



# **HARTING**

Circular Connectors

## Circular connectors



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# Transforming customer wishes into concrete solutions



The HARTING Technology Group is skilled in the fields of electrical, electronic and optical connection, transmission and networking technology, as well as in manufacturing, mechatronics and software creation. The Group uses these skills to develop customized solutions and products such as connectors for energy and data-transmission/data-networking applications, including, for example, mechanical engineering, rail technology, wind energy plants, factory automation and the telecommunications sector. In addition, HARTING also produces electro-magnetic components for the automobile industry and offers solutions in the field of housing technology and shop systems.

The HARTING Group currently comprises 58 sales companies and production plants worldwide employing a total of about 5,300 staff.



We aspire to top performance.

Connectors ensure functionality. As core elements of electrical and optical termination, connection and infrastructure technologies, they are essential in enabling the modular construction of devices, machines and systems across an extremely wide range of industrial applications. Their reliability is a crucial factor guaranteeing smooth functioning in the manufacturing area, telecommunications, applications in medical technology – in short, connectors are at work in virtually every conceivable application area. Thanks to the ongoing development of our technologies, our customers enjoy investment security and benefit from durable, long-term functionality.

Wherever our customers are, we're there.

Increasing industrialization is creating growing markets that are characterized by widely diverging demands and requirements. What these markets all share in common is the quest for perfection, increasingly efficient processes and reliable technologies. HARTING is providing these technologies – in Europe, the Americas and Asia. In order to implement customer requirements in the best possible manner, the HARTING professionals at our international subsidiaries engage in up-close, partnership-based interaction with our customers, right from the very early product development phase.

Our on-site staff form the interface to the centrally coordinated development and production departments. In this way, our customers can rely on consistently high, superior product quality – worldwide.

Our claim: Pushing Performance.

HARTING provides more than optimally attuned components. In order to offer our customers the best possible solutions, on request HARTING contributes a great deal more and is tightly integrated into the value-creation process.

From ready-assembled cables through to control racks or ready-to-go control desks. Our aim is to generate maximum benefit for our customers – with no compromises!

Quality creates reliability - and warrants trust.

The **HARTING** brand stands for superior quality and reliability - worldwide. The standards we set are the result of consistent, stringent quality management that is subject to regular certifications and audits.

EN ISO 9001, the EU Eco-Audit and ISO 14001:2004 are key elements here. We take a proactive stance towards new requirements, which is why **HARTING** is the first company worldwide to have obtained the new IRIS quality certificate for rail vehicles.



HARTING technology creates added value for customers.

Technologies by HARTING are at work worldwide. HARTING's presence stands for smoothly functioning systems powered by intelligent connectors, smart infrastructure solutions and sophisticated network systems. Over the course of many years of close, trust-based cooperation with its customers, the HARTING Technology Group has become one of the leading specialists globally for connector technology. We offer individual customers specific and innovative solutions that go beyond the basic standard functionalities. These tailored solutions deliver sustained results, ensure investment security and enable customers to achieve significant added value.

Opting for HARTING opens up an innovative, complex world of concepts and ideas.

In order to develop and produce connectivity and network solutions serving an exceptionally wide range of connector applications in a professional and cost-effective manner, HARTING not only commands the full array of conventional tools and basic technologies. Above and beyond these capabilities, HARTING is constantly harnessing and refining its broad base of knowledge and experience to create new solutions that also ensure continuity. To secure its lead in know-how, HARTING draws on a wealth of sources from its in-house research and applications.

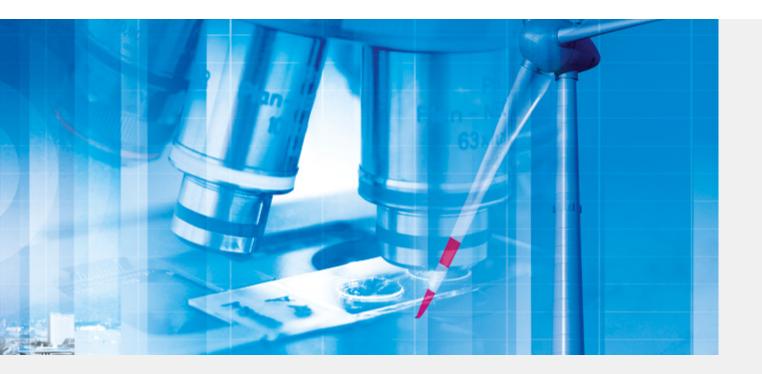
Salient examples of these sources of innovative knowledge include microstructure technologies, 3D design and connection technologies.

gy, high-temperature and ultrahigh-frequency applications that are finding use in telecommunications and automation networks, in the automotive industry, or in industrial sensor and actuator applications, RFID and wireless technologies, in addition to packaging and housing made of plastics, aluminum and stainless steel.

HARTING overcomes technological limitations.

Drawing on the comprehensive resources of the group's technology pool, HARTING devises practical solutions for its customers. Whether this involves industrial networks for manufacturing automation, or hybrid interface solutions for wireless telecommunication infrastructures, 3D circuit carriers with microstructures, or cable assemblies for high-temperature applications in the automotive industry – HARTING technologies offer not only components, but comprehensive solutions attuned to individual customer requirements and preferences. The range of cost-effective solutions covers ready-to-use cable configurations, completely assembled backplanes and board system carriers, as well as fully wired and tested control panels.

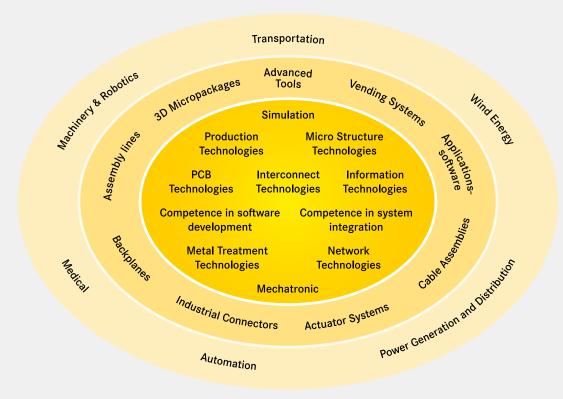
In order to ensure the future-proof design of RF and EMC-compatible interface solutions, the central HARTING laboratory (certified to EN 45001) employs simulation tools, as well as experimental, testing and diagnostics facilities all the way to scanning electron microscopes. In addition to product and process suitability considerations, lifecycle and environmental aspects play a key role in the selection of materials and processes.



HARTING's knowledge is practical know-how that generates synergy effects.

HARTING commands decades of experience with regard to the applications conditions involved in connections in telecommunications, computer, network and medical technologies, as well as industrial automation technologies, e.g. in the mechanical engineering and plant engineering areas, in addition to the power generation industry and the transportation sector. HARTING is highly

conversant with the specific application areas in all of these technology fields. In every solution approach, the key focus is on the application. In this context, uncompromising, superior quality is our hallmark. Every new solution found invariably flows back into the HARTING technology pool, thereby enriching our resources. And every new solution we go on to create will draw on this wealth of resources in order to optimize each and every individual solution. HARTING is synergy in action.



## HARTING eCatalogue





The HARTING eCatalogue / eShop can be found on our homepage at www.HARTING.com or at the direct link www.eCatalogue.HARTING.com.

The HARTING e-Catalogue is your platform for conveniently selecting individual products as well as configuring complete solutions. Our comprehensive product pages provide you with all necessary technical information and CAD files in various formats for downloading. You may also contact our technical sales department directly.

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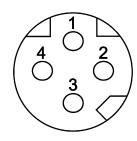
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003 08 1



4

Reflow soldering termination (THR) Shielded



#### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 4 \text{ A} \\ \text{Rated voltage} & 60 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

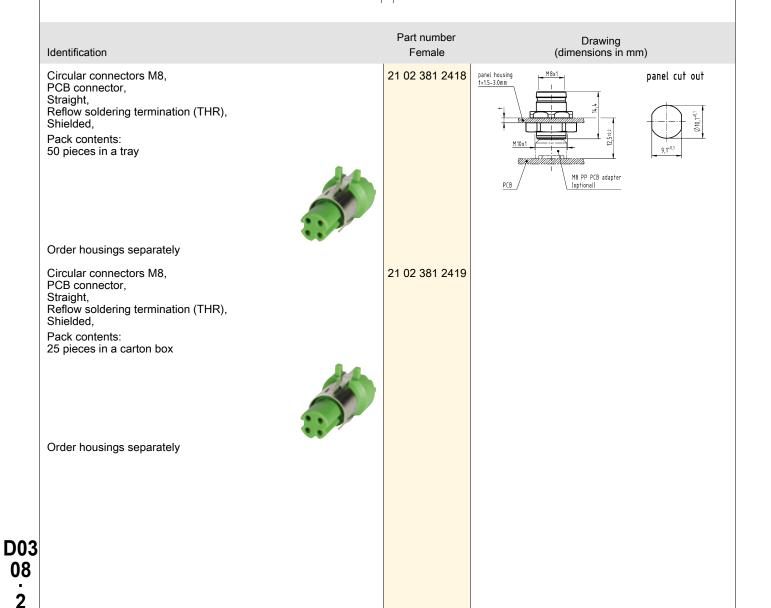
#### Technical characteristics

Transmission characteristics Cat. 5, Class D up to 100 MHz

Tightening torque 1 Nm Lock nut
Material (contacts) Copper alloy
Surface (contacts) Gold plated

RoHS compliant with exemption

## Specifications and approvals





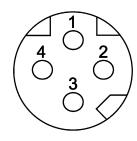
Part number Drawing (dimensions in mm) Identification Female 21 02 301 2001 panel housing t=1.5-3.0mm Circular connectors M8, panel cut out Housing, for front mounting, Pack contents: incl. lock nut M8 PP PCB adapter (optional) 21 02 301 2002 Circular connectors M8, Housing, for front mounting, Pack contents: without lock nut 21 01 000 0051 Lock nut, M10 x 1

M8



4

Reflow soldering termination (THR) Shielded



#### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 4 \text{ A} \\ \text{Rated voltage} & 60 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & > 10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \end{array}$ 

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Transmission characteristics Cat. 5, Class D up to 100 MHz

#### Technical characteristics

Tightening torque 1 Nm Lock nut
Material (contacts) Copper alloy
Surface (contacts) Gold plated

RoHS compliant with exemption

#### Specifications and approvals

IEC 61076-2-114

#### Identification

Circular connectors M8, PCB connector,

Straight,

for front mounting,

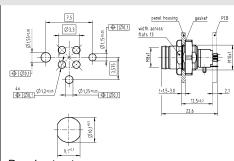
Reflow soldering termination (THR),

Shielded, Pack contents: incl. housing



Part number Drawing Female (dimensions in mm)

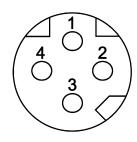
21 02 381 2431



Panel cut out

Number of contacts

Wave soldering termination



#### Technical characteristics

Number of contacts 4 A Rated current 60 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100

Degree of protection acc. to IEC IP67, when mated

Cat. 5, Class D up to 100 MHz Transmission characteristics

Tightening torque 1 Nm Lock nut

#### Technical characteristics

Material (contacts) Copper alloy Surface (contacts) Gold plated

RoHS compliant with exemption

#### Specifications and approvals

IEC 61076-2-114



## Part number Drawing (dimensions in mm) Identification Female Circular connectors M8, 21 42 000 0006 PCB connector. Straight, Wave soldering termination, Shielded PCB layout Order housings separately 21 41 000 0016 Circular connectors M8, Housing, for front mounting, 9 mm Circular connectors M8, 21 41 000 0017 Housing, for front mounting, 13 mm

## PCB connectors

D-coding



Identification

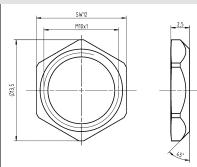
M8

Circular connectors M8, hexagonal nut, M10 x 1

Part number Female

21 41 000 0018

Drawing (dimensions in mm)

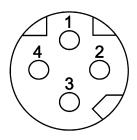


D03 08

Number of contacts

4

Wave soldering termination Shielded



#### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 4 \text{ A} \\ \text{Rated voltage} & 60 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & > 10^8 \Omega \\ \text{Contact resistance} & \leq 10 \text{ m}\Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Degree of protection acc. to IEC IP67, when mated

60529

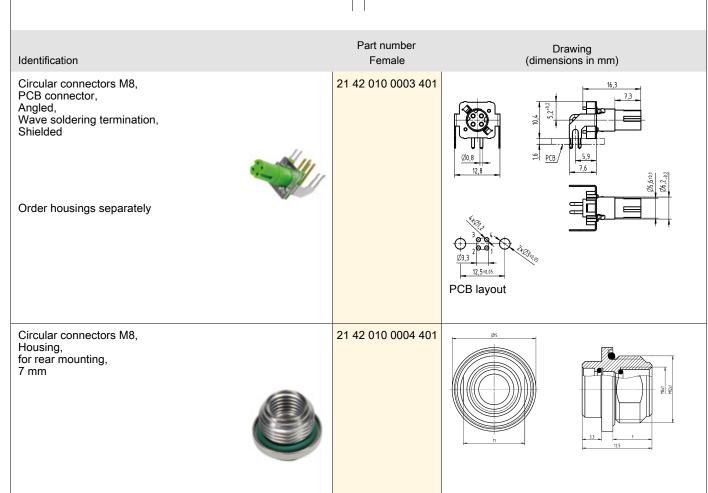
#### Technical characteristics

Transmission characteristics Cat. 5, Class D up to 100 MHz

Tightening torque 1 Nm Lock nut
Material (contacts) Copper alloy
Surface (contacts) Gold plated

RoHS compliant with exemption

## Specifications and approvals



## PCB connectors

M8

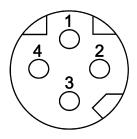
D-coding



Part number Drawing (dimensions in mm) Identification Female 21 42 010 0002 401 Circular connectors M8, Housing, for rear mounting, 11 mm 21 42 010 0001 401 Circular connectors M8, hexagonal nut, M12 x 1



Wave soldering termination



#### Technical characteristics

Number of contacts 4 A Rated current Rated voltage 60 V Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Degree of protection acc. to IEC IP67 60529

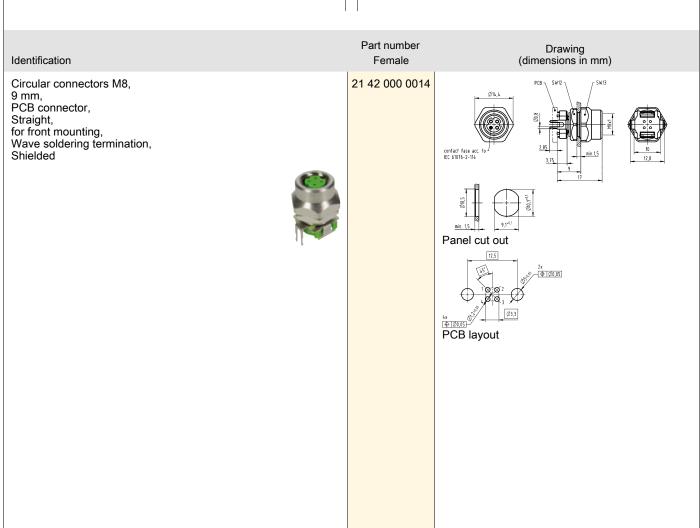
#### Technical characteristics

Transmission characteristics Cat. 5, Class D up to 100 MHz 1 Nm Lock nut

Tightening torque Material (contacts) Copper alloy Gold plated Surface (contacts)

RoHS compliant with exemption

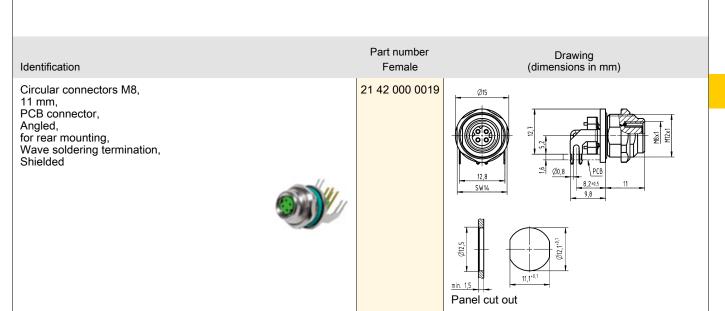
## Specifications and approvals





Part number Drawing (dimensions in mm) Identification Female 21 42 000 0005 Circular connectors M8, 13 mm, PCB connector, Straight, for front mounting, Wave soldering termination, Shielded Panel cut out PCB layout 21 42 000 0020 Circular connectors M8, 7 mm, PCB connector,
Angled,
for rear mounting,
Wave soldering termination,
Shielded Panel cut out PCB layout **D03** 



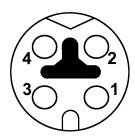


PCB layout



4

Reflow soldering termination (THR) Shielded



#### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 4 \text{ A} \\ \text{Rated voltage} & 60 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

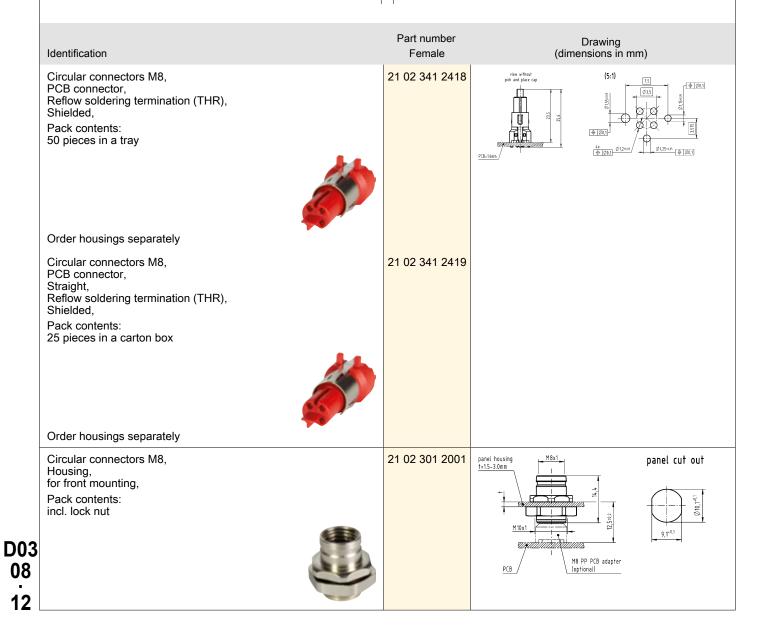
#### Technical characteristics

Transmission characteristics Cat. 5, Class D up to 100 MHz

Tightening torque 1 Nm Lock nut
Material (contacts) Copper alloy
Surface (contacts) Gold plated

RoHS compliant with exemption

## Specifications and approvals



# PCB connectors

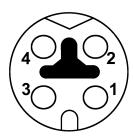
P-coding



Identification	Part number Female	Drawing (dimensions in mm)	
Circular connectors M8, Housing, for front mounting, Pack contents: without lock nut	21 02 301 2002		ı
Lock nut, M10 x 1	21 01 000 0051		
			D0 08 13



Reflow soldering termination (THR) Shielded



#### Technical characteristics

Number of contacts 4 A Rated current 60 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ

Degree of protection acc. to IEC IP65 / IP67, when mated

Cat. 5, Class D up to 100 MHz Transmission characteristics

#### Technical characteristics

Tightening torque 1 Nm Lock nut Material (contacts) Copper alloy Surface (contacts) Gold plated

RoHS compliant with exemption

#### Specifications and approvals

IEC 61076-2-114

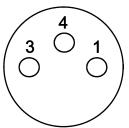
Identification	Part number Female
Circular connectors M8, PCB connector, Straight, for front mounting, Reflow soldering termination (THR), Shielded, Pack contents: incl. housing	21 02 341 2431

Drawing (dimensions in mm)



Number of contacts

Unshielded



## Technical characteristics

Number of contacts Rated current 3 A 50 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥100 Mating cycles Locking type

Screw locking Conductor length 50 cm

IP67 Degree of protection acc. to IEC

60529

0.25 mm<sup>2</sup> Conductor cross-section Conductor cross-section AWG 24 Tightening torque 0.8 Nm Lock nut

#### Technical characteristics

Material (insert) Thermoplastic polyurethane

(TPU)

Material (hood/housing) Copper-zinc alloy

Material (contacts) Brass Surface (contacts) Gold plated

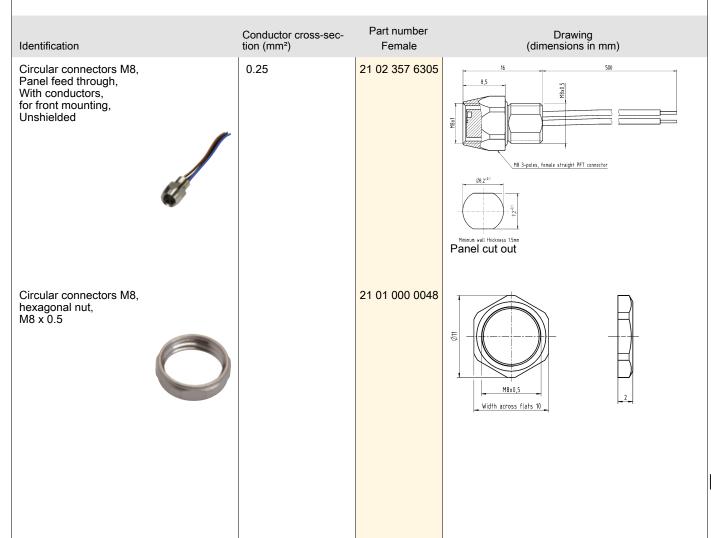
RoHS compliant with exemption,

compliant

## Specifications and approvals

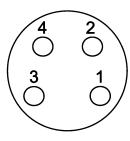
IEC 61076-2-104

 $\epsilon$ 



4

Unshielded



#### Technical characteristics

 Number of contacts
 4

 Rated current
 3 A

 Rated voltage
 50 V

 Rated impulse voltage
 1.5 kV

 Pollution degree
 3

 Insulation resistance
 >108 Ω

 Contact resistance
 ≤10 mΩ

 Mating cycles
 ≥100

 Locking type
 Screw locking

Locking type Screw
Conductor length 50 cm
Degree of protection acc. to IEC IP67

60529

Conductor cross-section 0.25 mm²
Conductor cross-section AWG 24

Tightening torque 0.8 Nm Lock nut

#### Technical characteristics

Material (insert) Thermoplastic polyurethane

(TPU)

Material (hood/housing) Copper-zinc alloy

Material (contacts)

Surface (contacts)

Brass

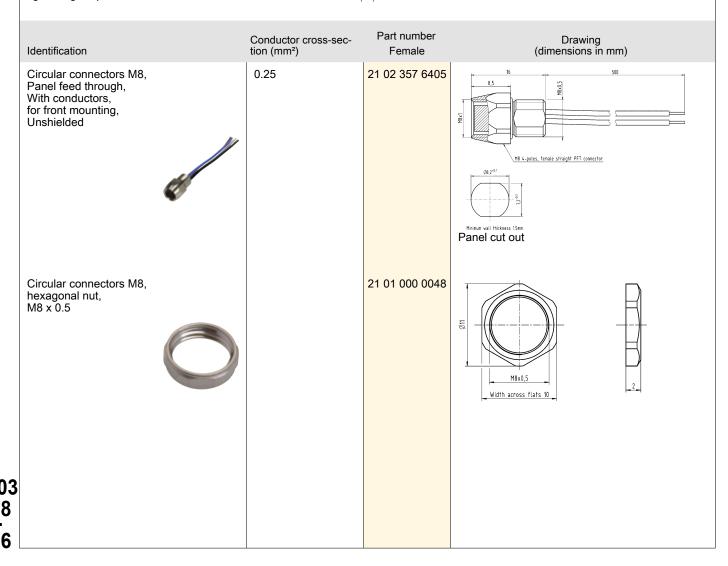
Gold plated

RoHS compliant with exemption,

compliant

## Specifications and approvals







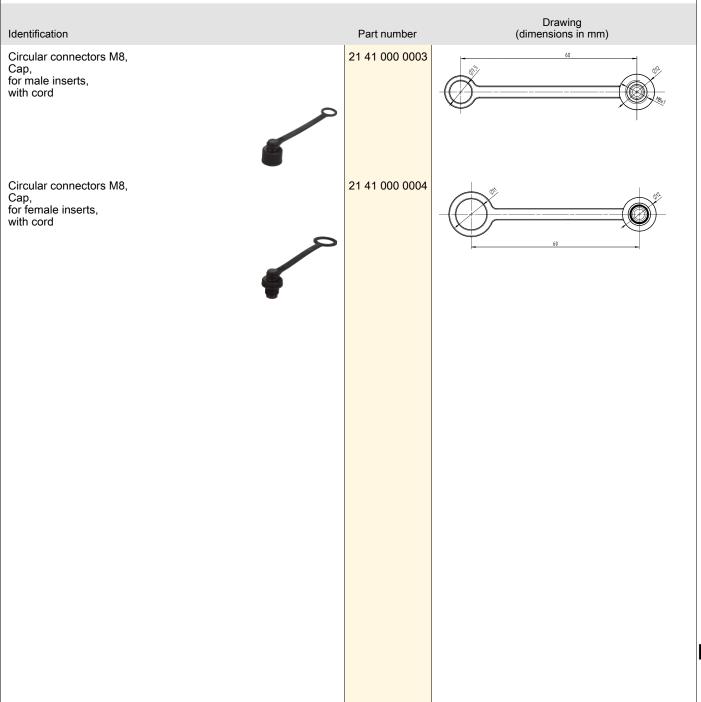
## Technical characteristics

Material (accessories)

Thermoplastic

## Technical characteristics

Colour (accessories) RoHS Black compliant





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Panel feed through	D03 12.83
Accessories	D03 12.100

D03 12 . 1

#### **PCB** connectors

#### A-coding

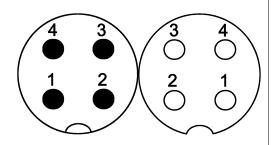


Number of contacts

4

M12

Reflow soldering termination (THR) Shielded



#### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 4 \text{ A} \\ \text{Rated voltage} & 250 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Tightening torque 2 Nm Lock nut

#### Technical characteristics

Material (insert) Liquid crystal polymer (LCP)
Material (contacts) Copper alloy

Surface (contacts) Copper allog Surface (contacts) Gold plated

RoHS compliant with exemption,

compliant

## Specifications and approvals

IEC 61076-2-101 UL 1977 ECBT2.E102079 CSA-C22.2 No. 182.3 ECBT8.E102079

Part number Drawing (dimensions in mm)

Circular connectors M12,

DCP adoptor

Part number Drawing (dimensions in mm)

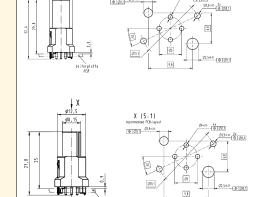
21 03 321 1418 21 03 321 2418

PCB adapter, Straight, Reflow soldering termination (THR), Shielded,

Pack contents: 60 pieces in a tray



Order housings separately





Part number Drawing (dimensions in mm) Identification Male Female 21 03 301 1000 21 03 301 2000 Circular connectors M12, M16x1,5 Housing, M12x1 for rear mounting, Montageausschnitt/ panel cut out Pack contents: 10 pieces 1:1 Gehäusewand panel housing t=1,5-3,5 M12 Leiterplattenadapter (optional) M12 PCB adapter (optional) Leiterplatte *PCB* M16x1,5 Montageausschnitt/ panel cut out 1:1 M12 Leiterplattenadapter (optional) M12 PCB adapter (optional) Circular connectors M12, 21 03 301 1003 21 03 301 2003 PushPull, Housing, for front mounting, Montageausschnitt/ panel cut out 1:1 Pack contents: 10 pieces PCB M12x1 1:1

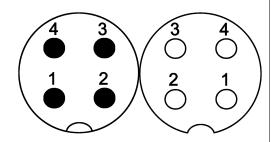
M12



4

M12

Reflow soldering termination (THR) Shielded



#### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 4 \text{ A} \\ \text{Rated voltage} & 250 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Tightening torque 2 Nm Lock nut

#### Technical characteristics

Material (insert) Liquid crystal polymer (LCP)
Material (hood/housing) Zinc die-cast

Material (contacts)

Surface (contacts)

Gold plated

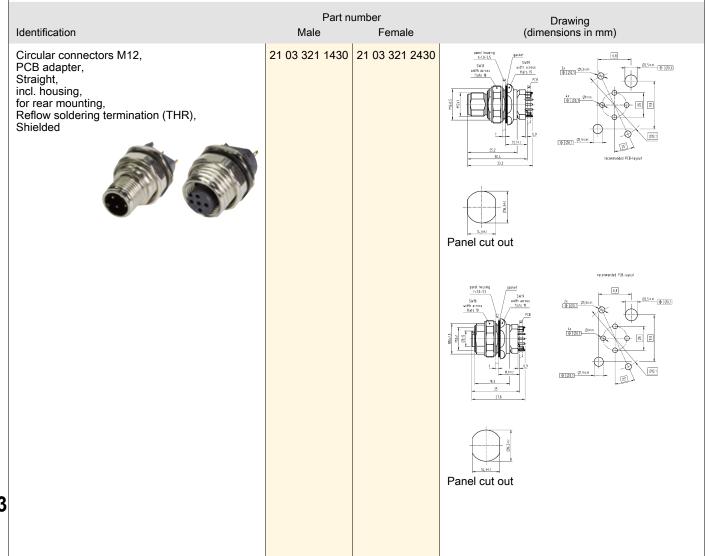
RoHS compliant with exemption

## Specifications and approvals

IEC 61076-2-101

UL 1977 ECBT2.E102079

CSA-C22.2 No. 182.3 ECBT8.E102079



Identification

Drawing (dimensions in mm)



Circular connectors M12,
PushPull,
PCB adapter,
Straight,
incl. housing,
for front mounting,
Reflow soldering termination (THR),
Shielded

21 03 321 1431

21 03 321 2431

Parel Cut out

21 03 321 2431

Parel Cut out

Part number

Female

Panel cut out

Male

M12

#### **PCB** connectors

A-coding

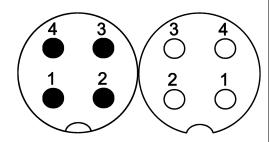


Number of contacts

4

M12

Reflow soldering termination (THR) Shielded



## Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 4 \text{ A} \\ \text{Rated voltage} & 250 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking
Degree of protection acc. to IEC IP20, IP67, when mated

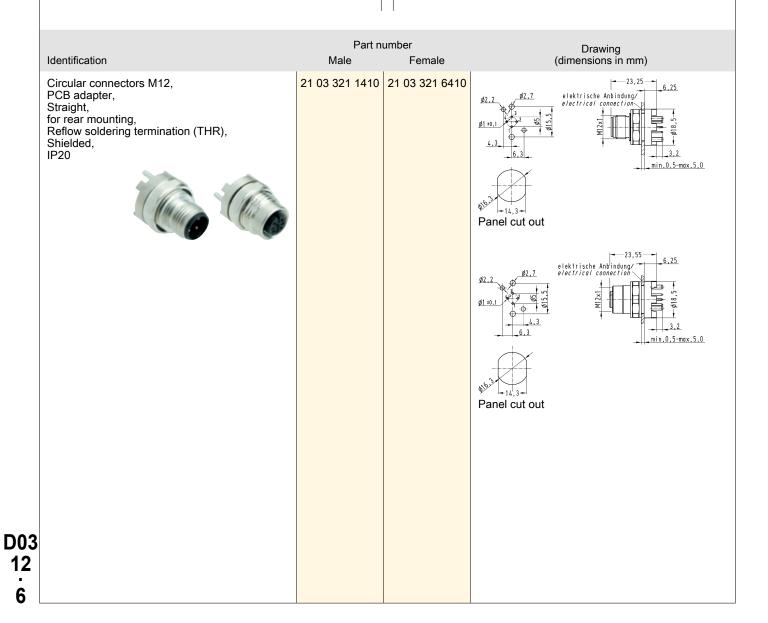
60529

#### Technical characteristics

Tightening torque 2 Nm Lock nut
Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast
Material (contacts) Copper alloy
Surface (contacts) Gold plated

RoHS compliant with exemption

## Specifications and approvals





Part number Drawing (dimensions in mm) Identification Male Female Circular connectors M12, PCB adapter, Straight, for rear mounting, Reflow soldering termination (THR), Shielded, IP67 21 03 321 1420 21 03 321 6420 elektrische Anbindung electrical connection -14,3-Panel cut out 23,55 Panel cut out

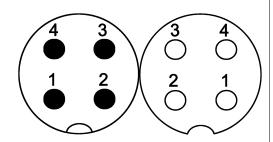
M12



4

M12

Reflow soldering termination (SMT) Unshielded



#### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 4 \text{ A} \\ \text{Rated voltage} & 250 \text{ V} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \Omega \\ \text{Contact resistance} & \leq 10 \text{ m}\Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking
Degree of protection acc. to IEC IP67, when mated

60529

#### Technical characteristics

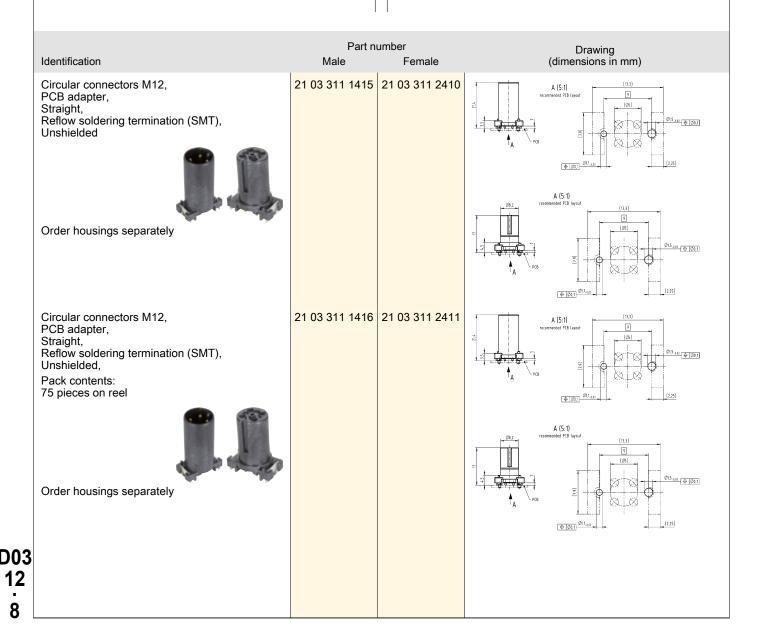
Tightening torque 1 Nm Lock nut

Material (insert) Liquid crystal polymer (LCP)

Material (contacts) Copper alloy Surface (contacts) Gold plated

RoHS compliant with exemption

## Specifications and approvals





Part number Drawing (dimensions in mm) Identification Male Female 21 41 000 0012 21 41 000 0010 Circular connectors M12, Housing, for front mounting, M14 x 1, 9 mm If necessary, order lock nut 21 41 000 0011 separately. Circular connectors M12, 21 41 000 0013 Housing, for front mounting, M14 x 1, 13 mm If necessary, order lock nut 21 41 000 0011 separately.

M12

D03 12

9

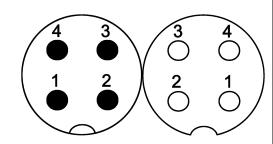
#### **PCB** connectors

A-coding



Number of contacts

Wave soldering termination Shielded



#### Technical characteristics

Number of contacts Rated current 4 A 250 V Rated voltage Pollution degree >10<sup>8</sup> Ω Insulation resistance Mating cycles ≥100 Locking type

Screw locking Degree of protection acc. to IEC IP67, when screwed 60529

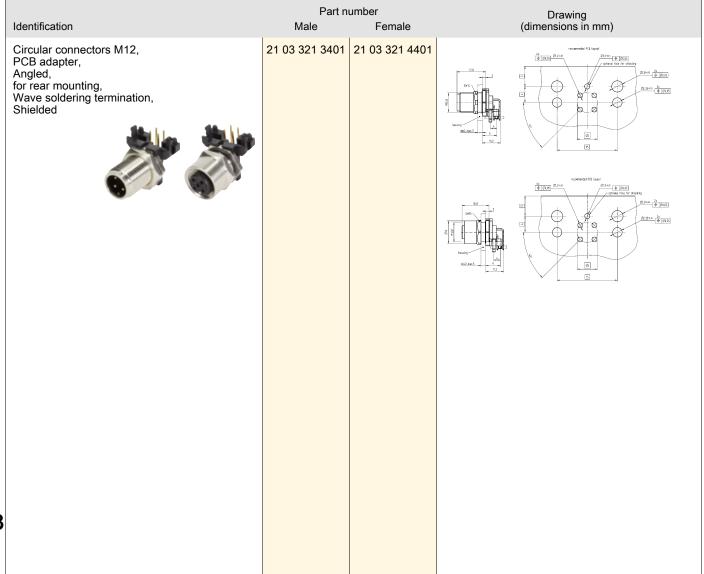
1 Nm Lock nut Tightening torque

#### Technical characteristics

Material (insert) Polyamide (PA) Material (hood/housing) Copper-zinc alloy Material (contacts) Copper alloy Surface (contacts) Gold plated

RoHS compliant with exemption

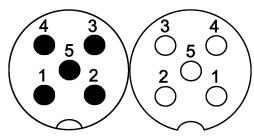
## Specifications and approvals





Number of contacts

Reflow soldering termination (THR)



#### Technical characteristics

Number of contacts 4 A Rated current 60 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥100 Mating cycles

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Tightening torque 2 Nm Lock nut

#### Technical characteristics

Material (insert) Liquid crystal polymer (LCP)

Copper alloy Material (contacts) Surface (contacts) Gold plated

RoHS compliant with exemption,

compliant

## Specifications and approvals

IEC 61076-2-101 UL 1977 ECBT2.E102079

CSA-C22.2 No. 182.3 ECBT8.E102079

#### Part number Drawing (dimensions in mm) Identification Male Female Circular connectors M12, 21 03 321 1518 21 03 321 2518

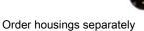
PCB adapter,

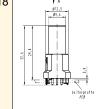
Straight,

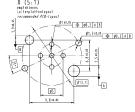
Reflow soldering termination (THR), Shielded,

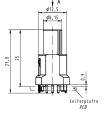
Pack contents: 60 pieces in a tray

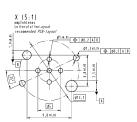










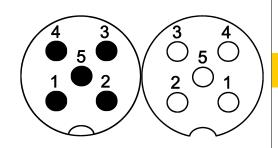




Part number Drawing (dimensions in mm) Male Identification Female 21 03 301 1000 21 03 301 2000 Circular connectors M12, M16x1,5 Housing, M12x1 for rear mounting, Montageausschnitt/ panel cut out Pack contents: 10 pieces 1:1 Gehäusewand
panel housing
t=1,5-3,5 M12 Leiterplattenadapter (optional) M12 PCB adapter (optional) M16x1,5 Montageausschnitt/ panel cut out 1:1 M12 Leiterplattenadapter (optional) M12 PCB adapter (optional) 21 03 301 1003 21 03 301 2003 Circular connectors M12, PushPull, Housing, for front mounting, Montageausschnitt/ panel cut out 1:1 Pack contents: 10 pieces PCB M12x1 1:1 panel housing t=1,0-2,5 **D03** 

5

Reflow soldering termination (THR)



### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 5 \\ \text{Rated current} & 4 \text{ A} \\ \text{Rated voltage} & 60 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & > 10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \text{ m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Tightening torque 2 Nm Lock nut

### Technical characteristics

Material (insert) Liquid crystal polymer (LCP)

Material (hood/housing)

Material (contacts)

Surface (contacts)

Zinc die-cast
Copper alloy
Gold plated

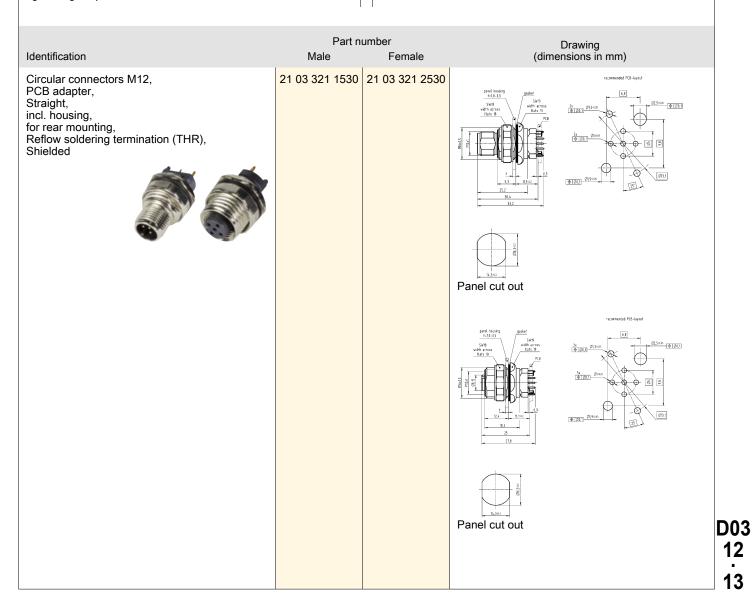
RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-101

UL 1977 ECBT2.E102079

CSA-C22.2 No. 182.3 ECBT8.E102079







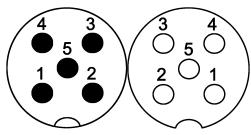
M12

Part number Drawing (dimensions in mm) Male Identification Female Circular connectors M12, PushPull, PCB adapter, Straight, incl. housing, for front mounting, Reflow soldering termination (THR), Shielded 21 03 321 1531 21 03 321 2531 Panel cut out Panel cut out

Number of contacts

5

Reflow soldering termination (THR)



### Technical characteristics

Number of contacts Rated current 4 A 60 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥100 Mating cycles Locking type Screw locking

Degree of protection acc. to IEC IP20, IP67, when mated

60529

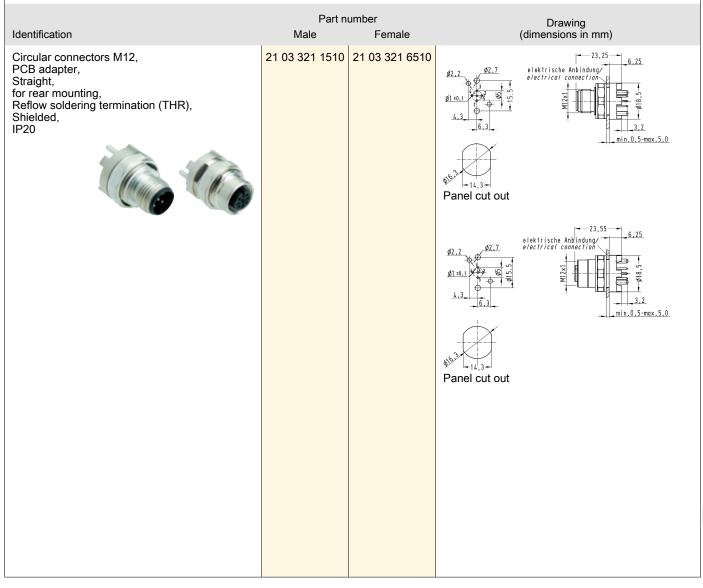
### Technical characteristics

Tightening torque 2 Nm Lock nut
Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast
Material (contacts) Copper alloy
Surface (contacts) Gold plated

RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-101



M12





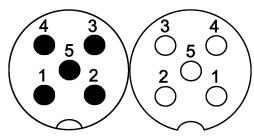
Part number Drawing (dimensions in mm) Identification Male Female Circular connectors M12, PCB adapter, Straight, for rear mounting, Reflow soldering termination (THR), Shielded, IP67 21 03 321 1520 21 03 321 6520 Panel cut out Panel cut out

D03 12

Number of contacts

5

Reflow soldering termination (SMT) Unshielded



### Technical characteristics

 Number of contacts
 5

 Rated current
 4 A

 Rated voltage
 60 V

 Pollution degree
 3

 Insulation resistance
 >108 Ω

 Contact resistance
 ≤10 mΩ

 Mating cycles
 ≥100

 Locking type
 Serrow lock

Locking type Screw locking
Degree of protection acc. to IEC IP67, when mated

60529

### Technical characteristics

Tightening torque 1 Nm Lock nut

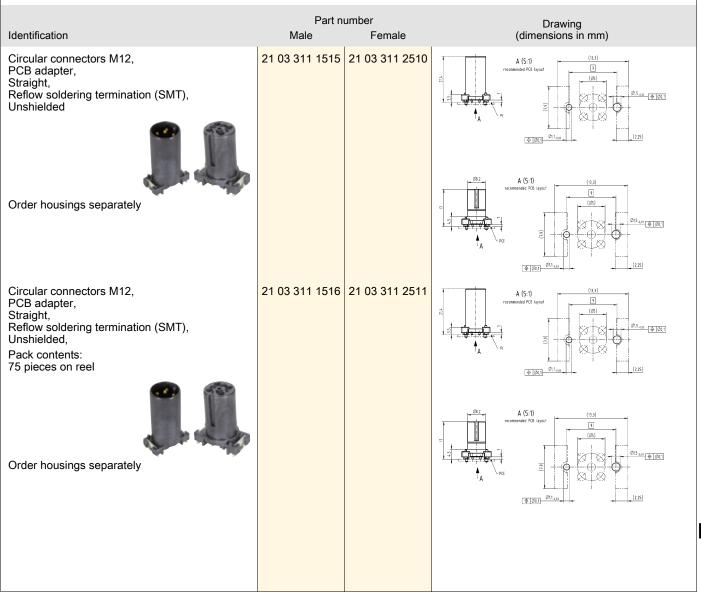
Material (insert) Liquid crystal polymer (LCP)

Material (contacts) Copper alloy Surface (contacts) Gold plated

RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-101





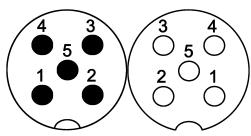


M12

Part number Drawing (dimensions in mm) Identification Male Female 21 41 000 0012 21 41 000 0010 Circular connectors M12, Housing, for front mounting, M14 x 1, 9 mm If necessary, order lock nut 21 41 000 0011 separately. 21 41 000 0013 Circular connectors M12, Housing, for front mounting, M14 x 1, 13 mm If necessary, order lock nut 21 41 000 0011 separately.

