

## Data sheet

Page 1/8

**M12 Industrial Ethernet cable, D-coded, 3.0 m,**  
**RJ45 plug straight - M12 plug angled, drag chain, torsion, PUR**

P/N

142M4D59030

EAN 4251394645636

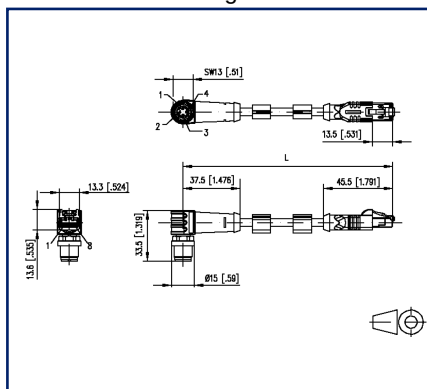
2026/07/30

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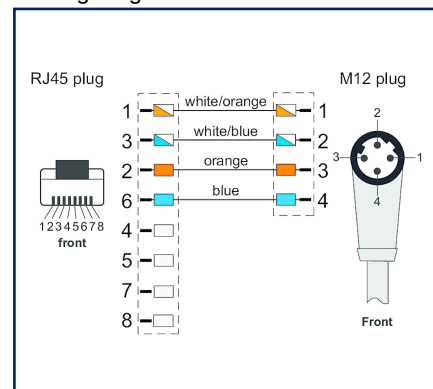
## Illustrations



Dimensional drawing



Wiring diagram



See enlarged drawings at the end of document

## Product specification

Shielded Ethernet cable made of PUR for safe and industrial data transmission in automation and fieldbus technology. Real-time requirements based on IEC61158 can be realized. The cable meets the requirements of UL-Style 21815 (80°/300V) and the specifications of Cat5 (electrical properties based on EN50288-2-2). Materials and design for increased mechanical stress (abrasion, bending, vibration, etc.) of the cable. Can be used in drag chain operation/torsion. High tensile strength due to incorporated aramide fibre. Special properties: seawater resistant, recyclable, LABS free, RoHs compliant, acid and alkali resistant, ozone resistant, UV resistant, hydrolysis resistant, drag chain compatible, halogen free, oil resistant, high flexibility, microbe resistant.

- Standard variants: 1.0 m, 2.0 m, 5.0 m, 10.0 m.
- Other cable lengths on request.



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Page 2/8

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## Technical Data

### General Data

|                                     |                                        |
|-------------------------------------|----------------------------------------|
| Fields of application               | Industrial Ethernet                    |
| Design                              | Ethernet-Connection line               |
| Shielding                           | shielded                               |
| Transmission technology             | Copper                                 |
| Cable Type                          | S/UTP                                  |
| Number of twisting elements         | 4                                      |
| Twisting element                    | single core                            |
| Wiring                              | Profinet                               |
| Color coding fiber/ wire(s)         | white/orange, white/blue, orange, blue |
| Color                               | green                                  |
| Dimensions                          |                                        |
| Dimension - Interface 1 (L x W x H) | 45.5 mm x 13.3 mm x 13.6 mm            |
| Dimension - Interface 1 (L x W x H) | 1.791 in. x 0.524 in. x 0.535 in.      |
| Dimension - Interface 2 (L x W x H) | 37.5 mm x 33.5 mm x 15 mm              |
| Dimension - Interface 2 (L x W x H) | 1.476 in. x 1.319 in. x 0.591 in.      |
| Cable length (m)                    | 3 m                                    |
| Cable length (ft)                   | 9.84 ft                                |
| Labeling option                     | identification label carrier           |

### Transmission characteristics

|                                                  |             |
|--------------------------------------------------|-------------|
| Category (ISO)                                   | 5e          |
| Transmission rate up to 100 MBit (Fast Ethernet) | IEEE 802.3u |

### Connections/interfaces

|                                          |                 |
|------------------------------------------|-----------------|
| Connector technology interface 1         | RJ45 plug       |
| Connector technology interface 2         | M12-plug angled |
| Coding interface 2                       | D-coded         |
| Number of positions/contacts interface 1 | 8P/4C           |
| Number of positions/contacts interface 2 | 4               |



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Page 3/8

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### Connections/interfaces

Termination data, stranded wire (min. - max.)

|                                                 |           |
|-------------------------------------------------|-----------|
| Conductor cross section, stranded wire          | AWG 26/19 |
| Conductor diameter, stranded wire (bare copper) | 0.5 mm    |
| Conductor diameter, stranded wire (bare copper) | 0.02 in.  |
| Cable sheath diameter (min. - max.)             |           |
| Cable sheath diameter                           | 4.8 mm    |
| Cable sheath diameter                           | 0.189 in. |

