

Network cable - VS-M12MS-IP20-94B-LI/10,0 - 1404310

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Assembled Ethernet cable, shielded, 4-pair, 26 AWG stranded (7-wire), RAL 5021 (water blue), M12 plug to RJ45 plug/IP20, line, length 10 m



Ethernet

Key Commercial Data

Packing unit	1 STK
GTIN	4 046356 690164
GTIN	4046356690164

Technical data

Mechanical characteristics

Number of positions	8
Insertion/withdrawal cycles	≥ 100
Cable outlet	straight
Length of cable	10 m
No. of cable outlets	1

Ambient conditions

Ambient temperature (operation)	-25 °C 60 °C (cable, fixed installation)
	-5 °C 60 °C (cable, flexible installation)

Material data

Flammability rating according to UL 94	НВ
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Standards and Regulations

Flammability rating according to UL 94	HB
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Line characteristics

Cable type	Ethernet, flexible, CAT5
Cable abbreviation	02YS(ST)C11Y
UL AWM style	20963 (80°C/30 V)



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Technical data

Line characteristics

Conductor cross section	Cable structure	4x2xAWG26/7; SF/UTP
Conductor structure signal line 7x 0.16 mm 0.96 mm 0.96 mm External cable diameter 0.4 mm ±0.2 mm white/blue-blue, white/orange-orange, white/green-green, white/brown-brown water blue RAL 5021 Commonwealth of the RAL 5021 Commonwealth or sistance 2.500 MC/km Wave impedance 2.500 MC/	Conductor cross section	4x 2x 0.14 mm ²
Core diameter including insulation 0.96 mm	AWG signal line	26
External cable diameter Wire colors white/blue-blue, white/orange-orange, white/green-green, white/brown-brown External sheath, color External sheath, color Transmission medium Copper Insulation resistance 2 500 MΩ*km Wave impedance 100 Ω ±5 Ω (at 100 MHz) Near end crosstalk attenuation (NEXT) 71.3 dB (with 1 MHz) 62.3 dB (at 10 MHz) 53.2 dB (at 16 MHz) 518. dB (at 20 MHz) 44.4 dB (at 62.5 MHz) 44.4 dB (at 62.5 MHz) Wave attenuation 3.2 dB (with 1 MHz) 6 dB (at 4 MHz) 6 dB (at 4 MHz) 71.1 dB (at 10 MHz) 11.1 dB (at 10 MHz) 22.4 dB (at 10 MHz) 82.4 dB (at 20 MHz) 12.1 dB (at 10 MHz) 13.5 dB (at 10 MHz) 13.6 dB (at 20 MHz) 14.1 dB (at 10 MHz) 15.5 dB (at 20 MHz) 15.5 dB (at 3 MHz) 15.5 dB (at 20 Mtz) 15.5 dB (at 20 Mtz) 15.5 dB (at 20 Mtz)	Conductor structure signal line	7x 0.16 mm
