

# Network cable - VS-M12MSS-IP20-94F/ 0,5/10G



1440591

<https://www.phoenixcontact.com/us/products/1440591>

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Network cable, Ethernet CAT6<sub>A</sub> (10 Gbps), 8-position, Plug straight M12 SPEEDCON / IP65, coding: X, on Plug straight RJ45 / IP20, cable length: 0.5 m

## Commercial Data

Item number	1440591
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	B06
Product Key	BF1CMJ
Catalog Page	Page 304 (PC-2011)
GTIN	4046356504515
Weight per Piece (including packing)	57.4 g
Weight per Piece (excluding packing)	53.8 g
Customs tariff number	85444290
Country of origin	PL

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## Technical Data

### Product properties

Product type	Data cable preassembled
Number of positions	8
Application	Standard
Number of slots	1
Shielded	yes
Coding	X - data

### Insulation characteristics

Overvoltage category	I
Degree of pollution	1

### Interfaces

Signal type/category	Ethernet CAT6 <sub>A</sub> , 10 Gbps
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### Electrical properties

Nominal voltage $U_N$	48 V AC
	60 V DC
Nominal current $I_N$	0.5 A
Transmission medium	Copper

### Connector

Insertion/withdrawal cycles	≥ 100
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#### Connection 1

Type	Plug straight M12 SPEEDCON / IP65
Number of positions	8 (8)
Coding type	X (Data)
Shielded	yes
Handle color	black
Degree of protection	IP65
	IP67
	IP69K

#### Connection 2

Type	Plug straight RJ45 / IP20
Number of positions	8 (8)
Shielded	yes
Handle color	gray

### Cable / line

Cable length	0.5 m
Cable weight	42 kg/km

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UL AWM Style	20963 (80°C/30 V)
Number of positions	8
Shielded	yes
Cable type	Ethernet 10 Gbit [94F]
Signal runtime	5.13 ns/m
Conductor structure signal line	7x 0.16 mm
AWG signal line	26
Conductor cross section	4x 2x 0.14 mm <sup>2</sup>
Wire diameter incl. insulation	1.04 mm
External cable diameter	6.4 mm ±0.2 mm
Outer sheath, material	PUR
External sheath, color	water blue RAL 5021
Conductor material	Bare Cu litz wires
Material wire insulation	Foamed PE
Single wire, color	white/blue-blue, white/orange-orange, white/green-green, white/brown-brown
Thickness, outer sheath	0.65 mm
Twisted pairs	2 cores to the pair
Type of pair shielding	Aluminum-lined foil
Overall twist	4 pairs for core
Optical shield covering	70 %
Insulation resistance	≥ 500 MΩ*km
Loop resistance	≤ 290.00 Ω/km
Wave impedance	100 Ω ±5 Ω (at 100 MHz)
Cable capacity	47 nF/km
Nominal voltage, cable	≤ 100 V
Test voltage Core/Core	700 V (50 Hz, 1 min.)
Test voltage Core/Shield	700 V (50 Hz, 1 min.)
Minimum bending radius, fixed installation	4 x D
Minimum bending radius, flexible installation	8 x D
Tensile strength	≤ 100 N
Near end crosstalk attenuation (NEXT)	75.3 dB (with 1 MHz) 66.3 dB (at 4 MHz) 61.8 dB (at 8 MHz) 60.3 dB (at 10 MHz) 57.2 dB (at 16 MHz) 55.8 dB (at 20 MHz) 54.3 dB (at 25 MHz) 52.8 dB (at 31.25 MHz) 48.4 dB (at 62.5 MHz) 45.3 dB (at 100 MHz) 40.8 dB (at 200 MHz) 39.3 dB (at 250 MHz) 38.1 dB (at 300 MHz)

