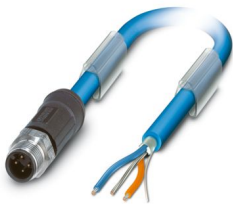


# SAC-3P-M12MS/20,0-961 VA - Bus system cable



1419096  
<https://www.phoenixcontact.com/us/products/1419096>

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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 free cable end, cable length: 20 m, For Ex area with high-grade steel knurl

## Commercial data

Item number	1419096
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	BF04
Product key	BF1CCG
Catalog page	Page 430 (C-2-2019)
GTIN	4046356541633
Weight per piece (including packing)	1,342 g
Weight per piece (excluding packing)	1,342 g
Customs tariff number	85444290
Country of origin	PL

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



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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+)

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

## 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)
	Stainless steel (Screw connection)
Ambient temperature (operation)	-25 °C ... 90 °C

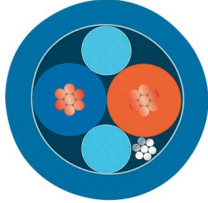
### Connection 2

Type	free cable end free cable end
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## 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)
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

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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	$\leq 19.35 \Omega/\text{km}$ (Signal line)
	$26 \Omega/\text{km}$ (shield)
Cable capacity	$147 \text{ pF/m}$ (at 1 kHz, core/shield)
	$\leq 3.94 \text{ pF/m}$ (capacitance unbalance)
Working capacitance	$78 \text{ nF}$ (at 1 kHz)
Cable impedance	$100 \Omega \pm 20 \%$ (At 31.25 kHz)
Nominal voltage, cable	300 V
Smallest bending radius, fixed installation	75 mm
Tensile strength	260 N
Shield attenuation	$3.00 \text{ dB/km}$ (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)	$-40^\circ\text{C} \dots 105^\circ\text{C}$ (cable, fixed installation)

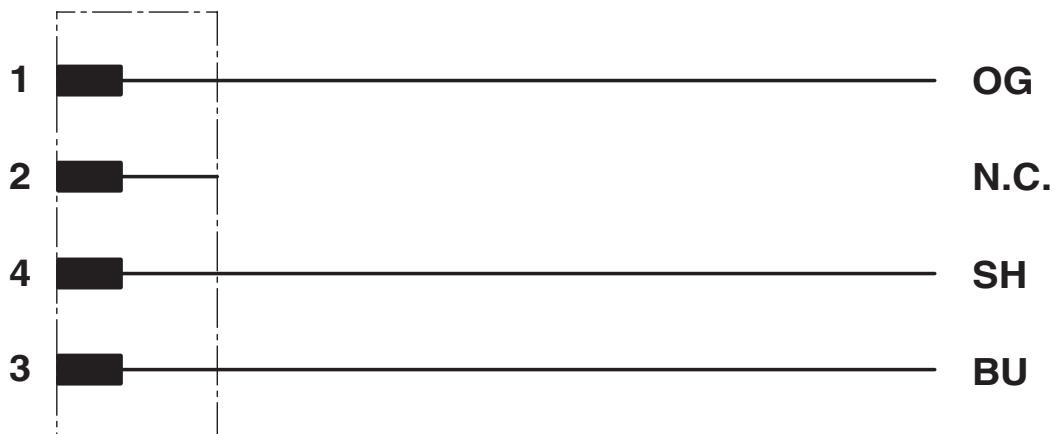
## Environmental and real-life conditions

### Ambient conditions

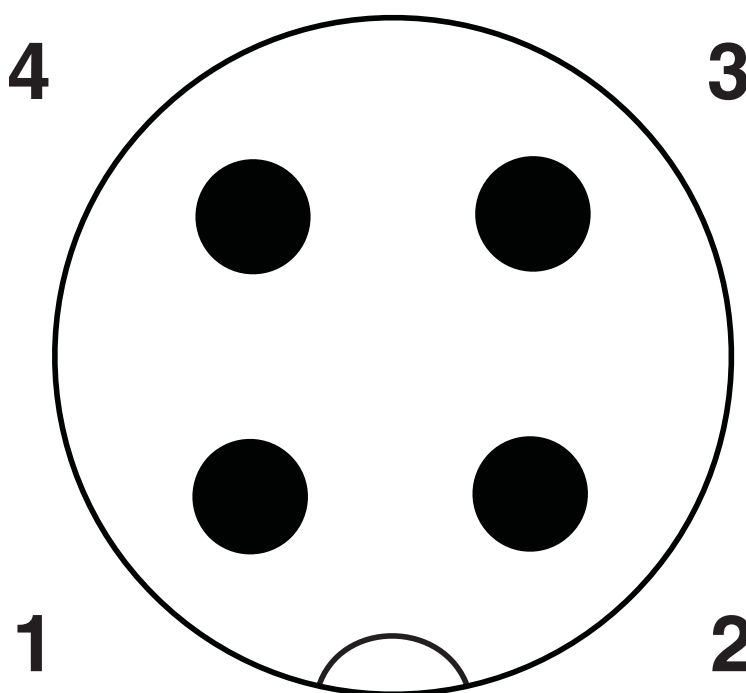
Degree of protection	IP65
	IP67
	IP68
	IP69K

