

## Sensor/actuator cable - SAC-3P-M 8FR SH BK/.../... - 1405835

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Sensor/actuator cable, 3-position, Variable cable type, shielded, free cable end, on Socket angled M8, cable length: Free input (0.2 ... 40.0 m)



### Key Commercial Data

Packing unit	1 pc
Minimum order quantity	50 pc

### Configuration

Cable type	PVC yellow 105 °C [542]
Length [m]	0.400

### Technical data

#### Dimensions

Length of cable	Free input (0.2 ... 40.0 m)
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#### Ambient conditions

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

#### General

Rated current at 40°C	4 A
Rated voltage	48 V AC
	60 V DC
Number of positions	3
Insulation resistance	≥ 100 MΩ
Coding	A - standard
Standards/regulations	M8 connector IEC 61076-2-104
Status display	No
Protective circuit/component	unwired

# Sensor/actuator cable - SAC-3P-M 8FR SH BK/.../... - 1405835

## Technical data

### General

Overvoltage category	II
Degree of pollution	3
Insertion/withdrawal cycles	≥ 100
Torque	0.2 Nm (M8 connectors)

### Material

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

### Line characteristics

Note	This item is a sensor/actuator cable with a freely selectable cable type. The technical data for all possible cable types is listed in the table below.
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### Standards and Regulations

Standards/specifications	M8 connector IEC 61076-2-104
Flammability rating according to UL 94	HB

### PVC yellow 105 °C [542]

Cable type	PVC yellow 105 °C
Cable type (abbreviation)	542
UL AWM style	2517 (105 °C / 300 V)
AWG signal line	24
Conductor structure signal line	32x 1.10 mm
Core diameter including insulation	1.12 mm ±0.03 mm
Wire colors	brown, blue, black
Overall twist	3 wires, twisted
Shielding	Tinned copper braided shield
Optical shield covering	85 %
External sheath, color	yellow
External cable diameter D	4.7 mm ±0.2 mm
Minimum bending radius, flexible installation	12 x D
Cable weight	33 kg/km
Outer sheath, material	PVC
Material conductor insulation	PVC
Conductor material	Tin-plated Cu litz wires
Insulation resistance	≥ (550 M Ohms/m @ 500V)
Conductor resistance	max. 79.7 Ω/km (20 °C)
Nominal voltage, cable	300 V

## Sensor/actuator cable - SAC-3P-M 8FR SH BK/.../... - 1405835

### Technical data

#### PVC yellow 105 °C [542]

Flame resistance	FT4
Other resistance	UV resistant
Ambient temperature (operation)	-30 °C ... 105 °C (cable, fixed installation)
	-5 °C ... 105 °C (cable, flexible installation)

#### Black PVC 105°C [535]

Cable type	Black PVC 105°C
Cable type (abbreviation)	535
UL AWM style	2517 (105 °C / 300 V)
AWG signal line	24
Conductor structure signal line	32x 1.10 mm
Core diameter including insulation	1.12 mm ±0.03 mm
Wire colors	brown, blue, black
Overall twist	3 wires, twisted
Shielding	Tinned copper braided shield
Optical shield covering	85 %
External sheath, color	black
External cable diameter D	4.7 mm ±0.2 mm
Minimum bending radius, flexible installation	12 x D
Cable weight	33 kg/km
Outer sheath, material	PVC
Material conductor insulation	PVC
Conductor material	Tin-plated Cu litz wires
Nominal voltage, cable	300 V
Flame resistance	FT4
Other resistance	UV resistant
Ambient temperature (operation)	-30 °C ... 105 °C (cable, fixed installation)

#### PUR halogen-free yellow [240]

Cable type	PUR halogen-free yellow
Cable type (abbreviation)	240
Cable abbreviation	Li9YV1-C-V1-11Y
UL AWM style	20549
Conductor cross section	3x 0.25 mm <sup>2</sup> (Signal line)
AWG signal line	24
Conductor structure signal line	32x 0.10 mm
Core diameter including insulation	1.17 mm ±0.02 mm
Thickness, insulation	≥ 0.21 mm
Wire colors	brown, blue, black
Overall twist	3 wires, twisted
Length of twist, overall twist	40 mm
Shielding	Braided copper wires

