

# SAC-3P-MS/ 2,5-28R SCO RAIL - Sensor/actuator cable



1424174

<https://www.phoenixcontact.com/us/products/1424174>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



Sensor/actuator cable, 3-position, PE-X halogen-free, black, shielded, Plug straight M12 SPEEDCON, coding: A, on free cable end, cable length: 2.5 m, For railway applications

## Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Securely locked by special vibration brake
- Resistant to temperature influences – tested for an extended temperature range and for resistance to temperature shocks
- Reliable signal transmission – 360° shielding in environments with electromagnetic interference

## Commercial data

Item number	1424174
Packing unit	1 pc
Minimum order quantity	50 pc
Product key	AF1CBA
GTIN	4055626368573
Weight per piece (including packing)	142.6 g
Weight per piece (excluding packing)	142.6 g
Country of origin	PL

# SAC-3P-MS/ 2,5-28R SCO RAIL - Sensor/actuator cable



1424174

<https://www.phoenixcontact.com/us/products/1424174>

## Technical data

### Product properties

Product type	Sensor/actuator cable
Application	Railway applications
Number of positions	3
No. of cable outlets	1
Shielded	yes
Coding	A

### Insulation characteristics

Overvoltage category	II
Degree of pollution	3

### Material specifications

Flammability rating according to UL 94	V0
Material of grip body	PA 6.6
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	PA 6.6
Material for screw connection	Zinc die-cast, nickel-plated
Standards/regulations	PA 6.6

### Electrical properties

Insulation resistance	$\geq 100 \text{ M}\Omega$
Nominal voltage $U_N$	48 V AC
	60 V DC
Nominal current $I_N$	4 A

### Mechanical properties

#### Mechanical data

Insertion/withdrawal cycles	$\geq 100$
-----------------------------	------------

### Signaling

Status display	no
Status display present	no

### Connector

#### Connection 1

Type	Plug straight M12 SPEEDCON
Number of positions	3
Locking type	SPEEDCON
Coding type	A

# SAC-3P-MS/ 2,5-28R SCO RAIL - Sensor/actuator cable

1424174

<https://www.phoenixcontact.com/us/products/1424174>

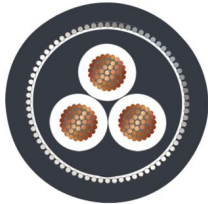
## Connection 2

Type	free cable end
------	----------------

## Cable/line

Cable length	2.5 m
--------------	-------

## Shielded black RADOX® [28R]

Dimensional drawing	
Cable weight	51 kg/km
Number of positions	3
Shielded	yes
Cable type	Shielded black RADOX® [28R]
Conductor structure signal line	19x 0.18 mm
AWG signal line	20
Conductor cross-section	3x 0.5 mm <sup>2</sup>
Wire diameter incl. insulation	1.43 mm
External cable diameter	5.30 mm ±0.3 mm
Outer sheath, material	PE-X
External sheath, color	black
Conductor material	Tin-plated Cu litz wires
Material wire insulation	PE-X
Single wire, color	white 1, white 2, white 3
Overall twist	3 wires, twisted
Max. conductor resistance	≤ 40.1 Ω/km
Nominal voltage, cable	600 V AC (Core-ground, U <sub>0</sub> ) 1000 V AC (Core-ground, U) ≤ 720 V AC (core-ground) ≤ 1200 V AC (Core-ground, U <sub>m</sub> ) ≤ 900 V DC (Core-ground, V <sub>0</sub> ) ≤ 1500 V DC (Line-line)
Test voltage	3500 V AC (50 Hz, 5 min.) 8400 V DC (50 Hz, 5 min.)
Minimum bending radius, fixed installation	3 x D
Minimum bending radius, flexible installation	4 x D
Smallest bending radius, fixed installation	16 mm
Smallest bending radius, movable installation	22 mm
Halogen-free	in accordance with EN 50267-2-1