Number of contacts

Wave soldering termination



### Technical characteristics

Number of contacts 4 A Rated current Rated voltage 60 V Pollution degree >10<sup>8</sup> Ω Insulation resistance ≥100 Mating cycles

Locking type Screw locking Degree of protection acc. to IEC IP67, when mated 60529

Tightening torque 1 Nm Lock nut

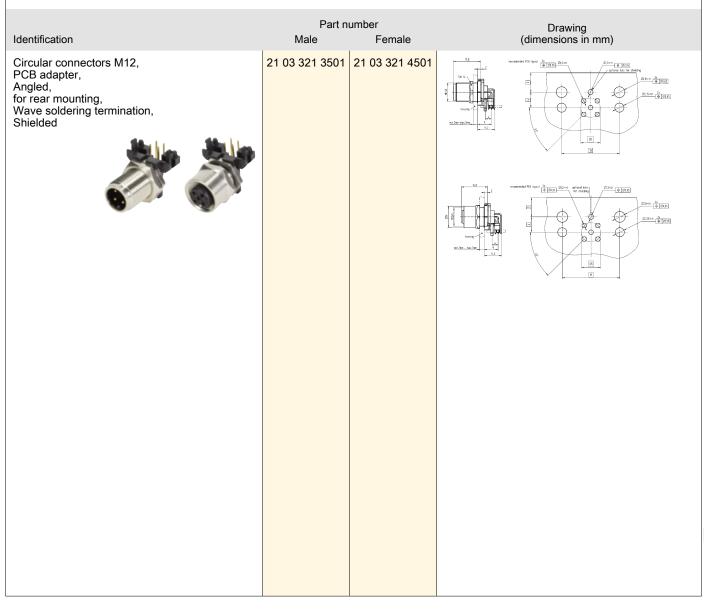
### Technical characteristics

Material (insert) Polyamide (PA) Material (hood/housing) Copper-zinc alloy Material (contacts) Copper alloy Surface (contacts) Gold plated

RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-101

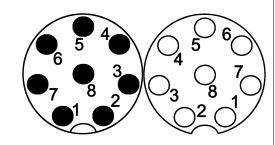




8

M12

Reflow soldering termination (THR) Shielded



# Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 8 \\ \text{Rated current} & 2 \text{ A} \\ \text{Rated voltage} & 30 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & > 10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Tightening torque 2 Nm Lock nut

### Technical characteristics

Material (insert) Liquid crystal polymer (LCP)

Material (contacts)

Copper alloy
Surface (contacts)

Gold plated

RoHS compliant with exemption,

compliant

# Specifications and approvals

IEC 61076-2-101 UL 1977 ECBT2.E102079

CSA-C22.2 No. 182.3 ECBT8.E102079

# Identification Part number Male Female (dimensions in mm) Circular connectors M12, PCB adapter, Straight, Reflow soldering termination (THR), Shielded, Pack contents: 60 pieces in a tray Order housings separately



Part number Drawing (dimensions in mm) Identification Male Female 21 03 301 1000 21 03 301 2000 Circular connectors M12, M16x1,5 Housing, M12x1 for rear mounting, Montageausschnitt/ panel cut out Pack contents: 10 pieces 1:1 Gehäusewand panel housing t=1,5-3,5 M12 Leiterplattenadapter (optional) M12 PCB adapter (optional) Leiterplatte *PCB* M16x1,5 Montageausschnitt/ panel cut out 1:1 M12 Leiterplattenadapter (optional) M12 PCB adapter (optional) Circular connectors M12, 21 03 301 1003 21 03 301 2003 PushPull, Housing, for front mounting, Montageausschnitt/ panel cut out 1:1 Pack contents: 10 pieces PCB M12x1 1:1

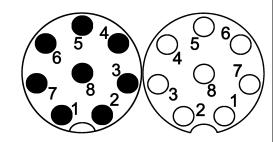
M12



8

M12

Reflow soldering termination (THR) Shielded



## Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 8 \\ \text{Rated current} & 2 \text{ A} \\ \text{Rated voltage} & 30 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Tightening torque 2 Nm Lock nut

### Technical characteristics

Material (insert) Liquid crystal polymer (LCP)

Material (hood/housing)

Material (contacts)

Surface (contacts)

Zinc die-cast
Copper alloy
Surface (contacts)

Gold plated

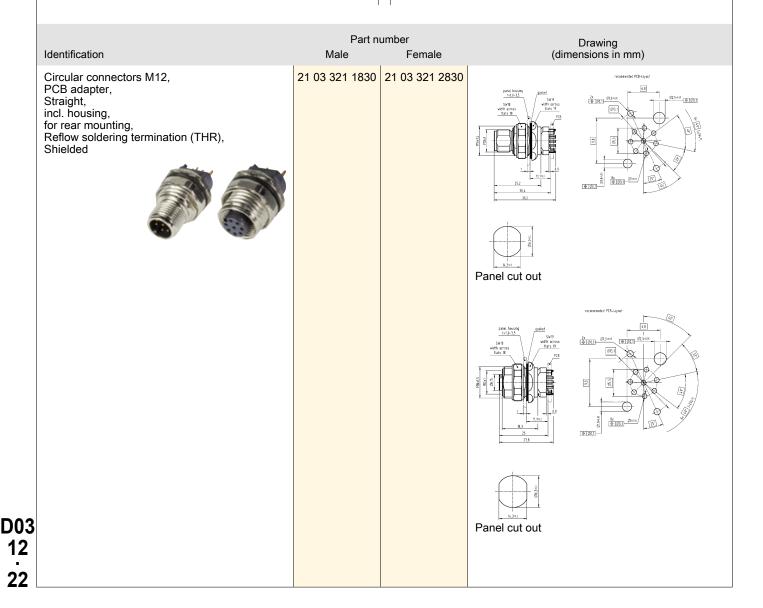
RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-101

UL 1977 ECBT2.E102079

CSA-C22.2 No. 182.3 ECBT8.E102079





Part number Drawing (dimensions in mm) Identification Male Female Circular connectors M12, PushPull, PCB adapter, Straight, incl. housing, for front mounting, Reflow soldering termination (THR), Shielded 21 03 321 1831 21 03 321 2831 Panel cut out Panel cut out

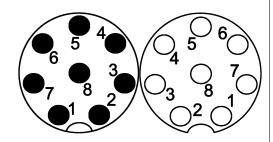
M12



8

M12

Reflow soldering termination (SMT) Unshielded



### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 8 \\ \text{Rated current} & 2 \text{ A} \\ \text{Rated voltage} & 30 \text{ V} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & > 10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m}\Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking
Degree of protection acc. to IEC IP67, when mated

60529

### Technical characteristics

Tightening torque 1 Nm Lock nut

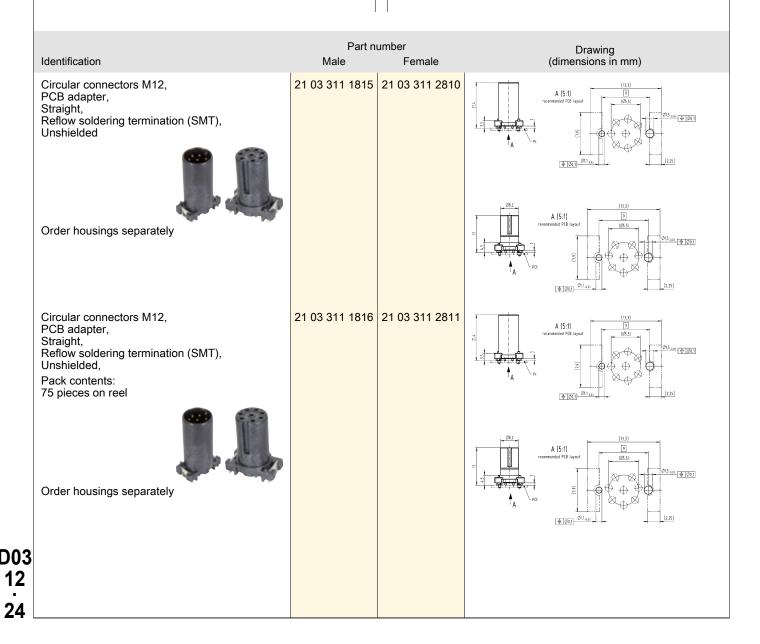
Material (insert) Liquid crystal polymer (LCP)

Material (contacts) Copper alloy Surface (contacts) Gold plated

RoHS compliant with exemption

# Specifications and approvals

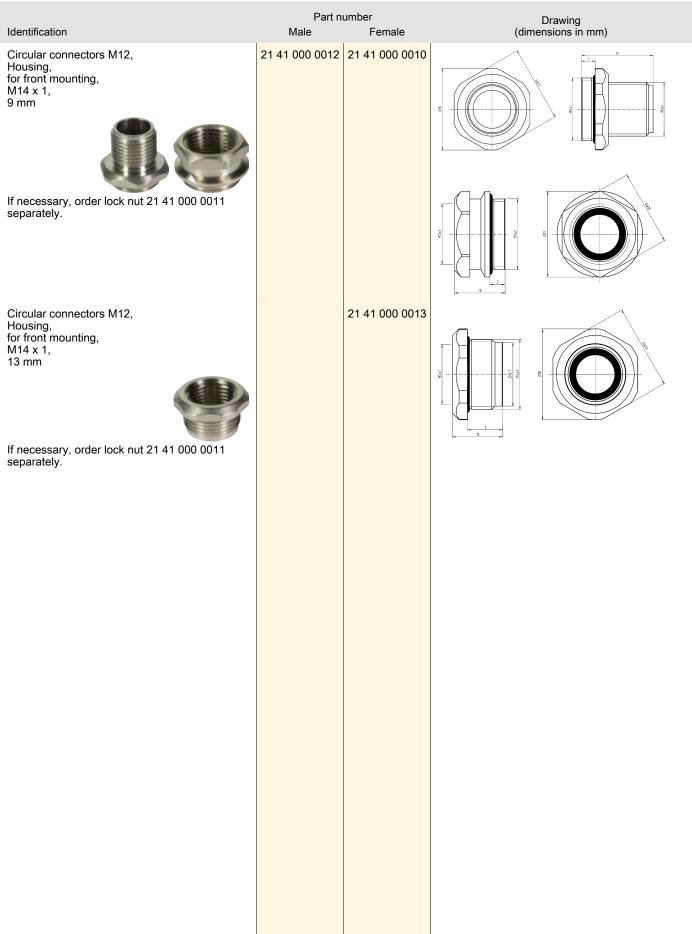
IEC 61076-2-101





D03

25

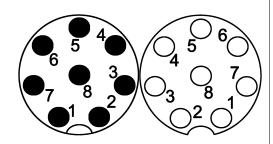




8

M12

Reflow soldering termination (SMT) Shielded



## Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 8 \\ \text{Rated current} & 2 \text{ A} \\ \text{Rated voltage} & 30 \text{ V} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & > 10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking
Degree of protection acc. to IEC IP67, when mated

60529

# Technical characteristics

Tightening torque 1 Nm Lock nut

Material (insert) Liquid crystal polymer (LCP)
Material (contacts) Copper alloy

Surface (contacts) Copper alloy Surface (contacts) Gold plated

RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-101

Identification	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, PCB adapter, Straight, Reflow soldering termination (SMT), Shielded	21 03 321 1802	21 03 321 2802	A (5:1) (3:3) (3:5) (7:5
Order housings separately			A [5:4]  reconnected 7:5 layed  (05:5)  (05:5)  (05:5)  (05:5)  (05:5)  (05:5)  (05:5)  (05:5)  (05:5)  (05:5)  (05:5)  (05:5)  (05:5)  (05:5)  (05:5)
Circular connectors M12, PCB adapter, Straight, Reflow soldering termination (SMT), Shielded, Pack contents: 75 pieces on reel	21 03 321 1803	21 03 321 2803	A (5:1)    1
Order housings separately			A (5:11)  reconsender PCS layed  (0.5)  (0.5)  (0.5)  (0.5)  (0.5)  (0.5)  (0.5)  (0.5)  (0.5)  (0.5)  (0.5)  (0.5)  (0.5)

If necessary, order lock nut 21 41 000 0011

separately.

Identification

Drawing (dimensions in mm)



Circular connectors M12, Housing, for front mounting, M14 x 1, 9 mm

Circular connectors M12, Housing, for front mounting, M14 x 1, 13 mm

21 41 000 0012

21 41 000 0010

21 41 000 0010

21 41 000 0010

21 41 000 0010

Part number

Female

Male

M12

**B-coding** 

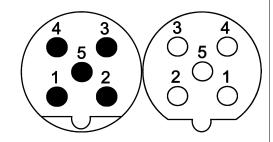


Number of contacts

5

M12

Reflow soldering termination (THR) Shielded



# Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 5 \\ \text{Rated current} & 4 \text{ A} \\ \text{Rated voltage} & 50 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Tightening torque 2 Nm Lock nut

### Technical characteristics

Material (insert) Liquid crystal polymer (LCP)

Material (contacts)

Copper alloy
Surface (contacts)

Gold plated

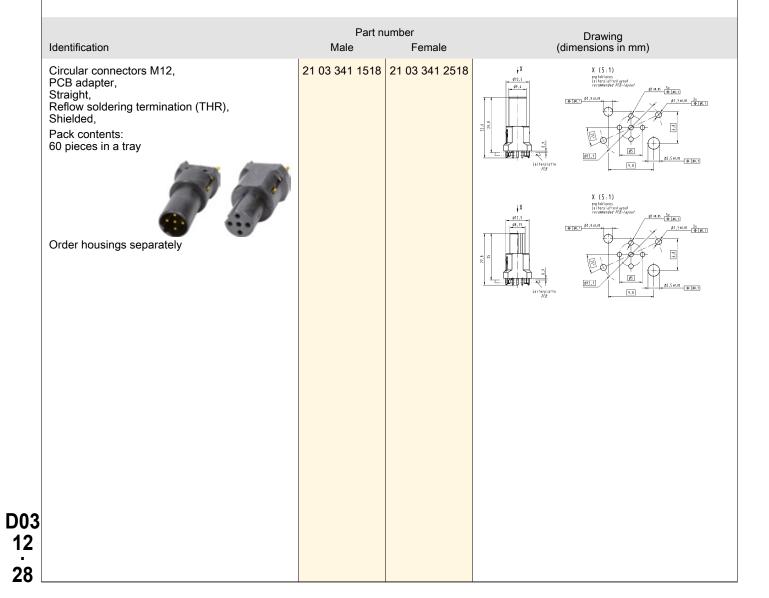
RoHS compliant with exemption,

compliant

# Specifications and approvals

IEC 61076-2-101 UL 1977 ECBT2.E102079

CSA-C22.2 No. 182.3 ECBT8.E102079





Part number Drawing (dimensions in mm) Identification Male Female 21 03 301 1000 21 03 301 2000 Circular connectors M12, M16x1,5 Housing, M12x1 for rear mounting, Montageausschnitt/ panel cut out Pack contents: 10 pieces 1:1 Gehäusewand panel housing t=1,5-3,5 M12 Leiterplattenadapter (optional) M12 PCB adapter (optional) Leiterplatte *PCB* M16x1,5 Montageausschnitt/ panel cut out 1:1 M12 Leiterplattenadapter (optional) M12 PCB adapter (optional) Circular connectors M12, 21 03 301 1003 21 03 301 2003 PushPull, Housing, for front mounting, Montageausschnitt/ panel cut out 1:1 Pack contents: 10 pieces PCB M12x1 1:1

M12

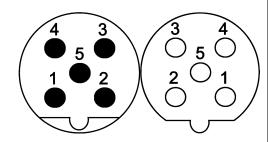
**B-coding** 



Number of contacts

M12

Reflow soldering termination (THR)



## Technical characteristics

Number of contacts Rated current 4 A 50 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥100 Mating cycles

Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Tightening torque 2 Nm Lock nut

### Technical characteristics

Material (insert) Liquid crystal polymer (LCP) Zinc die-cast

Material (hood/housing) Material (contacts) Copper alloy Surface (contacts) Gold plated

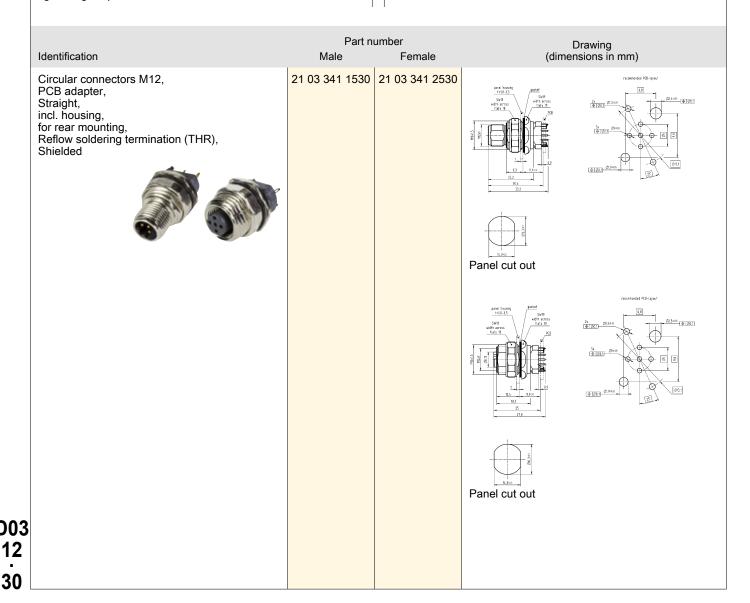
RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-101

UL 1977 ECBT2.E102079

CSA-C22.2 No. 182.3 ECBT8.E102079



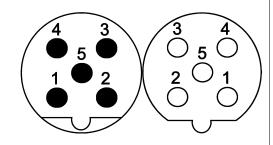


Part number Drawing (dimensions in mm) Identification Male Female Circular connectors M12, PCB adapter, Straight, incl. housing, for front mounting, Reflow soldering termination (THR), Shielded 21 03 341 1531 21 03 341 2531 Panel cut out Panel cut out

M12



Reflow soldering termination (THR)



# Technical characteristics

Number of contacts Rated current 4 A 50 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥100 Mating cycles Locking type Screw locking

Degree of protection acc. to IEC IP67, when mated

60529

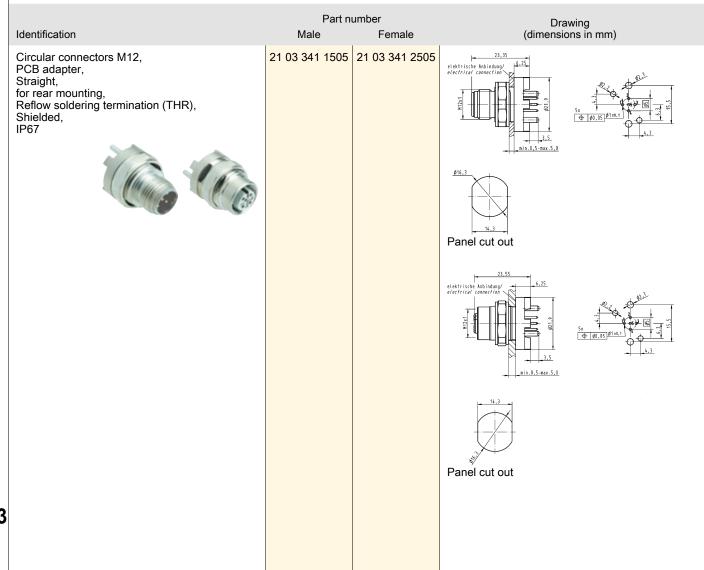
### Technical characteristics

Tightening torque 2 Nm Lock nut Material (insert) Polyamide (PA) Material (hood/housing) Zinc die-cast Material (contacts) Copper alloy Gold plated Surface (contacts)

RoHS compliant with exemption

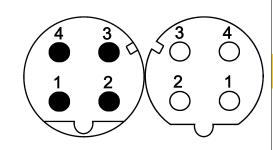
# Specifications and approvals

IEC 61076-2-101





Reflow soldering termination (THR)



### Technical characteristics

Number of contacts 4 A Rated current 50 V Rated voltage Rated impulse voltage 2.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥100 Mating cycles

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Transmission characteristics Cat. 5, Class D up to 100 MHz

Tightening torque 2 Nm Lock nut

### Technical characteristics

Material (contacts) Copper alloy Surface (contacts) Gold plated

RoHS compliant with exemption,

compliant

# Specifications and approvals

IEC 61076-2-101 UL 1977 ECBT2.E102079

CSA-C22.2 No. 182.3 ECBT8.E102079



### Material (insert) Liquid crystal polymer (LCP) Part number Drawing (dimensions in mm) Identification Female Male Circular connectors M12, 21 03 381 1418 21 03 381 2418 PCB adapter, Straight, Reflow soldering termination (THR), Shielded, Pack contents: 60 pieces in a tray Order housings separately

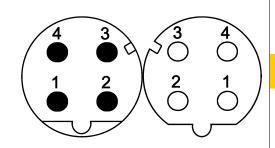


Part number Drawing (dimensions in mm) Identification Male Female 21 03 301 1000 21 03 301 2000 Circular connectors M12, M16x1,5 Housing, M12x1 for rear mounting, Montageausschnitt/ panel cut out Pack contents: 10 pieces 1:1 Gehäusewand
panel housing
t=1,5-3,5 M12 Leiterplattenadapter (optional) M12 PCB adapter (optional) M16x1,5 Montageausschnitt/ panel cut out 1:1 M12 Leiterplattenadapter (optional) M12 PCB adapter (optional) 21 03 301 1003 21 03 301 2003 Circular connectors M12, PushPull, Housing, for front mounting, Montageausschnitt/ panel cut out 1:1 Pack contents: 10 pieces PCB M12x1 1:1 panel housing t=1,0-2,5 **D03** 



4

Reflow soldering termination (THR)



### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 4 \text{ A} \\ \text{Rated voltage} & 50 \text{ V} \\ \text{Rated impulse voltage} & 2.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \text{ m} \Omega \\ \text{Mating cycles} & \geq 100 \end{array}$ 

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated 60529

Transmission characteristics Cat. 5, Class D up to 100 MHz

Tightening torque 2 Nm Lock nut

### Technical characteristics

Material (insert) Liquid crystal polymer (LCP)

Material (hood/housing)

Material (contacts)

Surface (contacts)

Zinc die-cast
Copper alloy
Surface (contacts)

Gold plated

RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-101

UL 1977 ECBT2.E102079

CSA-C22.2 No. 182.3 ECBT8.E102079

# Identification Male Female Circular connectors M12, PCB adapter, Straight, incl. housing, Reflow soldering termination (THR), Shielded Part — Warner (Part) 21 03 381 1430 21 03 381 2430 Part — Warner (Part) PCB adapter, Straight, incl. housing, Reflow soldering termination (THR), Shielded Part — Warner (Part) Part —





M12

Drawing (dimensions in mm) Identification Male Female Circular connectors M12, PushPull, PCB adapter, Straight, incl. housing, for front mounting, Reflow soldering termination (THR), Shielded 21 03 381 1431 21 03 381 2431 Panel cut out Panel cut out **D03** 

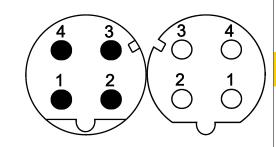
Part number



Number of contacts

4

Reflow soldering termination (THR)



### Technical characteristics

 Number of contacts
 4

 Rated current
 4 A

 Rated voltage
 50 V

 Rated impulse voltage
 2.5 kV

 Pollution degree
 3

 Insulation resistance
 >108 Ω

 Contact resistance
 ≤10 mΩ

 Mating cycles
 ≥100

 Locking type
 Serow less

Locking type Screw locking

Degree of protection acc. to IEC IP67, when mated, IP20

Posso

60529

Transmission characteristics Cat. 5, Class D up to 100 MHz

Tightening torque 2 Nm Lock nut Material (insert) Polyamide (PA)

### Technical characteristics

Material (hood/housing) Zinc die-cast
Material (contacts) Copper alloy
Surface (contacts) Gold plated

RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-101 UL 1977 ECBT2.E235076

CSA-C22.2 No. 182.3 ECBT8.E235076



# Part number Drawing Identification Male Female (dimensions in mm) 21 03 371 1400 21 03 371 2415 PCB layout Circular connectors M12, (5:1) PCB adapter, Straight, 4x ⊕ Ø0.05 for rear mounting, Reflow soldering termination (THR), Shielded, IP67 Ø5 Panel cut out min.2,0-max.519,3 Panel cut out

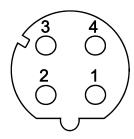




	Identification	Part no Male	umber Female	Drawi (dimensions	ng s in mm)
M12	Circular connectors M12, With fixing hole, PCB adapter, Straight, for rear mounting, Reflow soldering termination (THR), Shielded, IP20		21 03 381 6410	elektrische Anbindung electrical connector min.0.5-max.5.	
	Circular connectors M12, With fixing hole, PCB adapter, Straight, for rear mounting, Reflow soldering termination (THR), Shielded, IP67		21 03 381 6420	electrical connection 535  electrical connection 535  min 05-max 530  3.45	\$1.3 \$2.7 \$1.0.1 \$6.3
				Panel cut out	
D03 12 38					

Number of contacts

Reflow soldering termination (THR)



# Technical characteristics

Number of contacts Rated current 4 A Rated voltage 50 V Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100

Locking type Screw locking

Degree of protection acc. to IEC IP20, IP67, when mated

60529

Transmission characteristics Cat. 5, Class D up to 100 MHz

Tightening torque 2 Nm Lock nut

Material (insert) Liquid crystal polymer (LCP)

### Technical characteristics

Material (hood/housing) Zinc die-cast Material (contacts) Copper alloy Surface (contacts) Gold plated

RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-101 UL 1977 ECBT2.E235076

CSA-C22.2 No. 182.3 ECBT8.E235076



### Identification

Circular connectors M12,

PCB adapter, Angled,

for rear mounting,

Reflow soldering termination (THR),

Shielded,

IP20



Coding bottom left = Cable entry direction on the angled connector: to the right

Circular connectors M12, PCB adapter,

Angled,

for rear mounting,

Reflow soldering termination (THR),

Shielded,

IP20

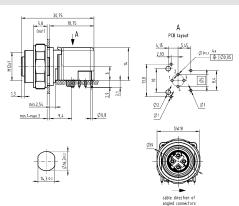


Coding top left = Cable entry direction on the angled connector: downwards

Part number Female

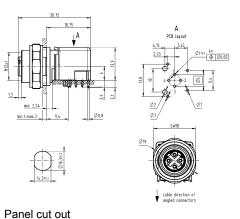
21 03 381 4410

Drawing (dimensions in mm)



Panel cut out

21 03 381 4411





Part number Drawing (dimensions in mm) Identification Female Circular connectors M12, 21 03 381 4412 With fixing hole, PCB adapter, Angled, for rear mounting, Reflow soldering termination (THR), Shielded, IP20 Coding bottom left = Cable entry direction on the angled connector: to the right Panel cut out Circular connectors M12, 21 03 381 4413 With fixing hole, PCB adapter, Angled, for rear mounting, Reflow soldering termination (THR), Shielded, IP20 Coding top left = Cable entry direction on the angled connector: downwards Panel cut out Circular connectors M12, PCB adapter, 21 03 381 4430 Angled, for rear mounting, Reflow soldering termination (THR), Shielded, IP67 Coding bottom left = Cable entry direction on the angled connector: to the right Panel cut out



### Identification

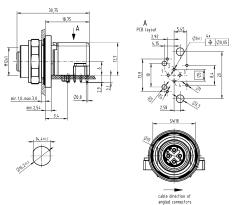
Circular connectors M12, With fixing hole, PCB adapter, Angled, for rear mounting, Reflow soldering termination (THR), Shielded, IP67



Coding bottom left = Cable entry direction on the angled connector: to the right

Part number Female

21 03 381 4432



Drawing (dimensions in mm)

Panel cut out

## **D-coding**

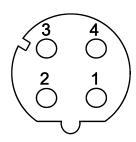


Number of contacts

4

M12

Reflow soldering termination (THR) Shielded



### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 4 \text{ A} \\ \text{Rated voltage} & 250 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP20, IP67, when mated

60529

Transmission characteristics Cat. 5, Class D up to 100 MHz

Tightening torque 2 Nm Lock nut

### Technical characteristics

Material (insert) Liquid crystal polymer (LCP)
Material (hood/housing) Zinc die-cast

Material (hood/housing)

Material (contacts)

Surface (contacts)

Zinc die-cast
Copper alloy
Gold plated

RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-101



### Identification

Circular connectors M12,

PushPull, PCB adapter, Angled, for rear mounting,

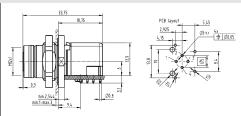
Reflow soldering termination (THR),

Shielded, IP20



21 03 381 4434

Drawing (dimensions in mm)





Panel cut out

Circular connectors M12,

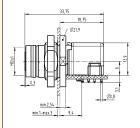
PushPull, With fixing hole, PCB adapter, Angled,

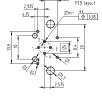
for rear mounting,

Reflow soldering termination (THR),

Shielded, IP20

21 03 381 4435







Panel cut out



Part number Drawing (dimensions in mm) Identification Female Circular connectors M12, PushPull, PCB adapter, Angled, for rear mounting, Reflow soldering termination (THR), Shielded, 21 03 381 4436 IP67 Panel cut out Circular connectors M12, PushPull, With fixing hole, PCB adapter, Angled, for rear mounting, Reflow soldering termination (THR), Shielded, IP67 21 03 381 4437 IP67 Panel cut out

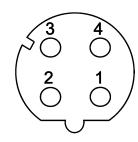
M12



4

M12

Reflow soldering termination (SMT) Shielded



### Technical characteristics

Degree of protection acc. to IEC IP67, when mated

00529

Transmission characteristics Cat. 5, Class D up to 100 MHz

If necessary, order lock nut 21 41 000 0011 separately.

### Technical characteristics

Tightening torque 1 Nm Lock nut

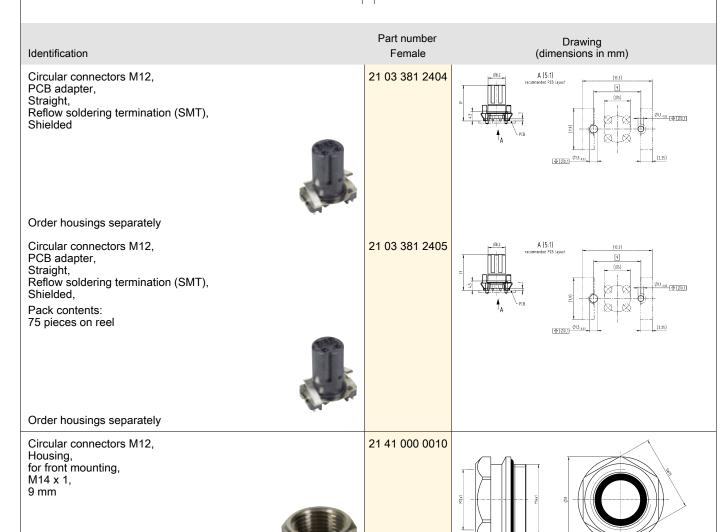
Material (insert) Liquid crystal polymer (LCP)
Material (contacts) Copper alloy

Surface (contacts) Copper alloy Gold plated

RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-101





M12

Part number Drawing (dimensions in mm)

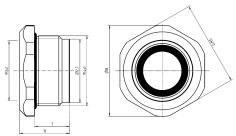
Circular connectors M12,

Part number Drawing (dimensions in mm)

Circular connectors M12, Housing, for front mounting, M14 x 1, 13 mm



If necessary, order lock nut 21 41 000 0011 separately.



D03 12 . 45

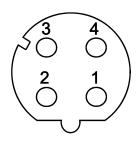
# **D-coding**



Number of contacts

M12

Wave soldering termination Shielded



### Technical characteristics

Number of contacts Rated current 4 A 250 V Rated voltage Pollution degree >10<sup>8</sup> Ω Insulation resistance Mating cycles ≥100 Locking type Screw locking

Degree of protection acc. to IEC IP67, when mated

Transmission characteristics

1 Nm Lock nut

Tightening torque

Cat. 5, Class D up to 100 MHz

Material (insert) Polyamide (PA) Material (hood/housing) Copper-zinc alloy Material (contacts) Copper alloy Surface (contacts) Gold plated

Technical characteristics

RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-101

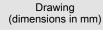
Identification

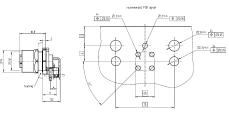
Circular connectors M12, PCB adapter, Angled, for rear mounting, Wave soldering termination, Shielded



Part number Female

21 03 381 4440

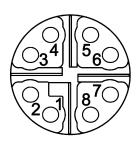








Reflow soldering termination (THR)



### Technical characteristics

Number of contacts 8 Rated current 0.5 A Rated voltage 50 V Rated impulse voltage 0.8 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥100 Mating cycles

Screw locking, PushPull Locking type Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Cat.  $6_A$ , Class  $E_A$  up to 500 MHz, Cat. 5, Class D up to 100 MHz Transmission characteristics

Tightening torque 2 Nm Lock nut

Material (insert) Liquid crystal polymer (LCP)

### Technical characteristics

Material (contacts) Copper alloy Surface (contacts) Gold plated

compliant with exemption, compliant RoHS

# Specifications and approvals

IEC 61076-2-109 UL 1977 ECBT2.E102079 CSA-C22.2 No. 182.3 ECBT8.E102079



Identification		Part number Female	Drawing (dimensions in mm)
Circular connectors M12, PCB adapter, Straight, Reflow soldering termination (THR), Shielded, Pack contents: 60 pieces in a tray  Order housings separately	Cat. 5 Cat. 6 <sub>A</sub>	21 03 381 2807 21 03 381 2806	10.14.1.16.15.15.15.15.15.15.15.15.15.15.15.15.15.
Circular connectors M12, PCB adapter, Angled, Reflow soldering termination (THR), Shielded, Pack contents: 30 pieces in a tray  Order housings separately	Cat. 6 <sub>A</sub>	21 03 381 4806	TRUMAN (N. Lynd)  (S.



