ELR H5-IES-PT/500AC-3-IFS - Hybrid motor starter

2905139

https://www.phoenixcontact.com/us/products/2905139

PHŒNIX CONTACT

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Networkable hybrid motor starter for reversing 3~ AC motors up to 500 V AC and 3 A output current, with adjustable overload shutdown, emergency stop function to SIL 3 / PL e and push-in connection, DIN rail connector provided.

Your advantages

- 22.5 mm wide
- Safety level in accordance with IEC 61508-1: SIL 3, ISO 13849: PL e
- Reduction in wiring
- Space saving
- Long service life
- 3-phase loop bridges
- Adjustable current for bimetal function
- Low-wear switching

Commercial data

Item number	2905139
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C478
Product key	CK7432
Catalog page	Page 24 (C-5-2019)
GTIN	4046356919548
Weight per piece (including packing)	309.3 g
Weight per piece (excluding packing)	282.7 g
Customs tariff number	85371098
Country of origin	DE

Technical data

Product properties

Product type	Hybrid motor starters
Product family	CONTACTRON
Operating mode	100% operating factor

Electrical properties

Number of phases	3
Motor starter type	Reversing starter
Maximum power dissipation for nominal condition	2.5 W
Switching frequency	≤ 2 Hz (Load-dependent)
Maximum power dissipation	4.1 W
Minimum power dissipation	0.88 W
Coordination type	1

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	60 mA
Protective circuit	Surge protection
	Reverse polarity protection

Insulation characteristics

Rated insulation voltage	550 V
Rated surge voltage	6 kV
Overvoltage category	III
Degree of pollution	2
Insulation characteristics between the control input and control supply voltage, and auxiliary circuit to the main circuit	Safe isolation (IEC 60947-1)
Isolation characteristics between the control input and control supply voltage to auxiliary circuit	Safe isolation (IEC 60947-1) in the auxiliary circuit ≤ 300 V AC

Emergency tripping

Operate threshold	> 33 A
Response time	< 0.5 s

Input data

Control

Input name	Enable input
Note	The enable input is compatible with signals with blanking (semiconductor output signals with test pulse with max. 3 ms duration), unblanking pulses of max. 4 ms are tolerated without adversely affecting the safety function.
Rated actuating voltage U_C	24 V DC

Triggering voltage range	19.2 V DC ... 30 V DC
Rated actuating current I_C	7 mA
Switching threshold	9.6 V ("0" signal)
	19.2 V ("1" signal)
Switching level	< 5 V DC (For EMERGENCY STOP)
Typical turn-off time	< 30 ms
Protective circuit	Reverse polarity protection

Output data

AC output

Rated operating voltage U_e	500 V AC
Operating voltage range	42 V AC ... 550 V AC
Rated operating current I_e	3 A (AC-51)
	3 A (AC-53a)
Mains frequency	50/60 Hz
Load current range	180 mA ... 3 A (see to derating)
Trigger characteristic in acc. with IEC 60947-4-2	Class 10
Cooling time	20 min. (for auto reset)
Leakage current	0 mA
Protective circuit	Surge protection; Varistor

Connection data

Control circuits

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section rigid	0.2 mm² ... 2.5 mm²
Conductor cross section flexible	0.2 mm² ... 2.5 mm²
Conductor cross section AWG	24 ... 14

Load circuit

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section rigid	0.2 mm² ... 2.5 mm²
Conductor cross section flexible	0.2 mm² ... 2.5 mm²
Conductor cross section AWG	24 ... 14

Signaling

Status display	Yellow LED
Operating voltage display	Green LED
Error indication	Red LED

Dimensions

Width	22.5 mm
Height	107.5 mm

Depth	114 mm

Material specifications

Flammability rating according to UL 94	V0 (Housing)

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-5 °C ... 60 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m

Approvals

UKCA

Certificate	UKCA-compliant

ATEX

Identification	Ⓔ II (2) G [Ex eb] [Ex db] [Ex pxb]
	Ⓔ II (2) D [Ex tb] [Ex pb]
Certificate	PTB 15 ATEX 3000

UL approval

Certificate	NLDX.E228652
	NRNT.E172140

Safety Integrity Level (SIL, IEC 61508)

Identification	≤ 3
Note	Safe shutdown

Safety Integrity Level (SIL, IEC 61508)

