Hybrid motor starter - ELR H5-IS-SC- 24DC/500AC-9-P - 2908697

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Hybrid motor starter as an alternative to a conventional reversing contactor. Reverses 3~ AC motors up to 9 A, offers motor protection and EMERGENCY STOP up to SIL 3 / PL e. Possible group shut-down, 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
- Emergency stop to performance level PLe (TÜV certified)

Additional advantages are provided by using the DIN rail connector adapter (Order No. 2203861):
- Emergency stop of the enable signal is also possible via the DIN rail connector, e. g. via a safety relay (PSR DC4...)
- Power can also be supplied via the DIN rail connector by a system power supply (e. g., MINI-SYS-PS...) or via the PCB connector IMC 1,5/ 5-ST-3,81, Order No. 1857919
- Optional relay module (e. g., EM-2RSC/21AU-R/L-P, Order No. 2908701) provides additional status information

Thanks to the internal interlocking circuit and load wiring, wiring expense is reduced to a minimum.

RoHS

Key Commercial Data

Packing unit	1
GTIN	4 055626 323114
GTIN	4055626323114
Custom tariff number	85371098

Technical data

Dimensions

Width	22.5 mm
Height	106.6 mm
Depth	113.7 mm

Ambient conditions

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Technical data

Ambient conditions

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

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	60 mA
Type of protection	Surge protection
	Reverse polarity protection

Input data

Input name	Control input: right/left and 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
Type of protection	Reverse polarity protection

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
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 ($\leq$ 3 A)
Cooling time	20 min. (for auto reset)
Leakage current	0 mA

Output data reply output

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Technical data

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	2 A (24 V, DC13)

Overspeed tripping

Operate threshold	> 60 A
Response time	< 0.5 s

General

Switching frequency	≤ 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	7 W
Minimum power dissipation	0.88 W
Operating voltage display	Green LED
Status display	Yellow LED
Indication	Red LED

Connection data

Connection name	Control circuits
Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section solid	0.2 mm² ... 2.5 mm²
Conductor cross section flexible	0.2 mm² ... 2.5 mm²
Conductor cross section AWG	24 ... 14
Torque	0.5 Nm ... 0.6 Nm (5-7 lbs-in)

Connection data 2

Connection name	Load circuit
Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section solid	0.2 mm² ... 2.5 mm²
Conductor cross section flexible	0.2 mm² ... 2.5 mm²
Conductor cross section AWG	24 ... 14

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Technical data

Connection data 2

Torque	0.5 Nm ... 0.6 Nm (5-7 lbs-in)

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 (120 V AC / 208 V AC)
	5 hp (277 V AC / 480 V AC)

Insulation characteristics

Rated insulation voltage	550 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)
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

Standards and Regulations

Designation	Standards/regulations
Standards/regulations	EN 60947-1
	EN 60947-4-2
	EN ISO 13849
	IEC 62061
	IEC 61508

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)
UL certificate	NLDX.E228652

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Technical data

Approvals/conformities

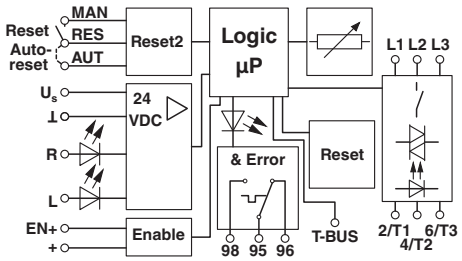
	NRNT.E172140

Environmental Product Compliance

REACh SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab “Downloads”, Category “Manufacturer's declaration”

Drawings

Block diagram



Classifications

eCl@ss

eCl@ss 5.0	27024002
eCl@ss 5.1	27024000
eCl@ss 6.0	27024000
eCl@ss 7.0	27024002
eCl@ss 8.0	27024002
eCl@ss 9.0	27370905

ETIM

ETIM 2.0	EC001037
ETIM 3.0	EC001037
ETIM 4.0	EC001037
ETIM 5.0	EC001037
ETIM 6.0	EC001037
ETIM 7.0	EC001037

UNSPSC

UNSPSC 13.2	25173902

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Approvals

Approvals

Approvals

UL Listed / cUL Listed / UL Listed / IECEE CB Scheme / cUL Listed / VDE Zeichengenehmigung / EAC

Ex Approvals

Approval details

UL Listed	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 228652
cUL Listed	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 228652
UL Listed	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 172140
IECEE CB Scheme	http://www.iecee.org/	DE1-60807
cUL Listed	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 172140
VDE Zeichengenehmigung	http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx	40048671
EAC		RU C-DE.A*30.B.01082

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Accessories

Accessories

Bridge

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.

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.

DIN rail connector

DIN rail bus connectors - ME 17,5 TBUS 1,5/ 5-ST-3,81 GN - 2709561

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

DIN rail bus connectors - ELR-TBUS-22,5-P - 2203861

Special DIN rail connector only suitable for ELR H...-P and EM-...-P.

DIN rail bus connectors - PSR-TBUS - 2890425

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

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Accessories

Extension module

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

Extension module - EM-2RPT/21AU-R/L-P - 2909573

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

Loop bridge

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.

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Accessories

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.

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.

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Accessories

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.

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- 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.

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Accessories

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.

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.

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Accessories

Jumper - BRIDGE- 2-1M - 2901542

3-phase loop bridge for 2 modules from the CONTACTRON family with screw connection and 22.5 mm housing width, 1 m long connecting cable, without ferrules.

Jumper - BRIDGE- 3-1M - 2901655

3-phase loop bridge for 3 modules from the CONTACTRON family with screw connection and 22.5 mm housing width, 1 m long connecting cable, without ferrules.

Jumper - BRIDGE- 4-1M - 2901658

3-phase loop bridge for 4 modules from the CONTACTRON family with screw connection and 22.5 mm housing width, 1 m long connecting cable, without ferrules.

Jumper - BRIDGE- 5-1M - 2901544

3-phase loop bridge for 5 modules from the CONTACTRON family with screw connection and 22.5 mm housing width, 1 m long connecting cable, without ferrules.

Jumper - BRIDGE- 6-1M - 2901649

3-phase loop bridge for 6 modules in the CONTACTRON family with 1 m long connecting cable without ferrules, 22.5 mm housing width.

Power supply

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Accessories

Power supply unit - MINI-SYS-PS-100-240AC/24DC/1.5 - 2866983

Primary-switched MINI POWER supply for DIN rail mounting, input: 1-phase, output: 24 V DC/1.5 A

Safety relays

Safety relays - PSR-MC38-2NO-1DO-24DC-SC - 1009831

Safety relay for emergency stop, safety doors and light grids up to SILCL 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 V DC, pluggable screw terminal block

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Safety relays - PSR-MC38-2NO-1DO-24DC-PI - 1009832

Safety relay for emergency stop, safety doors and light grids up to SILCL 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 V DC, pluggable push-in terminal

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