

# 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

## Your advantages

- 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

package_quantity	1
GTIN	4046356770552

## 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
Type of protection	Surge protection
Type of protection	Reverse polarity protection

### Input data

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

### Output data load output

Output name	AC output
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## Technical data

### Output data load output

Rated operating voltage $U_e$	500 V AC
Operating voltage range	42 V AC ... 550 V AC
Rated operating current $I_e$	0.6 A (AC-51)
Rated operating current $I_e$	0.6 A (AC-53a)
Mains frequency	50/60 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)
Leakage current	0 mA
Type of protection	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)
Switching capacity according to IEC 60947-5-1	2 A (24 V, DC13)

### General

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

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## Technical data

### Connection data, output side

<b>Conductor cross section flexible</b>	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
<b>Conductor cross section AWG</b>	24 ... 14

### Ambient conditions

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

### Dimensions

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

### UL data

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

### Insulation characteristics

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

### Standards and Regulations

<b>Designation</b>	Standards/regulations
<b>Standards/regulations</b>	IEC 60947-1
<b>Standards/regulations</b>	IEC 60947-4-2
<b>Standards/regulations</b>	IEC 61508
<b>Standards/regulations</b>	ISO 13849

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## Technical data

### Standards and Regulations

<b>ATEX</b>	⊕ II (2) G [Ex e] [Ex d] [Ex px]
<b>ATEX</b>	⊕ II (2) D [Ex t] [Ex p]

### Approvals/conformities

<b>Safety Integrity Level according to IEC 61508</b>	≤ 3 (Safe shutdown)
<b>Safety Integrity Level according to IEC 61508</b>	2 (Motor protection)
<b>Category acc. to EN ISO 13849</b>	≤ 3 (Safe shutdown)
<b>Performance level according to ISO 13849</b>	≤ e (Safe shutdown)
<b>ATEX</b>	⊕ II (2) G [Ex e] [Ex d] [Ex px]
<b>ATEX</b>	⊕ II (2) D [Ex t] [Ex p]
<b>EU-type examination certificate</b>	PTB 07 ATEX 3145
<b>UL certificate</b>	NLDX.E228652

### Environmental Product Compliance

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

## Classifications

### eCl@ss

<b>eCl@ss 5.0</b>	27024002
<b>eCl@ss 5.1</b>	27024002
<b>eCl@ss 6.0</b>	27024002
<b>eCl@ss 7.0</b>	27024002
<b>eCl@ss 8.0</b>	27024002
<b>eCl@ss 9.0</b>	27024002

### ETIM

<b>ETIM 2.0</b>	EC001037
<b>ETIM 3.0</b>	EC001037
<b>ETIM 4.0</b>	EC001037
<b>ETIM 5.0</b>	EC001037
<b>ETIM 6.0</b>	EC001037

### 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>	25173902

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## Approvals

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ATEX / UL Listed / cUL Listed / IECEE CB Scheme / UL Listed / cUL Listed / EAC / CCC-s / cULus Listed /

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### Approval details

- ATEX
- UL Listed
- cUL Listed
- IECEE CB Scheme
- 
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- EAC
- CCC-s
- cULus Listed

## Accessories

### Loop bridge

BRIDGE-PT 2 - 2904490



BRIDGE-PT 3 - 2904491



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## Accessories

BRIDGE-PT 4 - 2904492



BRIDGE-PT 5 - 2904493



BRIDGE-PT 6 - 2904494



BRIDGE-PT 7 - 2904495



BRIDGE-PT 8 - 2904496



BRIDGE-PT 9 - 2904497



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## Accessories

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BRIDGE-PT 10 - 2904498



## Cover

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BRIDGE COVER - 2906240



## Device marking

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US-EMLP (15X5) - 0828790

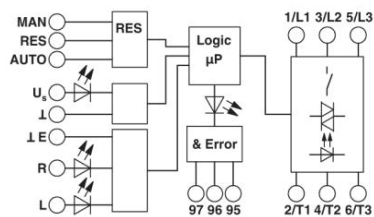


UC-EMLP (15X5) - 0819301



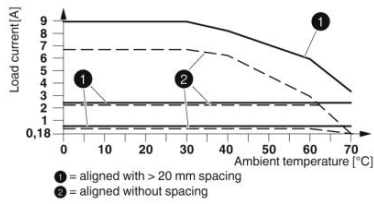
## Drawings

Block diagram



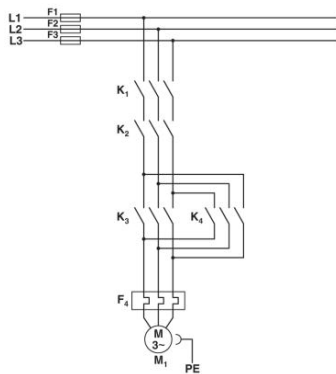
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## Diagram



## Derating diagram

## Circuit diagram



## Conventional structure

Main current path for reversing contactor according to category 3

K1 + K2 = Emergency stop contactor

K3 = Left contactor

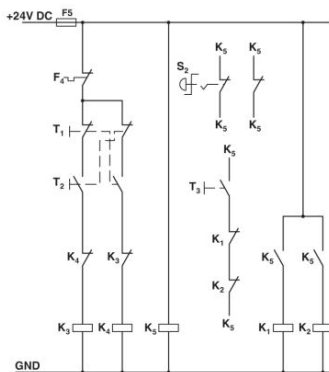
K4 = Right contactor

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

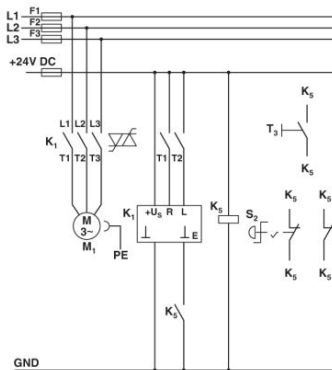
T1 = Right, T2 = Left, T3 = Reset

S2 = Emergency stop

F4 = Motor protection relay

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## 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

K5 = PSR SCP-24DC.../Safety relay

T1 = Right, T2 = Left, T3 = Reset

S2 = Emergency stop

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