

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (http://phoenixcontact.com/download)



Network cable, PROFINET CAT5 (100 Mbps), 4-position, PE-X halogen-free, black, shielded, Plug straight M12 SPEEDCON / IP65, coding: D, on Plug straight M12 SPEEDCON / IP65, coding: D, cable length: 6.5 m, Product tested according to customer specification/rail application



Key Commercial Data

Packing unit	1 pc
Minimum order quantity	50 pc
GTIN	4 055626 130071
GTIN	4055626130071
Weight per Piece (excluding packing)	459.500 g
Custom tariff number	85444290
Country of origin	Poland
Note	Made to Order (non-returnable)

Technical data

Dimensions

Length of cable	6.5 m
-----------------	-------

General data

Note	The cable is 100% electrically tested for continuity.
Rated current at 40°C	4 A
Rated voltage	48 V AC
	60 V DC
Number of positions	4
Signal type/category	PROFINET CAT5 (IEC 11801), 100 Mbps
Standards/regulations	M12 connector IEC 61076-2-101
Overvoltage category	II
Degree of pollution	3

Characteristics head 1



Technical data

Characteristics head 1

Head type	Plug straight M12 SPEEDCON / IP65
No. of positions (pin connector pattern)	4
Coding	D (Data)
Color	black
Material (component)	CuSn (Contact)
	Ni/Au (Contact surface)
	PA (Contact carriers)
	TPU, hardly inflammable, self-extinguishing (Grip)
	Zinc die-cast, nickel-plated (Screw connection)
Shielded	yes
Insulation resistance	≥ 100 MΩ
Test voltage	500 V DC ±15 V DC (for 60 s, insulation resistance according to DIN EN 60512-3-1)
	1.4 kV AC (for 60 s, dielectric strength according to DIN EN 60512-4-1)
Insertion/withdrawal cycles	≥ 100 (Quantity: 500 with Phoenix Contact mating connector)
Torque	0.4 Nm
Ambient temperature (operation)	-40 °C 90 °C
Weight	10 g ±5 g

Characteristics head 2

Head type	Plug straight M12 SPEEDCON / IP65
No. of positions (pin connector pattern)	4
Coding	D (Data)
Color	black
Material (component)	CuSn (Contact)
	Ni/Au (Contact surface)
	PA (Contact carriers)
	TPU, hardly inflammable, self-extinguishing (Grip)
	Zinc die-cast, nickel-plated (Screw connection)
Shielded	yes
Insulation resistance	≥ 100 MΩ
Test voltage	500 V DC ±15 V DC (for 60 s, insulation resistance according to DIN EN 60512-3-1)
	1.4 kV AC (for 60 s, dielectric strength according to DIN EN 60512-4-1)
Insertion/withdrawal cycles	≥ 100 (Quantity: 500 with Phoenix Contact mating connector)
Torque	0.4 Nm
Ambient temperature (operation)	-40 °C 90 °C
Weight	10 g ±5 g

