

# SAC-3P-M12MS/20,0-961/M12FS VA - Bus system cable



1419109

<https://www.phoenixcontact.com/pc/products/1419109>

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Bus system cable, PROFIBUS PA (31.25 kbps), 3-position, PVC, blue RAL 5015, shielded, Plug straight M12, coding: A, on Socket straight M12, coding: A, cable length: 20 m, For Ex area with high-grade steel knurl

## Commercial data

Item number	1419109
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	BF1CCG
Catalog page	Page 430 (C-2-2019)
GTIN	4046356541763
Weight per piece (including packing)	1,327 g
Weight per piece (excluding packing)	222.22 g
Customs tariff number	85444290
Country of origin	PL

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## Technical data

### Notes

General	For applications in circuits of intrinsic safety protection type "i". Electrical values following EN 60079-14.
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### Product properties

Product type	Data cable preassembled
Application	Process technology
Sensor type	PROFIBUS PA
Number of positions	3
No. of cable outlets	1
Shielded	yes
Coding	A

### Insulation characteristics

Overvoltage category	II
Degree of pollution	3

### Interfaces

Bus system	PROFIBUS PA
Signal type/category	PROFIBUS PA, 31.25 kbps

### Signaling

Status display	no
Status display present	No

### Electrical properties

Nominal voltage $U_N$	48 V AC
	60 V DC
Nominal current $I_N$	4 A
Transmission medium	Copper

### Mechanical properties

#### Mechanical data

Insertion/withdrawal cycles	$\geq 100$
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### Material specifications

Flammability rating according to UL 94	HB
Seal material	NBR

### Connection data

#### Pin assignment

1 (Plug) | OG (DATA+) | 1 (Socket)

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Contact   Color (signal designation)   Contact (optional)	3 (Plug)   BU (DATA-)   3 (Socket)
	4 (Plug)   SR (shield)   4 (Socket)

## Connector

### Connection 1

Type	Plug straight M12
Number of positions	3
Coding type	A (Standard)
Material	CuSn (Contact)
	Ni/Au (Contact surface)
	TPU GF (Contact carriers)
	TPU, hardly inflammable, self-extinguishing (Grip body)
	Stainless steel (Screw connection)
Ambient temperature (operation)	-25 °C ... 90 °C

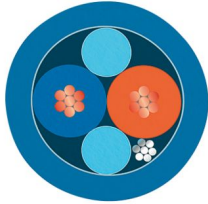
### Connection 2

Type	Socket straight M12
Number of positions	3
Coding type	A (Standard)
Material	CuSn (Contact)
	Ni/Au (Contact surface)
	TPU GF (Contact carriers)
	TPU, hardly inflammable, self-extinguishing (Grip body)
	Stainless steel (Screw connection)
Ambient temperature (operation)	-25 °C ... 90 °C

## Cable/line

Cable length	20 m
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### Fieldbus FOUNDATION/PROFIBUS PA, blue [961]

Dimensional drawing	
Cable weight	56.552 kg/km
Number of positions	2
Shielded	yes
Cable type	Fieldbus FOUNDATION/PROFIBUS PA, blue [961]
Conductor structure	2xAWG18/7 + 1xAWG20/7
Signal speed	0.66 c

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Conductor structure signal line	7x 0.40 mm
AWG signal line	18
Conductor cross section	2x 0.75 mm <sup>2</sup> (Signal line)
	1x 0.5 mm <sup>2</sup> (Drain wire)
Wire diameter incl. insulation	2.24 mm ±0.05 mm
External cable diameter	7.50 mm ±0.25 mm
Outer sheath, material	PVC
External sheath, color	blue RAL 5015
Conductor material	Tin-plated Cu litz wires
Material wire insulation	PO (Signal line)
Single wire, color	blue, orange
Thickness, insulation	0.50 mm
Thickness, outer sheath	1.00 mm
Twisted pairs	2 cores to the pair
Overall twist	One pair with one drain wire and fillers for core
Optical shield covering	100 %
Max. conductor resistance	≤ 19.35 Ω/km (Signal line)
	26 Ω/km (shield)
Cable capacity	147 pF/m (at 1 kHz, core/shield)
	≤ 3.94 pF/m (capacitance unbalance)
Working capacitance	78 nF (at 1 kHz)
Cable impedance	100 Ω ±20 % (At 31.25 kHz)
Nominal voltage, cable	300 V
Smallest bending radius, fixed installation	75 mm
Tensile strength	260 N
Shield attenuation	3.00 dB/km (at 39 kHz)
Flame resistance	UL 1685 (CSA FT 4)
	UL 1685 (vertical tray)
	UL 1666 (riser)
Special properties	UL standards PLTC-ER and ITC
Ambient temperature (operation)	-40 °C ... 105 °C (cable, fixed installation)