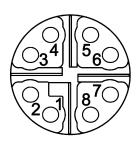


	Identification	Part number Female	Drawing (dimensions in mm)	
M12	Circular connectors M12, Housing, for rear mounting, Pack contents: 10 pieces	21 03 301 2000	Gehäusevand panel housing t=1,5-3,2; f(p) final  H12x1  Hnontageausschnitt/ panel cut out 1:1  1:1  415,3+9,2  P(B)  H2 Leiterplattenadapter (optional)	
	Circular connectors M12, PushPull, Housing, for front mounting, Pack contents: 10 pieces	21 03 301 2003	miss15  Montageausschnitt/ panel kousing 1:10-2,5  Montageausschnitt/ panel cof ouf 1:1  1:10-2,5  Montageausschnitt/ panel cof ouf 1:10-2,5  MIZPEB adapter Inprimal	
D03 12 48				





Reflow soldering termination (THR)



### Technical characteristics

Number of contacts Rated current 0.5 A Rated voltage 50 V Rated impulse voltage 0.8 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥100 Mating cycles

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated 60529

Transmission characteristics

Cat.  $6_A$ , Class  $E_A$  up to 500 MHz, Cat. 5, Class D up to 100 MHz

2 Nm Lock nut

Tightening torque Material (insert) Liquid crystal polymer (LCP)

#### Technical characteristics

Material (hood/housing) Zinc die-cast Material (contacts) Copper alloy Surface (contacts) Gold plated

RoHS compliant with exemption

### Specifications and approvals

IEC 61076-2-109 UL 1977 ECBT2.E102079

CSA-C22.2 No. 182.3 ECBT8.E102079



## Part number Drawing Identification Female (dimensions in mm) 21 03 381 2803 21 03 381 2802 Circular connectors M12, Cat. 5 PushPull, Cat. 6<sub>A</sub> PCB adapter, Straight, incl. housing, for front mounting, Reflow soldering termination (THR), Shielded. Pack contents: 60 pieces in a tray Panel cut out Panel cut out

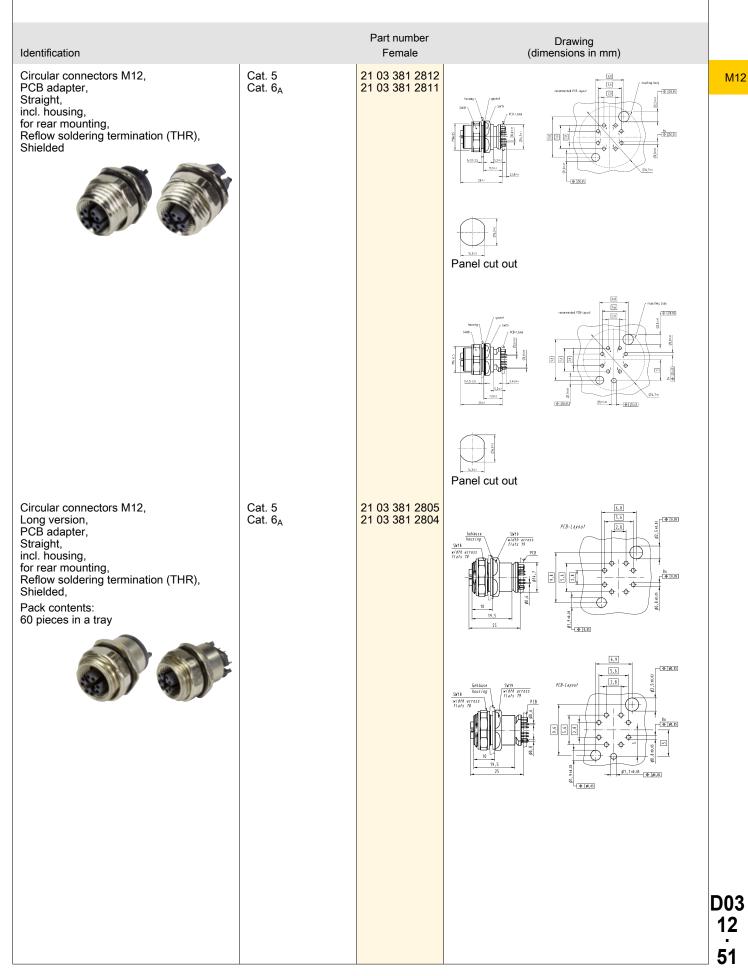
M12

**50** 



Part number Drawing (dimensions in mm) Identification Female 21 03 381 2814 21 03 381 2813 Circular connectors M12, Cat. 5 PushPull, PCB adapter, Cat. 6<sub>A</sub> Straight, incl. housing, for front mounting, Reflow soldering termination (THR), Shielded Panel cut out Panel cut out 21 03 381 2809 21 03 381 2810 Circular connectors M12, PCB adapter, Cat. 5 **♦ 1,1**5 Cat. 6<sub>A</sub> Straight, incl. housing, for rear mounting, Reflow soldering termination (THR), 8x + 1,15 Shielded, Pack contents: 60 pieces in a tray **D03** 





X-coding

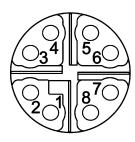


Number of contacts

8

M12

Reflow soldering termination (THR) Shielded



### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 8 \\ \text{Rated current} & 0.5 \text{ A} \\ \text{Rated voltage} & 50 \text{ V} \\ \text{Rated impulse voltage} & 0.8 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Transmission characteristics

Tightening torque

Material (insert)

Cat. 6<sub>A</sub>, Class E<sub>A</sub> up to 500 MHz

2 Nm Lock nut

Liquid crystal polymer (LCP)

### Technical characteristics

Material (hood/housing) Zinc die-cast
Material (contacts) Copper alloy
Surface (contacts) Gold plated

RoHS compliant with exemption

### Specifications and approvals

IEC 61076-2-109

UL 1977 ECBT2.E102079

CSA-C22.2 No. 182.3 ECBT8.E102079



#### Identification

Circular connectors M12,

PushPull, PCB adapter,

Angled, incl. housing, for front mount

for front mounting,

Reflow soldering termination (THR),

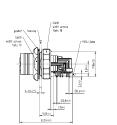
Shielded,

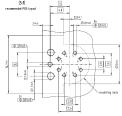
Pack contents: 30 pieces in a tray



21 03 381 4802

# Drawing (dimensions in mm)







Panel cut out

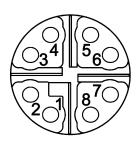


Part number Drawing (dimensions in mm) Identification Female 21 03 381 4810 Circular connectors M12, PushPull, PCB adapter, Angled, incl. housing, for front mounting, Reflow soldering termination (THR), Panel cut out Circular connectors M12, 21 03 381 4807 PCB adapter, β0 , 8 ±0 , 05 8x Φ | φ0, 05 Angled, incl. housing, for rear mounting, Reflow soldering termination (THR), Shielded, Pack contents: 30 pieces in a tray Circular connectors M12, 21 03 381 4809 PCB adapter, Angled, incl. housing, for rear mounting, Reflow soldering termination (THR), Shielded Panel cut out Circular connectors M12, 21 03 381 4804 Long version, PCB adapter, Angled, incl. housing, for rear mounting, Reflow soldering termination (THR), Shielded, Pack contents: 30 pieces in a tray



M12

Reflow soldering termination (SMT)



#### Technical characteristics

Number of contacts Rated current 0.5 A Rated voltage 48 V Pollution degree >10<sup>8</sup> Ω Insulation resistance Mating cycles ≥100 Locking type Screw locking

Degree of protection acc. to IEC IP67, when mated

Cat. 6<sub>A</sub>, Class E<sub>A</sub> up to 500 MHz Transmission characteristics

If necessary, order lock nut 21 41 000 0011 separately.

#### Technical characteristics

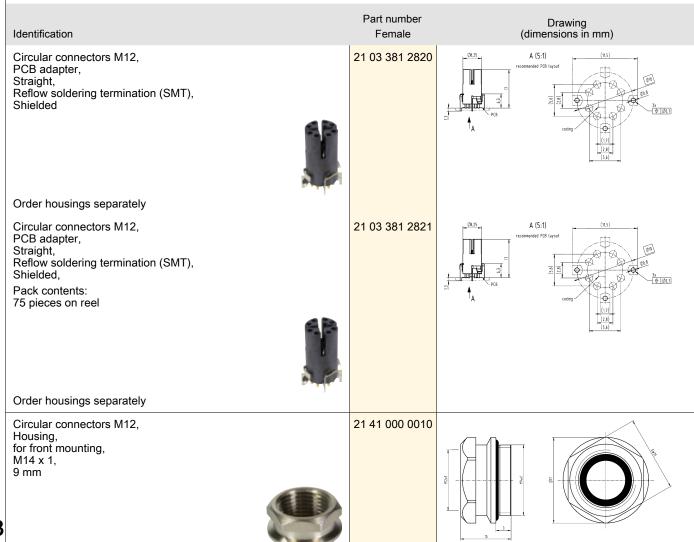
Tightening torque 1 Nm Lock nut

Material (insert) Liquid crystal polymer (LCP) Material (contacts) Copper alloy

Surface (contacts) Gold plated

RoHS compliant with exemption

### Specifications and approvals







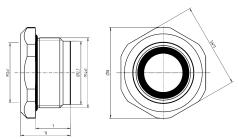
Part number Drawing Identification Female (dimensions in mm)

21 41 000 0013

Circular connectors M12, Housing, for front mounting, M14 x 1, 13 mm



If necessary, order lock nut 21 41 000 0011 separately.



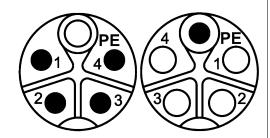




M12



Reflow soldering termination (THR) Shielded



#### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 12 \text{ A} \\ \text{Rated voltage} & 630 \text{ V} \\ \text{Rated impulse voltage} & 6 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

### Technical characteristics

Tightening torque 2 Nm Lock nut

Material (insert) Liquid crystal polymer (LCP)
Material (contacts) Copper alloy

Surface (contacts) Copper alloy Gold plated

### Specifications and approvals

IEC 61076-2-111

Identification	Part n	umber Female	Drawing (dimensions in mm)		
Circular connectors M12, Power, PushPull, PCB adapter, Straight, Reflow soldering termination (THR), Shielded,	21 03 309 1505 407	21 03 309 2505 407	Tecomended P3-layout A (5:1)		
Pack contents: 30 pieces in a carton box  Order housings separately			7 PCB 25.412 (01.30)  7 PCB (01.30)		
Circular connectors M12, Power,	21 03 309 1505	21 03 309 2505	25 25 25 25 25 25 25 25 25 25 25 25 25 2		
PushPull, PCB adapter, Straight, Reflow soldering termination (THR), Shielded, Pack contents: 60 pieces in a tray					
Order housings separately					

D0: 12

-





Identification	Part n Male	umber Female	Drawing (dimensions in mm)	
Circular connectors M12, Housing, for rear mounting, Pack contents: 30 pieces	21 03 302 1000 407	21 03 302 2000 407		
Circular connectors M12, Housing, for front mounting, Pack contents: 30 pieces	21 03 302 1001 407	21 03 302 2001 407		
				D 1
				<sub>E</sub>

K-coding



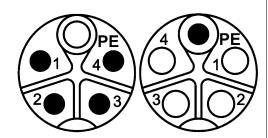
Number of contacts



M12



Reflow soldering termination (THR) Shielded



#### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 12 \text{ A} \\ \text{Rated voltage} & 630 \text{ V} \\ \text{Rated impulse voltage} & 6 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

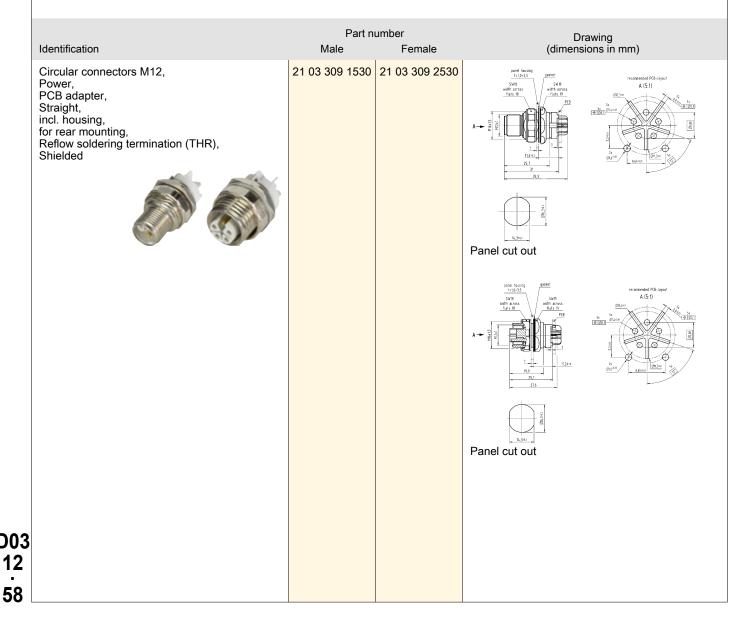
#### Technical characteristics

Tightening torque 2 Nm Lock nut

Material (insert) Liquid crystal polymer (LCP)

Material (contacts) Copper alloy Surface (contacts) Gold plated

### Specifications and approvals





Part number Drawing (dimensions in mm) Identification Male Female recommended PEB-layout A (5:1) 21 03 309 1531 21 03 309 2531 Circular connectors M12, Circular connectors M12,
Power,
PushPull,
PCB adapter,
Straight,
incl. housing,
for front mounting,
Reflow soldering termination (THR),
Shielded Panel cut out Panel cut out

L-coding

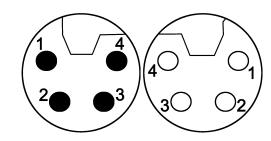


Number of contacts

4

M12

Reflow soldering termination (THR) Shielded



### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 16 \text{ A} \\ \text{Rated voltage} & 63 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & > 10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking
Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Tightening torque 2 Nm Lock nut Material (insert) Polyamide (PA)

#### Technical characteristics

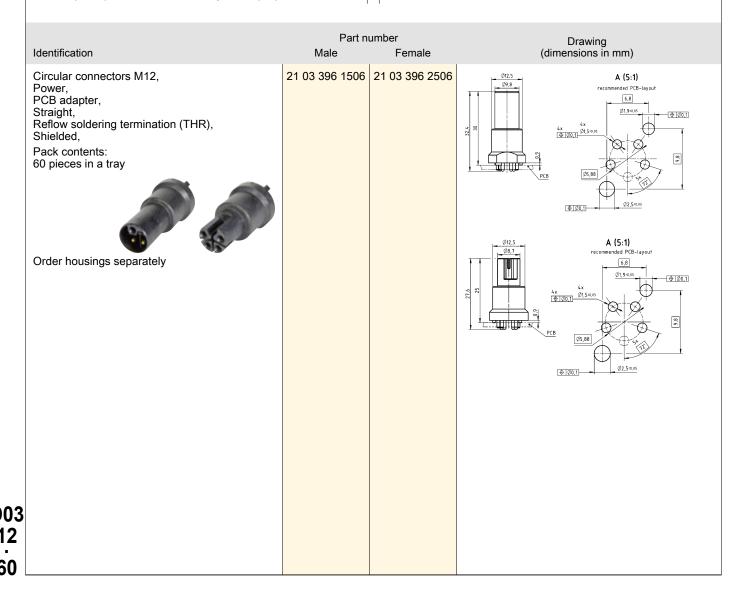
Colour (insert) Black
Material (contacts) Copper alloy
Surface (contacts) Gold plated

RoHS compliant, compliant with

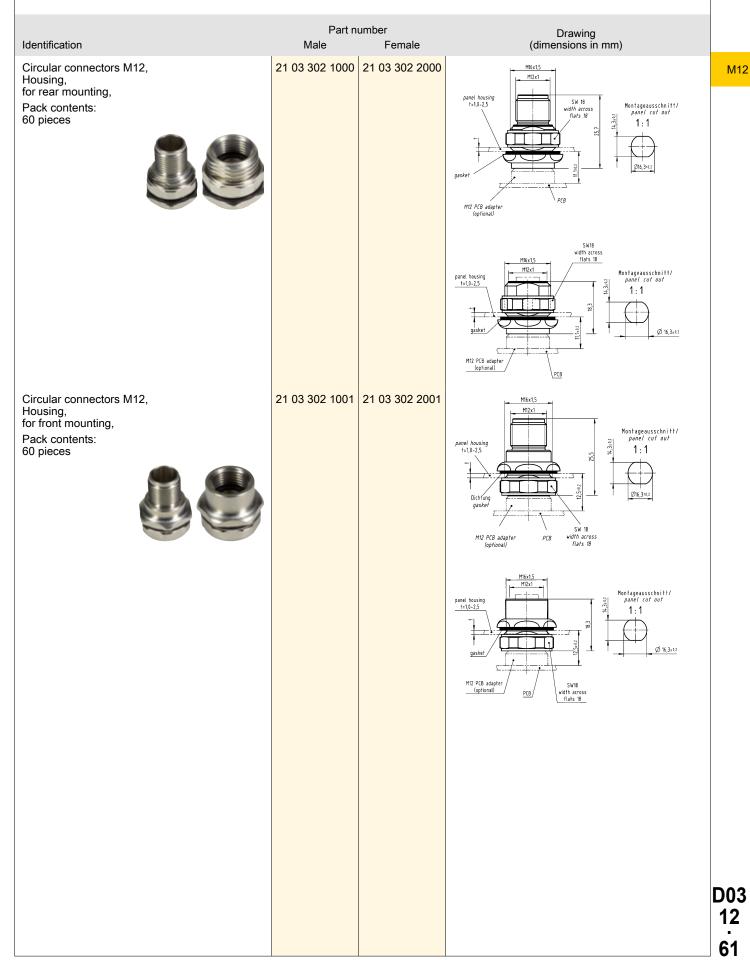
exemption

### Specifications and approvals







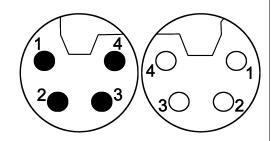


L-coding



Number of contacts

Reflow soldering termination (THR) Shielded



Black

Zinc die-cast

Copper alloy

Gold plated

compliant

### Technical characteristics

Number of contacts 16 A Rated current 63 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance

Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated 60529

Tightening torque 2 Nm Lock nut Material (insert) Polyamide (PA)

≤10 mΩ ≥100 Mating cycles

### Specifications and approvals

Material (hood/housing)

Material (contacts)

Surface (contacts)

Technical characteristics

Panel cut out

IEC 61076-2-111

Colour (insert)

RoHS



#### Part number Drawing Identification Male Female (dimensions in mm) 21 03 396 1532 21 03 396 2532 Circular connectors M12, A (5:1) mended PCB-layout Power, PCB adapter, 6,8 Ø1,9:0.05 Straight, incl. housing, for front mounting, Reflow soldering termination (THR), Shielded **⊕** Ø0.1⊢ (2:1) Panel cut out A (5:1) mended PCB-layout 6,8 → Ø0,1 (2:1)



Part number Drawing (dimensions in mm) Identification Male Female 21 03 396 1533 21 03 396 2533 A (5:1) mmended PCB layout Circular connectors M12, panel housing t=1,0+3,5 Power,
PCB adapter,
Straight,
incl. housing,
for rear mounting,
Reflow soldering termination (THR), 6,8 ⊕ Ø0,1 Shielded **⊕** Ø0,1 Panel cut out A (5:1) mended PCB-layout 6,8 4x ⊕ Ø0,1 **⊕** Ø0,1 Panel cut out

L-coding

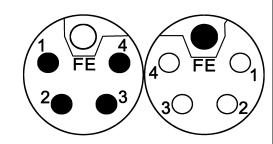


Number of contacts





Reflow soldering termination (THR) Shielded



#### Technical characteristics

Locking type Screw locking
Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Tightening torque 2 Nm Lock nut Material (insert) Polyamide (PA)

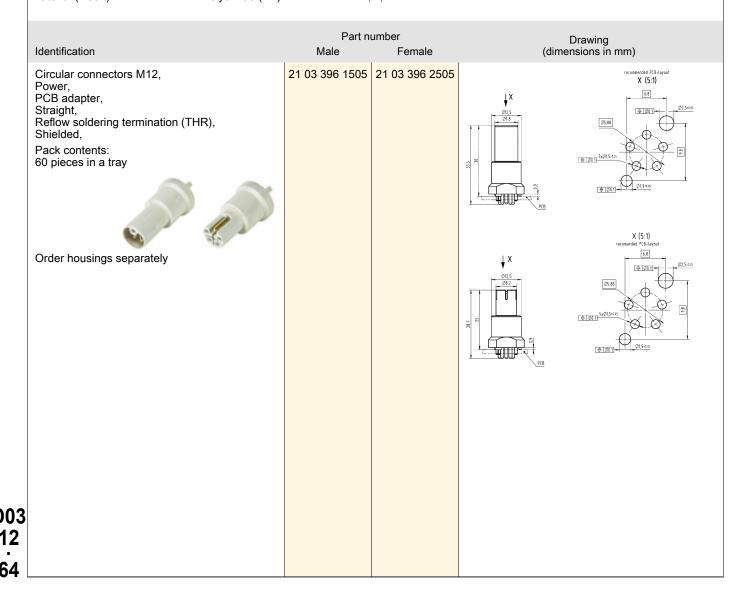
#### Technical characteristics

Colour (insert) Grey
Material (contacts) Copper alloy
Surface (contacts) Gold plated

RoHS compliant with exemption

### Specifications and approvals







Part number Drawing (dimensions in mm) Identification Male Female 21 03 302 1000 21 03 302 2000 Circular connectors M12, M16x1,5 Housing, for rear mounting, M12x1 SW 18 width across flats 18 Montageausschnitt/ panel cut out Pack contents: 60 pieces 1:1 M12 PCB adapter (optional) M12x1 Montageausschnitt/ panel cut out panel housing t=1,0-2,5 1:1 M12 PCB adapter (optional) Circular connectors M12, 21 03 302 1001 21 03 302 2001 Housing, for front mounting, M12x1 Montageausschnitt/ panel cut out Pack contents: panel housing t=1,0-2,5 1:1 60 pieces РСВ panel housing t=1,0-2,5 1:1

L-coding



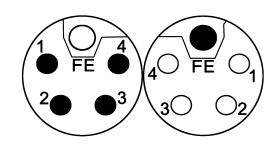
Number of contacts



M12



Reflow soldering termination (THR) Shielded



### Technical characteristics

Locking type Screw locking
Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Tightening torque 2 Nm Lock nut Material (insert) Polyamide (PA)

#### Technical characteristics

Colour (insert) Grey
Material (hood/housing) Zinc die-cast
Material (contacts) Copper alloy
Surface (contacts) Gold plated

RoHS compliant with exemption

### Specifications and approvals

IEC 61076-2-111



## Part number Drawing Identification Male Female (dimensions in mm) 21 03 396 1530 21 03 396 2530 Circular connectors M12, Power, PCB adapter, Straight, incl. housing, for rear mounting, Ø16 Reflow soldering termination (THR), Shielded 30.9 33,2 M16x1,5 10,8±0,2 19,8 27,6

Identification



21 03 396 1531 21 03 396 2531 Circular connectors M12, M12 Power,
PCB adapter,
Straight,
incl. housing,
for front mounting,
Reflow soldering termination (THR),
Shielded

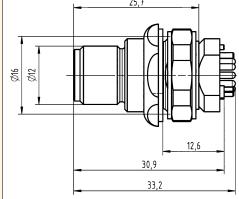
Female

Part number

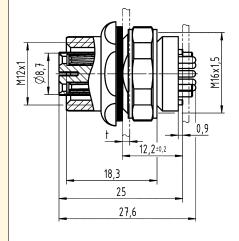
Male







Drawing (dimensions in mm)

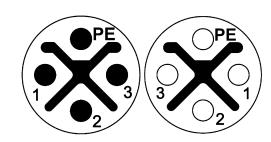


D03



3+ ⊕

Reflow soldering termination (THR) Shielded



#### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 3 \\ \text{Rated current} & 12 \text{ A} \\ \text{Rated voltage} & 630 \text{ V} \\ \text{Rated impulse voltage} & 6 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

### Technical characteristics

Tightening torque 2 Nm Lock nut

Material (insert) Liquid crystal polymer (LCP)

Material (contacts) Copper alloy Surface (contacts) Gold plated

### Specifications and approvals

	Identification	Part ni Male	umber Female	Drawing (dimensions in mm)
	Circular connectors M12, Power, PushPull, PCB adapter, Straight, Reflow soldering termination (THR), Shielded, Pack contents: 30 pieces in a carton box  Order housings separately	21 03 399 1430	21 03 399 2430	recommended PCB-layout 4.501  670,831  4.501  670,831  4.501  670,831  4.501  670,831  4.501  670,831  4.501  670,831  4.501  670,831  4.501  670,831  4.501  670,831  4.501  670,831  670,831  670,831  670,831  670,831
				(a) (b) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d
	Circular connectors M12, Power, PushPull, PCB adapter, Straight, Reflow soldering termination (THR), Shielded, Pack contents: 60 pieces in a tray Order housings separately	21 03 399 1460	21 03 399 2460	
3	Circular connectors M12, Housing, for rear mounting, Pack contents: 30 pieces	21 03 302 1000 407	21 03 302 2000 407	

S-coding



Identification	Part r Male	number Female	Drawing (dimensions in mm)	
Identification  Circular connectors M12, Housing, for front mounting, Pack contents: 30 pieces	Male			M
				D0

S-coding



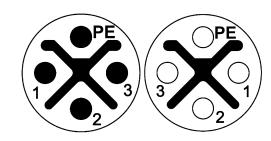
Number of contacts

3+

M12



Reflow soldering termination (THR) Shielded



### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 3 \\ \text{Rated current} & 12 \text{ A} \\ \text{Rated voltage} & 630 \text{ V} \\ \text{Rated impulse voltage} & 6 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & > 10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

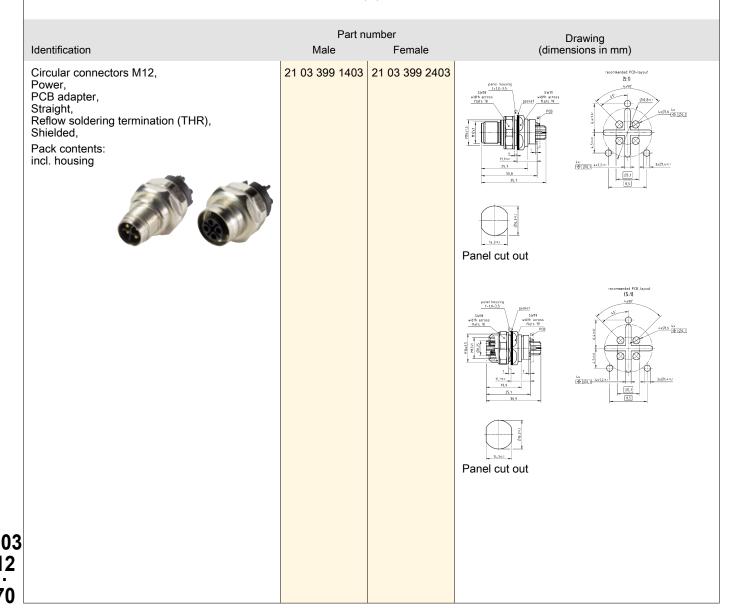
#### Technical characteristics

Tightening torque 2 Nm Lock nut

Material (insert) Liquid crystal polymer (LCP)

Material (contacts) Copper alloy Surface (contacts) Gold plated

### Specifications and approvals

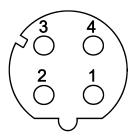


M12

Number of contacts

4

Reflow soldering termination (SMT)



### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 3 \text{ A} \\ \text{Rated voltage} & 57 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Transmission characteristics Cat. 5, Class D up to 100 MHz

### Technical characteristics

Data rate 100 Mbit/s
Tightening torque 2 Nm Lock nut
Material (insert) Liquid crystal polymer (LCP)

Material (contacts)

Surface (contacts)

Material (accessories)

Brass

Gold plated

Brass, nickel plated

RoHS compliant with exemption

## Specifications and approvals

Identification	Part number Female	Draw (dimension	ving ns in mm)	
Circular connectors M12, Magnetics, PCB adapter, with integrated transformer, Straight, Reflow soldering termination (SMT), Shielded, Pack contents: 60 pieces in a tray	21 03 381 2410	9 R P P P P P P P P P P P P P P P P P P	10,82	
Order housings separately  Circular connectors M12, Magnetics, PCB adapter, with integrated transformer, Straight, Power over Ethernet (PoE+), Reflow soldering termination (SMT), Shielded, Pack contents: 60 pieces in a tray	21 03 381 2411		10.43 13.72	
Order housings separately				

# PCB connectors with transformer





	Identification	Part number Female	Drawing (dimensions in mm)
	Circular connectors M12, Magnetics, PCB adapter, with integrated transformer, Angled, Reflow soldering termination (SMT), Shielded, Pack contents: 30 pieces in a tray  Order housings separately	21 03 381 4420	325 (-18,18) P1 10,19 33.9
	Circular connectors M12, Magnetics, PCB adapter, with integrated transformer, Angled, Power over Ethernet (PoE+), Reflow soldering termination (SMT), Shielded, Pack contents: 30 pieces in a tray  Order housings separately	21 03 381 4421	2.745 PP 10 (2)97.15
03	Circular connectors M12, PushPull, Housing, for front mounting, Pack contents: 30 pieces	21 03 301 2006	Panel cut out
2			

D03 12 . 72

# PCB connectors with transformer

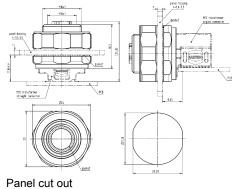


M12

Part number Female (dimensions in mm)

Circular connectors M12, Housing, for rear mounting, Pack contents: 30 pieces



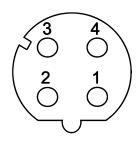


D03 12 .



M12

Reflow soldering termination (SMT) Shielded



#### Technical characteristics

Number of contacts Rated current 3 A Rated voltage 57 V Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥100 Mating cycles

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Transmission characteristics Cat. 5, Class D up to 100 MHz

### Technical characteristics

Data rate 100 Mbit/s Tightening torque 2 Nm Lock nut

Liquid crystal polymer (LCP) Material (insert)

Material (contacts) **Brass** Surface (contacts) Gold plated

RoHS compliant with exemption

## Specifications and approvals

IEC 61076-2-101

#### Identification

Circular connectors M12,

Magnetics, PushPull,

PCB adapter,

with integrated transformer,

Straight,

incl. housing, Power over Ethernet (PoE+), for front mounting,

Circular connectors M12.

with integrated transformer,

incl. housing, Power over Ethernet (PoE+),

Reflow soldering termination (SMT),

for front mounting,

Reflow soldering termination (SMT),

Shielded

Magnetics, PushPull, PCB adapter,

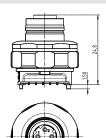
Analed.

Shielded

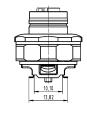


Female 21 03 381 2421

Part number

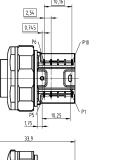


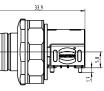






21 03 381 4422





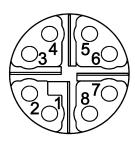




M12

Number of contacts

Reflow soldering termination (SMT)



#### Technical characteristics

Number of contacts 0.8 A Rated current Rated voltage 57 V Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Transmission characteristics Cat. 6A, Class EA up to 500 MHz

#### Technical characteristics

Data rate 1 Gbit/s Tightening torque 2 Nm Lock nut

Material (insert) Liquid crystal polymer (LCP)

Material (contacts) **Brass** Surface (contacts) Gold plated Material (accessories) Brass, nickel plated **RoHS** compliant with exemption

### Specifications and approvals

IEC 61076-2-109

#### Part number Drawing (dimensions in mm) Identification Female Circular connectors M12, 21 03 381 2815 Magnetics, PCB adapter, with integrated transformer, Straight, Reflow soldering termination (SMT), Shielded, Pack contents: 60 pieces in a tray Order housings separately Circular connectors M12, 21 03 381 2817 Magnetics, PCB adapter, with integrated transformer, Power over Ethernet (PoE+), Reflow soldering termination (SMT), Shielded, Pack contents: 60 pieces in a tray Order housings separately

# PCB connectors with transformer





	Identification	Part number Female	Drawing (dimensions in mm)
M12	Circular connectors M12, Magnetics, PCB adapter, with integrated transformer, Angled, Reflow soldering termination (SMT), Shielded, Pack contents: 30 pieces in a tray  Order housings separately	21 03 381 4820	9.555 6x(27)(-752)
	Circular connectors M12, Magnetics, PCB adapter, with integrated transformer, Angled, Power over Ethernet (PoE+), Reflow soldering termination (SMT), Shielded, Pack contents: 30 pieces in a tray  Order housings separately	21 03 381 4822	9.525
D03 12 76	Circular connectors M12, PushPull, Housing, for front mounting, Pack contents: 30 pieces	21 03 301 2006	Panel cut out

# PCB connectors with transformer





Drawing (dimensions in mm) M12

Identification

Circular connectors M12, Housing, for rear mounting,

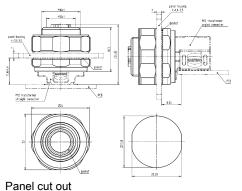
Pack contents: 30 pieces





Part number

Female 21 03 301 2007

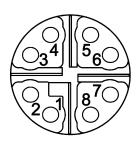


D03



M12

Reflow soldering termination (SMT)



#### Technical characteristics

Number of contacts 0.8 A Rated current Rated voltage 57 V Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Transmission characteristics Cat. 6A, Class EA up to 500 MHz

#### Technical characteristics

Data rate 1 Gbit/s Tightening torque 2 Nm Lock nut

Material (insert) Liquid crystal polymer (LCP)

Material (contacts) **Brass** Surface (contacts) Gold plated

RoHS compliant with exemption

### Specifications and approvals

IEC 61076-2-109

#### Identification

Circular connectors M12,

Magnetics, PushPull, PCB adapter,

with integrated transformer,

Straight,

incl. housing, Power over Ethernet (PoE+),

for front mounting,

Reflow soldering termination (SMT),

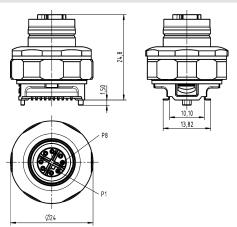
Shielded



#### Part number Female

21 03 381 2824

#### Drawing (dimensions in mm)



Circular connectors M12,

Magnetics, PushPull, PCB adapter,

with integrated transformer,

Angled,

incl. housing, Power over Ethernet (PoE+),

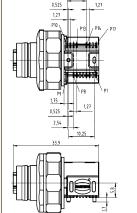
for front mounting,

Reflow soldering termination (SMT),

Shielded



21 03 381 4826

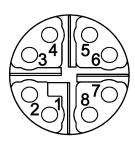




M12

Number of contacts

Reflow soldering termination (SMT)



#### Technical characteristics

Number of contacts 0.8 A Rated current Rated voltage 57 V Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Transmission characteristics Cat. 6<sub>A</sub>, Class E<sub>A</sub> up to 500 MHz

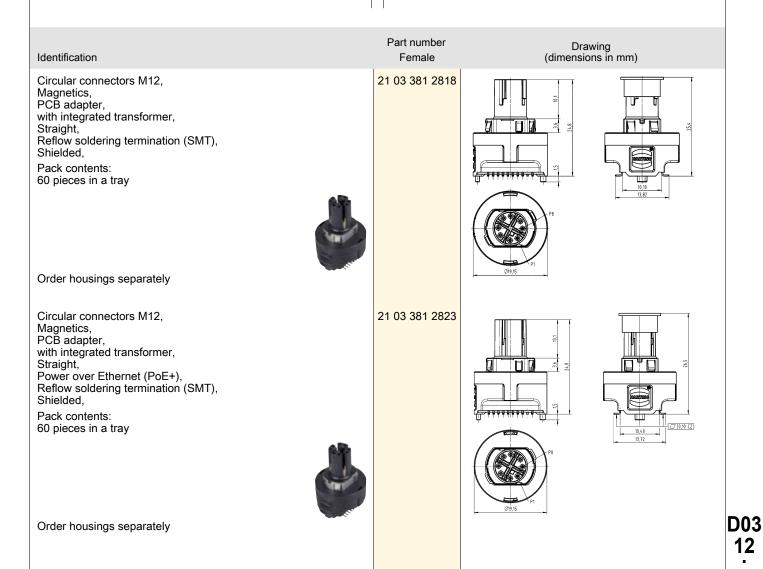
#### Technical characteristics

Data rate 10 Gbit/s Tightening torque 2 Nm Lock nut

Material (insert) Liquid crystal polymer (LCP)

Material (contacts) Brass Surface (contacts) Gold plated Material (accessories) Brass, nickel plated **RoHS** compliant with exemption

### Specifications and approvals



### PCB connectors with transformer





Part number Drawing (dimensions in mm) Identification Female Circular connectors M12, 21 03 381 4823 Magnetics, PCB adapter, with integrated transformer, **6006** Angled, Reflow soldering termination (SMT), Shielded, Pack contents: 30 pieces in a tray Order housings separately Circular connectors M12, 21 03 381 4825 Magnetics, PCB adapter, with integrated transformer, Angled, Power over Ethernet (PoE+), Reflow soldering termination (SMT), Shielded, Pack contents: 30 pieces in a tray Order housings separately 21 03 301 2006 Circular connectors M12, PushPull, Housing, for front mounting, Pack contents: 30 pieces Panel cut out

D03

# PCB connectors with transformer

Identification

Circular connectors M12,

Housing, for rear mounting,

Pack contents: 30 pieces

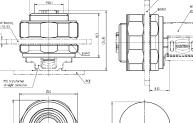




Drawing (dimensions in mm) M12

Part number Female

21 03 301 2007



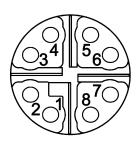
Panel cut out

D03 12 81



M12

Reflow soldering termination (SMT)



#### Technical characteristics

Number of contacts 0.8 A Rated current Rated voltage 57 V Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Transmission characteristics Cat. 6A, Class EA up to 500 MHz

### Technical characteristics

Data rate 10 Gbit/s Tightening torque 2 Nm Lock nut

Liquid crystal polymer (LCP) Material (insert)

Material (contacts) **Brass** Surface (contacts) Gold plated

RoHS compliant with exemption

### Specifications and approvals

IEC 61076-2-109

#### Identification

Circular connectors M12,

Magnetics, PushPull, PCB adapter,

with integrated transformer,

Straight,

incl. housing, Power over Ethernet (PoE+),

for front mounting,

Reflow soldering termination (SMT),

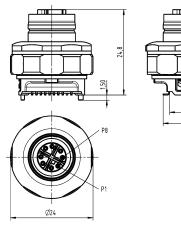
Shielded



Part number Female

21 03 381 2825

Drawing (dimensions in mm)



Circular connectors M12,

Magnetics, PushPull, PCB adapter,

with integrated transformer,

Angled,

incl. housing, Power over Ethernet (PoE+),

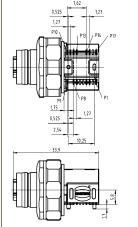
for front mounting,

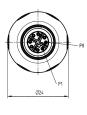
Reflow soldering termination (SMT),

Shielded



21 03 381 4827

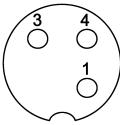




M12

Number of contacts

Unshielded



#### Technical characteristics

Number of contacts Rated current 4 A 250 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥100 Mating cycles Locking type

Screw locking Conductor length 50 cm

Degree of protection acc. to IEC IP67, when mated

60529

0.25 mm<sup>2</sup> Conductor cross-section Conductor cross-section AWG 24

#### Technical characteristics

Tightening torque 2 Nm Lock nut Polyamide (PA) Material (insert) Material (hood/housing) Zinc die-cast Material (contacts) Brass Gold plated Surface (contacts)

**RoHS** compliant with exemption

### Specifications and approvals

IEC 61076-2-101

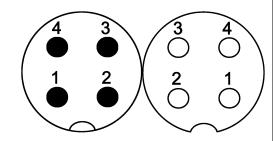
 $\epsilon$ 

#### Part number Conductor cross-sec-Drawing Identification tion (mm²) (dimensions in mm) Female Circular connectors M12, 0.25 21 03 317 6305 Panel feed through, With conductors, for front mounting, Unshielded M12 A-coded 3-poles, female straight PFT connector without lock nut



4

Unshielded



#### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 4 \text{ A} \\ \text{Rated voltage} & 250 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking
Conductor length 50 cm, 100 cm
Degree of protection acc. to IEC IP67, when mated 60529

Conductor cross-section
Conductor cross-section
Tightening torque

0.5 mm², 0.25 mm²
AWG 20, AWG 24
2 Nm Lock nut

### Technical characteristics

Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast
Material (contacts) Brass
Surface (contacts) Gold plated

RoHS Gold plated compliant with exemption

### Specifications and approvals

IEC 61076-2-101 UL 1977 ECBT2.E102079 CSA-C22.2 No. 182.3 ECBT8.E102079

**CE** 

Identification	Conductor cross-section (mm²)	Part no Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Panel feed through, With conductors, for front mounting, Unshielded, Pack contents: incl. lock nut	0.5	21 03 311 1402	21 03 311 2400	1 lbrowl 2 (white) SWII SWII SWII SWII SWII SWII SWII SWI
3				3 (bled Switz)  Library 1 (brevel 1 (brevel 2 (black)) 1 (brevel 2 (black)) 1 (black)

## Panel feed through

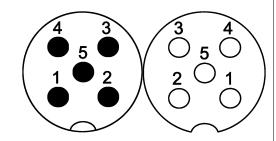


Conductor cross-section (mm²) Part number Drawing (dimensions in mm) Identification Male Female Circular connectors M12, Panel feed through, With conductors, for front mounting, Unshielded without lock nut 21 03 317 6405 21 03 317 6410 0.25 M12 A-coded 4-pole, female straight PFT connector 21 03 317 6405: a = 50 cm 21 03 317 6410: a = 100 cm



5

Unshielded



#### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 5 \\ \text{Rated current} & 4 \text{ A} \\ \text{Rated voltage} & 60 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & > 10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking
Conductor length 50 cm, 100 cm
Degree of protection acc. to IEC IP67, when mated

60529

Conductor cross-section 0.5 mm², 0.25 mm²
Conductor cross-section AWG 20, AWG 24
Tightening torque 2 Nm Lock nut

#### Technical characteristics

Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast
Material (contacts) Brass
Surface (contacts) Gold plated

