

# VS-M8MS-IP20/93B-0,5 - Network cable



1402452

<https://www.phoenixcontact.com/us/products/1402452>

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Network cable, Ethernet (100 Mbps), PROFINET (100 Mbps), EtherCAT® (100 Mbps), 4-position, PVC/PVC, green RAL 6018, Plug straight M8, coding: A / IP67, on Plug straight RJ45 / IP20, cable length: 0.5 m

## Commercial data

|                                      |                    |
|--------------------------------------|--------------------|
| Item number                          | 1402452            |
| Packing unit                         | 1 pc               |
| Minimum order quantity               | 1 pc               |
| Sales key                            | BF02               |
| Product key                          | BF1BJI             |
| Catalog page                         | Page 322 (PC-2011) |
| GTIN                                 | 4046356616096      |
| Weight per piece (including packing) | 59.5 g             |
| Weight per piece (excluding packing) | 59.2 g             |
| Customs tariff number                | 85444290           |
| Country of origin                    | PL                 |

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## Technical data

### Product properties

|                      |                         |
|----------------------|-------------------------|
| Product type         | Data cable preassembled |
| Application          | Standard                |
| Sensor type          | Ethernet                |
| Number of positions  | 4                       |
| No. of cable outlets | 1                       |
| Shielded             | yes                     |

### Insulation characteristics

|                      |    |
|----------------------|----|
| Overvoltage category | II |
| Degree of pollution  | 3  |

### Interfaces

|                      |                     |
|----------------------|---------------------|
| Signal type/category | Ethernet, 100 Mbps  |
|                      | PROFINET, 100 Mbps  |
|                      | EtherCAT®, 100 Mbps |

### Signaling

|                |    |
|----------------|----|
| Status display | No |
|----------------|----|

### Electrical properties

|                                         |         |
|-----------------------------------------|---------|
| Nominal voltage $U_N$                   | 30 V AC |
|                                         | 30 V DC |
| Nominal current $I_N$                   | 1 A     |
| Transmission medium                     | Copper  |
| Transmission characteristics (category) | CAT5    |

### Material specifications

|                                        |    |
|----------------------------------------|----|
| Flammability rating according to UL 94 | HB |
|----------------------------------------|----|

### Connector

#### Connection 1

|                     |                                                    |
|---------------------|----------------------------------------------------|
| Type                | Plug straight M8 / IP67                            |
| Number of positions | 4 (4)                                              |
| Coding type         | A (Standard)                                       |
| Shielded            | yes                                                |
| Handle color        | black                                              |
| Material            | CuSn (Contact)                                     |
|                     | Ni/Au (Contact surface)                            |
|                     | TPU GF (Contact carriers)                          |
|                     | TPU, hardly inflammable, self-extinguishing (Grip) |
|                     | CuZn (nickel-plated) (Screw connection)            |

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|                                 |                  |
|---------------------------------|------------------|
| Insertion/withdrawal cycles     | ≥ 100            |
| Insulation resistance           | ≥ 100 MΩ         |
| Tightening torque               | 0.2 Nm           |
| Degree of protection            | IP67             |
| Ambient temperature (operation) | -25 °C ... 90 °C |

## Connection 2

|                                 |                                                                                    |
|---------------------------------|------------------------------------------------------------------------------------|
| Type                            | Plug straight RJ45 / IP20                                                          |
| Number of positions             | 4 (8)                                                                              |
| Shielded                        | yes                                                                                |
| Handle color                    | gray                                                                               |
| Material                        | CuSn (Contact)<br>Ni/Au (Contact surface)<br>PC (Contact carriers)<br>PA (Housing) |
| Insertion/withdrawal cycles     | ≥ 750                                                                              |
| Degree of protection            | IP20                                                                               |
| Ambient temperature (operation) | -10 °C ... 60 °C                                                                   |

## Cable/line

|              |       |
|--------------|-------|
| Cable length | 0.5 m |
|--------------|-------|

