

# Bus system cable - SAC-3P-M12MR/20,0-961/M12FS VA



1419117

<https://www.phoenixcontact.com/pc/products/1419117>

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Bus system cable, PROFIBUS PA (31.25 kbps), 3-position, PVC, blue RAL 5015, shielded, Plug angled 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	1419117
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	BF1CCG
Catalog Page	Page 430 (C-2-2019)
GTIN	4046356541848
Weight per Piece (including packing)	1,319.3 g
Weight per Piece (excluding packing)	1,319 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
Number of positions	3
Application	Process technology
No. of cable outlets	1
Shielded	yes
Coding	B - inverse

### Insulation characteristics

Overvoltage category	II
Degree of pollution	3

### Interfaces

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

### LED signaling

Status display	No
Status display present	No

### Electrical properties

Contact resistance	≤ 5 mΩ
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	≥ 100
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### Material specifications

Color Handle area	black
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

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Contact carrier material	TPU GF
Material for screw connection	Stainless steel

## Connection data

### Pin assignment

Contact   Color (signal designation)   Contact (optional)	1 (Plug) = OG (DATA+) = 1 (Socket)
	3 (Plug) = BU (DATA-) = 3 (Socket)
	4 (Plug) = SR (shield) = 4 (Socket)

## Connector

### Connection 1

Head design	Plug
Head cable outlet	angled
Head thread type	M12
Coding	A


### Connection 2

Head design	Socket
Head cable outlet	straight
Head thread type	M12
Coding	A

## 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
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)

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Wire diameter incl. insulation	2.24 mm ±0.05 mm
External cable diameter	7.5 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	0.5 mm
Thickness, outer sheath	1 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 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)

## Ambient conditions

Degree of protection	IP65
	IP67
	IP68
	IP69K
Ambient temperature (operation)	-25 °C ... 90 °C (Plug / socket)

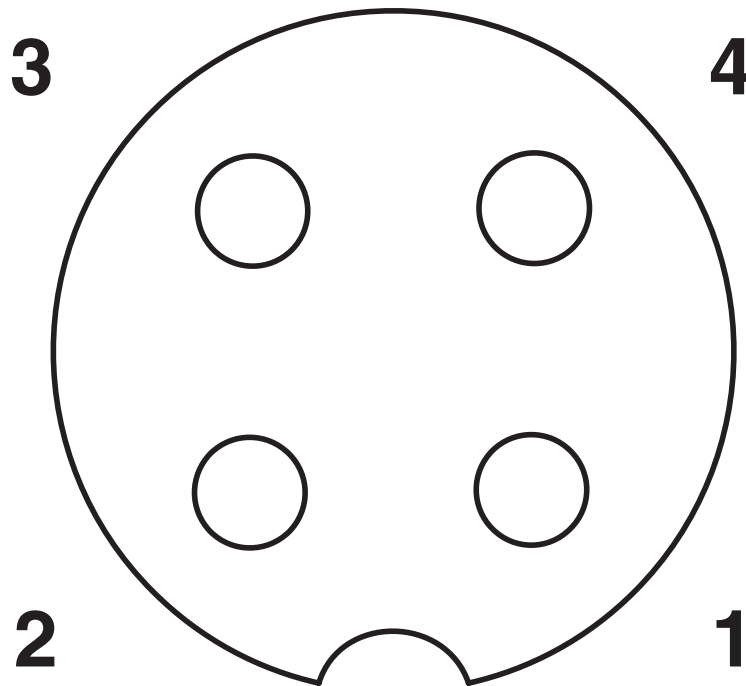
# Bus system cable - SAC-3P-M12MR/20,0-961/M12FS VA

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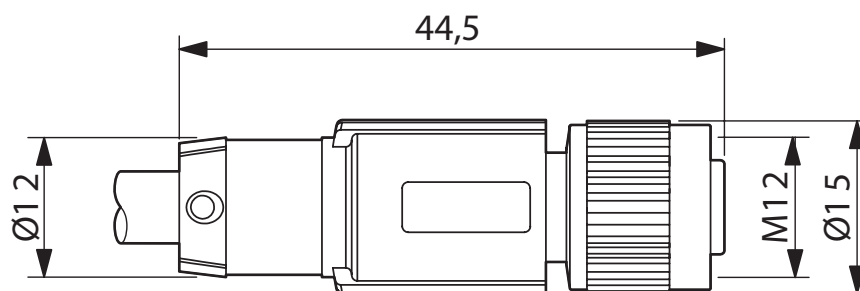
## Drawings

Schematic diagram



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

Dimensional drawing



M12 x 1 socket, straight

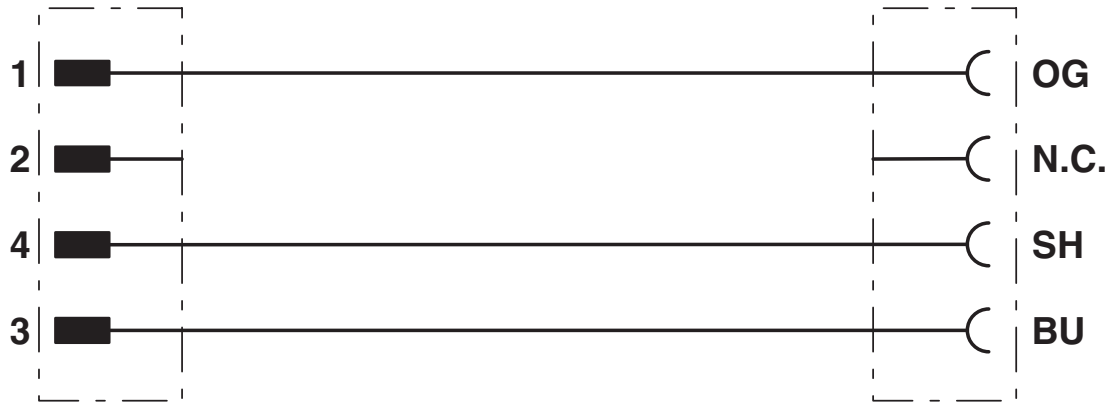
# Bus system cable - SAC-3P-M12MR/20,0-961/M12FS VA