RoHS compliant with exemption

## Specifications and approvals

IEC 61076-2-101 UL 1977 ECBT2.E102079 CSA-C22.2 No. 182.3 ECBT8.E102079

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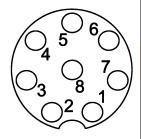
	Identification	Conductor cross-section (mm²)	Part no Male	umber Female	Drawing (dimensions in mm)
	Circular connectors M12, Panel feed through, With conductors, for front mounting, Unshielded, Pack contents: incl. lock nut	0.5	21 03 311 1501	21 03 311 2501	1 (bravn)
	6				Panel cut out
					3 (blue) 5 (c) 5 (
					Panel cut out
3	Circular connectors M12, Panel feed through, With conductors, for front mounting, Unshielded without lock nut	0.25		21 03 317 6505 21 03 317 6510	21 03 317 6505: a = 50 cm 21 03 317 6510: a = 100 cm
;					

M12

Number of contacts

8

Unshielded



#### Technical characteristics

Locking type Screw locking
Conductor length 50 cm, 100 cm
Degree of protection acc. to IEC IP67, when mated

30529

Conductor cross-section 0.25 mm<sup>2</sup> Conductor cross-section AWG 24

#### Technical characteristics

Tightening torque 2 Nm Lock nut
Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast
Material (contacts) Brass
Surface (contacts) Gold plated

RoHS Gold plated compliant with exemption

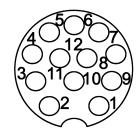
## Specifications and approvals

IEC 61076-2-101



Circular connectors M12, Panel feed through, With conductors, for front mounting, Unshielded  without lock nut  21 03 317 6805; a = 50 cm 21 03 317 6810: a = 100 cm





## Technical characteristics

Number of contacts 1.5 kV Rated impulse voltage Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Locking type Screw locking Conductor length 50 cm

Degree of protection acc. to IEC IP67, when mated

60529

Conductor cross-section 0.13 mm<sup>2</sup> Conductor cross-section AWG 26 Tightening torque 2 Nm Lock nut

#### Technical characteristics

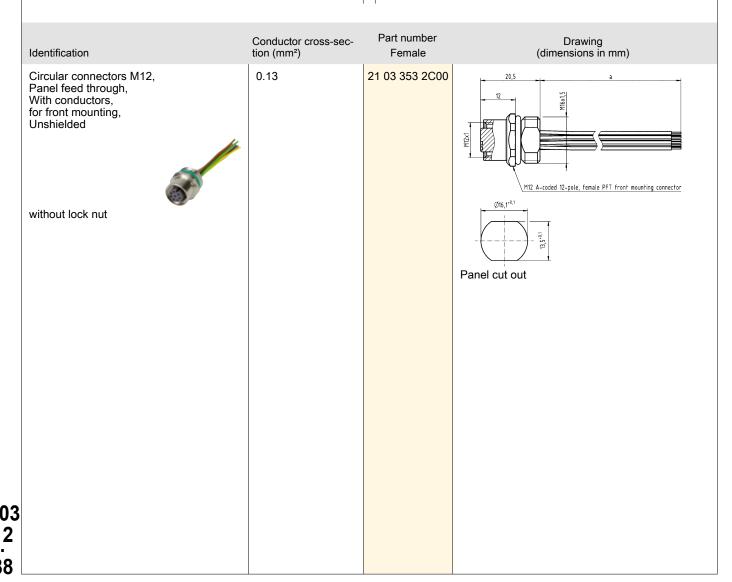
Material (insert) Polyamide (PA) Material (hood/housing) Zinc die-cast Material (contacts) Brass Surface (contacts) Gold plated

RoHS compliant with exemption

## Specifications and approvals

IEC 61076-2-101

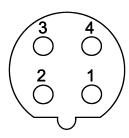
 $\epsilon$ 



M12

Number of contacts

Unshielded



#### Technical characteristics

Number of contacts 4 A Rated current Rated voltage 60 V Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Locking type

Screw locking

Conductor length 50 cm Degree of protection acc. to IEC IP67, when mated

60529

0.34 mm<sup>2</sup> Conductor cross-section

#### Technical characteristics

Conductor cross-section AWG 22 Tightening torque 2 Nm Lock nut Material (insert) Polyamide (PA) Material (hood/housing) Zinc die-cast Material (contacts) Brass Surface (contacts) Gold plated

RoHS compliant with exemption

## Specifications and approvals

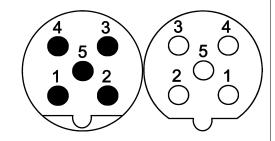
IEC 61076-2-101

Identification	Conductor cross-section (mm²)	Part number Female	Drawing (dimensions in mm)
Circular connectors M12, Panel feed through, With conductors, for front mounting, Unshielded	0.34	21 03 338 6405	20,5 a
without lock nut			Panel cut out



M12

Unshielded



#### Technical characteristics

Number of contacts Rated current 4 A 60 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Locking type Screw locking 20 cm

Conductor length

Degree of protection acc. to IEC IP67, when mated

60529

Conductor cross-section 0.34 mm<sup>2</sup> Conductor cross-section AWG 22

#### Technical characteristics

Tightening torque 2 Nm Lock nut Material (insert) Polyamide (PA) Zinc die-cast Material (hood/housing) Material (contacts) **Brass** Gold plated Surface (contacts)

RoHS compliant, compliant with

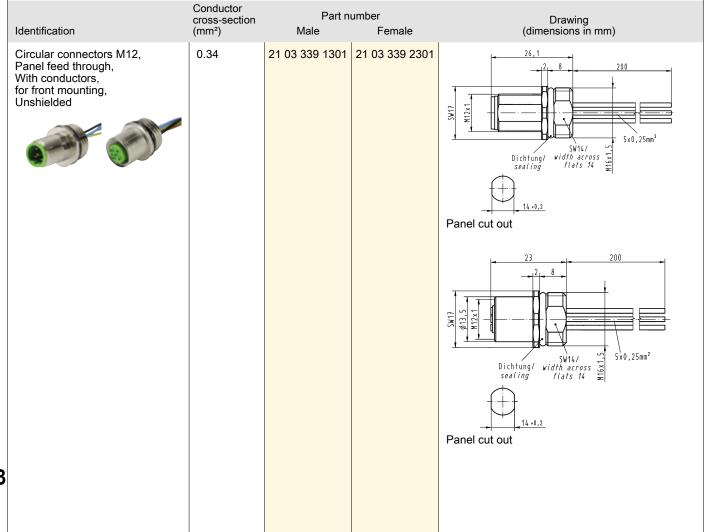
exemption

## Specifications and approvals

IEC 61076-2-101

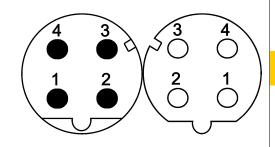
UL 1977 ECBT2.E102079

CSA-C22.2 No. 182.3 ECBT8.E102079



4

Unshielded



#### Technical characteristics

Number of contacts 4 A Rated current 250 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥100 Mating cycles Locking type Screw locking

Locking type Screw locking Conductor length 50 cm

Degree of protection acc. to IEC IP67, when mated

60529

Conductor cross-section 0.34 mm², 0.5 mm²
Conductor cross-section AWG 22, AWG 20

Transmission characteristics Cat. 5, Class D up to 100 MHz

Tightening torque 2 Nm Lock nut

#### Technical characteristics

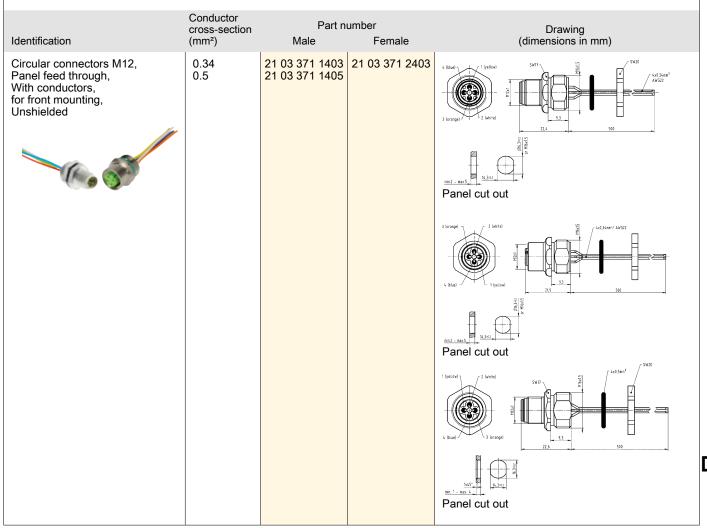
Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast
Material (contacts) Brass
Surface (contacts) Gold plated

RoHS compliant with exemption

## Specifications and approvals

IEC 61076-2-101 UL 1977 ECBT2.E102079 CSA-C22.2 No. 182.3 ECBT8.E102079





## Panel feed through



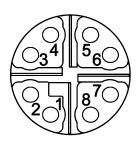
Conductor cross-section (mm²) Part number Drawing (dimensions in mm) Male Identification Female Circular connectors M12, Panel feed through, With conductors, for front mounting, Unshielded 0.34 21 03 375 2400 PG9 without lock nut Panel cut out **D03** 

M12



Number of contacts

4x 2x AWG 24/7 Shielded



#### Technical characteristics

Number of contacts

Core structure

4x 2x AWG 24/7, 4x 2x AWG 26/7

Rated current

0.5 A

Rated voltage

50 V

Rated impulse voltage Pollution degree

1.5 kV 3

Insulation resistance Contact resistance

>108 Ω ≤10 mΩ

Mating cycles

≥100 Screw locking, PushPull

Locking type

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Tightening torque

Transmission characteristics

2 Nm Lock nut

Cat.  $6_A$ , Class  $E_A$  up to 500 MHz

#### Technical characteristics

Material (insert)

Liquid crystal polymer (LCP)

Material (hood/housing)

Zinc die-cast

Material (contacts) Surface (contacts) Brass Gold plated

RoHS

compliant with exemption

## Specifications and approvals

IEC 61076-2-109

#### **Details**

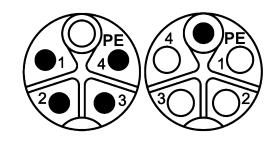
Other cable lengths on request!

Identification	Cable length	Part number Female	Drawing (dimensions in mm)
Circular connectors M12, Panel feed through, Pre-assembled on one side, EtherRail cable (4x 2x AWG 24/7), for rear mounting, Shielded	0.3 m 0.5 m 1 m 1.5 m	21 33 070 0853 003 21 33 070 0853 005 21 33 070 0853 010 21 33 070 0853 015	
Circular connectors M12, Panel feed through, Pre-assembled on one side, Industrial Ethernet cable (4x 2x AWG 26/7), for rear mounting, Shielded	0.3 m 0.5 m 1 m 1.5 m	21 33 080 0850 003 21 33 080 0850 005 21 33 080 0850 010 21 33 080 0850 015	WITH CHIEF THE PARTY OF THE PAR









#### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 12 \text{ A} \\ \text{Rated voltage} & 630 \text{ V} \\ \text{Rated impulse voltage} & 6 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking, PushPull

Conductor length 30 cm

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

#### Technical characteristics

Conductor cross-section

Tightening torque

Material (insert)

Material (contacts)

2.5 mm², 1.5 mm²

0.6 Nm, 2 Nm Lock nut

Polyamide (PA)

Brass

Material (contacts) Brass
Surface (contacts) Gold plated

## Specifications and approvals

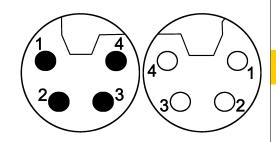
IEC 61076-2-111

	Identification	Conductor cross-section (mm²)	Part no Male	umber Female	Drawing (dimensions in mm)
	Circular connectors M12, Power, Panel feed through, With conductors, for front mounting, Shielded	1.5 2.5	21 03 309 5503 21 03 309 5501	21 03 309 6503 21 03 309 6501	## Swing spans housing 10-Ring width across first size 17 12-5x1.8 with across first size 19 12-5x1.8 width across first size 19 12-5x1.8
	Circular connectors M12, Power, Panel feed through, With conductors, for rear mounting, Shielded	1.5 2.5	21 03 309 5504 21 03 309 5502		Sw20  panel boxsing  Sw17  Sw17  panel boxsing  yith areas  flast 32  0.80ng  12.55.5  12.55.5  yith areas  yith areas  flast 31  2.55.5  32.8  Sw17  Sw17  12.55.5  yith areas  yith areas  flast 31  2.55.5  yith areas  (300)  Panel cut out
3					SW20 vidth across flats 20 0.800 18bluen  21grey  13.1  13.1  5x2.5mm  13.000



4

Unshielded



#### Technical characteristics

Locking type Screw locking Conductor length 30 cm

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section
Conductor cross-section
Tightening torque
Material (insert)

1.5 mm², 2.5 mm²
AWG 16, AWG 14
2 Nm Lock nut
Polyamide (PA)

#### Technical characteristics

Colour (insert)

Material (hood/housing)

Material (contacts)

Surface (contacts)

Black

Zinc die-cast

Copper alloy

Gold plated

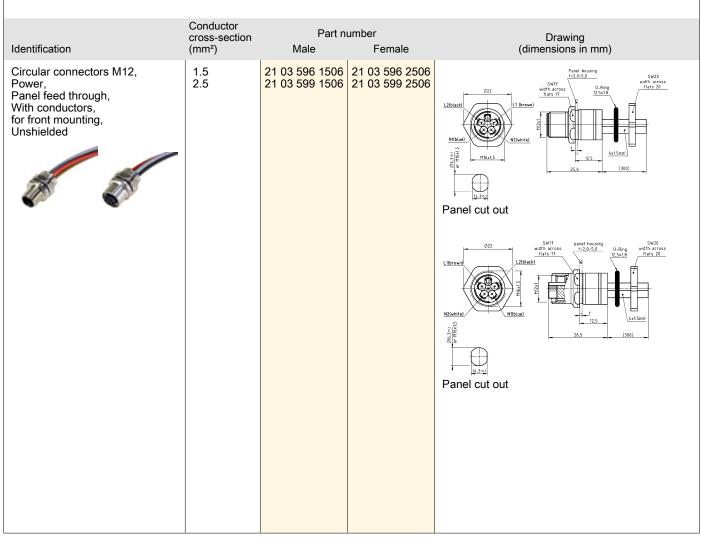
RoHS compliant with exemption

#### Specifications and approvals

IEC 61076-2-111 UL 2238 CYJV2.E302521

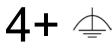
CSA-C22.2 No. 182.3 CYJV8.E302521



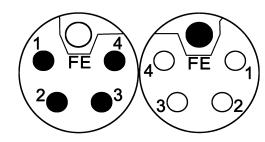




Conductor cross-section (mm²) Part number Drawing (dimensions in mm) Identification Male Female 21 03 596 1516 21 03 596 2516 21 03 599 1516 21 03 599 2516 1.5 2.5 Circular connectors M12, Power, Panel feed through, With conductors, for rear mounting, Unshielded Panel cut out Panel cut out **D03** 96



Unshielded



#### Technical characteristics

 Number of contacts
 4

 Rated current
 16 A

 Rated voltage
 63 V

 Rated impulse voltage
 1.5 kV

 Pollution degree
 3

 Insulation resistance
 >108 Ω

 Contact resistance
 ≤10 mΩ

 Mating cycles
 ≥100

 Locking type
 Screw locking

Locking type Screw locking
Conductor length 30 cm

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section
Conductor cross-section
Tightening torque
Material (insert)

1.5 mm², 2.5 mm²
AWG 16, AWG 14
2 Nm Lock nut
Polyamide (PA)

## Technical characteristics

Colour (insert)GreyMaterial (hood/housing)Zinc die-castMaterial (contacts)Copper alloySurface (contacts)Gold plated

RoHS compliant with exemption

## Specifications and approvals

IEC 61076-2-111 UL 2238 CYJV2.E302521

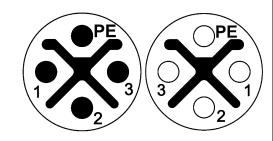
CSA-C22.2 No. 182.3 CYJV8.E302521



Identification	Conductor cross-section (mm²)	Part n	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Power, Panel feed through, With conductors, for front mounting, Unshielded	1.5 2.5	21 03 596 1505 21 03 599 1505		Panel housing 12,015,0 0-Ring width across flats 17  L2(black) FE (grey)
				Panel cut out
Circular connectors M12, Power, Panel feed through, With conductors, for rear mounting, Unshielded	1.5 2.5	21 03 596 1515 21 03 599 1515	21 03 596 2515 21 03 599 2515	







#### Technical characteristics

Number of contacts 12 A Rated current Rated voltage 630 V Rated impulse voltage 6 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

## Technical characteristics

Conductor cross-section 1.5 mm<sup>2</sup>, 2.5 mm<sup>2</sup> Conductor cross-section AWG 16, AWG 14 Tightening torque 0.6 Nm, 2 Nm Lock nut Material (insert) Polyamide (PA) Material (contacts) Brass Gold plated Surface (contacts)

## Specifications and approvals

IEC 61076-2-111

Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Power, Panel feed through, With conductors, for front mounting, Unshielded	1.5 2.5	21 03 396 1401 21 03 399 1401	21 03 396 2401 21 03 399 2401	SW17   SW20
				Panel cut out
				W17  PE (green/yellow)  Jablue)  Minack)  Jablue)  Minack)  Jablue)  Minack)  Jablue)  Jablue
				Panel cut out
				SW17
				Panel cut out



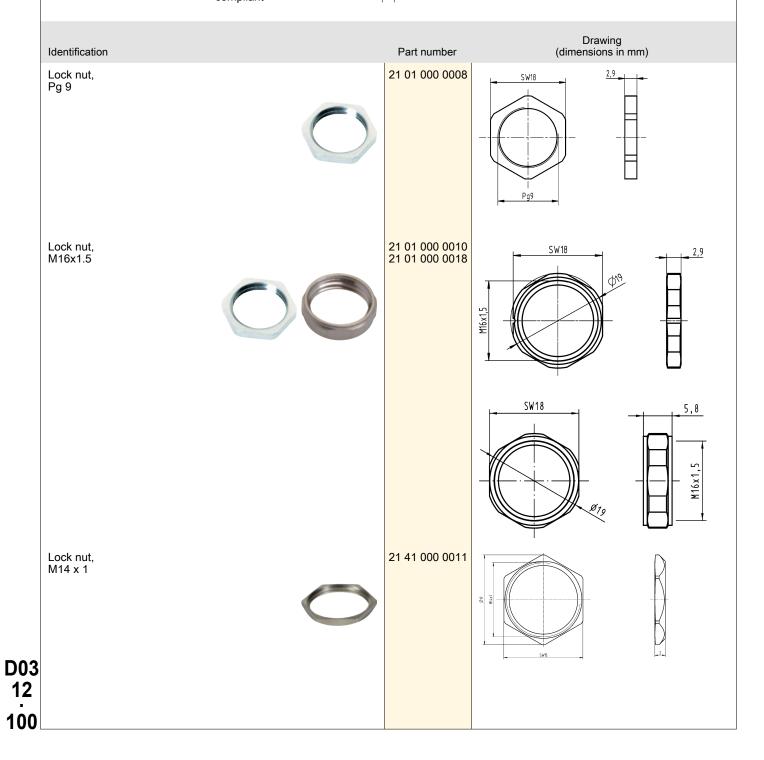
Conductor cross-section (mm²) Part number Drawing (dimensions in mm) Identification Male Female 21 03 396 1402 21 03 396 2402 21 03 399 1402 21 03 399 2402 1.5 2.5 Circular connectors M12, Power, Panel feed through, With conductors, for rear mounting, Unshielded Panel cut out Panel cut out Panel cut out

M12

## Technical characteristics

RoHS

compliant with exemption, compliant

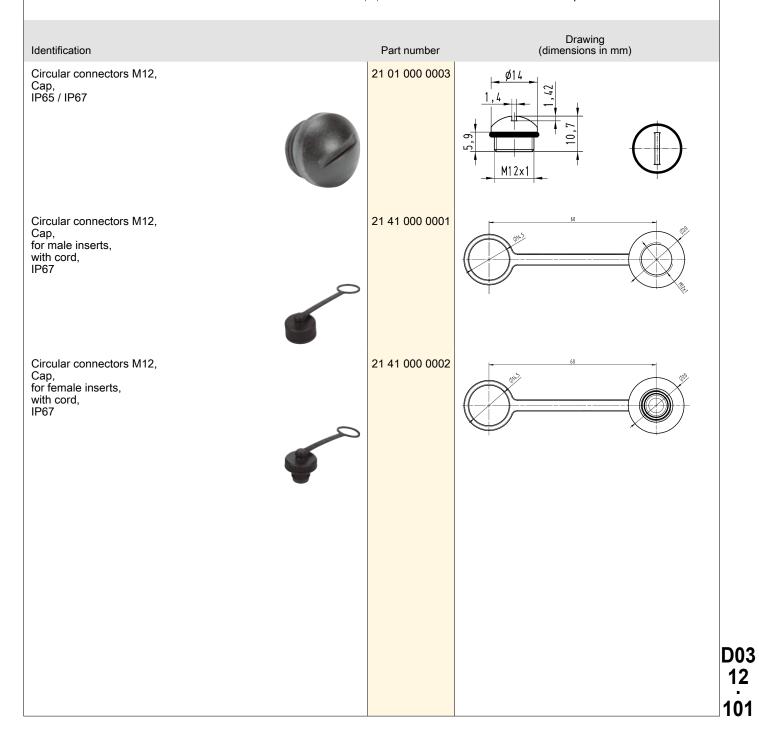


## Technical characteristics

Degree of protection acc. to IEC IP65 / IP67, IP67 60529

## Technical characteristics

Material (accessories) Colour (accessories) RoHS Thermoplastic Black compliant



M12

## Technical characteristics

Degree of protection acc. to IEC IP65 / IP67 60529

## Technical characteristics

Material (accessories) RoHS Metal compliant with exemption

Identification		Part number	Drawing (dimensions in mm)
Circular connectors M12, Cap, for female inserts, with cord		21 01 000 0030	S 100
Circular connectors M12, Cap, for female inserts, with cable clip		21 01 000 0031	§ (1)a
	and the same of th		
Circular connectors M12, Cap, for male inserts, with cord		21 01 000 0033	(B) (B) (B)
Circular connectors M12, Cap, for male inserts, with cable clip		21 01 000 0038	S. 1931
	100		
R			



Contents	Page	
M23 Signal inserts	D03 23.2	
M23 Signal contacts	D03 23.22	
M23 Signal Hoods/Housings	D03 23.23	
M23 Power inserts	D03 23.28	
M23 Power contacts	D03 23.33	
M23 Power Hoods/Housings	D03 23.34	
		ח
		D 2

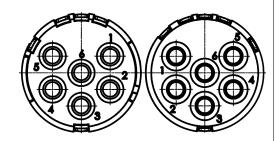
D03 23 . 1



Number of contacts



Crimp termination



#### Technical characteristics

Conductor cross-section 0.75 ... 2.5 mm² Material (insert) Polyamide (PA)

## Technical characteristics

Colour (insert) White Material flammability class acc. V-0

to UL 94

RoHS compliant

## Specifications and approvals

UL 1977 ECBT2.E235076

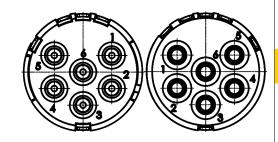
Identification  Conductor cross-section (mm²)  Circular connectors M23, Signal, Inserts, Crimp termination  Please order crimp contacts separately. 6x 2 mm  Conductor cross-section (Male Female (dimensions in mm))  Drawing (dimensions in mm)  09 15 106 3001  99 15 106 3101		, ,				
Signal, Inserts, Crimp termination  Please order crimp contacts separately. 6x 2 mm	Identification	cross-section			Drawin (dimensions	ng in mm)
	Signal, Inserts, Crimp termination	0.75 2.5	09 15 106 3001	09 15 106 3101	20,1	



Number of contacts



Solder termination



#### Technical characteristics

Number of contacts 20 A Rated current Rated voltage 300 V Rated impulse voltage  $2.5 \, kV$ Pollution degree  $>10^{10} \Omega$ Insulation resistance Limiting temperature -40 ... +125 °C ≥500 Mating cycles Conductor cross-section 2.5 mm² max. Material (insert) Polyamide (PA) Colour (insert) White

## Technical characteristics

Material (contacts)

Surface (contacts)

Gold plated

Material flammability class acc. V-0

to UL 94

RoHS compliant with exemption

## Specifications and approvals

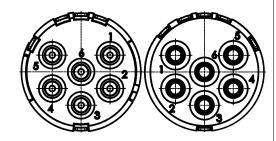
Identification	Conductor cross-section (mm²)	Part n	umber Female	Drawing (dimensions in	mm)
Circular connectors M23, Signal, Inserts, Solder termination	2.5 max.	09 15 106 2602	09 15 106 2702	7,5	Ø17 ————————————————————————————————————
				(22,2)	Ø17 —



Number of contacts



PCB solder termination



#### Technical characteristics

Number of contacts6Rated current20 ARated voltage300 VRated impulse voltage2.5 kVPollution degree3Insulation resistance>1010 ΩLimiting temperature-40 ... +125 °CMating cycles≥500

Material (insert) Polyamide (PA)

Colour (insert) White

#### Technical characteristics

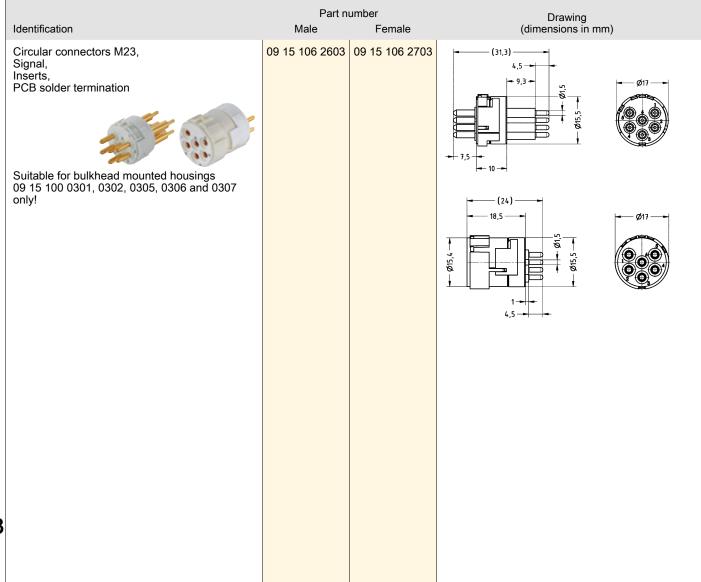
Material (contacts) Copper alloy Surface (contacts) Gold plated Material flammability class acc. V-0

to UL 94

RoHS compliant with exemption

## Specifications and approvals

UL 1977 ECBT2.E235076



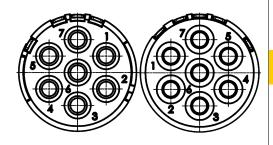
VI23



Number of contacts

7

Crimp termination



## Technical characteristics

Number of contacts7Rated current20 ARated voltage300 VRated impulse voltage2.5 kVPollution degree3Insulation resistance>1010 ΩLimiting temperature-40 ... +125 °CMating cycles≥500

Conductor cross-section 0.75 ... 2.5 mm² Material (insert) Polyamide (PA)

## Technical characteristics

Colour (insert) White Material flammability class acc. V-0

to UL 94 RoHS

compliant with exemption

## Specifications and approvals

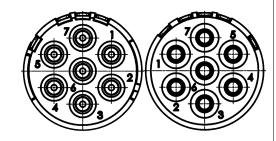
Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawi (dimensions	ing s in mm)
Circular connectors M23, Signal, Inserts, Crimp termination  Please order crimp contacts separately. 7x 2 mm	0.75 2.5	09 15 107 3001	09 15 107 3101	20,1	Ø17 —



Number of contacts

7

Solder termination



#### Technical characteristics

 Number of contacts
 7

 Rated current
 20 A

 Rated voltage
 300 V

 Rated impulse voltage
 2.5 kV

 Pollution degree
 3

 Insulation resistance
 >10<sup>10</sup> Ω

 Limiting temperature
 -40 ... +125 °C

 Mating cycles
 ≥500

 Conductor cross-section
 2.5 mm² max

Conductor cross-section 2.5 mm² max.

Material (insert) Polyamide (PA)

Colour (insert)

Colour (insert) White

## Technical characteristics

Material (contacts) Copper alloy Surface (contacts) Gold plated Material flammability class acc. V-0

to UL 94

RoHS compliant with exemption

## Specifications and approvals

UL 1977 ECBT2.E235076

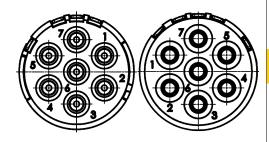
Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M23, Signal, Inserts, Solder termination	2.5 max.	09 15 107 2602	09 15 107 2702	7,5 — Ø17 —
				(22,2) 18,5 3,7 (22,2) (22,2) (30) (
3				



Number of contacts

7

PCB solder termination



#### Technical characteristics

Material (insert) Polyamide (PA)

Colour (insert) White

## Technical characteristics

Material (contacts)

Surface (contacts)

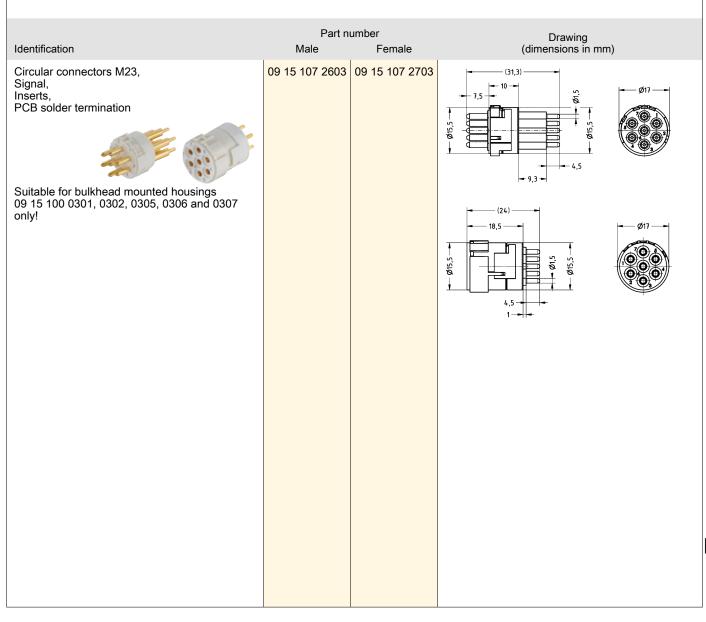
Gold plated

Material flammability class acc. V-0

to UL 94

RoHS compliant with exemption

## Specifications and approvals

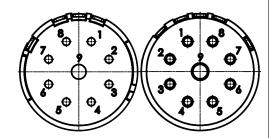




Number of contacts

8

+ 1 additional special contact Crimp termination



#### Technical characteristics

Number of contacts

Additional contacts + 1 additional special contact

Rated current 8 A
Rated voltage 200 V
Rated impulse voltage 2.5 kV
Pollution degree 3
Rated current (special contact) 20 A
Rated voltage (special contact) 200 V
Rated impulse voltage (special 2.5 kV contact)

Pollution degree (special

contact)

Insulation resistance  $>10^{10} \Omega$ 

#### Technical characteristics

Limiting temperature -40 ... +125 °C

Mating cycles ≥500

Conductor cross-section 0.08 ... 1.5 mm² Material (insert) Polyamide (PA) Colour (insert) White

Material flammability class acc. V-0

to UL 94

RoHS compliant with exemption

## Specifications and approvals

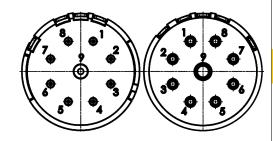
UL 1977 ECBT2.E235076

Identification	Conductor cross-section (mm²)	Part no Male	umber Female	Drawing (dimensions in mm)		
Circular connectors M23, Signal, Inserts, Crimp termination	0.08 1.5	09 15 109 3001	09 15 109 3101	12	Ø17  • • • • • • • • • • • • • • • • • • •	
Please order crimp contacts separately. 8x 1 mm 1x 2 mm				20 - 5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5	Ø17 — Ø17 — Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø	
3						



Number of contacts

+ 1 additional special contact Solder termination



#### Technical characteristics

Number of contacts

+ 1 additional special contact Additional contacts

Rated current 8 A Rated voltage 200 V Rated impulse voltage 2.5 kV Pollution degree Rated current (special contact) 20 A Rated voltage (special contact) 200 V Rated impulse voltage (special 2.5 kV contact)

Pollution degree (special

contact)

Insulation resistance  $>10^{10} \Omega$ Limiting temperature -40 ... +125 °C

#### Technical characteristics

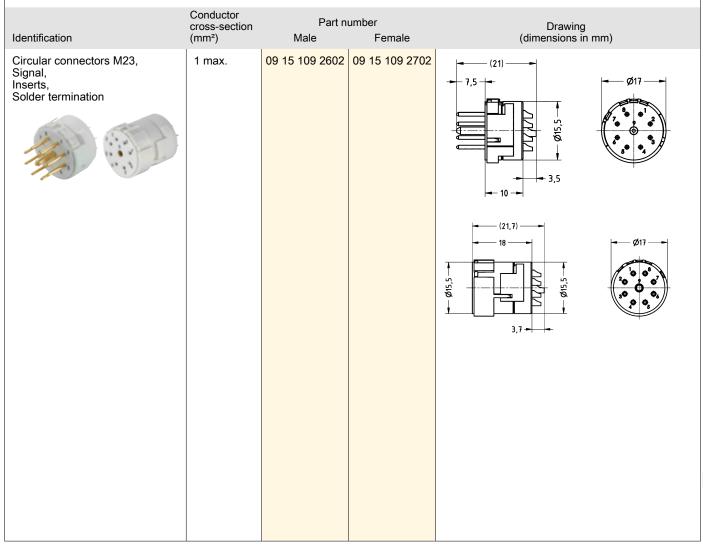
≥500 Mating cycles Conductor cross-section 1 mm² max. Material (insert) Polyamide (PA) Colour (insert) White Material (contacts) Copper alloy Surface (contacts) Gold plated

Material flammability class acc.

to UL 94

RoHS compliant with exemption

## Specifications and approvals



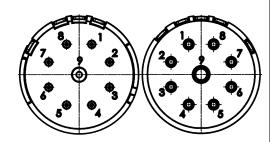


Number of contacts

8

M23

+ 1 additional special contact PCB solder termination



#### Technical characteristics

Number of contacts

Additional contacts + 1 additional special contact

Rated current 8 A
Rated voltage 200 V
Rated impulse voltage 2.5 kV
Pollution degree 3
Rated current (special contact) 20 A
Rated voltage (special contact) 200 V
Rated impulse voltage (special 2.5 kV

contact)

Pollution degree (special

contact)

Insulation resistance  $>10^{10} \Omega$ Limiting temperature  $-40 \dots +125 ^{\circ} C$ 

#### Technical characteristics

Mating cycles ≥500

Material (insert) Polyamide (PA)
Colour (insert) White
Material (contacts) Copper alloy
Surface (contacts) Gold plated
Material flammability class acc. V-0

to UL 94

RoHS compliant with exemption

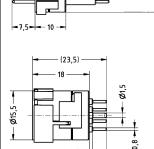
## Specifications and approvals

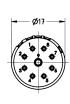
UL 1977 ECBT2.E235076

# Part number Drawing (dimensions in mm) Circular connectors M23, Signal, Inserts, PCB solder termination Part number (dimensions in mm) 09 15 109 2603 09 15 109 2703



Suitable for bulkhead mounted housings 09 15 100 0301, 0302, 0305, 0306 and 0307 only!