Standards and Regulations

Standard designation	M12 connector
Standards/regulations	IEC 61076-2-101



Technical data

Standards and Regulations

Cable Cable type PROFINET railway applications Cable type (abbreviation) 938 Signal bybefoategory PROFINET CATS (IEC 11801), 100 Mbps Cable structure 1x4xAWG22/7; SF/TQ Conductor cross section 4x 0.34 mm² AWO signal line 22 Conductor structure signal line 7x 0.25 mm Core diameter including insulation 1.4 mm ±0.1 mm Wire colors wheb-blue, orange-yellow Overall twist Star quad Shielding Aluminum-lined polyester foil, tinned copper braided shield External sheath, color black Culter sheath flickness 1 mm External cable diameter D 6.6 mm ±0.2 mm Minimum bending radius, fised installation 5 x D Minimum bending radius, fisexible installation 6 x D Tansile strength GRP ≤ 60 N (temporary) Cable weight 71 kg/km Muterial conductor insulation Cell PE Conductor material Tin-plated Cu litz wires Insulation resistance ≤ 54 G/km Cable capacity 44 nF/km (core-core)	Flammability rating according to UL 94	V0
Cable type (abbreviation) 939 Signal type/category PROFINET CAT5 (IEC 11801), 100 Mbps Cable structure 1x4xAWG22/7; SF/TQ Conductor cross section 4x 0.34 mm² AWG signal line 22 Conductor structure signal line 7x 0.25 mm Core diameter including insulation 1.4 mm ±0.1 mm Wire colors white-blue, orange-yellow Overall twist Star quad Shielding Aluminum-lined polyester foil, tinned copper braided shield External sheath, color black Outer sheath thickness 1 mm External cable diameter D 6.6 mm ±0.2 mm Minimum bending radius, fixed installation 5 x D Minimum bending radius, fixed installation 6 x D Tensile strength GRP ≤ 60 N (temporary) 2 to N (vemporary) ≤ 15 N (Permanent) Cable weight 71 kg/km Outer sheath, material PE.X Material conductor insulation Cell PE Conductor resistance ≥ 5 GC*km Conductor resistance ≥ 5 GL*k ±0 Mm Vave impedance	Cable	
Signal type/category PROFINET CAT5 (IEC 11801), 100 Mbps Cable structure 1.4x4AWG2277; SF/TQ Conductor cross section 4x 0.34 mm² AWO signal line 22 Conductor structure signal line 7x 0.25 mm Core diameter including insulation 1.4 mm ±0.1 mm Wire colors white-blue, orange-yellow Overall twist Star quad Shielding Aluminum-lined polyester foil, tinned copper braided shield External sheath, color black Ouler shealth thickness 1 mm External cable diameter D 6.6 mm ±0.2 mm Minimum bending radius, fixed installation 5 x D Minimum bending radius, fixed installation 5 x D Minimum bending radius, fixed installation 6 x D Tensile strength GRP ≤ 60 N (temporary) < 15 N (Permanent)	Cable type	PROFINET railway applications
Cable structure 1x4xAWG227; SF/TQ Conductor cross section 4x 0.34 mm² AWG signal line 22 Conductor structure signal line 7x 0.25 mm Core diameter including insulation 1.4 mm ±0.1 mm Wire colors while-blue, orange-yellow Overall twist Star quad Shielding Aluminum-lined polyester foil, tinned copper braided shield External sheath, color black Outer sheath thickness 1 mm External cable diameter D 6.6 mm ±0.2 mm Minimum bending radius, fixed installation 5 x D Minimum bending radius, fixed installation 6 x D Tensile strength GRP ≤ 60 N (temporary) Lable weight 71 kg/km Outer sheath, material PE-X Material conductor insulation Cell PE Conductor material Tin-plated Cu litz wires Insulation resistance ≤ 54.4 Ω/km Conductor resistance ≤ 54.4 Ω/km Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ± 5Ω (f = 100 MHz) Near end crosstalk attenuation	Cable type (abbreviation)	939
Conductor cross section 4x 0.34 mm² AWG signal line 22 Conductor structure signal line 7x 0.25 mm Core diameter including insulation 1.4 mm ±0.1 mm Wire colors white-blue, orange-yellow Overall twist Star quad Shielding Aluminum-lined polyester foil, tinned copper braided shield External sheath, color black Outer sheath trickness 1 mm External cable diameter D 6.6 mm ±0.2 mm Minimum bending radius, fixed installation 5 x D Minimum bending radius, fixed installation 6 x D Tensile strength GRP < 60 N (temporary)	Signal type/category	PROFINET CAT5 (IEC 11801), 100 Mbps
AWG signal line 22 Conductor structure signal line 7x 0.25 mm Core diameter including insulation 1.4 mm ±0.1 mm Write colors white-blue, orange-yellow Overall twist Star quad Shielding Aluminum-lined polyester foil, tinned copper braided shield External sheath, color black Outer sheath thickness 1 mm External cable diameter D 6.6 mm ±0.2 mm Minimum bending radius, fixed installation 5 x D Minimum bending radius, fixed installation 6 x D Tensile strength GRP ≤ 60 N (temporary) Cable weight 71 kg/km Outer sheath, material PE-X Material conductor insulation Cell PE Conductor material Tin-plated Cu litz wires Insulation resistance ≥ 5 GO*km Conductor resistance ≥ 5 GO*km Conductor resistance ≥ 5 GO*km Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ± 5 Ω (fe = 100 MHz) Near end crosstalk attenuation (NEXT) 71 dB (at 4 MHz) G dB (at 10 MHz)	Cable structure	1x4xAWG22/7; SF/TQ
