

# VS-M12FSBPS-IP20-93B/1,0 - Network cable



1404368

<https://www.phoenixcontact.com/us/products/1404368>

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Network cable, degree of protection: IP20, cable length: 1 m, number of positions: 4, 100 Mbps, CAT5, material: CuZn/PA, PROFINET, 1x4xAWG22/7, SF/TQ, green RAL 6018

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1404368       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | AB18          |
| Product key                          | ABNPAB        |
| GTIN                                 | 4046356692373 |
| Weight per piece (including packing) | 102.2 g       |
| Weight per piece (excluding packing) | 94.484 g      |
| Customs tariff number                | 85444290      |
| Country of origin                    | PL            |

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## Technical data

### Notes

|         |                                                                                                                                                                                                |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General | This product corresponds to the PROFINET Cabling and Interconnection Technology Guideline for PROFINET regulations, version 2.00, order no: 2.252, Chapter 10.1 Cord Sets for Balanced Cabling |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Product properties

|                     |                                   |
|---------------------|-----------------------------------|
| Product type        | Circular connectors (device side) |
| Type                | M12                               |
| Sensor type         | PROFINET                          |
| Number of positions | 4                                 |
| Shielded            | yes                               |

### Insulation characteristics

|                      |   |
|----------------------|---|
| Overvoltage category | I |
| Degree of pollution  | 1 |

### Material specifications

|                                        |                          |
|----------------------------------------|--------------------------|
| Flammability rating according to UL 94 | V2                       |
| Seal material, flat gasket             | FKM / FPM                |
| Housing material                       | CuZn/PA                  |
| Outer sheath, material                 | PVC                      |
| Conductor material                     | Tin-plated Cu litz wires |

### Electrical properties

|                                         |                       |
|-----------------------------------------|-----------------------|
| Rated voltage (III/3)                   | 50 V                  |
| Nominal voltage $U_N$                   | 48 V                  |
| Transmission medium                     | Copper                |
| Transmission speed                      | 100 Mbps              |
| Transmission characteristics (category) | CAT5 (IEC 11801:2002) |
| Transmission speed                      | 100 Mbps              |

### Connector

#### Connection 1

|                      |                                          |
|----------------------|------------------------------------------|
| Type                 | Flush-type female connector straight M12 |
| Coding type          | D                                        |
| Degree of protection | IP67                                     |

#### Connection 2

|                      |                    |
|----------------------|--------------------|
| Type                 | Plug straight RJ45 |
| Degree of protection | IP20               |

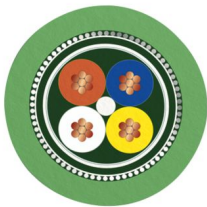
### Cable/line

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|                                               |                                                                                    |
|-----------------------------------------------|------------------------------------------------------------------------------------|
| Cable length                                  | 1.00 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 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                                                                              |
|                                               | 80 dB (with 1 MHz)                                                                 |

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|                                       |                                                   |
|---------------------------------------|---------------------------------------------------|
| Near end crosstalk attenuation (NEXT) | 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                                  |

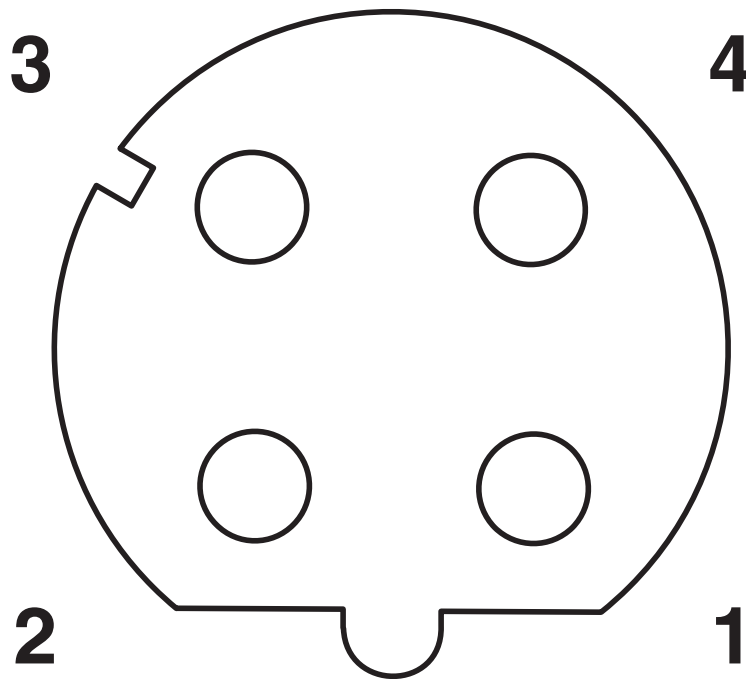
## Environmental and real-life conditions