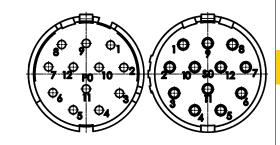






11+

Crimp termination



## Technical characteristics

Number of contacts11Rated current8 ARated voltage200 VRated impulse voltage2.5 kVPollution degree3Insulation resistance>1010  $\Omega$ Limiting temperature-40 ... +125 °CMating cycles $\geq$ 500

Conductor cross-section 0.08 ... 1.5 mm² Material (insert) Polyamide (PA)

## Technical characteristics

Colour (insert) Grey Material flammability class acc. V-0

to UL 94 RoHS

compliant with exemption

## Specifications and approvals

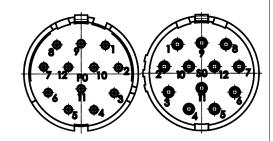
Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Dra (dimensi	awing ons in mm)
Circular connectors M23, Signal, Inserts, Crimp termination  Please order crimp contacts separately. 12x 1 mm	0.08 1.5	ı	09 15 112 3121	(dimensional contents)	Ø17  Ø17  Ø17  Ø19  Ø19  Ø19  Ø19  Ø19



Number of contacts

11+ 😩

Solder termination



#### Technical characteristics

Number of contacts Rated current 8 A Rated voltage 200 V Rated impulse voltage 2.5 kV Pollution degree  $>10^{10} \Omega$ Insulation resistance Limiting temperature -40 ... +125 °C ≥500 Mating cycles Conductor cross-section 1 mm² max. Material (insert) Polyamide (PA)

Colour (insert) Grey

## Technical characteristics

Material (contacts) Copper alloy Surface (contacts) Gold plated Material flammability class acc. V-0

to UL 94

RoHS compliant with exemption

## Specifications and approvals

UL 1977 ECBT2.E235076

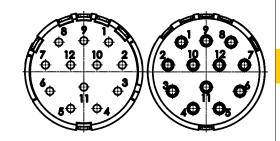
Identification	Conductor cross-section (mm²)	Part number Drawing Male Female (dimensions in mm)		Drawing (dimensions in mm)
Circular connectors M23, Signal, Inserts, Solder termination	1 max.	09 15 112 2622	09 15 112 2722	7,5
				3,7

M23

D03 23

12

Crimp termination



## Technical characteristics

Number of contacts 8 A Rated current Rated voltage 200 V Rated impulse voltage  $2.5 \, kV$ Pollution degree Insulation resistance  $>10^{10} \Omega$ Limiting temperature -40 ... +125 °C ≥500 Mating cycles

Conductor cross-section 0.08 ... 1.5 mm<sup>2</sup> Material (insert) Polyamide (PA)

## Technical characteristics

Colour (insert) White Material flammability class acc. V-0

to UL 94 RoHS

compliant with exemption,

compliant

## Specifications and approvals

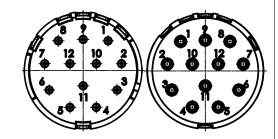
Identification	Conductor cross-section (mm²)	Part number Male Female		Drav (dimensio	Drawing (dimensions in mm)	
Circular connectors M23, Signal, Inserts, Crimp termination  Please order crimp contacts separately.	0.08 1.5	09 15 112 3001	09 15 112 3101	19,6	Ø17 —	
12x 1 mm  Circular connectors M23,	0.08 1.5	09 15 112 3011	09 15 112 3111	\$'S'\$	6 8 8 6 6 8 8 6	
Signal, Inserts, Marking in opposite direction, Crimp termination Please order crimp contacts separately. 12x 1 mm						



Number of contacts

12

Solder termination



#### Technical characteristics

Number of contacts Rated current 8 A 200 V Rated voltage Rated impulse voltage 2.5 kV Pollution degree >10<sup>10</sup> Ω Insulation resistance Limiting temperature -40 ... +125 °C ≥500 Mating cycles Conductor cross-section 1 mm<sup>2</sup> max. Material (insert) Polyamide (PA) Colour (insert) White

#### Technical characteristics

Material (contacts) Copper alloy
Surface (contacts) Gold plated
Material flammability class acc. V-0

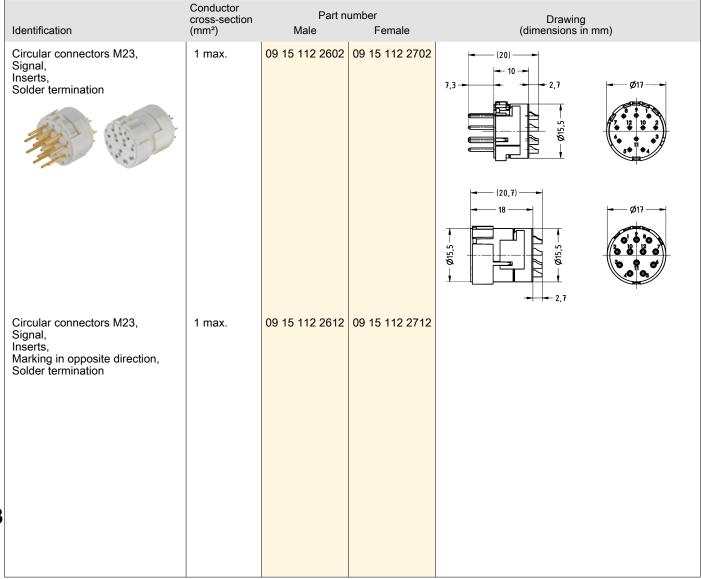
to UL 94

RoHS compliant with exemption,

compliant

## Specifications and approvals

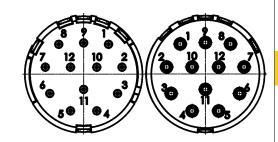
UL 1977 ECBT2.E235076





12

PCB solder termination



#### Technical characteristics

Material (insert) Polyamide (PA)

Colour (insert) White

## Technical characteristics

Material (contacts)

Surface (contacts)

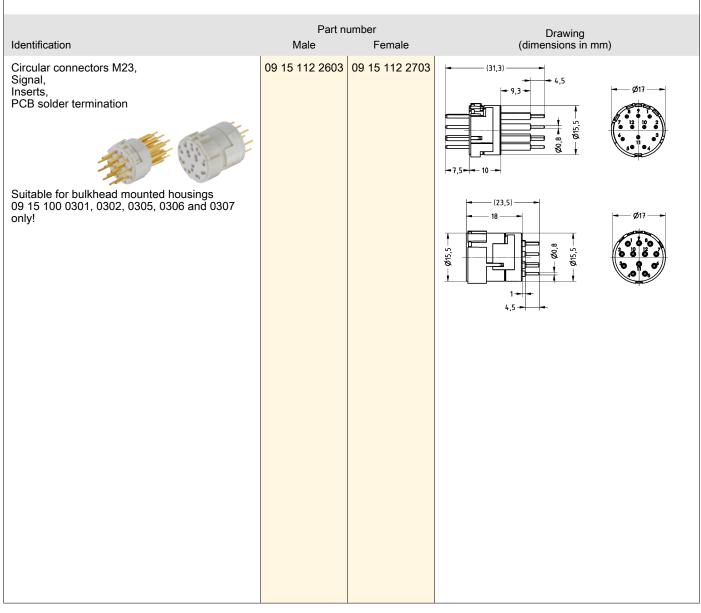
Gold plated

Material flammability class acc. V-0

to UL 94

RoHS compliant with exemption

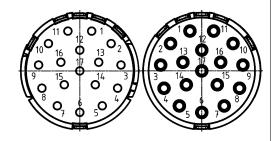
## Specifications and approvals





Number of contacts





#### Technical characteristics

Number of contacts 8 A Rated current Rated voltage 160 V Rated impulse voltage 1.5 kV Pollution degree >10<sup>6</sup> Ω Insulation resistance -40 ... +125 °C Limiting temperature ≥500 Mating cycles

Conductor cross-section 0.08 ... 1.5 mm<sup>2</sup> Material (insert) Polyamide (PA)

## Technical characteristics

Colour (insert) White Material flammability class acc. V-0

to UL 94

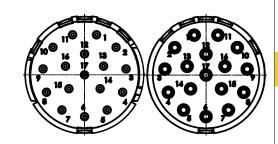
RoHS compliant with exemption

## Specifications and approvals

UL 1977 ECBT2.E235076



Solder termination



#### Technical characteristics

Number of contacts 8 A Rated current Rated voltage 160 V Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>6</sup> Ω Insulation resistance Limiting temperature -40 ... +125 °C ≥500 Mating cycles Conductor cross-section 1 mm² max. Material (insert) Polyamide (PA) Colour (insert) White

## Technical characteristics

Material (contacts) Copper alloy Gold plated Surface (contacts)

Material flammability class acc.

to UL 94

RoHS compliant with exemption

## Specifications and approvals

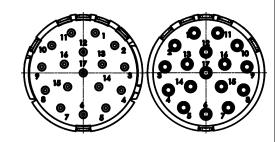
Identification	Conductor cross-section (mm²)	Part n	umber Female	Drawing (dimensions i	n mm)
Circular connectors M23, Signal, Inserts, Solder termination	1 max.	09 15 117 2602	09 15 117 2702	7,5	Ø17
				2,7	Ø17 —



Number of contacts

17

PCB solder termination



#### Technical characteristics

 Number of contacts
 17

 Rated current
 8 A

 Rated voltage
 160 V

 Rated impulse voltage
 1.5 kV

 Pollution degree
 3

 Insulation resistance
 >106 Ω

 Limiting temperature
 -40 ... +125 °C

 Mating cycles
 ≥500

Material (insert) Polyamide (PA)

Colour (insert) White

#### Technical characteristics

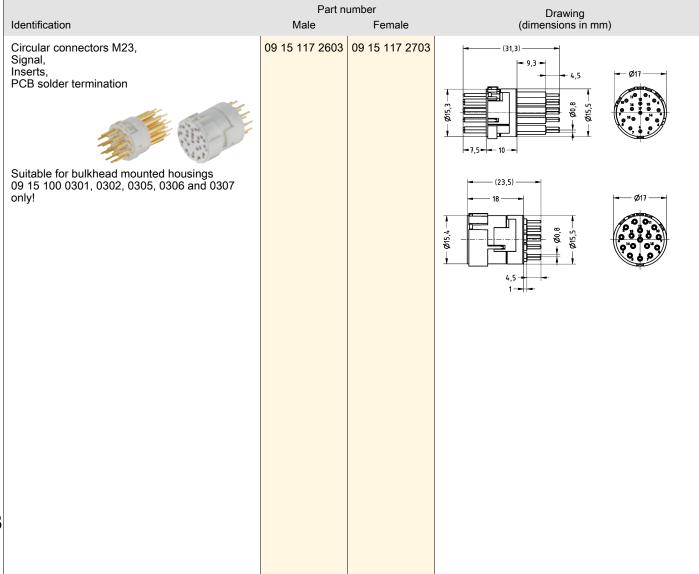
Material (contacts) Copper alloy Surface (contacts) Gold plated Material flammability class acc. V-0

to UL 94

RoHS compliant with exemption

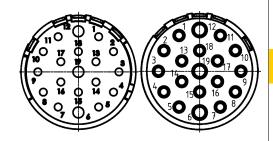
## Specifications and approvals

UL 1977 ECBT2.E235076





+ 3 additional special contacts Crimp termination



#### Technical characteristics

Number of contacts

+ 3 additional special contacts Additional contacts

Rated current 8 A Rated voltage 100 V Rated impulse voltage 1.5 kV Pollution degree 3 Rated current (special contact) 10 A Rated voltage (special contact) 100 V Rated impulse voltage (special 1.5 kV contact)

Pollution degree (special

contact)

Insulation resistance

3

>10<sup>6</sup> Ω

#### Technical characteristics

Limiting temperature -40 ... +125 °C

Mating cycles ≥500

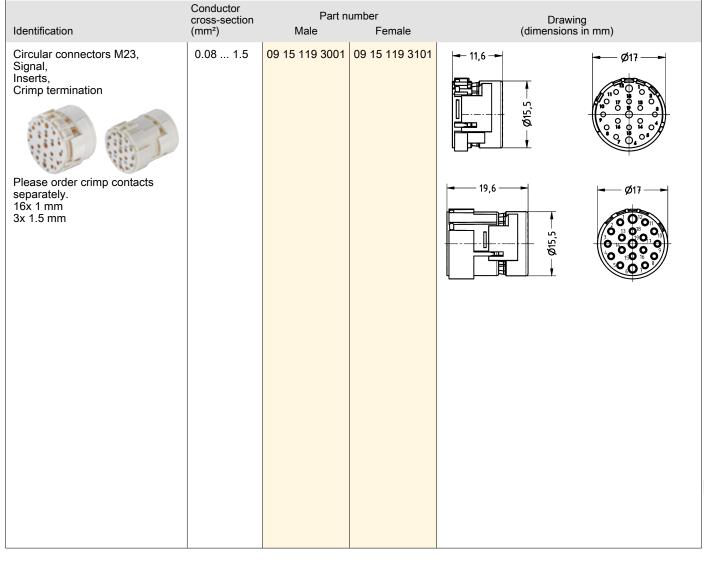
Conductor cross-section 0.08 ... 1.5 mm<sup>2</sup> Material (insert) Polyamide (PA)

Colour (insert) White Material flammability class acc.

to UL 94

RoHS compliant with exemption

# Specifications and approvals

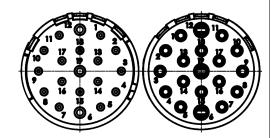


# M23 Signal inserts



Number of contacts

+ 3 additional special contacts Solder termination



#### Technical characteristics

Number of contacts

+ 3 additional special contacts Additional contacts

Rated current 8 A Rated voltage 100 V Rated impulse voltage 1.5 kV Pollution degree 3 Rated current (special contact) 10 A Rated voltage (special contact) 100 V Rated impulse voltage (special 1.5 kV contact)

Pollution degree (special

contact)

Insulation resistance >10<sup>6</sup> Ω Limiting temperature -40 ... +125 °C

#### Technical characteristics

Mating cycles ≥500 Conductor cross-section 1 mm<sup>2</sup> max. Polyamide (PA) Material (insert) Colour (insert) White Material (contacts) Copper alloy

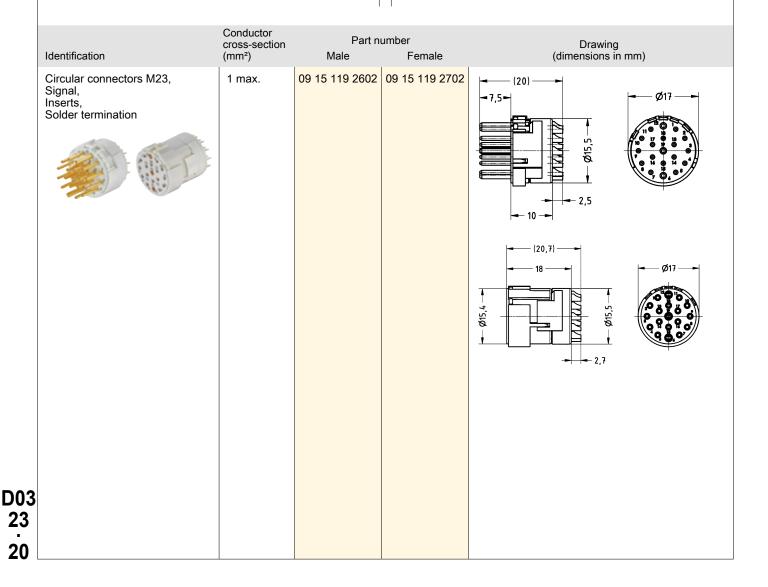
Surface (contacts) Gold plated Material flammability class acc.

to UL 94

RoHS compliant with exemption

# Specifications and approvals

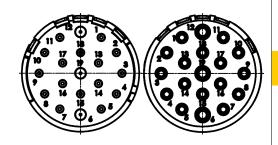
UL 1977 ECBT2.E235076



M23



+ 3 additional special contacts PCB solder termination



#### Technical characteristics

Number of contacts

+ 3 additional special contacts Additional contacts

Rated current 8 A Rated voltage 100 V Rated impulse voltage 1.5 kV Pollution degree 3 Rated current (special contact) 10 A Rated voltage (special contact) 100 V Rated impulse voltage (special 1.5 kV

contact)

Pollution degree (special 3

Insulation resistance >10<sup>6</sup> Ω Limiting temperature -40 ... +125 °C

contact)

# Technical characteristics

Mating cycles

Material (insert) Polyamide (PA)

Colour (insert) White Material (contacts) Copper alloy Surface (contacts) Gold plated

Material flammability class acc.

to UL 94

RoHS compliant with exemption

# Specifications and approvals

UL 1977 ECBT2.E235076

#### Part number Drawing Identification (dimensions in mm) Male Female

Circular connectors M23, Signal,

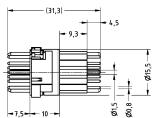
Inserts,

PCB solder termination

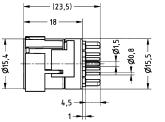


Suitable for bulkhead mounted housings 09 15 100 0301, 0302, 0305, 0306 and 0307 only!

09 15 119 2603 09 15 119 2703









M23

#### **Technical characteristics**

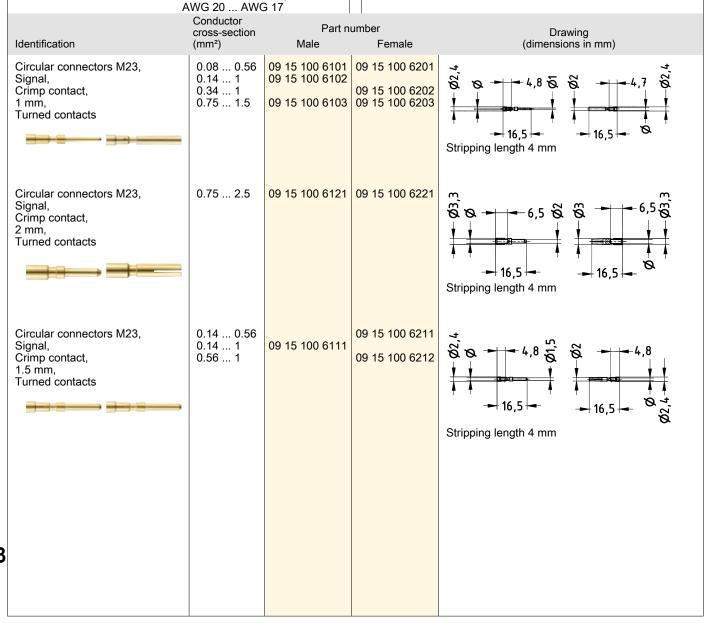
#### Technical characteristics

Material (contacts) Copper alloy Surface (contacts) Gold plated

RoHS compliant with exemption

#### Specifications and approvals

EN 60664-1 IEC 61984



#### Technical characteristics

-40 ... +125 °C Limiting temperature Screw locking, Locking type

ComLock rapid locking

Degree of protection acc. to IEC IP67, in locked position, IP69 / IPX9K acc. to ISO 20653

Copper-zinc alloy

Material (hood/housing) Surface (hood/housing) Nickel plated

**NBR** Material (seal)

60529

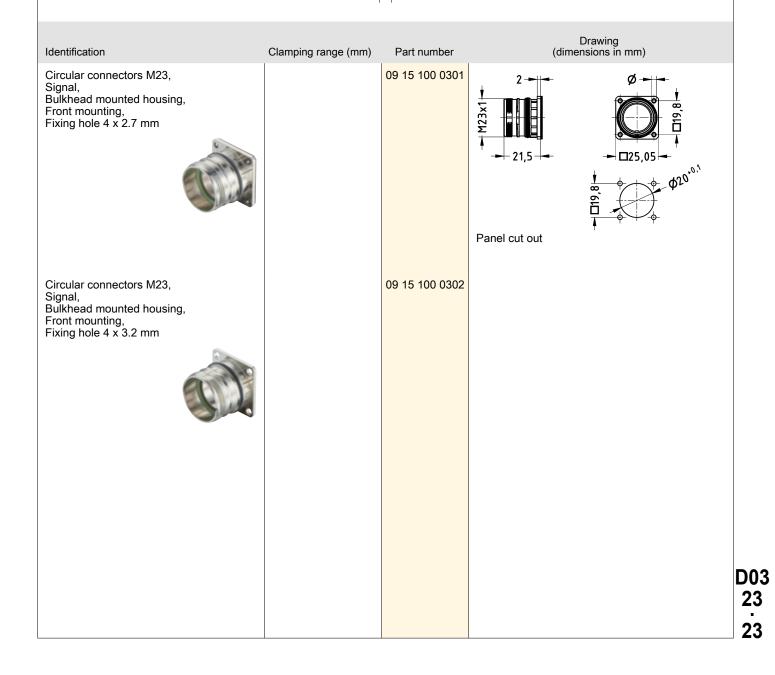
#### Technical characteristics

Colour (seal)

RoHS compliant with exemption,

compliant

# Specifications and approvals



M23



Drawing (dimensions in mm) Identification Part number Clamping range (mm) 09 15 100 0901 Circular connectors M23, Bulkhead mounted housing, Front mounting, Angled, Fixing hole 4 x 2.7 mm Panel cut out 09 15 100 0902 Circular connectors M23, Signal, Bulkhead mounted housing, Front mounting, Angled, Rotatable, Fixing hole 4 x 2.7 mm Panel cut out Circular connectors M23, 09 15 100 0363 Signal, Bulkhead mounted housing, Front mounting, Thread M20 x 1.5 Ø20,2 Panel cut out for male inserts Not compatible to ComLock 09 15 100 0364 Circular connectors M23, Signal, Bulkhead mounted housing, Front mounting, Thread Pg 13.5 for male inserts Not compatible to ComLock Ø20,6 Panel cut out



Drawing (dimensions in mm) Identification Clamping range (mm) Part number 09 15 100 0373 Circular connectors M23, Signal, Bulkhead mounted housing, Front mounting, Thread M20 x 1.5 Ø20,2 for female inserts Panel cut out Not compatible to ComLock Circular connectors M23, 09 15 100 0374 Signal, Bulkhead mounted housing, Front mounting, Thread Pg 13.5 for female inserts Not compatible to ComLock Ø20,6 Panel cut out Circular connectors M23, 09 15 100 0307 Signal,
Bulkhead mounted housing, Rear mounting, Fixing hole 4 x 2.7 mm □25 22.5 Panel cut out 09 15 100 0305 Circular connectors M23, Signal, Bulkhead mounted housing, Rear mounting, Thread 4 x M2.5 22,5 **25 Ø**23 **D03** Panel cut out

M23

25



		_	_	Drawing
1400	Identification	Clamping range (mm)	Part number	(dimensions in mm)
M23	Circular connectors M23, Signal, Bulkhead mounted housing, Rear mounting, Thread 4 x M3		09 15 100 0306	
	Circular connectors M23, Signal,		09 15 100 0308	3,5
	Bulkhead mounted housing, Rear mounting, Thread M25 x 1.5			SW29 SW30
				33.5 10,5
	Not compatible to ComLock			Panel cut out
	Circular connectors M23, Signal, Panel feed through housing, Rear mounting	3 7 7 12 11 17	09 15 100 0309 09 15 100 0310 09 15 100 0311	(approx. 67)  - 26
	Circular connectors M23, Signal, Cover, for hoods, With chain (100 mm)  Not compatible to ComLock		09 15 100 9103	(20,7) - 13,5 - 18 - 18 -
D03 23				



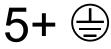
Drawing (dimensions in mm) Identification Clamping range (mm) Part number 09 15 100 9101 Circular connectors M23, Signal,
Cover,
for bulkhead mounted housings,
for cable to cable housing Circular connectors M23, Signal, Cover, for bulkhead mounted housings, for cable to cable housing, With chain (70 mm) 09 15 100 9102 (14,7) D03

M23

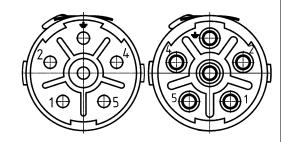
# M23 Power inserts



Number of contacts



Crimp termination



#### Technical characteristics

Number of contacts 28 A Rated current Rated voltage 600 V Rated impulse voltage 4 kV Pollution degree  $>10^{13} \Omega$ Insulation resistance -40 ... +125 °C Limiting temperature ≥500 Mating cycles

Conductor cross-section 0.14 ... 4 mm<sup>2</sup> Material (insert) Polyamide (PA)

Conductor

# Technical characteristics

Colour (insert) Blue Material flammability class acc. V-0 to UL 94

RoHS compliant

# Specifications and approvals

UL 1977 ECBT2.E235076

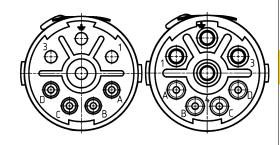
Identification	Conductor cross-section (mm²)	Part n Male	umber Female	[ (dimer	Orawing sions in mm)
Circular connectors M23, Power, Inserts, Crimp termination	0.14 4	09 15 606 3001	09 15 606 3101	Ø21 10 10 10 10 10 10 10 10 10 1	30,2
Please order crimp contacts separately. 6x 2 mm				8'618	30,2

28



**3+** 🖶

+ 4 additional signal contacts Crimp termination



#### Technical characteristics

Number of contacts 3

Additional contacts + 4 additional signal contacts

Rated current 28 A Rated voltage 600 V Rated impulse voltage 4 kV Pollution degree 3 Rated current (signal) 8 A 300 V Rated voltage (signal) Rated impulse voltage (signal) 2.5 kV Pollution degree (signal)  $>10^{13} \Omega$ Insulation resistance Limiting temperature -40 ... +125 °C

#### Technical characteristics

Mating cycles ≥500

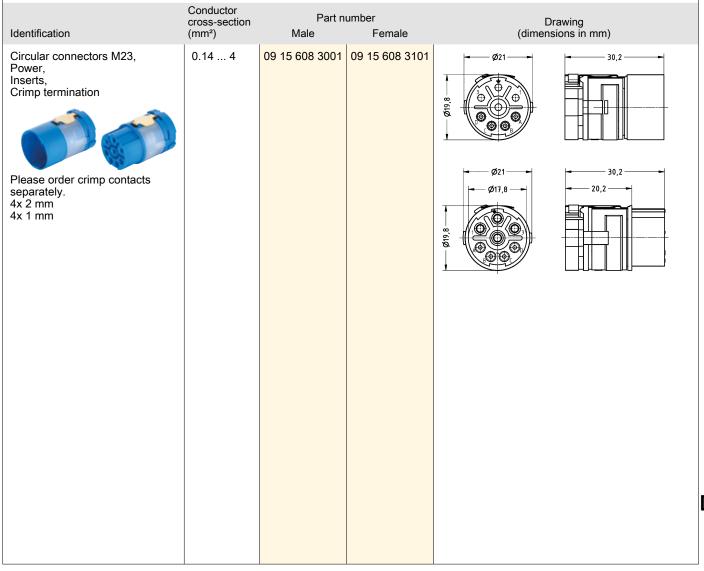
Conductor cross-section 0.14 ... 4 mm²
Material (insert) Polyamide (PA)

Colour (insert) Blue Material flammability class acc. V-0

to UL 94

RoHS compliant

# Specifications and approvals



# M23 Power inserts

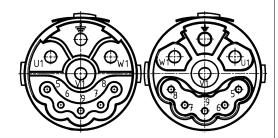


Number of contacts

3+



+ 5 additional signal contacts Crimp termination



#### Technical characteristics

Number of contacts 3

Additional contacts + 5 additional signal contacts

-40 ... +125 °C

Rated current 28 A Rated voltage 630 V Rated impulse voltage 4 kV Pollution degree 3 Rated current (signal) 10 A 250 V Rated voltage (signal) Rated impulse voltage (signal) 2.5 kV Pollution degree (signal)  $>10^{13} \Omega$ Insulation resistance

Limiting temperature

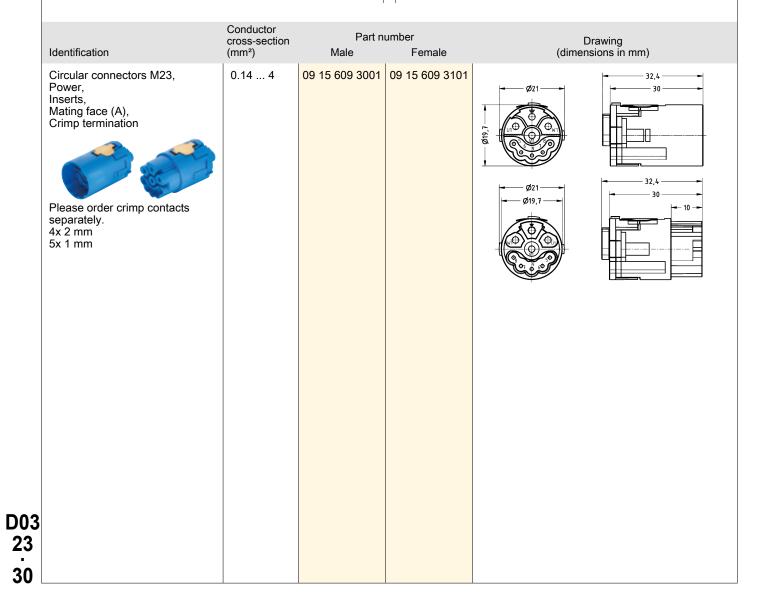
# Technical characteristics

Mating cycles≥500Conductor cross-section0.14 ... 4 mm²Material (insert)Polyamide (PA)

Colour (insert) Blue Material flammability class acc. V-0 to UL 94

RoHS compliant

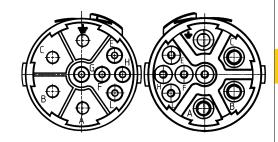
# Specifications and approvals





3+ 😩

+ 5 additional signal contacts Crimp termination



#### Technical characteristics

Number of contacts 3

Additional contacts + 5 additional signal contacts

Rated current 28 A Rated voltage 630 V Rated impulse voltage 4 kV Pollution degree 3 Rated current (signal) 10 A Rated voltage (signal) 250 V Rated impulse voltage (signal) 2.5 kV Pollution degree (signal)  $>10^{13} \Omega$ Insulation resistance Limiting temperature -40 ... +125 °C

#### Technical characteristics

Mating cycles ≥500

Conductor cross-section 0.14 ... 4 mm² Material (insert) Polyamide (PA)

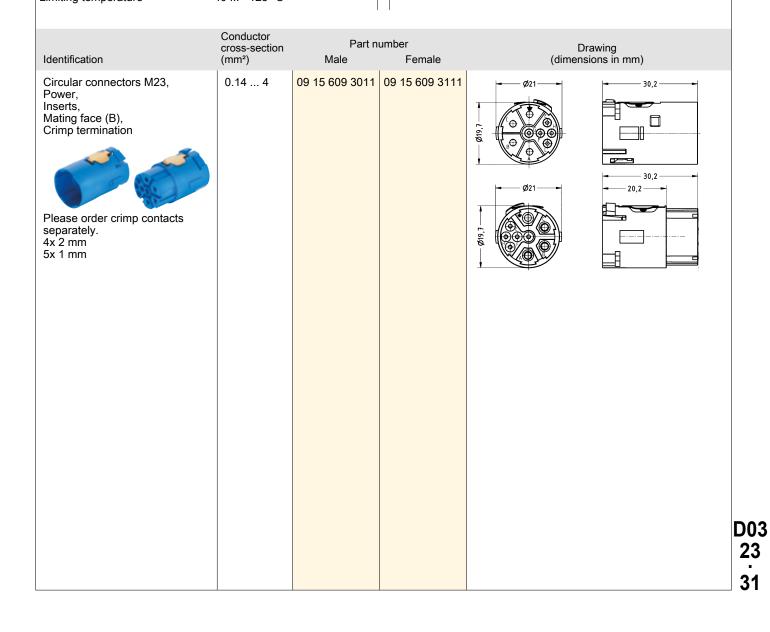
Colour (insert) Blue

Material flammability class acc. V-0

to UL 94

RoHS compliant

# Specifications and approvals



#### M23 Power inserts

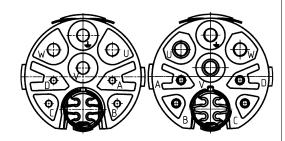


Number of contacts

3+



+ 4 additional signal contacts + 4 Data Crimp termination



#### Technical characteristics

Number of contacts
Additional contacts

Rated voltage

+ 4 additional signal contacts,

+ 4 Data Rated current 28 A

28 A 630 V 4 kV 3

Rated impulse voltage
Pollution degree
Rated current (signal)
Rated voltage (signal)

8 A 300 V 2.5 kV

Rated impulse voltage (signal) 2.5 kV
Pollution degree (signal) 3
Rated current (data) 2 A
Rated voltage (data) 60 V
Rated impulse voltage (data) 0.5 kV

#### Technical characteristics

Pollution degree (data)

Limiting temperature -40 ... +125 °C

Mating cycles ≥500

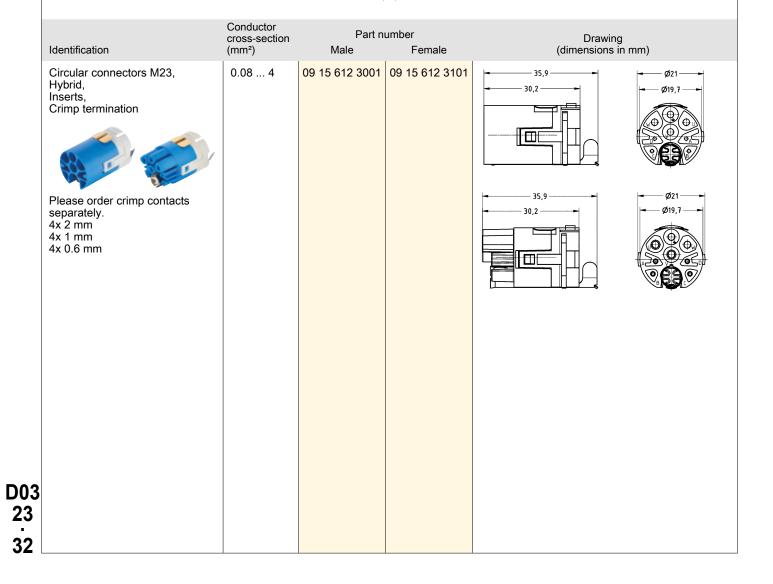
Conductor cross-section 0.08 ... 4 mm² Material (insert) Polyamide (PA)

Colour (insert) Blue
Material flammability class acc. V-0

to UL 94

RoHS compliant

# Specifications and approvals



# Technical characteristics

Contact resistance

Conductor cross-section

Material (contacts) Surface (contacts) RoHS

≤3 mΩ

0.08 ... 0.34 mm², 0.14 ... 1 mm², 0.75 ... 2.5 mm², 2.5 ... 4 mm²

Copper alloy

Gold plated compliant, compliant with

exemption

# Specifications and approvals

EN 60664-1 IEC 61984

Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M23, Power, Crimp contact, 0.6 mm, Turned contacts	0.08 0.34	09 15 600 6191	09 15 600 6291	4,5 % 4,5 % 5 % 5 % 5 % 5 % 5 % 5 % 5 % 5 % 5 %
Circular connectors M23, Power, Crimp contact, 1 mm, Turned contacts	0.14 1	09 15 600 6101	09 15 600 6201	Stripping length 4 mm
Circular connectors M23, Power, Crimp contact, 2 mm, Turned contacts	0.75 2.5 2.5 4	09 15 600 6121 09 15 600 6122	09 15 600 6221 09 15 600 6222	7,8 % % % 7,8 % % 7,8

M23

#### Technical characteristics

Limiting temperature -40 ... +125 °C Locking type Screw locking,

ComLock rapid locking

Degree of protection acc. to IEC IP67 / IP69 / IPX9K acc. to 60529 ISO 20653, in locked position

Material (hood/housing) Copper-zinc alloy Surface (hood/housing) Nickel plated

Material (seal) NBR

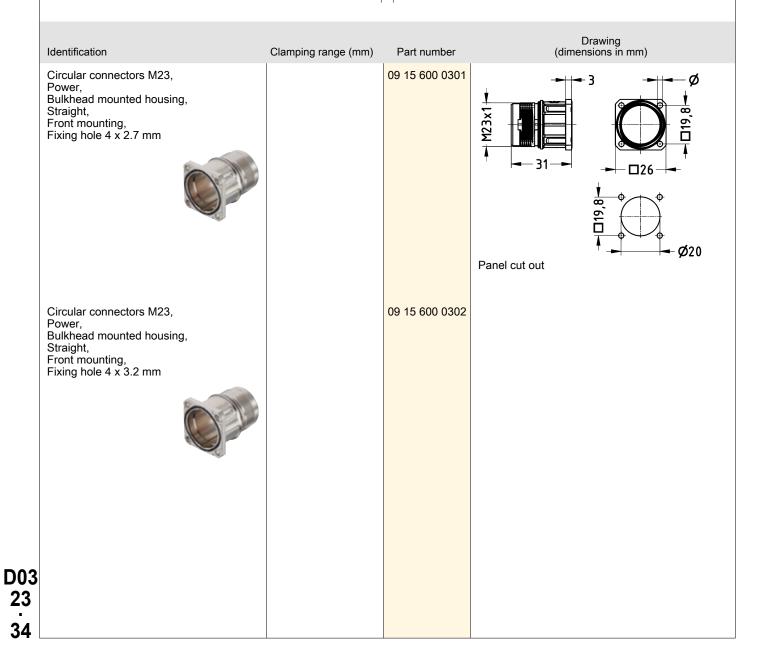
#### Technical characteristics

Colour (seal) Black

RoHS compliant, compliant with

exemption

# Specifications and approvals



# M23 Power Hoods/Housings

Drawing (dimensions in mm) Identification Clamping range (mm) Part number 09 15 600 0303 Circular connectors M23, - 39 Power, Bulkhead mounted housing, Straight, Front mounting, Thread M20 x 1.5 Not compatible to ComLock Ø20,2 Panel cut out 09 15 600 0313 Circular connectors M23, **-** 30,5 Power, Bulkhead mounted housing, Ø31**→** Straight, Front mounting, Thread M25 x 1.5 Ø25 Panel cut out Circular connectors M23, 09 15 600 0308 -37,3Power, - 33,8 Bulkhead mounted housing, Ø32,9+ Straight, Rear mounting, Thread M25 x 1.5 Ø25 Panel cut out

M23

**D03** 

# M23 Power Hoods/Housings



Drawing (dimensions in mm) Identification Clamping range (mm) Part number 09 15 600 0902 Circular connectors M23, Bulkhead mounted housing, Angled, Rotatable, Fixing hole 4 x 2.7 mm Ø20 Panel cut out Circular connectors M23, 09 15 600 0912 Power, Bulkhead mounted housing, Angled, Rotatable, Fixing hole 4 x 3.2 mm Ø20 Panel cut out 09 15 600 0310 Circular connectors M23, 7 ... 12 (approx. 72) 11 ... 17 09 15 600 0311 Panel feed through housing, Rear mounting, EMC version - **Ø**25 Panel cut out 09 15 600 9103 Circular connectors M23, Power, Cover, for hoods, With chain (100 mm) Not compatible to ComLock 36

**D03** 

M23

# M23 Power Hoods/Housings

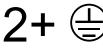


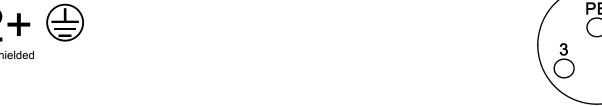
Identification	Clamping range (mm)	Part number	Drawing (dimensions in mm)	
Circular connectors M23, Power, Cover, for bulkhead mounted housings, for cable to cable housing, With chain (70 mm)		09 15 600 9102		M23
Eccard				
				D03 23 .37

7/8" HARAX®	HARTING	
Contents	Page	
Panel feed through	D03 35.2	
		DΛ

D03 35 . 1







#### Technical characteristics

Number of contacts Rated current 10 A 230 V Rated voltage conductor-earth Rated voltage conductor-con-400 V ductor 4.8 kV Rated impulse voltage Pollution degree 3 Insulation resistance >108 Ω Contact resistance ≤10 mΩ ≥100 Mating cycles Locking type Screw locking Conductor length 50 cm

Degree of protection acc. to IEC IP67

60529

#### Technical characteristics

Conductor cross-section 1 mm<sup>2</sup> AWG 18 Conductor cross-section

Material (insert) Thermoplastic polyurethane

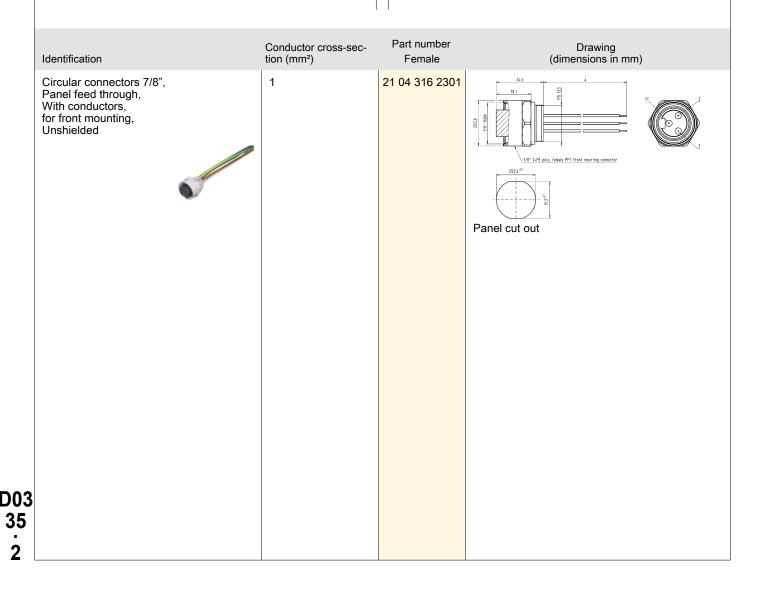
Material (hood/housing) Copper-zinc alloy

Material (contacts) Surface (contacts) Gold plated

RoHS compliant with exemption

# Specifications and approvals

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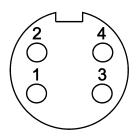




Number of contacts

4

Unshielded



#### Technical characteristics

Number of contacts Rated current 10 A 230 V Rated voltage conductor-earth Rated voltage conductor-con-400 V ductor 4.8 kV Rated impulse voltage Pollution degree 3 Insulation resistance >108 Ω Contact resistance ≤10 mΩ

Mating cycles ≥100
Locking type Screw locking
Conductor length 50 cm

Degree of protection acc. to IEC IP67

60529

# Technical characteristics

Conductor cross-section 1 mm²
Conductor cross-section AWG 18

Material (insert) Thermoplastic polyurethane

(TPU)

Material (hood/housing) Copper-zinc alloy

Material (contacts) Brass
Surface (contacts) Gold plated

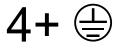
RoHS compliant with exemption

# Specifications and approvals

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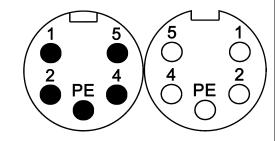
Identification	Conductor cross-section (mm²)	Part number Female	Drawing (dimensions in mm)
Circular connectors 7/8", Panel feed through, With conductors, for front mounting, Unshielded	1	21 04 316 2401	Panel cut out





Unshielded

60529



compliant with exemption

#### Technical characteristics

Number of contacts 10 A Rated current 230 V Rated voltage conductor-earth Rated voltage conductor-con-400 V ductor 4.8 kV Rated impulse voltage Pollution degree 3 Insulation resistance >108 Ω Contact resistance ≤10 mΩ ≥100 Mating cycles Locking type Screw locking Conductor length 50 cm Degree of protection acc. to IEC IP67

# Technical characteristics

Conductor cross-section
Conductor cross-section
Material (insert)
Material (hood/housing)
Material (contacts)
Surface (contacts)

1 mm²
AWG 18
Thermoplastic polyurethane (TPU)
Copper-zinc alloy
Brass
Gold plated

# Specifications and approvals



RoHS

Identification	Conductor cross section (mm²)	Part num Male	ber Female	Drawing (dimensions in mm)
Circular connectors 7/8", Panel feed through, With conductors, for front mounting, Unshielded	1	21 34 740 0571 005	21 04 316 2501	Panel cut out  Panel cut out  Panel cut out
3				

# HARAX® panel feed through



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Panel feed through	D03 50.2
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D03 50 1



Number of contacts

Number of contacts



HARAX



HARAX® connection technology Unshielded



#### Technical characteristics

Rated current 16 A 230 V Rated voltage conductor-earth Rated voltage conductor-con-400 V ductor Rated impulse voltage 4 kV Pollution degree 3 Insulation resistance >108 Ω Contact resistance ≤10 mΩ ≤2.8 mm Wire outer diameter Conductor length 50 cm Degree of protection acc. to IEC IP67

60529

Conductor cross-section 0.75 ... 1.5 mm<sup>2</sup> Conductor cross-section AWG 18 ... AWG 16

#### Technical characteristics

Cable diameter 6 ... 9 mm

Polyamide (PA), Thermoplastic polyurethane (TPU) Material (insert)

Material (hood/housing) Polyamide (PA), Thermoplastic

polyurethane (TPU) Copper alloy

Material (contacts) Surface (contacts) Gold plated RoHS compliant

# Specifications and approvals

	Identification	Conductor cross-section (mm²)	Size	Part number	Drawing (dimensions in mm)
	HARAX®, Panel feed through, With faston blades, for front mounting, HARAX® connection technology, Unshielded	0.75 1.5	Pg 13.5	21 01 130 3013	Gesantlinge im verschraubten Zusland ca. 49.6mm Complete length when assembled app. 49.6mm  SW24  Contact arrangement (view from mating side)
	HARAX®, Panel feed through, With solder termination, for front mounting, HARAX® connection technology, Unshielded	0.75 1.5	Pg 13.5	21 01 130 3023	
	HARAX®, Panel feed through, With conductors, for front mounting, HARAX® connection technology, Unshielded	0.75 1.5	Pg 13.5	21 01 130 3233	
3					



Number of contacts

Number of contacts

HARAX® connection technology Unshielded





HARAX

#### Technical characteristics

Rated current 16 A 230 V Rated voltage conductor-earth Rated voltage conductor-con-400 V ductor Rated impulse voltage 4 kV Pollution degree 3 Insulation resistance >108 Ω Contact resistance ≤10 mΩ ≤2.8 mm Wire outer diameter Conductor length 50 cm Degree of protection acc. to IEC IP67

