

# Hybrid motor starter - ELR H5-IES-SC-230AC/500AC-2 - 2900420

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"4 in 1" hybrid motor starter for reversing 3~ AC motors up to 550 V AC, with 230 V AC input, 2.4 A output current, emergency stop function, and adjustable overload shutdown.

Illustration shows the 24 V design

## Product Features

- 22.5 mm wide
- Safety level according to IEC 61508-1: SIL 3, ISO 13849: PL e
- Long service life
- Reduction in wiring
- Space saving
- 3-phase loop bridges
- Bimetal function can be set up to 9 A



## Key commercial data

<b>package_quantity</b>	1
<b>GTIN</b>	4046356504065

## Technical data

### Dimensions

<b>Width</b>	22.5 mm
<b>Height</b>	99 mm
<b>Depth</b>	114.5 mm

### Ambient conditions

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

### Input data

<b>Input name</b>	Device supply
<b>Rated control supply voltage <math>U_s</math></b>	230 V AC (50/60 Hz)
<b>Voltage range with reference to <math>U_s</math></b>	0.4 ... 1.1
<b>Rated control supply current <math>I_s</math></b>	4 mA
<b>Rated actuating voltage <math>U_c</math></b>	230 V AC

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## Technical data

### Input data

Voltage range with reference to $U_c$	0.4 ... 1.1
Rated actuating current $I_c$	7 mA
Switching threshold "0" signal, voltage	44 V AC
Switching threshold "1" signal voltage	85 V AC
Protective circuit	Surge protection
Typical response time	< 35 ms
Typical turn-off time	< 80 ms
Operating voltage display	Green LED
Status display	Yellow LED
Indication	Red LED
Input name	Control input right/left

### Output data

Output name	AC output
Nominal output voltage	500 V AC
Nominal output voltage range	42 V AC ... 550 V AC
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
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. 250 V AC
Continuous load current	6 A

### Output data, signaling contact

Measuring via	Current transformer for line current on L1 and L3
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### 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	14

### General

Test voltage input/output	4 kV <sub>rms</sub>
Mounting position	Vertical (horizontal DIN rail)

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## Technical data

### General

<b>Assembly instructions</b>	Can be aligned with spacing = 20 mm
<b>Operating mode</b>	100% operating factor
<b>Name</b>	Standards/regulations
<b>Standards/regulations</b>	DIN EN 50178
<b>Standards/regulations</b>	EN 60947
<b>Name</b>	Power station requirements
<b>Standards/regulations</b>	DWR 1300 / ZXX01/DD/7080.8d
<b>Name</b>	Air and creepage distances between the power circuits
<b>Standards/regulations</b>	DIN EN 50178
<b>Rated surge voltage / insulation</b>	6 kV/safe isolation
<b>Rated insulation voltage</b>	500 V
<b>Pollution degree</b>	2
<b>Surge voltage category</b>	III
<b>Safety integrity level according to IEC 61508-1</b>	SIL 3 (safe shutdown)
<b>Safety integrity level according to IEC 61508-1</b>	SIL 2 (motor protection)
<b>Category as per ISO 13849-1</b>	3
<b>Performance Level as per ISO 13849-1</b>	e
<b>Category in acc. with EN 954-1</b>	3

## classifications

### eCl@ss

<b>eCl@ss 4.0</b>	27371102
<b>eCl@ss 4.1</b>	27371102
<b>eCl@ss 5.0</b>	27371601
<b>eCl@ss 5.1</b>	27371601
<b>eCl@ss 6.0</b>	27371601
<b>eCl@ss 7.0</b>	27371601
<b>eCl@ss 8.0</b>	27371601

### ETIM

<b>ETIM 2.0</b>	EC000066
<b>ETIM 3.0</b>	EC000066
<b>ETIM 4.0</b>	EC000066
<b>ETIM 5.0</b>	EC000066

### UNSPSC

<b>UNSPSC 6.01</b>	30211915
<b>UNSPSC 7.0901</b>	39121514
<b>UNSPSC 11</b>	39121514
<b>UNSPSC 12.01</b>	39121514
<b>UNSPSC 13.2</b>	39121514