Identification	2
Note	Motor protection

Performance Level (ISO 13849)

Identification	e
Note	Safe shutdown

Category (ISO 13849)

Identification	≤ 3
Note	Safe shutdown

UL data

SCCR	100 kA (480 V AC (fuse: 30 A class CC/30 A class J (high fault)))
	5 kA (480 V AC (fuse: 20 A RK5 (standard fault)))
FLA	3 A (480 V AC)
Group installation	20 A (class RK5, SCCR 5kA (480 V AC), #24 - 14 AWG max. solid and stranded)

	30 A (class CC or J, SCCR 100kA (480 V AC), #24 - 14 AWG max, solid and stranded)
Category code	NLDX / NRNT
Horsepower ratings	0.5 hp (208 V AC)
	0.5 hp (230 V AC)
	0.5 hp (240 V AC)
	1.5 hp (480 V AC)

Standards and regulations
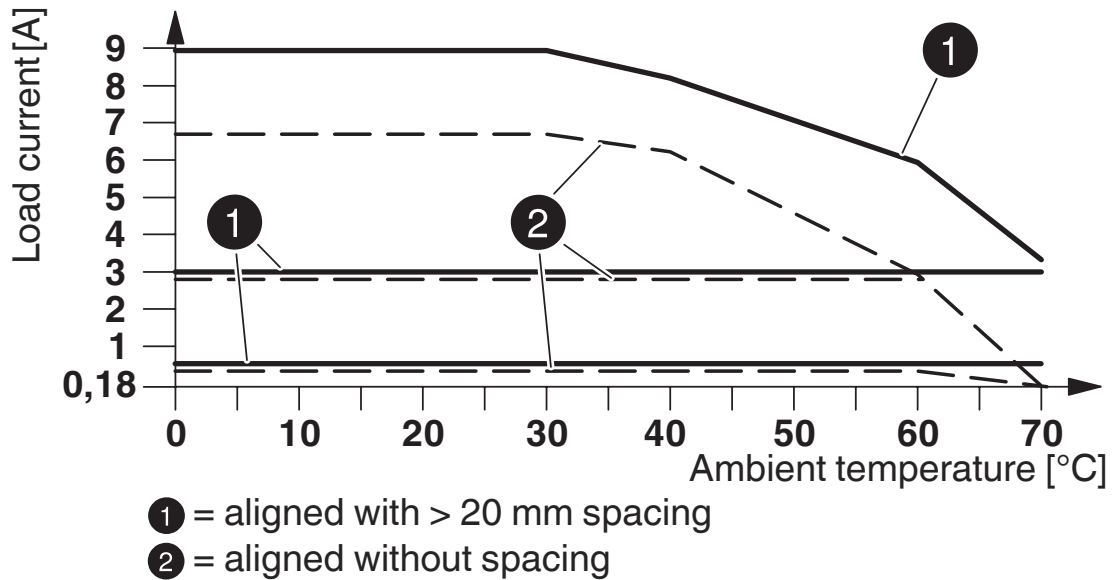
Standards/regulations

Standards/regulations	IEC 60947-1
	EN 60947-4-2
	IEC 61508
	ISO 13849

Mounting

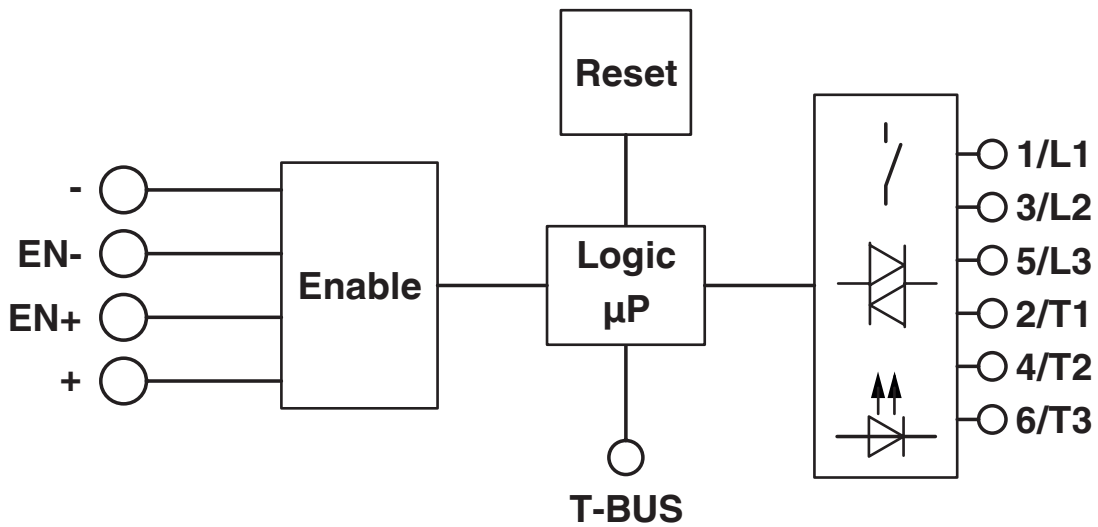| Mounting type	DIN rail mounting
Assembly note	alignable, for spacing see derating
Mounting position	vertical (horizontal DIN rail, motor output below)