Conductor structure signal line 7x 0.25 mm Core diameter including insulation 1.4 mm ±0.1 mm Wire colors white-blue, orange-yellow Overall twist Star quad Shielding Aluminum-lined polyester foil, tinned copper braided shield External sheath, color black Outer sheath thickness 1 mm External cable diameter D 6.6 mm ±0.2 mm Minimum bending radius, fixed installation 5 x D Minimum bending radius, fixed installation 6 x D Tensile strength GRP ≤ 60 N (temporary) Less through GRP ≤ 15 N (Permanent) Cable weight 71 kg/km Outer sheath, material PE-X Material conductor insulation Cell PE Conductor material Tin-plated Cu litz wires Insulation resistance ≥ 5 GP*km Conductor resistance ≤ 54.4 Ω/km Conductor resistance ≤ 54.4 Ω/km Conductor resistance ≤ 54.4 Ω/km Conductor resistance ≤ 64.6 th/m Conductor resistance ≤ 64.6 th/m Conductor resistance	Conductor cross section	4x 0.34 mm²
Core diameter including insulation 1.4 mm ± 0.1 mm Wire colors white-blue, orange-yellow Overall twist Star quad Shielding Aluminum-lined polyester foil, tinned copper braided shield External shaeth, color black Outer sheath thickness 1 mm External cable diameter D 6.6 mm ± 0.2 mm Minimum bending radius, fixed installation 5 x D Minimum bending radius, flexible installation 6 x D Tensile strength GRP ≤ 60 N (temporary) Cable weight 71 kg/km Outer sheath, material 71 kg/km Outer sheath, material 72 kg/km Material conductor insulation Cell PE Conductor material Tin-plated Cu litz wires Insulation resistance ≥ 5 GΩ*km Conductor resistance ≥ 54 4 Ω/km Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ± 50 (f = 100 MHz) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) Mark and crosstalk attenuation (NEXT) 64 dB (at 100 MHz) Gold B (at 3 125 MHz) 48 dB (at 100 MHz)	AWG signal line	22
Wire colors white-blue, orange-yellow Overall twist Star quad Shielding Aluminum-lined polyester foil, tinned copper braided shield External sheath, color black Outer sheath thickness 1 mm External cable diameter D 6.6 mm ±0.2 mm Minimum bending radius, fixed installation 5 x D Minimum bending radius, fixed installation 6 x D Tensile strength GRP < 60 N (temporary)	Conductor structure signal line	7x 0.25 mm
Overall twist Star quad Shielding Aluminum-lined polyester foil, tinned copper braided shield External sheath, color black Outer sheath thickness 1 mm External cable diameter D 6.6 mm ±0.2 mm Minimum bending radius, fixed installation 5 x D Minimum bending radius, fixed installation 6 x D Tensile strength GRP ≤ 60 N (temporary) ≤ 15 N (Permanent) Cable weight Outer sheath, material PE-X Material conductor insulation Cell PE Conductor material Tin-plated Cu litz wires Insulation resistance ≤ 5 GΩ*km Conductor resistance ≤ 54.4 Ω/km Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ± 5 Ω (* = 100 MHz) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 64 dB (at 10 MHz) 60 dB (at 16 MHz) 65 dB (at 31 125 MHz) 48 dB (at 100 MHz) 45 dB (at 100 MHz) 45 dB (at 100 MHz) 67 dB (at 116 MHz) 45 dB (at 100 MHz) 68 dB (at 4 MHz) 68 dB (at 4 MHz)	Core diameter including insulation	1.4 mm ±0.1 mm
Shielding Aluminum-lined polyester foil, tinned copper braided shield External sheath, color black Outer sheath thickness 1 mm External cable diameter D 6.6 mm ± 0.2 mm Minimum bending radius, fixed installation 5 x D Minimum bending radius, fiexible installation 6 x D Tensile strength GRP ≤ 60 N (temporary) Cable weight 71 kg/km Outer sheath, material PE-X Material conductor insulation Cell PE Conductor material Tin-plated Cu litz wires Insulation resistance ≥ 5 GΩ*km Conductor resistance ≤ 54.4 Ω/km Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ± 5 C (f = 100 MHz) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 4 dB (at 10 MHz) 64 dB (at 10 MHz) 5 dB (at 25 MHz) 48 dB (at 100 MHz) 4 dB (at 100 MHz) 48 dB (at 100 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) Fower-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz)	Wire colors	white-blue, orange-yellow