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	36.3 dB (at 400 MHz)
	34.8 dB (at 500 MHz)
Power-summated near end crosstalk attenuation (PSNEXT)	72.3 dB (with 1 MHz)
	63.3 dB (at 4 MHz)
	58.8 dB (at 8 MHz)
	57.3 dB (at 10 MHz)
	54.2 dB (at 16 MHz)
	52.8 dB (at 20 MHz)
	51.3 dB (at 25 MHz)
	49.9 dB (at 31.25 MHz)
	45.4 dB (at 62.5 MHz)
	42.3 dB (at 100 MHz)
	37.8 dB (at 200 MHz)
	36.3 dB (at 250 MHz)
	35.1 dB (at 300 MHz)
	33.3 dB (at 400 MHz)
	31.8 dB (at 500 MHz)
Return loss (RL)	20 dB (with 1 MHz)
	23 dB (at 4 MHz)
	24.5 dB (at 8 MHz)
	25 dB (at 10 MHz)
	25 dB (at 16 MHz)
	25 dB (at 20 MHz)
	24.2 dB (at 25 MHz)
	23.3 dB (at 31.25 MHz)
	20.7 dB (at 62.5 MHz)
	19 dB (at 100 MHz)
	16.4 dB (at 200 MHz)
	15.6 dB (at 250 MHz)
	15.6 dB (at 300 MHz)
	15.6 dB (at 400 MHz)
	15.6 dB (at 500 MHz)
Shield attenuation	3.1 dB (with 1 MHz)
	5.7 dB (at 4 MHz)
	8 dB (at 8 MHz)
	8.9 dB (at 10 MHz)
	11.2 dB (at 16 MHz)
	12.6 dB (at 20 MHz)
	14.1 dB (at 25 MHz)
	15.8 dB (at 31.25 MHz)
	22.5 dB (at 62.5 MHz)
	28.7 dB (at 100 MHz)
	41.4 dB (at 200 MHz)
	46.6 dB (at 250 MHz)

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	51.4 dB (at 300 MHz)
	60.1 dB (at 400 MHz)
	67.9 dB (at 500 MHz)
	≥ 80 dB (at 30 ... 100 MHz)
Halogen-free	according to IEC 60754-1
Flame resistance	according to IEC 60332-1-2
Resistance to oil	in accordance with DIN EN 60811-2-1
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation) -20 °C ... 80 °C (Cable, flexible installation)
Ambient temperature (installation)	-20 °C ... 80 °C
Signal type/category	Ethernet CAT6 <sub>A</sub> , 10 Gbps

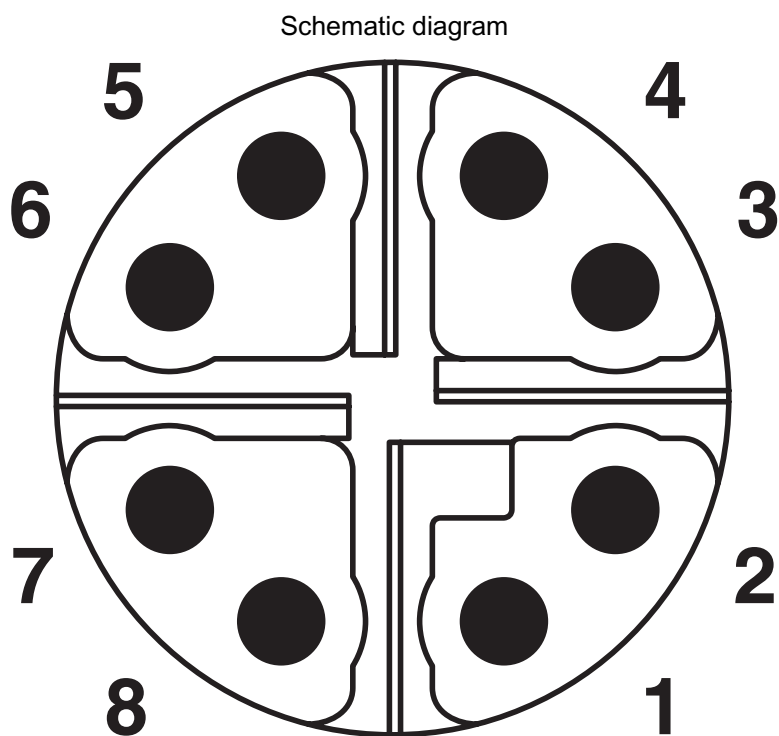
## Ambient conditions

Degree of protection	IP65 (M12 connector)
	IP67 (M12 connector)
	IP20 (RJ45 connector)
Degree of protection	IP67/IP20

