

# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...



1697593

<https://www.phoenixcontact.com/de/produkte/1697593>

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

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## Your advantages

- Easy and safe: 100% electrically tested plug-in components
- Save time, thanks to installation with snap-in fast locking system
- Flexible solutions - configurable materials with variable cable types and cable lengths

# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...



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## Commercial Data

Item number	1697593
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to Order (non-returnable)
Sales Key	C1 - Sensor-Aktor-Kabel
Product Key	BF1BBA
Catalog Page	Page 186 (C-2-2019)
Customs tariff number	85444290
Country of origin	PL

## Technical Data

### Product properties

Product type	Sensor/actuator cable
Number of positions	3
Application	Standard
	Robots and drag chains
No. of cable outlets	1
Shielded	no
Coding	A - standard

### Insulation characteristics

Overvoltage category	II
Degree of pollution	3

### Material specifications

Flammability rating according to UL 94	HB
Sealing material	NBR
Material of grip body	TPU, hardly inflammable, self-extinguishing
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Cable gland material	not available

### Electrical properties

Contact resistance	$\leq 5 \text{ m}\Omega$
Insulation resistance	$\geq 100 \text{ M}\Omega$
Nominal voltage $U_N$	48 V AC
	60 V DC
Nominal current $I_N$	4 A
Protective circuit	unwired

### Connector

Insertion/withdrawal cycles	$\geq 100$
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#### Header 1

Head design	free cable end
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#### Header 2

Head design	Socket
Head cable outlet	straight
Head thread type	M8
Head locking type	Snap-in

### LED signaling

# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...

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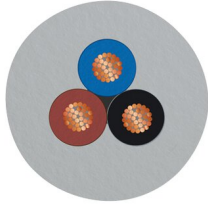
<https://www.phoenixcontact.com/de/produkte/1697593>

Status display	No
Status display present	No

## Cable / line

Cable length	Free input (0.2 ... 40.0 m)
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PUR halogen-free gray [280]

Dimensional drawing	
Shielded	no
UL AWM Style	20549 / 10493 (80°C/300 V)
Cable weight	18 kg/km
Cable type	PUR halogen-free gray
Short symbol	Li9Y11Y-HF
Cable type (abbreviation)	280
External cable diameter	3.6 mm ±0.15 mm
Outer sheath, material	PUR
External sheath, color	gray RAL 7001
Thickness, outer sheath	approx. 0.5 mm
Conductor material	Bare Cu litz wires
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross section	3x 0.25 mm <sup>2</sup>
Material wire insulation	PP
Thickness, insulation	≥ 0.21 mm (Core insulation)
Wire diameter incl. insulation	1.17 mm ±0.02 mm
Single wire, color	brown, blue, black
Overall twist	3 wires, twisted
Length of twist, overall twist	40 mm
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V
Conductor resistance	≤ 78 Ω/km (at 20 °C)
Cable insulation resistance	≥ 100 GΩ*km (at 20 °C)
Smallest bending radius, fixed installation	18 mm
Smallest bending radius, movable installation	36 mm
Number of bending cycles	10000000
Bending radius	44 mm
Traversing path	10 m

# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...

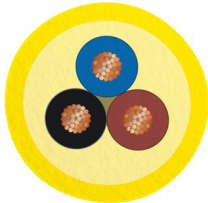


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Traversing rate	3 m/s
Acceleration	10 m/s <sup>2</sup>
Halogen-free	in accordance with DIN VDE 0472 part 815
Resistance to oil	in accordance with DIN EN 60811-2-1
Flame resistance	in accordance with UL 758/1581 FT2 DIN EN 60332-2-2 (20 s)
Other resistance	hydrolysis and microbe resistant Highly resistant to acids, alkaline solutions and solvents Resistant to salt water 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)	-25 °C ... 80 °C (Cable, flexible installation) -40 °C ... 80 °C (cable, fixed installation)