## Sensor/actuator cable - SAC-3P-M 8FR SH BK/.../... - 1405835

### Technical data

#### PUR halogen-free yellow [240]

Optical shield covering	85 %
External sheath, color	yellow
Outer sheath thickness	approx. 0.8 mm
External cable diameter D	5 mm ±0.2 mm
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Number of bending cycles	2000000
Minimum bending radius, drag chain applications	10 x D
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s <sup>2</sup>
Cable weight	33 kg/km
Outer sheath, material	PUR
Material conductor insulation	PP
Conductor material	Bare Cu litz wires
Insulation resistance	≥ 1 GΩ*km (at 20 °C)
Conductor resistance	78 Ω/km (at 20 °C)
Nominal voltage, cable	≤ 300 V AC
Test voltage, cable	≥ 3000 V AC (Spark test)
Test voltage Core/Shield	≥ 2000 V AC (for 60 s)
Flame resistance	in accordance with UL 758/1581 FT2
Halogen-free	in accordance with DIN VDE 0472 part 815
	According to EN 50267-2-1
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 black [PUR]

Cable type	PUR halogen-free black
Cable type (abbreviation)	PUR
Cable abbreviation	Li9Y-V1-C-V1-11Y
UL AWM style	20549
Conductor cross section	3x 0.25 mm <sup>2</sup> (Signal line)
AWG signal line	24
Conductor structure signal line	32x 0.10 mm
Core diameter including insulation	1.17 mm ±0.02 mm (Signal line)

## Sensor/actuator cable - SAC-3P-M 8FR SH BK/.../... - 1405835

### Technical data

PUR halogen-free black [PUR]

Thickness, insulation	≥ 0.21 mm (Core insulation)
	≥ 0.5 mm (Outer cable sheath)
Wire colors	brown, blue, black
Overall twist	3 wires, twisted
Shielding	Braided copper wires
Optical shield covering	80 %
External sheath, color	black-gray RAL 7021
External cable diameter D	4.35 mm ±0.2 mm
Smallest bending radius, fixed installation	22 mm
Smallest bending radius, movable installation	44 mm
Number of bending cycles	10000000
Bending radius	50 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s <sup>2</sup>
Cable weight	26 kg/km
Outer sheath, material	PUR
Material conductor insulation	PP
Conductor material	Bare Cu litz wires
Insulation resistance	≥ 100 GΩ*km
Conductor resistance	max. 79 Ω/km
Nominal voltage, cable	300 V
Test voltage, cable	3000 V
Special properties	Flexible cable conduit capable
	Silicone-free
	Free of substances which would hinder coating with paint or varnish
Flame resistance	in accordance with UL 758/1581 FT2
	DIN EN 60332-2-2 (20 s)
Halogen-free	in accordance with DIN VDE 0472 part 815
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
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation)
	-25 °C ... 80 °C (cable, flexible installation)

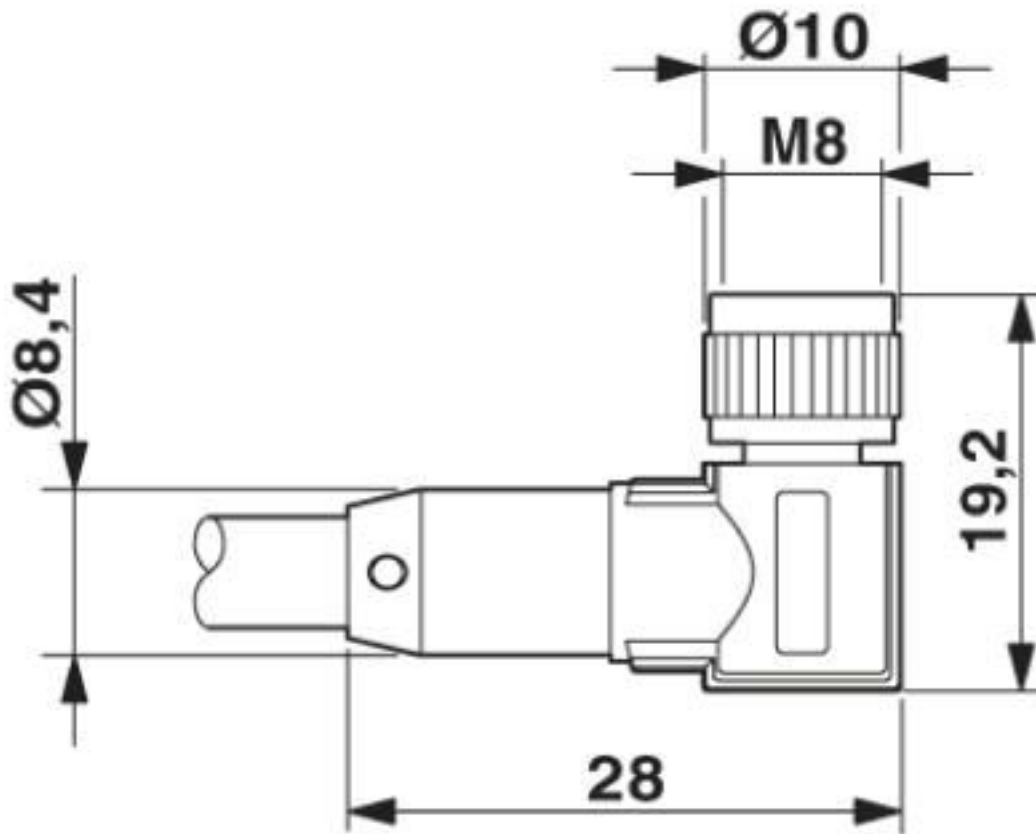
### Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

