

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



1404206

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Network cable, degree of protection: IP67/IP20, cable length: 1 m, number of positions: 4, 100 Mbps, CAT5, cable outlet: straight, Ethernet, 2x2xAWG26/7, SF/UTP, water blue RAL 5021

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1404206       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | AB18          |
| Product key                          | ABNPAB        |
| GTIN                                 | 4046356681483 |
| Weight per piece (including packing) | 79.5 g        |
| Weight per piece (excluding packing) | 70.939 g      |
| Customs tariff number                | 85444290      |
| Country of origin                    | PL            |

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## Technical data

### Product properties

|                      |                                   |
|----------------------|-----------------------------------|
| Product type         | Circular connectors (device side) |
| Type                 | M12                               |
| Sensor type          | Ethernet                          |
| Number of positions  | 4                                 |
| No. of cable outlets | 1                                 |
| Shielded             | yes                               |
| Cable outlet         | straight                          |

### Material specifications

|  |                    |
|--|--------------------|
| Flammability rating according to UL 94 | V0                 |
| Seal material, flat gasket             | FKM / FPM          |
| Outer sheath, material                 | PUR                |
| Conductor material                     | Bare Cu litz wires |

### Electrical properties

|   |                       |
|---|-----------------------|
| Nominal voltage $U_N$                   | 48 V                  |
| Nominal current $I_N$                   | 2 A                   |
| Transmission medium                     | Copper                |
| Transmission speed                      | 100 Mbps              |
| Transmission characteristics (category) | CAT5 (IEC 11801:2002) |

### Mechanical properties

#### Mechanical data

|                             |            |
|-----------------------------|------------|
| Insertion/withdrawal cycles | $\geq 100$ |
|-----------------------------|------------|

### Connector

#### Connection 1

|                      |  |
|----------------------|--|
| Type                 | Flush-type female connector straight M12 |
| Locking type         | SPEEDCON                                 |
| Coding type          | D  |
| Degree of protection | IP65/IP67                                |

#### Connection 2

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

### Cable/line

|              |        |
|--------------|--------|
| Cable length | 1.00 m |
|--------------|--------|


Ethernet flexible CAT5, 2-pair [93E]

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|   |  |
|---|--|
| Dimensional drawing                           |  |
| Cable weight                                  | 42 kg/km   |
| UL AWM Style                                  | 20963 (80°C/30 V)  |
| Wiring standards/regulations                  | Electrical requirements EN 50288-2-2   |
| Number of positions                           | 4  |
| Shielded                                      | yes  |
| Cable type                                    | Ethernet flexible CAT5, 2-pair [93E]   |
| Conductor structure                           | 2x2xAWG26/7, SF/UTP  |
| Signal runtime                                | 5.3 ns/m   |
| Conductor structure signal line               | 7x 0.16 mm   |
| AWG signal line                               | 26   |
| Conductor cross-section                       | 2x 2x 0.14 mm <sup>2</sup>   |
| Wire diameter incl. insulation                | 0.98 mm  |
| External cable diameter                       | 6.40 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/orange-orange, white/green-green   |
| Thickness, outer sheath                       | 1.20 mm  |
| Twisted pairs                                 | 2 cores to the pair  |
| Overall twist                                 | Two pairs with two fillers to the core   |
| Optical shield covering                       | 70 %   |
| Insulation resistance                         | ≥ 500 MΩ*km  |
| Coupling resistance                           | ≤ 100.00 mΩ/m (at 10 MHz)  |
| Loop resistance                               | ≤ 290.00 Ω/km  |
| Wave impedance                                | 100 Ω ±5 Ω (at 100 MHz)  |
| Cable capacity                                | approx. 45 nF/km (at 1 kHz)  |
| Nominal voltage, cable                        | ≤ 100 V (Peak value, not for high-power applications)                              |
| Test voltage Core/Core                        | 700 V (50 Hz, 1 min.)  |
| Test voltage Core/Shield                      | 700.00 V (50 Hz, 1 min.)   |
| Current carrying capacity of cable            | 2.00 A (according to DIN VDE 0891-1)   |
| Minimum bending radius, fixed installation    | 4 x D  |
| Minimum bending radius, flexible installation | 8 x D  |
| Smallest bending radius, fixed installation   | 26 mm  |
| Smallest bending radius, movable installation | 52 mm  |
| Tensile strength                              | ≤ 80 N   |

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|  |   |
|--|---|
| Near end crosstalk attenuation (NEXT)                  | 65.3 dB (with 1 MHz)                            |
|  | 56.3 dB (at 4 MHz)                              |
|  | 50.3 dB (at 10 MHz)                             |
|  | 47.2 dB (at 16 MHz)                             |
|  | 45.8 dB (at 20 MHz)                             |
|  | 42.9 dB (at 31.25 MHz)                          |
|  | 38.4 dB (at 62.5 MHz)                           |
|  | 35.3 dB (at 100 MHz)                            |
| Power-summated near end crosstalk attenuation (PSNEXT) | 62.3 dB (with 1 MHz)                            |
|  | 53.3 dB (at 4 MHz)                              |
|  | 47.3 dB (at 10 MHz)                             |
|  | 44.2 dB (at 16 MHz)                             |
|  | 42.8 dB (at 20 MHz)                             |
|  | 39.9 dB (at 31.25 MHz)                          |
|  | 35.4 dB (at 62.5 MHz)                           |
|  | 32.3 dB (at 100 MHz)                            |
| Return attenuation (RL)                                | 23 dB (at 4 MHz)                                |
|  | 24.1 dB (at 8 MHz)                              |
|  | 25 dB (at 10 MHz)                               |
|  | 25 dB (at 16 MHz)                               |
|  | 25 dB (at 20 MHz)                               |
|  | 23.6 dB (at 31.25 MHz)                          |
|  | 21.5 dB (at 62.5 MHz)                           |
|  | 20.1 dB (at 100 MHz)                            |
| Shield attenuation                                     | 3.2 dB (with 1 MHz)                             |
|  | 6 dB (at 4 MHz)                                 |
|  | 9.5 dB (at 10 MHz)                              |
|  | 12.1 dB (at 16 MHz)                             |
|  | 13.6 dB (at 20 MHz)                             |
|  | 17.1 dB (at 31.25 MHz)                          |
|  | 24.8 dB (at 62.5 MHz)                           |
|  | 32 dB (at 100 MHz)                              |
| Halogen-free   | according to IEC 60754-1                        |
| Flame resistance                                       | according to IEC 60332-1-2                      |
|  | in acc. to UL VW1                               |
|  | in accordance with UN ECE-R 118.03              |
| Resistance to oil                                      | in accordance with 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                                |

## Environmental and real-life conditions

### Ambient conditions

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|                                 |  |
|---------------------------------|--|
| Degree of protection            | IP67/IP20                                      |
| Ambient temperature (operation) | -25 °C ... 60 °C (cable, fixed installation)   |
|                                 | -5 °C ... 60 °C (Cable, flexible installation) |

## Standards and regulations

|                          |                              |
|--------------------------|------------------------------|
| Standard designation     | M12 circular connector       |
| Standards/specifications | according to IEC 61076-2-101 |

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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 10.0 | EC003570 |
|-----------|----------|

### 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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