

## Network cable - VS-M8MS-IP20/93B-2,0 - 1402454

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Assembled Ethernet cable, type B, shielded, star quad, AWG 22 stranded (7-wire), RAL 6018 (yellow-green), M8 Ethernet plug to RJ45 plug/IP20, length: 2.0 m, suitable for PROFINET and EtherCAT



Ethernet

### Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 616119
GTIN	4046356616119

### Technical data

#### Dimensions

Length of cable	2 m
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#### Ambient conditions

Degree of protection	IP20 (RJ45 connector)
	IP67 (M8 connectors)

#### General data

Rated current at 40°C	1 A
Rated voltage	50 V
Number of positions	4
Signal type/category	Ethernet, 100 Mbps
	PROFINET, 100 Mbps
	EtherCAT®, 100 Mbps
Standards/regulations	M8 connector IEC 61076-2-104
Degree of pollution	3
Degree of protection	IP20

#### Characteristics head 1

Head type	Plug straight M8 / IP67
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## Technical data

### Characteristics head 1

No. of positions (pin connector pattern)	4 (4)
Color	black
Material (component)	CuSn (Contact)
	Ni/Au (Contact surface)
	TPU GF (Contact carriers)
	TPU, hardly inflammable, self-extinguishing (Grip)
	CuZn (nickel-plated) (Screw connection)
Shielded	yes
Insulation resistance	≥ 100 MΩ
Insertion/withdrawal cycles	≥ 100
Torque	0.2 Nm
Ambient temperature (operation)	-25 °C ... 90 °C
Type type, plug side	Plug straight
Type type, socket side	Plug, straight

### Standards and Regulations

Standards/specifications	M8 connector IEC 61076-2-104
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### Cable

Cable type	PROFINET PVC stranded CAT5
Cable type (abbreviation)	93B
UL AWM style	21694
Signal type/category	PROFINET CAT5 (IEC 11801), 100 Mbps
	EtherCAT® CAT5 (IEC 11801), 100 Mbps
Cable structure	1x4xAWG22/7; SF/TQ
Conductor cross section	4x 0.34 mm <sup>2</sup>
AWG signal line	22
Conductor structure signal line	7x 0.25 mm
Core diameter including insulation	1.55 mm
Wire colors	White, yellow, blue, orange
Overall twist	Star quad
Shielding	Aluminum-coated foil, tinned copper braided shield
Optical shield covering	85 %
External sheath, color	green RAL 6018
Outer sheath thickness	approx. 0.9 mm
External cable diameter D	6.5 mm ±0.2 mm
Minimum bending radius, fixed installation	3 x D
Minimum bending radius, flexible installation	7 x D
Cable weight	67 kg/km
Outer sheath, material	PVC
Material, inner sheath	PVC
Material conductor insulation	PE

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## Technical data

### Cable

Conductor material	Tin-plated Cu litz wires	
Insulation resistance	≥ 500 MΩ*km	
Loop resistance	≤ 120.00 Ω/km	
Wave impedance	100 Ω ±15 Ω (at 100 MHz)	
Near end crosstalk attenuation (NEXT)	80 dB (with 1 MHz)	
	76 dB (at 4 MHz)	
	70 dB (at 10 MHz)	
	65 dB (at 16 MHz)	
	63 dB (at 20 MHz)	
	60 dB (at 31.25 MHz)	
	55 dB (at 62.5 MHz)	
	50 dB (at 100 MHz)	
	Attenuation	2.1 dB (with 1 MHz)
		4 dB (at 4 MHz)
6.3 dB (at 10 MHz)		
8 dB (at 16 MHz)		
9 dB (at 20 MHz)		
11.4 dB (at 31.25 MHz)		
16.5 dB (at 62.5 MHz)		
21.3 dB (at 100 MHz)		
Signal speed		0.66 c
Signal runtime		5.3 ns/m
Coupling resistance	≤ 20.00 mΩ/m (at 10 MHz)	
Nominal voltage, cable	600 V	
Test voltage Core/Core	2000 V (50 Hz, 1 min.)	
Test voltage Core/Shield	2000 V (50 Hz, 1 min.)	
Flame resistance	according to UL 1685 (CSA FT 4)	
Resistance to oil	Resistant to oil to a limited extent	
Other resistance	UV resistant According to UL 1581, Section 1200	
Ambient temperature (operation)	-40 °C ... 70 °C (cable, fixed installation)	
	-40 °C ... 70 °C (cable, flexible installation)	
Ambient temperature (installation)	-20 °C ... 60 °C	
Ambient temperature (storage/transport)	-50 °C ... 70 °C	

