

# ELR H5-IES-SC-SWD/500AC-9 - Hybrid motor starter



2903118

<https://www.phoenixcontact.com/us/products/2903118>

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Hybrid motor starter for reversing 3~ AC motors up to 550 V AC, 9 A output current, adjustable overload shutdown and safe emergency stop up to PLe/SIL 3 and SmartWire-DT™ adapter as a set.

## 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
- Adjustable current for bimetal function
- Low-wear switching

## Commercial data

Item number	2903118
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	C478
Product key	CK7434
Catalog page	Page 31 (C-7-2013)
GTIN	4046356712804
Weight per piece (including packing)	537 g
Weight per piece (excluding packing)	276.9 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	13.5 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 $I_S$	40 mA
Protective circuit	Surge protection Reverse polarity protection; Parallel polarity protection diode

### 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 ≤ 300 V AC
	Safe isolation (EN 50178) at operating voltage ≤ 300 V AC
	Basic insulation (IEC 60947-1) at operating voltage 300 V AC ... 500 V AC
	Safe isolation (EN 50178) at operating voltage 300 ... 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 ≤ 300 V AC
	Safe isolation (EN 50178) in the auxiliary circuit ≤ 300 V AC

### Emergency tripping

Operate threshold	> 45 A
Response time	< 2 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 $I_C$	5 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

## Output data

### AC output

Rated operating voltage $U_e$	500 V AC
Operating voltage range	42 V AC ... 550 V AC
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
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)

## 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.

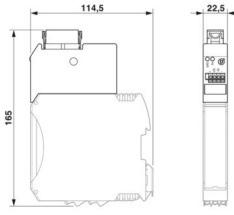
### Load circuit

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.

## Signaling

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

## Dimensions

Dimensional drawing	
Width	22.5 mm
Height	165 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)	-5 °C ... 55 °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
	NRNT.E172140

### Safety Integrity Level (SIL, IEC 61508)

Identification	≤ 3
Note	Safe shutdown

### Safety Integrity Level (SIL, IEC 61508)

Identification	2
Note	Motor protection

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## 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	6.5 A (480 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

## Standards and regulations

### Standards/regulations

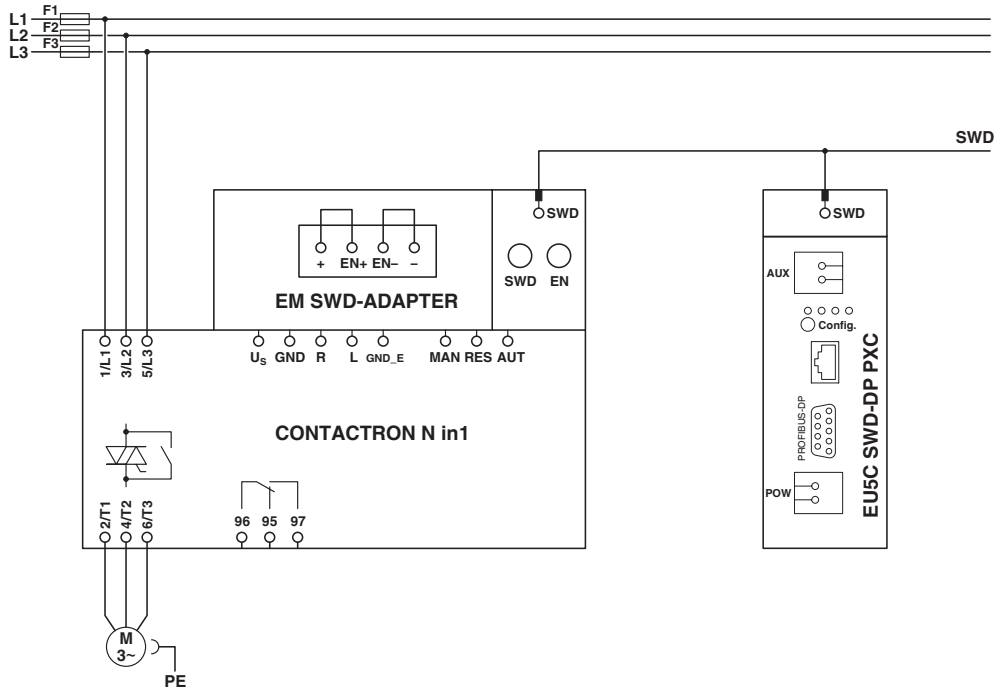
Standards/regulations	IEC 60947-1
	EN 60947-4-2
	IEC 61508
	ISO 13849

