

Bus system cable - NBC-MS/ 2,0-971/FR SCO VR KM - 1421790

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Bus system cable, VARAN, 6-position, PVC, black, shielded, cable length: 2 m, Customer version



Key Commercial Data

Packing unit	1 pc
Minimum order quantity	50 pc
GTIN	4 055626 282268
GTIN	4055626282268

Technical data

Dimensions

Length of cable	2 m

General data

Rated current at 40°C	2 A
Rated voltage	30 V AC
	30 V DC
Number of positions	6
Signal type/category	VARAN
Overvoltage category	II
Degree of pollution	3
Contact material	CuZn
Contact carrier material	TPU GF
Contact surface material	Ni/Au

Standards and Regulations

Flammability rating according to UL 94	НВ

Cable

Cable type	VARAN
Cable type (abbreviation)	971
UL AWM style	2461 (80°C/300 V)
Signal type/category	VARAN CAT5 (IEC 11801), 100 Mbps
Cable structure	1X2X24/32+2X2X24/19; SF/UTP



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Technical data

Cable

2x 0.25 mm² (Power supply)	Conductor cross section	2x 2x 0.25 mm² (Signal line)
AWG signal line 24 AWG power supply 24 Conductor structure signal line 19x 0.13 mm Conductor structure, voltage supply 32x 0.10 mm Cord dameter including insulation 1.25 mm (Signal line) Wire colors Blue-yellow, green-orange, red-blue Twisted pairs 2 cores to the pair Overall twist 3 pairs with filler elements to the core Shielding Aluminum-coated foil, tinned copper braided shield Optical shield covering 85 % External sheath, color black Outer sheath thickness 0.9 mm External cable diameter D 7 mm ±0.2 mm Minimum bending radius, fixed installation 4 x D Minimum bending radius, fixed installation 8 x D Number of bending cycles 200000 Minimum bending radius, fixed pistal applications 5 x D Outer sheath, material PVC Material conductor insulation PE Conductor meterial Bare Cu litz wires Insulation resistance > 50 MΩ*rm (at 20 *C) Working capacitance > 50 MΩ*rm (at 20 *C) <	Conductor cross section	, , ,
AWG power supply 24 Conductor structure, voltage supply 32x 0.10 mm Cord dameter including insulation 1.25 mm (Signal line) Vire colors Blue-yellow, green-orange, red-blue Twisted pairs 2 cores to the pair Overall twist 3 pairs with filler elements to the core Shifting Aluminum-coated foil, linned copper braided shield Optical shield covering 85 % External sheath, color black Outer sheath thickness 0.9 mm External cable diameter D 7 mm ±0.2 mm Minimum bending radius, fixed installation 4 x D Minimum bending radius, fixed installation 8 x D Number of bending cycles 200000 Minimum bending radius, drag chain applications 5 x D Outer sheath, material PVC Material conductor insulation PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*tm (at 20 °C) Working capacitance ⇒ 80 V Vording capacitance ≤ 80 V Test voltage Core/Core 1000 V	AWG signal line	
Conductor structure signal line 19x 0.13 mm Conductor structure, voltage supply 32x 0.10 mm Core diameter including insulation 1.25 mm (Signal line) Wire colors Blue-yellow, green-orange, red-blue Twisted pairs 2 cores to the pair Overall twist 3 pairs with filler elements to the core Shielding Aluminum-coated foil, tinned copper braided shield Optical shield covering 85 % External sheath, color black Outer sheath thickness 0.9 mm External cable diameter D 7 mm ±0.2 mm Minimum bending radius, fixed installation 4 x D Minimum bending radius, fixed installation 8 x D Number of bending cycles 200000 Minimum bending radius, drag chain applications 5 x D Outer sheath, material PVC Material conductor insulation PE Conductor material Bare Qu litz wires Insulation resistance > 500 MΩ*km (at 20 °C) Working capacitance 39 prox. 57 nF (at 1 kHz) Signal runtime 5.3 ns/m Nominal voldage, cable <t< td=""><td></td><td></td></t<>		