# SAC-3P-MS/ 2,5-28R SCO RAIL - Sensor/actuator cable



1424174

<https://www.phoenixcontact.com/us/products/1424174>

Flame resistance	IEC 60332-1-2
	EN 50266
	EN 50305, 9.1.2
	NF C32-070, 2.1
	NF C32-070, 2.2
	UL 1685, 12 (FT4)
	in accordance with ISO 6722-1 5.22 (UN ECE-R 118.01)
Fume corrosiveness	EN 50267-2-2
Fume toxicity	BS 6853 B.1
	EN 50305, 9.2
Concentration of fumes	BS 6853 D.8.7
	EN 61034-2
	UL 1685, 12 (FT4)
Resistance to oil	according to IRM 902, 72 h at 100 °C
Fire protection in rail vehicles	BS 6853 (Category Ia, Ib, II)
	GM/RT 2130 (Category Ia, Ib, II)
	EN 45545 (Risk level HL1 - HL3)
	DIN 5510 (Fire protection level 1, 2, 3, 4)
	NF F16-101 (Category A1, A2, B)
	NF F16-101 (Class C/F0)
	NFPA 130
UNI CEI 11170 (Risk level LR1 - LR4)	
Other resistance	Resistance to fuels (according to IRM 903, 168 h at 70 °C)
Ambient temperature (operation)	-50 °C ... 120 °C (cable, fixed installation)
	-25 °C ... 90 °C (Cable, flexible installation)

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP65
Ambient temperature (operation) (male connector/female connector)	-40 °C ... 85 °C (Plug / socket)

## Standards and regulations

### M12

Standard designation	M12 connector
Standards/specifications	IEC 61076-2-101
Standard designation	Shock, vibration
Standards/specifications	EN 50155

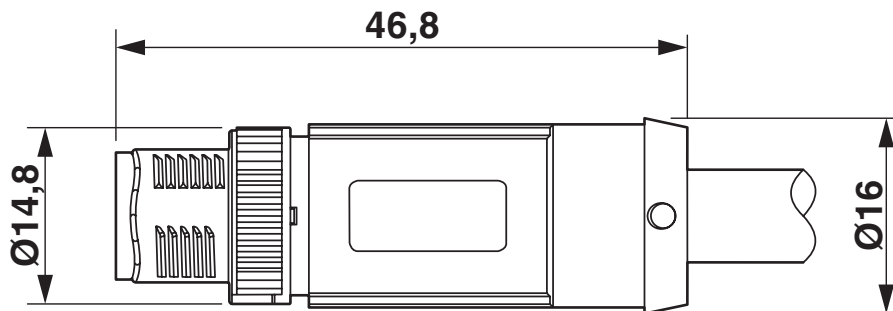
# SAC-3P-MS/ 2,5-28R SCO RAIL - Sensor/actuator cable

1424174

<https://www.phoenixcontact.com/us/products/1424174>

## Drawings

Dimensional drawing



M12 SPEEDCON plug, straight, shielded

Schematic diagram



Pin assignment M12 plug, 3-pos., A-coded, view male side

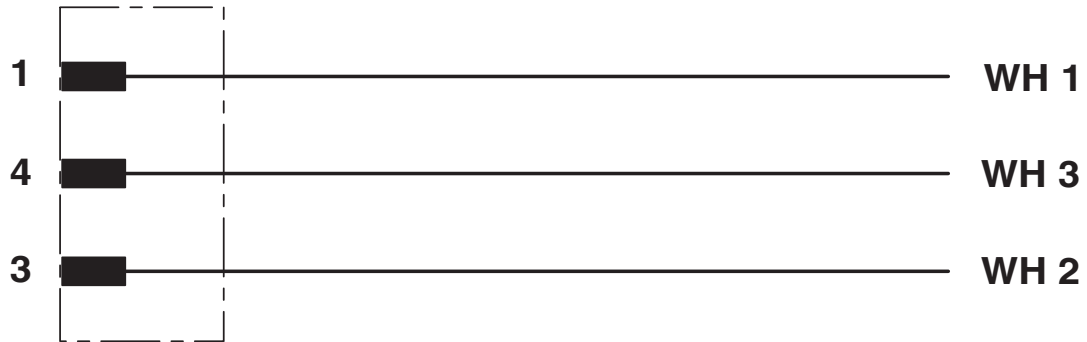
# SAC-3P-MS/ 2,5-28R SCO RAIL - Sensor/actuator cable



1424174

<https://www.phoenixcontact.com/us/products/1424174>

Circuit diagram



Contact assignment of the M12 plug

# SAC-3P-MS/ 2,5-28R SCO RAIL - Sensor/actuator cable



1424174

<https://www.phoenixcontact.com/us/products/1424174>

## Classifications

### ECLASS

ECLASS-13.0	27060311
ECLASS-15.0	27060311

### UNSPSC

UNSPSC 21.0	31251501
-------------	----------

# SAC-3P-MS/ 2,5-28R SCO RAIL - Sensor/actuator cable



1424174

<https://www.phoenixcontact.com/us/products/1424174>

## 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%
-------------------------------------	----------------------------

Phoenix Contact 2026 © - all rights reserved  
<https://www.phoenixcontact.com>

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