Wire colors white/blue-blue, white/orange-orange, white/green-green, white/brown-brown External sheath, color water blue RAL 5021 Transmission medium Copper Insulation resistance ≥ 500 MΩ*km Wave impedance 100 Ω ± 5 Ω (at 100 MHz) Near end crosstalk attenuation (NEXT) 71.3 dB (with 1 MHz) 63.3 dB (at 10 MHz) 63.3 dB (at 10 MHz) 51.8 dB (at 20 MHz) 49.9 dB (at 31.25 MHz) 44.9 dB (at 62.5 MHz) 44.9 dB (at 62.5 MHz) Wave attenuation 3.2 dB (with 1 MHz) Wave attenuation 3.2 dB (with 1 MHz) 9.5 dB (at 10 MHz) 9.5 dB (at 10 MHz) 12.1 dB (at 16 MHz) 12.1 dB (at 16 MHz) 13.6 dB (at 20 MHz) 24.8 dB (at 62.5 MHz) 14.1 dB (at 31.25 MHz) 24.8 dB (at 62.5 MHz) 24.1 dB (at 68.1 MHz) 25.0 dB (at 10 MHz) 25.5 dB (at 10 MHz) 25.0 dB (at 10 MHz) 25.5 dB (at 10 MHz) 25.0 dB (at 10 MHz) 25.5 dB (at 10 MHz) 25.0 dB (at 10 MHz) 25.5 dB (at 10 MHz) 25.0 dB (at 31.25 MHz) 25.5 dB (at 10 MHz) 25.5 dB (at 62.5 MHz) 25.5	Core diameter including insulation	0.96 mm
External sheath, color water blue RAL 5021	External cable diameter	6.4 mm ±0.2 mm
Transmission medium Copper Insulation resistance ≥ 500 MΩ*km Wave impedance 100 Ω ± 5 Ω (at 100 MHz) Near end crosstalk attenuation (NEXT) 71.3 dB (with 1 MHz) 62.3 dB (at 10 MHz) 56.3 dB (at 10 MHz) 53.2 dB (at 16 MHz) 51.8 dB (at 20 MHz) 48.9 dB (at 31.25 MHz) 44.4 dB (at 62.5 MHz) 44.4 dB (at 62.5 MHz) 41.3 dB (at 100 MHz) Wave attenuation 3.2 dB (with 1 MHz) 6 dB (at 4 MHz) 9.5 dB (at 10 MHz) 12.1 dB (at 16 MHz) 12.1 dB (at 6 MHz) 13.6 dB (at 20 MHz) 17.1 dB (at 31.25 MHz) 24.8 dB (at 62.5 MHz) 32 dB (at 100 MHz) Return Loss 23 dB (at 10 MHz) 24.1 dB (at 8 MHz) 24.1 dB (at 8 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 100 MHz) 25 dB (at 100 MHz) 21.5 dB (at 62.5 MHz) 21.5 dB (at 62.5 MHz) 21.5 dB (at 62.5 MHz) 21.5 dB (at 60.0 MHz) 21.5 dB (at 60.0 MHz) Signal runtime ≤ 100.00 mΩ/m (at 10 MHz) <t< td=""><td>Wire colors</td><td></td></t<>	Wire colors	
Insulation resistance ≥ 500 MΩ*km	External sheath, color	water blue RAL 5021
Wave impedance 100 Ω ± 5 Ω (at 100 MHz) Near end crosstalk attenuation (NEXT) 71.3 dB (with 1 MHz) 62.3 dB (at 4 MHz) 56.3 dB (at 10 MHz) 53.2 dB (at 16 MHz) 51.8 dB (at 20 MHz) 48.9 dB (at 31.25 MHz) 44.4 dB (at 62.5 MHz) 41.3 dB (at 100 MHz) 41.3 dB (at 100 MHz) Wave attenuation 3.2 dB (with 1 MHz) 9.5 dB (at 10 MHz) 9.5 dB (at 10 MHz) 12.1 dB (at 16 MHz) 13.6 dB (at 20 MHz) 17.1 dB (at 13.25 MHz) 24.8 dB (at 62.5 MHz) 24.8 dB (at 62.5 MHz) 32 dB (at 100 MHz) Return Loss 23 dB (at 4 MHz) 24.1 dB (at 8 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 21.5 dB (at 62.5 MHz) 21.5 dB (at 62.5 MHz) 21.5 dB (at 62.5 MHz) 21.5 dB (at 62.5 MHz) 21.5 dB (at 62.5 MHz) 21.5 dB (at 10 MHz) 21.5 dB (at 10 MHz) Signal runtime 5.3 ns/m Coupling resistance ≤ 100 V	Transmission medium	Copper
Near end crosstalk attenuation (NEXT)	Insulation resistance	≥ 500 MΩ*km