# Sensor/actuator cable - SAC-3P-M 8FR SH BK/.../... - 1405835

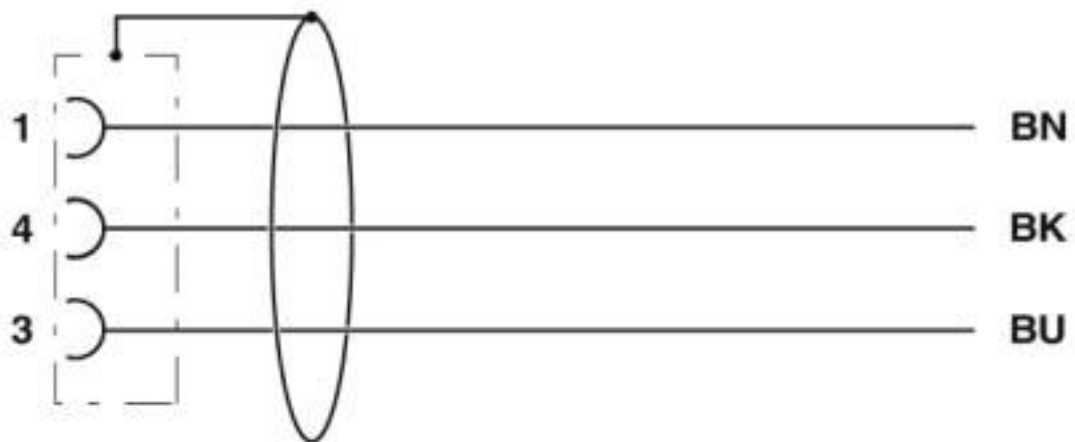
## Drawings

Dimensional drawing



Socket M8 x 1, angled, shielded

Circuit diagram



Contact assignment of M8 socket

## Sensor/actuator cable - SAC-3P-M 8FR SH