

Sensor/actuator cable - SAC-4P-M 8MS-M 8FS SH BK/.../... - 1405810

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Sensor/actuator cable, 4-position, Variable cable type, shielded, Plug straight M8, on Socket straight 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 black 105° [535]
Length [m]	2.100

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	4
Insulation resistance	≥ 100 MΩ
Coding	A - standard
Standards/regulations	M8 connector IEC 61076-2-104
Status display	No
Protective circuit/component	unwired

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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
Core diameter including insulation	1.12 mm ±0.03 mm
Wire colors	brown, blue, black, white
Overall twist	4 wires, twisted
Shielding	Tinned copper braided shield
Optical shield covering	85 %
External sheath, color	yellow
External cable diameter D	4.9 mm ±0.2 mm
Minimum bending radius, flexible installation	12 x D
Cable weight	37 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
Flame resistance	FT4

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Technical data

PVC yellow 105 °C [542]

Other resistance	UV resistant
Ambient temperature (operation)	-30 °C ... 105 °C (cable, fixed 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, white
Overall twist	4 wires, twisted
Shielding	Tinned copper braided shield
Optical shield covering	85 %
External sheath, color	black
External cable diameter D	4.9 mm ±0.2 mm
Minimum bending radius, flexible installation	12 x D
Cable weight	37 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	4x 0.25 mm² (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, white, blue, black
Overall twist	4 wires, twisted
Length of twist, overall twist	45 mm
Shielding	Braided copper wires
Optical shield covering	85 %
External sheath, color	yellow

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Technical data

PUR halogen-free yellow [240]

Outer sheath thickness	approx. 0.7 mm
External cable diameter D	5 mm $\pm$ 0.15 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 ²
Cable weight	34 kg/km
Outer sheath, material	PUR
Material conductor insulation	PP
Conductor material	Bare Cu litz wires
Insulation resistance	$\geq 1 \text{ G}\Omega \cdot \text{km}$ (at 20 °C)
Conductor resistance	78 Ω/km (at 20 °C)
Nominal voltage, cable	$\leq 300 \text{ V AC}$
Test voltage, cable	$\geq 3000 \text{ V AC}$ (Spark test)
Test voltage Core/Shield	$\geq 2000 \text{ V AC}$ (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	LiF9YC11Y
UL AWM style	20549
Conductor cross section	4x 0.25 mm ² (Signal line)
AWG signal line	24
Conductor structure signal line	32x 0.10 mm
Core diameter including insulation	1.17 mm $\pm$ 0.02 mm (Signal line)
Thickness, insulation	$\geq 0.21 \text{ mm}$ (Core insulation)
	approx. 0.5 mm (Outer cable sheath)

Sensor/actuator cable - SAC-4P-M 8MS-M 8FS SH BK/.../... - 1405810

Technical data

PUR halogen-free black [PUR]

Wire colors	brown, white, blue, black
Overall twist	4 wires, twisted
Shielding	Braided copper wires
Optical shield covering	80 %
External sheath, color	black-gray RAL 7021
External cable diameter D	4.7 mm ±0.15 mm
Smallest bending radius, fixed installation	24 mm
Smallest bending radius, movable installation	48 mm
Number of bending cycles	10000000
Bending radius	48 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s ²
Cable weight	31 kg/km
Outer sheath, material	PUR
Material conductor insulation	PP
Conductor material	Bare Cu litz wires
Insulation resistance	≥ 100 GΩ*km (at 20 °C)
Conductor resistance	max. 78 Ω/km (at 20 °C)
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)