62.3 dB (at 4 MHz) 56.3 dB (at 10 MHz) 55.2 dB (at 16 MHz) 55.2 dB (at 16 MHz) 51.8 dB (at 20 MHz) 48.9 dB (at 31.25 MHz) 44.4 dB (at 62.5 MHz) 41.3 dB (at 100 MHz) Wave attenuation 3.2 dB (with 1 MHz) 6 dB (at 4 MHz) 9.5 dB (at 10 MHz) 12.1 dB (at 10 MHz) 13.6 dB (at 20 MHz) 17.1 dB (at 31.25 MHz) 17.1 dB (at 31.25 MHz) 24.8 dB (at 62.5 MHz) 24.8 dB (at 62.5 MHz) 25 dB (at 100 MHz) 8 dB (at 4 MHz) 9 dB (at 4 MHz) 9 dB (at 4 MHz) 17.1 dB (at 31.25 MHz) 18.1 dB (at 100 MHz) 19.2 dB (at 100 MHz) 19.3 dB (at 20 MHz) 19.3 dB (at	Wave impedance	100 Ω ±5 Ω (at 100 MHz)
56.3 dB (at 10 MHz)	Near end crosstalk attenuation (NEXT)	71.3 dB (with 1 MHz)
53.2 dB (at 16 MHz)		62.3 dB (at 4 MHz)
51.8 dB (at 20 MHz) 48.9 dB (at 31.25 MHz) 44.4 dB (at 62.5 MHz) 41.3 dB (at 100 MHz) Wave attenuation 3.2 dB (with 1 MHz) 6 dB (at 4 MHz) 9.5 dB (at 10 MHz) 12.1 dB (at 16 MHz) 13.6 dB (at 20 MHz) 17.1 dB (at 31.25 MHz) 24.8 dB (at 62.5 MHz) 32 dB (at 100 MHz) Return Loss 23 dB (at 4 MHz) 24.1 dB (at 8 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 31.25 MHz) 21.5 dB (at 62.5		56.3 dB (at 10 MHz)
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41.3 dB (at 100 MHz) Wave attenuation 3.2 dB (with 1 MHz) 6 dB (at 4 MHz) 9.5 dB (at 10 MHz) 12.1 dB (at 16 MHz) 13.6 dB (at 20 MHz) 17.1 dB (at 31.25 MHz) 24.8 dB (at 62.5 MHz) 32 dB (at 100 MHz) Return Loss 23 dB (at 4 MHz) 24.1 dB (at 8 MHz) 24.1 dB (at 8 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 13.25 MHz) 21.1 dB (at 8 MHz) 25 dB (at 10 MHz) 25 dB (at 62.5 MHz) 21.5 dB (at 62.5 MHz) 20.1 dB (at 100 MHz) Signal runtime 5.3 ns/m Coupling resistance ≤ 100.00 mΩ/m (at 10 MHz) Nominal voltage, cable ≤ 100 V Test voltage Core/Core		48.9 dB (at 31.25 MHz)
Wave attenuation 3.2 dB (with 1 MHz) 6 dB (at 4 MHz) 9.5 dB (at 10 MHz) 12.1 dB (at 16 MHz) 13.6 dB (at 20 MHz) 17.1 dB (at 31.25 MHz) 24.8 dB (at 62.5 MHz) 24.8 dB (at 62.5 MHz) 32 dB (at 100 MHz) Return Loss 23 dB (at 4 MHz) 24.1 dB (at 8 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 16 MHz) 25 dB (at 31.25 MHz) 21.5 dB (at 62.5 MHz) 21.5 dB (at 100 MHz) 21.5 dB (at 100 MHz) Signal runtime 5.3 ns/m Coupling resistance ≤ 100.00 mΩ/m (at 10 MHz) Test voltage Core/Core 700 V (50 Hz, 1 min.)		44.4 dB (at 62.5 MHz)
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9.5 dB (at 10 MHz) 12.1 dB (at 16 MHz) 13.6 dB (at 20 MHz) 17.1 dB (at 31.25 MHz) 24.8 dB (at 62.5 MHz) 32 dB (at 100 MHz) Return Loss 23 dB (at 100 MHz) 24.1 dB (at 8 MHz) 24.1 dB (at 8 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 31.25 MHz) 21.5 dB (at 31.25 MHz) 21.5 dB (at 62.5 MHz) 21.5 dB (at 62.5 MHz) 20.1 dB (at 100 MHz) Signal runtime 5.3 ns/m Coupling resistance ≤ 100.00 mΩ/m (at 10 MHz) Nominal voltage, cable ≤ 100 V Test voltage Core/Core 700 V (50 Hz, 1 min.)	Wave attenuation	3.2 dB (with 1 MHz)