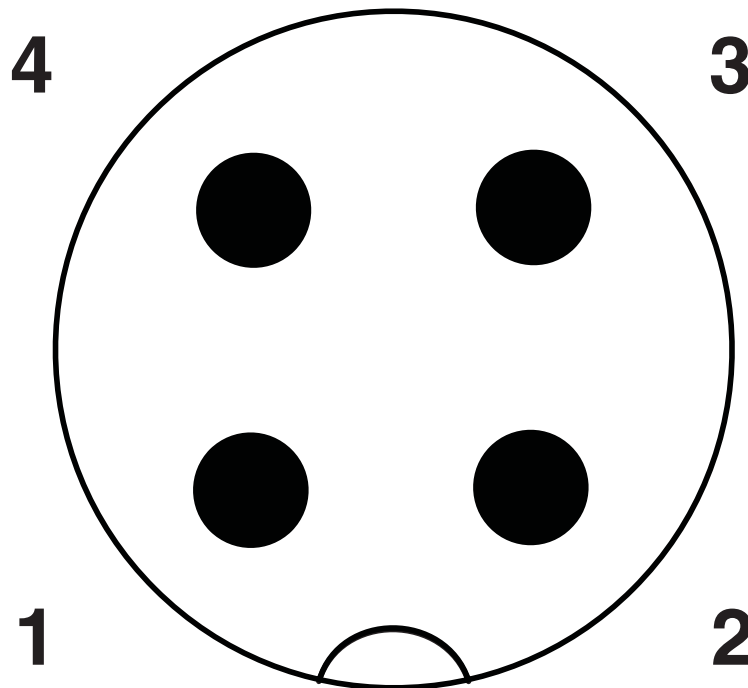
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Circuit diagram



Schematic diagram



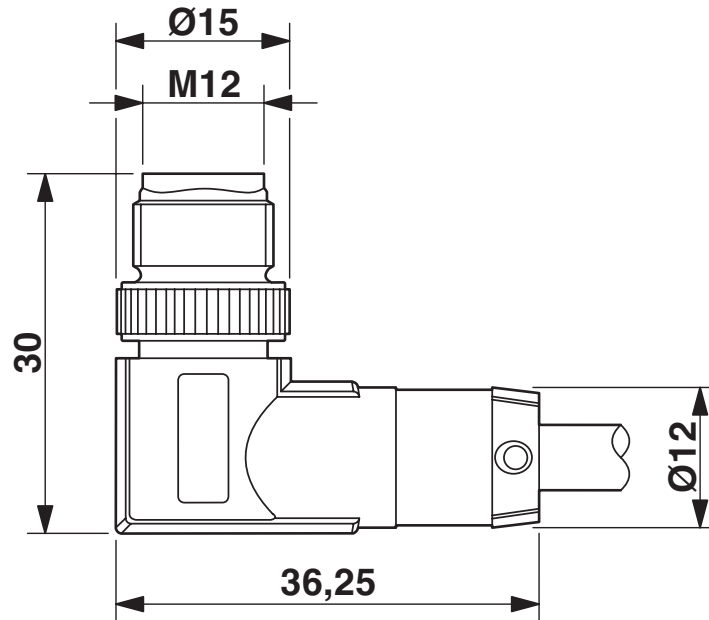
Pin assignment M12 plug, 3-pos., A-coded, view male side

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Dimensional drawing



M12 x 1 male plug, angled

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## Approvals



**EAC**

Approval ID: RU C-DE.BL08.B.00286



**EAC**

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

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## Classifications

### ECLASS

ECLASS-9.0	27060308
ECLASS-10.0.1	27060308
ECLASS-11.0	27060307

### ETIM

ETIM 8.0	EC001855
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### UNSPSC

UNSPSC 21.0	26121600
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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

### Torque screwdriver

Torque screwdriver - TSD 04 SAC - 1208429

<https://www.phoenixcontact.com/pc/products/1208429>



Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors

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### Torque screwdriver

Torque screwdriver - TSD-M 1,2NM - 1212224

<https://www.phoenixcontact.com/pc/products/1212224>



Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0.3 - 1.2 Nm

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## Adapter insert

Adapter insert - TSD-M SAC-BIT ADAPTER - 1212600

<https://www.phoenixcontact.com/pc/products/1212600>



Adapter bit for TSD-M...torque tools, E6.3-1/4" drive with 4 mm hexagon to accommodate SAC bits

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## Tool

Tool - SAC BIT M12-W14 - 1212513

<https://www.phoenixcontact.com/pc/products/1212513>



Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a hexagonal knurl wrench size of 14 mm, with 4 mm hexagonal drive

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