External sheath, color black Outer sheath thickness 1 mm External cable diameter D 6.6 mm ±0.2 mm Minimum bending radius, fixed installation 5 x D Minimum bending radius, fixexible installation 6 x D Tensile strength GRP ≤ 60 N (temporary) Cable weight 71 kg/km Outer sheath, material PE-X Material conductor insulation Cell PE Conductor material Tin-plated Cu litz wires Insulation resistance ≥ 5 GΩ*km Conductor resistance ≤ 54.4 Ω/km Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ± 5 Ω (f = 100 MHz) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 44 dB (at 10 MHz) 60 dB (at 16 MHz) 56 dB (at 31.25 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz) 68 dB (at 4 MHz)	Overall twist	Star quad
Outer sheath thickness 1 mm External cable diameter D 6.6 mm ±0.2 mm Minimum bending radius, fixed installation 5 x D Minimum bending radius, flexible installation 6 x D Tensile strength GRP ≤ 60 N (temporary) Cable weight 71 kg/km Outer sheath, material PE-X Material conductor insulation Cell PE Conductor material Tin-plated Cu litz wires Insulation resistance ≥ 5 GΩ*km Conductor resistance ≤ 54.4 Ω/km Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ± 5 Ω (f = 100 MHz) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 4d dB (at 10 MHz) 64 dB (at 10 MHz) 6d dB (at 13.25 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz) 68 dB (at 4 MHz)	Shielding	Aluminum-lined polyester foil, tinned copper braided shield
External cable diameter D 6.6 mm ±0.2 mm Minimum bending radius, fixed installation 5 x D Minimum bending radius, flexible installation 6 x D Tensile strength GRP ≤ 60 N (temporary) ≤ 15 N (Permanent) Cable weight Outer sheath, material PE-X Material conductor insulation Cell PE Conductor material Tin-plated Cu litz wires Insulation resistance ≥ 5 GΩ*km Conductor resistance ≤ 54.4 Ω/km Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ±5 Ω (f = 100 MHz) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 64 dB (at 10 MHz) 64 dB (at 10 MHz) 60 dB (at 16 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz) 68 dB (at 4 MHz)	External sheath, color	black
Minimum bending radius, fixed installation 5 x D Minimum bending radius, flexible installation 6 x D Tensile strength GRP ≤ 60 N (temporary) ≤ 15 N (Permanent) 2 15 N (Permanent) Cable weight 71 kg/km Outer sheath, material PE-X Material conductor insulation Cell PE Conductor material Tin-plated Cu litz wires Insulation resistance ≥ 5 GΩ*km Conductor resistance ≤ 54 4 Ω/km Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ±5 Ω (f = 100 MHz) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 64 dB (at 40 MHz) 64 dB (at 10 MHz) 65 dB (at 31.25 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz) 68 dB (at 4 MHz)	Outer sheath thickness	1 mm
Minimum bending radius, flexible installation 6 x D Tensile strength GRP ≤ 60 N (temporary) ≤ 15 N (Permanent) Cable weight 71 kg/km Outer sheath, material PE-X Material conductor insulation Cell PE Conductor material Tin-plated Cu litz wires Insulation resistance ≥ 5 GΩ*km Conductor resistance ≤ 54.4 Ω/km Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ±5 Ω (f = 100 MHz) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 64 dB (at 10 MHz) 64 dB (at 10 MHz) 60 dB (at 16 MHz) 56 dB (at 31.25 MHz) 48 dB (at 100 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz) 68 dB (at 4 MHz)	External cable diameter D	6.6 mm ±0.2 mm
Tensile strength GRP ≤ 60 N (temporary) ≤ 15 N (Permanent) Cable weight 71 kg/km Outer sheath, material PE-X Material conductor insulation Cell PE Conductor material Tin-plated Cu litz wires Insulation resistance ≥ 5 GΩ*km Conductor resistance ≤ 54.4 Ω/km Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ±5 Ω (f = 100 MHz) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 71 dB (at 4 MHz) 64 dB (at 10 MHz) 60 dB (at 16 MHz) 60 dB (at 16 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz) 68 dB (at 4 MHz)	Minimum bending radius, fixed installation	5 x D
≤ 15 N (Permanent) Cable weight 71 kg/km Outer sheath, material PE-X Material conductor insulation Cell PE Conductor material Tin-plated Cu litz wires Insulation resistance ≥ 5 GΩ*km Conductor resistance ≤ 54 4 Ω/km Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ±5 Ω (f = 100 MHz) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 64 dB (at 10 MHz) 64 dB (at 10 MHz) 60 dB (at 16 MHz) 56 dB (at 31.25 MHz) 48 dB (at 100 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz) 68 dB (at 4 MHz)	Minimum bending radius, flexible installation	6 x D
Cable weight 71 kg/km Outer sheath, material PE-X Material conductor insulation Cell PE Conductor material Tin-plated Cu litz wires Insulation resistance ≥ 5 GΩ*km Conductor resistance ≤ 54.4 Ω/km Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ± 5 Ω (f = 100 MHz) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 64 dB (at 10 MHz) 64 dB (at 10 MHz) 60 dB (at 16 MHz) 56 dB (at 31.25 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz) 68 dB (at 4 MHz)	Tensile strength GRP	≤ 60 N (temporary)