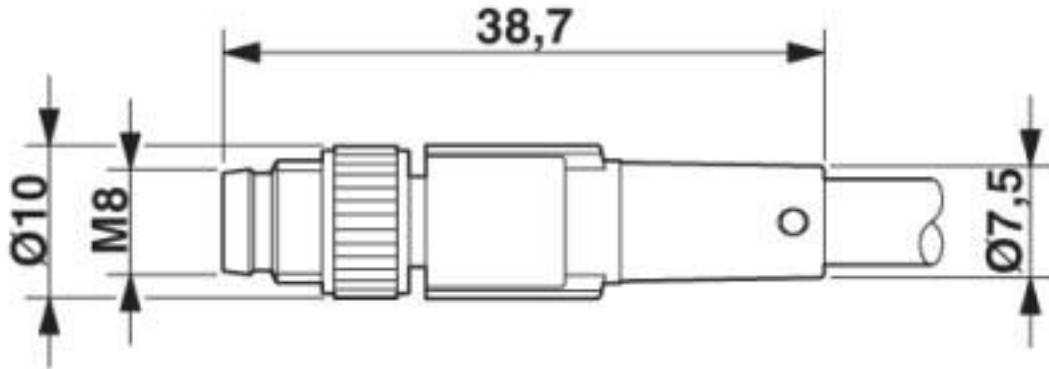
### Environmental Product Compliance

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

### Drawings

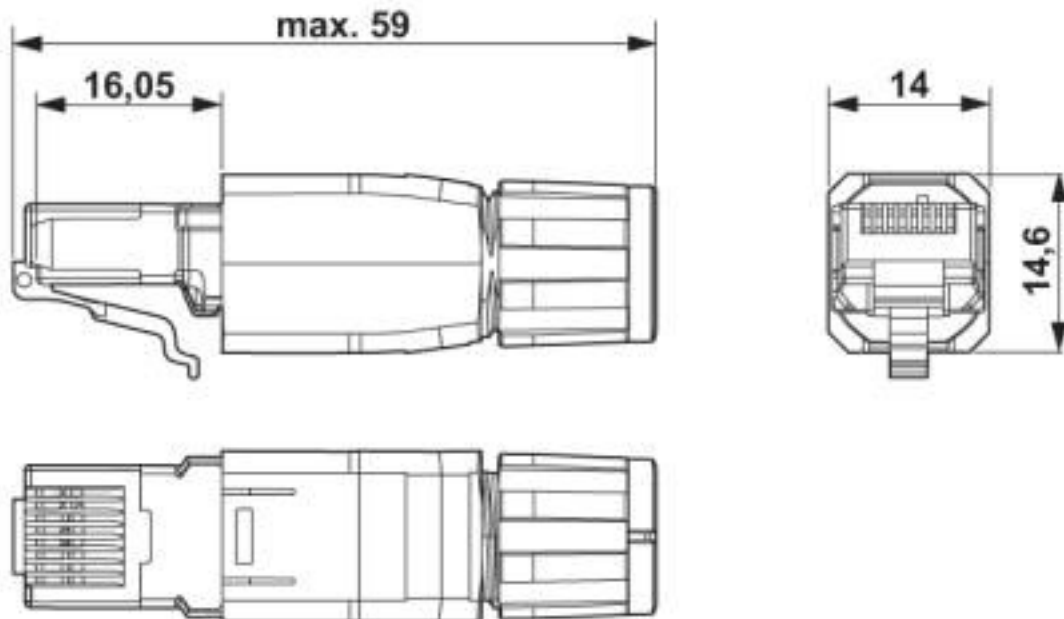
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Dimensional drawing



