

### Product type designation

### Product description

### IE Connecting Cable M12-180/M12-180

Flexible plug-in cable (4-wire), preferred length, prefabricated with two 4-pole M12 connectors (D-coded, 180° cable outlet)  
Industrial Ethernet connecting Cable M12-180/M12-180 pre-assembled IE FC Trailing Cable GP, with 2 M12 connectors (D-coded) Length 5.0 m



|                                                        |                                                                                                                       |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Suitability for use                                    | For connecting Industrial Ethernet stations (e.g. SIMATIC ET200 and SCALANCE XP-200) in IP 65/67 degree of protection |
| Cable designation                                      | 2YY (ST) CY 2x2x0,75/1,5-100 LI GN                                                                                    |
| Wire length                                            | 5 m                                                                                                                   |
| <b>Electrical data</b>                                 |                                                                                                                       |
| Damping ratio per length                               |                                                                                                                       |
| • at 10 MHz / maximum                                  | 0.063 dB/m                                                                                                            |
| • at 100 MHz / maximum                                 | 0.213 dB/m                                                                                                            |
| Impedance                                              |                                                                                                                       |
| • at 1 MHz ... 100 MHz                                 | 100 Ω                                                                                                                 |
| Relative symmetrical tolerance                         |                                                                                                                       |
| • of the characteristic impedance at 1 MHz ... 100 MHz | 5 %                                                                                                                   |
| Near-end crosstalk per length                          |                                                                                                                       |
| • at 1 MHz ... 100 MHz                                 | 0.5 dB/m                                                                                                              |
| Transfer impedance per length / at 10 MHz              | 20 mΩ/m                                                                                                               |
| Loop resistance per length / maximum                   | 120 mΩ/m                                                                                                              |

|                      |      |
|----------------------|------|
| Operating voltage    |      |
| • RMS value          | 80 V |
| NVP value in percent | 66 % |

#### Mechanical data

|                                                               |                                                                                                                                                     |
|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of electrical cores                                    | 4                                                                                                                                                   |
| Design of the shield                                          | Overlapped aluminum-clad foil, sheathed in a braided screen of tin-plated copper wires                                                              |
| Core diameter                                                 |                                                                                                                                                     |
| • of AWG22 core                                               | 0.75 mm                                                                                                                                             |
| Outer diameter                                                |                                                                                                                                                     |
| • of inner conductor                                          | 0.75 mm                                                                                                                                             |
| • of the wire insulation                                      | 1.5 mm                                                                                                                                              |
| • of the inner sheath of the cable                            | 3.9 mm                                                                                                                                              |
| • of cable sheath                                             | 6.5 mm                                                                                                                                              |
| Symmetrical tolerance of the outer diameter / of cable sheath | 0.2 mm                                                                                                                                              |
| Material                                                      |                                                                                                                                                     |
| • of the wire insulation                                      | polyethylene (PE)                                                                                                                                   |
| • of the inner sheath of the cable                            | PVC                                                                                                                                                 |
| • of cable sheath                                             | PVC                                                                                                                                                 |
| Color                                                         |                                                                                                                                                     |
| • of the insulation of data wires                             | white/yellow/blue/orange                                                                                                                            |
| • of cable sheath                                             | green                                                                                                                                               |
| Bending radius                                                |                                                                                                                                                     |
| • with single bend / minimum permissible                      | 32.5 mm                                                                                                                                             |
| • with multiple bends / minimum permissible                   | 49 mm                                                                                                                                               |
| • with continuous bending                                     | 100 mm                                                                                                                                              |
| Number of bending cycles                                      | 3000000; Drag chain suitable for 3 million bending cycles at a bending radius of 100 mm, a speed of 4 m/s and an acceleration of 4 m/s <sup>2</sup> |
| Tensile load / maximum                                        | 150 N                                                                                                                                               |
| Weight per length                                             | 68 kg/km                                                                                                                                            |

