

1517673

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Sensor/actuator cable, 4-position, Variable cable type, free cable end, on Socket angled M8, coding: A, with 2 LEDs, cable length: Free input (0.2 ... 40.0 m)

Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Convenient: increased machine availability thanks to quick and easy diagnostics

Commercial data

Item number	1517673
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	BF17
Product key	AF1BCA
Customs tariff number	85444290
Country of origin	PL

SAC-4P-M 8FR-2L/.../... - Sensor/actuator cable



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Technical data

Product properties

Product type	Sensor/actuator cable
Application	Standard
	Robots and drag chains
Number of positions	4
No. of cable outlets	1
Shielded	no
Coding	A

Insulation characteristics

Overvoltage category	II
Degree of pollution	3

Material specifications

Flammability rating according to UL 94	HB
Seal material	NBR
Material of grip body	TPU, hardly inflammable, self-extinguishing
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Material for screw connection	Zinc die-cast, nickel-plated

Electrical properties

Insulation resistance	$\geq 100 \text{ M}\Omega$
Nominal voltage U_N	24 V DC
Nominal current I_N	4 A

Mechanical properties

Mechanical data

Insertion/withdrawal cycles	≥ 100
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Signaling

Status display	2 LEDs
Status display present	yes

Connection data

Conductor connection

Tightening torque	0.2 Nm (M8 connectors)
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Connector

Connection 1

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Type	free cable end
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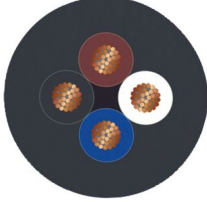
Connection 2

Type	Socket angled M8
Number of positions	4
Coding type	A

Cable/line

Cable length	Free input (0.2 ... 40.0 m)
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PUR halogen-free black [PUR]

Dimensional drawing	
Cable weight	23 kg/km
UL AWM Style	20549 / 10493 (80°C/300 V)
Number of positions	4
Shielded	no
Cable type	PUR halogen-free black [PUR] PUR halogen-free black PUR
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross-section	4x 0.25 mm ² (Signal line)
Wire diameter incl. insulation	1.17 mm ±0.02 mm (Signal line)
External cable diameter	3.95 mm ±0.15 mm
Outer sheath, material	PUR
External sheath, color	black-gray RAL 7021
Conductor material	Bare Cu litz wires
Material wire insulation	PP
Single wire, color	brown, white, blue, black
Thickness, insulation	≥ 0.21 mm (Core insulation) approx. 0.50 mm (Outer cable sheath)
Overall twist	4 wires, twisted
Max. conductor resistance	max. 78 Ω/km (at 20 °C)
Insulation resistance	≥ 100 GΩ*km (at 20 °C)
Nominal voltage, cable	≤ 300 V
Test voltage	≥ 3000 V
Smallest bending radius, fixed installation	20 mm
Smallest bending radius, movable installation	40 mm
Dynamic load capacity (bending)	Max. bending cycles: 10000000, Bending radius: 44 mm,

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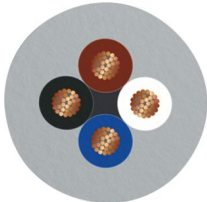


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	Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 5 m/s ²
Dynamic load capacity (torsion)	Torsion: ± 180 °/m, Torsion cycles: ≥ 5000000 , Torsional frequency: 35 cycles/min.
Halogen-free	in accordance with DIN VDE 0472 part 815
Flame resistance	in accordance with UL 758/1581 FT2
	DIN EN 60332-2-2 (20 s)
Resistance to oil	in accordance with DIN EN 60811-2-1
Other resistance	Highly resistant to acids, alkaline solutions and solvents
	hydrolysis and microbe resistant
	partly UV-resistant (in accordance with DIN EN ISO 4892-2-A)
Special properties	Flexible cable conduit capable
	Silicone-free
	Free of substances which would hinder coating with paint or varnish
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation)
	-25 °C ... 80 °C (Cable, flexible installation)

PUR halogen-free gray [280]

