

### product type designation

product description

### IE TP Cord M12-90/M12-90

Flexible plug-in cable (8-wire), preferred length, prefabricated with two IE FC M12 connectors 4X2 (X-coded)

IE TP Cord M12-90/M12-90 Pre-assembled IE Flexible Cable with 2 M12 connectors (X-coded); 90-degree cable outlet; length 15.0 m.



suitability for use

For connecting Industrial Ethernet stations with an M12 interface (e.g. SCALANCE W and XP-200)

wire length

15 m

### electrical data

number of electrical connections

2

attenuation factor per length

|                        |            |
|------------------------|------------|
| • at 10 MHz / maximum  | 0.086 dB/m |
| • at 100 MHz / maximum | 0.28 dB/m  |
| • at 300 MHz / maximum | 0.402 dB/m |
| • at 600 MHz / maximum | 0.735 dB/m |

impedance

|                        |       |
|------------------------|-------|
| • at 1 MHz ... 100 MHz | 100 Ω |
|------------------------|-------|

near-end crosstalk per length

|              |            |
|--------------|------------|
| • at 100 MHz | 0.724 dB/m |
| • at 300 MHz | 0.653 dB/m |
| • at 600 MHz | 0.608 dB/m |

loop resistance per length / maximum

290 mΩ/m

insulation resistance coefficient

5000 GΩ·m

operating voltage

|             |      |
|-------------|------|
| • RMS value | 80 V |
|-------------|------|

NVP value in percent

68 %

### mechanical data

number of electrical cores

8

design of the shield

Overlapped aluminum-clad foil, sheathed in a braided screen of tin-plated copper wires

type of electrical connection / FastConnect

No

core diameter

|                                |         |
|--------------------------------|---------|
| • of AWG26 insulated conductor | 0.48 mm |
|--------------------------------|---------|

outer diameter

|                                    |        |
|------------------------------------|--------|
| • of the wire insulation           | 1 mm   |
| • of the inner sheath of the cable | 5.4 mm |
| • of cable sheath                  | 6.5 mm |

symmetrical tolerance of the outer diameter / of cable sheath

0.3 mm

material

|                          |                   |
|--------------------------|-------------------|
| • of the wire insulation | polyethylene (PE) |
| • of cable sheath        | PUR               |

color

|                                   |                                                    |
|-----------------------------------|----------------------------------------------------|
| • of the insulation of data wires | white/blue, white/orange, white/green, white/brown |
|-----------------------------------|----------------------------------------------------|

|                                                                          |                                                                                                     |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| • of cable sheath                                                        | green                                                                                               |
| bending radius                                                           |                                                                                                     |
| • with single bend / minimum permissible                                 | 32.5 mm                                                                                             |
| • with multiple bends / minimum permissible                              | 65 mm                                                                                               |
| tensile load / maximum                                                   | 100 N                                                                                               |
| weight per length                                                        | 45 kg/km                                                                                            |
| <b>plug</b>                                                              |                                                                                                     |
| type of plug interlock                                                   | screwed                                                                                             |
| connector coding                                                         |                                                                                                     |
| • of the M12 circular connector                                          | X-coded                                                                                             |
| <b>ambient conditions</b>                                                |                                                                                                     |
| ambient temperature                                                      |                                                                                                     |
| • during operation                                                       | -30 ... +80 °C                                                                                      |
| • during storage                                                         | -40 ... +80 °C                                                                                      |
| • during transport                                                       | -40 ... +80 °C                                                                                      |
| • during installation                                                    | -40 ... +80 °C                                                                                      |
| fire behavior                                                            | flame resistant according to IEC 60332-1-2, smoke density according to IEC 61034                    |
| chemical resistance                                                      |                                                                                                     |
| • to mineral oil                                                         | oil resistant according to DIN EN 60811-2-1                                                         |
| • to grease                                                              | Conditional resistance                                                                              |
| • to water                                                               | conditional resistance                                                                              |
| radiological resistance / to UV radiation                                | resistant                                                                                           |
| protection class IP                                                      | IP65/67                                                                                             |
| <b>product features, product functions, product components / general</b> |                                                                                                     |
| product feature                                                          |                                                                                                     |
| • halogen-free                                                           | Yes                                                                                                 |
| • silicon-free                                                           | Yes                                                                                                 |
| <b>standards, specifications, approvals</b>                              |                                                                                                     |
| UL/ETL listing / 300 V Rating                                            | Yes; AWM Style 21815                                                                                |
| UL/ETL style / 600 V Rating                                              | No                                                                                                  |
| certificate of suitability                                               |                                                                                                     |
| • EAC approval                                                           | Yes                                                                                                 |
| • CE marking                                                             | Yes                                                                                                 |
| • RoHS conformity                                                        | Yes                                                                                                 |
| standard for structured cabling                                          | Cat6A                                                                                               |
| Marine classification association                                        |                                                                                                     |
| • American Bureau of Shipping Europe Ltd. (ABS)                          | No                                                                                                  |
| • French marine classification society (BV)                              | No                                                                                                  |
| • Det Norske Veritas (DNV)                                               | No                                                                                                  |
| • Germanische Lloyd (GL)                                                 | No                                                                                                  |
| • Lloyds Register of Shipping (LRS)                                      | No                                                                                                  |
| • Nippon Kaiji Kyokai (NK)                                               | No                                                                                                  |
| • Polski Rejestr Statkow (PRS)                                           | No                                                                                                  |
| reference code                                                           |                                                                                                     |
| • according to IEC 81346-2                                               | WG                                                                                                  |
| • according to IEC 81346-2:2019                                          | WGB                                                                                                 |
| <b>further information / internet links</b>                              |                                                                                                     |
| internet link                                                            |                                                                                                     |
| • to web page: selection aid TIA Selection Tool                          | <a href="http://www.siemens.com/tia-selection-tool">http://www.siemens.com/tia-selection-tool</a>   |
| • to website: Industrial communication                                   | <a href="http://www.siemens.com/simatic-net">http://www.siemens.com/simatic-net</a>                 |
| • to website: Industry Mall                                              | <a href="https://mall.industry.siemens.com">https://mall.industry.siemens.com</a>                   |
| • to website: Information and Download Center                            | <a href="http://www.siemens.com/industry/infocenter">http://www.siemens.com/industry/infocenter</a> |
| • to website: Selection guide for cables and connectors                  | <a href="https://sie.ag/2QdlxcP">https://sie.ag/2QdlxcP</a>                                         |
| • to website: Image database                                             | <a href="http://automation.siemens.com/bilddb">http://automation.siemens.com/bilddb</a>             |
| • to website: CAX-Download-Manager                                       | <a href="http://www.siemens.com/cax">http://www.siemens.com/cax</a>                                 |
| • to website: Industry Online Support                                    | <a href="https://support.industry.siemens.com">https://support.industry.siemens.com</a>             |

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