

## Bus system cable - SAC-4P-M12MS/ 5,0-960/M12FS VA - 1431296


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Bus system cable, FOUNDATION Fieldbus (31.25 kbps), 3-position, PVC, orange RAL 2003, shielded, Plug straight M12, coding: A, on Socket straight M12, coding: A, cable length: 5 m



### Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 431774
GTIN	4046356431774

### Technical data

#### Dimensions

Length of cable	5 m
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#### Ambient conditions

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

#### General

Note	Further products with variable cable type and variable cable length can be found in the accessories section
Rated current at 40°C	4 A
Rated voltage	48 V AC
	60 V DC
Number of positions	3
Color handle area	black
Insulation resistance	≥ 100 MΩ
Coding	A - standard

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## Technical data

### General

Signal type/category	FOUNDATION Fieldbus, 31.25 kbps
Status display	No
Overvoltage category	II
Degree of pollution	3
Insertion/withdrawal cycles	≥ 100
Torque	0.4 Nm (M12 connector)

### 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	Stainless steel
Sealing material	NBR

### Standards and Regulations

Flammability rating according to UL 94	HB
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### Cable

Cable type	FOUNDATION Fieldbus orange
Cable type (abbreviation)	960
Cable structure	2xAWG18/7 + 1xAWG20/7
Conductor cross section	2x 0.75 mm <sup>2</sup> (Signal line) 1x 0.5 mm <sup>2</sup> (Drain wire)
AWG signal line	18
Conductor structure signal line	7x 0.40 mm
Core diameter including insulation	2.24 mm ±0.05 mm
Thickness, insulation	0.5 mm
Wire colors	Blue, orange
Twisted pairs	2 cores to the pair
Overall twist	One pair with one drain wire and fillers for core
Shielding	Plastic-coated aluminum foil with a drain wire
Optical shield covering	100 %
External sheath, color	orange RAL 2003
Outer sheath thickness	1 mm
External cable diameter D	7.5 mm ±0.25 mm
Smallest bending radius, fixed installation	75 mm
Cable weight	56.552 kg/km
Tensile strength GRP	260 N
Outer sheath, material	PVC
Material conductor insulation	PO (Signal line)

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### Technical data

#### Cable

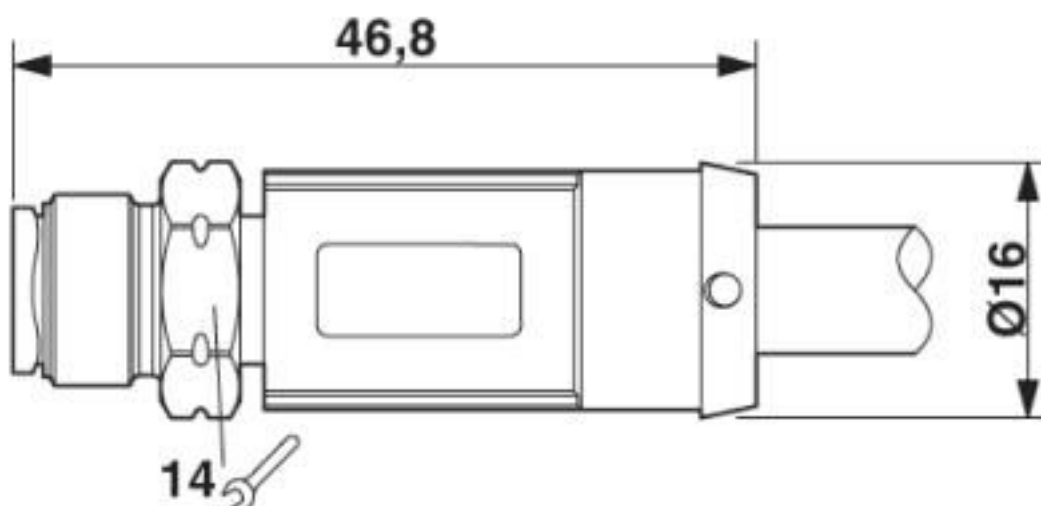
Conductor material	Tin-plated Cu litz wires
Conductor resistance	≤ 19.35 Ω/km (Signal line)
	26 Ω/km (shield)
Working capacitance	78 nF (at 1 kHz)
Cable capacity	147 pF/m (at 1 kHz, core/shield)
	≤ 3.94 pF/m (capacitance unbalance)
Signal speed	0.66 c
Shield attenuation	3 dB/km (at 39 kHz)
Cable impedance	100 Ω ±20 % (At 31.25 kHz)
Conductor inductance	0.6233 μH/m
Nominal voltage, cable	300 V
Special properties	UL standards PLTC-ER and ITC
Flame resistance	UL 1685 (CSA FT 4)
	UL 1685 (vertical tray)
	UL 1666 (riser)
Ambient temperature (operation)	-40 °C ... 105 °C (cable, fixed 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

