

ELR H5-I-SC- 24DC/500AC-9-P - Hybrid motor starter



2908693

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Hybrid motor starter as an alternative to a conventional reversing contactor. Reverses 3~ AC motors up to 9 A and offers motor protection. Possible supply and relay extension via DIN rail connector.

Product description

The modular 3-phase hybrid motor starter with reversing function and current monitoring provides the following functions: - Forward running - Reverse running - Motor overload protection Additional advantages are provided by using the DIN rail connector adapter (Item No. 2203861): - Power can also be supplied via the DIN rail connector by a system power supply (e. g., QUINT4-SYS...) or via the PCB connector IMC 1,5/ 5-ST-3,81, Item No. 1857919 - Optional relay module (e. g., EM-2RSC/21AU-R/L-P, Item No. 2908701) provides additional status information Thanks to the internal interlocking circuit and load wiring, wiring expense is reduced to a minimum.

Commercial data

Item number	2908693
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C470
Product key	CK7484
Catalog page	Page 27 (C-5-2019)
GTIN	4055626406671
Weight per piece (including packing)	318.5 g
Weight per piece (excluding packing)	318.3 g
Customs tariff number	85371098
Country of origin	DE

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Technical data

Product properties

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

Data management status

Article revision	03
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Electrical properties

Number of phases	3
Motor starter type	Reversing starter
Maximum power dissipation for nominal condition	7 W
Switching frequency	≤ 2 Hz (Load-dependent)
Maximum power dissipation	7 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; Parallel polarity protection diode

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	> 60 A
Response time	< 0.5 s

Input data

Control

Input name	Control input right/left
Rated actuating voltage U_C	24 V DC
Triggering voltage range	19.2 V DC ... 30 V DC

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Rated actuating current I_C	7 mA
Switching threshold	9.6 V ("0" signal)
	19.2 V ("1" signal)
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	9 A (AC-51)
	7 A (AC-53a)
Mains frequency	50/60 Hz
Load current range	1.5 A ... 9 A
Trigger characteristic in acc. with IEC 60947-4-2	Class 10 (≤ 3 A)
	Class 10A (> 3 A)
Cooling time	20 min. (for auto reset)
Leakage current	0 mA

Acknowledge output

Note	Confirmation: floating change-over contact, signal contact
Contact switching type	1 changeover contact
Switching capacity in accordance with IEC 60947-5-1	2 A (24 V, DC13)

Connection data

Control circuits

Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section AWG	24 ... 14
Tightening torque	0.5 Nm ... 0.6 Nm
	5 lb _F -in. ... 7 lb _F -in.

Load circuit

Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross section AWG	24 ... 14
Tightening torque	0.5 Nm ... 0.6 Nm
	5 lb _F -in. ... 7 lb _F -in.

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Signaling

Status display	LED (yellow)
Operating voltage display	Green LED
Error indication	Red LED

Dimensions

Width	22.5 mm
Height	107 mm
Depth	114 mm

Material specifications

Flammability rating according to UL 94	V0 (Housing)
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Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 70 °C (observe derating)
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m

Approvals

UL approval

Certificate	NLDX.E228652
	NRNT.E172140

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	7.6 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	2 hp (208 V AC)
	2 hp (230 V AC)
	2 hp (240 V AC)
	5 hp (480 V AC)
Ambient temperature (operation)	-25 °C ... 55 °C

Standards and regulations

Standards/regulations

Standards/regulations	EN 60947-1
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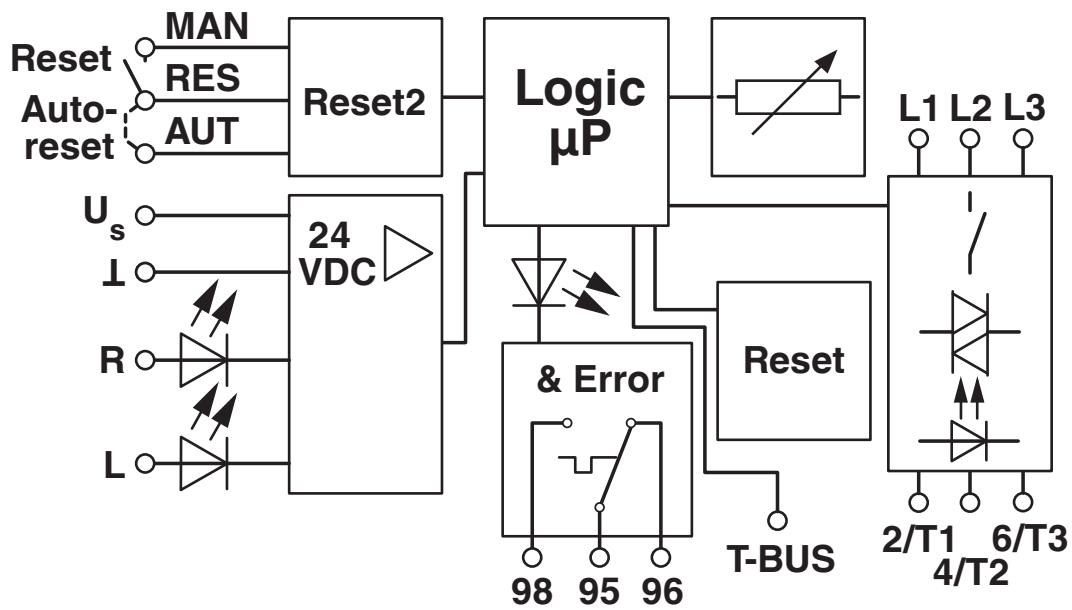
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	EN 60947-4-2
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Mounting