## PUR halogen-free yellow [240]

Dimensional drawing	
Shielded	no
UL AWM Style	20549
Cable weight	24 kg/km
Cable type	PUR halogen-free yellow
Short symbol	Li9Y11Y
Cable type (abbreviation)	240
External cable diameter	4.4 mm ±0.15 mm
Outer sheath, material	PUR
External sheath, color	yellow
Thickness, outer sheath	approx. 0.9 mm
Conductor material	Bare Cu litz wires
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross section	3x 0.25 mm <sup>2</sup> (Signal line)
Material wire insulation	PP
Thickness, insulation	≥ 0.21 mm
Wire diameter incl. insulation	1.17 mm ±0.02 mm
Single wire, color	brown, blue, black

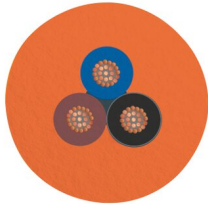
# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...

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Overall twist	3 wires, twisted
Length of twist, overall twist	40 mm
Nominal voltage, cable	≤ 300 V AC
Test voltage, cable	≥ 3000 V AC (Spark test)
Conductor resistance	78 Ω/km (at 20 °C)
Cable insulation resistance	≥ 1 GΩ*km (at 20 °C)
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Number of bending cycles	4000000
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>
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
Flame resistance	in accordance with UL 758/1581 FT2
Other resistance	hydrolysis and microbe resistant Resistant to salt water abrasion-resistant Low adhesion
Ambient temperature (operation)	-25 °C ... 80 °C (Cable, flexible installation) -40 °C ... 80 °C (cable, fixed installation)

## PUR halogen-free orange [180]

Dimensional drawing	
Shielded	no
UL AWM Style	20549
Cable weight	24 kg/km
Cable type	PUR halogen-free orange
Short symbol	Li9Y-11Y
Cable type (abbreviation)	180
External cable diameter	4.4 mm ±0.15 mm
Outer sheath, material	PUR
External sheath, color	orange RAL 2003
Conductor material	Bare Cu litz wires

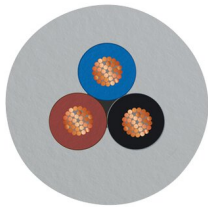
# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...

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Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross section	3x 0.25 mm <sup>2</sup> (Signal line)
Material wire insulation	PP
Thickness, insulation	≥ 0.21 mm (Core insulation)
Wire diameter incl. insulation	1.17 mm ±0.02 mm (Signal line)
Single wire, color	brown, blue, black
Overall twist	3 wires, twisted
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V
Conductor resistance	max. 78 Ω/km (at 20 °C)
Cable insulation resistance	≥ 10 GΩ*km (at 20 °C)
Smallest bending radius, fixed installation	22 mm
Smallest bending radius, movable installation	44 mm
Number of bending cycles	4000000
Bending radius	44 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s <sup>2</sup>
Halogen-free	in accordance with DIN VDE 0472 part 815
Resistance to oil	in accordance with DIN EN 60811-2-1
Flame resistance	in accordance with DIN UL-Style 20549 in accordance with UL 758/1581 FT2
Other resistance	hydrolysis and microbe resistant Resistant to salt water
Ambient temperature (operation)	-25 °C ... 80 °C (Cable, flexible installation) -40 °C ... 80 °C (cable, fixed installation)

## PUR halogen-free gray [280]

Dimensional drawing	
Shielded	no
UL AWM Style	20549 / 10493 (80°C/300 V)
Cable weight	18 kg/km
Cable type	PUR halogen-free gray
Short symbol	Li9Y11Y-HF
Cable type (abbreviation)	280
External cable diameter	3.6 mm ±0.15 mm

# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...