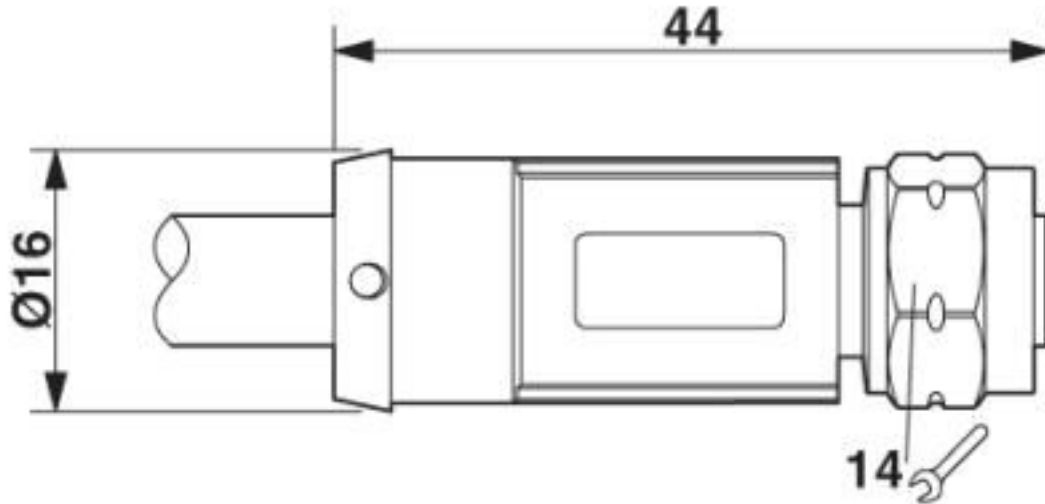
Dimensional drawing



Plug, M12 x 1, straight, shielded

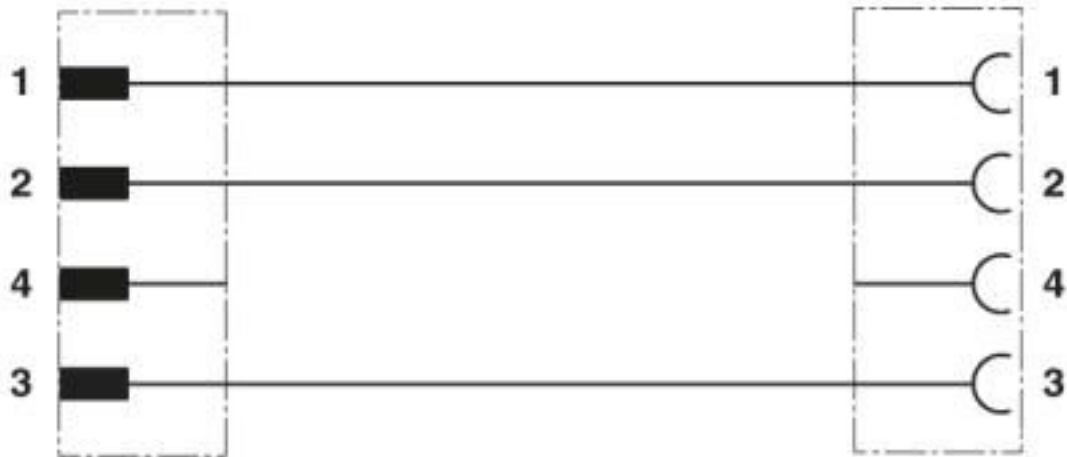
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Dimensional drawing



