

2903935

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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 Push-in connection. Connection to the SmartWire-DT system.

Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 2903935                        |
| Packing unit                         | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | C478                           |
| Product key                          | DK7434                         |
| GTIN                                 | 4046356771894                  |
| Weight per piece (including packing) | 308.3 g                        |
| Weight per piece (excluding packing) | 217.7 g                        |
| Customs tariff number                | 85371098                       |
| Country of origin                    | DE                             |

## Technical data

### Product properties

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

### Electrical properties

|                                                 |                         |
|-------------------------------------------------|-------------------------|
| Number of phases                                | 3                       |
| Switching frequency                             | ≤ 2 Hz (Load-dependent) |
| Maximum power dissipation for nominal condition | 12 W                    |
| 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 |
|                                                                                                                            | Safe isolation (EN 50178) in the auxiliary circuit ≤ 300 V AC    |

### Emergency tripping

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

### Input data

#### Control

|                               |                               |
|-------------------------------|-------------------------------|
| Input name                    | Enable input                  |
| 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) |

# ELR H5-IES-PT-SWD/500AC-9 - Hybrid motor starter



2903935

<https://www.phoenixcontact.com/us/products/2903935>

|                       |         |
|-----------------------|---------|
| 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            |
| 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                            |
| Protective circuit                                | Surge protection; Varistor      |

## Connection data

### Control circuits

|                                  |                                             |
|----------------------------------|---------------------------------------------|
| Connection method                | Push-in connection                          |
| Stripping length                 | 10 mm                                       |
| Conductor cross section rigid    | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Conductor cross section flexible | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Conductor cross section AWG      | 24 ... 14                                   |

### Load circuit

|                                  |                                             |
|----------------------------------|---------------------------------------------|
| Connection method                | Push-in connection                          |
| Stripping length                 | 10 mm                                       |
| Conductor cross section rigid    | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| Conductor cross section flexible | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> |
| 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 | 107.5 mm |
| Depth  | 114 mm   |

## Material specifications

|                                        |              |
|----------------------------------------|--------------|
| Flammability rating according to UL 94 | V0 (Housing) |
|----------------------------------------|--------------|

## Environmental and real-life conditions

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## Ambient conditions

|                                         |                                    |
|-----------------------------------------|------------------------------------|
| Degree of protection                    | IP20                               |
| Ambient temperature (operation)         | -5 °C ... 55 °C (observe derating) |
| Ambient temperature (storage/transport) | -40 °C ... 80 °C                   |

## Approvals

### ATEX

|                |                                                                   |
|----------------|-------------------------------------------------------------------|
| Identification | Ⓔ II (2) G [Ex eb] [Ex db] [Ex pxb]<br>Ⓔ II (2) D [Ex tb] [Ex pb] |
| Certificate    | PTB 15 ATEX 3001                                                  |

### UL approval

|             |                              |
|-------------|------------------------------|
| Certificate | NLDX.E228652<br>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 |

### UL data

|                    |                                                                                                                                                                  |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SCCR               | 100 kA (480 V AC (fuse: 30 A class CC/30 A class J (high fault)))<br>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)<br>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)<br>5 hp (277 V AC / 480 V AC)                                                                                                         |

## Standards and regulations

### Standards/regulations

|             |
|-------------|
| IEC 60947-1 |
|-------------|

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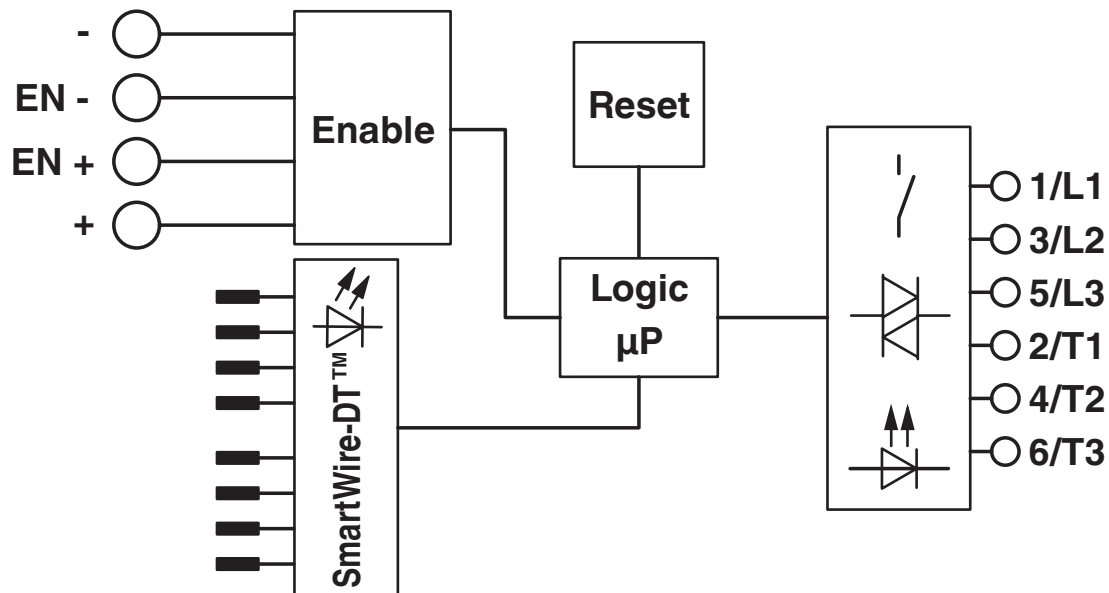
|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 60947-4-2 |
|                       | IEC 61508    |
|                       | ISO 13849    |

## Mounting

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

## Drawings

Block diagram



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)                                                                                                                                                                                                              |