

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

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)



"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

Packing unit	1 pc
Weight per Piece (excluding packing)	280.0 GRM
Custom tariff number	85371099
Country of origin	Germany

Technical data

Input data

Input name	Device supply
Rated control supply voltage U_s	230 V AC (50/60 Hz)
Voltage range with reference to U_s	0.4 ... 1.1
Rated control supply current I_s	4 mA
Protective circuit	Surge protection
Typical response time	< 35 ms

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

Technical data

Input data

Typical turn-off time	< 80 ms
Operating voltage display	Green LED
Status display	Yellow LED
Indication	Red LED
Input name	Control input right/left
Rated actuating voltage U_c	230 V AC
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

Output data load 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)
Min. load current	180 mA
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)
Protective circuit	Surge protection

Output data reply output

Note	Confirmation 01: floating change-over contact, signal contact
Contact type	1 PDT
Contact material	AgSnO ₂ , hard gold-plated
Maximum switching voltage	30 V AC
	36 V DC
Minimum switching voltage	100 mV AC/DC (at 10 mA)
Min. switching current	1 mA (at 24 V)
Maximum inrush current	50 mA
Limiting continuous current	50 mA
Interrupting rating (ohmic load) max.	1.2 W (at 24 V DC)
Note	the following values are applicable if a gold layer is destroyed
Maximum switching voltage	250 V AC/DC
Minimum switching voltage	5 V (at 100 mA)
Min. switching current	10 mA (at 12 V)

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

Technical data

Output data reply output

Limiting continuous current	6 A
Interrupting rating (ohmic load) max.	140 W (at 24 V DC)
	20 W (at 48 V DC)
	18 W (at 60 V DC)
	23 W (at 110 V DC)
	40 W (at 220 V DC)
	1500 VA (for 250 V AC)
Switching capacity according to IEC 60947-5-1	2 A (at 24 V, DC13)
	0.2 A (at 110 V, DC13)
	0.1 A (at 220 V, DC13)
	3 A (at 24 V, AC15)
	3 A (at 120 V, AC15)
	3 A (at 230 V, AC15)

Output data, signaling contact

Measuring via	Current transformer for line current on L1 and L3
---------------	---

Connection data

Connection method	Screw 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	Air and creepage distances between the power circuits
Standards/regulations	DIN EN 50178
Insulation	sichere Trennung
Pollution degree	2
Surge voltage category	III
Designation	Standards/regulations
Standards/regulations	EN 60947
Safety integrity level according to IEC 61508-1	SIL 3 (safe shutdown)

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

Technical data

General

	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

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

Classifications

eCl@ss

eCl@ss 4.0	27371102
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 2.0	EC000066
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

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

Approvals

Approvals

Approvals






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

Ex Approvals

ATEX / ATEX

Approvals submitted

Approval details

UL Listed 
cUL Listed 
IECEx CB Scheme 
UL Listed 
cUL Listed 
GL
GL-SW

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

Approvals

IECEE CB Scheme 

GL

GL-SW


cUL Listed 

cULus Listed 

GL

cULus Listed 

cULus Listed



Accessories

Accessories

Loop bridge

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

Accessories

Jumper - BRIDGE- 2 - 2900746



3-phase loop bridge for 2 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.

Jumper - BRIDGE- 3 - 2900747



3-phase loop bridge for 3 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.

Jumper - BRIDGE- 4 - 2900748



3-phase loop bridge for 4 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.

Jumper - BRIDGE- 5 - 2900749



3-phase loop bridge for 5 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.

Jumper - BRIDGE- 6 - 2900750



3-phase loop bridge for 6 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.

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

Accessories

Jumper - BRIDGE- 7 - 2900751



3-phase loop bridge for 7 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.

Jumper - BRIDGE- 8 - 2900752



3-phase loop bridge for 8 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.

Jumper - BRIDGE- 9 - 2900753



3-phase loop bridge for 9 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.

Jumper - BRIDGE-10 - 2900754



3-phase loop bridge for 10 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 0.3 m, with ferrules.

Jumper - BRIDGE- 2-3M - 2901543



3-phase loop bridge for 2 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m, with ferrules included.