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Outer sheath, material	PUR
External sheath, color	gray RAL 7001
Thickness, outer sheath	approx. 0.5 mm
Conductor material	Bare Cu litz wires
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross section	3x 0.25 mm <sup>2</sup>
Material wire insulation	PP
Thickness, insulation	≥ 0.21 mm (Core insulation)
Wire diameter incl. insulation	1.17 mm ±0.02 mm
Single wire, color	brown, blue, black
Overall twist	3 wires, twisted
Length of twist, overall twist	40 mm
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V
Conductor resistance	≤ 78 Ω/km (at 20 °C)
Cable insulation resistance	≥ 100 GΩ*km (at 20 °C)
Smallest bending radius, fixed installation	18 mm
Smallest bending radius, movable installation	36 mm
Number of bending cycles	10000000
Bending radius	44 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s <sup>2</sup>
Halogen-free	in accordance with DIN VDE 0472 part 815
Resistance to oil	in accordance with DIN EN 60811-2-1
Flame resistance	in accordance with UL 758/1581 FT2 DIN EN 60332-2-2 (20 s)
Other resistance	hydrolysis and microbe resistant Highly resistant to acids, alkaline solutions and solvents Resistant to salt water 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)	-25 °C ... 80 °C (Cable, flexible installation) -40 °C ... 80 °C (cable, fixed installation)

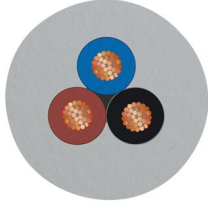
Gray, highly flexible PUR [800]



# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...

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Dimensional drawing	
Note	Due to the extremely robust outer sheath, this cable should only be stripped in 5 cm increments.
Shielded	no
UL AWM Style	20549
Cable weight	24 kg/km
Cable type	Gray, highly flexible PUR
Short symbol	LiF9Y11Y
Cable type (abbreviation)	800
External cable diameter	4.3 mm ±0.2 mm
Outer sheath, material	PUR
External sheath, color	gray RAL 7001
Conductor material	Bare Cu litz wires
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross section	3x 0.25 mm <sup>2</sup> (Signal line)
Material wire insulation	PP
Wire diameter incl. insulation	1.2 mm ±0.05 mm (Signal line)
Single wire, color	brown, blue, black
Overall twist	3 wires, twisted
Nominal voltage, cable	300 V
Test voltage, cable	2000 V
Conductor resistance	approx. 76 Ω/km
Cable insulation resistance	≥ 20 MΩ*km
Minimum bending radius, fixed installation	4 x D
Minimum bending radius, flexible installation	7.5 x D
Number of bending cycles	10000000
Minimum bending radius, drag chain applications	7,5 x D
Traversing path	5 m
Traversing rate	3.3 m/s
Acceleration	5 m/s <sup>2</sup>
Number of bending cycles	15000000
Traversing path	0.9 m
Traversing rate	5 m/s
Acceleration	30 m/s <sup>2</sup>
Torsion force	± 360 °/m
Torsion cycles	1000000

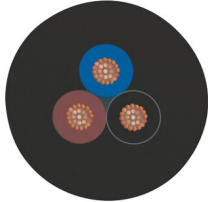
# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...

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Halogen-free	in accordance with DIN VDE 0472 part 815
Resistance to oil	in accordance with DIN EN 60811-2-1
Flame resistance	in accordance with UL 758/1581 FT2
Other resistance	Highly resistant to acids, alkaline solutions and solvents
Special properties	Silicone-free
	Cable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishing
	Free from silicone and cadmium
Ambient temperature (operation)	Free of substances which would hinder coating with paint or varnish
	-25 °C ... 80 °C (Cable, flexible installation)
	-40 °C ... 80 °C (cable, fixed installation)

## PUR halogen-free black [PUR]

Dimensional drawing	
Shielded	no
UL AWM Style	20549 / 10493 (80°C/300 V)
Cable weight	18 kg/km
Cable type	PUR halogen-free black
Short symbol	Li9Y11Y-HF
Cable type (abbreviation)	PUR
External cable diameter	3.6 mm ±0.15 mm
Outer sheath, material	PUR
External sheath, color	black-gray RAL 7021
Thickness, outer sheath	approx. 0.5 mm
Conductor material	Bare Cu litz wires
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross section	3x 0.25 mm <sup>2</sup>
Material wire insulation	PP
Thickness, insulation	≥ 0.21 mm (Core insulation)
Wire diameter incl. insulation	1.17 mm ±0.02 mm
Single wire, color	brown, blue, black
Overall twist	3 wires, twisted
Length of twist, overall twist	40 mm
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V

# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...