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP65
	IP67
	IP68
	IP69K

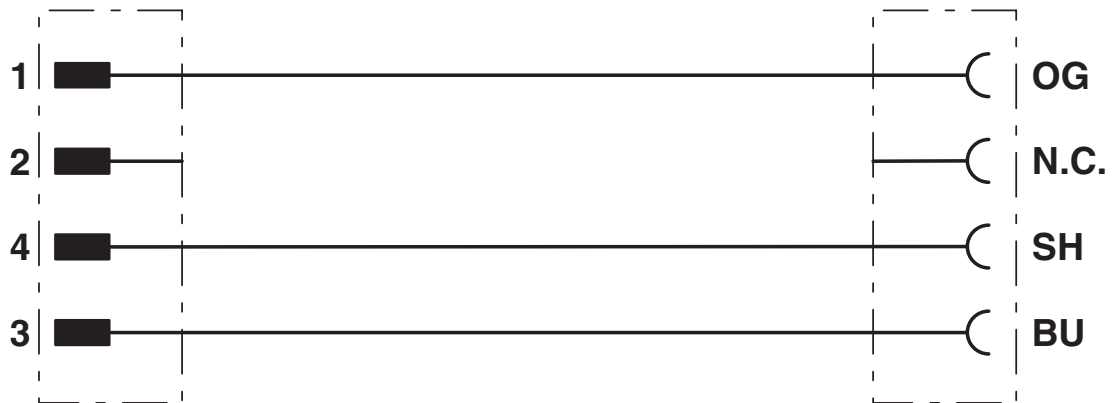
# SAC-3P-M12MS/20,0-961/M12FS VA - Bus system cable

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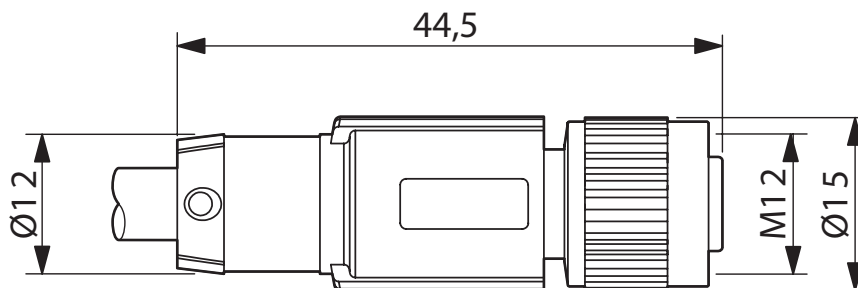
<https://www.phoenixcontact.com/pc/products/1419109>

