

# Hybrid motor starter - ELR H5-I-SC-230AC/500AC-9 - 2900578

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Hybrid motor starter for reversing 3~ AC motors up to 550 V AC, with 230 V AC input, 9 A output current, and adjustable overload shutdown.

## Your advantages

- ✓ 22.5 mm wide
- ✓ Space saving
- ✓ Long service life
- ✓ Reduction in wiring
- ✓ 3-phase loop bridges
- ✓ Adjustable current for bimetal function
- ✓ Low-wear switching



## Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 528191
GTIN	4046356528191

## Technical data

### Dimensions

Width	22.5 mm
Height	107 mm
Depth	114 mm

### Ambient conditions

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

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## Technical data

### Device supply

Rated control circuit supply voltage $U_s$	230 V AC
Control supply voltage range	85 V AC ... 253 V AC
Rated control supply current $I_s$	4 mA
Mains frequency	50/60 Hz
Type of protection	Surge protection

### Input data

Input name	Control input right/left
Rated actuating voltage $U_c$	230 V AC
Triggering voltage range	85 V AC ... 253 V AC
Rated actuating current $I_c$	7 mA (Input type 1)
Mains frequency	50/60 Hz
Switching threshold	44 V AC ("0" signal)
	85 V AC ("1" signal)
Typical turn-off time	< 70 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
Rated operating current $I_e$	9 A (AC-51)
	6.5 A (AC-53a)
Mains frequency	50/60 Hz
Load current range	1.5 A ... 9 A (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 changeover contact
Switching capacity according to IEC 60947-5-1	3 A (230 V, AC15)
	2 A (24 V, DC13)

### Overspeed tripping

Operate threshold	> 45 A
Response time	< 2 s

### General

Motor starter type	Reversing starter
Switching frequency	≤ 2 Hz (Load-dependent)

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## Technical data

### General

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	16.1 W
Minimum power dissipation	2.6 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 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
Torque	0.5 Nm ... 0.6 Nm
	5 lb <sub>f</sub> -in. ... 7 lb <sub>f</sub> -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 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
Torque	0.5 Nm ... 0.6 Nm
	5 lb <sub>f</sub> -in. ... 7 lb <sub>f</sub> -in.

### Insulation characteristics

Rated insulation voltage	500 V
Rated surge voltage	4 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) at operating voltage ≤ 300 V AC
	Safe isolation (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

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## Technical data

### Insulation characteristics

Designation	Isolation characteristics between the control input and control supply voltage to auxiliary circuit
Insulation	Safe isolation (IEC 60947-1) in the auxiliary circuit $\leq 300$ V AC
	Safe isolation (EN 50178) in the auxiliary circuit $\leq 300$ V AC

### Standards and Regulations

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

### Conformance/approvals

Designation	UL approval
Certificate	NLDX.E228652

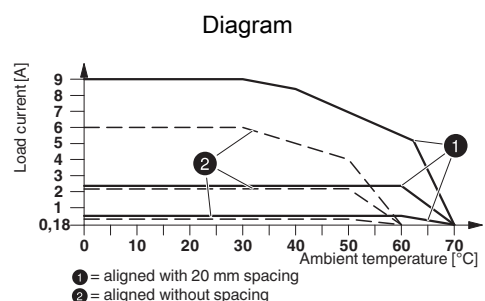
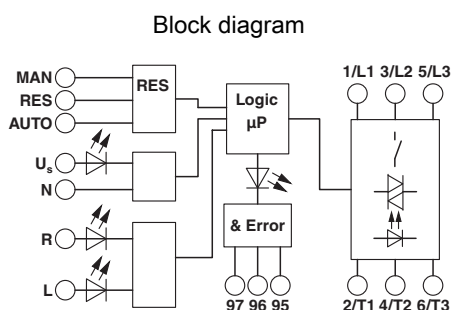
### UL data

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	6.5 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 / NRNT

### Environmental Product Compliance

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

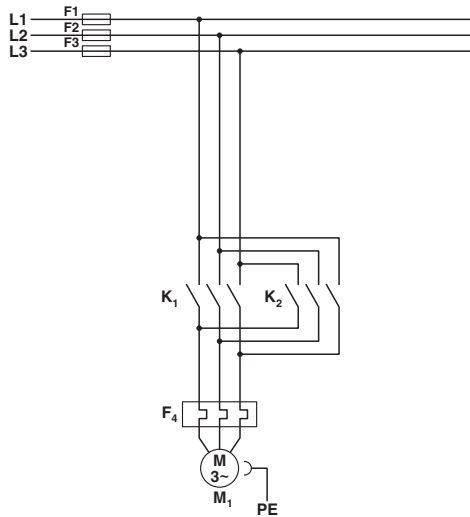
## Drawings



Derating diagram

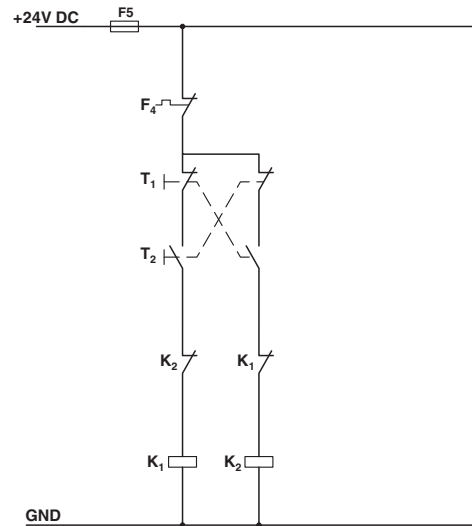
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Circuit diagram



