

# ELR H5-IES-SC-230AC/500AC-2

Order No.: 2900420


Illustration shows the 24 V design



<http://eshop.phoenixcontact.de/phoenix/treeViewClick.do?UID=2900420>

"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.



Commercial data	
GTIN (EAN)	4 046356 504065 
sales group	G420
Pack	1 pcs.
Customs tariff	85364900
Catalog page information	Page 230 (NTK-2010)

### Product notes

WEEE/RoHS-compliant since:  
03/01/2010



<http://www.download.phoenixcontact.com>  
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Technical data	
<b>Input data</b>	
Mains frequency	40 Hz
	100 Hz
Rated control supply voltage $U_s$	230 V AC

Rated control supply voltage range with reference to $U_s$	0.4 ... 1.1
Rated control supply current $I_s$	4 mA
Rated actuating voltage $U_c$	230 V AC
Rated actuating 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

**Output data, load relay**

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)
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
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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	12

**General data**

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	4 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)
	SIL 2 (motor protection)
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**

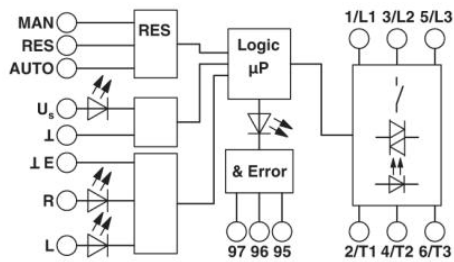


Certification CB, CUL Listed, UL Listed

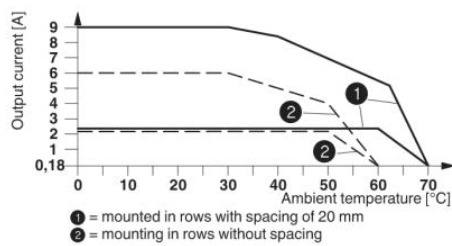
Certification Ex: PTB

## Diagrams/Drawings

### Block diagram



### Diagram



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

Circuit diagram



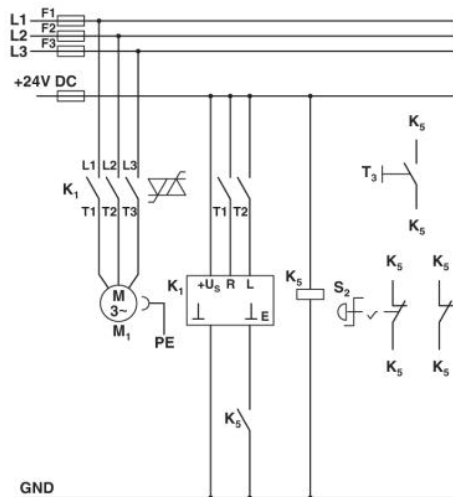
**Conventional structure**

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



**Conventional structure**

Control current path for reversing 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  
 F4 = Motor protection relay



**Structure with CONTACTRON**

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 = 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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