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



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Approvals

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	IECEE CB Scheme Approval ID: DE1-60807
	EAC Approval ID: RU*C-DE.*08.B.00520*
	DNV GL Approval ID: TAA00002HK
	UL Listed Approval ID: FILE E 172140
	cUL Listed Approval ID: FILE E 172140
	cUL Listed Approval ID: E228652
	UL Listed Approval ID: E228652

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Classifications

ECLASS

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

ETIM

ETIM 9.0	EC001037
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UNSPSC

UNSPSC 21.0	25173900
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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	4c37a364-d915-4053-ab69-617301d44143

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Accessories

BRIDGE- 2 - Bridge

2900746

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



BRIDGE- 3 - Bridge

2900747

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



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BRIDGE- 4 - Bridge

2900748

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



BRIDGE- 5 - Bridge

2900749

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



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BRIDGE- 6 - Bridge

2900750

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



BRIDGE- 7 - Bridge

2900751

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



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BRIDGE- 8 - Bridge

2900752

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



BRIDGE- 9 - Bridge

2900753

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



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BRIDGE-10 - Bridge

2900754

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



BRIDGE- 2-1M - Bridge

2901542

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



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BRIDGE- 3-1M - Bridge

2901655

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



BRIDGE- 4-1M - Bridge

2901658

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



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BRIDGE- 5-1M - Bridge

2901544

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



BRIDGE- 6-1M - Bridge

2901649

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3-phase loop bridge for 6 CONTACTRON modules, with screw connection and 22.5 mm housing width, connecting cable: 1 m



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BRIDGE- 2-3M - Bridge

2901543

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



BRIDGE- 3-3M - Bridge

2901656

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



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BRIDGE- 4-3M - Bridge

2901659

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



BRIDGE- 5-3M - Bridge

2901545

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



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BRIDGE- 6-3M - Bridge

2901697

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



BRIDGE- 7-3M - Bridge

2901698

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



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BRIDGE- 8-3M - Bridge

2901700

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



BRIDGE- 9-3M - Bridge

2901701

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



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BRIDGE-10-3M - Bridge

2901702

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



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

2909897

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



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

2909898

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

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

2909899

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

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

2904614

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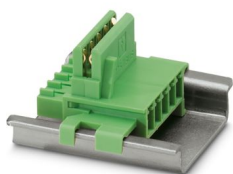


Primary-switched power supply, QUINT POWER, screw connection, DIN rail mounting, supply of devices possible via the TBUS DIN rail connector, protective coating, input: single-phase, output: 24 V DC/2.5 A

ME 17,5 TBUS 1,5/ 5-ST-3,81 GN - DIN rail bus connectors

2709561

<https://www.phoenixcontact.com/us/products/2709561>



DIN rail connector for DIN rail mounting. Universal for TBUS housing. Gold-plated contacts, 5-pos.

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EM-2RSC/21AU-R/L-P - Extension module

2908701

<https://www.phoenixcontact.com/us/products/2908701>



Relay extension module for ELR-...-P hybrid motor starters, feedback of forward and reverse running when control signal is present, screw connection, DIN rail connector included

EM-2RPT/21AU-R/L-P - Extension module

2909573

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Relay extension module for ELR-...-P hybrid motor starters, feedback of forward and reverse running when control signal is present, Push-in connection, DIN rail connector included

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ELR-TBUS-22,5-P - DIN rail bus connectors

2908702

<https://www.phoenixcontact.com/us/products/2908702>

Special DIN rail connector only suitable for CONTACTRON pro modular hybrid motor starters (ELR H...-P and EM-...-P). Pack contains 10 DIN rail connectors.



PSR-MC38-2NO-1DO-24DC-SC - Safety relays

1009831

<https://www.phoenixcontact.com/us/products/1009831>

Safety relay for emergency stop, safety doors and light grids up to SIL 3, Cat. 4, PL e, 1- or 2-channel operation, automatic or manual, monitored start, 2 enabling current paths, 1 signal output, TBUS interface, $U_S = 24\text{ V DC}$, pluggable screw terminal block



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PSR-MC38-2NO-1DO-24DC-PI - Safety relays

1009832

<https://www.phoenixcontact.com/us/products/1009832>



Safety relay for emergency stop, safety doors and light grids up to SIL 3, Cat. 4, PL e, 1- or 2-channel operation, automatic or manual, monitored start, 2 enabling current paths, 1 signal output, TBUS interface, $U_S = 24 \text{ V DC}$, pluggable push-in terminal

PSR-TBUS - DIN rail bus connectors

2890425

<https://www.phoenixcontact.com/us/products/2890425>



DIN rail connector for safety switching devices, for supplying/controlling/monitoring (depending on the module)

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PSR-TBUS - 1PCS - DIN rail bus connectors

1326060

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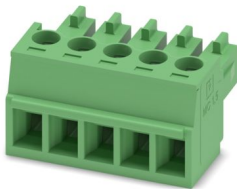
DIN rail connector for safety switching devices, for supplying/controlling/monitoring (depending on the module)



MC 1,5/ 5-ST-3,81 - PCB connector

1803604

<https://www.phoenixcontact.com/us/products/1803604>



PCB connector, nominal cross section: 1.5 mm², color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Sn, contact connection type: Socket, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, product range: MC 1,5/-ST, pitch: 3.81 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, plug-in system: COMBICON MC 1,5, locking: without, mounting: without, type of packaging: packed in cardboard

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IMC 1,5/ 5-ST-3,81 - PCB connector

1857919

<https://www.phoenixcontact.com/us/products/1857919>



PCB connector, nominal cross section: 1.5 mm², color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Sn, contact connection type: Pin, number of potentials: 5, number of rows: 1, number of positions: 5, number of connections: 5, product range: IMC 1,5/...-ST, pitch: 3.81 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, plug-in system: COMBICON MC 1,5, locking: without, mounting: without, type of packaging: packed in cardboard

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