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Conductor resistance	≤ 78 Ω/km (at 20 °C)
Cable insulation resistance	≥ 100 GΩ*km (at 20 °C)
Smallest bending radius, fixed installation	18 mm
Smallest bending radius, movable installation	36 mm
Number of bending cycles	10000000
Bending radius	44 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s <sup>2</sup>
Halogen-free	in accordance with DIN VDE 0472 part 815
Resistance to oil	in accordance with DIN EN 60811-2-1
Flame resistance	in accordance with UL 758/1581 FT2 DIN EN 60332-2-2 (20 s)
Other resistance	hydrolysis and microbe resistant Highly resistant to acids, alkaline solutions and solvents Resistant to salt water 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)	-25 °C ... 80 °C (Cable, flexible installation) -40 °C ... 80 °C (cable, fixed installation)
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.

## Cable structure

Cable type	Gray, highly flexible PUR
	PUR/PVC gray
	PUR/PVC yellow
	PUR halogen-free black
	PUR halogen-free orange
	PUR halogen-free gray

## Ambient conditions

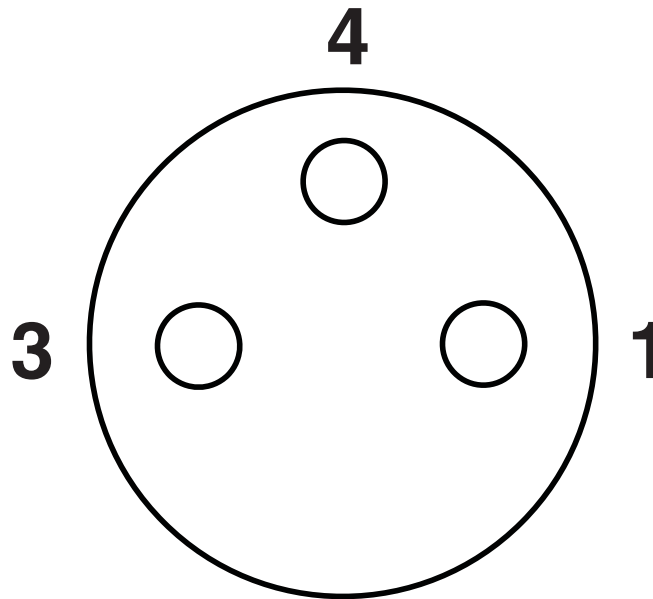
Degree of protection	IP65
	IP67
	IP68
Ambient temperature (operation)	-25 °C ... 90 °C (Plug / socket)

## Standards and regulations

Standards/specifications	IEC 61076-2-104
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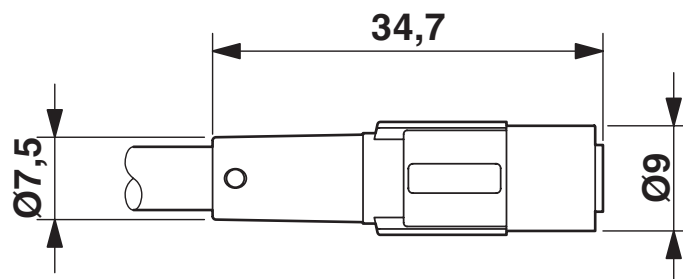
## Drawings