## Mounting

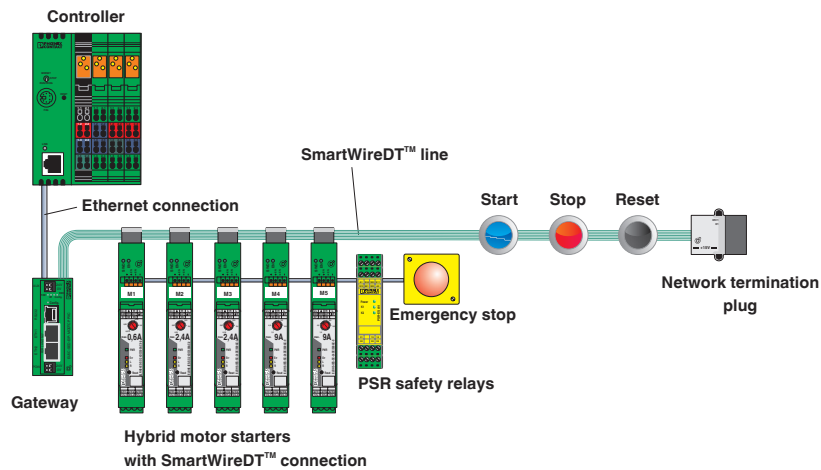
Mounting type	DIN rail mounting
Assembly instructions	alignable, for spacing see derating
Mounting position	vertical (horizontal DIN rail, motor output below)