M8 x 1 male plug, straight version

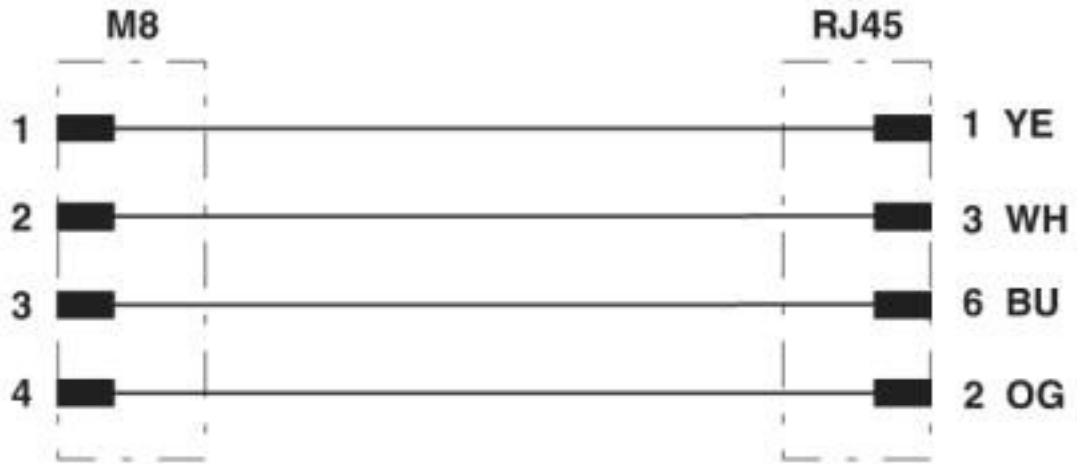
Dimensional drawing



RJ45 connector, IP20

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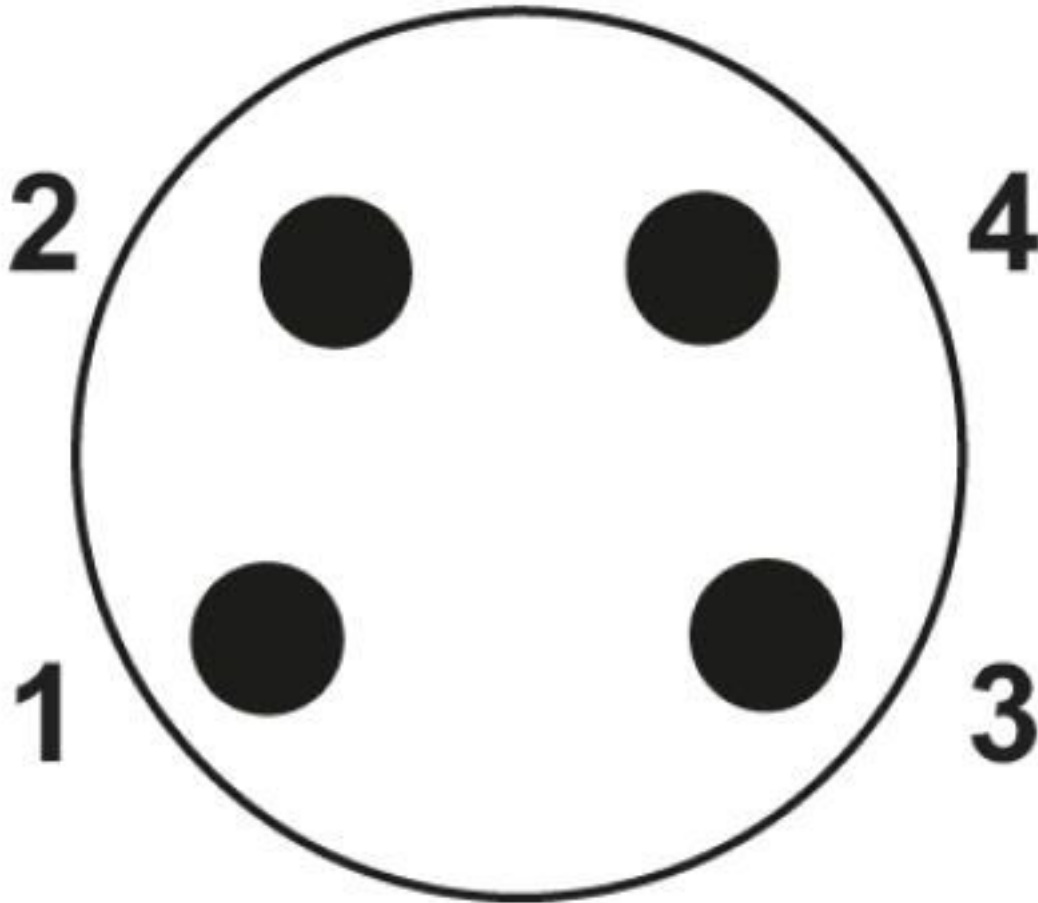
Circuit diagram