Schematic diagram



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

Dimensional drawing



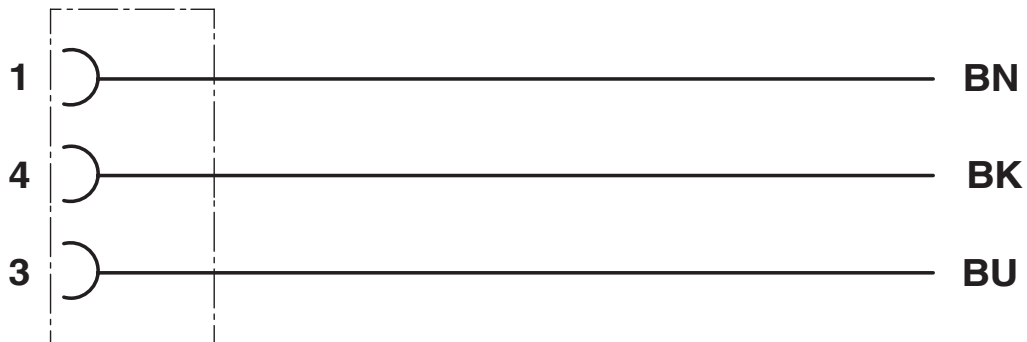
M8 snap-in sockets

# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...

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Circuit diagram



Contact assignment of the M 8 sockets, 3-pos.

# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...





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## Approvals

 <b>UL Listed</b> Approval ID: FILE E 221474				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
	60 V	4 A	-	-

 <b>cUL Listed</b> Approval ID: FILE E 221474				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
	60 V	4 A	-	-

 <b>EAC</b> Approval ID: RU D-DE.HB35.B.00387	
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<b>cULus Listed</b>
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# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...



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## Classifications

### ECLASS

ECLASS-9.0	27060311
ECLASS-10.0.1	27060311
ECLASS-11.0	27060311

### ETIM

ETIM 8.0	EC001855
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### UNSPSC

UNSPSC 21.0	26121600
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# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...



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## Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values



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## Accessories

### Insert label

Insert label - PABA WH/23 - 1013779

<https://www.phoenixcontact.com/de/produkte/1013779>



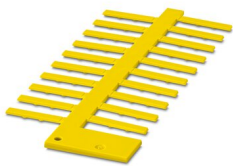
Insert label, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, mounting type: slide-on, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 20

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### Insert label

Insert label - PABA YE/23 - 1013782

<https://www.phoenixcontact.com/de/produkte/1013782>



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

# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...

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## Marker pen

Marker pen - B-STIFT - 1051993

<https://www.phoenixcontact.com/de/produkte/1051993>



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

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## Diagonal cutter

Diagonal cutter - CUTFOX-S VDE - 1212207

<https://www.phoenixcontact.com/de/produkte/1212207>



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

# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...

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## Stripping tool

Stripping tool - WIREFOX SAC-1 - 1212757

<https://www.phoenixcontact.com/de/produkte/1212757>



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

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## Stripping tool

Stripping tool - WIREFOX SAC - 1212623

<https://www.phoenixcontact.com/de/produkte/1212623>



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

# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...

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## Stripping tool

Stripping tool - WIREFOX 10 - 1212150

<https://www.phoenixcontact.com/de/produkte/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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## Protective hose adapter

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

<https://www.phoenixcontact.com/de/produkte/1422884>



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

# Sensor/actuator cable - SAC-3P-M 8SIFS/.../...

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## Protective hose

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

<https://www.phoenixcontact.com/de/produkte/3240681>



Protective hose, material: PA 6, filament: without, UV-resistant: yes, flexible, degree of protection: IP68, color: black, inflammability class in acc. with UL 94: V0, inner diameter: 10 mm, Total length: 50 m

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## Protective hose

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

<https://www.phoenixcontact.com/de/produkte/3240839>



Protective hose, material: PA 6, filament: without, UV-resistant: yes, flexible, degree of protection: IP68, color: black, inflammability class in acc. with UL 94: HB, inner diameter: 10 mm, Total length: 50 m

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