

SAC-5P-M12MS-M12FR/920/... - Bus system cable



1431102

<https://www.phoenixcontact.com/us/products/1431102>

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Bus system cable, CANopen®, DeviceNet™, 5-position, PUR halogen-free, red lilac RAL 4001, shielded, Plug straight M12, coding: A, on Socket angled M12, coding: A, cable length: Free input (0.2 ... 40.0 m)

Commercial data

Item number	1431102
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	BF17
Product key	AF1CKD
Catalog page	Page 433 (C-2-2019)
Customs tariff number	85444290
Country of origin	PL

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Technical data

Product properties

Product type	Data cable preassembled
Application	Standard
Sensor type	CANopen®
Number of positions	5
No. of cable outlets	1
Shielded	yes
Coding	A

Insulation characteristics

Overvoltage category	II
Degree of pollution	3

Interfaces

Bus system	CANopen®/DeviceNet™
Signal type/category	CANopen®
	DeviceNet™

Signaling

Status display	no
Status display present	No

Electrical properties

Insulation resistance	≥ 100 MΩ
Nominal voltage U _N	48 V AC
	60 V DC
Nominal current I _N	4 A
Transmission medium	Copper

Material specifications

Flammability rating according to UL 94	HB
Seal material	NBR
Material of grip body	TPU, hardly inflammable, self-extinguishing
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Material for screw connection	Zinc die-cast, nickel-plated

Connector

Connection 1

Type	Plug straight M12
Number of positions	5

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Coding type	A (Standard)
Ambient temperature (operation)	-25 °C ... 90 °C

Connection 2

Type	Socket angled M12
Number of positions	5
Coding type	A (Standard)
Ambient temperature (operation)	-25 °C ... 90 °C

Cable/line

Cable length	Free input (0.2 ... 40.0 m)
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CANopen®/DeviceNet™, PUR, violet [920]

Dimensional drawing		
UL AWM Style	21198 (80°C/300 V)	
Number of positions	4	
Shielded	yes	
Cable type	CANopen®/DeviceNet™, PUR, violet [920]	
Conductor structure	2xAWG24/19+2xAWG22/19	
AWG signal line	24	
AWG power supply	22	
Conductor cross section	2x 0.25 mm² (Data cable)	
	2x 0.34 mm² (Power supply)	
	1x 0.34 mm² (Drain wire)	
Wire diameter incl. insulation	1.95 mm ±0.05 mm (Data cable)	
	1.4 mm ±0.05 mm (Power supply)	
External cable diameter	6.70 mm ±0.3 mm	
Outer sheath, material	PUR	
External sheath, color	red lilac RAL 4001	
Conductor material	Tin-plated Cu litz wires	
Material wire insulation	Foamed PE (Data cable)	
	PE (Power supply)	
Single wire, color	red-black, blue-white	
Twisted pairs	2 cores to the pair	
Overall twist	2 pairs around a drain wire in the center to the core	
Optical shield covering	80 %	
Insulation resistance	≥ 5 GΩ*km (Data cable)	
	≥ 5 GΩ*km (Power supply)	

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Wave impedance	120 Ω $\pm$ 10 % (with 1 MHz)
Nominal voltage, cable	$\leq$ 300 V (Peak value, not for high-power applications)
Test voltage Core/Core	2000 V (50 Hz, 1 min.)
Test voltage Core/Shield	2000.00 V (50 Hz, 1 min.)
Minimum bending radius, fixed installation	4 x D
Minimum bending radius, flexible installation	8 x D
Dynamic load capacity (bending)	Max. bending cycles: 5000000, Bending radius: 70 mm, Bending radius: 15 x D, Traversing path: 4.5 m, Traversing rate: 3 m/s, Acceleration: 3 m/s ² , Ambient temperature: -20 °C ... 60 °C
Shield attenuation	$\leq$ 22.9 dB/km (with 1 MHz)
	$\leq$ 16.4 dB/km (At 500 kHz)
	$\leq$ 9.5 dB/km (At 125 kHz)
Halogen-free	in accordance with DIN VDE 0472 part 815
	according to IEC 60754-1
Flame resistance	UL 1581, Section 1060 and UL 2556, Section 9.3 (FT1)
	UL 1581, Section 1100 and UL 2556, Section 9.1 (HFT/FT2)
	IEC 60332-1-2
	in accordance with ISO 6722-1 5.22 (UN ECE-R 118.01)
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation)
	-30 °C ... 70 °C (Cable, flexible installation)
	-20 °C ... 60 °C (for installation)
	-20 °C ... 60 °C (cable, drag chain applications)