Outer sheath, material PE-X Material conductor insulation Cell PE Conductor material Tin-plated Cu litz wires Insulation resistance ≥ 5 GΩ*km Conductor resistance ≤ 54.4 Ω/km Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ± 5 Ω (f = 100 MHz) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 64 dB (at 10 MHz) 64 dB (at 10 MHz) 60 dB (at 16 MHz) 56 dB (at 31.25 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz) 68 dB (at 4 MHz)		≤ 15 N (Permanent)
Material conductor insulation Cell PE Conductor material Tin-plated Cu litz wires Insulation resistance ≥ 5 GΩ*km Conductor resistance ≤ 54.4 Ω /km Cable capacity 44 nF/km (core-core) Wave impedance 100 $\Omega \pm 5 \Omega$ ($f = 100 \text{ MHz}$) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 64 dB (at 4 MHz) 64 dB (at 10 MHz) 60 dB (at 16 MHz) 56 dB (at 31.25 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 45 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz) 68 dB (at 4 MHz)	Cable weight	71 kg/km
Conductor material Tin-plated Cu litz wires Insulation resistance ≥ 5 GΩ*km Conductor resistance ≤ 54.4 Ω /km Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ±5 Ω (f = 100 MHz) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 71 dB (at 4 MHz) 64 dB (at 10 MHz) 60 dB (at 16 MHz) 56 dB (at 31.25 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 48 dB (at 100 MHz) 49 dB (at 155 MHz) 40 dB (at 155 MHz) 40 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz)	Outer sheath, material	PE-X
Insulation resistance ≥ 5 GΩ*km Conductor resistance ≤ 54.4 Ω /km Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ±5 Ω (f = 100 MHz) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 71 dB (at 4 MHz) 64 dB (at 10 MHz) 60 dB (at 16 MHz) 56 dB (at 31.25 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 48 dB (at 100 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz)	Material conductor insulation	Cell PE
Conductor resistance ≤ 54.4 Ω/km Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ± 5 Ω (f = 100 MHz) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 71 dB (at 4 MHz) 64 dB (at 10 MHz) 60 dB (at 16 MHz) 56 dB (at 31.25 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz) 68 dB (at 4 MHz)	Conductor material	Tin-plated Cu litz wires
Cable capacity 44 nF/km (core-core) Wave impedance 100 Ω ±5 Ω (f = 100 MHz) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 71 dB (at 4 MHz) 64 dB (at 10 MHz) 60 dB (at 16 MHz) 56 dB (at 31.25 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz) 68 dB (at 4 MHz)	Insulation resistance	$\geq 5~G\Omega^*$ km
Wave impedance 100 Ω ±5 Ω (f = 100 MHz) Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 71 dB (at 4 MHz) 64 dB (at 10 MHz) 60 dB (at 16 MHz) 60 dB (at 16 MHz) 56 dB (at 31.25 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz) 68 dB (at 4 MHz)	Conductor resistance	\leq 54.4 Ω /km
Near end crosstalk attenuation (NEXT) 76 dB (with 1 MHz) 71 dB (at 4 MHz) 64 dB (at 10 MHz) 60 dB (at 16 MHz) 60 dB (at 31.25 MHz) 52 dB (at 62.5 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz) 68 dB (at 4 MHz)	Cable capacity	44 nF/km (core-core)
71 dB (at 4 MHz) 64 dB (at 10 MHz) 60 dB (at 16 MHz) 56 dB (at 31.25 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz)	Wave impedance	100 Ω ±5 Ω (f = 100 MHz)
64 dB (at 10 MHz) 60 dB (at 16 MHz) 56 dB (at 31.25 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz)	Near end crosstalk attenuation (NEXT)	76 dB (with 1 MHz)
60 dB (at 16 MHz) 56 dB (at 31.25 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz)		71 dB (at 4 MHz)
56 dB (at 31.25 MHz) 52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz)		64 dB (at 10 MHz)
52 dB (at 62.5 MHz) 48 dB (at 100 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz)		60 dB (at 16 MHz)
48 dB (at 100 MHz) 45 dB (at 155 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz)		56 dB (at 31.25 MHz)
45 dB (at 155 MHz) 42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz)		52 dB (at 62.5 MHz)
42 dB (at 200 MHz) Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz)		48 dB (at 100 MHz)
Power-summated near end crosstalk attenuation (PSNEXT) 73 dB (with 1 MHz) 68 dB (at 4 MHz)		45 dB (at 155 MHz)
68 dB (at 4 MHz)		42 dB (at 200 MHz)
	Power-summated near end crosstalk attenuation (PSNEXT)	73 dB (with 1 MHz)
61 dB (at 10 MHz)		68 dB (at 4 MHz)
		61 dB (at 10 MHz)



