

## Hybrid motor starter - ELR H5-IES-PT- 24DC/500AC-0,6 - 2903902

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Hybrid motor starter for reversing 3~ AC motors up to 500 V AC and 0.6 A output current, with 24 V DC control voltage, adjustable overload shutdown and emergency stop function to SIL 3/PL e and push-in connection

### Why buy this product

- 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 STK
GTIN	 4 046356 770552
GTIN	4046356770552
Weight per Piece (excluding packing)	217.400 g
Custom tariff number	85371099
Country of origin	Germany

### Technical data

#### Dimensions

Width	22.5 mm
Height	99 mm
Depth	114.5 mm

#### Ambient conditions

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

#### Device supply

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## Technical data

### Device supply

Rated control circuit supply voltage $U_s$	24 V DC
Control supply voltage range	19.2 V DC ... 30 V DC
Rated control supply current $I_s$	40 mA
Protective circuit	Reverse polarity protection
	Surge protection

### Input data

Input name	Control input right/left
Rated actuating voltage $U_c$	24 V DC
Rated actuating current $I_c$	5 mA (Input type 1)
Switching threshold	9.6 V ("0" signal)
	19.2 V ("1" signal)
Switching level	< 5 V DC (For EMERGENCY STOP)
Protective circuit	Reverse polarity protection
Typical turn-off time	< 30 ms

### Output data load output

Output name	AC output
Rated operating voltage $U_e$	500 V AC
Operating voltage range	42 V AC ... 550 V AC
Mains frequency	50 Hz
	60 Hz
Load current range	75 mA ... 600 mA (see to derating)
Trigger characteristic in acc. with IEC 60947-4-2	Class 10A
Cooling time	20 min. (for auto reset)
Rated operating current at AC-51	0.6 A
Rated operating current at AC-53a	0.6 A
Leakage current	0 mA
Protective circuit	Surge protection

### Output data reply output

Output name	Acknowledge output
Note	Confirmation: floating change-over contact, signal contact
Contact type	1 PDT
Switching capacity according to IEC 60947-5-1	3 A (230 V, AC15)
	2 A (24 V, DC13)

### General

Switching frequency	$\leq 2$ Hz (Load-dependent)
Mounting position	vertical (horizontal DIN rail, motor output below)
Assembly instructions	alignable, for spacing see derating
Operating mode	100% operating factor
Maximum power dissipation	2.5 W

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## Technical data

### General

Minimum power dissipation	0.88 W
Operating voltage display	Green LED
Status display	Yellow LED
Indication	Red LED

### Connection data, input side

Connection name	Control circuits
Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section solid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 14

### Connection data, output side

Connection name	Load circuit
Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section solid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 14

### Insulation characteristics

Rated insulation voltage	500 V
Rated surge voltage	6 kV
Overvoltage category	III
Degree of pollution	2
Designation	Insulation characteristics between the control input and control supply voltage, and auxiliary circuit to the main circuit
Insulation	Safe isolation (IEC 60947-1/EN 50178) at operating voltage ≤ 300 V AC
	Basic isolation (IEC 60947-1) at operating voltage 300 ... 500 V AC
	Safe isolation (EN 50178) at operating voltage 300 ... 500 V AC
Designation	Isolation characteristics between the control input and control supply voltage to auxiliary circuit
Insulation	Safe isolation (IEC 60947-1) in the auxiliary circuit ≤ 300 V AC
	Safe isolation (EN 50178) in the auxiliary circuit ≤ 300 V AC

### Approvals/conformities

Safety Integrity Level according to IEC 61508	≤ 3 (Safe shutdown)
	2 (Motor protection)
Category acc. to EN ISO 13849	≤ 3 (Safe shutdown)
Performance level according to ISO 13849	≤ e (Safe shutdown)
ATEX	# II (2) G [Ex e] [Ex d] [Ex px]
	# II (2) D [Ex t] [Ex p]
EU-type examination certificate	PTB 07 ATEX 3145

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## Technical data

### Approvals/conformities

UL certificate	NLDX.E228652
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### UL data

SCCR	100 kA (500 V AC (fuse: 30 A class CC/30 A class J (high fault)))
	5 kA (500 V AC (fuse: 20 A RK5 (standard fault)))
FLA	0.6 A (500 V AC)
Group installation	20 A (class RK5, SCCR 5kA, #24 - 14 AWG max. solid and stranded)
	30 A (class CC or J, SCCR 100kA, #24 - 14 AWG max, solid and stranded)
Category code	NLDX
Horsepower ratings	-

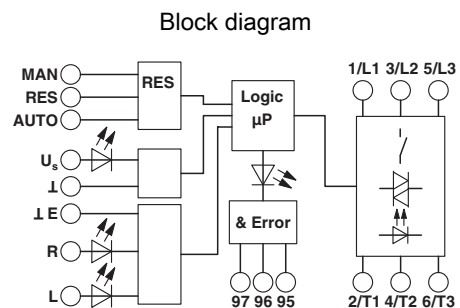
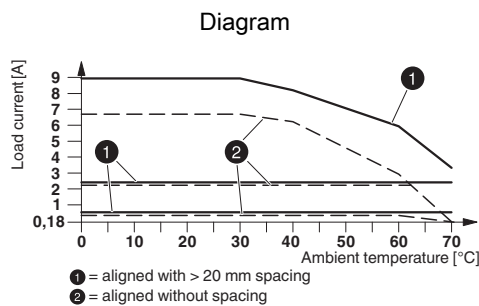
### Standards and Regulations