## Drawings

Circuit diagram



Dimensional drawing



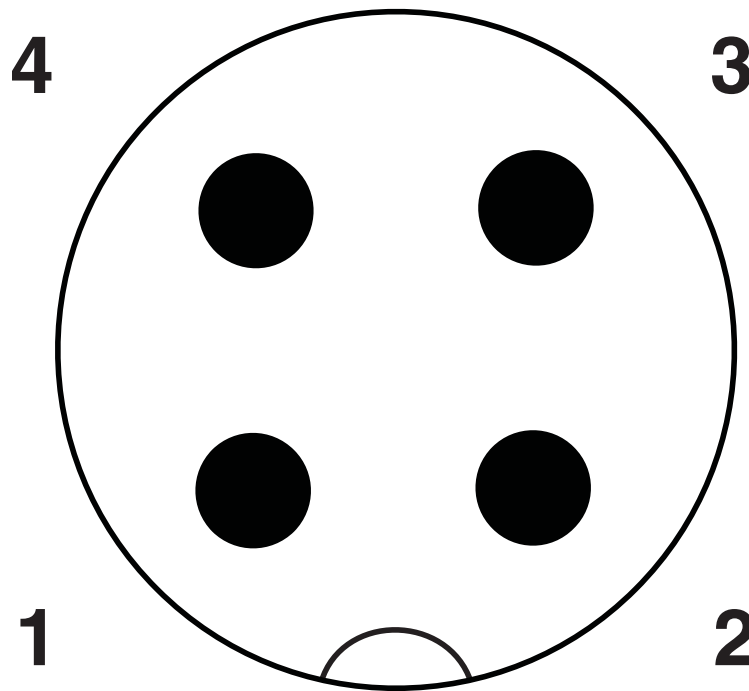
M12 x 1 socket, straight

# SAC-3P-M12MS/20,0-961/M12FS VA - Bus system cable

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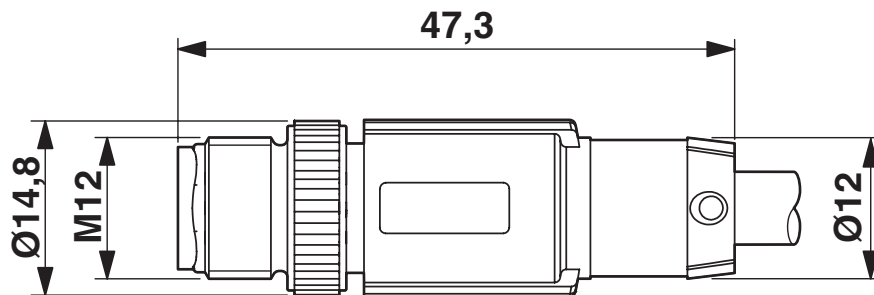
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Schematic diagram



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

Dimensional drawing



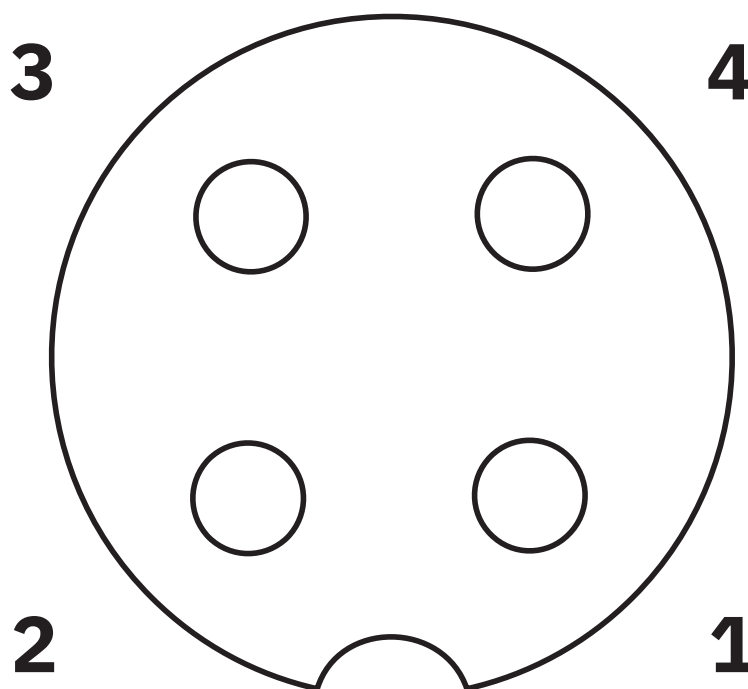
Plug, M12 x 1, straight, shielded

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Schematic diagram



Pin assignment M12 socket, 3-pos., A-coded, view female side

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## Approvals

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**EAC-RoHS**

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



**cULus Listed**

Approval ID: E221474



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## Classifications

### ECLASS

ECLASS-11.0	27060307
ECLASS-12.0	27060307
ECLASS-13.0	27060307

### ETIM

ETIM 9.0	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
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### 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%
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