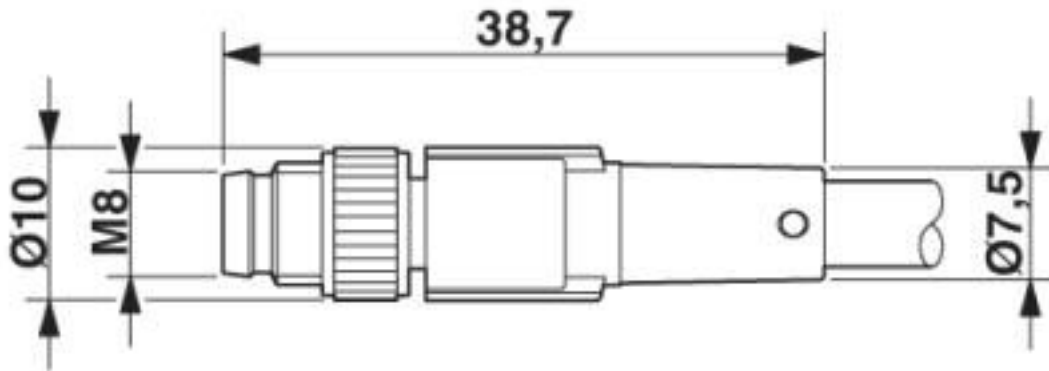
Environmental Product Compliance

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

Drawings

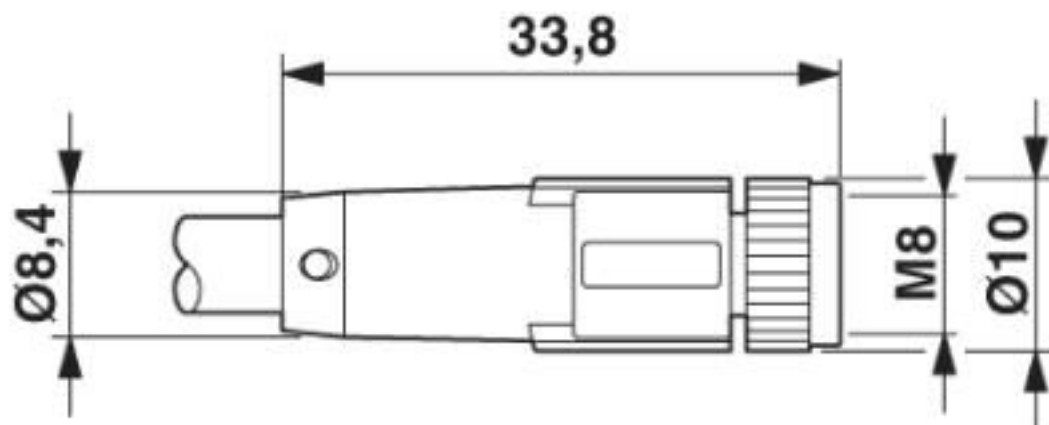
Sensor/actuator cable - SAC-4P-M 8MS-M 8FS SH BK/.../... - 1405810