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## approvals

ATEX / UL Listed / cUL Listed / IECEx CB Scheme / UL Listed / cUL Listed / GL / GL-SW / IECEx CB Scheme / cULus Listed / GL /

### Approval details

ATEX	
Nominal voltage UN	
Nominal current IN	
mm <sup>2</sup> /AWG/kcmil	

UL Listed
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cUL Listed
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IECEx CB Scheme
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GL
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GL-SW
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# Hybrid motor starter - ELR H5-IES-SC-230AC/500AC-2 - 2900420

approvals



accessories

## Loop bridge

BRIDGE- 2 - 2900746



BRIDGE- 3 - 2900747



BRIDGE- 4 - 2900748



BRIDGE- 5 - 2900749



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## accessories

BRIDGE- 6 - 2900750



BRIDGE- 7 - 2900751



BRIDGE- 8 - 2900752



BRIDGE- 9 - 2900753



BRIDGE-10 - 2900754



BRIDGE- 2-3M - 2901543



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## accessories

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BRIDGE- 3-3M - 2901656



BRIDGE- 4-3M - 2901659



BRIDGE- 5-3M - 2901545



BRIDGE- 6-3M - 2901697



BRIDGE- 7-3M - 2901698



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## accessories

BRIDGE- 8-3M - 2901700



BRIDGE- 9-3M - 2901701



BRIDGE-10-3M - 2901702



BRIDGE- 2-1M - 2901542



BRIDGE- 3-1M - 2901655



BRIDGE- 4-1M - 2901658





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accessories

BRIDGE- 5-1M - 2901544

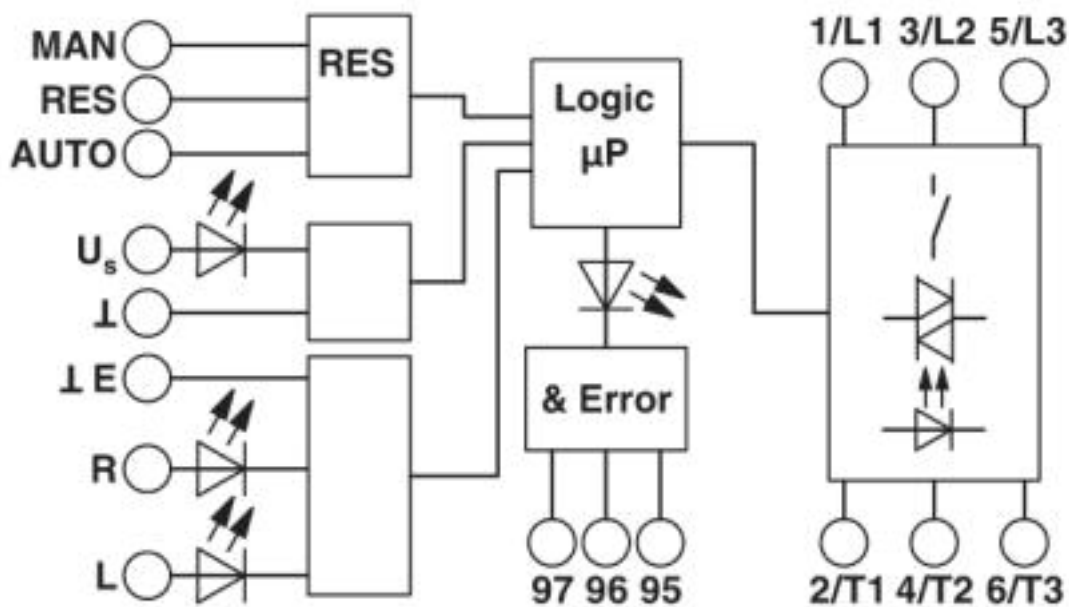


BRIDGE- 6-1M - 2901649



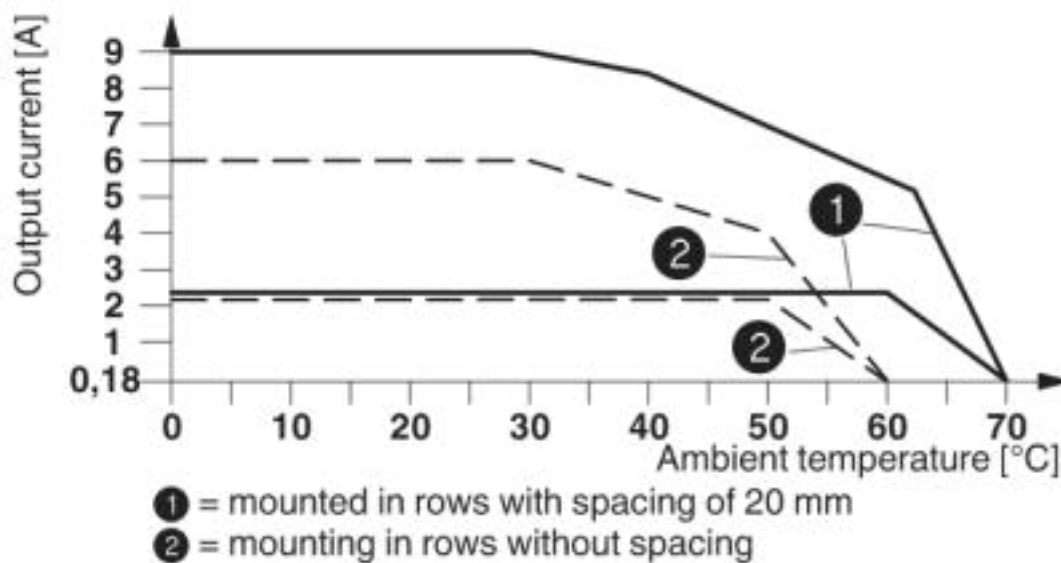
## Drawings

Block diagram



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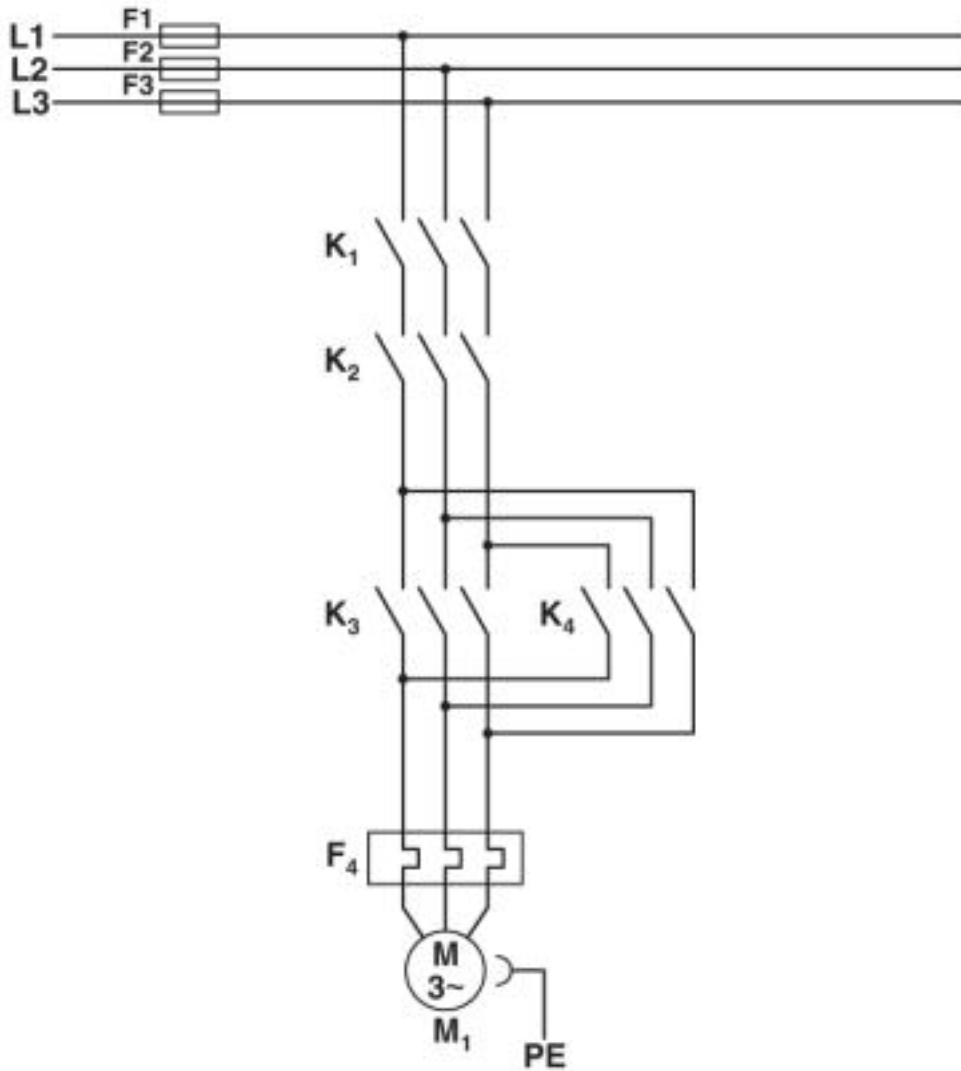
Diagram