#### Ambient conditions

|                       |                                                                          |
|-----------------------|--------------------------------------------------------------------------|
| Ambient temperature   |                                                                          |
| • during operation    | -25 ... +75 °C                                                           |
| • during storage      | -25 ... +75 °C                                                           |
| • during transport    | -25 ... +75 °C                                                           |
| • during installation | -10 ... +60 °C                                                           |
| • Note                | Electrical properties measured at 20 °C, tests according to DIN VDE 0472 |
| Burning behavior      | flame resistant according to UL 1685 (CSA FT 4)                          |
| Chemical resistance   |                                                                          |

|                                                                                         |                        |
|-----------------------------------------------------------------------------------------|------------------------|
| <ul style="list-style-type: none"> <li>• to mineral oil</li> <li>• to grease</li> </ul> | conditional resistance |
| Radiological resistance / to UV radiation                                               | resistant              |
| Protection class IP                                                                     | IP65, IP67             |

#### Product features, product functions, product components / general

|                                                                  |     |
|------------------------------------------------------------------|-----|
| Product feature                                                  |     |
| <ul style="list-style-type: none"> <li>• halogen-free</li> </ul> | No  |
| <ul style="list-style-type: none"> <li>• silicon-free</li> </ul> | Yes |

#### Standards, specifications, approvals

|                                                                                                   |                                              |
|---------------------------------------------------------------------------------------------------|----------------------------------------------|
| UL/ETL listing / 300 V Rating                                                                     | Yes; c(UL)us, CMG / PLTC / Sun Res / OIL RES |
| UL/ETL style / 600 V Rating                                                                       | Yes                                          |
| Certificate of suitability                                                                        |                                              |
| <ul style="list-style-type: none"> <li>• RoHS conformity</li> </ul>                               | Yes                                          |
| Standard for structured cabling                                                                   | Cat5e                                        |
| Marine classification association                                                                 |                                              |
| <ul style="list-style-type: none"> <li>• American Bureau of Shipping Europe Ltd. (ABS)</li> </ul> | No                                           |
| <ul style="list-style-type: none"> <li>• Bureau Veritas (BV)</li> </ul>                           | No                                           |
| <ul style="list-style-type: none"> <li>• Det Norske Veritas (DNV)</li> </ul>                      | No                                           |
| <ul style="list-style-type: none"> <li>• Germanische Lloyd (GL)</li> </ul>                        | No                                           |
| <ul style="list-style-type: none"> <li>• Lloyds Register of Shipping (LRS)</li> </ul>             | No                                           |
| <ul style="list-style-type: none"> <li>• Nippon Kaiji Kyokai (NK)</li> </ul>                      | No                                           |
| <ul style="list-style-type: none"> <li>• Polski Rejestr Statkow (PRS)</li> </ul>                  | No                                           |

#### Further information / Internet-Links

|                                                                                                     |                                                                                                     |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Internet-Link                                                                                       |                                                                                                     |
| <ul style="list-style-type: none"> <li>• to website: Selector SIMATIC NET SELECTION TOOL</li> </ul> | <a href="http://www.siemens.com/snst">http://www.siemens.com/snst</a>                               |
| <ul style="list-style-type: none"> <li>• to website: Industrial communication</li> </ul>            | <a href="http://www.siemens.com/simatic-net">http://www.siemens.com/simatic-net</a>                 |
| <ul style="list-style-type: none"> <li>• to website: Industry Mall</li> </ul>                       | <a href="https://mall.industry.siemens.com">https://mall.industry.siemens.com</a>                   |
| <ul style="list-style-type: none"> <li>• to website: Information and Download Center</li> </ul>     | <a href="http://www.siemens.com/industry/infocenter">http://www.siemens.com/industry/infocenter</a> |
| <ul style="list-style-type: none"> <li>• to website: Image database</li> </ul>                      | <a href="http://automation.siemens.com/bilddb">http://automation.siemens.com/bilddb</a>             |
| <ul style="list-style-type: none"> <li>• to website: CAx Download Manager</li> </ul>                | <a href="http://www.siemens.com/cax">http://www.siemens.com/cax</a>                                 |
| <ul style="list-style-type: none"> <li>• to website: Industry Online Support</li> </ul>             | <a href="https://support.industry.siemens.com">https://support.industry.siemens.com</a>             |

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