## Drawings

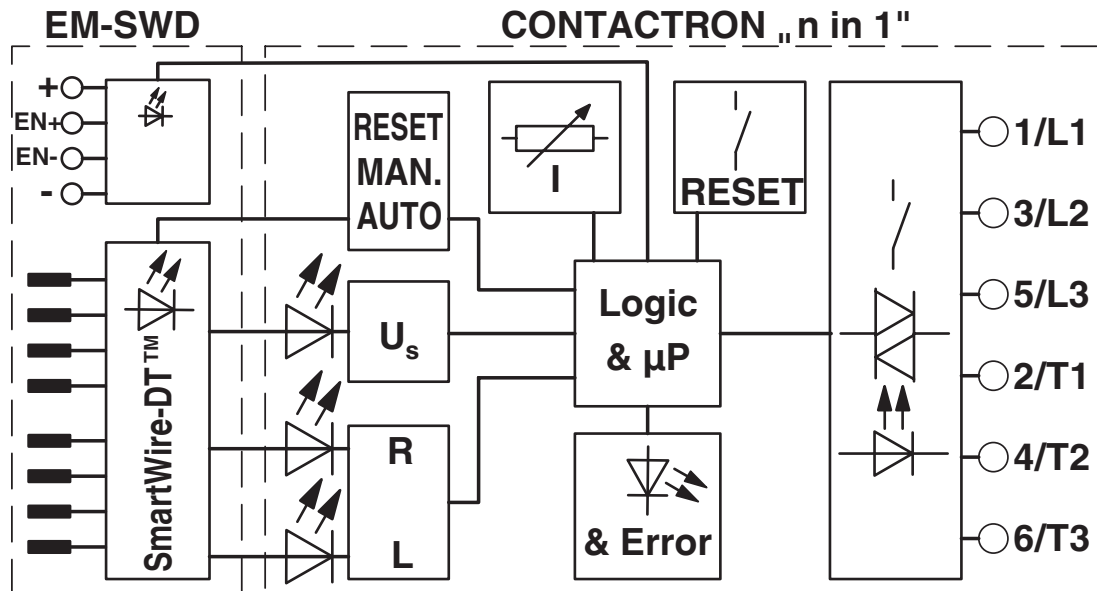
Circuit diagram



Application drawing



Block diagram



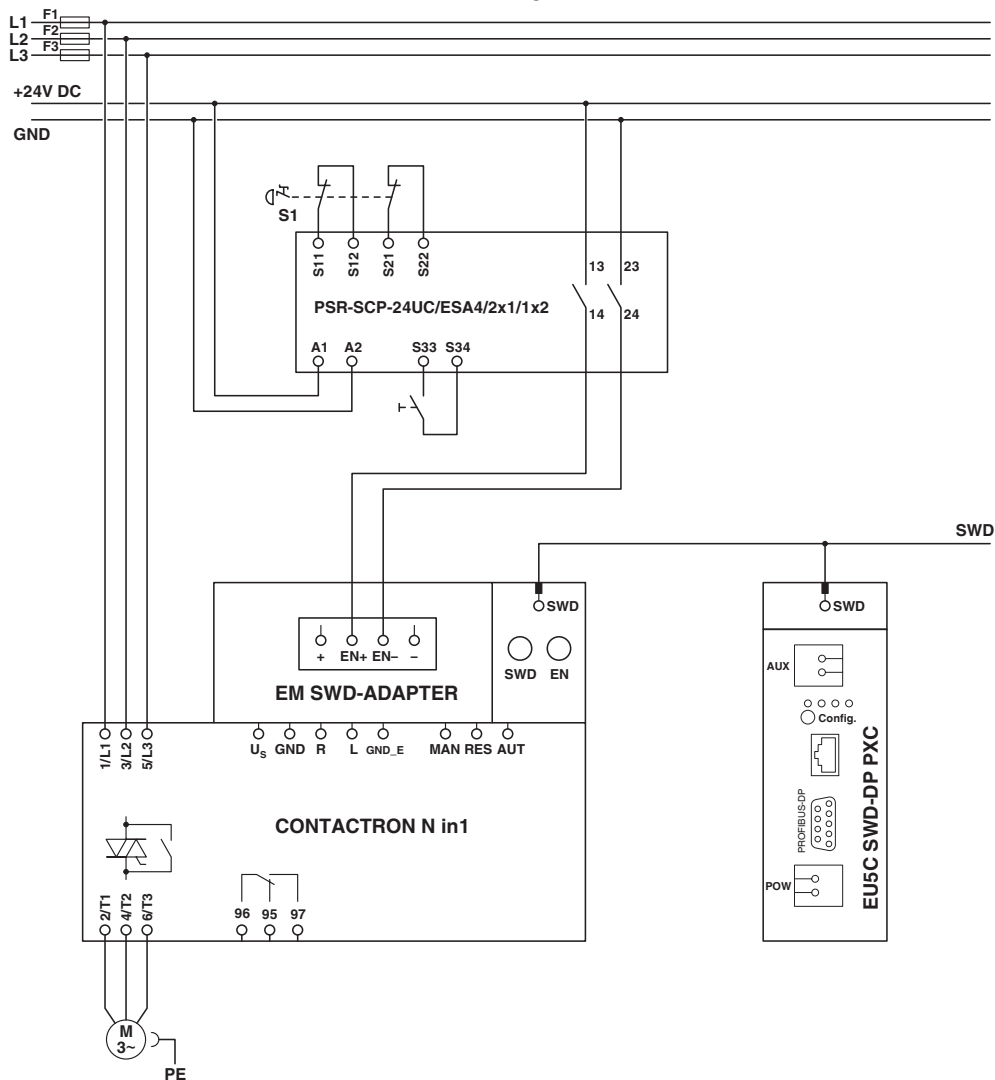
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Circuit diagram