Technical data

Cable

	57 dB (at 16 MHz) 53 dB (at 31.25 MHz) 49 dB (at 62.5 MHz) 45 dB (at 100 MHz) 42 dB (at 155 MHz)
	49 dB (at 62.5 MHz) 45 dB (at 100 MHz)
	45 dB (at 100 MHz)
	42 dB (at 155 MHz)
	,
	39 dB (at 200 MHz)
Attenuation	1.5 dB (with 1 MHz)
	3.3 dB (at 4 MHz)
	5.3 dB (at 10 MHz)
1	6.9 dB (at 16 MHz)
!	9.9 dB (at 31.25 MHz)
	14.5 dB (at 62.5 MHz)
	18.8 dB (at 100 MHz)
	23.6 dB (at 155 MHz)
	27.3 dB (at 200 MHz)
Return loss (RL)	25 dB (with 1 MHz)
	25 dB (at 4 MHz)
	28 dB (at 10 MHz)
	28 dB (at 16 MHz)
	27 dB (at 31.25 MHz)
	26 dB (at 62.5 MHz)
	25 dB (at 100 MHz)
	25 dB (at 155 MHz)
	23 dB (at 200 MHz)
Signal speed	0.75 c
Signal runtime	4.4 ns/m
Shield attenuation	60 dB (up to 1000 MHz)
Coupling resistance	< 13.00 mΩ/m (f = 1 MHz)
	< 8.00 mΩ/m (f = 10 MHz 100 MHz)
Cable impedance	100 Ω ±15 Ω (f = 0.5 MHz 3 MHz)
Nominal voltage, cable	125 V
Test voltage Core/Core	1000 V AC (50 Hz, 1 min.)
Test voltage Core/Shield	1000 V AC (50 Hz, 1 min.)
Fire protection in rail vehicles	BS 6853 (Internal cable Ia, Ib, II/external cable Ia, Ib, II)
	DIN 5510-2 (Fire protection level 1, 2, 3, 4)
	EN 45545-2 (Risk level HL1 - HL3)
	EN 50306-4
	NF F16-101 (Classification C/F1)
	NF F16-101 (Internal cable A1, A2, B/external cable A1, A2, B)
	NFPA 130