Dimensional drawing



M8 x 1 male plug, straight version

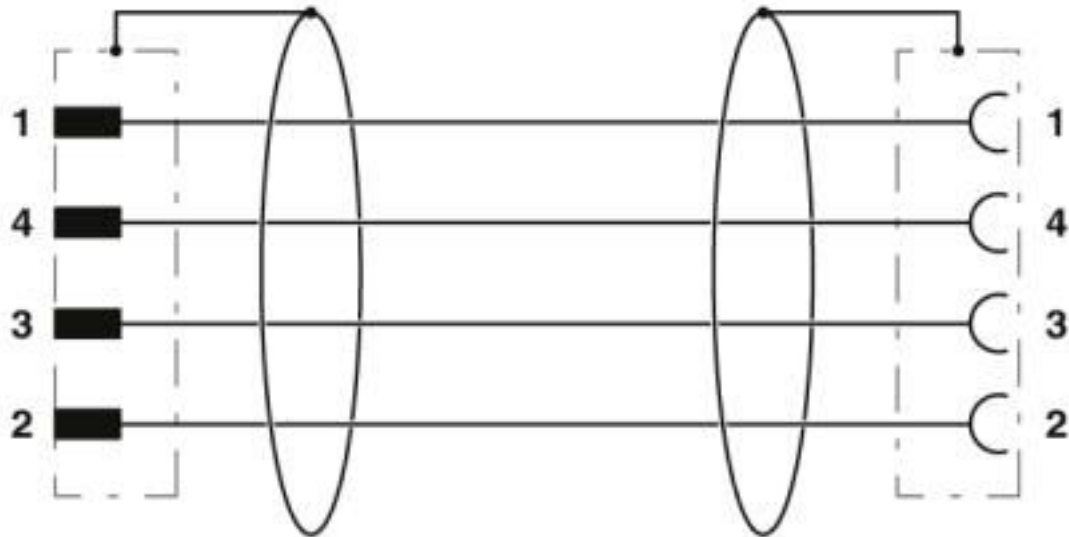
Dimensional drawing



Socket M8 x 1, straight, shielded

Sensor/actuator cable - SAC-4P-M 8MS-M 8FS SH BK/.../... - 1405810

