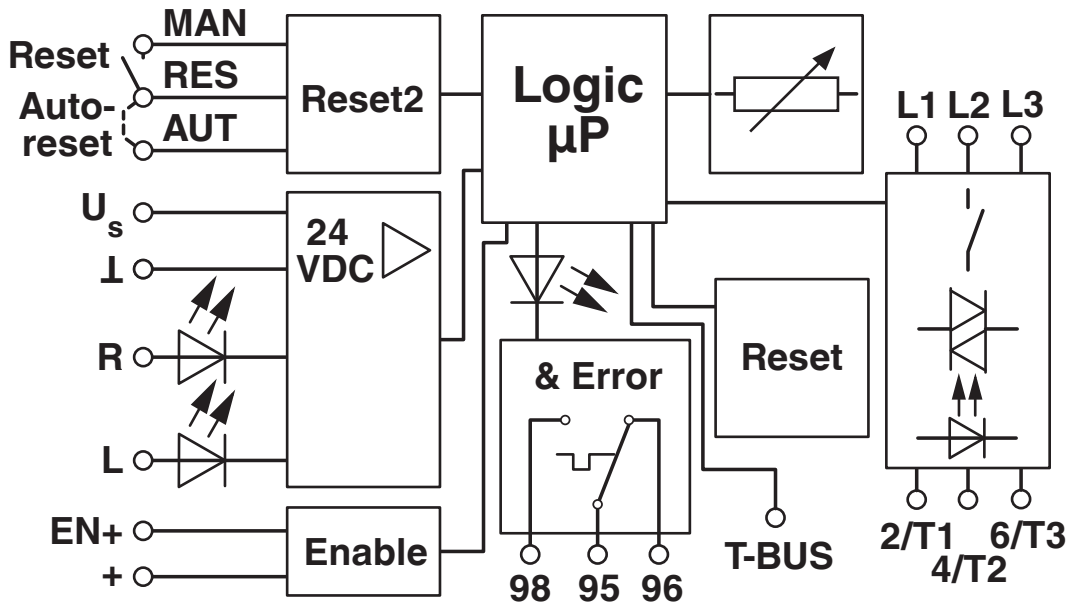
| | |
|---|---|
| Standards/regulations | EN 60947-1 |
| | EN 60947-4-2 |
| | EN ISO 13849 |
| | IEC 62061 |
| | IEC 61508 |

## Mounting

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

## Drawings

Block diagram



## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2909567

**IECEE CB Scheme**
Approval ID: CB-DE1-60807-A1

**UL Listed**
Approval ID: FILE E 172140

**cUL Listed**
Approval ID: FILE E 172140

**cUL Listed**
Approval ID: E228652

**UL Listed**
Approval ID: E228652

**VDE Zeichengenehmigung**
Approval ID: 40054426

**Functional Safety**
Approval ID: 968/FSP 1746.04/23

**CCC**
Approval ID: 2024010304672814

**DNV**
Approval ID: TAA00002HK

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-13.0 | 27370905 |
| ECLASS-15.0 ASSET | 27250101 |
| 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(a)-III, 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 | 082eb457-f6b6-472c-a341-b6c1ca74ef2b |

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