

# ELR W3-230AC/500AC- 9I - Hybrid motor starter



2297060

<https://www.phoenixcontact.com/us/products/2297060>

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"4 in 1" three-phase semiconductor reversing contactor with 230 V AC input, 9 A output current, emergency stop function, and adjustable overload switching.

## Your advantages

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

## Commercial data

Item number	2297060
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C470
Product key	CK7414
Catalog page	Page 19 (C-7-2013)
GTIN	4046356170598
Weight per piece (including packing)	314.675 g
Weight per piece (excluding packing)	223.15 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

### Electrical properties

Number of phases	3
Motor starter type	Reversing starter
Maximum power dissipation for nominal condition	13.5 W
Switching frequency	$\leq 2$ Hz (Load-dependent)
Maximum power dissipation	16.1 W
Minimum power dissipation	2.6 W

### Supply

Rated control circuit supply voltage $U_S$	230 V AC
Control supply voltage range	92 V AC ... 253 V AC
Rated control supply current $I_S$	4 mA
Mains frequency	40/100 Hz
Protective circuit	Surge protection

### Insulation characteristics

Rated insulation voltage	500 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) at operating voltage $\leq 300$ V AC
	Basic insulation (IEC 60947-1) at operating voltage 300 V AC ... 500 V AC
Isolation characteristics between the control input and control supply voltage to auxiliary circuit	Safe isolation (IEC 60947-1) in the auxiliary circuit $\leq 300$ V AC

## Input data

### Control

Input name	Control input right/left
Rated actuating voltage $U_C$	230 V AC
Triggering voltage range	92 V AC ... 253 V AC
Rated actuating current $I_C$	7 mA
Switching threshold	44 V AC ("0" signal)
	85 V AC ("1" signal)
Switching level	$< 5$ V DC (For EMERGENCY STOP)
Typical response time	$< 35$ ms
Typical turn-off time	$< 80$ ms

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## 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)
	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
Residual voltage	< 0.5 V
Surge current	100 A (t = 10 ms)
Protective circuit	Surge protection

### 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	3 A (230 V, AC15)
	2 A (24 V, DC13)
Residual voltage	< 0.5 V

## Connection data

### Control circuits

Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section rigid	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
Tightening torque	0.5 Nm ... 0.6 Nm
	5 lb <sub>F</sub> -in. ... 7 lb <sub>F</sub> -in.

### Load circuit

Connection method	Screw connection
Stripping length	8 mm
Screw thread	M3
Conductor cross section rigid	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
Tightening torque	0.5 Nm ... 0.6 Nm
	5 lb <sub>F</sub> -in. ... 7 lb <sub>F</sub> -in.

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## Signaling

Status display	Yellow LED
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

### ATEX

Identification	⚡ II (2) G [Ex e] [Ex d] [Ex px]
	⚡ II (2) D [Ex t] [Ex p]
Certificate	PTB 07 ATEX 3145

### UL approval

Certificate	NLDX.E228652
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### 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

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## 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

## Standards and regulations

### Standards/regulations

Standards/regulations	EN 60947
	IEC 61508
	ISO 13849

## Mounting

Mounting type	DIN rail mounting
Assembly instructions	Can be aligned with spacing = 20 mm
Mounting position	Vertical (horizontal DIN rail)

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