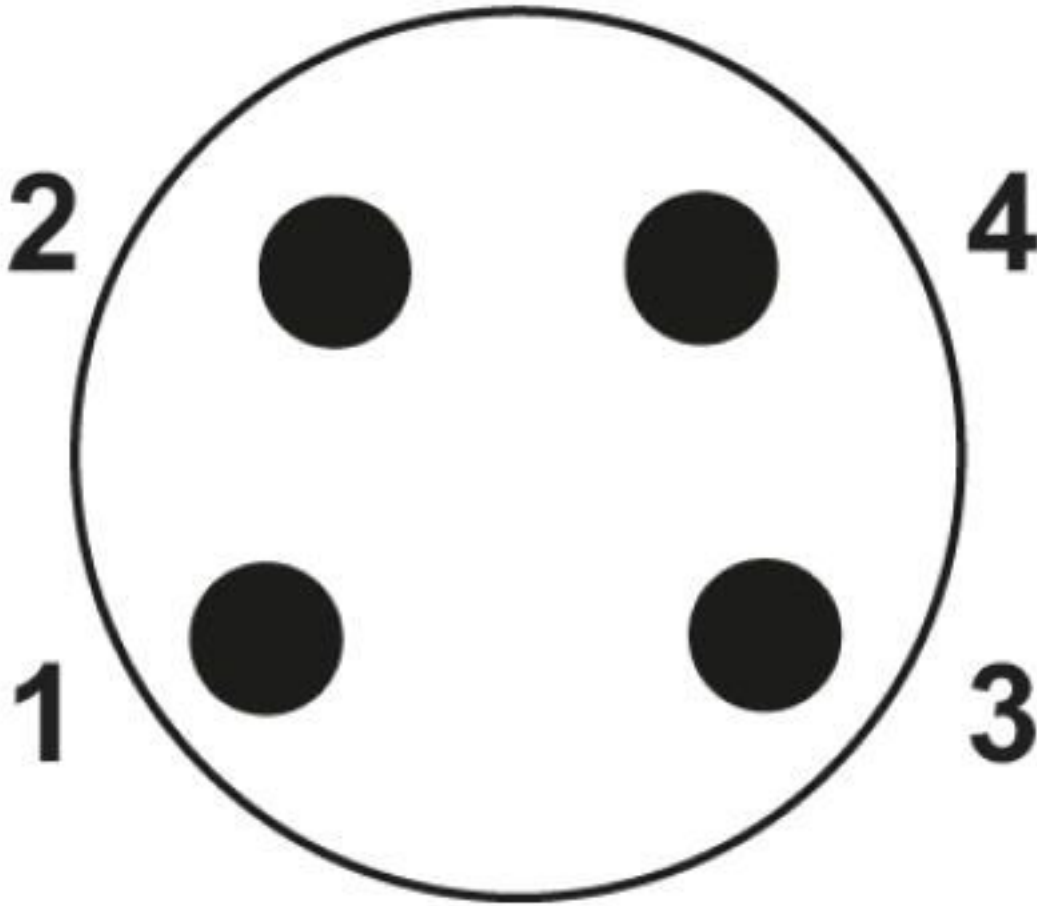
Circuit diagram



Contact assignment of M8 plugs/sockets

Sensor/actuator cable - SAC-4P-M 8MS-M 8FS SH BK/.../... - 1405810