Drawings

Diagram

1 = aligned with > 20 mm spacing
2 = aligned without spacing

Derating diagram

Block diagram

Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2905139

IECEE CB Scheme
Approval ID: DE1-60807

EAC
Approval ID: RU*C-DE.*08.B.00520*

UL Listed
Approval ID: FILE E 172140

CCC
Approval ID: 2016010304900298

cUL Listed
Approval ID: FILE E 172140

cUL Listed
Approval ID: FILE E 228652

UL Listed
Approval ID: FILE E 228652

ATEX
Approval ID: PTB 15 ATEX 3000

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Classifications

ECLASS

ECLASS-11.0	27370905
ECLASS-13.0	27370905
ECLASS-12.0	27370905

ETIM

ETIM 9.0	EC001037

UNSPSC

UNSPSC 21.0	25173900

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	5569f02f-f4ee-4fc8-8617-ac451cfb17a7

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Mandatory accessories

EM-PB-GATEWAY-IFS - Data interface

2297620

https://www.phoenixcontact.com/us/products/2297620

Gateway for the connection of up to 32 INTERFACE system devices to a higher-level controller via PROFIBUS DP. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

EM-CAN-GATEWAY-IFS - Data interface

2901504

https://www.phoenixcontact.com/us/products/2901504

Gateway for the connection of up to 32 INTERFACE system devices to a higher-level controller via CANopen®. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

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https://www.phoenixcontact.com/us/products/2905139

EM-MODBUS-GATEWAY-IFS - Data interface

2901528

https://www.phoenixcontact.com/us/products/2901528

Gateway for the connection of up to 32 INTERFACE system devices via Modbus/TCP to a higher-level controller. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

EM-PNET-GATEWAY-IFS - Data interface

2904472

https://www.phoenixcontact.com/us/products/2904472

Gateway for the connection of up to 32 INTERFACE system devices via PROFINET to a higher-level controller. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

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EM-ETH-GATEWAY-IFS - Data interface

2901988

https://www.phoenixcontact.com/us/products/2901988

Gateway for the connection of up to 32 INTERFACE system devices to a higher-level controller via EtherNet/IP™. The INTERFACE system devices are connected to the Gateway via DIN rail connectors, the DIN rail connectors are provided.

EM-PSAFE-GATEWAY-IFS - Data interface

1188207

https://www.phoenixcontact.com/us/products/1188207

Gateway for connecting up to 15 INTERFACE system devices to a higher-level secure controller via PROFIsafe. The system devices are connected to the gateway via DIN rail connectors. The DIN rail connectors are provided.

Accessories

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BRIDGE-PT 1 - Bridge

1161777

https://www.phoenixcontact.com/us/products/1161777

3-phase loop bridge for 1 CONTACTRON module, with Push-in connection and 22.5 mm housing width, connecting cable: 3 m

BRIDGE-PT 2 - Bridge

2904490

https://www.phoenixcontact.com/us/products/2904490

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

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BRIDGE-PT 3 - Bridge

2904491

https://www.phoenixcontact.com/us/products/2904491

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

BRIDGE-PT 4 - Bridge

2904492

https://www.phoenixcontact.com/us/products/2904492

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

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BRIDGE-PT 5 - Bridge

2904493

https://www.phoenixcontact.com/us/products/2904493

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

BRIDGE-PT 6 - Bridge

2904494

https://www.phoenixcontact.com/us/products/2904494

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

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BRIDGE-PT 7 - Bridge

2904495

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

BRIDGE-PT 8 - Bridge

2904496

https://www.phoenixcontact.com/us/products/2904496

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

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BRIDGE-PT 9 - Bridge

2904497

https://www.phoenixcontact.com/us/products/2904497

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

BRIDGE-PT 10 - Bridge

2904498

https://www.phoenixcontact.com/us/products/2904498

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

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BRIDGE-PT 1-1M - Bridge

1161778

https://www.phoenixcontact.com/us/products/1161778

3-phase loop bridge for 1 CONTACTRON module, with Push-in connection and 22.5 mm housing width, connecting cable: 1 m

