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Bus system flush-type plug, DeviceNet/CANopen, 5-pos., M12, shielded, A-coded, front/screw mounting with M16 thread, with 0.5 m bus cable, 2 x 0.2 mm 2 , 2 x 0.32 mm 2





Key commercial data

Packing unit	1 pc
GTIN	4 046356 022361
Weight per Piece (excluding packing)	56.2 g
Custom tariff number	85444290
Country of origin	Germany

Technical data

Dimensions

1	
Length of cable 0.5 m	m

Ambient conditions

Ambient temperature (operation)	-25 °C 85 °C (Plug / socket)
Degree of protection	IP67

General

Note	The electrical and mechanical data specified assume that the connector pair is correctly locked and mounted. If the connector is unlocked and if there is a danger of contamination, the connector must be sealed using a protective cap > IP54. Influences arising from litz wires, cables or PCB assembly must also be taken into consideration.
Rated current at 40°C	4 A
Rated voltage	60 V
Number of positions	5
Contact resistance	$\leq 3 \text{ m}\Omega$
Insulation resistance	\geq 100 M Ω
Coding	A - standard



Technical data

General

Standards/regulations	M12 connector IEC 61076-2-101
Status display	No
Surge voltage category	II
Pollution degree	3
Test voltage	2500 V
Connection method	CAN Bus / DeviceNet
Insertion/withdrawal cycles	> 100
Torque	3 Nm 4 Nm (Installation-side)
Mounting type	Front mounting M16 x 1.5 With locking nut

Material

Inflammability class according to UL 94	V0
Contact material	CuZn
Contact surface material	Ni/Au
Contact carrier material	PA 66
Material, knurls	Nickel-plated brass
Sealing material	NBR

Cable

Cable type (abbreviation) 920 UL AWM style 21198 (80°C/300 V) Conductor cross section 2x 0.25 mm² (signal line) 2x 0.34 mm² (Power supply) 1x 0.34 mm² (Drain wire) AWG signal line 24 AWG power supply 222 Conductor structure signal line 19x 0.13 mm Conductor structure, voltage supply 19x 0.15 mm Core diameter including insulation 1.95 mm ±0.05 mm (signal line) 1.4 mm ±0.05 mm (Power supply) Wire colors Red-black, blue-white Twisted pairs 2 cores to the pair Type of pair shielding Aluminum-lined polyester foil Overall twist 2 pairs around a drain wire in the center to the core Shielding Tinned copper braided shield	[
UL AWM style 21198 (80°C/300 V) Conductor cross section 2x 0.25 mm² (signal line) 2x 0.34 mm² (Power supply) 1x 0.34 mm² (Drain wire) AWG signal line 24 AWG power supply 22 Conductor structure signal line 19x 0.13 mm Conductor structure, voltage supply 19x 0.15 mm Core diameter including insulation 1.95 mm ±0.05 mm (signal line) 1.4 mm ±0.05 mm (Power supply) Wire colors Red-black, blue-white Twisted pairs 2 cores to the pair Type of pair shielding Aluminum-lined polyester foil Overall twist 2 pairs around a drain wire in the center to the core	Cable type	CAN Bus/DeviceNet
Conductor cross section 2x 0.25 mm² (signal line) 2x 0.34 mm² (Power supply) 1x 0.34 mm² (Drain wire) AWG signal line 24 AWG power supply 22 Conductor structure signal line 19x 0.13 mm Conductor structure, voltage supply 19x 0.15 mm Core diameter including insulation 1.95 mm ±0.05 mm (signal line) 1.4 mm ±0.05 mm (Power supply) Wire colors Red-black, blue-white Twisted pairs 2 cores to the pair Type of pair shielding Overall twist 2 pairs around a drain wire in the center to the core	Cable type (abbreviation)	920
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Conductor structure, voltage supply 19x 0.15 mm 1.95 mm ±0.05 mm (signal line) 1.4 mm ±0.05 mm (Power supply) Wire colors Red-black, blue-white Twisted pairs 2 cores to the pair Type of pair shielding Aluminum-lined polyester foil Overall twist 2 pairs around a drain wire in the center to the core	AWG power supply	22
Core diameter including insulation 1.95 mm ±0.05 mm (signal line) 1.4 mm ±0.05 mm (Power supply) Wire colors Red-black, blue-white Twisted pairs 2 cores to the pair Type of pair shielding Aluminum-lined polyester foil Overall twist 2 pairs around a drain wire in the center to the core	Conductor structure signal line	19x 0.13 mm
1.4 mm ±0.05 mm (Power supply) Wire colors Red-black, blue-white Twisted pairs 2 cores to the pair Type of pair shielding Aluminum-lined polyester foil Overall twist 2 pairs around a drain wire in the center to the core	Conductor structure, voltage supply	19x 0.15 mm
Wire colors Red-black, blue-white Twisted pairs 2 cores to the pair Type of pair shielding Aluminum-lined polyester foil Overall twist 2 pairs around a drain wire in the center to the core	Core diameter including insulation	1.95 mm ±0.05 mm (signal line)
Twisted pairs 2 cores to the pair Type of pair shielding Aluminum-lined polyester foil Overall twist 2 pairs around a drain wire in the center to the core		1.4 mm ±0.05 mm (Power supply)
Type of pair shielding Aluminum-lined polyester foil Overall twist 2 pairs around a drain wire in the center to the core	Wire colors	Red-black, blue-white
Overall twist 2 pairs around a drain wire in the center to the core	Twisted pairs	2 cores to the pair
	Type of pair shielding	Aluminum-lined polyester foil
Shielding Tinned copper braided shield	Overall twist	2 pairs around a drain wire in the center to the core
	Shielding	Tinned copper braided shield
Optical shield covering 80 %	Optical shield covering	80 %
External sheath, color Violet, RAL 4001	External sheath, color	Violet, RAL 4001
External cable diameter D 6.7 mm ±0.3 mm	External cable diameter D	6.7 mm ±0.3 mm
Number of bending cycles 5000000	Number of bending cycles	5000000