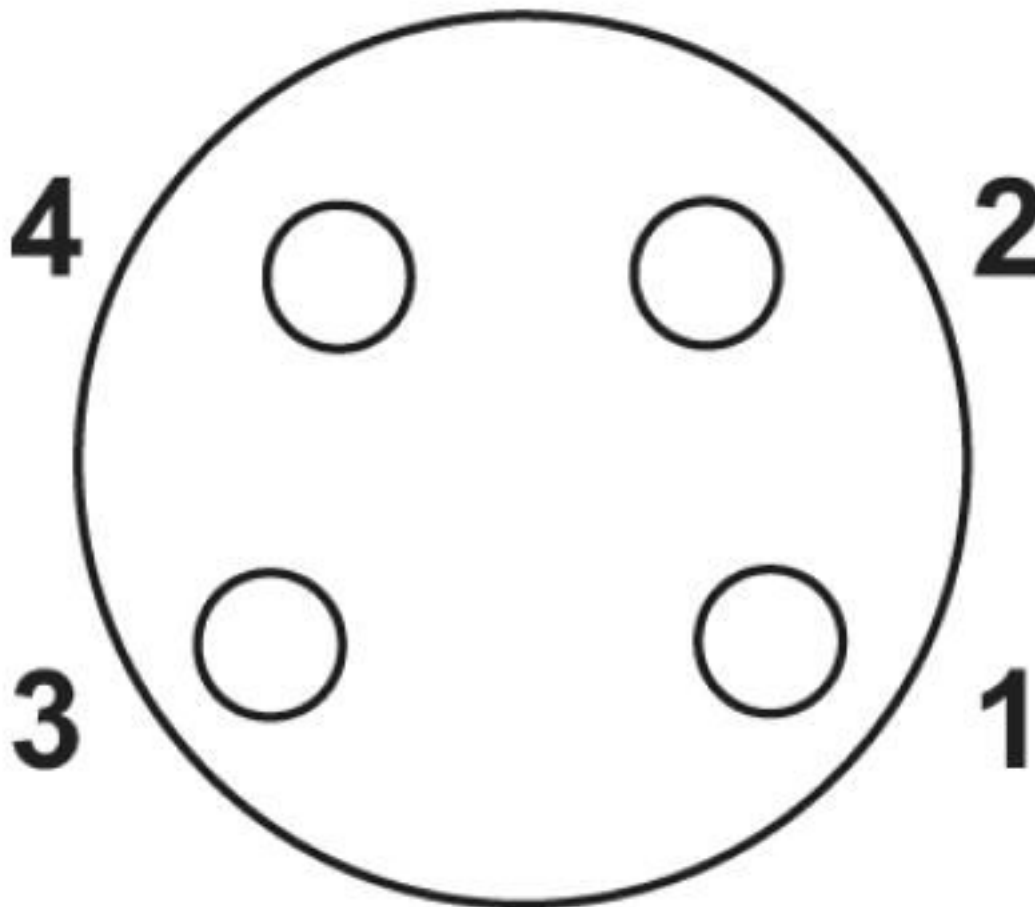
Schematic diagram



Pin assignment M8 plug, 4-pos., view male side

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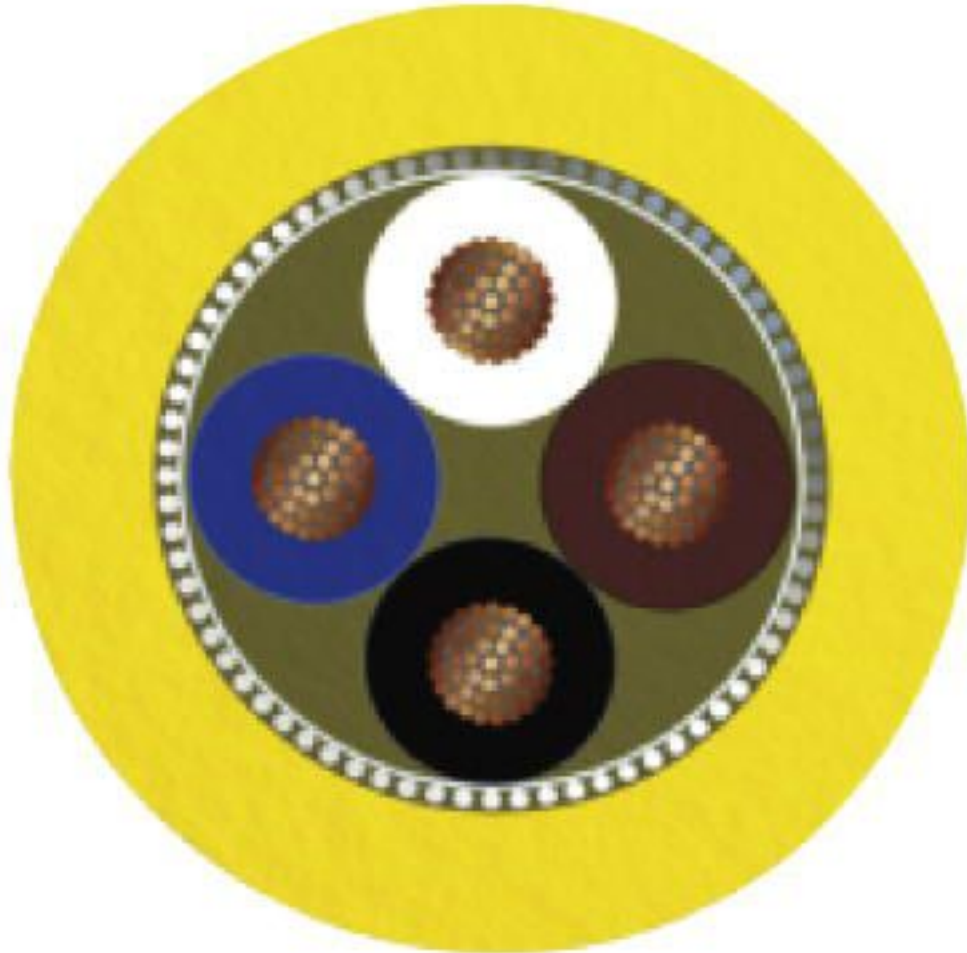
Schematic diagram



