

## 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 $I_S$	$\leq 40$ 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 $U_N$	$\leq 5$ mA
Rated control supply current $I_S$	$\leq 40$ 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 $I_C$	$\leq 5$ 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	$\leq 50$ 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 <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	14

### General

Test voltage input/output	4 kV <sub>rms</sub>
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

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#### Approvals

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

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#### Ex Approvals

#### ATEX

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#### Approvals submitted

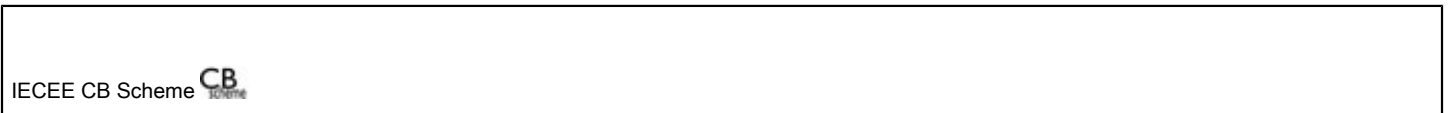
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### Approval details

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

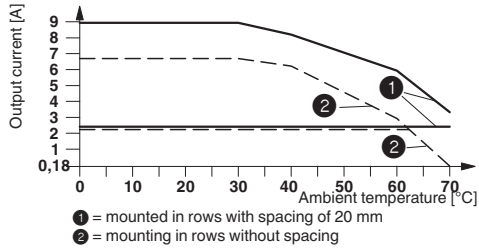
## Approvals



## Drawings

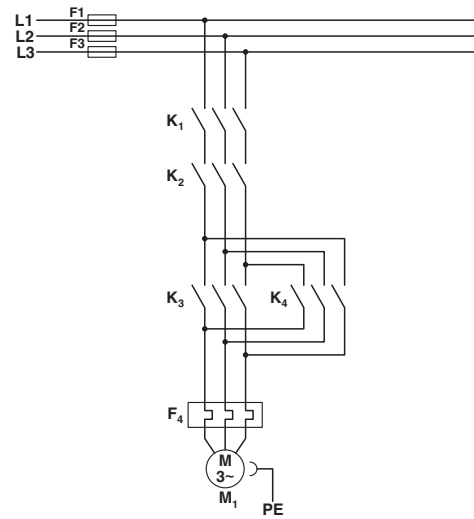
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Diagram



Derating curve

Circuit diagram

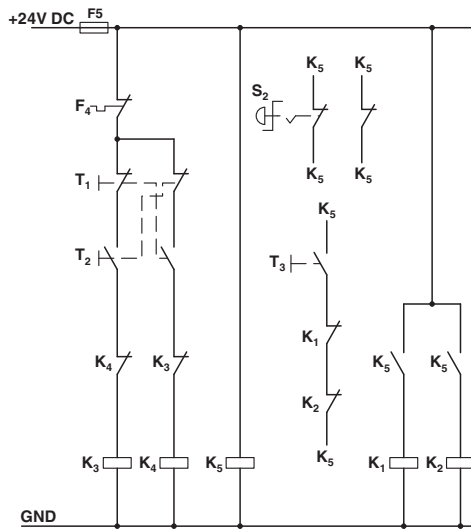


Conventional structure

Main current path for reversing contactor according to category 3

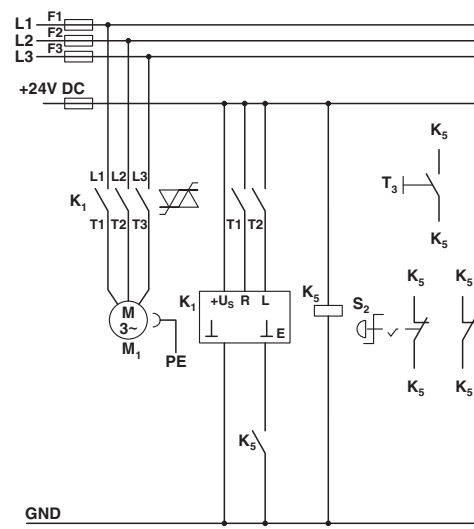
- K1 + K2 = Emergency stop contactor
- K3 = Left contactor
- K4 = Right contactor
- F4 = Motor protection relay

Circuit diagram



Conventional structure

Circuit diagram



Structure with CONTACTRON

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

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