BK/.../... - 1405835

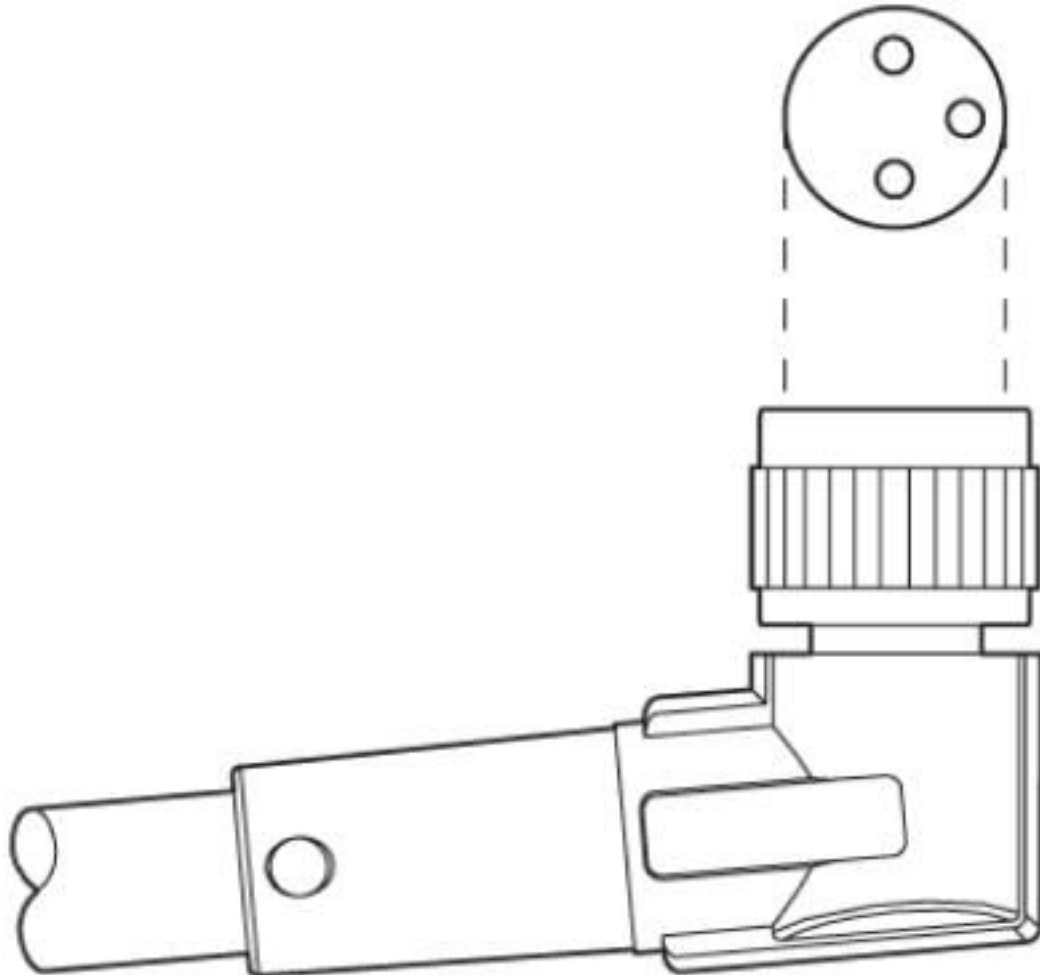
Schematic diagram



Pin assignment M8 socket, 3-pos., view female side

# Sensor/actuator cable - SAC-3P-M 8FR SH BK/.../... - 1405835

Schematic diagram

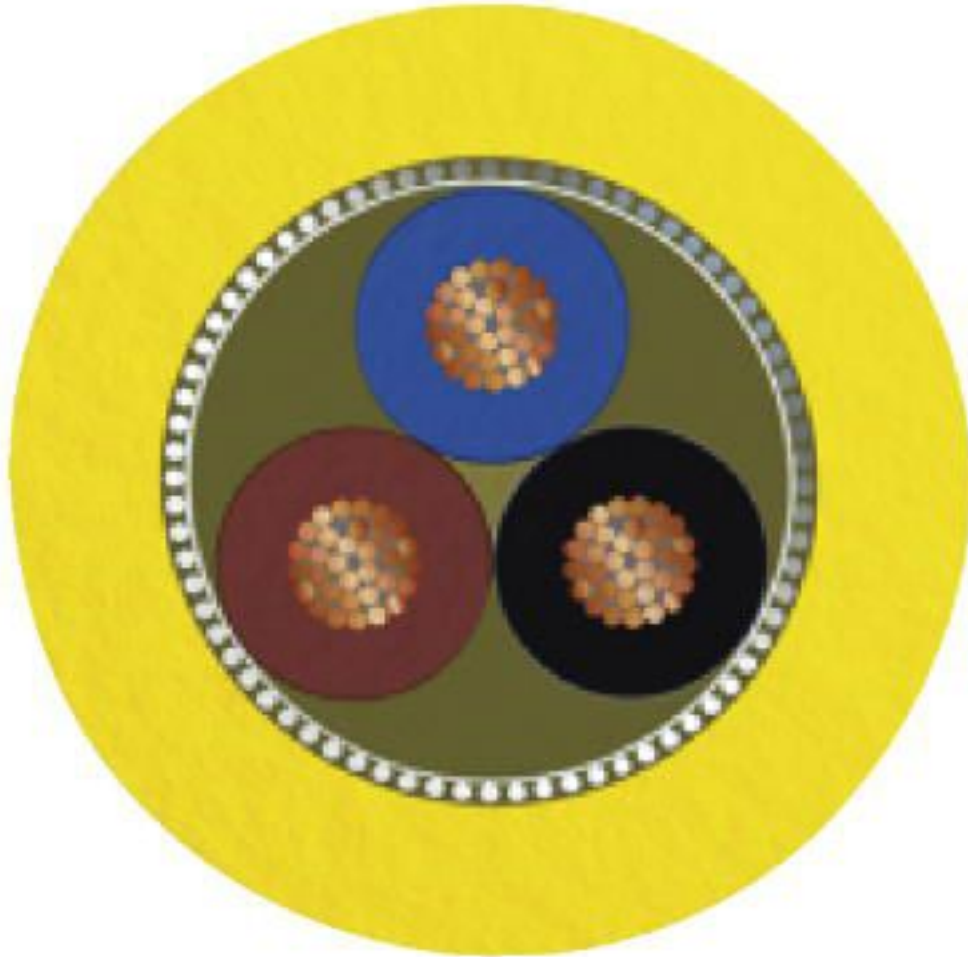