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## Drawings



M12 Cat6<sub>A</sub>, 8-pos. plug pin assignment, pin side view

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## Schematic diagram



Connector pin assignment plug RJ45

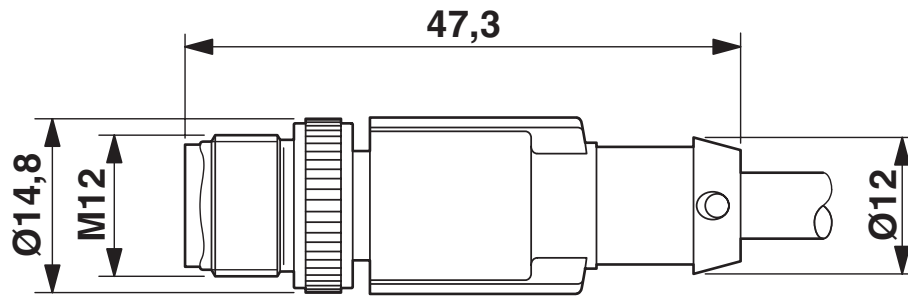
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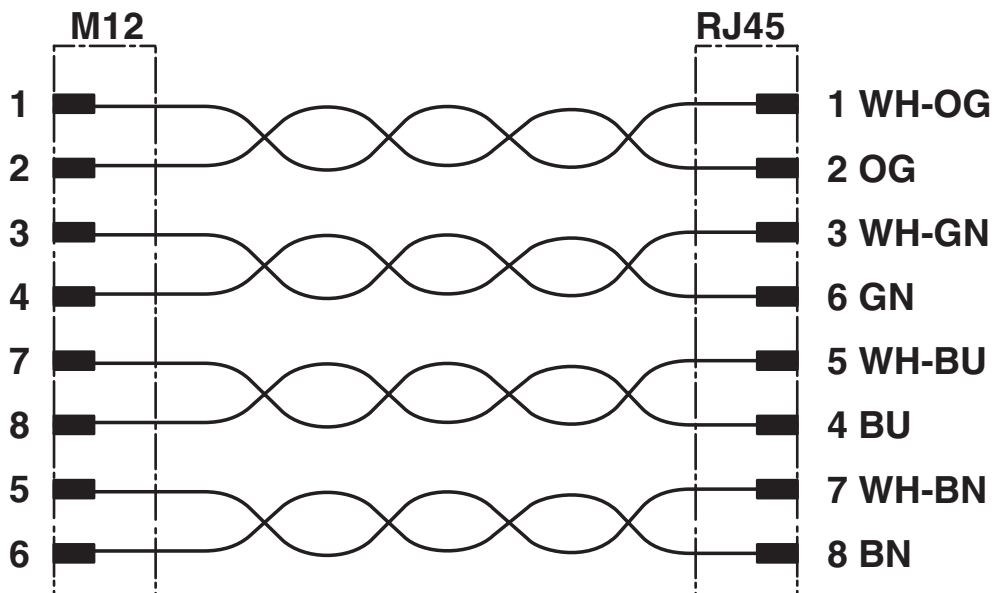
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Dimensional drawing



M12 connector dimensional drawing

Circuit diagram



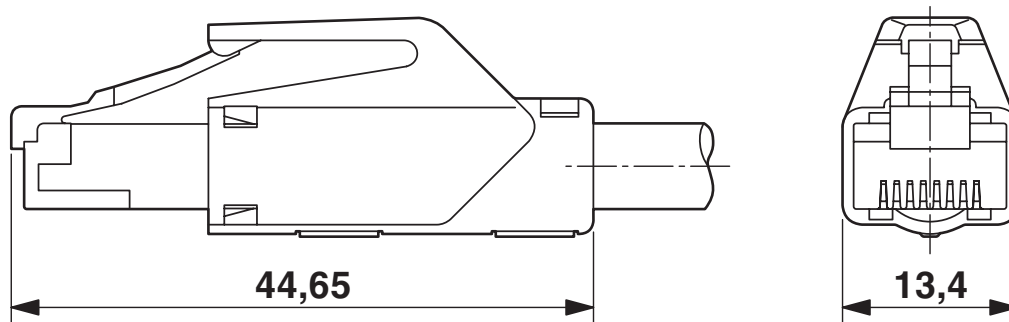
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Dimensional drawing



RJ45 connector dimensional drawing

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## Approvals



### EAC

Approval ID: EAC-Zulassung



### UL Listed

Approval ID: FILE E 335024

	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
	30 V	0.5 A	-	-



### cUL Listed

Approval ID: FILE E 335024

	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
	30 V	0.5 A	-	-



### EAC

Approval ID: RU D-DE.HB35.B.00385

### cULus Listed

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## Classifications

### ECLASS

ECLASS-9.0	27060308
ECLASS-10.0.1	27060308
ECLASS-11.0	27060307

### ETIM

ETIM 8.0	EC001855
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### UNSPSC

UNSPSC 21.0	26121600
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## Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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