

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

1431296
<https://www.phoenixcontact.com/us/products/1431296>

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Bus system cable, FOUNDATION Fieldbus (31.25 kbps), 3-position, PVC, orange RAL 2003, shielded (Plastic-coated aluminum foil with a drain wire), Plug straight M12, coding: A, on Socket straight M12, coding: A, cable length: 5 m

Commercial data

Item number	1431296
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	BF04
Product key	BF1CCG
Catalog page	Page 435 (C-2-2019)
GTIN	4046356431774
Weight per piece (including packing)	347.7 g
Weight per piece (excluding packing)	347.7 g
Customs tariff number	85444290
Country of origin	PL

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



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Technical data

Notes

General	Further products with variable cable type and variable cable length can be found in the accessories section
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Product properties

Product type	Data cable preassembled
Application	Process technology
Sensor type	FOUNDATION Fieldbus
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	FOUNDATION Fieldbus
Signal type/category	FOUNDATION Fieldbus, 31.25 kbps

Signaling

Status display	No
Status display present	No

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
Transmission medium	Copper

Mechanical properties

Mechanical data

Insertion/withdrawal cycles	≥ 100
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Material specifications

Flammability rating according to UL 94	HB
Seal material	NBR

Connection data

Pin assignment

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Contact Color (signal designation) Contact (optional)	1 (Plug) BU (DATA-) 1 (Socket)
	2 (Plug) OG (DATA+) 2 (Socket)
	3 (Plug) SR (shield) 3 (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)
	Stainless steel (Screw connection)
Ambient temperature (operation)	-25 °C ... 90 °C

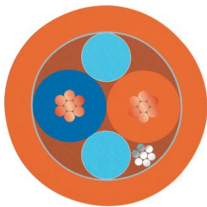
Connection 2

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

Cable/line

Cable length	5 m
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FOUNDATION Fieldbus orange [960]

Dimensional drawing	
Cable weight	56.552 kg/km
Number of positions	2
Shielded	yes
Cable type	FOUNDATION Fieldbus orange [960]
Conductor structure	2xAWG18/7 + 1xAWG20/7

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Signal speed	0.66 c
Conductor structure signal line	7x 0.40 mm
AWG signal line	18
Conductor cross section	2x 0.75 mm ² (Signal line)
	1x 0.5 mm ² (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	orange RAL 2003
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

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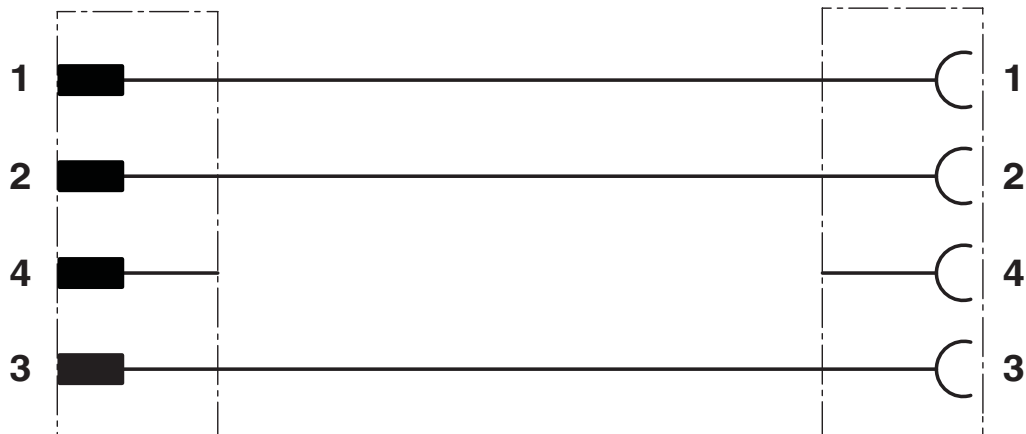


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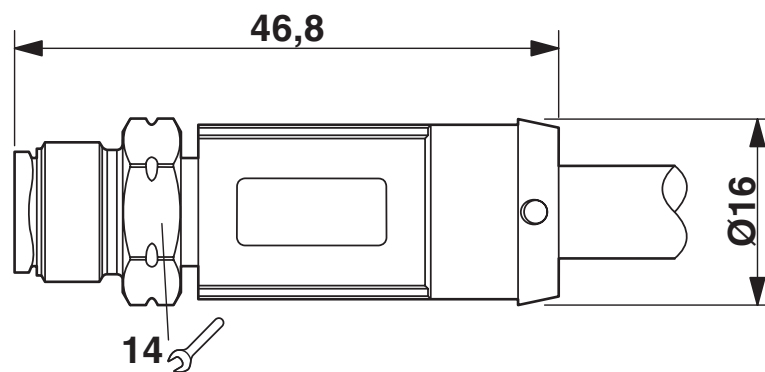
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Drawings

Circuit diagram



Dimensional drawing



Plug, M12 x 1, straight, shielded

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Schematic diagram



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

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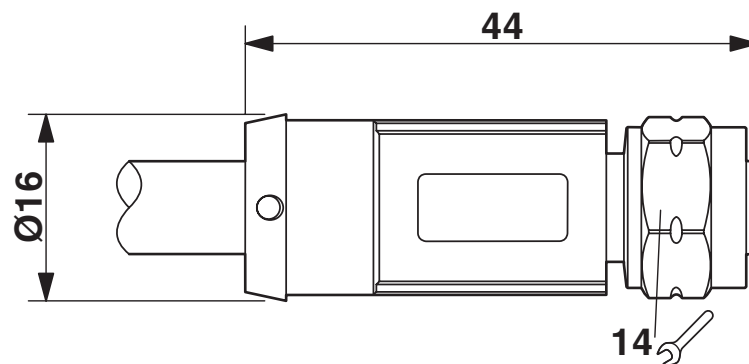
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Schematic diagram



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

Dimensional drawing



M12 x 1 socket, straight

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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
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

PROT-M12 FS-PA-CHAIN - Sealing cap

1430873

<https://www.phoenixcontact.com/us/products/1430873>

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



PROT-M12 MS-PA-CHAIN - Screw plug

1430899

<https://www.phoenixcontact.com/us/products/1430899>

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



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

1431393

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

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

1431416

<https://www.phoenixcontact.com/us/products/1431416>



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

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

1431403

<https://www.phoenixcontact.com/us/products/1431403>



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

TSD 04 SAC - Torque screwdriver

1208429

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

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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

TSD-M SAC-BIT ADAPTER - Adapter insert

1212600

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

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SAC BIT M12-W14 - Tool

1212513

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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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