

# ELR H5-ES-SC- 24DC/500AC-2

Order No.: 2900559

The figure shows the 9 A version



<http://eshop.phoenixcontact.de/phoenix/treeViewClick.do?UID=2900559>

"3 in 1" hybrid motor starter for reversing 3~ AC motors up to 550 V AC, with 24 V DC input, 2.4 A output current, and emergency stop function.



| Commercial data |                 |
|-----------------|-----------------|
| GTIN (EAN)      | 4 046356 527828 |
| Note            | Made-to-order   |
| sales group     | G420            |
| Pack            | 1 pcs.          |
| Customs tariff  | 85364900        |

## Product notes

WEEE/RoHS-compliant since:  
02/09/2010



<http://www.download.phoenixcontact.com>  
Please note that the data given here has been taken from the online catalog. For comprehensive information and data, please refer to the user documentation. The General Terms and Conditions of Use apply to Internet downloads.

## Technical data

### Input data

|  |              |
|--|--------------|
| Rated control supply voltage $U_s$                         | 24 V DC      |
| Rated control supply voltage range with reference to $U_s$ | 0.8 ... 1.25 |
| Rated control supply current $I_s$                         | 35 mA        |

|   |   |
|---|---|
| Rated actuating voltage $U_c$                         | 24 V DC   |
| Rated actuating voltage range with reference to $U_c$ | 0.8 ... 1.25  |
| Rated actuating current $I_c$                         | 3 mA  |
| Switching threshold "0" signal, voltage               | 9.6 V   |
| Switching threshold "1" signal voltage                | 19.2 V  |
| Protective circuit                                    | Protection against polarity reversal Parallel polarity protection diode |
|   | Surge protection  |
| Typical response time                                 | < 35 ms   |
| Typical turn-off time                                 | < 40 ms   |
| Operating voltage display                             | Green LED   |
| Status display  | Yellow LED  |
| Indication  | Red LED   |

#### Output data, load relay

|                              |                                       |
|------------------------------|---------------------------------------|
| Output name                  | AC output                             |
| Nominal output voltage       | 500 V AC                              |
| Nominal output voltage range | 48 V AC ... 550 V AC                  |
| Load current                 | max. 2.4 A (see derating curve)       |
| Leakage current              | 0 mA                                  |
| Residual voltage             | < 0.3 V                               |
| Surge current                | 100 A ( $t = 10$ ms)                  |
| Type of protection           | Surge protection                      |
| Output name                  | Acknowledge output                    |
| Note                         | Confirmation 01: Floating PDT contact |
| Nominal output voltage       | max. 253 V AC 0% ... 100% (300 V DC)  |
| Continuous load current      | 2 A                                   |

#### Output data, signaling contact

|               |   |
|---------------|---|
| Measuring via | Current transformer for line current on L1 and L3 |
|---------------|---|

#### Connection data

|                                       |                      |
|---------------------------------------|----------------------|
| Connection method                     | Screw connection     |
| Conductor cross section solid min.    | 0.14 mm <sup>2</sup> |
| Conductor cross section solid max.    | 2.5 mm <sup>2</sup>  |
| Conductor cross section stranded min. | 0.14 mm <sup>2</sup> |
| Conductor cross section stranded max. | 2.5 mm <sup>2</sup>  |

|   |   |
|---|---|
| Conductor cross section AWG/kcmil min.          | 26  |
| Conductor cross section AWG/kcmil max           | 12  |
| <b>General data</b>                             |   |
| Width   | 22.5 mm   |
| Height  | 99 mm   |
| Depth   | 114.5 mm  |
| Test voltage input/output                       | 4 kV <sub>rms</sub>                                   |
| Ambient temperature (operation)                 | -25 °C ... 70 °C                                      |
| Ambient temperature (storage/transport)         | -25 °C ... 70 °C                                      |
| Mounting position                               | Vertical (horizontal DIN rail)                        |
| Assembly instructions                           | Can be aligned with spacing = 20 mm                   |
| Operating mode                                  | 100% operating factor                                 |
| Degree of protection                            | IP20  |
| Name  | Standards/regulations                                 |
| Standards/regulations                           | DIN EN 50178  |
|   | EN 60947  |
| Name  | Power station requirements                            |
| Standards/regulations                           | DWR 1300 / ZXX01/DD/7080.8d                           |
| Name  | Air and creepage distances between the power circuits |
| Standards/regulations                           | DIN EN 50178  |
| Rated surge voltage / insulation                | 6 kV/safe isolation                                   |
| Rated insulation voltage                        | 500 V   |
| Pollution degree                                | 2   |
| Surge voltage category                          | III   |
| Safety integrity level according to IEC 61508-1 | SIL 3 (safe shutdown)                                 |
| Category as per ISO 13849-1                     | 3   |
| Performance Level as per ISO 13849-1            | e   |
| Category in acc. with EN 954-1                  | 3   |