BRIDGE-PT-2-1M - Bridge

1049407

https://www.phoenixcontact.com/us/products/1049407

3-phase loop bridge for 2 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, connecting cable: 1 m

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https://www.phoenixcontact.com/us/products/2905139

BRIDGE-PT-3-1M - Bridge

1049408

https://www.phoenixcontact.com/us/products/1049408

3-phase loop bridge for 3 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, connecting cable: 1 m

BRIDGE-PT-4-1M - Bridge

1049409

https://www.phoenixcontact.com/us/products/1049409

3-phase loop bridge for 4 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, connecting cable: 1 m

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BRIDGE-PT-5-1M - Bridge

1049413

https://www.phoenixcontact.com/us/products/1049413

3-phase loop bridge for 5 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, connecting cable: 1 m

BRIDGE-PT-2-2M/0,3M - Bridge

1107649

https://www.phoenixcontact.com/us/products/1107649

3-phase loop bridge for 2 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, cable length between the modules: 0.3 m, connecting cable: 2 m

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BRIDGE-PT-3-2M/0,3M - Bridge

1107650

https://www.phoenixcontact.com/us/products/1107650

3-phase loop bridge for 3 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, cable length between the modules: 0.3 m, connecting cable: 2 m

BRIDGE-PT-4-2M/0,3M - Bridge

1107644

https://www.phoenixcontact.com/us/products/1107644

3-phase loop bridge for 4 CONTACTRON modules, with Push-in connection and 22.5 mm housing width, cable length between the modules: 0.3 m, connecting cable: 2 m

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US-EMLP (15X5) - Plastic label

0828790

https://www.phoenixcontact.com/us/products/0828790

Plastic label, Card, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189

UC-EMLP (15X5) - Plastic label

0819301

https://www.phoenixcontact.com/us/products/0819301

Plastic label, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 10

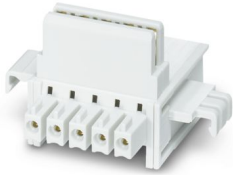# ELR H5-IES-PT/500AC-3-IFS - Hybrid motor starter

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ME 22,5 TBUS 1,5/ 5-ST-3,81 GY - DIN rail bus connectors

2201937

https://www.phoenixcontact.com/us/products/2201937

DIN rail connector, color: gray, nominal current: 8 A (parallel contacts), rated voltage (III/2): 125 V, number of positions: 5, product range: TBUS5-22,5.., pitch: 3.81 mm, mounting: DIN rail mounting, locking: without, mounting: without, type of packaging: packed in cardboard, Item with gold-plated contacts, bus connectors for connecting with electronics housings, 5 parallel contacts

EM-D-8/4-24DC-IFS - Extension module

2904473

https://www.phoenixcontact.com/us/products/2904473

For more complex applications with Interface system devices (IFS), the extension module offers digital inputs and outputs for processing additional signals in the field. Easy connection to IFS gateway via the DIN rail connector as the slave.

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QUINT4-SYS-PS/1AC/24DC/2.5/SC - Power supply unit

2904614

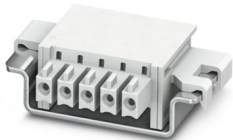https://www.phoenixcontact.com/us/products/2904614

Primary-switched power supply, QUINT POWER, screw connection, DIN rail mounting, supply of devices possible via the TBUS DIN rail connector, protective coating, input: single-phase, output: 24 V DC/2.5 A

ME 22,5 TBUS ADAPTER KMGY - DIN rail bus connectors

2201756

https://www.phoenixcontact.com/us/products/2201756

DIN rail bus adapter for ME and ME-MAX, design width: 22.5 mm, 5 parallel positions, color: light gray (similar to RAL 7035)