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

Sensor/actuator cable - SAC-4P-M 8MS-M 8FS SH BK/.../... - 1405810

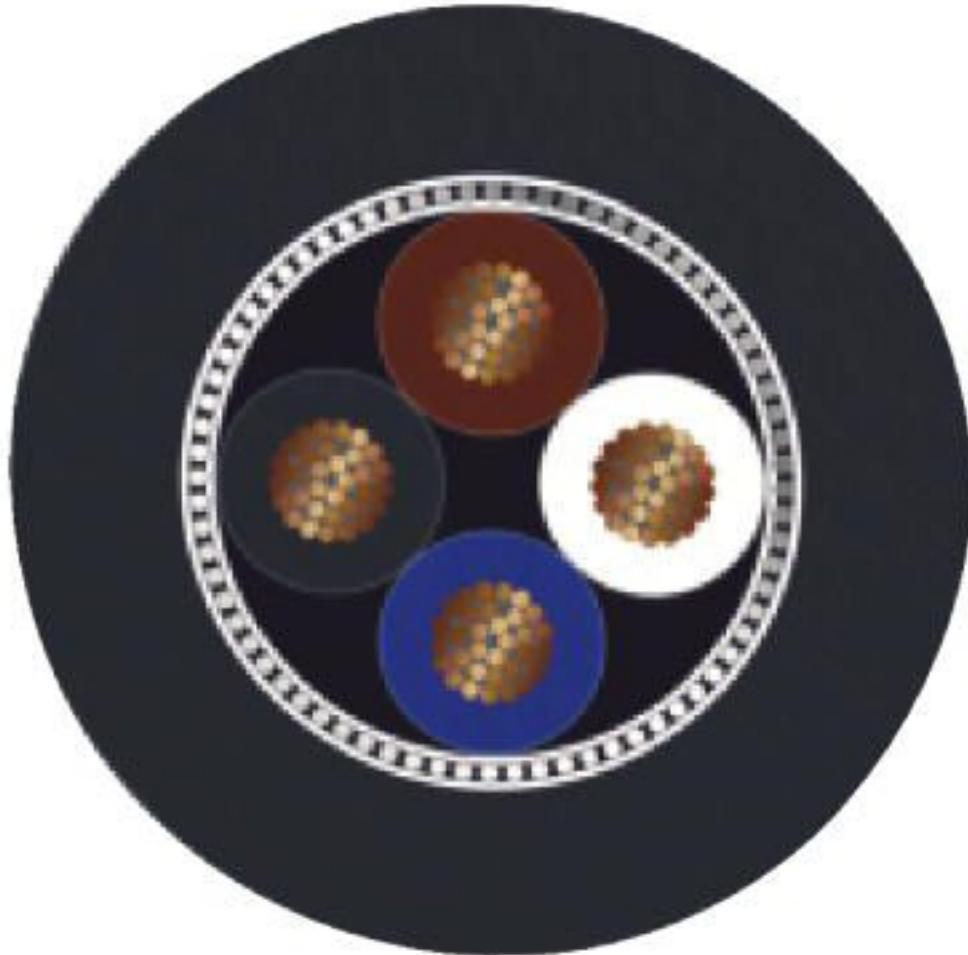
Cable cross section



PVC yellow 105 °C [542]

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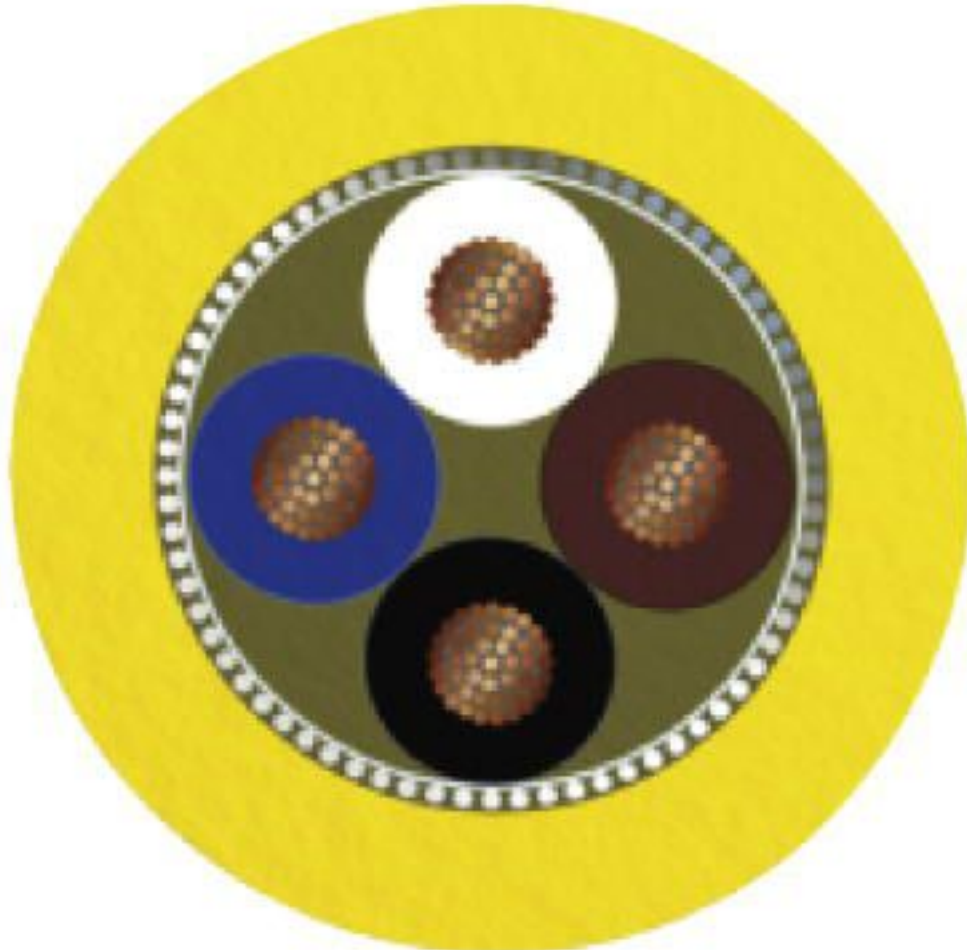
Cable cross section