Conductor structure, voltage supply 32x 0.10 mm Core diameter including insulation 1.25 mm (Signal line) Wire colors Blue-yellow, green-orange, red-blue Twisted pairs 2 cores to the pair Overall twist 3 pairs with filler elements to the core Shielding Aluminum-coated foil, tinned copper braided shield Optical shield covering 85 % External sheath, color black Outer sheath thickness 0.9 mm External cable diameter D 7 mm ±0.2 mm Minimum bending radius, fixed installation 4 x D Minimum bending radius, fixed installation 8 x D Number of bending cycles 200000 Minimum bending radius, dag chain applications 5 x D Outer sheath, material PC Material conductor insulation PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance ⇒ 780 /km (at 20 °C) Working capacitance ⇒ 53 ns/m Nominal voltage, cable ≤ 80 V Test voltage Core/Shield 1000 V <td></td> <td></td>		
Core diameter including insulation 1.25 mm (Signal line) Wire colors Blue-yellow, green-orange, red-blue Wire colors Blue-yellow, green-orange, red-blue Twisted pairs 2 cores to the pair Overall twist 3 pairs with filler elements to the core Shielding Aluminum-coated foil, tinned copper braided shield Optical shield covering 85 % External sheath, color black Outer sheath thickness 0.9 mm External cable diameter D 7 mm ±0.2 mm Minimum bending radius, fixed installation 4 x D Minimum bending radius, flexible installation 8 x D Number of bending cycles 200000 Minimum bending radius, drag chain applications 5 x D Outer sheath, material PVC Material conductor insulation PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Vorking capacitance 30 NMO*km (at 20 °C) Working capacitance 35 n s/m Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 80 V		
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Wire colors Blue-yellow, green-orange, red-blue Twisted pairs 2 cores to the pair Overall twist 3 pairs with filler elements to the core Shielding Aluminum-coated foil, tinned copper braided shield Optical shield covering 85 % External sheath, color black Outer sheath thickness 0.9 mm External cable diameter D 7 mm ±0.2 mm Minimum bending radius, fixed installation 4 x D Minimum bending radius, fixei installation 8 x D Number of bending cycles 200000 Minimum bending radius, fixei paintallation 5 x D Outer sheath, material PVC Material conductor insulation PE Conductor insulation PE Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance ≥ 500 MΩ*km (at 20 °C) Working capacitance approx. 57 nF (at 1 kHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 80 V Test voltage Core/Core 1000 V Test voltage Core/Shield 1000 V Flame resistance<	Core diameter including insulation	1 1 1
Twisted pairs 2 cores to the pair Overall twist 3 pairs with filler elements to the core Shielding Aluminum-coated foil, tinned copper braided shield Optical shield covering 85 % External sheath, color black Outer sheath thickness 0.9 mm External cable diameter D 7 mm ±0.2 mm Minimum bending radius, fixed installation 4 x D Minimum bending radius, fixex linstallation 8 x D Number of bending cycles 200000 Minimum bending radius, drag chain applications 5 x D Outer sheath, material PVC Material conductor insulation PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance 370 km (at 20 °C) Working capacitance approx. 57 nF (at 1 kHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 80 V Test voltage Core/Core 1000 V Test voltage Core/Shield 1000 V Flame resistance according to IEC 60332-1-2 Resista		
Overall twist 3 pairs with filler elements to the core Shielding Aluminum-coated foil, tinned copper braided shield Optical shield covering 85 % External sheath, color black Outer sheath thickness 0.9 mm External cable diameter D 7 mm ±0.2 mm Minimum bending radius, fixed installation 4 x D Minimum bending radius, flexible installation 8 x D Number of bending cycles 2000000 Minimum bending radius, drag chain applications 5 x D Outer sheath, material PVC Material conductor insulation PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance 3 Ω/km (at 20 °C) Working capacitance 3 ns/m Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 80 V Test voltage Core/Core 1000 V Flame resistance according to IEC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (operation) -40 °C 80 °C Ambient temperature (installation) </td <td></td> <td>· · · · · · · · · · · · · · · · · · ·</td>		· · · · · · · · · · · · · · · · · · ·