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP65
	IP67
Ambient temperature (operation)	-25 °C ... 90 °C (Plug / socket)
	-40 °C ... 80 °C (cable, fixed installation)
	-20 °C ... 75 °C (Cable, flexible installation)

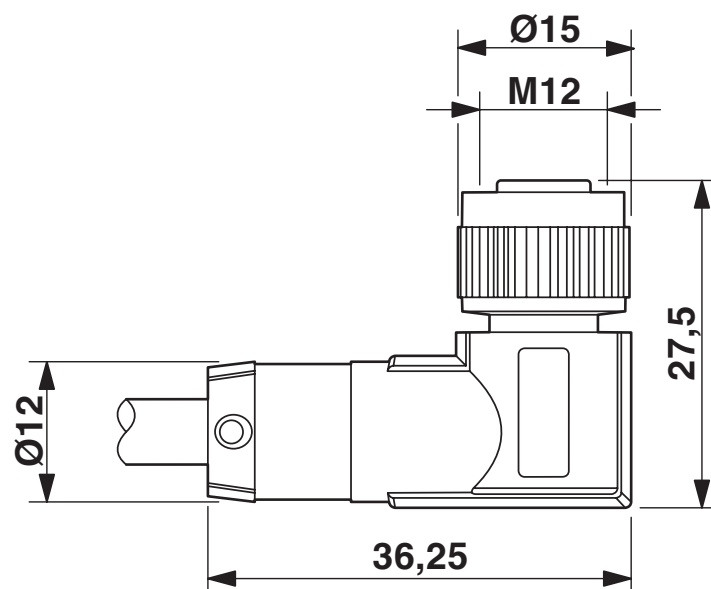
Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing



M12 x 1 socket, angled, shielded

Schematic diagram



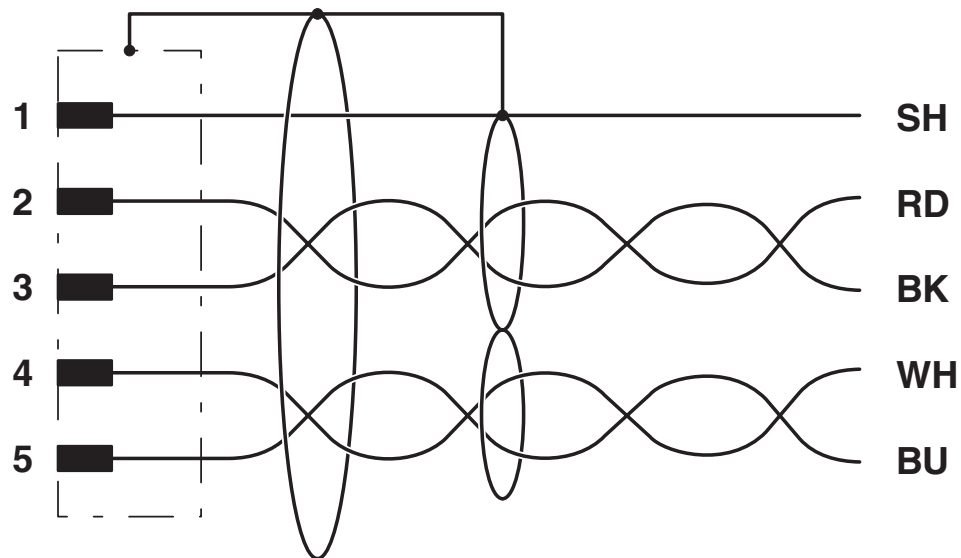
Pin assignment M12 male connector, 5-pos., A-coded, male side

Schematic diagram



Pin assignment M12 socket, 5-pos., A-coded, socket side view

Circuit diagram



Contact assignment of the M12 connector and the M12 socket

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Approvals

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UL Listed

Approval ID: FILE E 221474

	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
	125 V	4 A	-	-



cUL Listed

Approval ID: FILE E 221474

	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
	125 V	4 A	-	-



EAC-RoHS

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

cULus Listed

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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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