60529

Conductor cross-section 0.75 ... 1.5 mm<sup>2</sup> Conductor cross-section AWG 18 ... AWG 16

#### Technical characteristics

Cable diameter 6 ... 9 mm

Polyamide (PA), Thermoplastic polyurethane (TPU) Material (insert)

Polyamide (PA), Thermoplastic Material (hood/housing)

polyurethane (TPU)

Material (contacts) Copper alloy Surface (contacts) Gold plated RoHS compliant

# Specifications and approvals

	0 1 /			
Identification	Conductor cross-section (mm²)	Size	Part number	Drawing (dimensions in mm)
HARAX®, Panel feed through, With faston blades, for front mounting, HARAX® connection technology, Unshielded	0.75 1.5	Pg 13.5	21 01 130 1013	Gesant länge im verschraubten Zustand co. 49.6mm Complete length when assembled app. 49.6mm  SW24  Contact arrangement (view from mating side)
HARAX®, Panel feed through, With solder termination, for front mounting, HARAX® connection technology, Unshielded	0.75 1.5	Pg 13.5	21 01 130 1023	
HARAX®, Panel feed through, With conductors, for front mounting, HARAX® connection technology, Unshielded	0.75 1.5	Pg 13.5	21 01 130 1223	



Number of contacts

Number of contacts

HARAX® connection technology Unshielded



HARAX

#### Technical characteristics

Rated current 16 A 230 V Rated voltage conductor-earth Rated voltage conductor-con-400 V ductor Rated impulse voltage 4 kV Pollution degree 3 Insulation resistance >108 Ω Contact resistance ≤10 mΩ ≤2.8 mm Wire outer diameter Conductor length 50 cm Degree of protection acc. to IEC IP67

60529

Conductor cross-section 0.75 ... 1.5 mm<sup>2</sup> Conductor cross-section AWG 18 ... AWG 16

#### Technical characteristics

Cable diameter 6 ... 9 mm

Polyamide (PA), Thermoplastic polyurethane (TPU) Material (insert)

Polyamide (PA), Thermoplastic polyurethane (TPU) Material (hood/housing)

Material (contacts) Copper alloy Surface (contacts) Gold plated RoHS compliant

# Specifications and approvals

Identification	Conductor cross-section (mm²)	Size	Part number	Drawing (dimensions in mm)
HARAX®, Panel feed through, With solder terminatio for front mounting, HARAX® connection Unshielded		M20 Pg 13.5	21 01 141 3023 21 01 140 3023	Gesant länge im verschraubten Zustand.co. 18,2mm Complete length when assembled app. 48,2mm  Line Sw21  Contact arrangement (view from mating side)
HARAX®, Panel feed through, With conductors, for front mounting, HARAX® connection Unshielded	0.75 1.5	M20	21 01 141 3333	
3				



Number of contacts

Number of contacts

HARAX® connection technology Unshielded





HARAX

#### Technical characteristics

Rated current 16 A 230 V Rated voltage conductor-earth Rated voltage conductor-con-400 V ductor Rated impulse voltage 4 kV Pollution degree 3 Insulation resistance >108 Ω Contact resistance ≤10 mΩ ≤2.8 mm Wire outer diameter Conductor length 50 cm Degree of protection acc. to IEC IP67

60529

Conductor cross-section 0.75 ... 1.5 mm<sup>2</sup> Conductor cross-section AWG 18 ... AWG 16

#### Technical characteristics

Cable diameter 6 ... 9 mm

Polyamide (PA), Thermoplastic polyurethane (TPU) Material (insert)

Polyamide (PA), Thermoplastic Material (hood/housing) polyurethane (TPU)

Material (contacts) Copper alloy Surface (contacts) Gold plated RoHS compliant

# Specifications and approvals

Identification	Conductor cross-section (mm²)	Size	Part number	Drawing (dimensions in mm)
HARAX®, Panel feed through, With solder termination, for front mounting, HARAX® connection technology, Unshielded	0.75 1.5 0.75 1.5	M20 Pg 13.5	21 01 141 1023 21 01 140 1023	Gesmtiage in verschreubten Zustand co. 48. 2mm Complete length when assembled app. 48. 2mm  12.9  Contact arrangement (view from mating side)
HARAX®, Panel feed through, With conductors, for front mounting, HARAX® connection technology, Unshielded	0.75 1.5 0.75 1.5	M20 Pg 13.5	21 01 141 1323 21 01 140 1323	

HARAX

# Technical characteristics

RoHS

compliant with exemption, compliant

HARAX®, Lock nut, Thermoplastic  M20 Pg 13.5  M20 Pg 13.5  21 01 000 0009  width across flats 24  years flats 27  years flats 28  years flats	Identification	Size	Part number	Draw (dimension	ring is in mm)
HARAX®, Lock nut, Metal	HARAX®, Lock nut, Thermoplastic	M20 Pg 13.5	21 01 000 0009 21 01 000 0007		
Lock nut, Metal				SW27	5
	Lock nut,	Pg 13.5	21 01 000 0039	SW24	5



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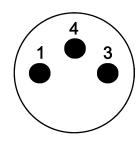
M8

C03 08 1



3

HARAX® connection technology Unshielded



#### Technical characteristics

Number of contacts 2 A Rated current 32 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥100 Mating cycles Wire outer diameter ≤1 mm Screw locking Locking type

Degree of protection acc. to IEC IP67, in locked position

60529

Conductor cross-section 0.1 ... 0.14 mm<sup>2</sup>

#### Technical characteristics

Conductor cross-section AWG 27 ... AWG 26
Cable diameter 1.9 ... 3.5 mm
Tightening torque 0.4 Nm

Material (insert) Polyamide (PA)

Material (hood/housing) Polyamide (PA), Zinc die-cast

Material (contacts)

Copper alloy
Surface (contacts)

Gold plated

RoHS compliant with exemption

# Specifications and approvals

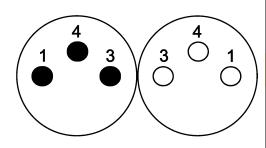
IEC 61076-2-104

	Identification	Conductor cross-section (mm²)	Part number Male	Drawing (dimensions in mm)
	Circular connectors M8, M8-XS, Cable connector, Straight, HARAX® connection technology, Unshielded	0.1 0.14	21 02 159 1305	Gesantlänge im verschraubten Zustand ca. 40,8mm Complete length when assembled app. 40,8mm width across flats 9
3				

M8

Number of contacts

HARAX® connection technology Unshielded



#### Technical characteristics

Number of contacts 4 A Rated current Rated voltage 32 V Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Wire outer diameter ≤1.6 mm Screw locking Locking type

Degree of protection acc. to IEC IP67, in locked position

60529

0.14 ... 0.34 mm<sup>2</sup> Conductor cross-section Conductor cross-section AWG 26 ... AWG 22

#### Technical characteristics

Cable diameter 2.5 ... 5.1 mm Tightening torque 0.4 Nm Material (insert) Polyamide (PA)

Material (hood/housing) Polyamide (PA), Zinc die-cast

Copper alloy Material (contacts) Surface (contacts) Gold plated RoHS compliant

# Specifications and approvals

IEC 61076-2-104 UL 1977 ECBT2.E102079

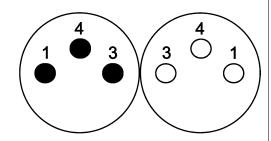
CSA-C22.2 No. 182.3 ECBT8.E102079

Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M8, M8-S, Cable connector, Straight, HARAX® connection technology, Unshielded	0.14 0.34	21 02 151 1305	21 02 151 2305	Gesamtlänge im verschraubten Zustand co. 40,8mm/ complete Tength when assembled app. 40,8mm/ width across flats 9  Gesamtlänge im verschraubten Zustand co. 42,5mm/ complete Tength when assembled app. 42,5mm/ into the complete Tength when assembled app. 42,5mm/ width across flats 9



3

Screw termination Unshielded



#### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 3 \\ \text{Rated current} & 4 \text{ A} \\ \text{Rated voltage} & 60 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & > 10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking

Degree of protection acc. to IEC IP67, in locked position

60529

 $\begin{array}{lll} \mbox{Conductor cross-section} & 0.09 \dots 0.5 \mbox{ mm}^2 \\ \mbox{Conductor cross-section} & \mbox{AWG 28} \dots \mbox{AWG 20} \\ \end{array}$ 

#### Technical characteristics

Cable diameter 4 ... 5.5 mm
Tightening torque 0.4 Nm
Material (insert) Polyamide (PA)
Material (hood/housing) Polyamide (PA),
Copper-zinc alloy

Material (contacts) Brass
Surface (contacts) Gold plated

RoHS compliant with exemption

# Specifications and approvals

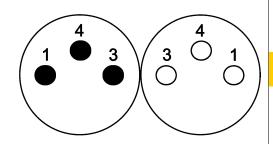
IEC 61076-2-104

Identification	Conductor cross-section (mm²)	Part no	umber Female	Drawing (dimensions in mm)
Circular connectors M8, Cable connector, Straight, Screw termination, Unshielded	0.09 0.5	21 02 359 1301	21 02 359 2301	complete length when assembled app. 47mm  SW13  SW13  SW13  SW13  SW12  SW12  SW12
Circular connectors M8, Cable connector, Angled, Screw termination, Unshielded	0.09 0.5	21 02 359 3301	21 02 359 4301	SW13 SW13 SW13 SW13 SW13 SW13 SW13 SW13

M8

Number of contacts

Screw termination Shielded



#### Technical characteristics

Number of contacts 4 A Rated current Rated voltage 60 V Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Screw locking Locking type

Degree of protection acc. to IEC IP67, in locked position

60529

Conductor cross-section 0.09 ... 0.5 mm<sup>2</sup> AWG 28 ... AWG 20 Conductor cross-section

# Technical characteristics

Cable diameter 4 ... 5.5 mm Tightening torque 0.4 Nm Material (insert) Polyamide (PA) Material (hood/housing) Copper-zinc alloy

Material (contacts) Brass Surface (contacts) Gold plated

RoHS compliant with exemption

# Specifications and approvals

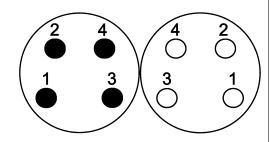
IEC 61076-2-104

Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M8, Cable connector, Straight, Screw termination, Shielded	0.09 0.5	21 02 369 1301	21 02 369 2301	complete length when assembled app. 47mm  SW13  SW13  SW13  SW13  SW13  SW13  SW13  SW13  SW13



4

HARAX® connection technology Unshielded



#### Technical characteristics

Number of contacts Rated current 4 A Rated voltage 32 V Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Wire outer diameter ≤1.6 mm Locking type Screw locking

Degree of protection acc. to IEC IP67, in locked position

60529

Conductor cross-section 0.14 ... 0.34 mm²
Conductor cross-section AWG 26 ... AWG 22

#### Technical characteristics

Cable diameter 2.5 ... 5.1 mm
Tightening torque 0.4 Nm
Material (insert) Polyamide (PA)
Material (hood/housing) Polyamide (PA), Zinc die-cast

Material (contacts)

Surface (contacts)

RoHS

Copper alloy

Gold plated

compliant

#### Specifications and approvals

IEC 61076-2-104

UL 1977 ECBT2.E102079

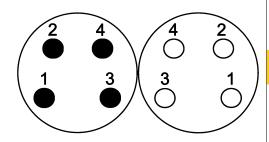
CSA-C22.2 No. 182.3 ECBT8.E102079

# Identification Circular connectors M8, M8-S, Cable connector, Straight, HARAX® connection technology, Unshielded O.14 ... 0.34 21 02 151 1405 21 02 151 1405 21 02 151 1405

M8

Number of contacts

Screw termination Unshielded



#### Technical characteristics

Number of contacts 4 A Rated current Rated voltage 30 V Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Locking type Screw locking

Degree of protection acc. to IEC IP67, in locked position

60529

Conductor cross-section 0.09 ... 0.5 mm<sup>2</sup> AWG 28 ... AWG 20 Conductor cross-section

# Technical characteristics

Cable diameter 4 ... 5.5 mm Tightening torque 0.4 Nm Material (insert) Polyamide (PA) Material (hood/housing) Polyamide (PA), Copper-zinc alloy

Material (contacts) Brass Surface (contacts) Gold plated

RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-104

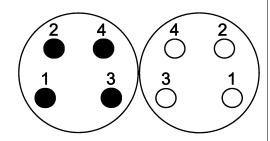
Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M8, Cable connector, Straight, Screw termination, Unshielded	0.09 0.5	21 02 359 1401	21 02 359 2401	complete length when assembled app. 47mm  SW13 SW13 SW12 SW12  SW13 SW13 SW13 SW12
Circular connectors M8, Cable connector, Angled, Screw termination, Unshielded	0.09 0.5	21 02 359 3401	21 02 359 4401	SW13 SW13 SW12 Complete length when assembled app. 26,8mm

## A-coding



Number of contacts

Screw termination Shielded



### Technical characteristics

Number of contacts 4 A Rated current Rated voltage 30 V Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance Mating cycles ≥100

Conductor cross-section Conductor cross-section

≤10 mΩ Locking type Screw locking Degree of protection acc. to IEC IP67, in locked position 60529

0.09 ... 0.5 mm<sup>2</sup> AWG 28 ... AWG 20

### Technical characteristics

Cable diameter 4 ... 5.5 mm Tightening torque 0.4 Nm Material (insert) Polyamide (PA) Material (hood/housing) Copper-zinc alloy

Material (contacts) Brass Surface (contacts) Gold plated

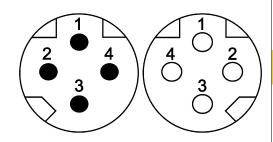
RoHS compliant with exemption

## Specifications and approvals

Identification	Conductor cross-section (mm²)	Part no	umber Female	Drawing (dimensions in mm)
Circular connectors M8, Cable connector, Straight, Screw termination, Shielded	0.09 0.5	21 02 369 1401	21 02 369 2401	complete length when assembled app. 47mm  SW13  Complete length when assembled app. 41mm  SW13  SW13  SW13

Number of contacts

HARAX® connection technology Shielded



#### Technical characteristics

Number of contacts 4 A Rated current 60 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥100 Mating cycles

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, in locked position

60529

Cable diameter 6.2 ... 6.8 mm

#### Technical characteristics

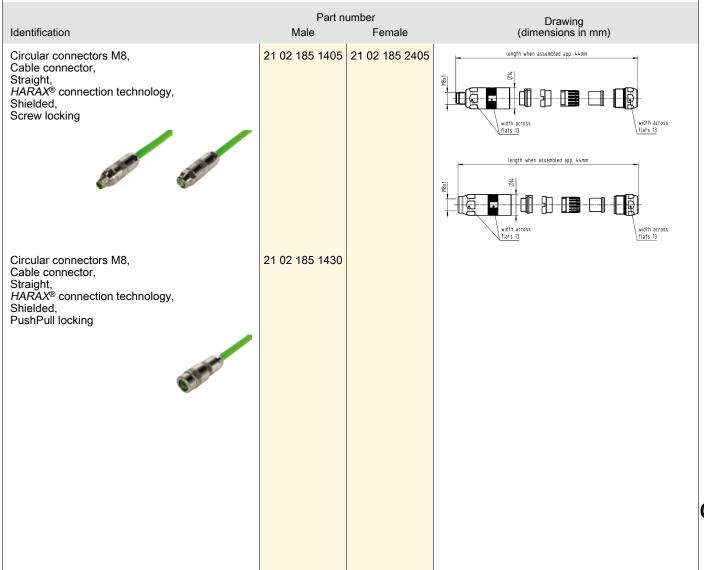
Transmission characteristics Cat. 5, Class D up to 100 MHz

Tightening torque 0.4 Nm Material (insert) Polyamide (PA)

Material (hood/housing) Polyamide (PA), Zinc die-cast

Material (contacts) Copper alloy Surface (contacts) Gold plated

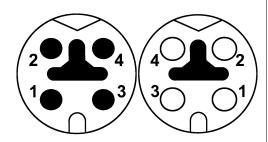
## Specifications and approvals





4

HARAX® connection technology Shielded



### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 4 \text{ A} \\ \text{Rated voltage} & 60 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking, PushPull
Degree of protection acc. to IEC IP65 / IP67, in locked position 60529

Cable diameter 6.2 ... 6.8 mm

#### Technical characteristics

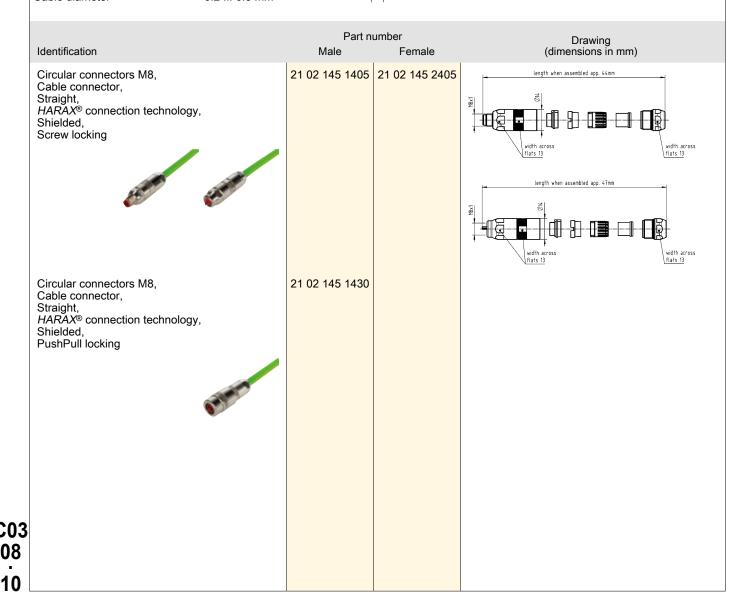
Transmission characteristics Cat. 5, Class D up to 100 MHz

Tightening torque 0.4 Nm Material (insert) Polyamide (PA)

Material (hood/housing) Polyamide (PA), Zinc die-cast

Material (contacts) Copper alloy Surface (contacts) Gold plated

## Specifications and approvals



## Accessories



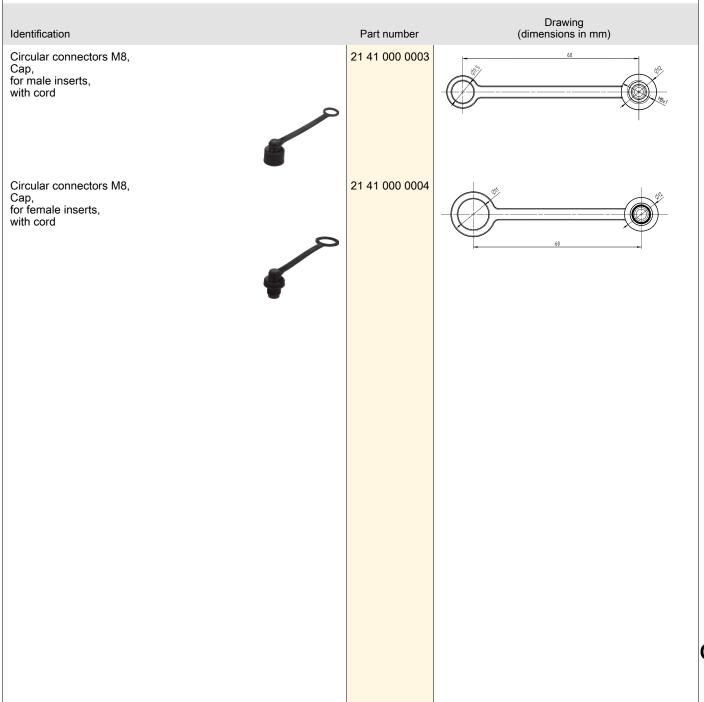
## Technical characteristics

Material (accessories)

Thermoplastic

## Technical characteristics

Colour (accessories) RoHS Black compliant



## Technical characteristics

Material (accessories)

Thermoplastic

## Technical characteristics

Colour (accessories) RoHS Black, Grey, Transparent compliant

Identification	Cable diameter (mm)	Part number	Drawing (dimensions in mm)
Circular connectors M8, M8-XS, Seal, Black	1.9 2.5	21 01 010 2016	
Circular connectors M8, M8-XS, Seal, Grey	2.5 3.5	21 01 010 2008	12,4
Circular connectors M8, M8-XS, Seal, Transparent	4.2 5.4	21 01 010 2005	
Circular connectors M8, M8-S, Set of seals	2.5 5.1	21 01 010 2013	60 25-32 00 32-4,00 4,0-5,1
			Ψ

C03 08



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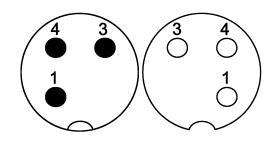
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C03 12 1



3

HARAX® connection technology Unshielded



### Technical characteristics

Number of contacts Rated current 4 A Rated voltage 32 V Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Wire outer diameter ≤1.6 mm Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 0.14 ... 0.34 mm²
Conductor cross-section AWG 26 ... AWG 22

#### Technical characteristics

Cable diameter 2.9 ... 5.1 mm
Tightening torque 0.6 Nm
Material (insert) Polyamide (PA)
Material (hood/housing) Polyamide (PA), Zinc die-cast

Material (contacts)
Surface (contacts)
RoHS
Brass
Gold plated
compliant

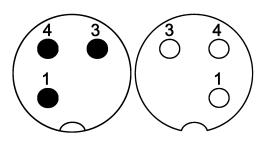
### Specifications and approvals

IEC 61076-2-101

UL 1977 ECBT2.E102079

Number of contacts

HARAX® connection technology Unshielded



#### Technical characteristics

Number of contacts 3 6 A Rated current Rated voltage 50 V Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Wire outer diameter ≤2.6 mm Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

0.34 ... 0.75 mm<sup>2</sup> Conductor cross-section AWG 22 ... AWG 18 Conductor cross-section

### Technical characteristics

Cable diameter 6 ... 8 mm Tightening torque 0.6 Nm Material (insert) Polyamide (PA)

Material (hood/housing) Polyamide (PA), Zinc die-cast

Material (contacts) Brass Surface (contacts) Gold plated

RoHS compliant with exemption

## Specifications and approvals

IEC 61076-2-101 UL 1977 ECBT2.E102079

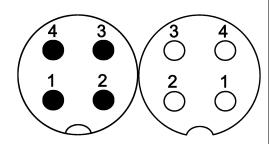
Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, M12-L, Cable connector, Straight, Deviating contact configuration, 1, 3, 4, HARAX® connection technology, Unshielded	0.34 0.75	21 03 212 1306	21 03 212 2306	app. 52,2
Circular connectors M12, M12-L, Cable connector, Straight, Deviating contact configuration, 3, 4, 5, HARAX® connection technology, Unshielded	0.34 0.75	21 03 212 1400	21 03 212 2400	SW17



4

M12

HARAX® connection technology Unshielded



compliant

### Technical characteristics

Number of contacts Rated current 4 A Rated voltage 32 V Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Wire outer diameter ≤1.6 mm Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 0.14 ... 0.34 mm²
Conductor cross-section AWG 26 ... AWG 22

#### Technical characteristics

Cable diameter 2.9 ... 5.1 mm
Tightening torque 0.6 Nm
Material (insert) Polyamide (PA)
Material (hood/housing) Polyamide (PA), Zinc die-cast

Material (contacts)
Surface (contacts)
Brass
Gold plated

Charifications and approval

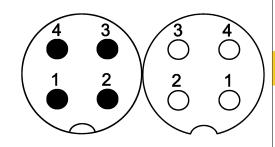
### Specifications and approvals

IEC 61076-2-101

RoHS

UL 1977 ECBT2.E102079

HARAX® connection technology Unshielded



#### Technical characteristics

Number of contacts 6 A Rated current Rated voltage 50 V Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Wire outer diameter ≤2.6 mm Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

0.34 ... 0.75 mm<sup>2</sup> Conductor cross-section AWG 22 ... AWG 18 Conductor cross-section

### Technical characteristics

Cable diameter 6 ... 8 mm, 7 ... 8.8 mm

Tightening torque 0.6 Nm Material (insert) Polyamide (PA)

Material (hood/housing) Polyamide (PA), Zinc die-cast

Material (contacts) Brass Surface (contacts) Gold plated

RoHS compliant with exemption

## Specifications and approvals

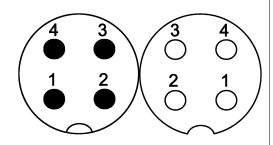
IEC 61076-2-101 UL 1977 ECBT2.E102079

Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, M12-L, Cable connector, Straight, HARAX® connection technology, Unshielded	0.34 0.75	21 03 212 1305	21 03 212 2305	app. 52
				E.W.S.
Circular connectors M12, M12-L, Cable connector, Straight, HARAX® connection technology, Unshielded, Cable-Ø 7 8.8 mm	0.34 0.75	21 03 212 1407	21 03 212 2407	



4

HARAX® connection technology Unshielded



### Technical characteristics

Number of contacts Rated current 4 A 32 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Wire outer diameter ≤1.6 mm Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 0.25 ... 0.5 mm²
Conductor cross-section AWG 24 ... AWG 20

#### Technical characteristics

Cable diameter 4 ... 5.1 mm

Tightening torque 0.6 Nm

Material (insert) Polyamide (PA)

Material (hood/housing) Polyamide (PA), Zinc die-cast

Material (contacts)

Brass

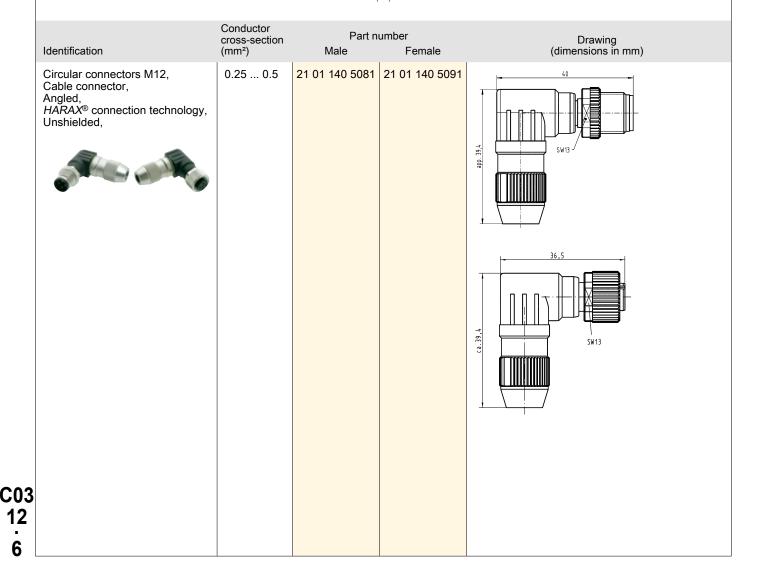
Surface (contacts)
Surface (contacts)
RoHS
Brass
Gold plated
compliant

### Specifications and approvals

IEC 61076-2-101

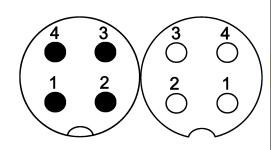
UL 1977 ECBT2.E102079

CSA-C22.2 No. 182.3 ECBT8.E102079



Number of contacts

HARAX® connection technology Shielded



#### Technical characteristics

Number of contacts 4 A Rated current Rated voltage 50 V Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Wire outer diameter ≤1.6 mm Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

0.14 ... 0.34 mm<sup>2</sup> Conductor cross-section Conductor cross-section AWG 26 ... AWG 22

## **Technical characteristics**

Cable diameter 4.5 ... 8.8 mm Tightening torque 0.6 Nm, 2 Nm Lock nut Material (insert) Polyamide (PA) Material (hood/housing) Zinc die-cast Material (contacts) Brass Surface (contacts) Gold plated

RoHS compliant with exemption

## Specifications and approvals

IEC 61076-2-101 UL 1977 ECBT2.E102079

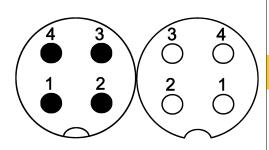
Identification	Conductor cross-section (mm²)	Part n	umber Female	Drawing (dimensions in mm)
Circular connectors M12, M12-L, Cable connector, Straight, HARAX® connection technology, Shielded	0.14 0.34	21 03 221 1405	21 03 221 2405	complete length when assembled app. 52mm  Complete length when assembled app. 49mm  SW15  SW15  SW15



Conductor cross-section (mm²) Part number Drawing (dimensions in mm) Identification Male Female 21 03 321 1425 21 03 321 2425 Circular connectors M12,  $0.14\ ...\ 0.34$ complete length when assembled app. 51.5mm M12-L,
Cable connector,
Panel feed through,
for rear mounting,
HARAX® connection technology, Shielded

4

Screw termination Unshielded



### Technical characteristics

Number of contacts 7.5 A Rated current Rated voltage 250 V Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Locking type

Locking type Screw locking
Degree of protection acc. to IEC IP67, when mated

60529

Conductor cross-section 1.5 mm² max. Conductor cross-section AWG 16

## Technical characteristics

Cable diameter 4 ... 8 mm
Tightening torque 0.6 Nm
Material (insert) Polyamide (PA)

Material (hood/housing) Polyamide (PA), Zinc die-cast

Material (contacts) Brass
Surface (contacts) Gold plated

RoHS compliant with exemption

## Specifications and approvals

IEC 61076-2-101

Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Cable connector, Straight, Screw termination, Unshielded	1.5 max.	ı	21 03 319 2401	complete length when assembled app. 5 fmm  complete length when assembled app. 5 fmm  complete length when assembled app. 5 fmm  SW18  SW18  SW17

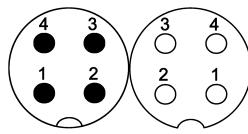


Conductor cross-section (mm²) Part number Drawing (dimensions in mm) Identification Male Female Circular connectors M12, Cable connector, Angled, Screw termination, Unshielded 21 03 319 3401 21 03 319 4401 1.5 max. M12 M12×1 complete length when assembled app. 46mm complete length when assembled app. 42mm

Number of contacts

4

Screw termination Shielded



### Technical characteristics

Number of contacts 4 A Rated current Rated voltage 250 V Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Locking type

Locking type Screw locking
Degree of protection acc. to IEC IP67, when mated

60529

Conductor cross-section 1.5 mm² max. Conductor cross-section AWG 16

## Technical characteristics

Cable diameter 4 ... 8 mm
Tightening torque 0.6 Nm
Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast
Material (contacts) Brass
Surface (contacts) Gold plated

RoHS compliant with exemption

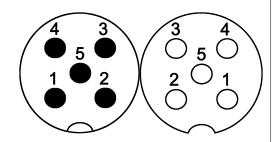
## Specifications and approvals

	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Cable connector, Straight, Screw termination, Shielded	1.5 max.	21 03 329 1401	21 03 329 2401	complete length when assembled app. 58mm  complete length when assembled app. 53mm  SW18  SW18  SW19



5

HARAX® connection technology Unshielded



### Technical characteristics

Number of contacts Rated current 4 A 50 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Wire outer diameter ≤2 mm Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

 $\begin{array}{lll} \mbox{Conductor cross-section} & 0.34 \dots 0.5 \mbox{ mm}^2 \\ \mbox{Conductor cross-section} & \mbox{AWG 22} \dots \mbox{AWG 20} \\ \end{array}$ 

#### Technical characteristics

Cable diameter 6 ... 8 mm
Tightening torque 0.6 Nm
Material (insert) Polyamide (PA)

Material (hood/housing) Polyamide (PA), Zinc die-cast Material (contacts) Brass

Surface (contacts)

Gold plated

RoHS compliant with exemption

### Specifications and approvals

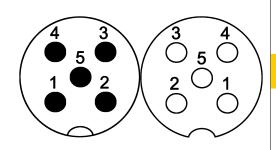
IEC 61076-2-101

UL 1977 ECBT2.E102079

CSA-C22.2 No. 182.3 ECBT8.E102079

Number of contacts

Crimp termination Shielded



#### Technical characteristics

Number of contacts Rated current 4 A 1.5 kV Rated impulse voltage Pollution degree

48 V AC, 60 V DC Rated voltage

>10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥500 Mating cycles Wire outer diameter ≤2.3 mm Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

0.14 ... 0.75 mm², Conductor cross-section

0.09 ... 0.25 mm<sup>2</sup>, 0.13 ... 0.33 mm<sup>2</sup>, 0.25 ... 0.52 mm<sup>2</sup>, 0.33 ... 0.82 mm<sup>2</sup>

#### Technical characteristics

AWG 26 ... AWG 18, AWG 28 ... AWG 24, AWG 26 ... AWG 22, AWG 24 ... AWG 20, AWG 22 ... AWG 18 Conductor cross-section Cable diameter 4.5 ... 8.8 mm Tightening torque 0.6 Nm Material (insert) Polyamide (PA) Material (hood/housing) Zinc die-cast Material (contacts) Copper alloy

RoHS compliant, compliant with

exemption

### Specifications and approvals

IEC 61076-2-101

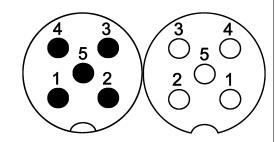
UL 1977 ECBT2.E102079

		ı	ı	
Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Cable connector, with conduit, Straight, Crimp termination, Shielded  Please order crimp contacts separately.	0.14 0.75	21 03 812 1511	21 03 812 2511	conglete length when assembled ago 65 finan  width across firsts 19  conglete length when assembled ago 65 finan  width across firsts 20  width across firsts 20
D-Sub, Standard, Crimp contact, Turned contacts	0.09 0.25 0.13 0.33 0.25 0.52 0.33 0.82	09 67 000 7576 09 67 000 5576 09 67 000 8576 09 67 000 3576	09 67 000 7476 09 67 000 5476 09 67 000 8476 09 67 000 3476	Wire gauge Ø Stripping length 0.09-0.25 mm² 0.64 mm 4 mm 0.13-0.33 mm² 0.88 mm 4 mm 0.25-0.52 mm² 1.13 mm 4 mm 0.33-0.82 mm² 1.34 mm 4 mm for stranded wire according IEC 60228 Class 5



5

Screw termination Unshielded



### Technical characteristics

 Number of contacts
 5

 Rated current
 7.5 A

 Rated voltage
 60 V

 Rated impulse voltage
 1.5 kV

 Pollution degree
 3

 Insulation resistance
 >108 Ω

 Contact resistance
 ≤10 mΩ

 Mating cycles
 ≥100

 Locking type
 Screw locking

Locking type Screw locking
Degree of protection acc. to IEC IP67, when mated

60529

Conductor cross-section 1.5 mm² max.
Conductor cross-section AWG 16

#### Technical characteristics

Cable diameter 4 ... 8 mm
Tightening torque 0.6 Nm
Material (insert) Polyamide (PA)
Material (hood/housing) Polyamide (PA), Zinc die-cast

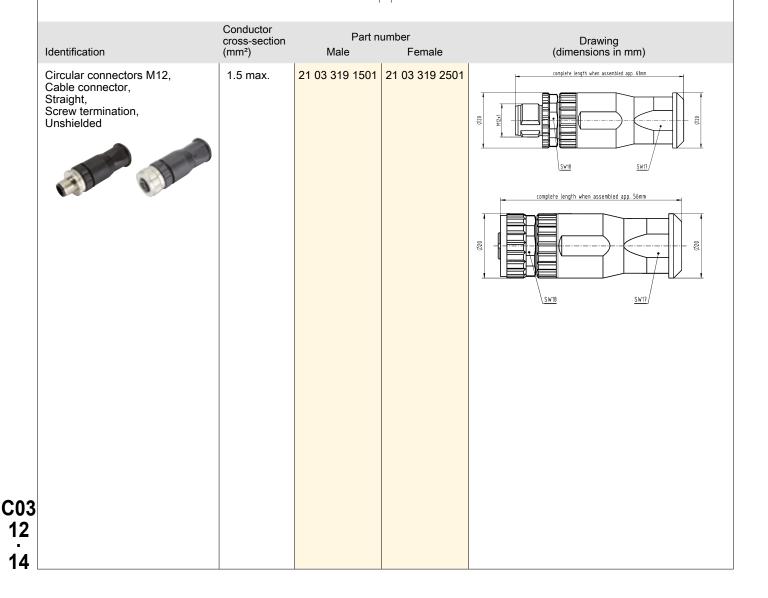
Material (contacts) Brass
Surface (contacts) Gold plated

RoHS compliant, compliant with

exemption

## Specifications and approvals

IEC 61076-2-101

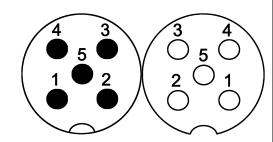




Conductor cross-section (mm²) Part number Drawing (dimensions in mm) Identification Male Female Circular connectors M12, Cable connector, Angled, Screw termination, Unshielded 1.5 max. 21 03 319 3501 21 03 319 4501 complete length when assembled app. 46mm SW18 complete length when assembled app. 42mm



Screw termination Shielded



### Technical characteristics

Number of contacts 4 A Rated current Rated voltage 60 V Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Locking type Screw locking Degree of protection acc. to IEC IP67, when mated

60529

Conductor cross-section 1.5 mm<sup>2</sup> max. Conductor cross-section AWG 16

### Technical characteristics

Cable diameter 4 ... 8 mm Tightening torque 0.6 Nm Material (insert) Polyamide (PA) Material (hood/housing) Zinc die-cast Material (contacts) Brass Surface (contacts) Gold plated

RoHS compliant with exemption

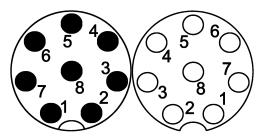
## Specifications and approvals

	Identification	Conductor cross-section (mm²)	Part n	umber Female	Drawing (dimensions in mm)
	Circular connectors M12, Cable connector, Straight, Screw termination, Shielded	1.5 max.	21 03 329 1501	21 03 329 2501	complete length when assembled app. 58mm  SW18  SW19
					complete length when assembled app. 53mm  SW18  SW18
3					

Number of contacts

8

IDC termination Shielded



#### Technical characteristics

Number of contacts Rated current 2 A 30 V Rated voltage Rated impulse voltage 0.8 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥100 Mating cycles Wire outer diameter ≤1.6 mm Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 0.14 ... 0.34 mm² Conductor cross-section AWG 26 ... AWG 22

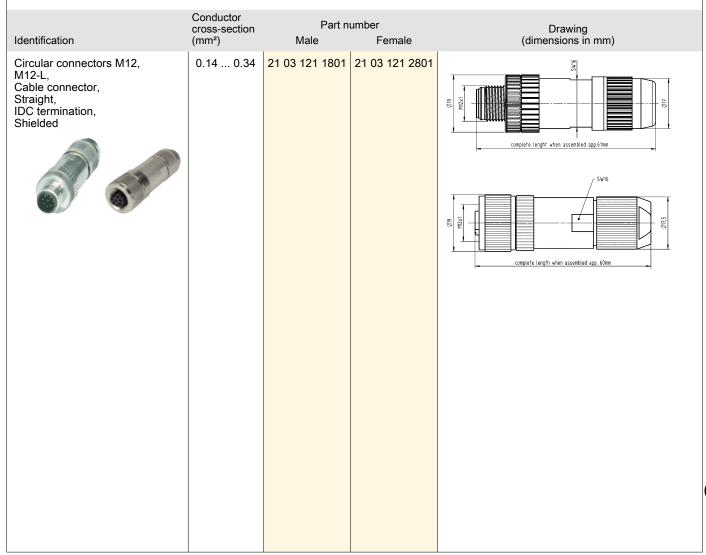
#### Technical characteristics

Cable diameter 4 ... 8 mm
Tightening torque 0.4 Nm
Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast
Material (contacts) Brass
Surface (contacts) Gold plated

RoHS compliant, compliant with

exemption

## Specifications and approvals

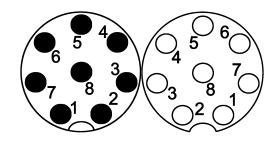




8

M12

Screw termination Unshielded



## Technical characteristics

Number of contacts 2 A Rated current Rated voltage 30 V Rated impulse voltage 0.8 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Locking type Screw locking

Degree of protection acc. to IEC IP67, when mated

60529

Conductor cross-section 0.5 mm² max.
Conductor cross-section AWG 20

### Technical characteristics

Cable diameter 4 ... 8 mm
Tightening torque 0.6 Nm
Material (insert) Polyamide (PA)

Material (hood/housing) Polyamide (PA), Zinc die-cast

Material (contacts) Brass
Surface (contacts) Gold plated

RoHS compliant with exemption

## Specifications and approvals

	Identification	Conductor cross-section (mm²)	Part ni Male	umber Female	Drawing (dimensions in mm)
	Circular connectors M12, Cable connector, Straight, Screw termination, Unshielded	0.5 max.	21 03 319 1801	21 03 319 2801	complete length when assembled app. 61mm  SW18  SW17
					complete length when assembled app. 56mm  SW18  SW17
3					
3					