Derating curve ELR H5-IES-SC-230AC/500AC-2 and ELR H5-IES-SC-230AC/500AC-9

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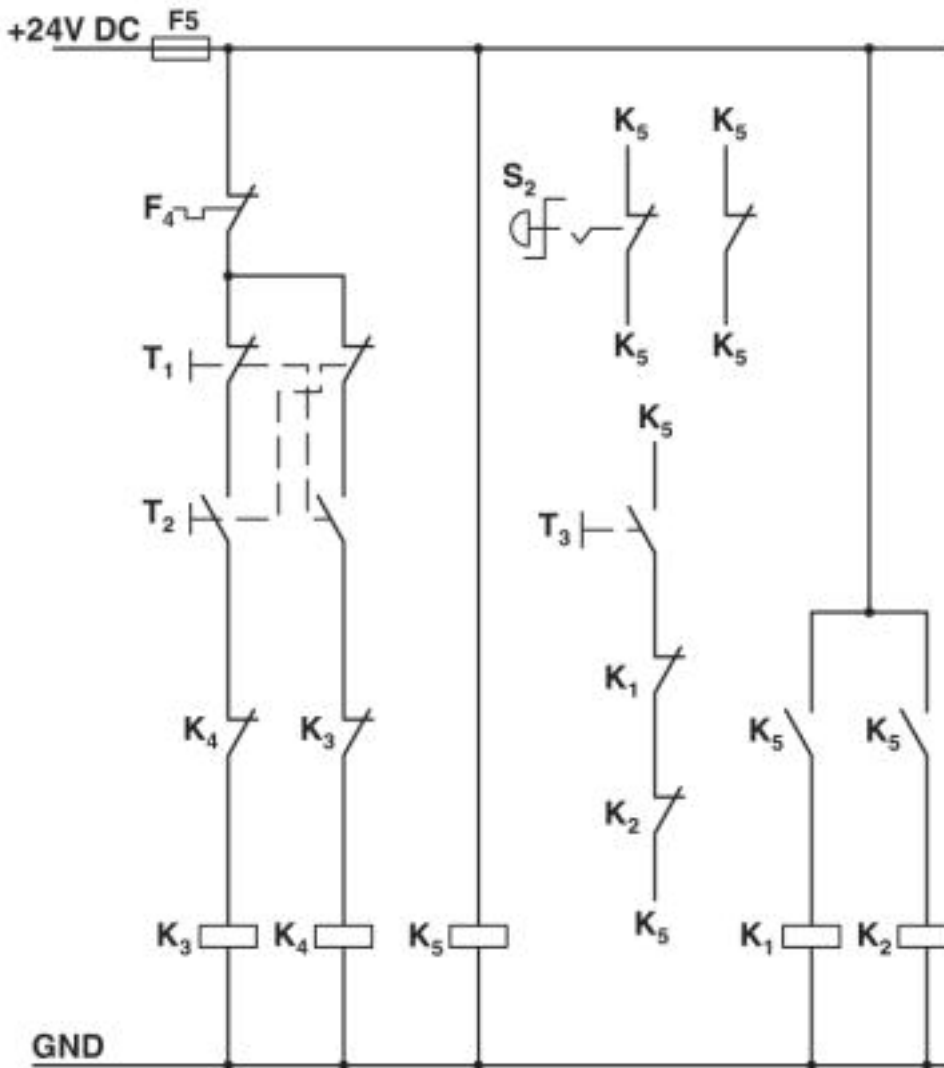
Circuit diagram



