

ELR H5-ES-SC-230AC/500AC-9 - Hybrid motor starter



2900562

<https://www.phoenixcontact.com/us/products/2900562>

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Hybrid motor starter for reversing 3~ AC motors up to 550 V AC, with 230 V AC input, 9 A output current, and emergency stop function.

Your advantages

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

Commercial data

Item number	2900562
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	NULL
Product key	DK7414
GTIN	4046356527835
Weight per piece (including packing)	297.3 g
Weight per piece (excluding packing)	223.15 g
Customs tariff number	85371099
Country of origin	DE

Technical data

Product properties

Product type	Hybrid motor starters
Product family	CONTACTRON
Operating mode	100% operating factor

Insulation characteristics: Air clearances and creepage distances between the power circuits

Insulation	safe isolation
Overvoltage category	III
Degree of pollution	2

Electrical properties

Number of phases	3
Service life electrical	3×10^7 cycles
Reversing frequency	≤ 2 Hz
Maximum power dissipation	16.1 W
Minimum power dissipation	2.6 W
Coordination type	1

Air clearances and creepage distances between the power circuits

Rated insulation voltage	500 V
Rated surge voltage	6 kV

Supply

Rated control circuit supply voltage U_S	230 V AC
Control supply voltage range	92 V AC ... 253 V AC
Rated control supply current I_S	4 mA
Mains frequency	50/60 Hz
Protective circuit	Surge protection

Emergency tripping

Operate threshold	> 45 A
Response time	< 2 s

Input data

Control

Rated actuating voltage U_C	230 V AC
Triggering voltage range	92 V AC ... 253 V AC
Mains frequency	50 Hz 60 Hz 50/60 Hz
Switching threshold	44 V AC ("0" signal) 85 V AC ("1" signal)
Switching level	< 5 V AC (For EMERGENCY STOP)
Typical turn-off time	< 70 ms

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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) 6.5 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
Residual voltage	< 0.3 V
Protective circuit	Surge protection

Acknowledge output

Note	Confirmation 01: floating changeover contact
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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

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

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

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Material specifications

Flammability rating according to UL 94 (Housing)	V0 (Housing)
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Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C

Approvals

Safety Integrity Level (SIL, IEC 61508)

Identification	≤ 3
Note	Safe shutdown

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)))
	5 kA (480 V AC (fuse: 20 A RK5 (standard fault)))
FLA	6.5 A (480 V)

Standards and regulations

Standards/regulations

Standards/regulations	DIN EN 50178
	EN 60947

Power station requirements

Standards/regulations	DWR 1300/ZXX01/DD/7080.8d
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Air clearances and creepage distances between the power circuits