Technical data

Cable

Bending radius	70 mm
Traversing path	4.5 m
Traversing rate	3 m/s
Acceleration	3 m/s²
Outer sheath, material	PUR
Material conductor insulation	Foamed PE (signal line)
	PE (Power supply)
Conductor material	Tin-plated Cu litz wires
Insulation resistance	≥ 5 GΩ*km (signal line)
	$\geq 5 \text{ G}\Omega^*\text{km}$ (Power supply)
Loop resistance	≤ 181.8 Ω (signal line)
	\leq 114.8 Ω (Power supply)
Working capacitance	nom. 40 nF (signal line)
Wave impedance	120 Ω ±12 Ω (f = 1 MHz)
Shield attenuation	≤ 0.229 dB/km (with 1 MHz)
	≤ 0.164 dB (At 500 kHz)
	≤ 0.095 dB (At 125 kHz)
Nominal voltage, cable	≤ 300 V (Peak value, not for high-power applications)
Test voltage Core/Core	2000 V (50 Hz, 1 min.)
Test voltage Core/Shield	2000 V (50 Hz, 1 min.)
Flame resistance	UL 1581, Sec. 1060 (FT-1)
	IEC 60332-1
Ambient temperature (operation)	-40 °C 80 °C (cable, fixed installation)
	-20 °C 70 °C (cable, flexible installation)

Classifications

eCl@ss

eCl@ss 4.0	27140815
eCl@ss 4.1	27140815
eCl@ss 5.0	27143423
eCl@ss 5.1	27143423
eCl@ss 6.0	27143423
eCl@ss 7.0	27449001
eCl@ss 8.0	27440103

ETIM

ETIM 2.0	EC001297
ETIM 3.0	EC002061



Classifications

ETIM

ETIM 4.0	EC000830
ETIM 5.0	EC002061

UNSPSC

UNSPSC 6.01	31251501
UNSPSC 7.0901	31251501
UNSPSC 11	31251501
UNSPSC 12.01	31251501
UNSPSC 13.2	31251501

Approvals

Approvals

Approvals

EAC

Ex Approvals

Approvals submitted

Approval details

EAC

Drawings

Dimensioned drawing



Schematic diagram



Housing cutout for M16 fastening thread, mounting panel with thread

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

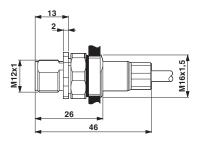


Cable cross section



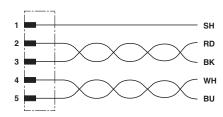
CAN Bus/DeviceNet [920]

Dimensioned drawing



M12 flush-type plug

Circuit diagram



Contact assignment of the M12 plug

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