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

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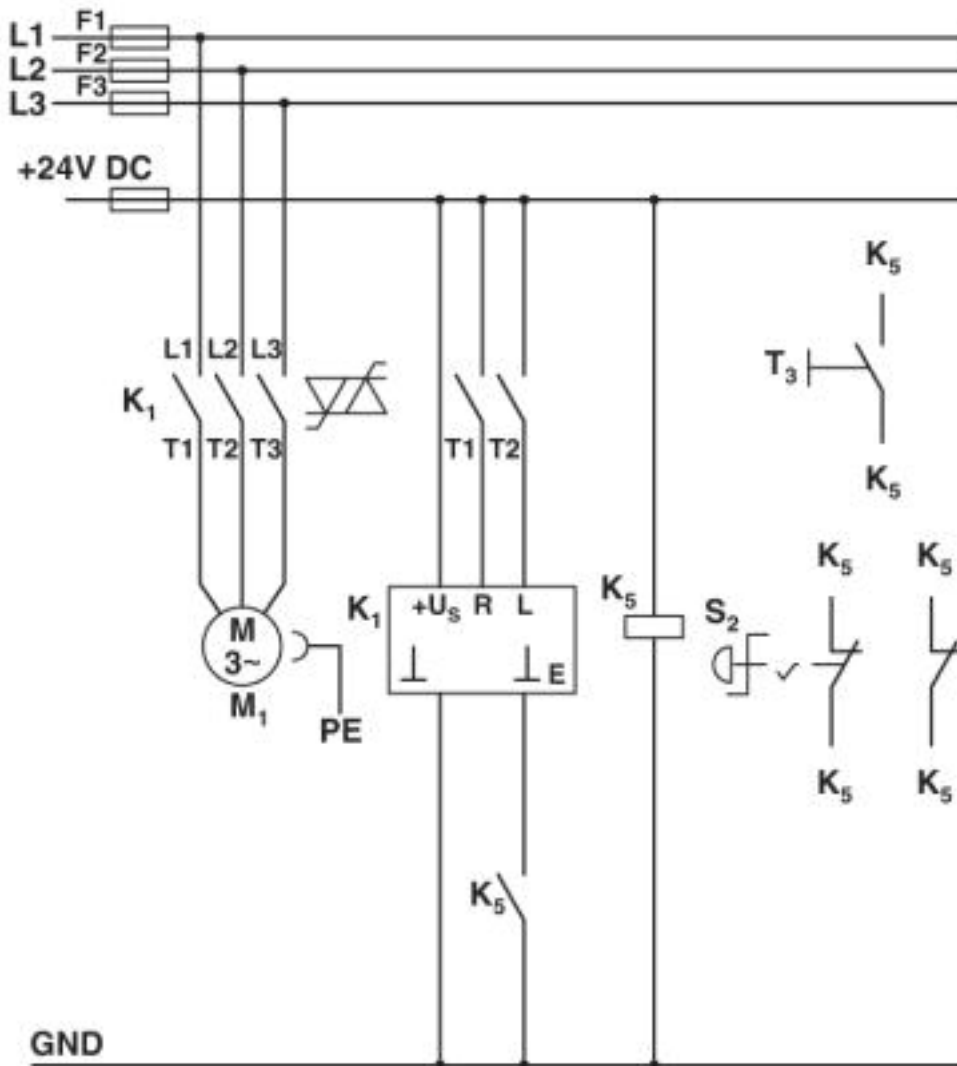
Circuit diagram



Conventional structure  
 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

# Hybrid motor starter - ELR H5-IES-SC-230AC/500AC-2 - 2900420

Circuit diagram



Structure with CONTACTRONMain and control current path for "4 in 1" hybrid motor starter with reversing function according to category 3K1 = "4 in 1" hybrid motor starter with reversing functionK5 = PSR SCP-24DC.../Safety relayT1 = Right, T2 = Left, T3 = ResetS2 = Emergency stop

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