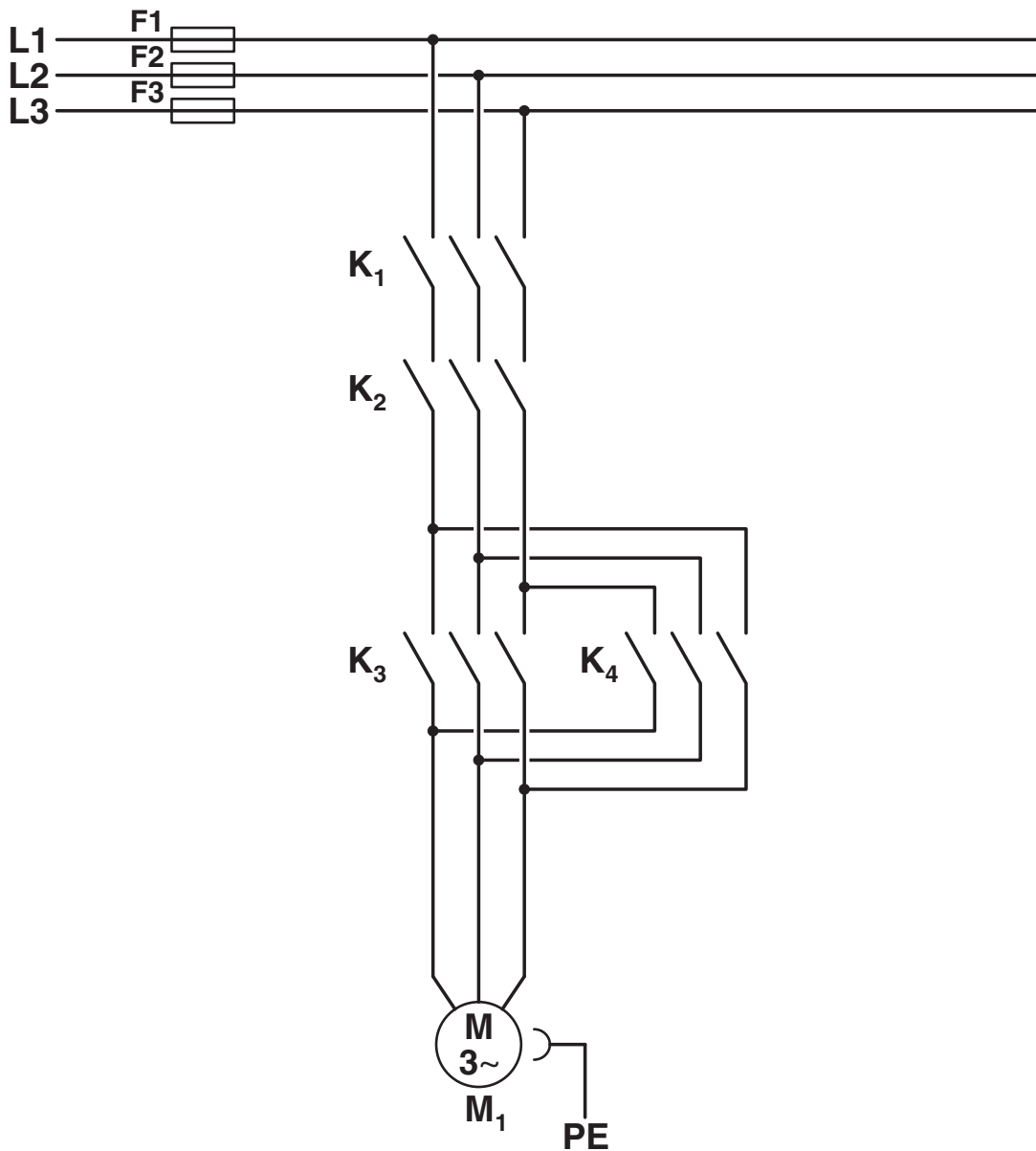
Standards/regulations	DIN EN 50178
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Mounting

Assembly note	can be aligned with spacing = 20 mm
Mounting position	Vertical (horizontal DIN rail)