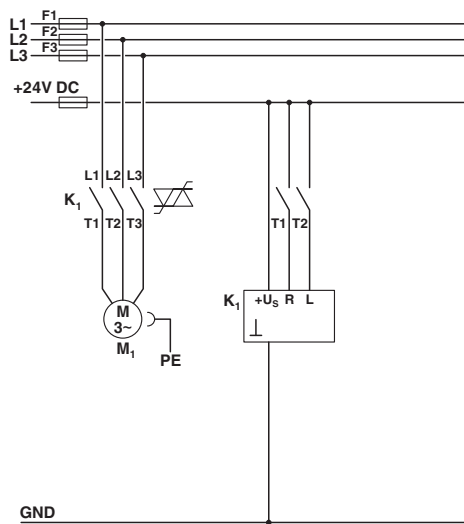
Conventional structure  
Main current path contactor  
K1 = Left contactor  
K2 = Right contactor  
F4 = Motor protection relay

Circuit diagram



Conventional structure  
Control current path contactor  
K1 = Left contactor  
K2 = Right contactor  
T1 = Left, T2 = Right  
F4 = Motor protection relay

Circuit diagram



Structure with CONTACTRON  
Main and control current path for '3 in 1' hybrid motor starter  
K1 = '3 in 1' hybrid motor starter  
T1 = Right, T2 = Left

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## Classifications

### eCl@ss

eCl@ss 10.0.1	27370905
eCl@ss 4.0	27021100
eCl@ss 4.1	27021100
eCl@ss 5.0	27024000
eCl@ss 5.1	27024000
eCl@ss 6.0	27024000
eCl@ss 7.0	27024002
eCl@ss 9.0	27370905

### ETIM

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

### UNSPSC

UNSPSC 6.01	30211915
UNSPSC 7.0901	39121514
UNSPSC 11	39121514
UNSPSC 12.01	39121514
UNSPSC 13.2	25173902
UNSPSC 18.0	25173902
UNSPSC 19.0	25173902
UNSPSC 20.0	25173902
UNSPSC 21.0	25173902

## Accessories

### Accessories

#### Adapter

Adapter - EM-CPS-DA-22,5F/16A - 1002668



Device adapter with fuse holder for 16 A fuse (10x38/Class CC), CrossLink® interface and fixed DIN rail

#### Assembly adapter

## Hybrid motor starter - ELR H5-I-SC-230AC/500AC-9 - 2900578

### Accessories

Power distribution board - EM-CPS-225 - 1002634



Modular power distribution board with CrossLink® interface, 125 A, 3-pos., touch-proof and protection against polarity reversal, width: 225 mm

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Power distribution board - EM-CPS-405 - 1002635



Modular power distribution board with CrossLink® interface, 125 A, 3-pos., touch-proof and protection against polarity reversal, width: 405 mm

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Connection module - EM-CPS-TB3/63A - 1002633



Connection module with integrated spring-loaded terminals for cables from 1.5 to 16 mm<sup>2</sup>, 3-pos., maximum 63 A

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### Bridge

Bridge - 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

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### 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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### Device marking

## Hybrid motor starter - ELR H5-I-SC-230AC/500AC-9 - 2900578

### Accessories

#### Plastic label - US-EMLP (15X5) - 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

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#### Plastic label - UC-EMLP (15X5) - 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

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### Loop bridge

#### Bridge - 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.

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#### Bridge - 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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#### Bridge - 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.



## Hybrid motor starter - ELR H5-I-SC-230AC/500AC-9 - 2900578

### Accessories

#### Bridge - 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.

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#### Bridge - 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.

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#### Bridge - 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.

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#### Bridge - 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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#### Bridge - 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.

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## Hybrid motor starter - ELR H5-I-SC-230AC/500AC-9 - 2900578

### Accessories

Bridge - 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.

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Bridge - BRIDGE- 2-1M - 2901542



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 - BRIDGE- 3-1M - 2901655



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

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Bridge - BRIDGE- 4-1M - 2901658



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 - BRIDGE- 5-1M - 2901544



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

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## Hybrid motor starter - ELR H5-I-SC-230AC/500AC-9 - 2900578

### Accessories

Bridge - BRIDGE- 6-1M - 2901649



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 - 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

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Bridge - 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

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Bridge - 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

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Bridge - 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

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## Hybrid motor starter - ELR H5-I-SC-230AC/500AC-9 - 2900578

### Accessories

Bridge - 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

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Bridge - 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

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Bridge - 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

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Bridge - 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

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Bridge - BRIDGE- 2- 2M/0,3M - 2909897



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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## Hybrid motor starter - ELR H5-I-SC-230AC/500AC-9 - 2900578

### Accessories

Bridge - BRIDGE- 3- 2M/0,3M - 2909898



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

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Bridge - BRIDGE- 4- 2M/0,3M - 2909899



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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PHOENIX CONTACT GmbH & Co. KG  
Flachsmarktstr. 8  
32825 Blomberg  
Germany  
Tel. +49 5235 300  
Fax +49 5235 3 41200  
<http://www.phoenixcontact.com>