### Electrical characteristics

|                           |               |
|---------------------------|---------------|
| Current carrying capacity | 1 A at 40 °C  |
| Rated voltage             | 60 V DC       |
| Insulation resistance     | min. 100 MOhm |

### Mechanical data

|                                                                  |                          |
|------------------------------------------------------------------|--------------------------|
| Life - Number of mating cycles                                   | min. 100                 |
| Torsion                                                          | min. $\pm 30$ °/m        |
| Bending radius without load                                      | min. 36 mm               |
| Maximum operating bending radius                                 | 19.2 mm                  |
| Maximum operating bending radius                                 | 0.756 in.                |
| Maximum installation load                                        | 36 mm                    |
| Number of alternating bending cycles (mechanical resistance) at: | 5 million bending cycles |
| Alternating bending radius                                       | 36 mm                    |
| velocity                                                         | 180 m/s                  |
| acceleration                                                     | 5 m/s <sup>2</sup>       |
| Shielding braid coverage                                         | 85 %                     |

### Materials and material properties



## Data sheet

Page 4/8

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### Materials and material properties

#### Cable

|                                 |               |
|---------------------------------|---------------|
| Material - Conductor            | Cu (copper)   |
| Material - Conductor Insulation | polypropylene |
| Material - Cable jacket         | PUR           |
| Flame retardancy                | yes           |

#### Interface 1

|                                         |           |
|-----------------------------------------|-----------|
| Material - Body interface 1             | Plastics  |
| Material - Contact interface 1          | CuSn      |
| Material - Contact finish interface 1   | Au (gold) |
| Material - Contact carriers interface 1 | Plastics  |

#### Interface 2

|                                         |                   |
|-----------------------------------------|-------------------|
| Material - Body interface 2             | Plastics          |
| Material - Contact interface 2          | CuSn              |
| Material - Contact finish interface 2   | Au (gold)         |
| Material - Contact carriers interface 2 | Plastics          |
| Material - Union nut interface 2        | CuZnPb (brass)    |
| Material - Union nut finish interface 2 | Ni (nickel)       |
| Material - Pair shield                  | plastic film      |
| Material - Pair shield finish           | Al (Aluminium)    |
| Material - Main shield                  | Cu (copper) braid |
| Material - Main shield finish           | Sn                |
| Oil resistance                          | yes               |
| UV-resistance                           | yes               |
| drag chain suitable                     | yes               |
| torsional                               | yes               |
| RoHS                                    | compliant         |



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Page 5/8

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### Environmental conditions

Temperature (min. - max.)

Temperature - Operating °C -30 °C - 70 °C

Temperature - Operating °F -22 °F - 158 °F

Particulate ingress interface 1 IP2X when plugged in

Liquid ingress/immersion interface 1 IPX0 when plugged in

Particulate ingress interface 2 IP6X when plugged in

Liquid ingress/immersion interface 2 IPX5, IPX7, IPX8 when plugged in

Pollution degree interface 1 1

Pollution degree interface 2 3

### Approvals

UL listed (file no.) pending

### Standards/Regulations

Generic cabling systems

General requirements ISO/IEC 11801-1 | DIN EN 50173-1

Profinet yes

Connectors for electronic equipment

circular connector DIN EN 61076-2-101

Multi-element metallic cables used in analogue and digital communication and control DIN EN 50288-4-1

Test for vertical flame propagation for a single insulated wire or cable IEC 60332-1-2

Measurement of smoke density of cables burning DIN EN 61034

### Classifications

ETIM 7.0 EC002599

ETIM 8.0 EC002599

ETIM 9.0 EC002599

ETIM 10.0 EC002599



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Page 6/8

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**Technical Data****Packing details**