Dimensional drawing	
Cable weight	23 kg/km
UL AWM Style	20549 / 10493 (80°C/300 V)
Number of positions	4
Shielded	no
Cable type	PUR halogen-free gray [280]
	PUR halogen-free gray 280
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross-section	4x 0.25 mm ² (Signal line)
Wire diameter incl. insulation	1.17 mm $\pm$ 0.02 mm (Signal line)
External cable diameter	3.95 mm $\pm$ 0.15 mm
Outer sheath, material	PUR
External sheath, color	gray RAL 7001
Conductor material	Bare Cu litz wires
Material wire insulation	PP
Single wire, color	brown, white, blue, black
Thickness, insulation	$\geq$ 0.21 mm (Core insulation)
	approx. 0.50 mm (Outer cable sheath)

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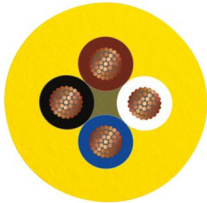


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Overall twist	4 wires, twisted
Max. conductor resistance	max. 78 Ω /km (at 20 °C)
Insulation resistance	$\geq 100 \text{ G}\Omega \cdot \text{km}$ (at 20 °C)
Nominal voltage, cable	$\leq 300 \text{ V}$
Test voltage	$\geq 3000 \text{ V}$
Smallest bending radius, fixed installation	20 mm
Smallest bending radius, movable installation	40 mm
Dynamic load capacity (bending)	Max. bending cycles: 10000000, Bending radius: 44 mm, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 5 m/s^2
Halogen-free	in accordance with DIN VDE 0472 part 815
Flame resistance	in accordance with UL 758/1581 FT2 DIN EN 60332-2-2 (20 s)
Resistance to oil	in accordance with DIN EN 60811-2-1
Other resistance	Highly resistant to acids, alkaline solutions and solvents hydrolysis and microbe resistant partly UV-resistant (in accordance with DIN EN ISO 4892-2-A)
Special properties	Flexible cable conduit capable Silicone-free Free of substances which would hinder coating with paint or varnish
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation) -25 °C ... 80 °C (Cable, flexible installation)

PUR halogen-free yellow [240]

Dimensional drawing	
Cable weight	25 kg/km
UL AWM Style	20549
Number of positions	4
Shielded	no
Cable type	PUR halogen-free yellow [240] PUR halogen-free yellow 240
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross-section	4x 0.25 mm^2 (Signal line)
Wire diameter incl. insulation	1.17 mm $\pm 0.02 \text{ mm}$
External cable diameter	4.40 mm $\pm 0.15 \text{ mm}$
Outer sheath, material	PUR

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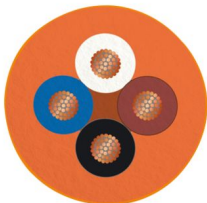


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External sheath, color	yellow, similar to RAL 1021
Conductor material	Bare Cu litz wires
Material wire insulation	PP
Single wire, color	brown, white, blue, black
Thickness, insulation	≥ 0.21 mm
Thickness, outer sheath	approx. 0.75 mm
Overall twist	4 wires, twisted
Length of twist, overall twist	45 mm
Max. conductor resistance	78 Ω/km (at 20 °C)
Insulation resistance	≥ 1 GΩ*km (at 20 °C)
Nominal voltage, cable	≤ 300 V AC
Test voltage	≥ 3000 V AC (Spark test)
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Smallest bending radius, fixed installation	22 mm
Smallest bending radius, movable installation	44 mm
Dynamic load capacity (bending)	Max. bending cycles: 10000000, Bending radius: 10 x D, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 10 m/s²
Dynamic load capacity (torsion)	Torsion: ±180 °/m, Torsion cycles: ≥5000000, Torsional frequency: 35 cycles/min.
Halogen-free	in accordance with DIN VDE 0472 part 815 in accordance with EN 50267-2-1
Flame resistance	in accordance with UL 758/1581 FT2
Resistance to oil	According to DIN EN 60811-2-1, 168 h at 100 °C according to UL 758, 168 h at 60 °C
Other resistance	hydrolysis and microbe resistant Resistant to salt water abrasion-resistant Low adhesion
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation) -25 °C ... 80 °C (Cable, flexible installation)

PUR halogen-free orange [180]

Dimensional drawing	
Cable weight	25 kg/km
UL AWM Style	20549
Number of positions	4

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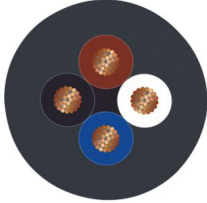


