

# Data sheet

**M12 plug, X-coded, IP67, Cat.6<sub>A</sub>, Ø 6-9.7 mm, field assembly, straight**

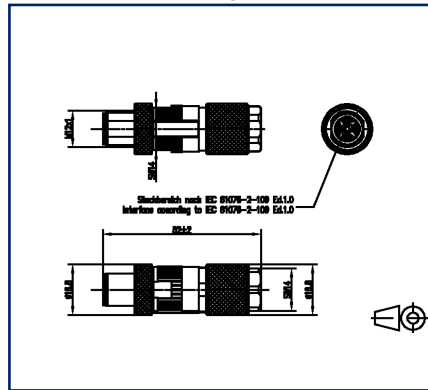
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P/N  
**MNF881A315-0001**  
**EAN 4250184151166**  
 2026/05/20  
 Version: T

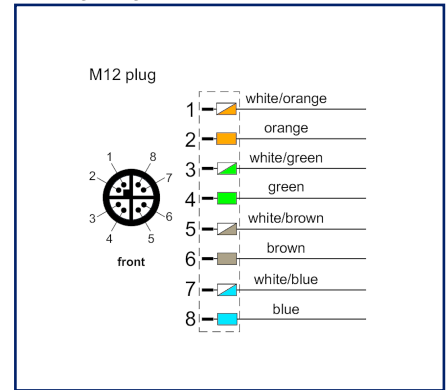
## Illustrations



Dimensional drawing



Wiring diagram



See enlarged drawings at the end of document

## Product specification

- M12 Cat.6<sub>A</sub> X-coded plug based on IEC PAS 61076-2-109 and suitable for field assembly
- for a 8-wire M12 plug for AWG 22
- connection of AWG 26/1 - 22/1, AWG 26/7 - 22/7 possible
- solid copper wire diameter from 0.4 to 0.64 mm
- stranded copper wire diameter from 0.48 to 0.76 mm
- core diameter up to 1.6 mm
- cable jacket from 6.0 to 9.7 mm
- consists of only 2 parts
- easy assembly - connection without special tools
- zinc die-cast housing for industrial use
- suitable for applications in the railway industry according to data sheet

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**Technical Data**

**General Data**

|   |                                   |
|---|-----------------------------------|
| Electromagnetic measurement according to MICE | E2                                |
| Design  | plug                              |
| Shielding                                     | shielded                          |
| Transmission technology                       | Copper                            |
| Dimensions                                    |                                   |
| Dimension (L x W x H)                         | 52 mm x 16.8 mm x 16.8 mm         |
| Dimension (L x W x H)                         | 2.047 in. x 0.661 in. x 0.661 in. |
| Field assembly ability                        | yes                               |
| Labeling option                               | on housing                        |

**Transmission characteristics**

|                                 |                |
|---------------------------------|----------------|
| Category (ISO)                  | 6 <sub>A</sub> |
| Category (TIA)                  | 6A             |
| Remote Powering                 | yes            |
| PoE                             | IEEE 802.3af   |
| PoE plus                        | IEEE 802.3at   |
| UPoE                            | yes            |
| 4PPoE                           | IEEE 802.3bt   |
| HDBaseT                         | yes            |
| Transmission rate up to 10 GBit | IEEE 802.3an   |

**Connections/interfaces**

|  |                |
|--|----------------|
| Connector technology interface 1         | IDC-connection |
| Connector technology interface 2         | M12-plug       |
| Coding interface 2                       | X-coded        |
| Number of ports interface 2              | 1              |
| Number of ports interface 2 equipped     | 1              |
| Number of positions/contacts interface 1 | 8              |
| Number of positions/contacts interface 2 | 8              |

