

### M12 female 90° A-cod. with cable LED

PUR 5x0.34 bk UL/CSA+drag ch. 3m

Art.No.: 7000-12441-6470300

Weight: 0.136

Country of origin: DE

Model designation: MSDL2-U647\_3.0

### Advantages of our connectors:

Our connectors are versatile and specially optimised for industrial environments. All connectors are 100% tested during the manufacturing process to ensure the highest quality and reliability.

The contacts are gold-plated, which ensures optimum conductivity. Thanks to the high degree of protection, the connectors are ideal for demanding industrial environments. They are also vibration-resistant - this is ensured by the union nut with vibration protection.

Our connectors are resistant to oils and cooling lubricants, but resistance to aggressive media should be tested for each specific application. Different cable lengths available [on request](#)

If you are missing technical information? Please feel free to use our [dictionary](#) to find more technical details.

### Product details:

**Female 90°**

**M12, 5-pole**

**3× LED (PNP)**

**Art-No. 7005 - M12 Lite - (plastic hexagonal screw) on request**

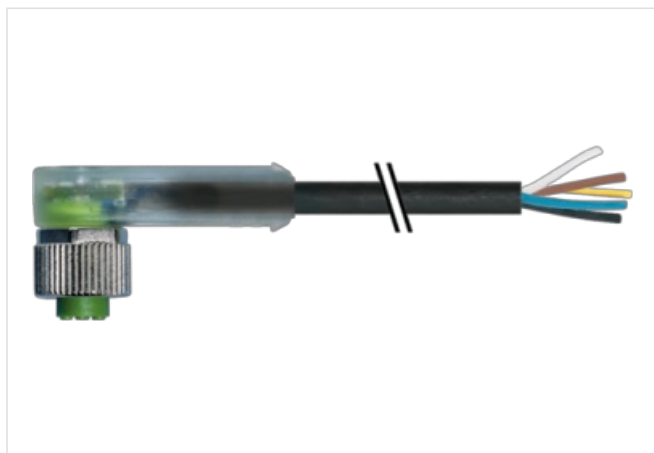
**Plastic housings with good resistance against chemicals and oils.**

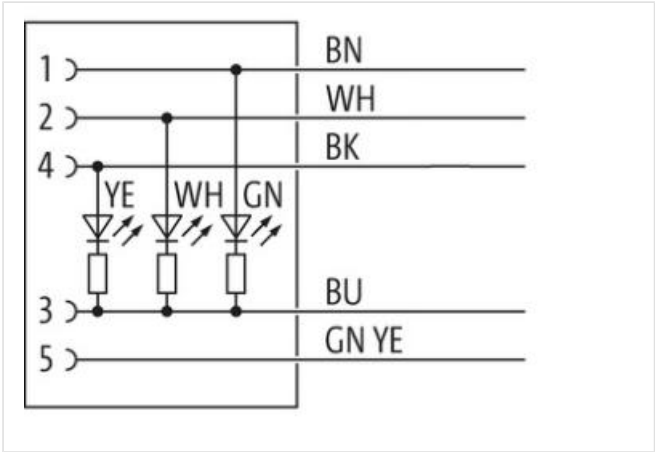
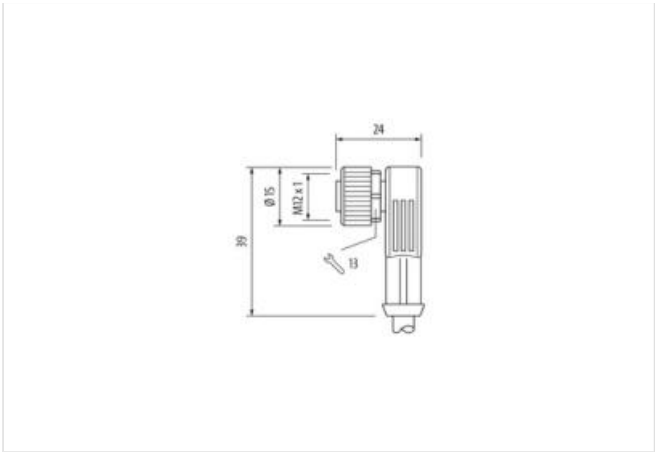
**The resistance to aggressive media should be individually tested for your application. Further details on request.**

**Further cable lengths on request.**

### [Link to Product](#)

#### Illustration





Product may differ from Image



|   |                   |
|---|-------------------|
| Cable length                              | 3 m               |
| Side 1                                    |                   |
| Tightening torque                         | 0,6 Nm            |
| Mounting method                           | inserted, screwed |
| Coating contact                           | gold plated       |
| Family construction form                  | M12               |
| Thread                                    | M12 x 1           |
| suitable for corrugated tube (internal Ø) | 10 mm             |
| Cable outlet                              | angled            |
| Coding                                    | A                 |
| Material contact                          | Copper alloy      |
| Material                                  | PUR               |
| No. of poles                              | 5                 |
| Width across flats                        | SW13              |
| Degree of protection (EN IEC 60529)       | IP65, IP66K, IP67 |
| Side 2                                    |                   |
| Stripping length (jacket)                 | 20 mm             |
| Family construction form                  | free cable end    |