## Drawings

Circuit diagram



Schematic diagram



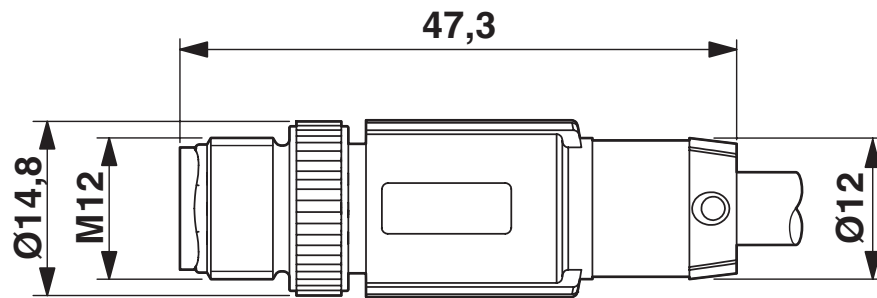
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Dimensional drawing



Plug, M12 x 1, straight, shielded

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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
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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## Accessories

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

1422884

<https://www.phoenixcontact.com/us/products/1422884>



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

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

3240681

<https://www.phoenixcontact.com/us/products/3240681>



Protective hose, material: PA 6, UV-resistant: yes, flexible, degree of protection: IP68, color: black, flammability rating in acc. with UL 94: V0, inner diameter: 10 mm, Total length: 50 m

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

1419096

<https://www.phoenixcontact.com/us/products/1419096>



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

3240839

<https://www.phoenixcontact.com/us/products/3240839>



Protective hose, material: PA 6, UV-resistant: yes, flexible, degree of protection: IP68, color: black, flammability rating in acc. with UL 94: HB, inner diameter: 10 mm, Total length: 50 m

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## SACC-M12FS-4QO SH PBPA - Data connector

1413934

<https://www.phoenixcontact.com/us/products/1413934>



Data connector, PROFIBUS (31.25 kbps), 2-position, halogen-free, shielded, Socket straight M12, coding: A, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

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



1419096

<https://www.phoenixcontact.com/us/products/1419096>

## SACC-M12MS-4QO SH PBPA - Data connector

1413933

<https://www.phoenixcontact.com/us/products/1413933>



Data connector, PROFIBUS (31.25 kbps), 2-position, halogen-free, shielded, Plug straight M12, coding: A, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

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## TSD 04 SAC - Torque screwdriver

1208429

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



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

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



1419096

<https://www.phoenixcontact.com/us/products/1419096>

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

1212224

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



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

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

1212600

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



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

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



1419096

<https://www.phoenixcontact.com/us/products/1419096>

## SAC BIT M12-W14 - Tool

1212513

<https://www.phoenixcontact.com/us/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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## CUTFOX 12 - Cable-cutting tool

1212128

<https://www.phoenixcontact.com/us/products/1212128>



**Cable cutter**, for copper and aluminum up to 12 mm diameter (up to 35 mm<sup>2</sup>)

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<https://www.phoenixcontact.com/us/products/1419096>

## CUTFOX-S VDE - Diagonal cutter

1212207

<https://www.phoenixcontact.com/us/products/1212207>



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

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## VS-CABLE-STRIP-VARIO - Stripping tool

1657407

<https://www.phoenixcontact.com/us/products/1657407>



Stripping tool, for the multi-level stripping of shielded cables

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<https://www.phoenixcontact.com/us/products/1419096>

## MICROFOX-SP-1 - Diagonal cutter

1212487

<https://www.phoenixcontact.com/us/products/1212487>



Electronic diagonal cutter, tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version

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## WIREFOX 4 - Stripping tool

1212156

<https://www.phoenixcontact.com/us/products/1212156>



Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 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

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



1419096

<https://www.phoenixcontact.com/us/products/1419096>

## WIREFOX-E 4 - Stripping tool

1212704

<https://www.phoenixcontact.com/us/products/1212704>



Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 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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## WIREFOX 10 - Stripping tool

1212150

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