Layout of connector pin assignments



## Sensor/actuator cable - SAC-3P-M 8FR SH BK/.../... - 1405835

Cable cross section



PVC yellow 105 °C [542]

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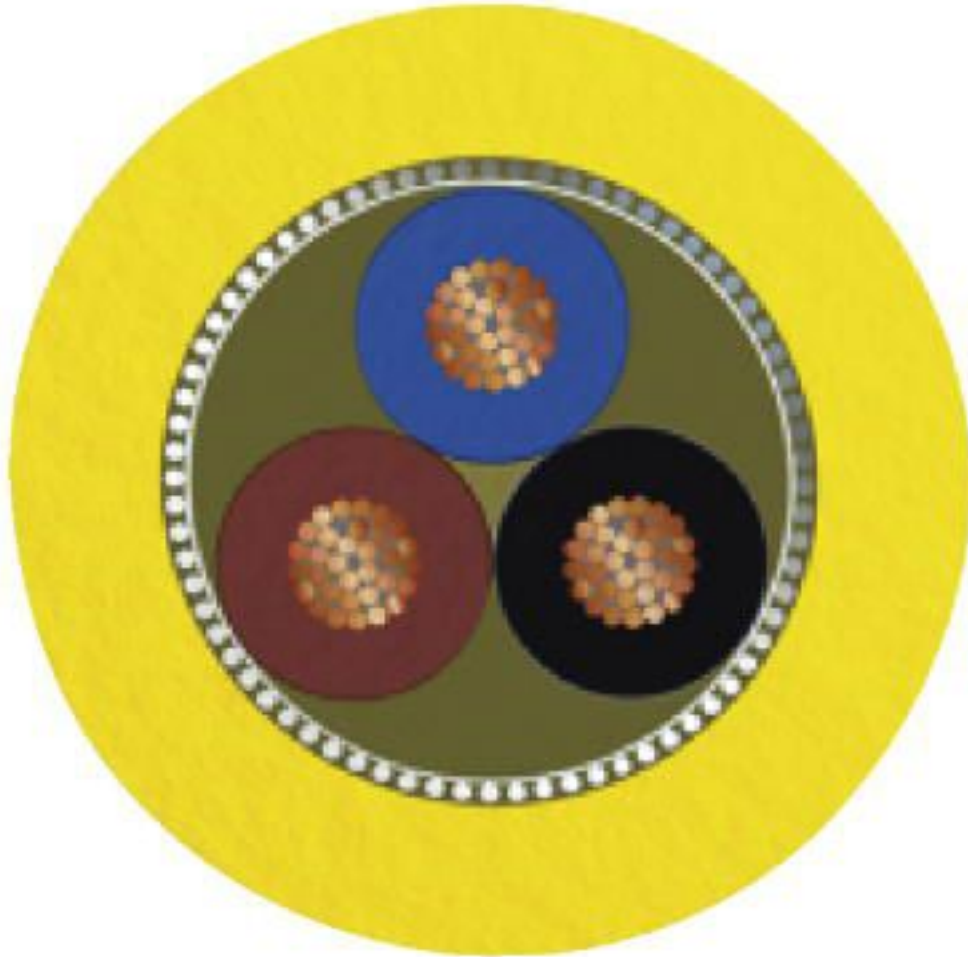
Cable cross section



Black PVC 105°C [535]

