

Hybrid motor starter - ELR H5-IES-PT- 24DC/500AC-2 - 2903904

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"4 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, emergency stop function, adjustable overload shutdown, and push-in connection.

Product Features

- 22.5 mm wide
- Safety level according to IEC 61508-1: SIL 3, ISO 13849: PL e
- Reduction in wiring
- Long service life
- Space saving



Key commercial data

Packing unit	1
GTIN	 4 046356 771276
Custom tariff number	85371099

Technical data

Dimensions

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

Ambient conditions

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

Input data

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Technical data

Input data

Input name	Device supply
Rated control supply voltage U_S	24 V DC (According to IEC 60947-1)
Voltage range with reference to U_S	0.8 ... 1.25
Rated control supply current I_S	≤ 40 mA
Protective circuit	Protection against polarity reversal
	Surge protection
Operating voltage display	Green LED
Status display	Yellow LED
Indication	Red LED
Input name	Control input right/left
Typical input current at U_N	≤ 5 mA
Rated control supply current I_S	≤ 40 mA (According to IEC 60947-1)
Rated actuating voltage U_C	24 V DC
Voltage range with reference to U_C	0.8 ... 1.25
Rated actuating current I_C	≤ 5 mA
Switching level "safe off"	< 5 V DC
Protective circuit	Protection against polarity reversal
Typical response time	< 35 ms
Typical turn-off time	< 40 ms

Output data

Output name	AC output
Nominal output voltage	500 V AC
Nominal output voltage range	42 V AC ... 550 V AC
Mains frequency	50 Hz
	60 Hz
Load current	max. 2.4 A (see derating curve)
Rated operating current at AC-51	2.4 A
Rated operating current at AC-53a	2.4 A
Leakage current	0 mA
Residual voltage	< 0.3 V (at I_e)
Surge current	100 A ($t = 10$ ms)
Type of protection	Surge protection
Output name	Acknowledge output
Note	Confirmation 01: floating change-over contact, signal contact
Continuous load current	≤ 50 mA

Output data, signaling contact

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Technical data

Output data, signaling contact

Measuring via	Current transformer for line current on L1 and L3
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Connection data

Connection method	Push-in connection
Conductor cross section solid min.	0.14 mm ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section stranded min.	0.14 mm ²
Conductor cross section stranded max.	2.5 mm ²
Conductor cross section AWG/kcmil min.	26
Conductor cross section AWG/kcmil max	14

General

Test voltage input/output	4 kV _{rms}
Mounting position	Vertical (horizontal DIN rail)
Assembly instructions	Can be aligned with spacing = 20 mm
Operating mode	100% operating factor
Designation	Standards/regulations
Standards/regulations	DIN EN 50178
	IEC 60947-1
	EN 60947-4-2
	IEC 61508
	ISO 13849
Designation	Air and creepage distances between the power circuits
Rated surge voltage	6 kV
Insulation	Safe isolation (EN 50178) for mains voltage ≤ 500 V AC
	Safe isolation (IEC 60947-1) for mains voltage ≤ 300 V AC
	Basic insulation (IEC 60947-1) for mains voltage of 300 ... 500 V AC
Pollution degree	2
Surge voltage category	III
Safety Integrity Level according to IEC 61508	SIL 3 (safe shutdown)
	SIL 2 (motor protection)
Category acc. to EN ISO 13849	3
Performance level according to ISO 13849	e

Classifications

eCl@ss

eCl@ss 4.0	27371102
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Classifications

eCl@ss

eCl@ss 4.1	27371102
eCl@ss 5.0	27371601
eCl@ss 5.1	27371601
eCl@ss 6.0	27371601
eCl@ss 7.0	27371601
eCl@ss 8.0	27371601

ETIM

ETIM 3.0	EC000066
ETIM 4.0	EC000066
ETIM 5.0	EC000066

UNSPSC

UNSPSC 6.01	30211915
UNSPSC 7.0901	39121514
UNSPSC 11	39121514
UNSPSC 12.01	39121514
UNSPSC 13.2	39121514

Approvals

Approvals

Approvals

UL Listed / UL Listed / cUL Listed / cUL Listed / IECCEB Scheme / IECCEB Scheme / cULus Listed