Shielding Auminum-coated foil, tinned copper braided shield Optical shield covering 85 % External sheath, color black Outer sheath thickness 0,9 mm External cable diameter D 7 mm ±0.2 mm Minimum bending radius, fixed installation 4 x D Minimum bending radius, fixelibe installation 8 x D Number of bending cycles 200000 Minimum bending radius, drag chain applications 5 x D Outer sheath, material PVC Material conductor insulation PE Conductor material Bare Cu litz wires Insulation resistance 2500 MΩ*km (at 20 °C) Conductor resistance 350 N M M (at 120 °C) Working capacitance 370 N M (at 120 °C) Working capacitance 370 N M (at 120 °C) Signal runtime 5.3 ns/m Nominal voltage, cable 5.3 ns/m Nominal voltage, cable 5.3 ns/m Nominal voltage Core/Core 1000 V Flame resistance according to IEC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (installation) -40 °C 80 °C Ambient temperature (installation) -40 °C 80 °C	<u> </u>	
Optical shield covering 85 % External sheath, color black Outer sheath thickness 0.9 mm External cable diameter D 7 mm ±0.2 mm Minimum bending radius, fixed installation 4 x D Minimum bending radius, flexible installation 8 x D Number of bending cycles 200000 Minimum bending radius, drag chain applications 5 x D Outer sheath, material PVC Material conductor insulation PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance 3 R Ω/km (at 20 °C) Working capacitance 3 n/m Signal runtime 5.3 n/m Nominal voltage, cable ≤ 80 V Test voltage Core/Core 1000 V Test voltage Core/Shield 1000 V Flame resistance according to IBC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (installation) -40 °C 80 °C	Overall twist	3 pairs with filler elements to the core
External sheath, color black Outer sheath thickness 0.9 mm External cable diameter D 7 mm ±0.2 mm Minimum bending radius, fixed installation 4 x D Minimum bending radius, flexible installation 8 x D Number of bending cycles 200000 Minimum bending radius, drag chain applications 5 x D Outer sheath, material PVC Material conductor insulation PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance 3 mprox. 57 nF (at 1 kHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 80 V Test voltage Core/Core 1000 V Test voltage Core/Shield 1000 V Flame resistance according to IEC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (installation) -40 °C 80 °C	Shielding	Aluminum-coated foil, tinned copper braided shield
Outer sheath thickness 0.9 mm External cable diameter D 7 mm ±0.2 mm Minimum bending radius, fixed installation 4 x D Minimum bending radius, flexible installation 8 x D Number of bending cycles 200000 Minimum bending radius, drag chain applications 5 x D Outer sheath, material PVC Material conductor insulation PE Conductor material Bare Cu litz wires Insulation resistance 2 500 MΩ*km (at 20 °C) Conductor resistance 78 Ω/km (at 20 °C) Working capacitance approx. 57 nF (at 1 kHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 80 V Test voltage Core/Core 1000 V Test voltage Core/Shield 1000 V Flame resistance according to IEC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (operation) -40 °C 80 °C Ambient temperature (installation) -40 °C 80 °C	Optical shield covering	85 %
External cable diameter D 7 mm ±0.2 mm Minimum bending radius, fixed installation 4 x D Minimum bending radius, flexible installation 8 x D Number of bending cycles 200000 Minimum bending radius, drag chain applications 5 x D Outer sheath, material PVC Material conductor insulation PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance 78 Ω/km (at 20 °C) Working capacitance approx. 57 nF (at 1 kHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 80 V Test voltage Core/Core 1000 V Test voltage Core/Shield 1000 V Flame resistance according to IEC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (operation) -40 °C 80 °C Ambient temperature (installation) -40 °C 80 °C	External sheath, color	black