M12 x 1 socket, straight

Circuit diagram



Contact assignment of the M12 connector and the M12 socket

# Bus system cable - SAC-4P-M12MS/ 5,0-960/M12FS VA - 1431296

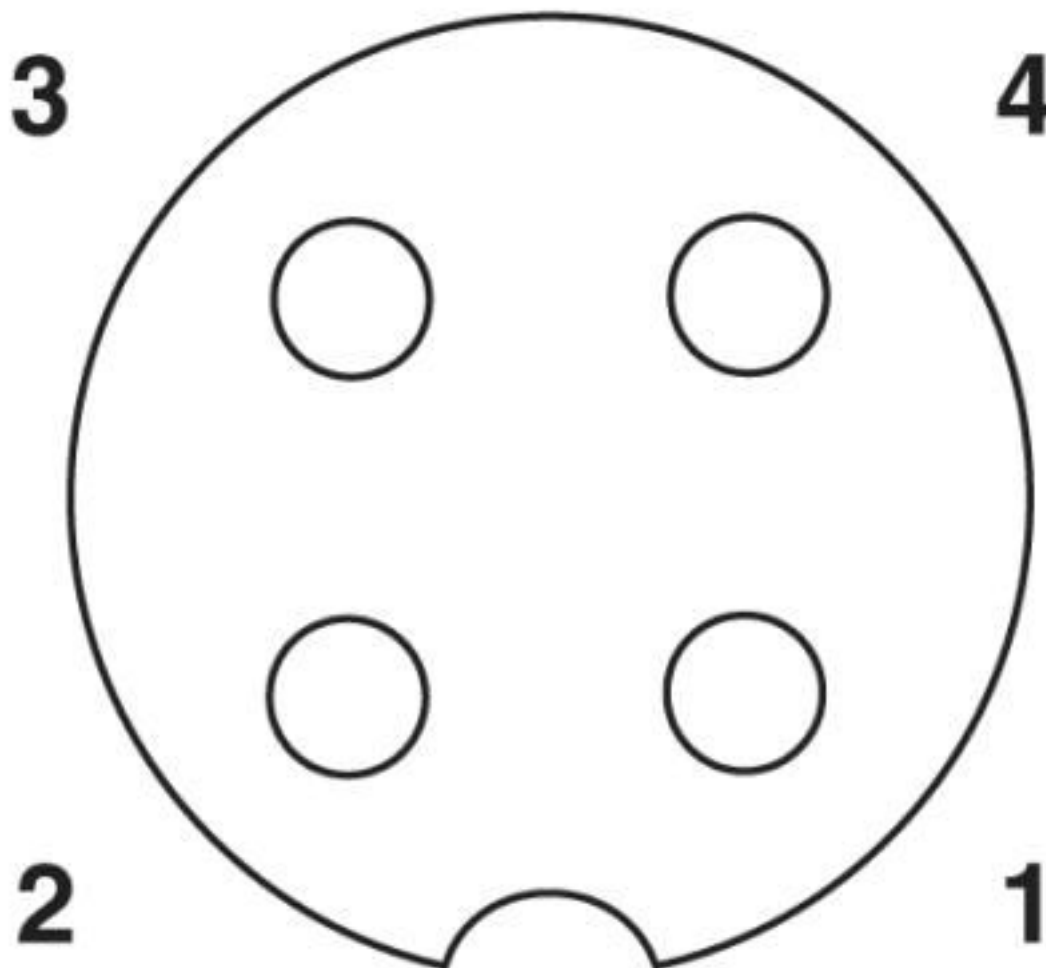
Schematic diagram



Pin assignment M12 plug, 4-pos., A-coded, view plug side

# Bus system cable - SAC-4P-M12MS/ 5,0-960/M12FS VA - 1431296

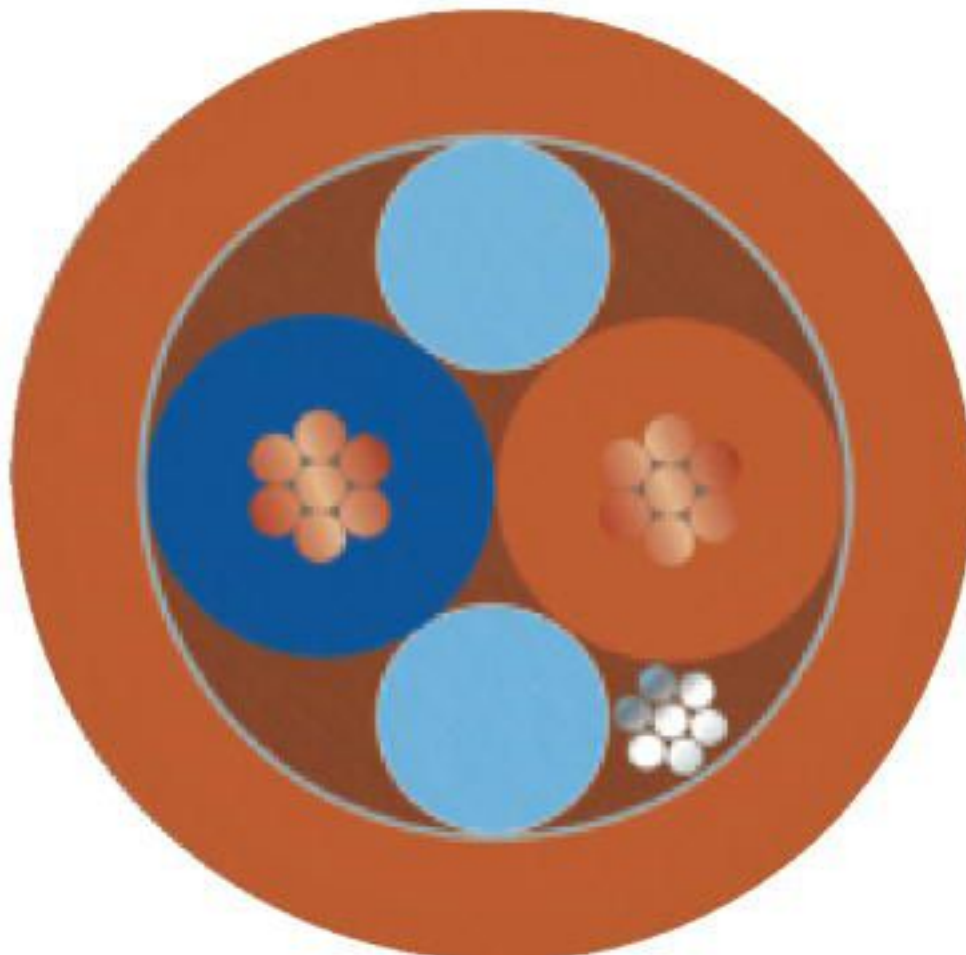
Schematic diagram



Pin assignment M12 socket, 4-pos., A-coded, view female side

# Bus system cable - SAC-4P-M12MS/ 5,0-960/M12FS VA - 1431296

Cable cross section



FOUNDATION Fieldbus orange [960]

## Classifications

eCl@ss

eCl@ss 10.0.1	27060308
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	27060308

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## Classifications

### ETIM

ETIM 3.0	EC001855
ETIM 4.0	EC001855
ETIM 5.0	EC002599
ETIM 6.0	EC001262
ETIM 7.0	EC001262

### UNSPSC

UNSPSC 6.01	31251501
UNSPSC 7.0901	31251501
UNSPSC 11	31251501
UNSPSC 12.01	31251501
UNSPSC 13.2	31251501
UNSPSC 18.0	26121604
UNSPSC 19.0	26121604
UNSPSC 20.0	26121604
UNSPSC 21.0	26121604

## Approvals

### Approvals

Approvals

EAC-RoHS / EAC

Ex Approvals

### Approval details

EAC-RoHS		RU D- DE.HB35.B.00387
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EAC		RU C- DE.BL08.B.00286
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## Accessories