Drawings

Circuit diagram



Conventional structure

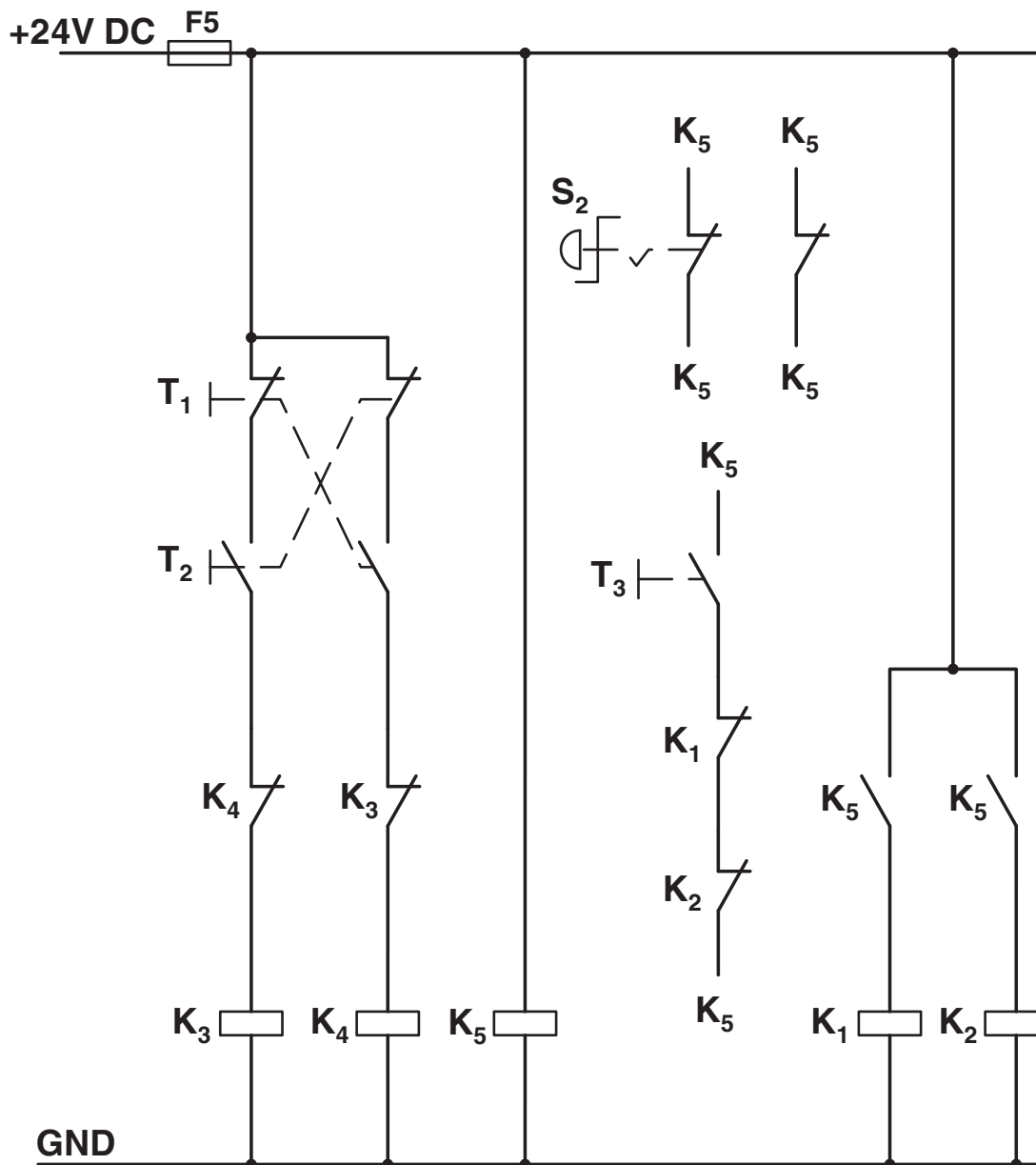
Main current path for contactor according to category 3