Contact assignment of the M8 and RJ45 plug

## Network cable - VS-M8MS-IP20/93B-2,0 - 1402454

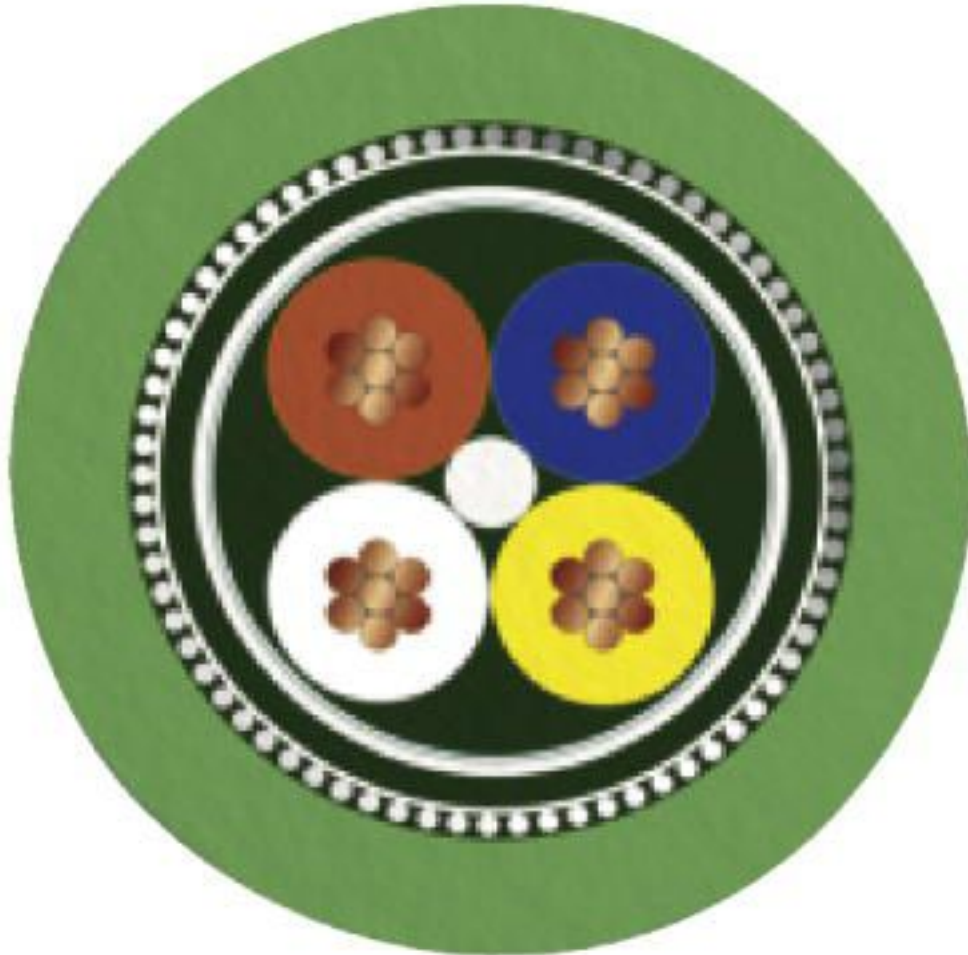
Schematic diagram



Pin assignment M8 plug, 4-pos., view male side

## Network cable - VS-M8MS-IP20/93B-2,0 - 1402454

Cable cross section



PROFINET PVC stranded CAT5 [93B]

### Classifications

eCl@ss

eCl@ss 4.0	27060306
eCl@ss 4.1	27060306
eCl@ss 5.0	27061801
eCl@ss 5.1	27060307
eCl@ss 6.0	27060390
eCl@ss 7.0	27060390
eCl@ss 8.0	27060308
eCl@ss 9.0	27060308

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### Classifications

#### ETIM

ETIM 4.0	EC002599
ETIM 5.0	EC002599
ETIM 6.0	EC002599

#### UNSPSC

UNSPSC 6.01	26121609
UNSPSC 7.0901	26121609
UNSPSC 11	26121609
UNSPSC 12.01	26121609
UNSPSC 13.2	26121604
UNSPSC 19.0	26121604

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