## Sensor/actuator cable - SAC-3P-M 8FR SH BK/.../... - 1405835

Cable cross section



PUR halogen-free yellow [240]

### Classifications

eCl@ss

eCl@ss 10.0.1	27060311
eCl@ss 4.0	27060300
eCl@ss 4.1	27060300
eCl@ss 5.0	27061800
eCl@ss 5.1	27061800
eCl@ss 6.0	27279200
eCl@ss 7.0	27279218
eCl@ss 8.0	27279218
eCl@ss 9.0	27060311

# Sensor/actuator cable - SAC-3P-M 8FR SH BK/.../... - 1405835

## Classifications

### ETIM

ETIM 3.0	EC001855
ETIM 4.0	EC001855
ETIM 5.0	EC001855
ETIM 6.0	EC001855
ETIM 7.0	EC001855

### UNSPSC

UNSPSC 6.01	31251501
UNSPSC 7.0901	31251501
UNSPSC 11	31251501
UNSPSC 12.01	31251501
UNSPSC 13.2	31251501
UNSPSC 19.0	31251501
UNSPSC 20.0	31251501
UNSPSC 21.0	31251501

## Approvals


### Approvals


#### Approvals

UL Listed / cUL Listed / EAC-RoHS / EAC / cULus Listed

#### Ex Approvals

### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 221474
Nominal voltage UN	60 V		
Nominal current IN	4 A		

cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 221474
Nominal voltage UN	60 V		
Nominal current IN	4 A		

## Sensor/actuator cable - SAC-3P-M 8FR SH BK/.../... - 1405835

### Approvals

EAC-RoHS		RU D- DE.HB35.B.00387
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EAC		RU C- DE.BL08.B.00286
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cULus Listed		
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### Accessories

#### Accessories

#### Conductor marking

Insert label - PABA WH/23 - 1013779



Insert label, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, mounting type: thread on, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 20

Insert label - PABA YE/23 - 1013782



Insert label, Strip, yellow, unlabeled, can be labeled with: CMS-P1-PLOTTER, mounting type: thread on, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 20

#### Corrugated pipe

Protective hose - WP-PA HF 13,0 BK - 3240681



Polyamide protective hose, inflammability class V0, UV resistant

## Sensor/actuator cable - SAC-3P-M 8FR SH BK/.../... - 1405835

### Accessories

Protective hose - WP-PA HF-HB 13,0 BK - 3240839



Polyamide protective hose, inflammability class HB, UV resistant

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### Cutting tools

Diagonal cutter - CUTFOX-S VDE - 1212207



Diagonal cutter for hard (piano wire) and soft wires, VDE 1000 V AC/1500 V DC tested

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### Marker pen

Marker pen - B-STIFT - 1051993



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

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### Plug for cable screw gland

Screw plug - PROT-M 8 MS-PA-CHAIN - 1430860



M8 sealing cap made of plastic with fixing band for sensor cables, for M8 sockets

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### Screwdriver tools

Tool - SAC BIT M8-D10 - 1208461



Nut for assembling M8 connectors with longitudinal knurl and a knurl diameter of 10 mm, for 4 mm hexagonal drive

## Sensor/actuator cable - SAC-3P-M 8FR SH BK/.../... - 1405835

### Accessories

#### Stripping tool

Stripping tool - WIREFOX SAC-1 - 1212757



Stripping pliers, for halogen-free sensor/actuator cables (SAC cables), with PUR and PVC insulation, from  $\varnothing$  of 3.2 to 4.4 mm, any stripping length

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Stripping tool - WIREFOX SAC - 1212623



Stripping pliers, for halogen-free sensor/actuator cables (SAC cables), with PUR and PVC insulation, from  $\varnothing$  of 4.4 to 7 mm, any stripping length

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Stripping tool - WIREFOX 10 - 1212150



Stripping tool, for cables and conductors from 0.02 - 10 mm<sup>2</sup>, self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm<sup>2</sup> stranded/1.5 mm<sup>2</sup> solid, replaceable stripping blade

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#### Torque tool

Torque screwdriver - TSD 02 SAC - 1208487



Torque screwdriver, with preset torque of 0.2 Nm and 4 mm hexagonal drive for M8 connectors

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Protective hose adapter - WP-CTA POM 13,0 BK - 1422884



Protective hose adapter, for corrugated hoses with a nominal size of 13 (10 x 13), corrugated in parallel

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