| Commercial data                          |  |
|--|--|
| ECLASS-6.0                               | 27279218   |
| ECLASS-7.0                               | 27279218   |
| ECLASS-8.0                               | 27279218   |
| ECLASS-9.0                               | 27060311   |
| ECLASS-10.1                              | 27060311   |
| ECLASS-11.1                              | 27060311   |
| ECLASS-12.0                              | 27060311   |
| ETIM-5.0                                 | EC001855   |
| customs tariff number                    | 85444290   |
| customs tariff number                    | 85444290   |
| GTIN                                     | 4048879637114  |
| GTIN                                     | 4048879637114  |
| Packaging unit                           | 1  |
| Packaging unit                           | 1  |
| Electrical data   Supply                 |  |
| Operating voltage DC                     | 24 V   |
| Operating voltage DC min.                | 18 V   |
| Operating voltage DC max.                | 30 V   |
| Operating voltage DC max. (UL-listed)    | 30 V   |
| Current operating per contact max.       | 4 A  |
| Diagnostics                              |  |
| Status indication LED                    | green, white, yellow   |
| Installation   Connection                |  |
| Stripping length (jacket)                | 20 mm  |
| Mounting set                             | M12 x 1  |
| Gender                                   | female   |
| Device protection   Electrical           |  |
| Additional condition protection degree   | inserted, screwed  |
| Pollution Degree                         | 3  |
| Rated surge voltage                      | 0,8 kV   |
| Material group (IEC 60664-1)             | I  |
| Mechanical data   Material data          |  |
| Coating locking                          | Nickeled   |
| Coating of fitting                       | nickel plated  |
| Locking material                         | Zinc die-casting   |
| Material screw connection                | Zinc die-casting   |
| Mechanical data   Mounting data          |  |
| Mounting method                          | inserted, screwed, Shaking protection  |
| Environmental characteristics   Climatic |  |
| Operating temperature min.               | -30 °C   |
| Operating temperature max.               | 85 °C  |
| Additional condition temperature range   | depending on cable quality   |
| Important installation notes             |  |
| Note on strain relief                    | Protect the connectors by suitable measures from mechanical loads, e.g. by the usage of cable ties.  |
| Note on bending radius                   | Attention: Observe the permissible bending radii when laying cables, as the IP protection class can be endangered by excessive bending forces. |
| Conformity                               |  |
| Product standard                         | DIN EN 61076-2-101 (M12)   |
| Installation   Cable                     |  |

|   |  |
|---|--|
| wire arrangement                                  | brown, black, blue, white, green-yellow                        |
| Cable identification                              | 647  |
| Cable Type  | 3  |
| Jacket Color                                      | black  |
| Type of Certificate                               | cURus  |
| Amount stranding                                  | 1  |
| Stranding   | 5 wires around Core filler twisted                             |
| Filler  | yes  |
| wire arrangement                                  | brown, black, blue, white, green-yellow                        |
| Cable weight                                      | 44,55 g/m  |
| Material jacket                                   | PUR  |
| Shore hardness jacket                             | 90 ± 5 Shore A   |
| Freedom from ingredients (jacket)                 | lead-free, cadmium-free, CFC-free, halogen-free, silicone-free |
| Outer-diameter (jacket)                           | 5,6 mm   |
| Tolerance outer diameter (sheath)                 | ± 5 %  |
| Material wire insulation                          | PP   |
| Amount wires                                      | 5  |
| Outer diameter insulation                         | 1,45 mm  |
| Outer diameter tolerance core insulation          | ± 5 %  |
| Shore hardness wire insulation                    | 65 ± 5 Shore D   |
| Ingredient freeness wire insulation               | lead-free, cadmium-free, CFC-free, halogen-free, silicone-free |
| Amount strands (wire)                             | 42   |
| Diameter of single wires                          | 0,1 mm   |
| Conductor crosssection (wire)                     | 0,34 mm <sup>2</sup>   |
| Material conductor wire                           | Stranded copper wire, bare                                     |
| Conductor type (wire)                             | strand class 6   |
| Nominal voltage AC max.                           | 600 V  |
| Current load capacity (standard)                  | to DIN VDE 0298-4  |
| Current load capacity min. wire                   | 4,5 A  |
| Electrical resistance line constant wire          | 60 Ω/km @ 20 °C  |
| AC withstand voltage (wire - wire)                | 6 kV @ 60 s  |
| Power frequency withstand voltage (wire - jacket) | 6 kV @ 60 s  |
| Min. operating temperature (static)               | -40 °C   |
| Max. operating temperature (fixed)                | 90 °C  |
| Operating temperature min. (dynamic)              | -25 °C   |
| Operating temperature max. (dynamic)              | 90 °C  |
| UV resistance                                     | DIN EN ISO 4892-2 A  |
| Flame resistance                                  | IEC 60332-2-2   UL 1581 § 1100 FT2   UL 1581 § 1090            |
| chemical resistance                               | Good, application-related testing                              |
| Gasoline resistance                               | Good, application-related testing                              |
| Oil resistance                                    | Good, application-related testing   DIN EN 60811-404           |
| Bending radius (fixed)                            | 5 x Outer diameter   |
| Bending radius (dynamic)                          | 10 x Outer diameter  |
| No. of bending cycles (C-track)                   | 5 Mio. @ 25 °C   |
| Traversing distance (C-track)                     | 5 m @ 25 °C   horizontal                                       |
| Travel speed (C-track)                            | 3,3 m/s @ 25 °C  |
| No. of torsion cycles                             | 2 Mio.   |
| Torsion stress                                    | ± 180 °/m  |
| Torsion speed                                     | 35 cycles/min  |