

### product type designation

product description

### IE Connecting Cable M12-90/M12-90

Flexible plug-in cable (4-wire), preferred length, prefabricated with two 4-pin M12 connectors (D-coded, 90° cable outlet)

IE Connecting Cable M12-90/M12-90 pre-assembled IE FC Trailing Cable GP, with 2 M12 connectors (D-coded) Length 1.5 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

1.5 m

### electrical data

number of electrical connections

2

attenuation factor per length

- at 10 MHz / maximum
- at 100 MHz / maximum

0.063 dB/m  
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 insulated conductor

0.75 mm

outer diameter

- of inner conductor
- of the wire insulation
- of the inner sheath of the cable
- of cable sheath

0.75 mm  
1.5 mm  
3.9 mm  
6.5 mm

symmetrical tolerance of the outer diameter / of cable sheath

0.2 mm

material

- of the wire insulation
- of the inner sheath of the cable
- of cable sheath

polyethylene (PE)  
PVC  
PVC

color

- of the insulation of data wires

white/yellow/blue/orange

<ul style="list-style-type: none"> <li>of cable sheath</li> </ul>	green
bending radius	
<ul style="list-style-type: none"> <li>with single bend / minimum permissible</li> </ul>	32.5 mm
<ul style="list-style-type: none"> <li>with multiple bends / minimum permissible</li> </ul>	49 mm
<ul style="list-style-type: none"> <li>with continuous bending</li> </ul>	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

<b>plug</b>	
type of plug interlock	screwed
design of plug-in connection	M12-90
tightening torque / for M12 round connector / maximum	0.6 N·m
connector coding	M12
<ul style="list-style-type: none"> <li>of the M12 circular connector</li> </ul>	D-coded

<b>ambient conditions</b>	
ambient temperature	
<ul style="list-style-type: none"> <li>during operation</li> </ul>	-25 ... +75 °C
<ul style="list-style-type: none"> <li>during storage</li> </ul>	-25 ... +75 °C
<ul style="list-style-type: none"> <li>during transport</li> </ul>	-25 ... +75 °C
<ul style="list-style-type: none"> <li>during installation</li> </ul>	-10 ... +60 °C
<ul style="list-style-type: none"> <li>note</li> </ul>	Electrical properties measured at 20 °C, tests according to DIN VDE 0472
fire behavior	flame resistant according to UL 1685 (CSA FT 4)
chemical resistance	
<ul style="list-style-type: none"> <li>to mineral oil</li> </ul>	conditional resistance
<ul style="list-style-type: none"> <li>to grease</li> </ul>	Conditional resistance
radiological resistance / to UV radiation	resistant
protection class IP	IP65, IP67

<b>product features, product functions, product components / general</b>	
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

<b>standards, specifications, approvals</b>	
UL/ETL listing / 300 V Rating	Yes; c(ETL)us, CMG FT4 / (ETL)us PLTC / Sun Res / OIL RES
UL/ETL style / 600 V Rating	Yes; cRUus AWM 21694 AWM I A/B 60°C 600V FT2
certificate of suitability	UL 2238
<ul style="list-style-type: none"> <li>EAC approval</li> </ul>	Yes
<ul style="list-style-type: none"> <li>CE marking</li> </ul>	Yes
<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>French marine classification society (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
reference code	
<ul style="list-style-type: none"> <li>according to IEC 81346-2</li> </ul>	WG
<ul style="list-style-type: none"> <li>according to IEC 81346-2:2019</li> </ul>	WGB

<b>further information / internet links</b>	
internet link	
<ul style="list-style-type: none"> <li>to website: Selection guide for cables and connectors</li> </ul>	<a href="https://support.industry.siemens.com/cs/ww/en/view/109766358">https://support.industry.siemens.com/cs/ww/en/view/109766358</a>
<ul style="list-style-type: none"> <li>to web page: selection aid TIA Selection Tool</li> </ul>	<a href="https://www.siemens.com/tstcloud">https://www.siemens.com/tstcloud</a>
<ul style="list-style-type: none"> <li>to web page: SiePortal</li> </ul>	<a href="https://sieportal.siemens.com/">https://sieportal.siemens.com/</a>
<ul style="list-style-type: none"> <li>to website: Image database</li> </ul>	<a href="https://www.automation.siemens.com/bilddb">https://www.automation.siemens.com/bilddb</a>
<ul style="list-style-type: none"> <li>to website: CAX-Download-Manager</li> </ul>	<a href="https://www.siemens.com/cax">https://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>

<b>security information</b>	
security information	Siemens provides products and solutions with industrial cybersecurity functions

that support the secure operation of plants, systems, machines and networks. In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial cybersecurity concept. Siemens' products and solutions constitute one element of such a concept. Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place. For additional information on industrial cybersecurity measures that may be implemented, please visit [www.siemens.com/cybersecurity-industry](http://www.siemens.com/cybersecurity-industry). Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer's exposure to cyber threats. To stay informed about product updates, subscribe to the Siemens Industrial Cybersecurity RSS Feed under <https://www.siemens.com/cert>. (V4.7)

## Approvals / Certificates

### General Product Approval



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formity](#)

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### Industrial Communication

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