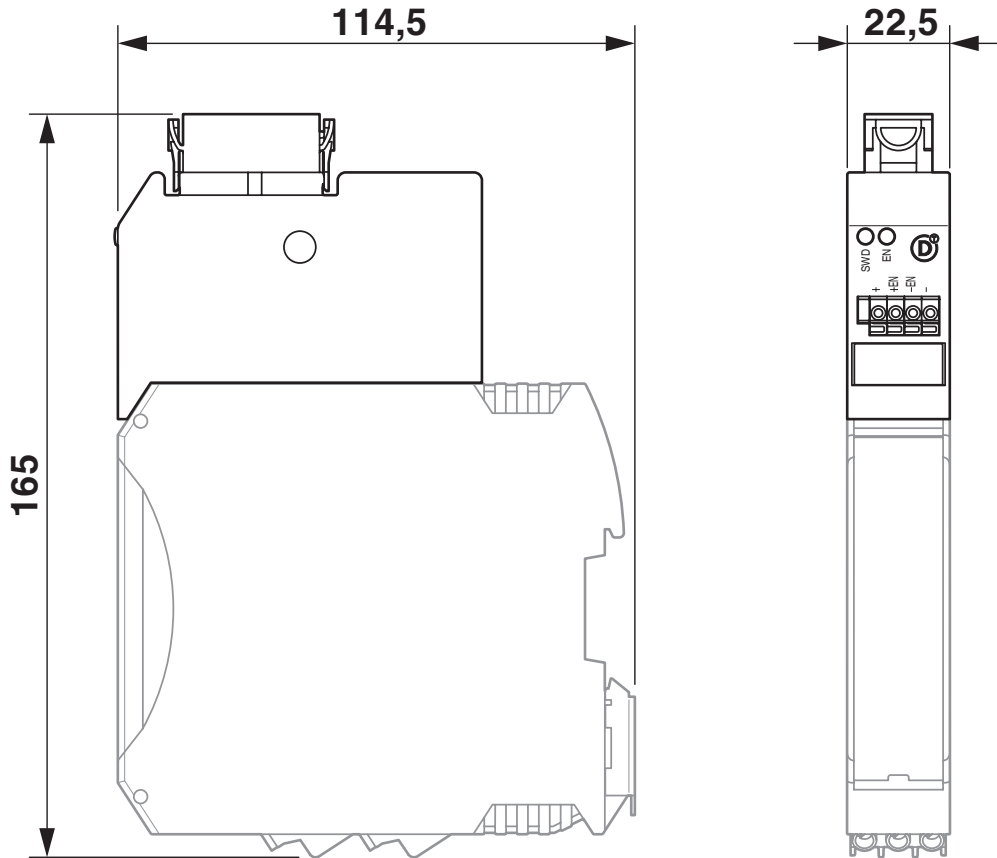
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Dimensional drawing



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## Classifications

### ECLASS

ECLASS-11.0

27370905

### ETIM

ETIM 8.0

EC001037

### UNSPSC

UNSPSC 21.0

25173900

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## Environmental product compliance

China RoHS	Environmentally Friendly Use Period = 50 years For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"
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## Accessories

### 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

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### 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

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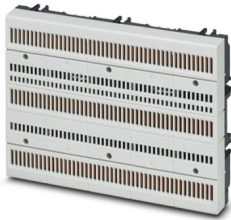
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## EM-CPS-225 - Power distribution board

1002634

<https://www.phoenixcontact.com/us/products/1002634>



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

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## EM-CPS-405 - Power distribution board

1002635

<https://www.phoenixcontact.com/us/products/1002635>



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

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

1002633

<https://www.phoenixcontact.com/us/products/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- 2 - Bridge

2900746

<https://www.phoenixcontact.com/us/products/2900746>



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

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## BRIDGE- 3 - Bridge

2900747

<https://www.phoenixcontact.com/us/products/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- 4 - Bridge

2900748

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



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## BRIDGE- 5 - Bridge

2900749

<https://www.phoenixcontact.com/us/products/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- 6 - Bridge

2900750

<https://www.phoenixcontact.com/us/products/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- 7 - Bridge

2900751

<https://www.phoenixcontact.com/us/products/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- 8 - Bridge

2900752

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

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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- 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



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## BRIDGE- 4-1M - Bridge

2901658

<https://www.phoenixcontact.com/us/products/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- 5-1M - Bridge

2901544

<https://www.phoenixcontact.com/us/products/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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## BRIDGE- 6-1M - Bridge

2901649

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



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## BRIDGE- 3-3M - Bridge

2901656

<https://www.phoenixcontact.com/us/products/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- 4-3M - Bridge

2901659

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



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## 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





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## 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



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## 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

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## 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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