Minimum bending radius, fixed installation4 x DMinimum bending radius, flexible installation8 x DNumber of bending cycles200000Minimum bending radius, drag chain applications5 x DOuter sheath, materialPVCMaterial conductor insulationPEConductor materialBare Cu litz wiresInsulation resistance≥ 500 MΩ*km (at 20 °C)Conductor resistance78 Ω/km (at 20 °C)Working capacitanceapprox. 57 nF (at 1 kHz)Signal runtime5.3 ns/mNominal voltage, cable≤ 80 VTest voltage Core/Core1000 VTest voltage Core/Shield1000 VFlame resistanceaccording to IEC 60332-1-2Resistance to oilAccording to DIN EN 60811-2-1, 168 h at 100°CAmbient temperature (operation)40 °C 80 °CAmbient temperature (installation)-40 °C 80 °C	Outer sheath thickness	0.9 mm
Minimum bending radius, flexible installation 8 x D Number of bending cycles 200000 Minimum bending radius, drag chain applications 5 x D Outer sheath, material PVC Material conductor insulation PE Conductor material Bare Cu litz wires Insulation resistance 2 500 MΩ*km (at 20 °C) Conductor resistance 78 Ω/km (at 20 °C) Working capacitance approx. 57 nF (at 1 kHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 80 V Test voltage Core/Core 1000 V Test voltage Core/Shield 1000 V Flame resistance according to IEC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (operation) 40 °C 80 °C Ambient temperature (installation) -40 °C 80 °C	External cable diameter D	7 mm ±0.2 mm
Number of bending cycles 200000 Minimum bending radius, drag chain applications 5 x D Outer sheath, material PVC Material conductor insulation PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance 78 Ω/km (at 20 °C) Working capacitance approx. 57 nF (at 1 kHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 80 V Test voltage Core/Core 1000 V Test voltage Core/Shield 1000 V Flame resistance according to IEC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (operation) -40 °C 80 °C Ambient temperature (installation) -40 °C 80 °C	Minimum bending radius, fixed installation	4 x D
Minimum bending radius, drag chain applications 5 x D Outer sheath, material PVC Material conductor insulation PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance 78 Ω/km (at 20 °C) Working capacitance approx. 57 nF (at 1 kHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 80 V Test voltage Core/Core 1000 V Test voltage Core/Shield 1000 V Flame resistance according to IEC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (operation) -40 °C 80 °C Ambient temperature (installation) -40 °C 80 °C	Minimum bending radius, flexible installation	8 x D
Outer sheath, material PVC Material conductor insulation PE Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance 78 Ω/km (at 20 °C) Working capacitance approx. 57 nF (at 1 kHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 80 V Test voltage Core/Core 1000 V Test voltage Core/Shield 1000 V Flame resistance according to IEC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (operation) -40 °C 80 °C Ambient temperature (installation) -40 °C 80 °C	Number of bending cycles	200000
Material conductor insulationPEConductor materialBare Cu litz wiresInsulation resistance≥ 500 MΩ*km (at 20 °C)Conductor resistance78 Ω/km (at 20 °C)Working capacitanceapprox. 57 nF (at 1 kHz)Signal runtime5.3 ns/mNominal voltage, cable≤ 80 VTest voltage Core/Core1000 VTest voltage Core/Shield1000 VFlame resistanceaccording to IEC 60332-1-2Resistance to oilAccording to DIN EN 60811-2-1, 168 h at 100°CAmbient temperature (operation)-40 °C 80 °CAmbient temperature (installation)-40 °C 80 °C	Minimum bending radius, drag chain applications	5 x D