Type of packaging 1 pc(s) / plastic bag

**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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Page 7/8

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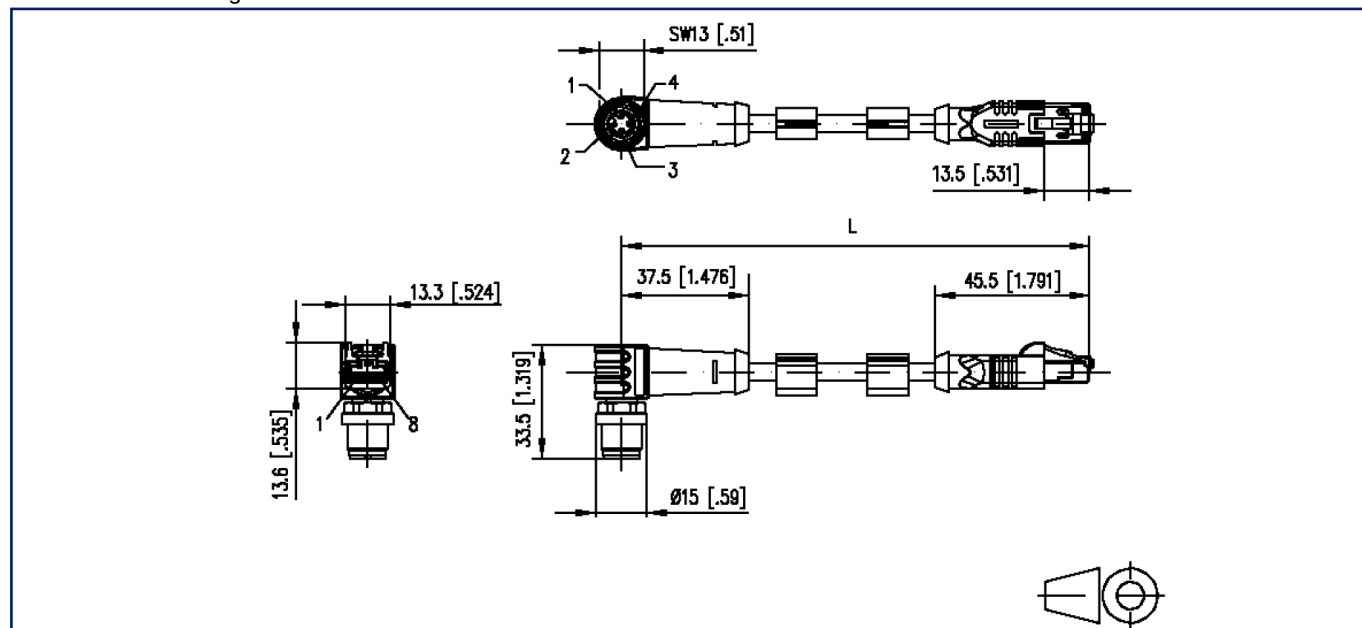
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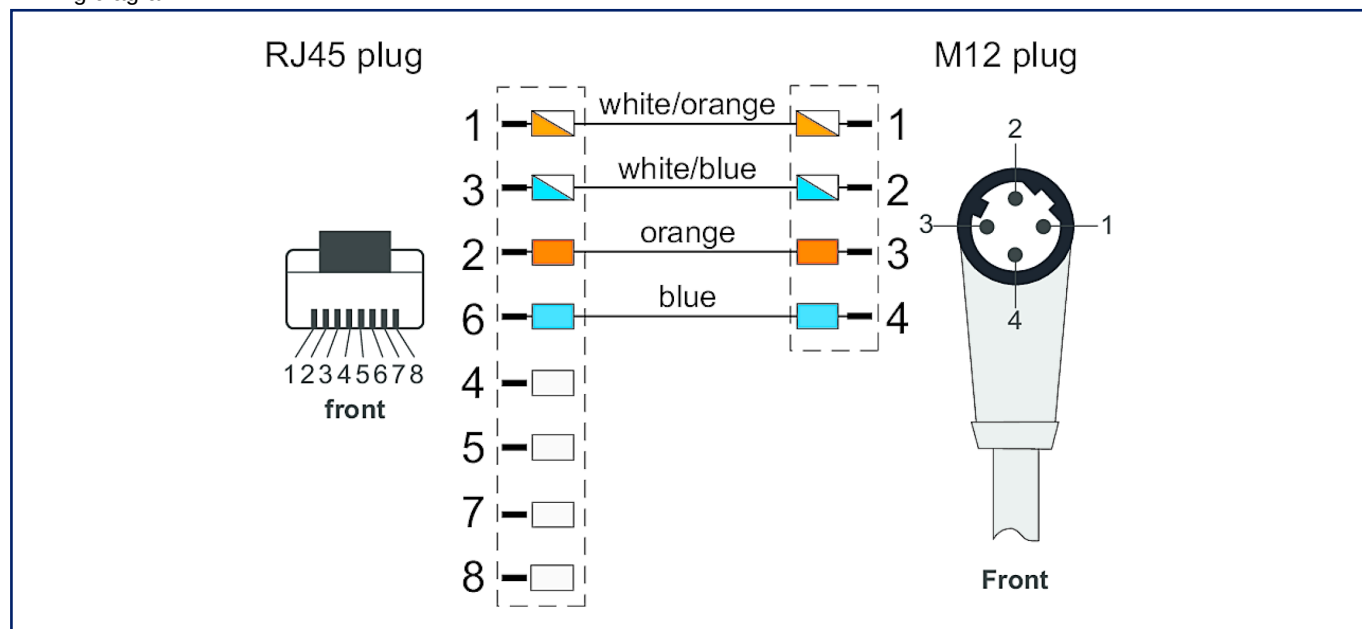
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## Illustrations

### Dimensional drawing



### Wiring diagram



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Page 8/8

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Principle diagram