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**Connections/interfaces**

|   |   |
|---|---|
| Termination data, solid wire (min. - max.)      |   |
| Conductor cross section, solid wire             | AWG 26/1 - AWG 22/1                           |
| Conductor cross section, solid wire             | 0.128 mm <sup>2</sup> - 0.324 mm <sup>2</sup> |
| Conductor diameter, solid wire (bare copper)    | 0.409 mm - 0.643 mm                           |
| Conductor diameter, solid wire (bare copper)    | 0.016 in. - 0.025 in.                         |
| Termination data, stranded wire (min. - max.)   |   |
| Conductor cross section, stranded wire          | AWG 26/7 - AWG 22/7                           |
| Conductor cross section, stranded wire          | 0.141 mm <sup>2</sup> - 0.355 mm <sup>2</sup> |
| Conductor diameter, stranded wire (bare copper) | 0.483 mm - 0.762 mm                           |
| Conductor diameter, stranded wire (bare copper) | 0.019 in. - 0.03 in.                          |
| Aderdurchmesser (min.-max.)                     |   |
| Core diameter (conductor with insulation)       | 0.85 mm - 1.6 mm                              |
| Core diameter (conductor with insulation)       | 0.033 in. - 0.063 in.                         |
| Cable sheath diameter (min. - max.)             |   |
| Cable sheath diameter                           | 6 mm - 9.70 mm                                |
| Cable sheath diameter                           | 0.236 in. - 0.382 in.                         |
| Cable access/outlet                             | straight M12                                  |

**Electrical characteristics**

|   |                   |
|---|-------------------|
| Current carrying capacity                           | 0.5 A             |
| Rated voltage                                       | 50 V AC / 60 V DC |
| Through resistance                                  | max. 5 mOhm       |
| Insulation resistance                               | min. 100 MOhm     |
| Dielectric strength conductor-conductor (primarily) | 500 V DC          |

**Mechanical data**

|                                |           |
|--------------------------------|-----------|
| Mounting method                | screwable |
| Insertion and withdrawal force | max. 30 N |
| Life - Number of mating cycles | min. 100  |

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**Materials and material properties**

|                           |                       |
|---------------------------|-----------------------|
| Material - Housing        | GD-Zn                 |
| Material - Contact        | CuZnPb (brass)        |
| Material - Contact finish | Ni + Au (nickel-gold) |
| Material - Shield         | CuSn                  |
| Material - Shield finish  | Sn                    |
| Material - Stuffer cap    | PA UL94-V0            |
| Halogen free              | yes                   |
| Material - Finish         | Ni (nickel)           |
| RoHS                      | compliant             |

**Environmental conditions**

|                            |                                     |
|----------------------------|-------------------------------------|
| Temperature (min. - max.)  |                                     |
| Temperature - Storage °C   | -40 °C - 85 °C                      |
| Temperature - Storage °F   | -40 °F - 185 °F                     |
| Temperature - Operating °C | -40 °C - 85 °C                      |
| Temperature - Operating °F | -40 °F - 185 °F                     |
| Particulate ingress        | IP6X when plugged in                |
| Liquid ingress/immersion   | IPX7 when plugged in                |
| Damp heat                  | 25 °C / +40 °C / 93% RH // 5 cycles |
| Overvoltage category       | III                                 |
| Degree of pollution        | 2                                   |
| Shock                      | 490 m/s <sup>2</sup>                |

**Approvals**

UL listed (file no.)  DUXR.E178484

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**Standards/Regulations**

|   |  |
|---|--|
| Application-specific communications cabling systems                                     |  |
| Profinet  | yes  |
| Connectors for electronic equipment   |  |
| circular connector  | DIN EN 61076-2-109:2010-08   |
| Connectors for electronic equipment - Tests and measurements                            |  |
| Test standard for connectors (engaging and separating connectors under electrical load) | DIN-EN 60512-99-001, DIN-EN 60512-99-002                             |
| Railway applications  |  |
| Contact holder  | Thermoplastic HL1-HL3; R22, R23 according to EN 45545-2:2020+A1:2023 |
| Flammable mass (g)  | 1.2 g  |
| Stuffer cap   | Thermoplastic HL1-HL3; R22, R23 according to EN 45545-2:2020+A1:2023 |
| Flammable mass (g)  | 0.97 g   |
| Sealings  | Elastomer  |
| Flammable mass (g)  | 1.63 g   |
| Shock and vibration   | EN 50155:2021, EN 61373:2010 Class 1 Category B                      |
| Salt spray  | EN 50155:2021, (DIN EN 60068-2-11:2000-02/ 48-hour KA test)          |