12.1 dB (at 16 MHz) 13.6 dB (at 20 MHz) 17.1 dB (at 31.25 MHz) 24.8 dB (at 62.5 MHz) 32 dB (at 100 MHz) Return Loss 23 dB (at 4 MHz) 24.1 dB (at 8 MHz) 25 dB (at 10 MHz) 25 dB (at 20 MHz) 25 dB (at 31.25 MHz) 21.5 dB (at 62.5 MHz) 21.5 dB (at 62.5 MHz) 20.1 dB (at 100 MHz) Signal runtime 5.3 ns/m Coupling resistance ≤ 100.00 mΩ/m (at 10 MHz) Nominal voltage, cable ≤ 100 V Test voltage Core/Core 700 V (50 Hz, 1 min.)		6 dB (at 4 MHz)
13.6 dB (at 20 MHz) 17.1 dB (at 31.25 MHz) 24.8 dB (at 62.5 MHz) 32 dB (at 100 MHz) Return Loss 23 dB (at 4 MHz) 24.1 dB (at 8 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 20 MHz) 25 dB (at 31.25 MHz) 21.5 dB (at 62.5 MHz) 21.5 dB (at 62.5 MHz) 21.5 dB (at 62.5 MHz) 20.1 dB (at 100 MHz) Signal runtime Coupling resistance ≤ 100.00 mΩ/m (at 10 MHz) Nominal voltage, cable ≤ 100 V Test voltage Core/Core		9.5 dB (at 10 MHz)
17.1 dB (at 31.25 MHz) 24.8 dB (at 62.5 MHz) 32 dB (at 100 MHz) Return Loss 23 dB (at 4 MHz) 24.1 dB (at 8 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 30 MHz) 25 dB (at 31.25 MHz) 25 dB (at 31.25 MHz) 21.5 dB (at 62.5 MHz) 21.5 dB (at 62.5 MHz) 20.1 dB (at 100 MHz) Signal runtime 5.3 ns/m Coupling resistance ≤ 100.00 mΩ/m (at 10 MHz) Nominal voltage, cable ≤ 100 V Test voltage Core/Core		12.1 dB (at 16 MHz)
24.8 dB (at 62.5 MHz) 32 dB (at 100 MHz) Return Loss 23 dB (at 4 MHz) 24.1 dB (at 8 MHz) 25 dB (at 10 MHz) 25 dB (at 10 MHz) 25 dB (at 20 MHz) 25 dB (at 31.25 MHz) 21.5 dB (at 31.25 MHz) 21.5 dB (at 62.5 MHz) 20.1 dB (at 100 MHz) Signal runtime 5.3 ns/m Coupling resistance ≤ 100.00 mΩ/m (at 10 MHz) Nominal voltage, cable ≤ 100 V Test voltage Core/Core 700 V (50 Hz, 1 min.)		13.6 dB (at 20 MHz)
32 dB (at 100 MHz)		17.1 dB (at 31.25 MHz)
Return Loss 23 dB (at 4 MHz) 24.1 dB (at 8 MHz) 25 dB (at 10 MHz) 25 dB (at 16 MHz) 25 dB (at 20 MHz) 23.6 dB (at 31.25 MHz) 21.5 dB (at 62.5 MHz) 20.1 dB (at 100 MHz) Signal runtime 5.3 ns/m Coupling resistance ≤ 100.00 mΩ/m (at 10 MHz) Nominal voltage, cable ≤ 100 V Test voltage Core/Core 700 V (50 Hz, 1 min.)		24.8 dB (at 62.5 MHz)
24.1 dB (at 8 MHz) 25 dB (at 10 MHz) 25 dB (at 16 MHz) 25 dB (at 20 MHz) 23.6 dB (at 31.25 MHz) 21.5 dB (at 62.5 MHz) 20.1 dB (at 100 MHz) Signal runtime 5.3 ns/m Coupling resistance ≤ 100.00 mΩ/m (at 10 MHz) Nominal voltage, cable ≤ 100 V Test voltage Core/Core 700 V (50 Hz, 1 min.)		32 dB (at 100 MHz)
25 dB (at 10 MHz) 25 dB (at 16 MHz) 25 dB (at 16 MHz) 25 dB (at 20 MHz) 23.6 dB (at 31.25 MHz) 21.5 dB (at 62.5 MHz) 20.1 dB (at 100 MHz) Signal runtime 5.3 ns/m Coupling resistance ≤ 100.00 mΩ/m (at 10 MHz) Nominal voltage, cable Test voltage Core/Core 700 V (50 Hz, 1 min.)	Return Loss	23 dB (at 4 MHz)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		24.1 dB (at 8 MHz)