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Shielded	no
Cable type	PUR halogen-free orange [180] PUR halogen-free orange 180
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross-section	4x 0.25 mm ² (Signal line)
Wire diameter incl. insulation	1.17 mm ±0.02 mm (Signal line)
External cable diameter	4.40 mm ±0.15 mm
Outer sheath, material	PUR
External sheath, color	orange RAL 2003
Conductor material	Bare Cu litz wires
Material wire insulation	PP
Single wire, color	brown, white, blue, black
Thickness, insulation	≥ 0.21 mm (Core insulation) 0.75 mm (Outer cable sheath)
Overall twist	4 wires, twisted
Max. conductor resistance	max. 78 Ω/km (at 20 °C)
Insulation resistance	≥ 10 GΩ*km (at 20 °C)
Nominal voltage, cable	≤ 300 V
Test voltage	≥ 3000 V
Smallest bending radius, fixed installation	22 mm
Dynamic load capacity (bending)	Max. bending cycles: 10000000
Dynamic load capacity (torsion)	Torsion: ±180 °/m, Torsion cycles: ≥5000000, Torsional frequency: 35 cycles/min.
Halogen-free	in accordance with DIN VDE 0472 part 815
Flame resistance	in accordance with DIN UL-Style 20549
Ambient temperature (operation)	-25 °C ... 80 °C (Cable)

PVC black [PVC]

Dimensional drawing	
Cable weight	33 kg/km
UL AWM Style	2464 / 1729 (80°C/300 V)
Number of positions	4
Shielded	no
Cable type	PVC black [PVC] PVC black PVC
Conductor structure signal line	14x 0.15 mm

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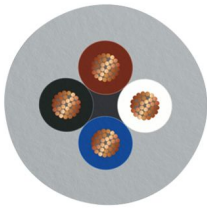


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AWG signal line	24
Conductor cross-section	4x 0.25 mm ² (Signal line)
Wire diameter incl. insulation	1.17 mm ±0.05 mm
External cable diameter	4.40 mm ±0.15 mm
Outer sheath, material	PVC
External sheath, color	black RAL 9005
Conductor material	Bare Cu litz wires
Material wire insulation	PVC
Single wire, color	brown, white, blue, black
Thickness, insulation	≥ 0.23 mm (Core insulation) ≥ 0.76 mm (Outer cable sheath)
Overall twist	4 wires, twisted
Max. conductor resistance	max. 79 Ω/km (at 20 °C)
Insulation resistance	≥ 100 MΩ*km (at 20 °C)
Nominal voltage, cable	≤ 300 V
Test voltage	≥ 3000 V
Minimum bending radius, fixed installation	5 x D
Smallest bending radius, fixed installation	22 mm
Flame resistance	As per UL-Style 2464
Resistance to oil	EN 60811-2-1
Ambient temperature (operation)	-25 °C ... 80 °C (cable, fixed installation) -10 °C ... 80 °C (Cable, flexible installation)

PVC gray [500]

Dimensional drawing	
Cable weight	33 kg/km
Number of positions	4
Shielded	no
Cable type	PVC gray [500] PVC gray 500
Conductor structure signal line	14x 0.15 mm
AWG signal line	24
Conductor cross-section	4x 0.25 mm ² (Signal line)
Wire diameter incl. insulation	1.17 mm ±0.05 mm
External cable diameter	4.40 mm ±0.15 mm
Outer sheath, material	PVC
External sheath, color	gray RAL 7001

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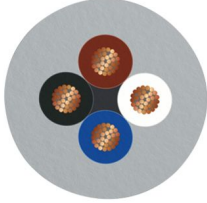


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Conductor material	Bare Cu litz wires
Material wire insulation	PVC
Single wire, color	brown, white, blue, black, green-yellow
Thickness, insulation	≥ 0.23 mm (Core insulation)
	≥ 0.76 mm (Outer cable sheath)
Overall twist	4 wires, twisted
Max. conductor resistance	max. 79 Ω/km (at 20 °C)
Insulation resistance	≥ 100 MΩ*km (at 20 °C)
Nominal voltage, cable	≤ 300 V
Test voltage	≥ 3000 V
Flame resistance	As per UL-Style 2464
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation)
	-25 °C ... 80 °C (Cable, flexible installation)