**Classifications**

|           |          |
|-----------|----------|
| ETIM 7.0  | EC002635 |
| ETIM 8.0  | EC002635 |
| ETIM 9.0  | EC002635 |
| ETIM 10.0 | EC002635 |

**Packing details**

|                   |                |
|-------------------|----------------|
| Type of packaging | 10 pc(s) / box |
|-------------------|----------------|

**Application note**

This product is a standard product of METZ CONNECT. METZ CONNECT is not aware of the specific intended use of the goods by the Customer or any customers of the Customer. The Customer guarantees that it has fully and sufficiently tested the use of the goods and any product modifications, product changes or product enhancements with regard to the specific intended use in accordance with the state of the art or in any other way. At METZ CONNECT's request, the Customer shall submit and make available meaningful evidence (e.g. test and laboratory protocols, certifications, etc.).

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## Accessories

| P/N      | Designation                              |
|----------|--|
| 130670-E | KAPRi plus cable and installation tester |
| 130674-E | KAPRi plus extension set M12 X-coded     |
| 700669   | M12 plug protection cap IP54             |



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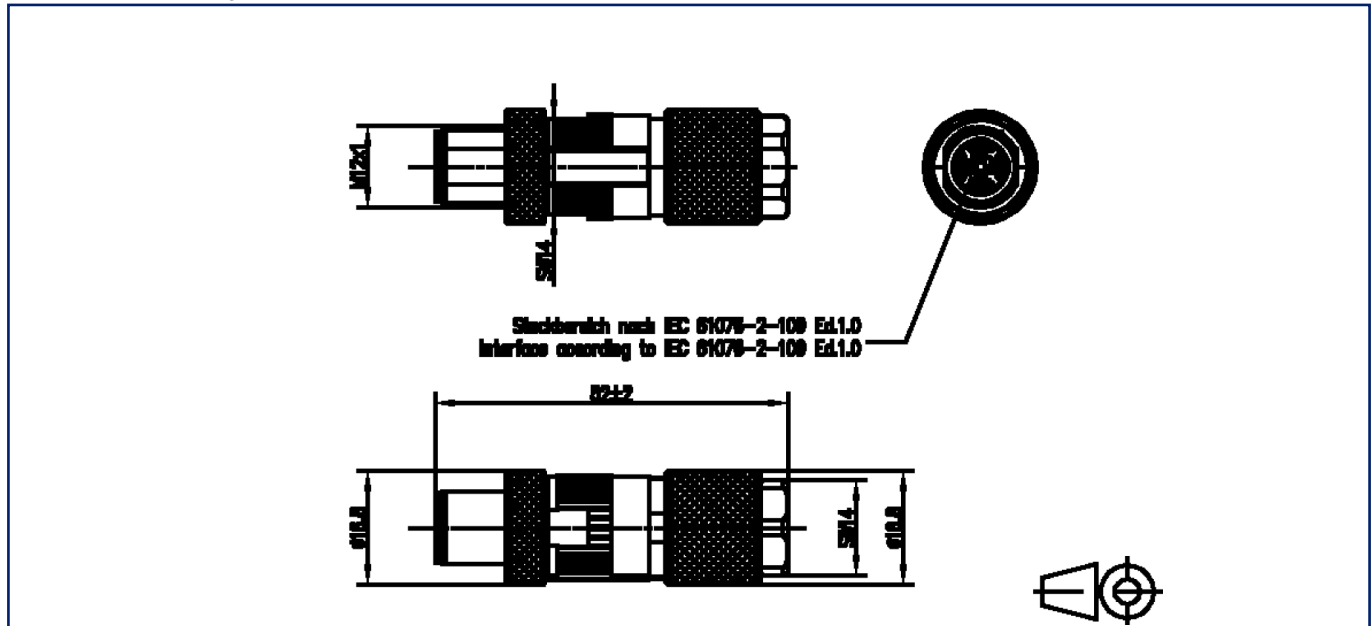
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