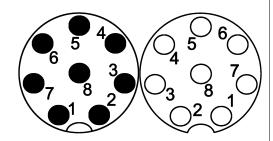


Conductor cross-section (mm²) Part number Drawing (dimensions in mm) Identification Male Female Circular connectors M12, Cable connector, Angled, Screw termination, Unshielded 0.5 max. 21 03 319 3801 21 03 319 4801 complete length when assembled app. 46mm SW18 complete length when assembled app. 42mm



M12

Screw termination Shielded



## Technical characteristics

Number of contacts 2 A Rated current Rated voltage 30 V Rated impulse voltage 0.8 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Locking type Screw locking Degree of protection acc. to IEC IP67, when mated

60529

Conductor cross-section 0.5 mm<sup>2</sup> max. Conductor cross-section AWG 20

### Technical characteristics

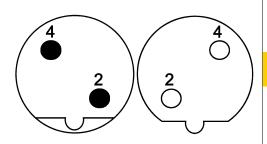
Cable diameter 4 ... 8 mm Tightening torque 0.6 Nm Material (insert) Polyamide (PA) Material (hood/housing) Zinc die-cast Material (contacts) **Brass** Surface (contacts) Gold plated

RoHS compliant with exemption

## Specifications and approvals

Identification	Condu cross-: (mm²)	section P	art number Female	Drawing (dimensions in mm)
Circular connectors M Cable connector, Straight, Screw termination, Shielded	M12, 0.5 m	21 03 329 1	801 21 03 329 2801	complete length when assembled app. S8mm  SW18  SW19
				complete length when assembled app. 53mm  Sw19
3				

HARAX® connection technology Shielded



#### Technical characteristics

Number of contacts 4 A Rated current Rated voltage 32 V Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Wire outer diameter ≤2.6 mm Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

0.25 ... 0.34 mm<sup>2</sup> Conductor cross-section Conductor cross-section AWG 24 ... AWG 22

### Technical characteristics

Cable diameter 4.5 ... 8.8 mm, 7 ... 8.8 mm Tightening torque 0.6 Nm, 2 Nm Lock nut Material (insert) Polyamide (PA) Material (hood/housing) Zinc die-cast Material (contacts) Brass Surface (contacts) Gold plated

RoHS compliant with exemption

## Specifications and approvals

IEC 61076-2-101 UL 1977 ECBT2.E102079

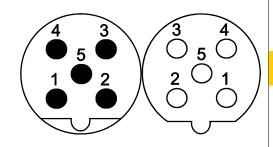
Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, M12-L, Cable connector, Straight, HARAX® connection technology, Shielded	0.25 0.34	21 03 241 1301	21 03 241 2301	Gesamtlänge im verschraubten Zustand ca. 58mm complete length when assembled app. 58mm  SM17 vidth across flats 17
				Gesamtlänge im verschraubten Zustand ca. 54,5mm complete length when assembled app. 54,5mm  SW17 width across flats 17  Flats 17



Conductor cross-section Part number Drawing (dimensions in mm) Identification Male Female (mm<sup>2</sup>) 21 03 341 1425 21 03 341 2425 Circular connectors M12,  $0.25 \dots 0.34$ M12 complete length when assembled app. 57mm M12-L, Cable connector, Panel feed through, for rear mounting, HARAX® connection technology, Shielded, Cable-Ø 7 ... 8.8 mm complete length when assembled app. 53mm 22

Number of contacts

Crimp termination Shielded



## Technical characteristics

Number of contacts Rated current 4 A 60 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥500 Mating cycles Wire outer diameter ≤2.3 mm Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section

0.14 ... 0.75 mm<sup>2</sup>, 0.09 ... 0.25 mm<sup>2</sup>, 0.13 ... 0.33 mm<sup>2</sup>, 0.25 ... 0.52 mm², 0.33 ... 0.82 mm<sup>2</sup>

#### Technical characteristics

AWG 26 ... AWG 18, AWG 28 ... AWG 24, Conductor cross-section AWG 26 ... AWG 24, AWG 26 ... AWG 22, AWG 24 ... AWG 20, AWG 22 ... AWG 18 Cable diameter 4.5 ... 8.8 mm Tightening torque 0.6 Nm, 2 Nm Lock nut Material (insert) Polyamide (PA) Material (hood/housing) Zinc die-cast Material (contacts) Copper alloy

RoHS compliant, compliant with

exemption

## Specifications and approvals

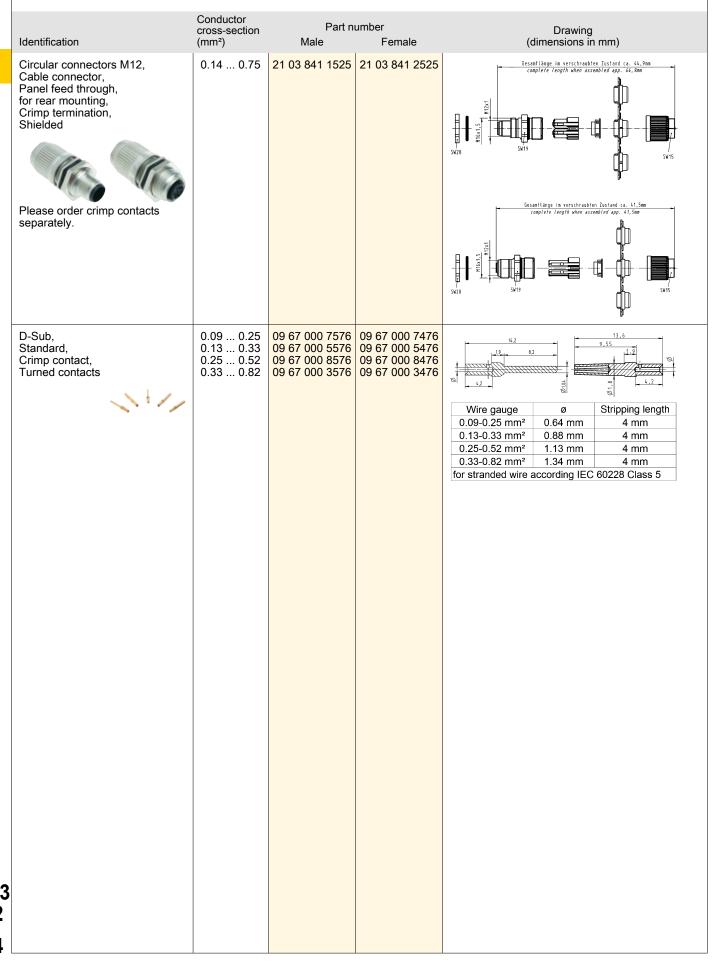
IEC 61076-2-101

UL 1977 ECBT2.E102079

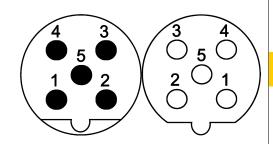
CSA-C22.2 No. 182.3 ECBT8.E102079

### Conductor Part number cross-section Drawing Identification (mm<sup>2</sup>) Male Female (dimensions in mm) 0.14 ... 0.75 21 03 841 1505 21 03 841 2505 Circular connectors M12, complete length when assembled app. 44.8m Cable connector, Straight, Crimp termination, Shielded Please order crimp contacts separately. complete length when assembled app. 41.4mm





Screw termination Shielded



### Technical characteristics

Number of contacts 4 A Rated current Rated voltage 60 V Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Locking type

Screw locking Degree of protection acc. to IEC IP67, when mated

60529

Conductor cross-section 1.5 mm<sup>2</sup> max. AWG 16 Conductor cross-section

## Technical characteristics

Cable diameter 4 ... 8 mm Tightening torque 0.6 Nm Material (insert) Polyamide (PA) Material (hood/housing) Zinc die-cast Material (contacts) Brass

Surface (contacts) Gold plated

RoHS compliant with exemption

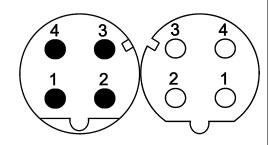
## Specifications and approvals

IEC 61076-2-101

Identification	Conductor cross-section (mm²)	Part no Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Cable connector, Straight, Screw termination, Shielded	1.5 max.	Male 21 03 349 1501		complete length when assembled app. 57mm  SW18  SW19  Complete length when assembled app. 53mm
				<u>swi9</u>



HARAX® connection technology Shielded



#### Technical characteristics

Number of contacts Rated current 4 A 50 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥100 Mating cycles Wire outer diameter ≤2 mm Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section

0.14 ... 0.34 mm², 0.34 ... 0.75 mm<sup>2</sup>

Conductor cross-section

AWG 26 ... AWG 22, AWG 22 ... AWG 18

Cable diameter

4.5 ... 8.8 mm Cat. 5, Class D up to 100 MHz

Transmission characteristics

Tightening torque

0.6 Nm, 2 Nm Lock nut Polyamide (PA)

Material (insert)

# Technical characteristics

Material (hood/housing) Zinc die-cast Material (contacts) **Brass** Surface (contacts) Gold plated

RoHS compliant with exemption

Specifications and approvals

IEC 61076-2-101 UL 1977 ECBT2.E102079

CSA-C22.2 No. 182.3 ECBT8.E102079



#### **Details**

For Fast Ethernet applications only

Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, M12-L, Cable connector, Straight, HARAX® connection technology, Shielded	0.14 0.34 0.34 0.75	21 03 281 1405 21 03 282 1405	21 03 281 2405 21 03 282 2405	complete length when assembled app. 52mm
3				complete length when assembled app. 49mm  SW17

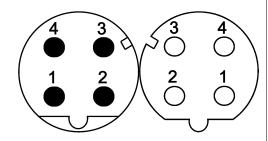


Conductor Part number cross-section Drawing (dimensions in mm) Identification Male  $(mm^2)$ Female 21 03 381 1425 21 03 381 2425 Circular connectors M12,  $0.14 \dots 0.34$ complete length when assembled app. 51.5mm M12-L, Cable connector, Panel feed through, for rear mounting,

HARAX® connection technology, Shielded Gesamtlänge im verschraubten Zustand ca. 48,2mm\_complete length when assembled app. 48,2mm\_15,1\_ width across flats 13 SW17 width across flats 17



Crimp termination Shielded



## Technical characteristics

Number of contacts Rated current 4 A Rated impulse voltage 1.5 kV Pollution degree

48 V AC, 60 V DC Rated voltage

>10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥500 Mating cycles Wire outer diameter ≤2.3 mm Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

0.14 ... 0.75 mm², 0.09 ... 0.25 mm², 0.13 ... 0.33 mm², 0.25 ... 0.52 mm², Conductor cross-section

0.33 ... 0.82 mm²

Conductor cross-section

AWG 26 ... AWG 18, AWG 28 ... AWG 24, AWG 26 ... AWG 22, AWG 24 ... AWG 20, AWG 22 ... AWG 18

#### Technical characteristics

Cable diameter 4.5 ... 8.8 mm

Transmission characteristics Cat. 5, Class D up to 100 MHz 0.6 Nm

Tightening torque Material (insert) Polyamide (PA) Material (hood/housing) Zinc die-cast Material (contacts) Copper alloy

RoHS compliant with exemption

### Specifications and approvals

IEC 61076-2-101

UL 1977 ECBT2.E102079

CSA-C22.2 No. 182.3 ECBT8.E102079

#### **Details**

For Fast Ethernet applications only

Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Cable connector, with conduit, Straight, Crimp termination, Shielded  Please order crimp contacts separately.	0.14 0.75	21 03 882 1411	21 03 882 2411	conglete length when assentied ago, 63 5mm  width across  rights 17  conglete length when assentied ago, 63 1mm
				Vidih across (Fals 17)
3				

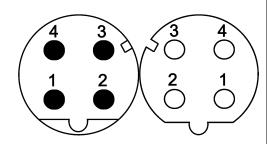


Conductor Part number Drawing (dimensions in mm) cross-section Identification  $(mm^2)$ Male Female 0.09 ... 0.25 0.13 ... 0.33 0.25 ... 0.52 0.33 ... 0.82 09 67 000 7576 | 09 67 000 7476 09 67 000 5576 | 09 67 000 5476 09 67 000 8576 | 09 67 000 8476 09 67 000 3576 | 09 67 000 3476 D-Sub, Standard, Crimp contact, Turned contacts 010 11/ Wire gauge 0.09-0.25 mm² Ø Stripping length 0.64 mm 4 mm 0.13-0.33 mm<sup>2</sup> 0.88 mm 4 mm 0.25-0.52 mm<sup>2</sup> 1.13 mm 4 mm 0.33-0.82 mm<sup>2</sup> 1.34 mm 4 mm for stranded wire according IEC 60228 Class 5



4

Screw termination Shielded



#### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 4 \text{ A} \\ \text{Rated voltage} & 250 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & >10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 100 \\ \end{array}$ 

Locking type Screw locking
Degree of protection acc. to IEC IP67, when mated

60529

Conductor cross-section 1.5 mm² max.
Conductor cross-section AWG 16
Cable diameter 4 ... 8 mm

Transmission characteristics Cat. 5, Class D up to 100 MHz

Conductor

Tightening torque 0.6 Nm

#### Technical characteristics

Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast
Material (contacts) Brass
Surface (contacts) Gold plated

RoHS compliant with exemption

### Specifications and approvals

IEC 61076-2-101

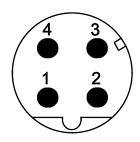
## **Details**

For Fast Ethernet applications only

Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Cable connector, Straight, Screw termination, Shielded, IP67	1.5 max.	21 03 389 1402	21 03 389 2402	complete length when assembled app. 57mm  SW18  SW19  complete length when assembled app. 53mm
				SW19
3				

Number of contacts

Screw termination Shielded



#### Technical characteristics

Number of contacts Rated current 4 A 250 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥100 Mating cycles

Locking type Screw locking Degree of protection acc. to IEC IP65, when mated

60529

Conductor cross-section 1.5 mm<sup>2</sup> max. Conductor cross-section AWG 16 Cable diameter 4.5 ... 8.3 mm

Transmission characteristics Cat. 5, Class D up to 100 MHz

Tightening torque 0.6 Nm

#### Technical characteristics

Material (insert) Polyamide (PA) Material (hood/housing) Zinc die-cast Material (contacts) Brass Surface (contacts) Gold plated

## Specifications and approvals

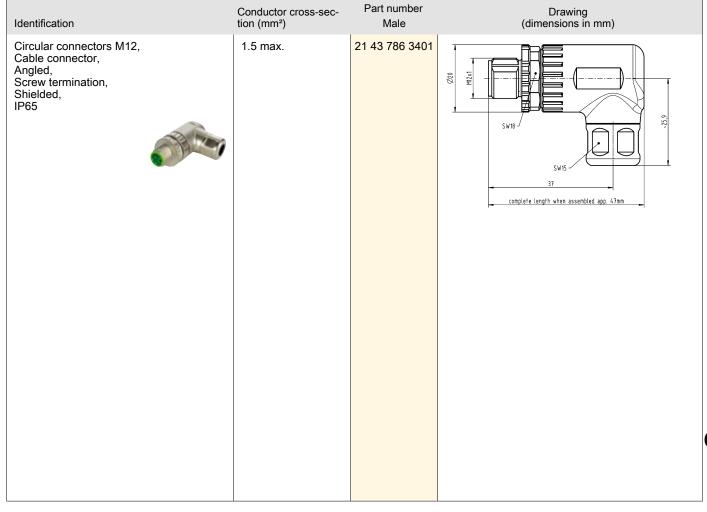
IEC 61076-2-101

UL 1977 ECBT2.E102079

CSA-C22.2 No. 182.3 ECBT8.E102079

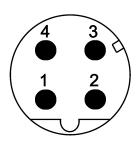
#### **Details**

For Fast Ethernet applications only





preLink® IDC insulation displacement termination . Shielded



## Technical characteristics

Number of contacts

-40 ... +85 °C Limiting temperature Mating cycles ≥500

Locking type Screw locking Degree of protection acc. to IEC IP65, IP67

60529 0.1 ... 0.12 mm², 0.22 ... 0.32 mm² Conductor cross-section

AWG 27 ... AWG 26, Conductor cross-section AWG 24 ... AWG 22

Cable diameter 5 ... 9.5 mm

Transmission characteristics Cat. 5, Class D up to 100 MHz

Data rate 10 Mbit/s, 100 Mbit/s Material (hood/housing) Zinc die-cast

Surface (hood/housing) Nickel plated

RoHS compliant with exemption

# Specifications and approvals

UL 1863 DUXR2.E470046

CSA-C22.2 No. 182.4, No. 233-09 DUXR8.E470046 DNV GL

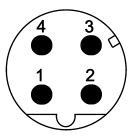
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#### **Details**

For Fast Ethernet applications only

	Identification	Conductor cross-section (mm²)	Part number Male	Drawing (dimensions in mm)
	preLink®, Circular connectors M12, Screw mounted housing, Cable connector, preLink® IDC insulation displacement termination, Shielded	0.1 0.12, 0.22 0.32	20 82 005 0001	
	Please order terminal module separately			
3				
)				

preLink® IDC insulation displacement termination



## Technical characteristics

Number of contacts

-40 ... +85 °C Limiting temperature

≥500 Mating cycles

Locking type Screw locking Degree of protection acc. to IEC IP65, IP67

Conductor cross-section

 $\begin{array}{c} 0.1 \; ... \; 0.12 \; mm^2, \\ 0.22 \; ... \; 0.32 \; mm^2 \end{array}$ 

AWG 27 ... AWG 26, Conductor cross-section

AWG 24 ... AWG 22

Cable diameter 5 ... 9.5 mm

Cat. 5, Class D up to 100 MHz Transmission characteristics

Data rate 10 Mbit/s, 100 Mbit/s Material (insert) Zinc die-cast, nickel-plated

Material (hood/housing) Zinc die-cast

RoHS compliant with exemption,

compliant

# Specifications and approvals

UL 1863 DUXR2.E470046

CSA-C22.2 No. 182.4, No. 233-09 DUXR8.E470046

DNV GL

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### **Details**

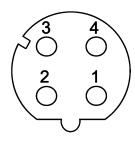
For Fast Ethernet applications only

Identification	Conductor cross-section (mm²)	Part number Male	Drawing (dimensions in mm)
preLink®, Circular connectors M12, Connector insert, preLink® IDC insulation displacement termination, Shielded	0.1 0.12, 0.22 0.32	20 82 005 1214	
Please order terminal module separately Please order screw mounted housing separately.			
preLink®, Circular connectors M12, Screw mounted housing, Empty housing	0.1 0.12, 0.22 0.32	20 82 000 1210	



M12

preLink® IDC insulation displacement termination



#### **Features**

- · Ethernet data connector suitable for industry
- Robust design
- 360° shielding
- Category of transmission Cat. 5
- Suitable for termination of massive and flexible wires
- Suitable for all PoE versions
- Very fast preLink® termination technology

## **Technical characteristics**

Number of contacts

-40 ... +85 °C Limiting temperature

≥500 Mating cycles

Locking type Screw locking, PushPull

Degree of protection acc. to IEC IP65, IP67

0.1 ... 0.12 mm², Conductor cross-section

0.22 ... 0.32 mm<sup>2</sup> AWG 27 ... AWG 26,

10 Mbit/s, 100 Mbit/s

Conductor cross-section AWG 24 ... AWG 22

Cable diameter 5 ... 9.5 mm Cat. 5, Class D up to 100 MHz

Transmission characteristics

Data rate

Material (hood/housing) Zinc die-cast

Surface (hood/housing) Nickel plated

RoHS compliant with exemption

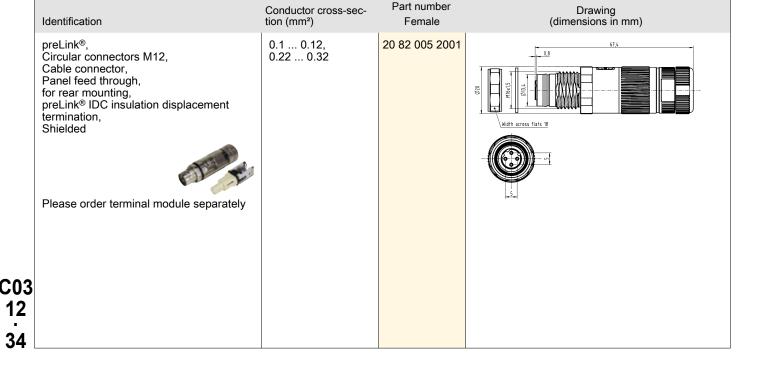
# Specifications and approvals

IEC 61076-2-101 DNV GL



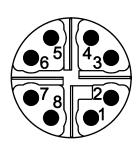
#### **Details**

For Fast Ethernet applications only





preLink® IDC insulation displacement termination



### Technical characteristics

Number of contacts

-40 ... +85 °C Limiting temperature

Mating cycles ≥500 Locking type Screw locking Degree of protection acc. to IEC IP65, IP67

60529

0.1 ... 0.12 mm², 0 .22 ... 0.32 mm² Conductor cross-section

AWG 27 ... AWG 26, AWG 24 ... AWG 22 Conductor cross-section

Cable diameter 5 ... 9.5 mm

Transmission characteristics Cat. 6<sub>A</sub>, Class E<sub>A</sub> up to 500

10 Mbit/s, 100 Mbit/s, 1 Gbit/s, 2.5 Gbit/s, 5 Gbit/s, 10 Gbit/s Data rate

Material (hood/housing) Zinc die-cast Surface (hood/housing) Nickel plated

# Technical characteristics

RoHS compliant with exemption

# Specifications and approvals

UL 1863 DUXR2.E470046

CSA-C22.2 No. 182.4, No. 233-09 DUXR8.E470046

DNV GL



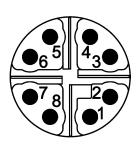
#### **Details**

Identification	Conductor cross-section (mm²)	Part number Male	Drawing (dimensions in mm)
preLink®, Circular connectors M12, Screw mounted housing, Cable connector, preLink® IDC insulation displacement termination, Shielded	0.1 0.12, 0.22 0.32	20 82 005 0002	
Please order terminal module separately			



8

preLink® IDC insulation displacement termination Shielded



### Technical characteristics

Number of contacts 8

Limiting temperature -40 ... +85 °C

Mating cycles ≥500

Locking type Screw locking Degree of protection acc. to IEC IP65, IP67

60529

Conductor cross-section 0.1 ... 0.12 mm²,

0.22 ... 0.32 mm<sup>2</sup>

Conductor cross-section AWG 27 ... AWG 26,

AWG 24 ... AWG 22

Cable diameter 5 ... 9.5 mm

Transmission characteristics Cat. 6<sub>A</sub>, Class E<sub>A</sub> up to 500

MHz

Data rate 10 Mbit/s, 100 Mbit/s, 1 Gbit/s,

2.5 Gbit/s, 5 Gbit/s, 10 Gbit/s Zinc die-cast, nickel-plated

Material (insert) Zinc die-cast, n Material (hood/housing) Zinc die-cast

# Technical characteristics

RoHS compliant with exemption,

compliant

# Specifications and approvals

UL 1863 DUXR2.E470046

CSA-C22.2 No. 182.4, No. 233-09 DUXR8.E470046

**DNV GL** 



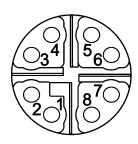
#### **Details**

Part number

Identification	Conductor cross-section (mm²)	Part number Male	Drawing (dimensions in mm)
preLink®, Circular connectors M12, Connector insert, preLink® IDC insulation displacement termination, Shielded  Please order terminal module separately Please order screw mounted housing separately.	0.1 0.12, 0.22 0.32	20 82 006 1218	
preLink®, Circular connectors M12, Screw mounted housing, Empty housing	0.1 0.12, 0.22 0.32	20 82 000 1210	



preLink® IDC insulation displacement termination



### **Features**

- · Ethernet data connector suitable for industry
- · Robust design
- · 360° shielding
- · Category of transmission Cat. 6A
- · Suitable for termination of massive and flexible wires
- · Suitable for all PoE versions
- · Very fast preLink® termination technology

## Technical characteristics

Number of contacts

-40 ... +85 °C Limiting temperature

Mating cycles ≥500

Locking type Screw locking, PushPull

Degree of protection acc. to IEC IP65, IP67

0.1 ... 0.12 mm², Conductor cross-section

0.22 ... 0.32 mm<sup>2</sup>

AWG 27 ... AWG 26, Conductor cross-section AWG 24 ... AWG 22

5 ... 9.5 mm

Cable diameter

Transmission characteristics Cat. 6<sub>A</sub>, Class E<sub>A</sub> up to 500 MHz

Data rate 10 Mbit/s, 100 Mbit/s, 1 Gbit/s, 2.5 Gbit/s, 5 Gbit/s, 10 Gbit/s

Zinc die-cast

Material (hood/housing) Surface (hood/housing) Nickel plated

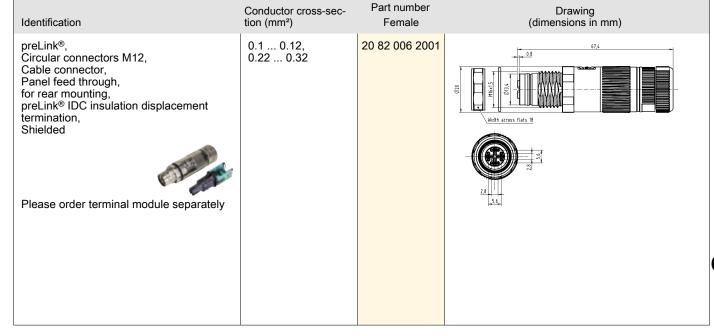
RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-109 **DNV GL** 



# **Details**



preLink® IDC insulation displacement termination



# Technical characteristics

Limiting temperature -40 ... +85 °C

Mating cycles ≥10

Wire outer diameter 1.3 ... 1.6 mm, 0.8 ... 1.1 mm

0.22 ... 0.32 mm², 0.1 ... 0.12 mm² Conductor cross-section

AWG 24 ... AWG 22, AWG 27 ... AWG 26 Conductor cross-section

Colour (insert) Yellow, White, Black

RoHS compliant

# Specifications and approvals

DNV GL

UL 1863 DUXR2.E470046

CSA-C22.2 No. 182.4, No. 233-09 DUXR8.E470046



Or ction (mm²) Part number  0.32 20 82 000 0001	Drawing (dimensions in mm)
.12 20 82 000 0003	
	25 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5

# preLink® M12

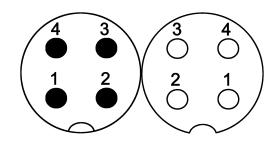


Identification	Conductor cross-section (mm²)	Part number	Drawing (dimensions in mm)	
preLink®, Terminal module, 4-pin, AIDA compliant, preLink® IDC insulation displacement termination, Conductor diameter 1.3 - 1.6 mm, Pack contents: 10 pieces	0.22 0.32	20 82 000 0005	9,5	M12
preLink®, Terminal module, 4-pin, AIDA compliant, preLink® IDC insulation displacement termination, Conductor diameter 1.3 - 1.6 mm, Pack contents: 100 pieces	0.22 0.32	20 82 000 0005 XL	9.5 10.6 1	C03 12



4

HARAX® connection technology Shielded



### Technical characteristics

Number of contacts 4 A Rated current 50 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥500 Mating cycles Wire outer diameter ≤1.6 mm Locking type

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section
Conductor cross-section

>10<sup>8</sup> Ω ≤10 mΩ ≥500 ≤1.6 mm Screw locking IP65 / IP67, when mater

IP65 / IP67, when mate

0.34 mm², 0.14 mm² AWG 22, AWG 26

# Technical characteristics

Cable diameter 5.7 ... 8.8 mm
Tightening torque 0.6 Nm
Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast
Material (contacts) Copper alloy
Surface (contacts) Gold plated
RoHS compliant

# Specifications and approvals

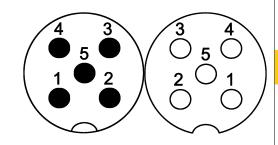
IEC 61076-2-101

UL 2238 CYJV2.E302521

CSA-C22.2 No. 182.3 CYJV8.E302521

Identification	Conductor cross-section (mm²)	Part n	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Slim Design, Cable connector, Straight, HARAX® connection technology, Shielded	0.14 0.34	21 03 322 1410 21 03 322 1400	21 03 322 2410 21 03 322 2400	vidth across flats 15  length when assembled app. 46mm  width across flats 15
3				length when assembled app. 42mm  width across width across flats 15  length when assembled app. 42mm  width across flats 15

Crimp termination Shielded



### Technical characteristics

Number of contacts Rated current 4 A Rated impulse voltage 1.5 kV Pollution degree

48 V AC, 60 V DC Rated voltage

>10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥500 Mating cycles Wire outer diameter ≤2.3 mm

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 0.13 ... 0.82 mm<sup>2</sup>,

0.09 ... 0.25 mm<sup>2</sup>, 0.13 ... 0.33 mm<sup>2</sup>, 0.25 ... 0.52 mm², 0.33 ... 0.82 mm<sup>2</sup>

0.13 ... 0.82

# Technical characteristics

AWG 26 ... AWG 18, AWG 28 ... AWG 24, Conductor cross-section AWG 26 ... AWG 22, AWG 24 ... AWG 20, AWG 22 ... AWG 18 Cable diameter 5.7 ... 8.8 mm Tightening torque 0.6 Nm, 2 Nm Lock nut Material (insert) Liquid crystal polymer (LCP) Material (hood/housing) Zinc die-cast Material (contacts) Copper alloy RoHS compliant, compliant with

# Specifications and approvals

IEC 61076-2-101

UL 2238 CYJV2.E302521 CSA-C22.2 No. 182.3 CYJV8.E302521

Conductor Part number Drawing cross-section Identification (mm<sup>2</sup>) Male Female (dimensions in mm)

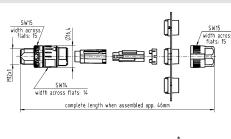
21 03 821 1505 21 03 821 2505

Circular connectors M12, Slim Design, Cable connector, Straight, Crimp termination,

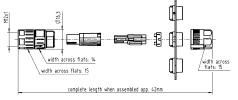
Shielded



Please order crimp contacts separately.



exemption





Conductor Part number Drawing cross-section Identification (dimensions in mm) Male Female (mm<sup>2</sup>) 21 03 821 1507 Circular connectors M12,  $0.13 \dots 0.82$ 21 03 821 2507 SW15 width across Slim Design, Ø16,4 flats: 15 Cable connector, Straight,
Crimp termination, Shielded, Shield connection with crimp flange width across width across flats: 14 flats: 15 complete length when assembled app. 40,5 SW15 width across Please order crimp contacts separately. Please order crimp flange set separately. SW14 width across flats: 14 width arross flats: 15 complete length when assembled app. 36,5 Circular connectors M12, 0.13 ... 0.82 21 03 821 1525 21 03 821 2525 length when assembled app. 46mm Slim Design, Cable connector, Panel feed through, for rear mounting, Crimp termination, Shielded Please order crimp contacts separately. Circular connectors M12, 0.13 ... 0.82 21 03 821 2527 Slim Design, Cable connector, Panel feed through, for rear mounting, Crimp termination, width aci flat:15 flat:19 Shielded, Shield connection with crimp flange Please order crimp contacts separately. Please order crimp flange set separately.

	Conductor				
Identification	cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)	
Circular connectors M12, Slim Design, Cable connector, Angled, Crimp termination, Shielded  Please order crimp contacts separately.	0.13 0.82	21 03 821 3505	21 03 821 4505	length when assentided app. 55  width across flats: 15  width across flats: 15  width across flats: 16	M12
				length when assembled ago, 51 with across flats. 15 with across flats 15 with across flats 15	
Circular connectors M12, Slim Design, Cable connector, Angled, Crimp termination, Shielded, Shield connection with crimp flange	0.13 0.82	21 03 821 3507	21 03 821 4507	length when assembled app. 54  SW15 width across flats: 15  SW16 width across flats: 15	
Please order crimp contacts separately. Please order crimp flange set separately.				length when assembled app. 51  SW15 width across flats: 15  SW16 width across flats: 16  Vide page 18  SW16 SW16 SW16 SW16 SW16 SW16 SW16 SW1	
D-Sub, Standard, Crimp contact, Turned contacts	0.09 0.25 0.13 0.33 0.25 0.52 0.33 0.82	09 67 000 5576 09 67 000 8576	09 67 000 7476 09 67 000 5476 09 67 000 8476 09 67 000 3476	Wire gauge Ø Stripping length 0.09-0.25 mm² 0.64 mm 4 mm 0.13-0.33 mm² 0.88 mm 4 mm 0.25-0.52 mm² 1.13 mm 4 mm 0.33-0.82 mm² 1.34 mm 4 mm for stranded wire according IEC 60228 Class 5	C03
					43

# M12 Slim Design

M12

# A-coding

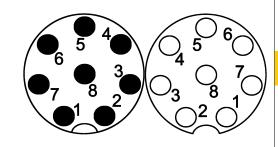


Conductor Part number Drawing (dimensions in mm) cross-section Identification Male Female (mm<sup>2</sup>) 21 01 010 00xx Circular connectors M12, 21 01 010 00xx Slim Design, Crimp flange set D2 D1 D3 D4 D5 HARTING offers to test and define the best crimp flange and 21 01 010 0017 3.5 4.5 6.0 6.5 7.5 ferrule combination for customer specific cables. 21 01 010 0018 5.5 7.5 8.5 4.5 6.6 5.5 6.8 21 01 010 0019 4.5 8.0 9.0 21 01 010 0020 5.0 6.0 7.8 9.0 10.0 21 01 010 0021 10.0 10.8 6.5 7.5 8.0 6.0 10.0 21 01 010 0022 5.0 7.4 9.0 21 01 010 0024 6.5 8.8 10.0 10.8

CO:



Crimp termination Shielded



### Technical characteristics

Number of contacts 8 Rated current 2 A Rated impulse voltage 0.8 kV Pollution degree

30 V AC, 30 V DC Rated voltage

>10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥500 Mating cycles Wire outer diameter ≤1.65 mm

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

0.13 ... 0.33 mm<sup>2</sup> Conductor cross-section Conductor cross-section AWG 26 ... AWG 22 Cable diameter 5.7 ... 8.8 mm

### Technical characteristics

Tightening torque 0.6 Nm, 2 Nm Lock nut Material (insert) Liquid crystal polymer (LCP) Material (hood/housing) Zinc die-cast

Material (contacts) Copper alloy Gold plated Surface (contacts)

compliant, compliant with exemption RoHS

# Specifications and approvals

IEC 61076-2-101 UL 2238 CYJV2.E302521

CSA-C22.2 No. 182.3 CYJV8.E302521

		'	'	
Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Slim Design, Cable connector, Straight, Crimp termination, Shielded  Please order crimp contacts separately.	0.13 0.33	21 03 821 1805	21 03 821 2805	complete length when assembled app. 4.6mm  width across flats: 14  width across flats: 15  width across flats: 15  complete length when assembled app. 42mm



Conductor Part number Drawing (dimensions in mm) cross-section Identification Male Female (mm<sup>2</sup>) 21 03 821 1807 Circular connectors M12,  $0.13 \dots 0.33$ 21 03 821 2807 SW15 width across Slim Design, Ø16,4 flats: 15 Cable connector, Straight,
Crimp termination, Shielded, Shield connection with crimp flange SW14 SW15 width across width across flats: 15 complete length when assembled app. 40,5 Please order crimp contacts separately. Please order crimp flange set flats: 15 separately. SW14 SW15 complete length when assembled app. 36,5 Circular connectors M12, 0.13 ... 0.33 21 03 821 1825 21 03 821 2825 Slim Design, Cable connector, Panel feed through, for rear mounting, Crimp termination, Shielded width acros Please order crimp contacts separately. Circular connectors M12, 21 03 821 2827 0.13 ... 0.33 Slim Design, Cable connector, Panel feed through, for rear mounting, Crimp termination, Shielded, complete length when assembled app. 36,5 Shield connection with crimp flange Please order crimp contacts separately. Please order crimp flange set separately.