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

Accessories

Jumper - BRIDGE- 3-3M - 2901656



3-phase loop bridge for 3 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m, with ferrules included.

Jumper - BRIDGE- 4-3M - 2901659



3-phase loop bridge for 4 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m, with ferrules included.

Jumper - BRIDGE- 5-3M - 2901545



3-phase loop bridge for 5 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m, with ferrules included.

Jumper - BRIDGE- 6-3M - 2901697



3-phase loop bridge for 6 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m, with ferrules included.

Jumper - BRIDGE- 7-3M - 2901698



3-phase loop bridge for 7 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m, with ferrules included.

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

Accessories

Jumper - BRIDGE- 8-3M - 2901700



3-phase loop bridge for 8 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m, with ferrules included.

Jumper - BRIDGE- 9-3M - 2901701



3-phase loop bridge for 9 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m, with ferrules included.

Jumper - BRIDGE-10-3M - 2901702

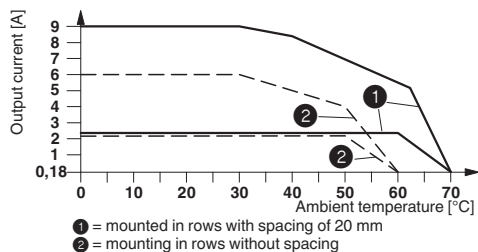


3-phase loop bridge for 10 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 3 m, with ferrules included.

Drawings

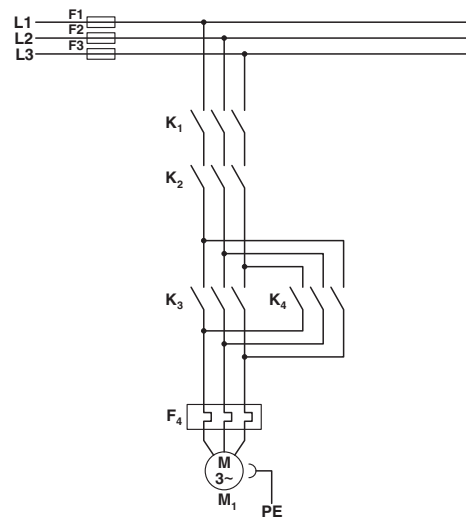
Hybrid motor starter - ELR H5-IES-SC-230AC/500AC-2 - 2900420

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

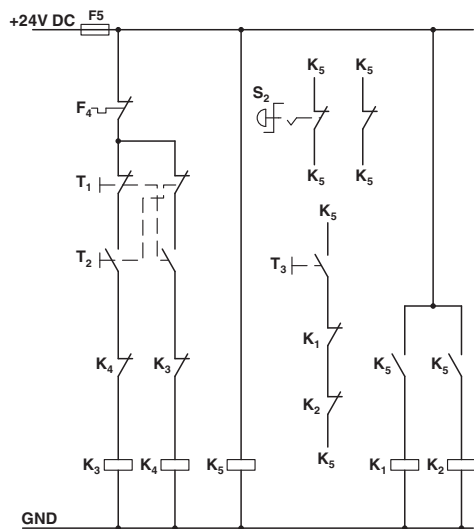
K1 + K2 = Emergency stop contactor

K3 = Left contactor

K4 = Right contactor

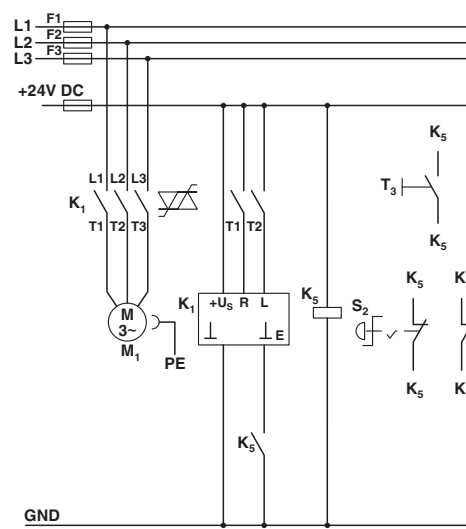
F4 = Motor protection relay

Circuit diagram



Conventional structure

Circuit diagram



Structure with CONTACTRON

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

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