Designation	Standards/regulations
Standards/regulations	IEC 60947-1
	IEC 60947-4-2
	IEC 61508
	ISO 13849
ATEX	# II (2) G [Ex e] [Ex d] [Ex px]
	# II (2) D [Ex t] [Ex p]

### Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

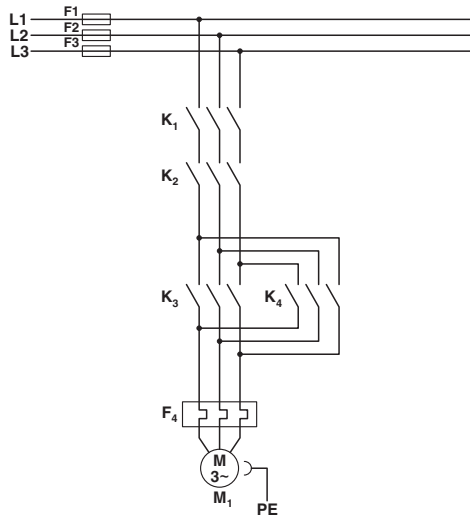
## Drawings



### Derating diagram

# Hybrid motor starter - ELR H5-IES-PT- 24DC/500AC-0,6 - 2903902

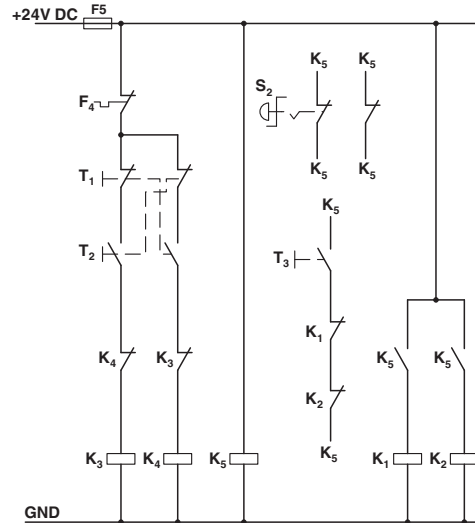
Circuit diagram



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

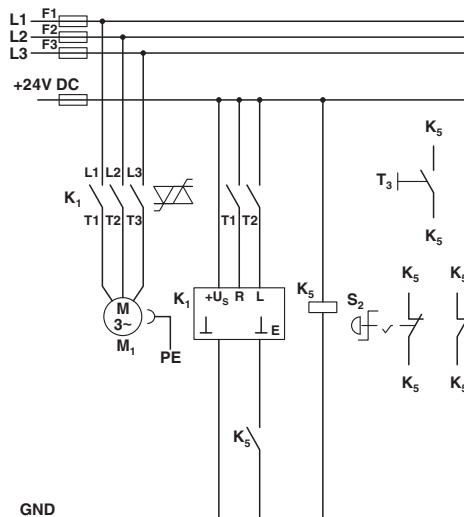
Circuit diagram



Conventional structure  
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

Circuit diagram



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

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K5 = PSR SCP-24DC.../Safety relay  
 T1 = Right, T2 = Left, T3 = Reset  
 S2 = Emergency stop

## Classifications

### eCl@ss

eCl@ss 5.0	27024002
eCl@ss 5.1	27024002
eCl@ss 6.0	27024002
eCl@ss 7.0	27024002
eCl@ss 8.0	27024002
eCl@ss 9.0	27024002

### ETIM

ETIM 2.0	EC001037
ETIM 3.0	EC001037
ETIM 4.0	EC001037
ETIM 5.0	EC001037
ETIM 6.0	EC001037

### UNSPSC

UNSPSC 6.01	30211915
UNSPSC 7.0901	39121514
UNSPSC 11	39121514
UNSPSC 12.01	39121514
UNSPSC 13.2	25173902

## Approvals

### Approvals


#### Approvals

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

#### Ex Approvals

#### ATEX

### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYVV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYVV/template/LISEXT/1FRAME/index.htm</a>	FILE E 323771
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## Approvals

cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 228652
IECEE CB Scheme		<a href="http://www.iecee.org/">http://www.iecee.org/</a>	DE1-55728
UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 228652
cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 323771
EAC			7500651.22.01.00245
cULus Listed			

## Accessories

### Accessories

#### Cover

Covering hood - BRIDGE COVER - 2906240



The BRIDGE COVER covering hood is used to cover unused plugs on the CONTACTRON bridge that may subsequently be used to extend the system. The hood can be used with the screw and Push-in version of the bridge.

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#### Loop bridge

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### Accessories

#### Jumper - BRIDGE-PT 2 - 2904490



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

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#### Jumper - BRIDGE-PT 3 - 2904491



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

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#### Jumper - BRIDGE-PT 4 - 2904492



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

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#### Jumper - BRIDGE-PT 5 - 2904493



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

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#### Jumper - BRIDGE-PT 6 - 2904494



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

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## Hybrid motor starter - ELR H5-IES-PT- 24DC/500AC-0,6 - 2903902

### Accessories

Jumper - BRIDGE-PT 7 - 2904495



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

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Jumper - BRIDGE-PT 8 - 2904496



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

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Jumper - BRIDGE-PT 9 - 2904497



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

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Jumper - BRIDGE-PT 10 - 2904498



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

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