Gray, highly flexible PUR [800]

Dimensional drawing	
Note	Due to the extremely robust outer sheath, this cable should only be stripped in 5 cm increments.
Cable weight	27.1 kg/km
UL AWM Style	20549
Number of positions	4
Shielded	no
Cable type	Gray, highly flexible PUR [800] Gray, highly flexible PUR 800
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross-section	4x 0.25 mm² (Signal line)
Wire diameter incl. insulation	1.15 mm ±0.05 mm (Signal line)
External cable diameter	4.50 mm ±0.2 mm
Outer sheath, material	PUR
External sheath, color	gray RAL 7001
Conductor material	Bare Cu litz wires
Material wire insulation	PP
Single wire, color	brown, white, blue, black
Overall twist	4 wires, twisted
Max. conductor resistance	approx. 76 Ω/km
Insulation resistance	≥ 20 MΩ*km

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Nominal voltage, cable	300 V
Test voltage	1200 V
Minimum bending radius, fixed installation	4 x D
Minimum bending radius, flexible installation	7.5 x D
Smallest bending radius, fixed installation	18 mm
Smallest bending radius, movable installation	34 mm
Dynamic load capacity (bending)	Max. bending cycles: 10000000, Bending radius: 7,5 x D, Traversing path: 5 m, Traversing rate: 3.3 m/s, Acceleration: 5 m/s ² Max. bending cycles: 15000000, Bending radius: 50 mm, Traversing path: 0.9 m, Traversing rate: 5 m/s, Acceleration: 30 m/s ²
Dynamic load capacity (torsion)	Torsion: ± 360 °/m, Torsion cycles: 1000000, Torsional frequency: 35 cycles/min.
Halogen-free	in accordance with DIN VDE 0472 part 815
Flame resistance	in accordance with UL 758/1581 FT2
Resistance to oil	in accordance with DIN EN 60811-2-1
Other resistance	Highly resistant to acids, alkaline solutions and solvents Silicone-free
Special properties	Cable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishing Free from silicone and cadmium Free of substances which would hinder coating with paint or varnish
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation) -25 °C ... 80 °C (Cable, flexible installation)

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP65 IP67 IP68
Ambient temperature (operation) (male connector/female connector)	-25 °C ... 90 °C (Plug / socket)

Standards and regulations

M8

Standard designation	M8 connector
Standards/specifications	IEC 61076-2-104

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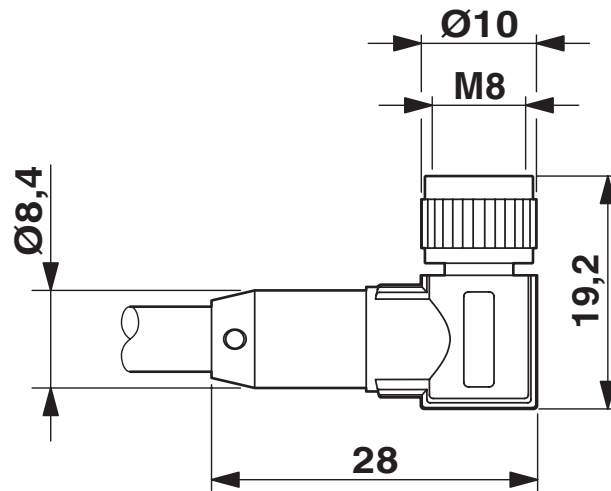
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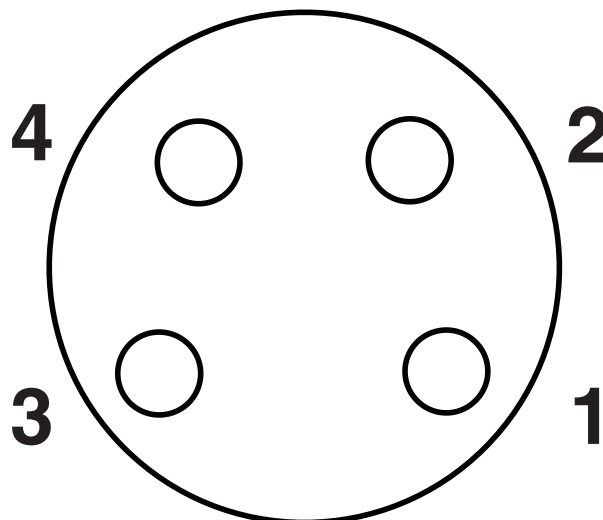
Drawings