Accessories

Data cable preassembled



## Bus system cable - SAC-4P-M12MS/ 5,0-960/M12FS VA - 1431296

### Accessories

#### Bus system cable - SAC-4P-M12MS FF VA/.../... - 1431322



Bus system cable, FOUNDATION Fieldbus (31.25 kbps), 3-position, Variable cable type, shielded, Plug straight M12, coding: A, on free cable end, cable length: Free input (0.2 ... 40.0 m), High-grade steel knurl

#### Bus system cable - SAC-4P-M12MR FF VA/.../... - 1431335



Bus system cable, FOUNDATION Fieldbus (31.25 kbps), 3-position, Variable cable type, shielded, Plug angled M12, coding: A, on free cable end, cable length: Free input (0.2 ... 40.0 m), High-grade steel knurl

#### Bus system cable - SAC-4P-M12FS FF VA/.../... - 1431348



Bus system cable, FOUNDATION Fieldbus (31.25 kbps), 3-position, Variable cable type, shielded, free cable end, on Socket straight M12, coding: A, cable length: Free input (0.2 ... 40.0 m), High-grade steel knurl

#### Bus system cable - SAC-4P-M12FR FF VA/.../... - 1431351



Bus system cable, FOUNDATION Fieldbus (31.25 kbps), 3-position, Variable cable type, shielded, free cable end, on Socket angled M12, coding: A, cable length: Free input (0.2 ... 40.0 m), High-grade steel knurl

#### Bus system cable - SAC-4P-M12MS-M12FS FF VA/... - 1431364



Bus system cable, FOUNDATION Fieldbus (31.25 kbps), 3-position, Variable cable type, shielded, Plug straight M12, coding: A, on Socket straight M12, coding: A, cable length: Free input (0.2 ... 40.0 m), High-grade steel knurl

## Bus system cable - SAC-4P-M12MS/ 5,0-960/M12FS VA - 1431296

### Accessories

Bus system cable - SAC-4P-M12MS-M12FR FF VA/... - 1431380



Bus system cable, FOUNDATION Fieldbus (31.25 kbps), 3-position, Variable cable type, shielded, Plug straight M12, coding: A, on Socket angled M12, coding: A, cable length: Free input (0.2 ... 40.0 m), High-grade steel knurl

Bus system cable - SAC-4P-M12MR-M12FS FF VA/... - 1431377



Bus system cable, FOUNDATION Fieldbus (31.25 kbps), 3-position, Variable cable type, shielded, Plug angled M12, coding: A, on Socket straight M12, coding: A, cable length: Free input (0.2 ... 40.0 m), High-grade steel knurl

Bus system cable - SAC-4P-M12MR-M12FR FF VA/... - 1431393



Bus system cable, FOUNDATION Fieldbus (31.25 kbps), 3-position, Variable cable type, shielded, Plug angled M12, coding: A, on Socket angled M12, coding: A, cable length: Free input (0.2 ... 40.0 m), High-grade steel knurl

### Plug for cable screw gland

Screw plug - PROT-M12 MS-PA-CHAIN - 1430899

M12 sealing cap with fixing band, for sensor cables, for free M12 sockets



### Protective cap

Sealing cap - PROT-M12 FS-PA-CHAIN - 1430873

M12 sealing cap made of plastic with fixing band, for sensor cables, for free M12 plugs



### Screwdriver tools

## Bus system cable - SAC-4P-M12MS/ 5,0-960/M12FS VA - 1431296

### Accessories

Adapter insert - TSD-M SAC-BIT ADAPTER - 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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Adapter - SAC BIT M12-W14 - 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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T-distributor

T distributor - SAC-4P-M12T/2XM12 FF VA - 1431416



T distributor, FOUNDATION Fieldbus, FOUNDATION Fieldbus, 4-position, unshielded, Plug straight M12, coding: A, on Socket straight M12, coding: A and Socket straight M12, coding: A, Parallel distributor

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Terminal resistor

Termination resistor - SAC-4P-M12MS FF TR VA - 1431403



FOUNDATION Fieldbus™ termination resistor, 4-pos., M12 connector, high-grade steel knurl

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Torque tool

Torque screwdriver - TSD 04 SAC - 1208429



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

## Bus system cable - SAC-4P-M12MS/ 5,0-960/M12FS VA - 1431296

### Accessories

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



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

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