### Certificates / Approvals



Certification

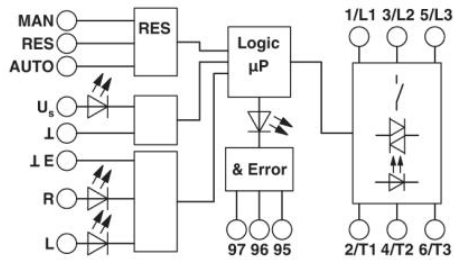
CB, CUL Listed, UL Listed

Certification Ex:

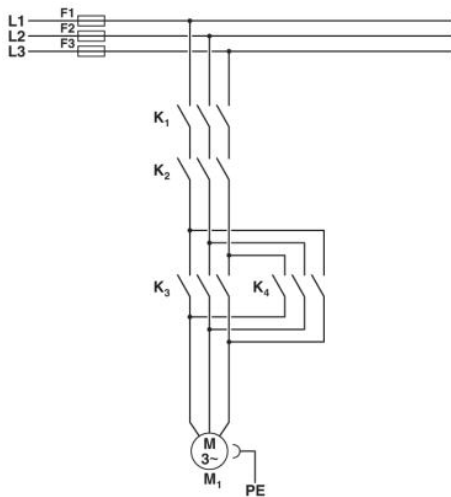
PTB

**Diagrams/Drawings**

Block diagram

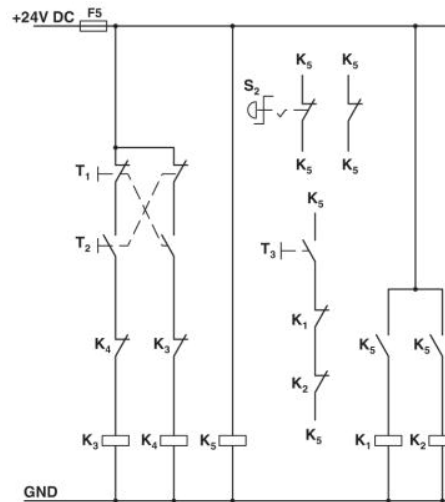


Circuit diagram



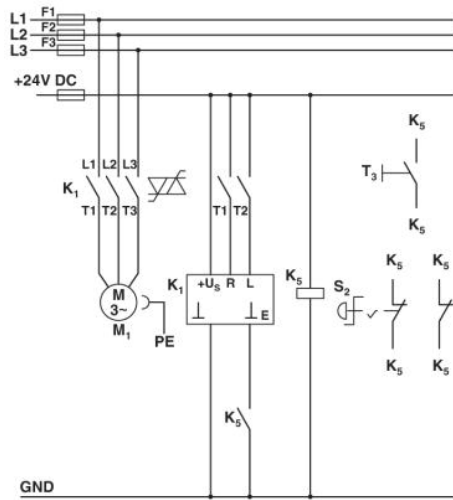
**Conventional structure**

Main current path for contactor according to category 3  
 K1 + K2 = Emergency stop contactor  
 K3 = Left contactor  
 K4 = Right contactor



**Conventional structure**

Control current path for contactor according to category 3  
 K1 + K2 = Emergency stop contactor  
 K3 = Left contactor  
 K4 = Right contactor  
 K5 = PSR SCP-24DC.../safety relay  
 T1 = Left, T2 = Right, T3 = Reset  
 S2 = Emergency stop



**Structure with CONTACTRON**

Main and control current path for "3 in 1" hybrid motor starter with reversing function according to category 3

K1 = "3 in 1" hybrid motor starter with reversing function

K5 = PSR SCP-24DC.../safety relay

T1 = Left, T2 = Right, T3 = Reset

S2 = Emergency stop

**Address**

PHOENIX CONTACT Inc., USA  
586 Fulling Mill Road  
Middletown, PA 17057, USA  
Phone (800) 888-7388  
Fax (717) 944-1625  
<http://www.phoenixcon.com>



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- Оценку стоимости проекта по компонентам.
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Тел: +7 (812) 336 43 04 (многоканальный)  
Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)