Ex Approvals

ATEX

Approvals submitted

Approval details

UL Listed


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Approvals

UL Listed 

cUL Listed 

cUL Listed 

IECEE CB Scheme 

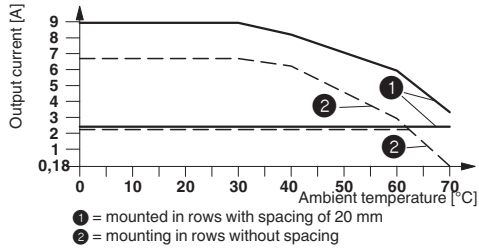
IECEE CB Scheme 

cULus Listed 

Drawings

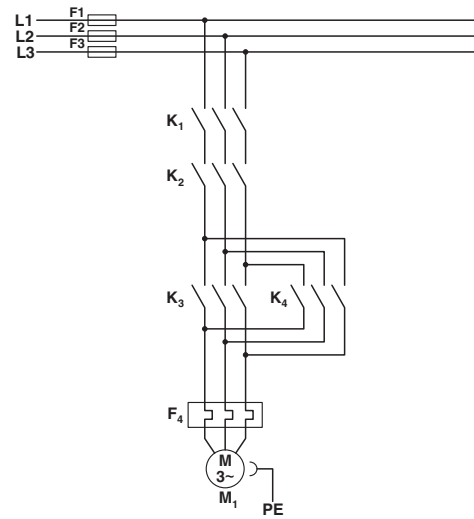
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Diagram



Derating curve

Circuit diagram

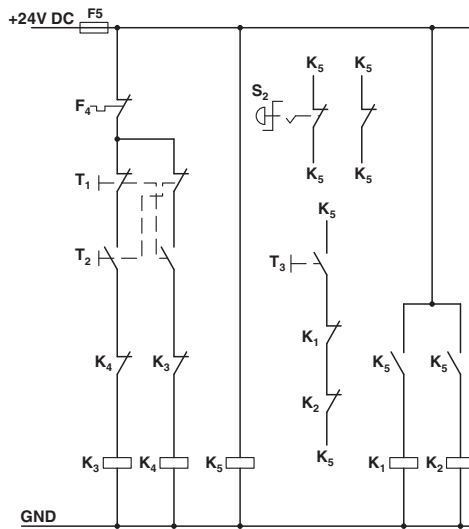


Conventional structure

Main current path for reversing contactor according to category 3

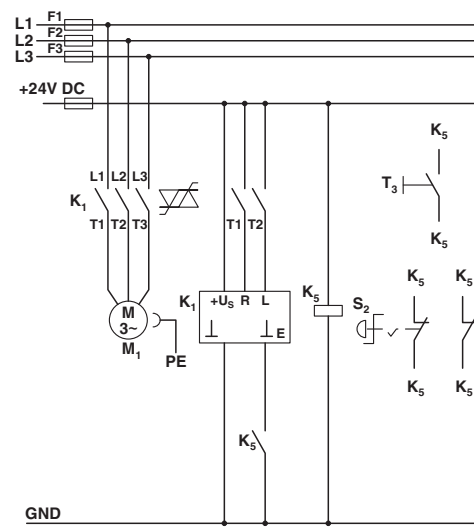
- K1 + K2 = Emergency stop contactor
- K3 = Left contactor
- K4 = Right contactor
- F4 = Motor protection relay

Circuit diagram



Conventional structure

Circuit diagram



Structure with CONTACTRON

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Control current path reversing contactor 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
F4 = Motor protection relay

Main and control current path for '4 in 1' hybrid motor starter with reversing function according to category 3

K1 = '4 in 1' hybrid motor starter with reversing function
K5 = PSR SCP-24DC.../Safety relay
T1 = Right, T2 = Left, T3 = Reset
S2 = Emergency stop

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