Conductor material Bare Cu litz wires Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance 78 Ω/km (at 20 °C) Working capacitance approx. 57 nF (at 1 kHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 80 V Test voltage Core/Core 1000 V Test voltage Core/Shield 1000 V Flame resistance according to IEC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (operation) -40 °C 80 °C Ambient temperature (installation) -40 °C 80 °C	Outer sheath, material	PVC
Insulation resistance ≥ 500 MΩ*km (at 20 °C) Conductor resistance 78 Ω/km (at 20 °C) Working capacitance approx. 57 nF (at 1 kHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 80 V Test voltage Core/Core 1000 V Test voltage Core/Shield 1000 V Flame resistance according to IEC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (operation) -40 °C 80 °C Ambient temperature (installation)	Material conductor insulation	PE
Conductor resistance78 Ω/km (at 20 °C)Working capacitanceapprox. 57 nF (at 1 kHz)Signal runtime5.3 ns/mNominal voltage, cable≤ 80 VTest voltage Core/Core1000 VTest voltage Core/Shield1000 VFlame resistanceaccording to IEC 60332-1-2Resistance to oilAccording to DIN EN 60811-2-1, 168 h at 100°CAmbient temperature (operation)-40 °C 80 °CAmbient temperature (installation)-40 °C 80 °C	Conductor material	Bare Cu litz wires
Working capacitance approx. 57 nF (at 1 kHz) Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 80 V Test voltage Core/Core 1000 V Test voltage Core/Shield 1000 V Flame resistance according to IEC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (operation) -40 °C 80 °C Ambient temperature (installation) -40 °C 80 °C	Insulation resistance	\geq 500 M Ω *km (at 20 °C)
Signal runtime 5.3 ns/m Nominal voltage, cable ≤ 80 V Test voltage Core/Core 1000 V Test voltage Core/Shield 1000 V Flame resistance according to IEC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (operation) -40 °C 80 °C Ambient temperature (installation) -40 °C 80 °C	Conductor resistance	78 Ω/km (at 20 °C)
Nominal voltage, cable ≤ 80 V Test voltage Core/Core 1000 V Test voltage Core/Shield 1000 V Flame resistance according to IEC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (operation) -40 °C 80 °C Ambient temperature (installation)	Working capacitance	approx. 57 nF (at 1 kHz)
Test voltage Core/Core 1000 V Test voltage Core/Shield 1000 V Flame resistance according to IEC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (operation) -40 °C 80 °C Ambient temperature (installation)	Signal runtime	5.3 ns/m
Test voltage Core/Shield 1000 V Flame resistance according to IEC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (operation) -40 °C 80 °C Ambient temperature (installation) -40 °C 80 °C	Nominal voltage, cable	≤ 80 V
Flame resistance according to IEC 60332-1-2 Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (operation) -40 °C 80 °C Ambient temperature (installation) -40 °C 80 °C	Test voltage Core/Core	1000 V
Resistance to oil According to DIN EN 60811-2-1, 168 h at 100°C Ambient temperature (operation) -40 °C 80 °C Ambient temperature (installation) -40 °C 80 °C	Test voltage Core/Shield	1000 V
Ambient temperature (operation) -40 °C 80 °C Ambient temperature (installation) -40 °C 80 °C	Flame resistance	according to IEC 60332-1-2
Ambient temperature (installation) -40 °C 80 °C	Resistance to oil	According to DIN EN 60811-2-1, 168 h at 100°C
	Ambient temperature (operation)	-40 °C 80 °C
Ambient temperature (storage/transport) -40 °C 80 °C	Ambient temperature (installation)	-40 °C 80 °C
	Ambient temperature (storage/transport)	-40 °C 80 °C

Environmental Product Compliance

REACh SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"



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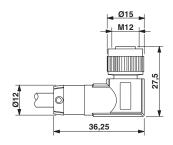
Drawings

Schematic diagram



Pin assignment M12 plug, 8-pos., view plug side

Dimensional drawing



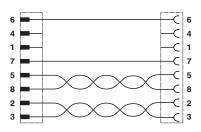
M12 x 1 socket, angled, shielded

Schematic diagram



Pin assignment M12 socket, 8-pos., A-coded, view female side

Circuit diagram



Contact assignment of the M12 connector and the M12 socket

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