Dimensional drawing



Socket M8 x 1, angled, with LED

Schematic diagram



Pin assignment M8 socket, 4-pos., view female side

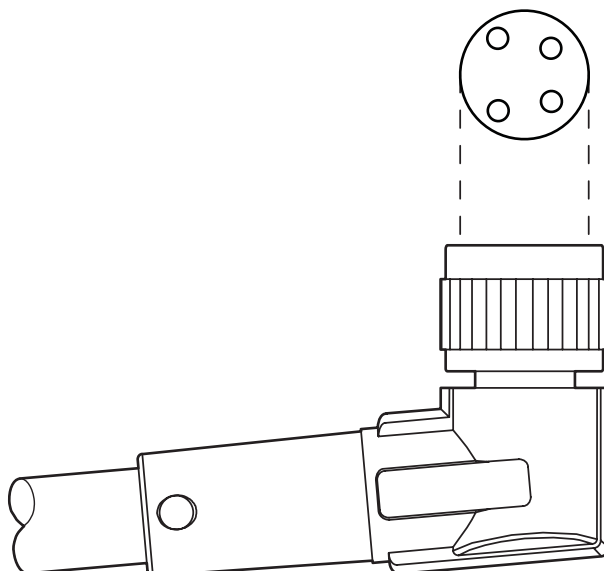
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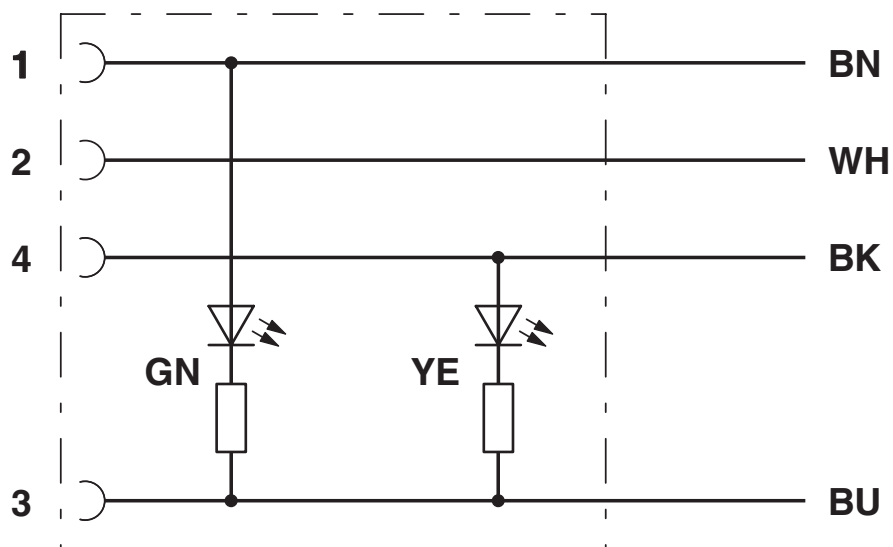


Schematic diagram



Layout of connector pin assignments

Circuit diagram



Contact assignment of the M8 socket with LED

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Approvals

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	UL Listed Approval ID: FILE E 221474			
	Nominal voltage U _N	Nominal current I _N	Cross section AWG	Cross section mm ²
	keine			
	24 V	4 A	-	-

	cUL Listed Approval ID: FILE E 221474			
	Nominal voltage U _N	Nominal current I _N	Cross section AWG	Cross section mm ²
	keine			
	24 V	4 A	-	-

	EAC-RoHS Approval ID: RU D-DE.HB35.B.00387			

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Classifications

ECLASS

ECLASS-13.0	27060311
ECLASS-15.0	27060311

ETIM

ETIM 10.0	EC001855
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UNSPSC

UNSPSC 21.0	26121600
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Environmental product compliance

EU RoHS	
Fulfills EU RoHS substance requirements	Yes, No exemptions
China RoHS	
Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits
EU REACH SVHC	
REACH candidate substance (CAS No.)	No substance above 0.1 wt%
EF3.1 Climate Change	
CO2e kg	2.78 kg CO2e

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Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com