

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



1402450

<https://www.phoenixcontact.com/us/products/1402450>

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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 M8 Ethernet plug, length: 2.0 m, suitable for PROFINET and EtherCAT®

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1402450                        |
| Packing unit                         | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | BF02                           |
| Product key                          | AF1BJI                         |
| GTIN                                 | 4046356616072                  |
| Weight per piece (including packing) | 161.6 g                        |
| Weight per piece (excluding packing) | 161.6 g                        |
| Customs tariff number                | 85444290                       |
| Country of origin                    | PL                             |

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## Technical data

### Product properties

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

### 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 $U_N$ | 60 V     |
| Nominal current $I_N$ | 3 A      |
| Transmission medium   | Copper   |
| Transmission speed    | 100 Mbps |

### Material specifications

|  |                              |
|--|------------------------------|
| Flammability rating according to UL 94 | HB                           |
| Material for screw connection          | Zinc die-cast, nickel-plated |

### Connector

#### Connection 1

|                             |   |
|-----------------------------|---|
| Type                        | Plug straight M8 / IP67                                 |
| Number of positions         | 4 (4)   |
| Shielded                    | yes   |
| Handle color                | black   |
| Material                    | CuSn (Contact)  |
|                             | Ni/Au (Contact surface)                                 |
|                             | TPU GF (Contact carrier)                                |
|                             | TPU, hardly inflammable, self-extinguishing (Grip body) |
|                             | CuZn (nickel-plated) (Screw connection)                 |
| Insertion/withdrawal cycles | ≥ 100   |

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

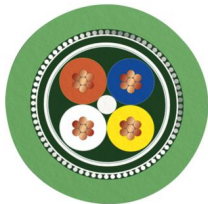
## Connection 2

|                                 |   |
|---------------------------------|---|
| Type                            | Plug straight M8 / IP67   |
| Number of positions             | 4 (4)   |
| Shielded                        | yes   |
| Handle color                    | black   |
| Material                        | CuSn (Contact)<br>Ni/Au (Contact surface)<br>TPU GF (Contact carrier)<br>CuZn (nickel-plated) (Screw connection)<br>TPU, hardly inflammable, self-extinguishing (Grip body)<br>TPU, hardly inflammable, self-extinguishing (Grip body)<br>CuZn (nickel-plated) (Screw connection) |
| Insertion/withdrawal cycles     | ≥ 100   |
| Insulation resistance           | ≥ 100 MΩ  |
| Tightening torque               | 0.2 Nm  |
| Degree of protection            | IP67  |
| Ambient temperature (operation) | -25 °C ... 90 °C  |

## Cable/line

|              |     |
|--------------|-----|
| Cable length | 2 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   |

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|   |   |
|---|---|
| Conductor cross-section                       | 4x 0.34 mm <sup>2</sup>                           |
| Wire diameter incl. insulation                | 1.55 mm   |
| External cable diameter                       | 6.50 mm ±0.2 mm                                   |
| Outer sheath, material                        | PVC   |
| 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                         | ≥ 500 MΩ*km                                       |
| Coupling resistance                           | ≤ 20.00 mΩ/m (at 10 MHz)                          |
| Loop resistance                               | ≤ 120.00 Ω/km                                     |
| Wave impedance                                | 100 Ω ±15 Ω (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                                  |

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## Environmental and real-life conditions

### Ambient conditions

|                      |                 |
|----------------------|-----------------|
| Degree of protection | IP65            |
|                      | IP67            |
|                      | IP65/IP67/IP69K |

## Standards and regulations

### M8

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

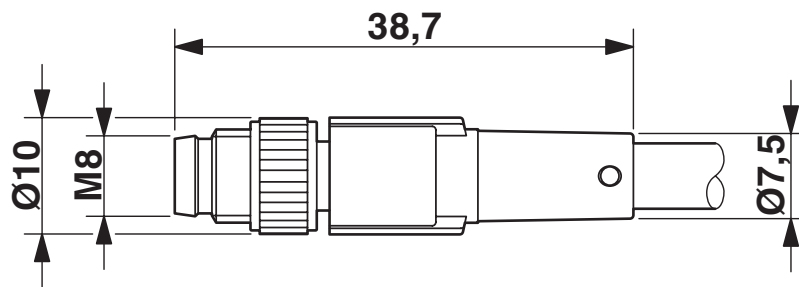
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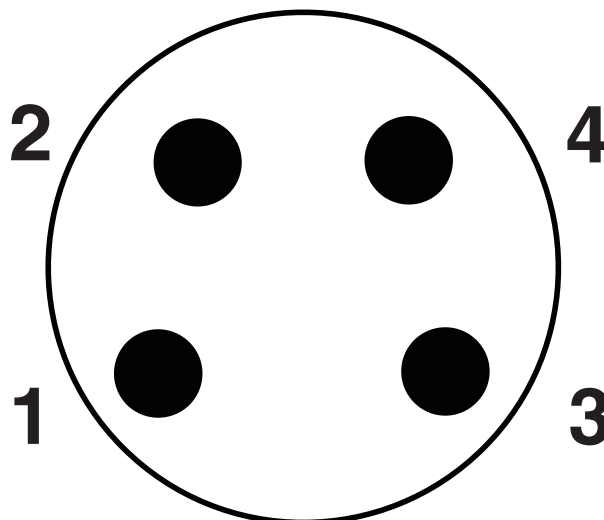
## Drawings

Dimensional drawing



M8 x 1 male plug, straight version

Schematic diagram



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

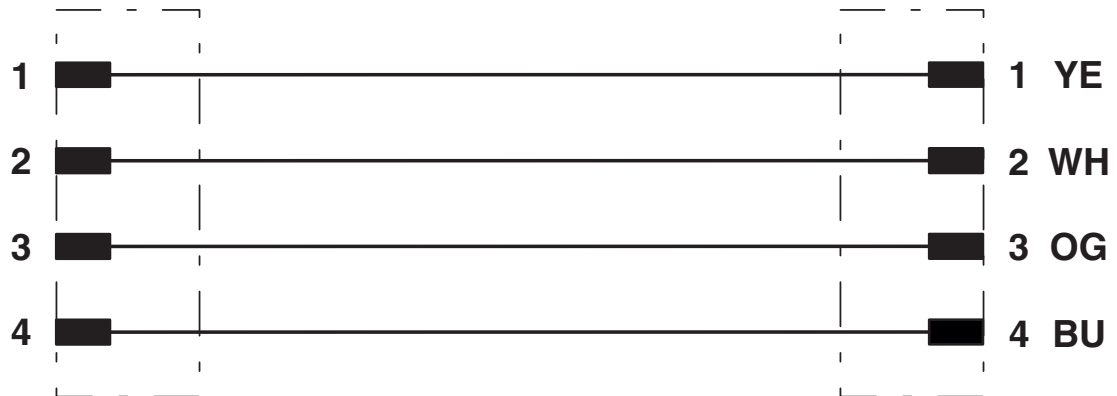
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Circuit diagram



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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27060307 |
| ECLASS-15.0 | 27060307 |

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