K1 + K2 = Emergency stop contactor

K3 = Left contactor

K4 = Right contactor

Circuit diagram

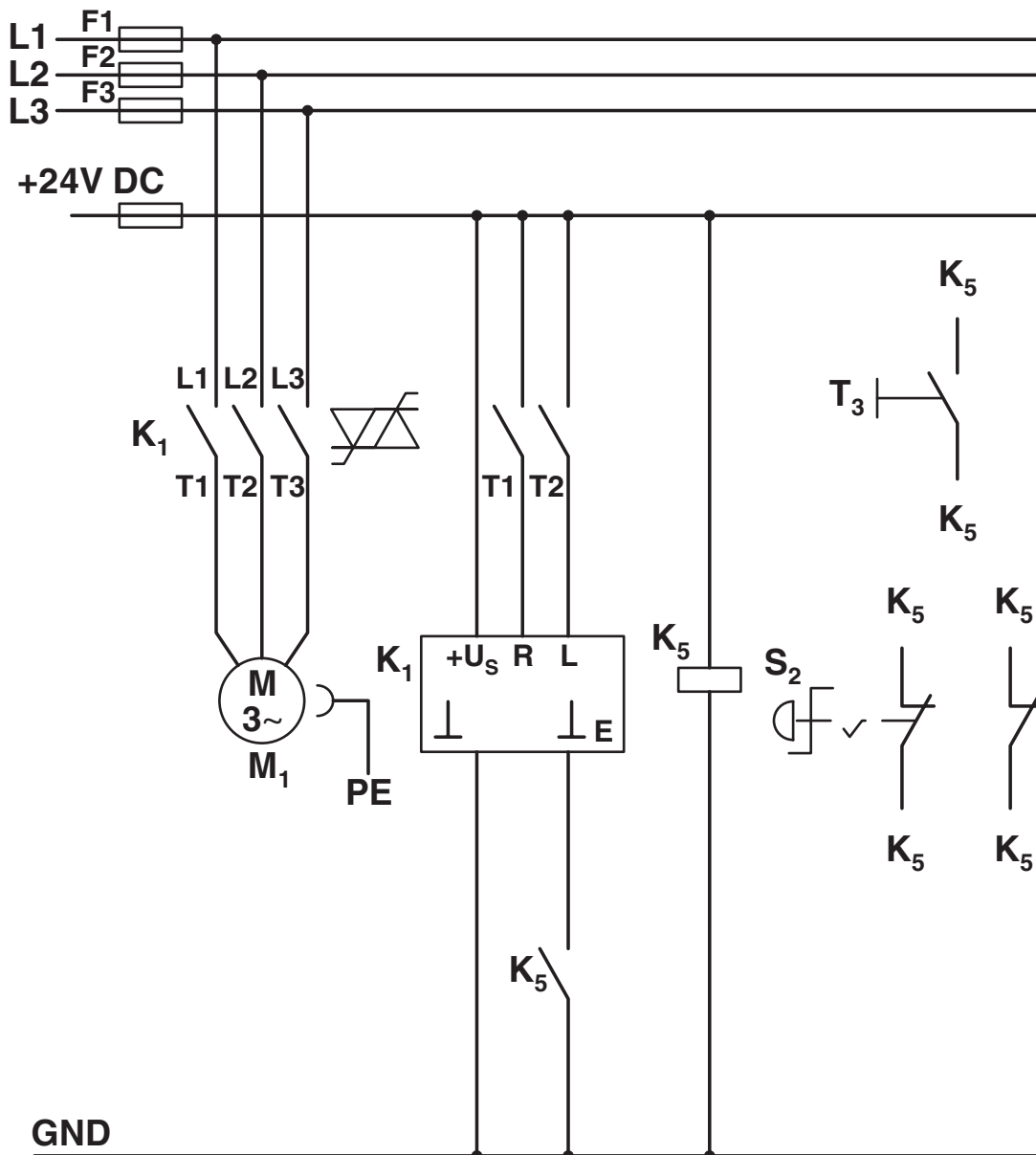


Conventional structure

Control current path protection according to category 3

- K1 + K2 = Emergency stop contactor
- K3 = Left contactor
- K4 = Right contactor
- K5 = PSR SCP-24DC.../Safety relay
- T1 = Right, T2 = Left, T3 = Reset
- S2 = Emergency stop

Circuit diagram



Structure with CONTACTRON

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

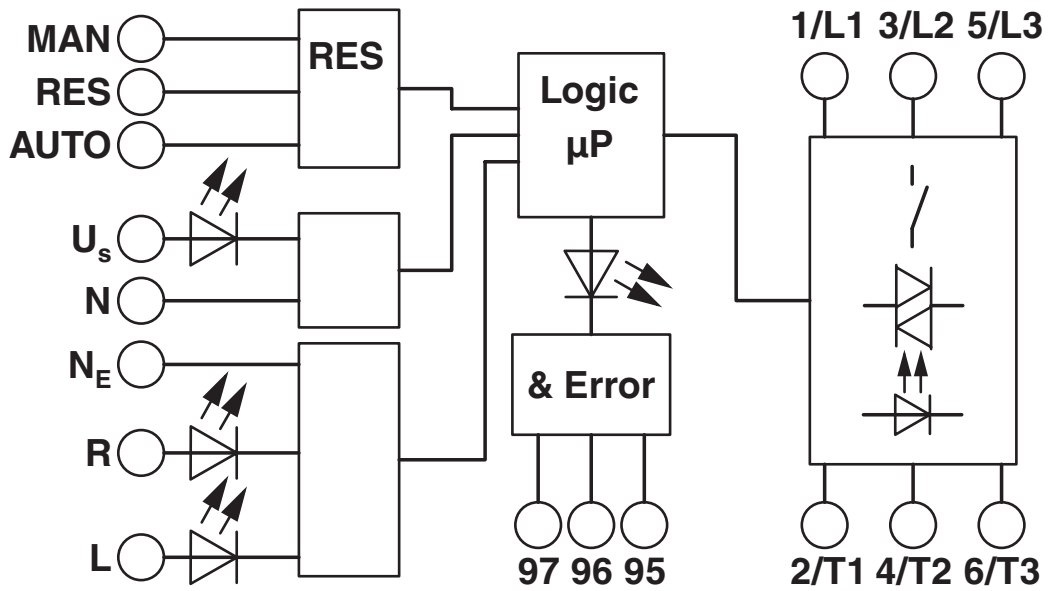
K1 = '3 in 1' hybrid motor starter with reversing function

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

T1 = Right, T2 = Left, T3 = Reset

S2 = Emergency stop

Block diagram



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Environmental product compliance

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.)	No substance above 0.1 wt%
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