Technical data

Cable

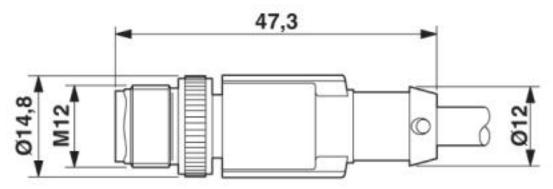
	PN-K-02511
	UIC 564-2 (Class A)
Flame resistance	according to EN 60332-1-2
	according to EN 50266-2-5
	according to ISO 14572 5.21 (UN ECE-R 118.01)
Halogen-free	According to EN 50267-2-1
	according to EN 60684-2
Resistance to oil	according to EN 60684-2, 72 h at 100 °C, IRM 902
Other resistance	Resistant to fuel according to EN 60684-2, 72 h at 100 °C, IRM 903
	Resistant to ozone according to EN 50306-4, 72 h at 40 $^{\circ}$ C, procedure B, volume concentration 200 x 10 $^{\circ}$
Concentration of fumes	EN 61034-2
Ambient temperature (operation)	-40 °C 85 °C (cable, fixed installation)
	-25 °C 70 °C (cable, flexible installation)

Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

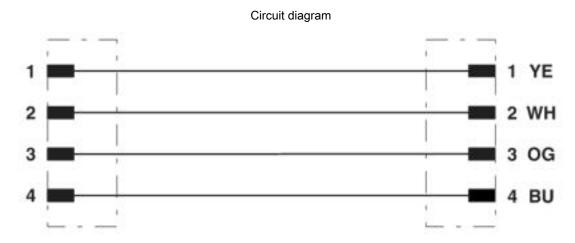
Drawings

Dimensional drawing

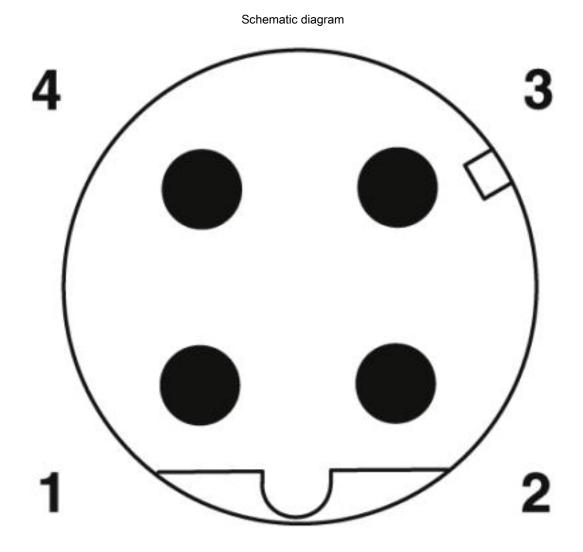


M12 SPEEDCON plug, straight, shielded



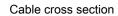


Contact assignment of the M12 plugs



Pin assignment M12 male connector, 4-pos., D-coded, male side







PROFINET railway applications [939]

Classifications

eCl@ss

eCl@ss 5.1	27250107
eCl@ss 6.0	27279200
eCl@ss 7.0	27279218
eCl@ss 8.0	27279218
eCl@ss 9.0	27060311

ETIM

ETIM 5.0	EC001855
ETIM 6.0	EC001855
ETIM 7.0	EC001855



Classifications

UNSPSC

UNSPSC 13.2	31251501
UNSPSC 19.0	31251501
UNSPSC 20.0	31251501
UNSPSC 21.0	31251501

Phoenix Contact 2019 @ - all rights reserved http://www.phoenixcontact.com