Black PVC 105°C [535]

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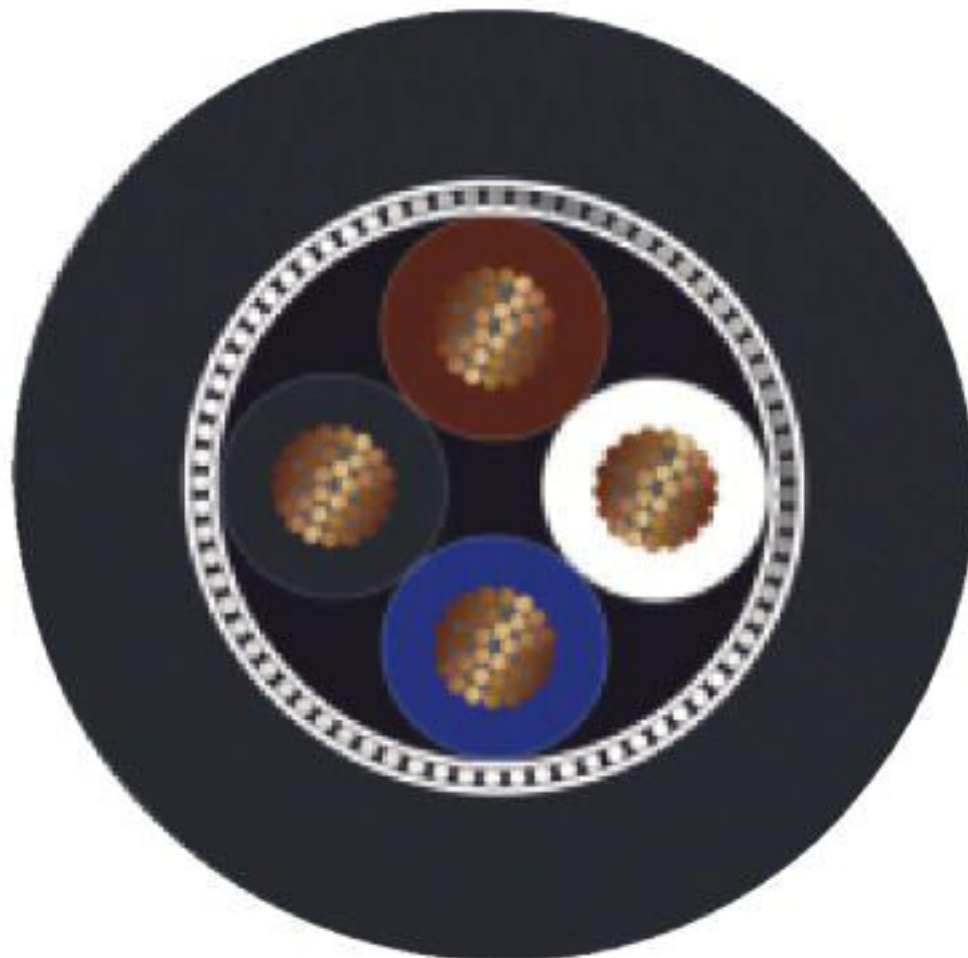
Cable cross section



PUR halogen-free yellow [240]

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Cable cross section



PUR halogen-free black [PUR]

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

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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		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 221474
Nominal voltage UN	30 V		
Nominal current IN	4 A		

cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 221474
Nominal voltage UN	30 V		
Nominal current IN	4 A		

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Approvals

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

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

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

Plug for cable screw gland

Sensor/actuator cable - SAC-4P-M 8MS-M 8FS SH BK/.../... - 1405810

Accessories

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

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



Protective cap

Sealing cap - PROT-M 8 FS-PA-CHAIN - 1430857

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



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

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

Mouser Electronics

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