## PROFINET PVC stranded CAT5 [93B]

|                                 |                                                                                      |
|---------------------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing             |  |
| Cable weight                    | 67 kg/km                                                                             |
| UL AWM Style                    | 21694                                                                                |
| Number of positions             | 4                                                                                    |
| Shielded                        | yes                                                                                  |
| Cable type                      | PROFINET PVC stranded CAT5 [93B]                                                     |
| Conductor structure             | 1x4xAWG22/7, SF/TQ                                                                   |
| Signal runtime                  | 5.3 ns/m                                                                             |
| Signal speed                    | 0.66 c                                                                               |
| Conductor structure signal line | 7x 0.25 mm                                                                           |
| AWG signal line                 | 22                                                                                   |
| Conductor cross section         | 4x 0.34 mm²                                                                          |
| Wire diameter incl. insulation  | 1.55 mm                                                                              |
| External cable diameter         | 6.50 mm ±0.2 mm                                                                      |
| Outer sheath, material          | PVC                                                                                  |

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|                                               |                                                         |
|-----------------------------------------------|---------------------------------------------------------|
| External sheath, color                        | green RAL 6018                                          |
| Conductor material                            | Tin-plated Cu litz wires                                |
| Material wire insulation                      | PE                                                      |
| Single wire, color                            | white, yellow, blue, orange                             |
| Thickness, outer sheath                       | approx. 0.90 mm                                         |
| Overall twist                                 | Star quad                                               |
| Optical shield covering                       | 85 %                                                    |
| Insulation resistance                         | $\geq 500 \text{ M}\Omega \cdot \text{km}$              |
| Coupling resistance                           | $\leq 20.00 \text{ m}\Omega/\text{m}$ (at 10 MHz)       |
| Loop resistance                               | $\leq 120.00 \text{ }\Omega/\text{km}$                  |
| Wave impedance                                | $100 \text{ }\Omega \pm 15 \text{ }\Omega$ (at 100 MHz) |
| Nominal voltage, cable                        | 600 V                                                   |
| Test voltage Core/Core                        | 2000 V (50 Hz, 1 min.)                                  |
| Test voltage Core/Shield                      | 2000.00 V (50 Hz, 1 min.)                               |
| Minimum bending radius, fixed installation    | 3 x D                                                   |
| Minimum bending radius, flexible installation | 7 x D                                                   |
| Smallest bending radius, fixed installation   | 20 mm                                                   |
| Smallest bending radius, movable installation | 46 mm                                                   |
| 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)                                      |
| Shield 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)                                    |
| 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                                        |

## Environmental and real-life conditions

### Ambient conditions

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

## Standards and regulations

M8

|                          |                 |
|--------------------------|-----------------|
| Standard designation     | M8 connector    |
| Standards/specifications | IEC 61076-2-104 |

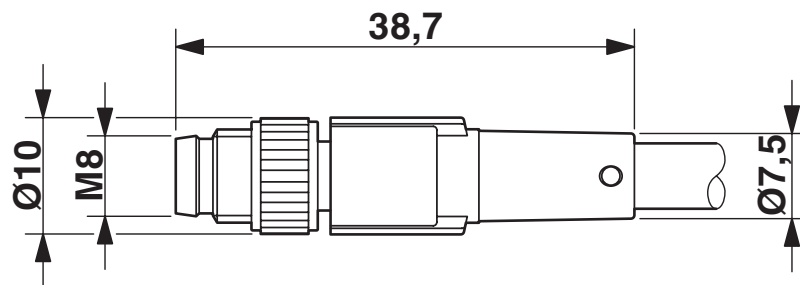
# VS-M8MS-IP20/93B-0,5 - Network cable

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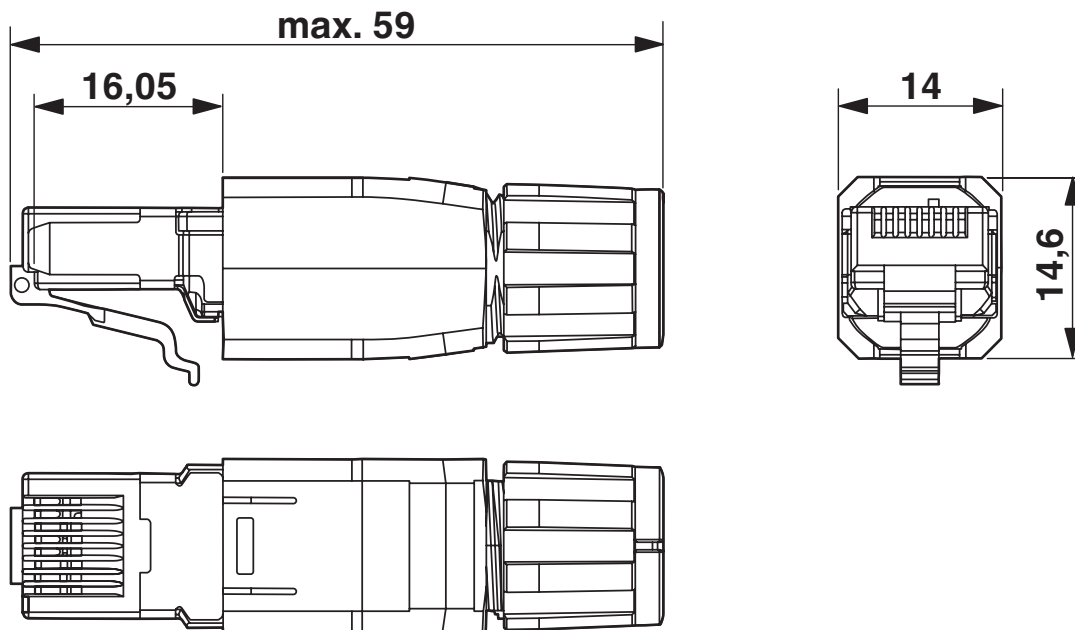
## Drawings

