# Hybrid motor starter - ELR H5-IES-SC/500AC-9-IFS - 2905153

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Figure shows the 9 A version with push-in connection

Networkable hybrid motor starter for reversing 3~ AC motors up to 500 V AC and 9 A output current, with adjustable overload shutdown, emergency stop function up to SIL 3/PL e, and screw connection, DIN rail connector provided.

## Why buy this product

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

RoHS

## Key Commercial Data

| | |
|---|---|
| Packing unit | 1 STK |
| GTIN | 4 046356 920346 |
| GTIN | 4046356920346 |
| Weight per Piece (excluding packing) | 300.000 g |
| Custom tariff number | 85371098 |
| Country of origin | Germany |

## Technical data

### Device supply

| | |
|---|---|
| Rated control circuit supply voltage $U_S$ | 24 V DC |

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## Technical data

### Device supply

| | |
|---|---|
| Control supply voltage range | 19.2 V DC ... 30 V DC |
| Rated control supply current $I_S$ | 60 mA |
| Type of protection | Surge protection |
| | Reverse polarity protection |

### Input data

| | |
|---|---|
| Input name | 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 |
| Type of protection | Reverse polarity protection |

### Output data load output

| | |
|---|---|
| Output name | 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 (AC-51) |
| | 7 A (AC-53a) |
| Mains frequency | 50/60 Hz |
| Load current range | 1.5 A ... 9 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 |
| Type of protection | Surge protection |

### Overspeed tripping

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

### General

| | |
|---|---|
| Switching frequency | ≤ 2 Hz (Load-dependent) |
| Mounting position | vertical (horizontal DIN rail, motor output below) |

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## Technical data

### General

| | |
|---|---|
| Mounting type | DIN rail mounting |
| Assembly instructions | alignable, for spacing see derating |
| Operating mode | 100% operating factor |
| Maximum power dissipation | 7 W |
| Minimum power dissipation | 0.88 W |
| Operating voltage display | Green LED |
| Status display | Yellow LED |
| Indication | Red LED |

### Connection data, input side

| | |
|---|---|
| Connection name | Control circuits |
| Connection method | Screw connection |
| Stripping length | 8 mm |
| Screw thread | M3 |
| Conductor cross section solid | 0.2 mm² ... 2.5 mm² |
| Conductor cross section flexible | 0.2 mm² ... 2.5 mm² |
| Conductor cross section AWG | 24 ... 14 |
| Torque | 0.5 Nm ... 0.6 Nm (5-7 lbs-in) |

### Connection data, output side

| | |
|---|---|
| Connection name | Load circuit |
| Connection method | Screw connection |
| Stripping length | 8 mm |
| Screw thread | M3 |
| Conductor cross section solid | 0.2 mm² ... 2.5 mm² |
| Conductor cross section flexible | 0.2 mm² ... 2.5 mm² |
| Conductor cross section AWG | 24 ... 14 |
| Torque | 0.5 Nm ... 0.6 Nm (5-7 lbs-in) |

### Ambient conditions

| | |
|---|---|
| Ambient temperature (operation) | -5 °C ... 60 °C (observe derating) |
| Ambient temperature (storage/transport) | -40 °C ... 80 °C |
| Degree of protection | IP20 |

### Dimensions

| | |
|---|---|
| Width | 22.5 mm |
| Height | 99 mm |
| Depth | 114.5 mm |

### UL data

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## Technical data

### 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 (120 V AC / 208 V AC) |
| | 5 hp (277 V AC / 480 V AC) |

### Insulation characteristics

| | |
|---|---|
| Rated insulation voltage | 550 V |
| Rated surge voltage | 6 kV |
| Overvoltage category | III |
| Degree of pollution | 2 |
| Designation | Insulation characteristics between the control input and control supply voltage, and auxiliary circuit to the main circuit |
| Insulation | Safe isolation (IEC 60947-1) |
| Designation | Isolation characteristics between the control input and control supply voltage to auxiliary circuit |
| Insulation | Safe isolation (IEC 60947-1) in the auxiliary circuit ≤ 300 V AC |
| | Safe isolation (EN 50178) in the auxiliary circuit ≤ 300 V AC |

### Standards and Regulations

| | |
|---|---|
| Designation | Standards/regulations |
| Standards/regulations | IEC 60947-1 |
| | EN 60947-4-2 |
| | IEC 61508 |
| | ISO 13849 |
| ATEX | # II (2) G [Ex e] [Ex d] [Ex px] |
| | # II (2) D [Ex t] [Ex p] |

### Approvals/conformities

| | |
|---|---|
| Safety Integrity Level according to IEC 61508 | ≤ 3 (Safe shutdown) |
| | 2 (Motor protection) |
| Category acc. to EN ISO 13849 | ≤ 3 (Safe shutdown) |
| Performance level according to ISO 13849 | e (Safe shutdown) |
| ATEX | # II (2) G [Ex e] [Ex d] [Ex px] |
| | # II (2) D [Ex t] [Ex p] |

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## Technical data

### Approvals/conformities

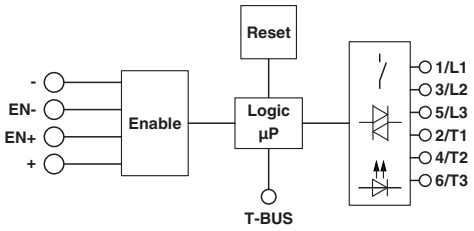
| | |
|---|---|
| EU-type examination certificate | PTB 15 ATEX 3000 |
| UL certificate | NLDX.E228652 |
| | NRNT.E172140 |

### Environmental Product Compliance

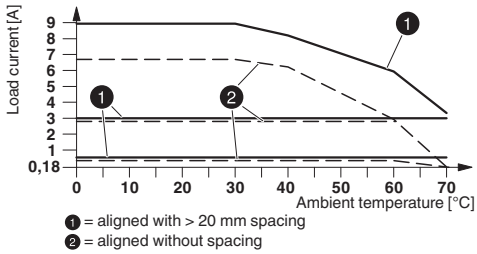
| | |
|---|---|
| China RoHS | Environmentally Friendly Use Period = 50 |
| | For details about hazardous substances go to tab “Downloads”, Category “Manufacturer's declaration” |

## Drawings

Block diagram




Diagram




Derating diagram

## Approvals

### Approvals

Approvals

UL Listed / UL Listed / cUL Listed / cUL Listed / IECEE CB Scheme / cULus Listed

Ex Approvals

### Approval details

| | | | |
|---|---|---|---|
| UL Listed | UL LISTED | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 228652 |

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## Approvals

| | | | |
|---|---|---|---|
| UL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 172140 |
| cUL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 172140 |
| cUL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 228652 |
| IECEE CB Scheme | | http://www.iecee.org/ | DE1-56580 |
| cULus Listed | | | |