25 dB (at 20 MHz) 23.6 dB (at 31.25 MHz) 21.5 dB (at 62.5 MHz) 20.1 dB (at 100 MHz) Signal runtime 5.3 ns/m Coupling resistance ≤ 100.00 mΩ/m (at 10 MHz) Nominal voltage, cable ≤ 100 V Test voltage Core/Core 700 V (50 Hz, 1 min.)		25 dB (at 10 MHz)
23.6 dB (at 31.25 MHz) 21.5 dB (at 62.5 MHz) 20.1 dB (at 100 MHz) Signal runtime 5.3 ns/m Coupling resistance ≤ 100.00 mΩ/m (at 10 MHz) Nominal voltage, cable ≤ 100 V Test voltage Core/Core 700 V (50 Hz, 1 min.)		25 dB (at 16 MHz)
$ 21.5 \text{ dB (at } 62.5 \text{ MHz)} $ $ 20.1 \text{ dB (at } 100 \text{ MHz)} $ Signal runtime $ 5.3 \text{ ns/m} $ Coupling resistance $ \leq 100.00 \text{ m}\Omega/\text{m (at } 10 \text{ MHz)} $ Nominal voltage, cable $ \leq 100 \text{ V} $ Test voltage Core/Core $ 700 \text{ V (50 Hz, 1 min.)} $		25 dB (at 20 MHz)
		23.6 dB (at 31.25 MHz)
Signal runtime 5.3 ns/m Coupling resistance ≤ 100.00 mΩ/m (at 10 MHz) Nominal voltage, cable ≤ 100 V Test voltage Core/Core 700 V (50 Hz, 1 min.)		21.5 dB (at 62.5 MHz)
Coupling resistance ≤ 100.00 mΩ/m (at 10 MHz) Nominal voltage, cable ≤ 100 V Test voltage Core/Core 700 V (50 Hz, 1 min.)		20.1 dB (at 100 MHz)
Nominal voltage, cable ≤ 100 V Test voltage Core/Core 700 V (50 Hz, 1 min.)	Signal runtime	5.3 ns/m
Test voltage Core/Core 700 V (50 Hz, 1 min.)	Coupling resistance	≤ 100.00 mΩ/m (at 10 MHz)
	Nominal voltage, cable	≤ 100 V
Test voltage Core/Shield 700 V (50 Hz, 1 min.)	Test voltage Core/Core	700 V (50 Hz, 1 min.)
	Test voltage Core/Shield	700 V (50 Hz, 1 min.)



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Technical data

Line characteristics

Twisted pairs	2 cores to the pair
Overall twist	4 pairs for core
Shielding	Aluminum-coated foil, tinned copper braided shield
Optical shield covering	70 %
Outer sheath, material	PUR
Material conductor insulation	Foamed PE
Conductor material	Bare Cu litz wires
Cable weight	47 kg/km
Minimum bending radius, fixed installation	4 x D
Minimum bending radius, flexible installation	8 x D
Flame resistance	according to IEC 60332-1-2
Halogen-free	according to IEC 60754-1
Resistance to oil	according to EN 60811-2-1
Ambient temperature (operation)	-40 °C 80 °C (cable, fixed installation)
	-20 °C 80 °C (cable, flexible installation)

Environmental Product Compliance

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

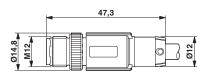
Drawings

Cable cross section



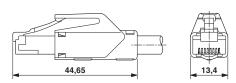
Ethernet, flexible, CAT5 [94B]

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing





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