Dimensional drawing



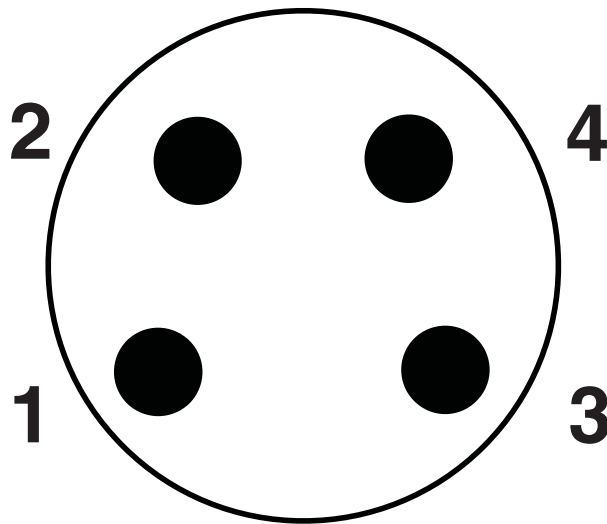
M8 x 1 male plug, straight version

Dimensional drawing



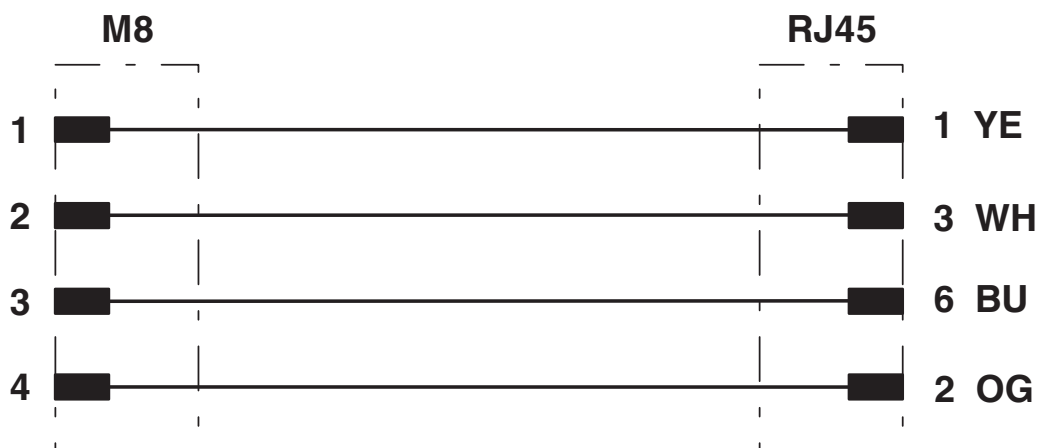
RJ45 connector, IP20

Schematic diagram



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

Circuit diagram



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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27060307 |
| ECLASS-12.0 | 27060307 |
| ECLASS-13.0 | 27060307 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001855 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 26121600 |
|-------------|----------|

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## Environmental product compliance

|                                         |                                          |
|-----------------------------------------|------------------------------------------|
| EU RoHS                                 |                                          |
| Fulfills EU RoHS substance requirements | Yes, No exemptions                       |
| China RoHS                              |                                          |
| Environment friendly use period (EFUP)  | EFUP-E                                   |
|                                         | No hazardous substances above the limits |
| EU REACH SVHC                           |                                          |
| REACH candidate substance (CAS No.)     | No substance above 0.1 wt%               |

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