### Ambient conditions

|                                 |                                                |
|---------------------------------|------------------------------------------------|
| Degree of protection            | IP20                                           |
|                                 | IP20                                           |
| Ambient temperature (operation) | -40 °C ... 70 °C (cable, fixed installation)   |
|                                 | -5 °C ... 50 °C (Cable, flexible installation) |
|                                 | Plug / socket                                  |

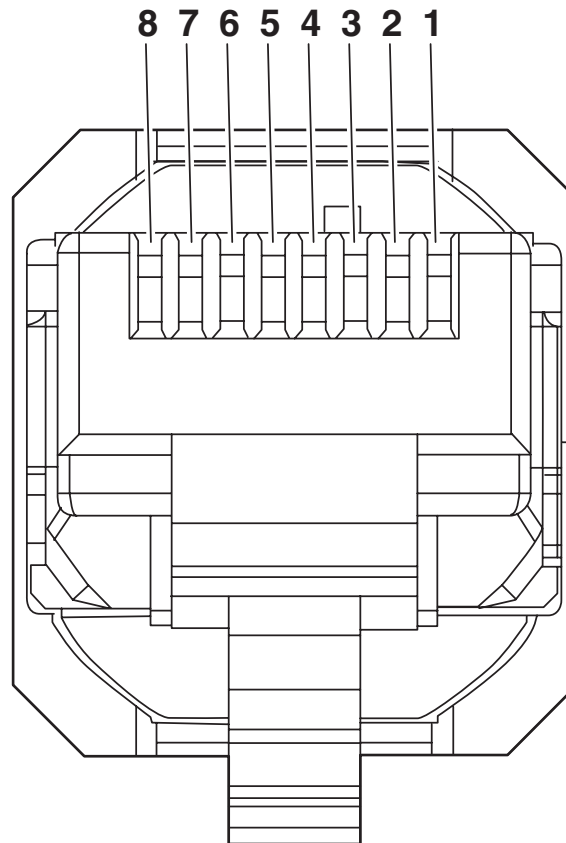
## Drawings

Schematic diagram



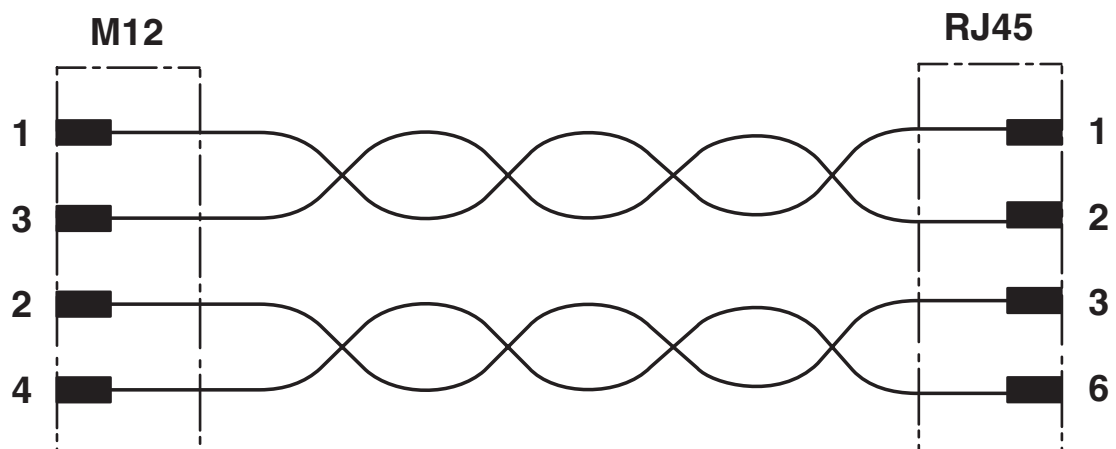
Pin assignment M12 socket, 4-pos., D-coded, female side

Schematic diagram



Connector pin assignment plug RJ45

Circuit diagram



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## Approvals

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**EAC**

Approval ID: 19060508

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27440103 |
| ECLASS-15.0 | 27440103 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC003570 |
|----------|----------|

### UNSPSC

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

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## Environmental product compliance

### EU RoHS

|                                         |      |
|-----------------------------------------|------|
| Fulfills EU RoHS substance requirements | Yes  |
| Exemption                               | 6(c) |

### China RoHS

|                                        |                                                                                                                                                                                                                                   |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environment friendly use period (EFUP) | EFUP-50                                                                                                                                                                                                                           |
|                                        | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

### EU REACH SVHC

|                                     |                                                                                      |
|-------------------------------------|--------------------------------------------------------------------------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1)                                                                 |
|                                     | 2-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol (UV-329)(CAS: 3147-75-9) |
| SCIP                                | 8fd5fb3f-cbbb-4b66-a132-14b93233d8cb                                                 |

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