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Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)	
Circular connectors M12, Slim Design, Cable connector, Angled, Crimp termination, Shielded  Please order crimp contacts separately.	0.13 0.33	21 03 821 3805	21 03 821 4805	length when assembled app. 55  width across flats: 15  width across flats: 15  width across flats: 16	M12
	0.40	04.00.004.0007	04.00.004.4007	width across flats: 15  Width across flats: 15  Width across flats: 16	
Circular connectors M12, Slim Design, Cable connector, Angled, Crimp termination, Shielded, Shield connection with crimp flange	0.13 0.33	21 03 821 3807	21 03 821 4807	length when assembled app. 54  SW15  Width across flats: 15  Width across flats: 15  Width across flats: 15  Width across flats: 15	
Please order crimp contacts separately. Please order crimp flange set separately.				length when assembled app. 51  SW15  SW15  SW15  SW16  SW16	
Circular connectors M12, Crimp contact, Turned contacts	0.13 0.33	21 01 100 9020	21 01 100 9025	5,8	
				5.8	
					<b>C</b> 03
					12 47

# M12 Slim Design

M12

# A-coding



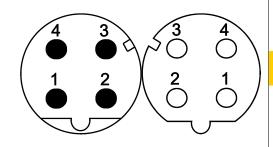
Conductor Part number Drawing (dimensions in mm) cross-section Identification Male Female (mm<sup>2</sup>) 21 01 010 00xx Circular connectors M12, 21 01 010 00xx Slim Design, Crimp flange set D2 D1 D3 D4 D5 HARTING offers to test and define the best crimp flange and 21 01 010 0017 3.5 4.5 6.0 6.5 7.5 ferrule combination for customer specific cables. 21 01 010 0018 5.5 7.5 8.5 4.5 6.6 6.8 21 01 010 0019 4.5 5.5 8.0 9.0 21 01 010 0020 5.0 6.0 7.8 9.0 10.0 21 01 010 0021 10.0 10.8 6.5 7.5 8.0 6.0 10.0 21 01 010 0022 5.0 7.4 9.0 21 01 010 0024 6.5 8.8 10.0 10.8



Number of contacts

4

HARAX® connection technology Shielded



### Technical characteristics

Number of contacts 4 A Rated current 50 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥500 Wire outer diameter ≤1.6 mm Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section
Conductor cross-section
Cable diameter

O.34 mm², 0.14 mm²
AWG 22, AWG 26
5.7 ... 8.8 mm

Transmission characteristics Cat. 5, Class D up to 100 MHz

Tightening torque 0.6 Nm
Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast

### Technical characteristics

Material (contacts) Copper alloy Surface (contacts) Gold plated compliant

# Specifications and approvals

IEC 61076-2-101 UL 2238 CYJV2.E302521 CSA-C22.2 No. 182.3 CYJV8.E302521



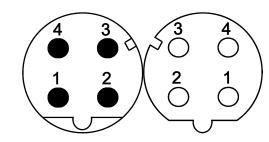
#### **Details**

For Fast Ethernet applications only

Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Slim Design, Cable connector, Straight, HARAX® connection technology, Shielded	0.14 0.34	21 03 382 1410 21 03 382 1400	21 03 382 2410 21 03 382 2400	46mm SW15
				SW15



Crimp termination Shielded



#### Technical characteristics

Number of contacts Rated current 4 A Rated impulse voltage 1.5 kV Pollution degree

48 V AC, 60 V DC Rated voltage

>10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥500 Wire outer diameter <2.3 mm

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529 Conductor cross-section 0.13 ... 0.82 mm²,

0.09 ... 0.25 mm<sup>2</sup>, 0.13 ... 0.33 mm<sup>2</sup>, 0.25 ... 0.52 mm², 0.33 ... 0.82 mm<sup>2</sup>

AWG 26 ... AWG 18, Conductor cross-section

AWG 28 ... AWG 24, AWG 26 ... AWG 22, AWG 24 ... AWG 20, AWG 22 ... AWG 18

Cable diameter 5.7 ... 8.8 mm

# Technical characteristics

Transmission characteristics Tightening torque Material (insert) Material (hood/housing) Material (contacts)

RoHS

Cat. 5, Class D up to 100 MHz 0.6 Nm, 2 Nm Lock nut Liquid crystal polymer (LCP)

Zinc die-cast Copper alloy

compliant, compliant with

exemption

# Specifications and approvals

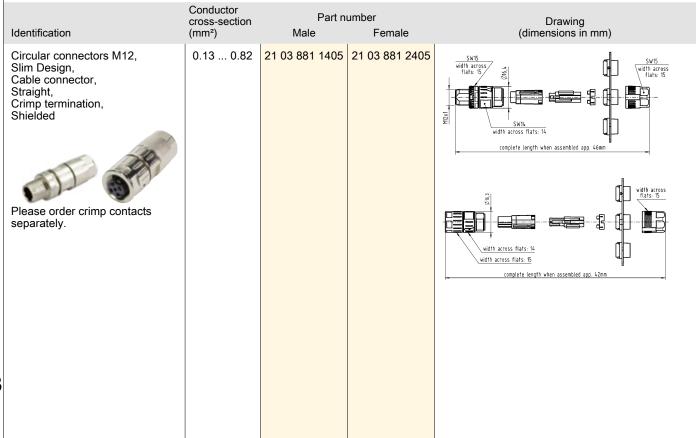
IEC 61076-2-101 UL 2238 CYJV2.E302521

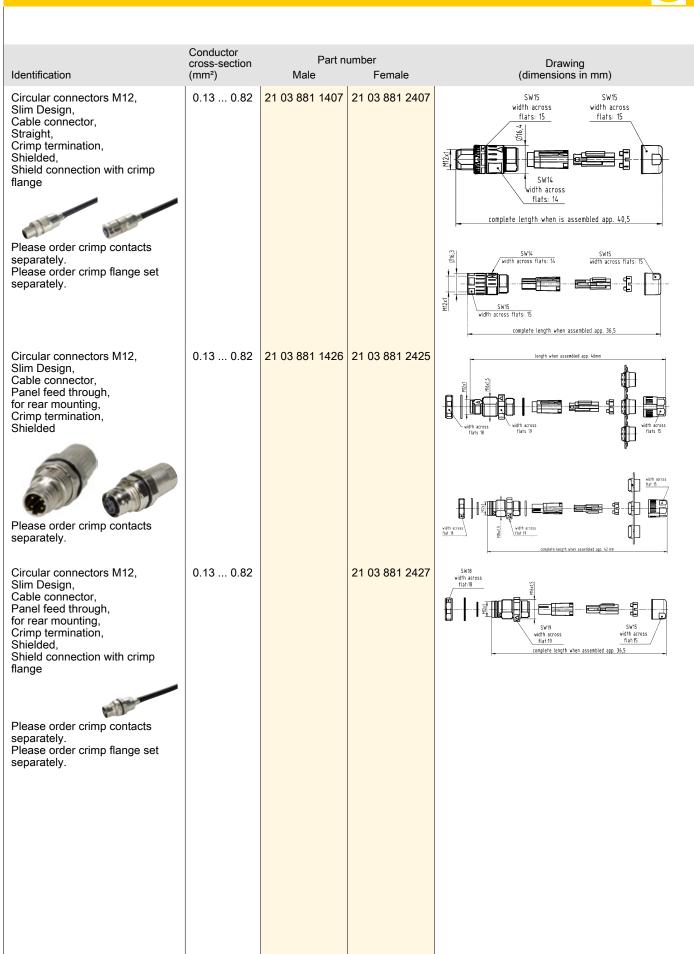
CSA-C22.2 No. 182.3 CYJV8.E302521



#### **Details**

For Fast Ethernet applications only







Conductor Part number Drawing cross-section Identification (dimensions in mm) (mm<sup>2</sup>) Male Female Circular connectors M12,  $0.13 \dots 0.82$ 21 03 881 3405 21 03 881 4405 length when assembled app. 55 Slim Design, Cable connector, Angled, Crimp termination, Shielded Please order crimp contacts separately. length when assembled app. 51 Circular connectors M12, 0.13 ... 0.82 21 03 881 3407 21 03 881 4407 Slim Design, length when assembled app. 51 Cable connector, SW15 width across flats: 15 Angled, width across flats: 15 Crimp termination, Shielded, Shield connection with crimp flange SW16 width across flats: 16 Please order crimp contacts separately. Please order crimp flange set separately. 09 67 000 7576 09 67 000 5576 D-Sub. 0.09 ... 0.25 09 67 000 7476 13,6 09 67 000 5476 Standard,  $0.13 \dots 0.33$ 09 67 000 8576 09 67 000 8476 Crimp contact,  $0.25 \dots 0.52$ Turned contacts  $0.33 \dots 0.82$ 09 67 000 3576 09 67 000 3476 Wire gauge Stripping length 0.09-0.25 mm<sup>2</sup> 0.64 mm 4 mm 0.13-0.33 mm<sup>2</sup> 0.88 mm 4 mm 0.25-0.52 mm<sup>2</sup> 1.13 mm 4 mm 0.33-0.82 mm<sup>2</sup> 1.34 mm 4 mm for stranded wire according IEC 60228 Class 5

# M12 Slim Design



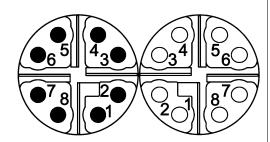
Conductor cross-section (mm²) Part number Drawing (dimensions in mm) Identification Female Male 21 01 010 00xx 21 01 010 00xx Circular connectors M12, Slim Design, Crimp flange set D1 D2 D3 D4 HARTING offers to test and D5 define the best crimp flange and ferrule combination for customer 21 01 010 0017 3.5 4.5 6.0 6.5 7.5 21 01 010 0018 5.5 6.6 7.5 8.5 4.5 specific cables. 21 01 010 0019 4.5 5.5 6.8 9.0 8.0 21 01 010 0020 5.0 6.0 7.8 9.0 10.0 21 01 010 0021 10.0 10.8 6.5 7.5 8.0 21 01 010 0022 10.0 5.0 6.0 7.4 9.0 21 01 010 0024 5.5 6.5 8.8 10.0 10.8



8

M12

Crimp termination Shielded



#### **Technical characteristics**

Number of contacts Rated current 0.5 A Rated voltage 48 V Rated impulse voltage 0.8 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥500 Wire outer diameter ≤1.4 mm

Locking type Screw locking, PushPull Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 0.08 ... 0.25 mm², 0.13 ... 0.25 mm², 0.08 ... 0.22 mm²
Conductor cross-section AWG 28 ... AWG 23,

AWG 26 ... AWG 23, AWG 28 ... AWG 24

Cable diameter 5.7 ... 8.8 mm

Transmission characteristics Cat. 6<sub>A</sub>, Class E<sub>A</sub> up to 500 MHz

Tightening torque 0.6 Nm, 2 Nm Lock nut

#### Technical characteristics

Material (insert)

Material (hood/housing)

Material (contacts)

Surface (contacts)

Liquid crystal polymer (LCP)

Zinc die-cast

Copper alloy

Gold plated

RoHS compliant, compliant with

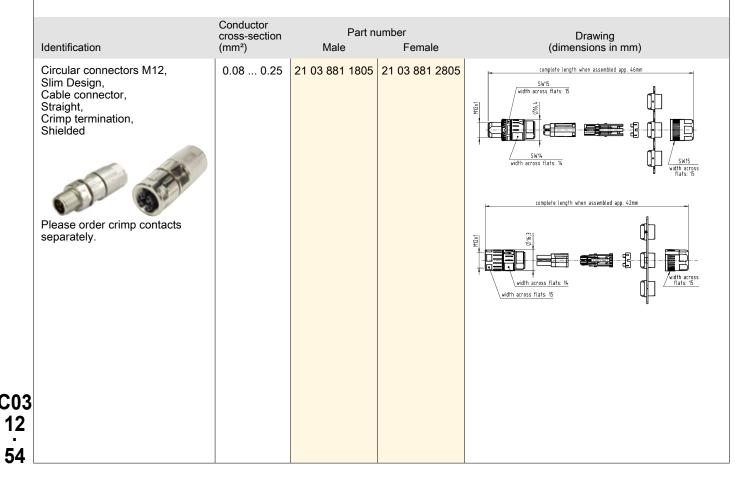
exemption

# Specifications and approvals

IEC 61076-2-109 UL 2238 CYJV2.E302521 CSA-C22.2 No. 182.3 CYJV8.E302521



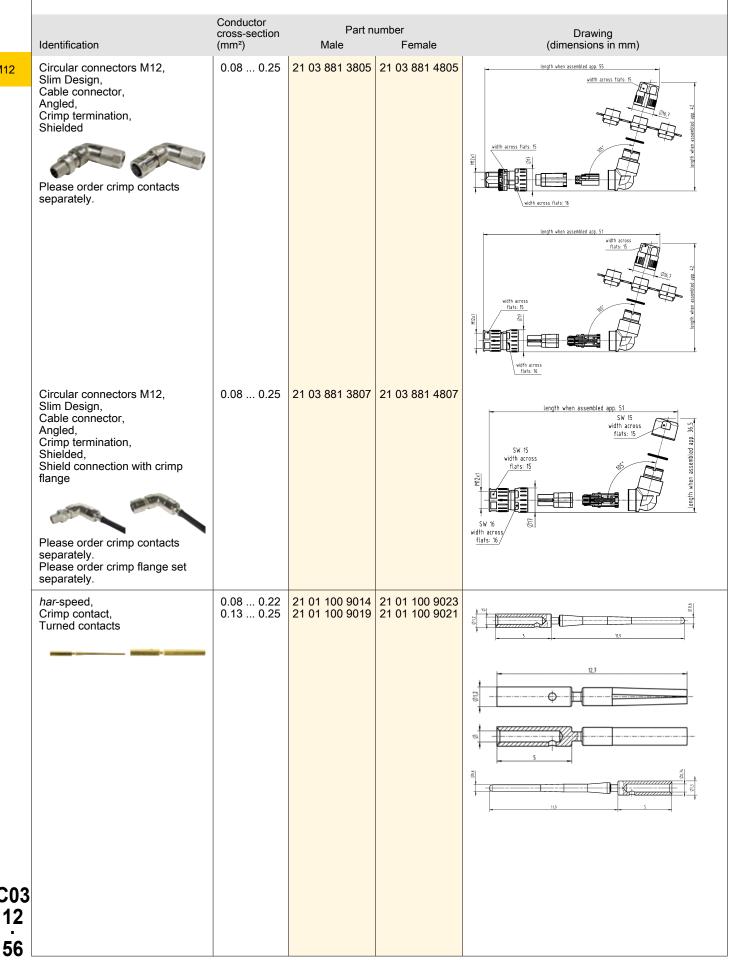
#### **Details**



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Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Slim Design, Cable connector, Straight, Crimp termination, Shielded, Shield connection with crimp flange	0.08 0.25	21 03 881 1807	21 03 881 2807	complete length when assembled app. 40,5  SW15  SW15  Vidth across flats: 15  SW14  Width across flats: 14
Please order crimp contacts separately. Please order crimp flange set separately.				complete length when assembled app. 36,5 SW15 width across flats: 15  SW14 width across flats: 14
Circular connectors M12, Slim Design, Cable connector, Panel feed through, for rear mounting, Crimp termination, Shielded	0.08 0.25	21 03 881 1825	21 03 881 2825	length when assembled app. 45mm  Vidth across flats 19 Vidth across flats 19
Please order crimp contacts separately.				conplete length when assembled app. 42 mm  width across flats: 19  flats: 19  flats: 19
Circular connectors M12, Slim Design, Cable connector, Panel feed through, for rear mounting, Crimp termination, Shielded, Shield connection with crimp flange	0.08 0.25		21 03 881 2827	complete length when assembled app. 36,5  width across flats:18  SW19 width across flats:19  If a complete length when assembled app. 36,5  Width across flats:19
Please order crimp contacts separately. Please order crimp flange set separately.				





# M12 Slim Design





Conductor cross-section (mm²) Part number Drawing (dimensions in mm) Identification Female Male 21 01 010 00xx 21 01 010 00xx Circular connectors M12, Slim Design, Crimp flange set D1 D2 D3 D4 HARTING offers to test and D5 define the best crimp flange and ferrule combination for customer 21 01 010 0017 3.5 4.5 6.0 6.5 7.5 21 01 010 0018 5.5 6.6 7.5 8.5 4.5 specific cables. 21 01 010 0019 4.5 5.5 6.8 9.0 8.0 21 01 010 0020 5.0 6.0 7.8 9.0 10.0 21 01 010 0021 10.0 10.8 6.5 7.5 8.0 21 01 010 0022 10.0 5.0 6.0 7.4 9.0 21 01 010 0024 5.5 6.5 8.8 10.0 10.8

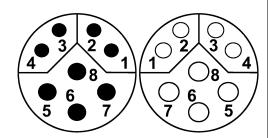
M12

C03



8

4 Power + 4 Data Crimp termination Shielded



### Technical characteristics

Number of contacts 6 A Rated current 50 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree Rated current (data) 0.5 A Insulation resistance >108 Ω ≤10 mΩ Contact resistance Mating cycles ≥100

Locking type PushPull, Screw locking Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 0.33 ... 0.82 mm², 0.13 0.25 mm²

 $\begin{array}{c} 0.13 \; ... \; 0.25 \; mm^{2}, \\ 0.08 \; ... \; 0.22 \; mm^{2} \end{array}$ 

Conductor cross-section AWG 22 ... AWG 18,

AWG 26 ... AWG 23, AWG 28 ... AWG 24

# Technical characteristics

Cable diameter 5.7 ... 8.8 mm
Tightening torque 0.6 Nm
Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast
Material (contacts) Copper alloy
Surface (contacts) Gold plated

RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-113

#### **Details**

For Fast Ethernet applications only

	Identification	Conductor cross-section (mm²)	Part no Male	umber Female	Drawing (dimensions in mm)
	Circular connectors M12, Slim Design, Cable connector, Straight, Crimp termination, Shielded, PushPull locking Please order crimp contacts separately.		21 03 861 1830		
	Circular connectors M12, Slim Design, Cable connector, Straight, Crimp termination, Shielded, Screw locking Please order crimp contacts separately.		21 03 861 1814	21 03 861 2805	complete length when assembled app. 40  width across flats 15  complete length when assembled app. 42 mm  width across flats 15  width across flats 15  width across flats 15
3					



Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Slim Design, Cable connector, Panel feed through, for rear mounting, Crimp termination, Shielded Please order crimp contacts separately.		21 03 861 1825	21 03 861 2825	
Circular connectors M12, Power, Crimp contact, Turned contacts, Pack contents: 50 pieces	0.13 0.25 0.33 0.82	21 01 100 9982 21 01 100 9981	21 01 100 9984 21 01 100 9983	7.7 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
har-speed, Crimp contact, Turned contacts	0.08 0.22 0.13 0.25	21 01 100 9014 21 01 100 9019	21 01 100 9023 21 01 100 9021	26 ms
				27
				11.5

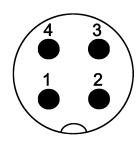
C03 12 . 59



4

M12

HARAX® connection technology Shielded



# Technical characteristics

Number of contacts Rated current 4 A 50 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥500 Wire outer diameter ≤1.6 mm Locking type **PushPull** 

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 0.34 mm², 0.14 mm² Conductor cross-section AWG 22, AWG 26

### Technical characteristics

Cable diameter 5.7 ... 8.8 mm
Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast
Material (contacts) Copper alloy
Surface (contacts) Gold plated

RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-101

UL 2238 CYJV2.E302521

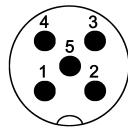
CSA-C22.2 No. 182.3 CYJV8.E302521

#### Part number Drawing (dimensions in mm) Conductor cross-sec-Identification tion (mm²) Male 21 03 322 1411 Circular connectors M12, 0.14 21 03 322 1401 PushPull, 0.34 Cable connector, Straight, HARAX® connection technology, Shielded

Number of contacts

5

Crimp termination Shielded



### Technical characteristics

Number of contacts5Rated current4 ARated impulse voltage1.5 kVPollution degree3

Rated voltage 48 V AC, 60 V DC

 Insulation resistance
 >108 Ω

 Contact resistance
 ≤10 mΩ

 Mating cycles
 ≥500

 Wire outer diameter
 ≤2.3 mm

 Locking type
 PushPull

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 0.13 ... 0.82 mm²,

 $\begin{array}{c} 0.09 \ ... \ 0.25 \ mm^2, \\ 0.13 \ ... \ 0.33 \ mm^2, \\ 0.25 \ ... \ 0.52 \ mm^2, \\ 0.33 \ ... \ 0.82 \ mm^2 \end{array}$ 

## Technical characteristics

Conductor cross-section AWG 26 ... AWG 18, AWG 28 ... AWG 24, AWG 26 ... AWG 22, AWG 24 ... AWG 20, AWG 22 ... AWG 18

Cable diameter 5.7 ... 8.8 mm

Material (insert) Liquid crystal polymer (LCP)
Material (hood/housing) Zinc die-cast

Material (nood/nousing) Zinc die-cast Copper alloy

RoHS compliant with exemption

# Specifications and approvals

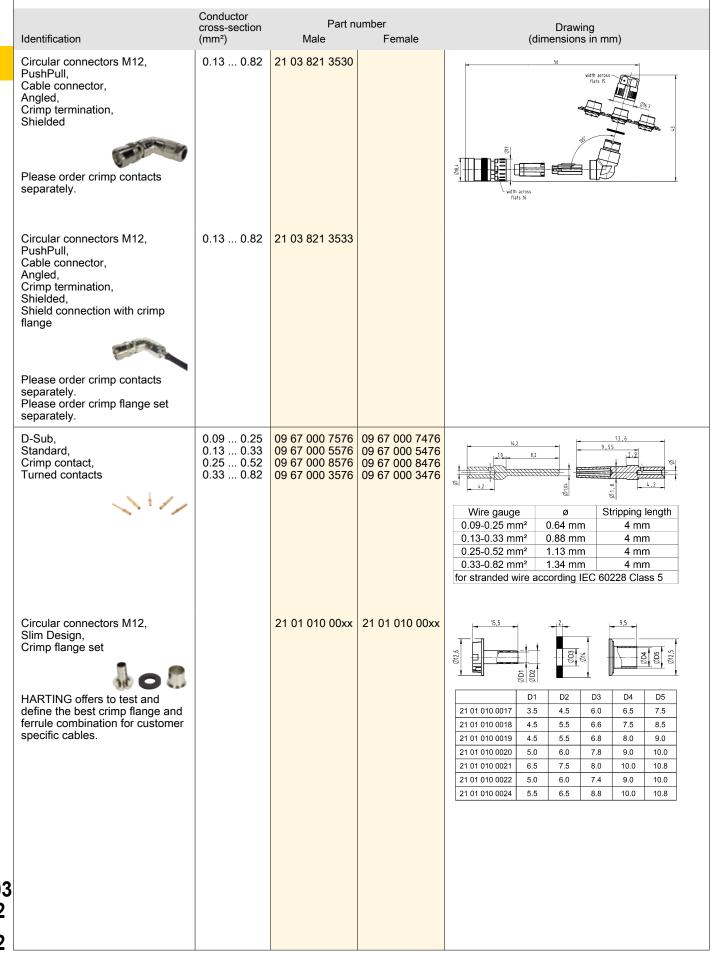
IEC 61076-2-101

UL 2238 CYJV2.E302521

CSA-C22.2 No. 182.3 CYJV8.E302521

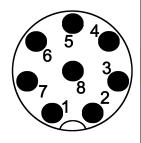
Identification	Conductor cross-section (mm²)	Part no Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, PushPull, Cable connector, Straight, Crimp termination, Shielded	0.13 0.82	21 03 821 1530		complete length when assembled app. 46mm  width across flats: 14  width across flats: 15
Please order crimp contacts separately.				
Circular connectors M12, PushPull, Cable connector, Straight, Crimp termination, Shielded, Shield connection with crimp flange  Please order crimp contacts separately. Please order crimp flange set separately.	0.13 0.82	21 03 821 1533		SW14 SW15 width across flats: 14 complete length when assembled app. 41







Crimp termination Shielded



### Technical characteristics

Number of contacts8Rated current2 ARated impulse voltage0.8 kVPollution degree3

Rated voltage 30 V AC, 30 V DC

 $\begin{array}{lll} \text{Insulation resistance} & > 10^8 \ \Omega \\ \text{Contact resistance} & \leq 10 \ \text{m}\Omega \\ \text{Mating cycles} & \geq 500 \\ \text{Wire outer diameter} & \leq 1.65 \ \text{mm} \\ \text{Locking type} & \text{PushPull} \\ \end{array}$ 

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 0.13 ... 0.33 mm² Conductor cross-section AWG 26 ... AWG 22

### Technical characteristics

Cable diameter 5.7 ... 8.8 mm

Material (insert) Liquid crystal polymer (LCP)

Material (hood/housing)

Material (contacts)

Surface (contacts)

Zinc die-cast
Copper alloy
Gold plated

RoHS compliant with exemption

# Specifications and approvals

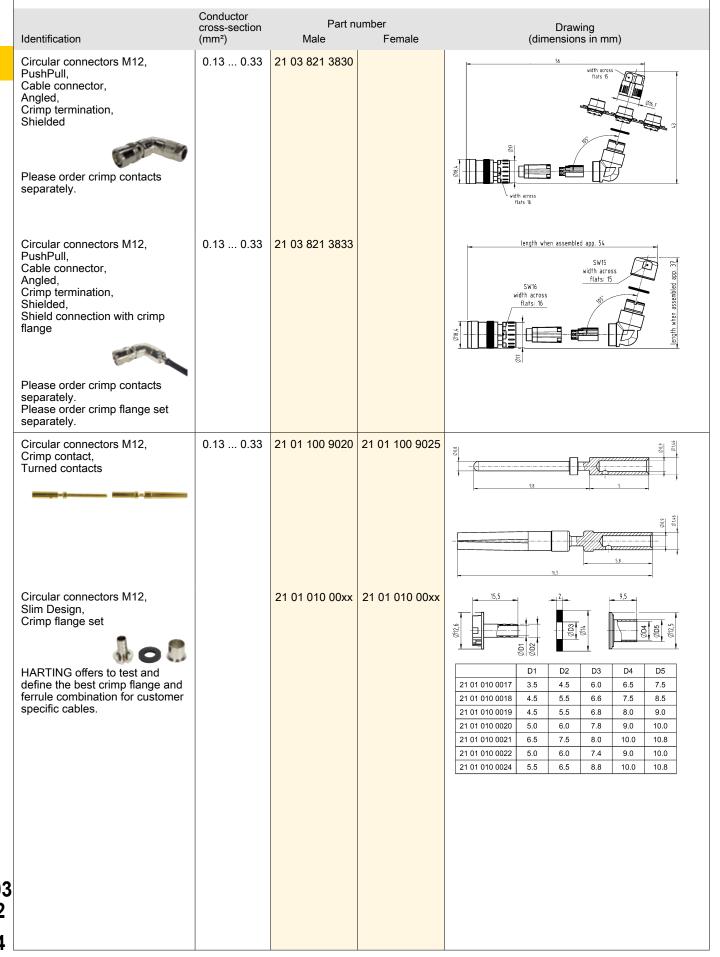
IEC 61076-2-101

UL 2238 CYJV2.E302521

CSA-C22.2 No. 182.3 CYJV8.E302521

Identification	Conductor cross-section (mm²)	Part no Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, PushPull, Cable connector, Straight, Crimp termination, Shielded  Please order crimp contacts	0.13 0.33	21 03 821 1830		complete length when assembled app. 4.6mm  width across flats: 14
separately.  Circular connectors M12, PushPull, Cable connector, Straight, Crimp termination, Shielded, Shield connection with crimp flange  Please order crimp contacts separately. Please order crimp flange set separately.	0.13 0.33	21 03 821 1833		complete length when assembled app. 41  SW14 width across flats: 14  SW15  SW1

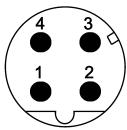




Number of contacts

4

HARAX® connection technology Shielded



### Technical characteristics

Number of contacts 4 A Rated current 50 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥500 Wire outer diameter ≤1.6 mm Locking type **PushPull** 

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section
Conductor cross-section
Cable diameter

O.34 mm², 0.14 mm²
AWG 22, AWG 26
5.7 ... 8.8 mm

Transmission characteristics

Material (insert)
Material (hood/housing)

Cat. 5, Class D up to 100 MHz

Polyamide (PA) Zinc die-cast

### Technical characteristics

Material (contacts) Copper alloy Surface (contacts) Gold plated

RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-101 UL 2238 CYJV2.E302521

CSA-C22.2 No. 182.3 CYJV8.E302521



#### **Details**

For Fast Ethernet applications only

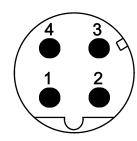
Identification	Conductor cross-section (mm²)	Part number Male	Drawing (dimensions in mm)
Circular connectors M12, PushPull, Cable connector, Straight, HARAX® connection technology, Shielded	0.14 0.34	21 03 382 1411 21 03 382 1401	SW14



4

M12

Crimp termination Shielded



# Technical characteristics

Number of contacts 4
Rated current 4 A
Rated impulse voltage 1.5 kV
Pollution degree 3

Rated voltage 48 V AC, 60 V DC

 Insulation resistance
 >108 Ω

 Contact resistance
 ≤10 mΩ

 Mating cycles
 ≥500

 Wire outer diameter
 ≤2.3 mm

 Locking type
 PushPull

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 0.13 ... 0.82 mm²,

 $\begin{array}{c} 0.09 \; ... \; 0.25 \; mm^2, \\ 0.13 \; ... \; 0.33 \; mm^2, \\ 0.25 \; ... \; 0.52 \; mm^2, \\ 0.33 \; ... \; 0.82 \; mm^2 \end{array}$ 

Conductor cross-section AWG 26 ... AWG 18, AWG 28 ... AWG 24,

AWG 26 ... AWG 22, AWG 24 ... AWG 20, AWG 22 ... AWG 18

### Technical characteristics

Cable diameter 5.7 ... 8.8 mm

Transmission characteristics Cat. 5, Class D up to 100 MHz Material (insert) Liquid crystal polymer (LCP)

Material (hood/housing) Zinc die-cast Material (contacts) Copper alloy

RoHS compliant with exemption

# Specifications and approvals

IEC 61076-2-101

UL 2238 CYJV2.E302521

CSA-C22.2 No. 182.3 CYJV8.E302521



#### **Details**

For Fast Ethernet applications only

				•	
	Identification	Conductor cross-section (mm²)	Part no Male	umber Female	Drawing (dimensions in mm)
	Circular connectors M12, PushPull, Cable connector, Straight, Crimp termination, Shielded	0.13 0.82	21 03 881 1430		complete length when assembled app. 46mm  special printing  SW14  width across flats: 14  Width across flats: 15
	Please order crimp contacts separately.				
	Circular connectors M12, PushPull, Cable connector, Straight, Crimp termination, Shielded, Shield connection with crimp flange	0.13 0.82	21 03 881 1433		
3	Please order crimp contacts separately. Please order crimp flange set separately.				

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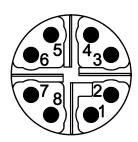
dentification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, PushPull, Cable connector, Angled, Crimp termination, Shielded  Please order crimp contacts separately.	0.13 0.82	21 03 881 3430		width across flats 16
Circular connectors M12, PushPull, Cable connector, Angled, Crimp termination, Shielded, Shield connection with crimp lange  Please order crimp contacts separately.	0.13 0.82	21 03 881 3433		length when assembled app. 54  SW16  Width across flats: 16  Flats: 15  Way A Hibrary Company A Hibrar
Please order crimp flange set separately.  D-Sub, Standard, Crimp contact, Furned contacts	0.09 0.25 0.13 0.33 0.25 0.52 0.33 0.82	09 67 000 7576 09 67 000 5576 09 67 000 8576 09 67 000 3576	09 67 000 5476 09 67 000 8476	13,6 9,55 11,9 0 1,2 0 1,2 0 1,2 0 1,5 0 1,5 0 1,5 0 1,5 0 1,5 0 1,5 0 0 0 0 0 0 0 0 0 0 0 0 0
				Wire gauge
Circular connectors M12, Slim Design, Crimp flange set		21 01 010 00xx	21 01 010 00xx	9,5 900 900 900 900 900 900 900 90
HARTING offers to test and define the best crimp flange and errule combination for customer specific cables.				D1         D2         D3         D4         D5           21 01 010 0017         3.5         4.5         6.0         6.5         7.5           21 01 010 0018         4.5         5.5         6.6         7.5         8.5           21 01 010 0019         4.5         5.5         6.8         8.0         9.0           21 01 010 0020         5.0         6.0         7.8         9.0         10.0           21 01 010 0021         6.5         7.5         8.0         10.0         10.8           21 01 010 0022         5.0         6.0         7.4         9.0         10.0           21 01 010 0024         5.5         6.5         8.8         10.0         10.8



8

M12

Crimp termination Shielded



#### Technical characteristics

Number of contacts Rated current 0.5 A Rated voltage 48 V Rated impulse voltage 0.8 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥500 Wire outer diameter ≤1.4 mm Locking type **PushPull** 

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 0.08 ... 0.25 mm², 0.13 ... 0.25 mm²,

0.08 ... 0.22 mm<sup>2</sup>

Conductor cross-section AWG 28 ... AWG 23, AWG 26 AWG 23

AWG 26 ... AWG 23, AWG 28 ... AWG 24

Cable diameter 5.7 ... 8.8 mm

 $\label{eq:Cat.6A} Transmission characteristics \qquad \text{Cat. 6A, Class E}_{A} \text{ up to 500 MHz}$ 

#### Technical characteristics

Material (insert) Liquid crystal polymer (LCP)

Material (hood/housing)

Material (contacts)

Surface (contacts)

Zinc die-cast
Copper alloy
Surface (contacts)

Gold plated

RoHS compliant with exemption

## Specifications and approvals

IEC 61076-2-109 UL 2238 CYJV2.E302521

CSA-C22.2 No. 182.3 CYJV8.E302521



#### **Details**

For Ethernet applications up to 10 Gbit only

Identification	Conductor cross-section (mm²)	Part no Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, PushPull, Cable connector, Straight, Crimp termination, Shielded  Please order crimp contacts	0.08 0.25	21 03 881 1830		complete length when assembled app. 46mm  SW15  Width across flats: 14.  SW15  Width across flats: 15.
separately.  Circular connectors M12, PushPull, Cable connector, Straight, Crimp termination, Shielded, Shield connection with crimp flange	0.08 0.25	21 03 881 1833		complete length when assembled app. 41  SW14  Width across flats: 14  SW2  SW5  SW6  SW75  SW6  SW75  SW75
Please order crimp contacts separately. Please order crimp flange set separately.				

C0:

Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)	
Circular connectors M12, PushPull, Cable connector, Angled, Crimp termination, Shielded  Please order crimp contacts separately.	0.08 0.25	21 03 881 3830		vidit across flats 15	M12
Circular connectors M12, PushPull, Cable connector, Angled, Crimp termination, Shielded, Shield connection with crimp flange  Please order crimp contacts separately. Please order crimp flange set separately.	0.08 0.25	21 03 881 3833			
har-speed, Crimp contact, Turned contacts	0.08 0.22 0.13 0.25	21 01 100 9014 21 01 100 9019	21 01 100 9023 21 01 100 9021	200 112 127 127 127 127 127 127 127 127 127	
Circular connectors M12, Slim Design, Crimp flange set  HARTING offers to test and define the best crimp flange and ferrule combination for customer specific cables.		21 01 010 00xx	21 01 010 00xx	15,5  D1 D2 D3 D4 D5  21 01 010 0017 3.5 4.5 6.0 6.5 7.5  21 01 010 0019 4.5 5.5 6.8 8.0 9.0  21 01 010 0020 5.0 6.0 7.8 9.0 10.0  21 01 010 0022 5.0 6.0 7.4 9.0 10.0  21 01 010 0024 5.5 6.5 8.8 10.0 10.8	C03 12





M12



Crimp termination Shielded



#### Technical characteristics

Number of contacts Rated current 12 A Rated voltage 630 V Rated impulse voltage 6 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥500 Mating cycles Locking type PushPull

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section

0.5 ... 2.5 mm², 2.5 mm², 1.5 mm², 0.75 mm², 0.5 mm²

#### Technical characteristics

Conductor cross-section AWG 20 ... AWG 14, AWG 14, AWG 16, AWG 19, AWG 21

Cable diameter 5.8 ... 13.5 mm
Tightening torque 0.6 Nm
Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast
Material (contacts) Copper alloy
Surface (contacts) Gold plated

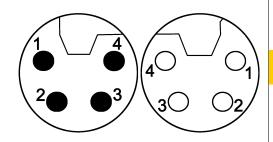
## Specifications and approvals

IEC 61076-2-111

Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Power, PushPull, Cable connector, Straight, Crimp termination, Shielded, PushPull locking  Please order crimp contacts	0.5 2.5	21 03 896 1525	21 03 896 2525	camplete length when assembled upp 52mm seal insert, red Office  Width across flats 17 Seal insert, green Office Seal insert, black Office Office Seal insert, black Office Offic
separately.  Circular connectors M12, Power,	0.5 0.75	21 01 100 9963		101
Crimp contact, Turned contacts, Pack contents: 50 pieces	1.5 2.5	21 01 100 9937 21 01 100 9938	21 01 100 9939 21 01 100 9940	(a) (b) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d

4

Crimp termination Shielded



#### Technical characteristics

Number of contacts 16 A Rated current Rated voltage 63 V Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥500 Locking type PushPull

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 2.5 mm², 1.5 mm², 0.75 mm²,

0.5 mm<sup>2</sup>

Conductor cross-section AWG 14, AWG 16, AWG 19,

AWG 21

## **Technical characteristics**

Cable diameter 5.8 ... 13.5 mm
Tightening torque 0.6 Nm
Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast
Material (contacts) Copper alloy
Surface (contacts) Gold plated

#### Specifications and approvals

IEC 61076-2-111



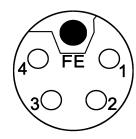
Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Power, PushPull, Cable connector, Straight, Crimp termination, Shielded, PushPull locking Please order crimp contacts separately.		21 03 896 1420	21 03 896 2420	
Circular connectors M12, Power, Crimp contact, Turned contacts, Pack contents: 50 pieces	0.5 0.75 1.5 2.5	21 01 100 9963 21 01 100 9937	21 01 100 9964 21 01 100 9965 21 01 100 9939 21 01 100 9940	71.5 4.5 5 5 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7







Crimp termination Shielded



#### Technical characteristics

Number of contacts 16 A Rated current Rated voltage 63 V Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥500 Mating cycles Locking type PushPull

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section

2.5 mm<sup>2</sup>, 1.5 mm<sup>2</sup>, 0.75 mm<sup>2</sup>,

0.5 mm<sup>2</sup>

Conductor cross-section AWG 14, AWG 16, AWG 19,

AWG 21

#### Technical characteristics

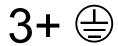
Cable diameter5.8 ... 13.5 mmTightening torque0.6 NmMaterial (insert)Polyamide (PA)Material (hood/housing)Zinc die-castMaterial (contacts)Copper alloySurface (contacts)Gold plated

#### Specifications and approvals

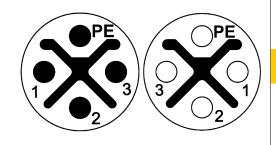
IEC 61076-2-111



Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Power, PushPull, Cable connector, Straight, Crimp termination, Shielded, PushPull locking Please order crimp contacts separately.		21 03 896 1520	21 03 896 2520	
Circular connectors M12, Power, Crimp contact, Turned contacts, Pack contents: 50 pieces	0.5 0.75 1.5 2.5	21 01 100 9962 21 01 100 9963 21 01 100 9937 21 01 100 9938	21 01 100 9965 21 01 100 9939	70.4  70.4  70.4  70.6



Crimp termination Shielded



#### Technical characteristics

Number of contacts 3 Rated current 12 A Rated voltage 630 V Rated impulse voltage 6 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥500 Locking type PushPull

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 2.5 mm², 1.5 mm², 0.75 mm²,

0.5 mm<sup>2</sup>

#### Technical characteristics

Conductor cross-section AWG 14, AWG 16, AWG 19, AWG 21

Cable diameter 5.8 ... 13.5 mm
Tightening torque 0.6 Nm
Material (insert) Polyamide (PA)

Material (insert)Polyamide (PAMaterial (hood/housing)Zinc die-castMaterial (contacts)Copper alloySurface (contacts)Gold plated

#### Specifications and approvals

IEC 61076-2-111

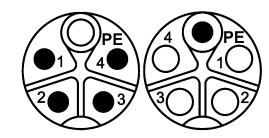
Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Power, PushPull, Cable connector, Straight, Crimp termination, Shielded, PushPull locking Please order crimp contacts separately.		21 03 896 1425	21 03 896 2425	complete length when assembled app 52mm  Seal insert, blue  Online  Complete length when assembled app 52mm  Seal insert, green  Online  Complete length when assembled app 52mm  Seal insert, green  Online  Seal insert, green
Circular connectors M12, Power, Crimp contact, Turned contacts, Pack contents: 50 pieces	0.5 0.75 1.5 2.5	21 01 100 9963	21 01 100 9964 21 01 100 9965 21 01 100 9939 21 01 100 9940	79.4  (2) 844.55  (3) 544.55  (4) 544.55  (5) 60  (7) 844.55  (7) 844.55  (8) 644.55  (9) 844.55  (1)







Crimp termination Shielded



#### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 12 \text{ A} \\ \text{Rated voltage} & 630 \text{ V} \\ \text{Rated impulse voltage} & 6 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & > 10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 500 \\ \end{array}$ 

Locking type Screw locking
Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 0.5 ... 2.5 mm², 2.5 mm²,

1.5 mm<sup>2</sup>, 0.75 mm<sup>2</sup>, 0.5 mm<sup>2</sup>

#### Technical characteristics

Conductor cross-section AWG 20 ... AWG 14, AWG 14, AWG 16, AWG 19, AWG 21

Cable diameter 5.8 ... 13.5 mm
Tightening torque 0.6 Nm
Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast
Material (contacts) Copper alloy
Surface (contacts) Gold plated

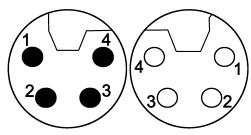
## Specifications and approvals

IEC 61076-2-111

Identification	Conductor cross-section (mm²)	Part no Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Power, Cable connector, Straight, Crimp termination, Shielded, Screw locking	0.5 2.5	21 03 896 1515	21 03 896 2515	canclete length when assembled app. S7mm  Seel insert, red  O'D'D'm  Width across flats 17  Seel insert, green  O'95mm  Seel insert, black  O'95mm  Seel insert, black
Please order crimp contacts separately.				
Circular connectors M12, Power, Crimp contact, Turned contacts, Pack contents: 50 pieces	0.5 0.75 1.5 2.5	21 01 100 9962 21 01 100 9963 21 01 100 9937 21 01 100 9938	21 01 100 9964 21 01 100 9965 21 01 100 9939 21 01 100 9940	70.4 70.4 70.4 70.5
3				(A) (B) (B) (B) (B) (B) (B) (B) (B) (B) (B

Number of contacts

HARAX® connection technology Shielded



#### Technical characteristics

Number of contacts 12 A Rated current Rated voltage 63 V Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥100 Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 0.75 ... 1.5 mm<sup>2</sup> AWG 18 ... AWG 16 Conductor cross-section Cable diameter 5.8 ... 13.5 mm

Tightening torque 0.6 Nm

## **Technical characteristics**

Material (insert) Polyamide (PA) Colour (insert) Black Material (hood/housing) Zinc die-cast Material (contacts) Copper alloy Gold plated Surface (contacts) RoHS compliant

#### Specifications and approvals

IEC 61076-2-111

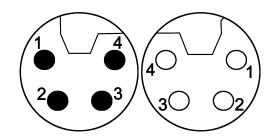


Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Identification  Circular connectors M12, Power, Cable connector, Straight, HARAX® connection technology, Shielded	(mm²) 0.75 1.5	Male 21 03 296 1506		(dimensions in mm)  (depris legits see asserted as 3000  (equit legits see as 3000  (equit le



4

Crimp termination Shielded



#### Technical characteristics

 $\begin{array}{lll} \text{Number of contacts} & 4 \\ \text{Rated current} & 16 \text{ A} \\ \text{Rated voltage} & 63 \text{ V} \\ \text{Rated impulse voltage} & 1.5 \text{ kV} \\ \text{Pollution degree} & 3 \\ \text{Insulation resistance} & > 10^8 \, \Omega \\ \text{Contact resistance} & \leq 10 \, \text{m} \Omega \\ \text{Mating cycles} & \geq 500 \\ \end{array}$ 

Locking type Screw locking
Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 2.5 mm<sup>2</sup>, 1.5 mm<sup>2</sup>, 0.75 mm<sup>2</sup>,

0.5 mm<sup>2</sup>

Conductor cross-section AWG 14, AWG 16, AWG 19,

AWG 21

#### Technical characteristics

Cable diameter 5.8 ... 13.5 mm
Tightening torque 0.6 Nm
Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast
Material (contacts) Copper alloy
Surface (contacts) Gold plated

#### Specifications and approvals

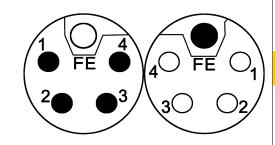
IEC 61076-2-111



Identification	Conductor cross-section (mm²)	Part no Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Power, Cable connector, Straight, Crimp termination, Shielded, Screw locking Please order crimp contacts separately.		21 03 896 1410	21 03 896 2410	
Circular connectors M12, Power, Crimp contact, Turned contacts, Pack contents: 50 pieces	0.5 0.75 1.5 2.5	21 01 100 9962 21 01 100 9963 21 01 100 9937 21 01 100 9938	21 01 100 9965	75.4 75.4 75.4 75.4 75.4 76.6 77.3 to 55



HARAX® connection technology Shielded



#### Technical characteristics

Number of contacts 12 A Rated current 63 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥100 Mating cycles Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 0.75 ... 1.5 mm<sup>2</sup> AWG 18 ... AWG 16 Conductor cross-section Cable diameter 5.8 ... 13.5 mm

Tightening torque

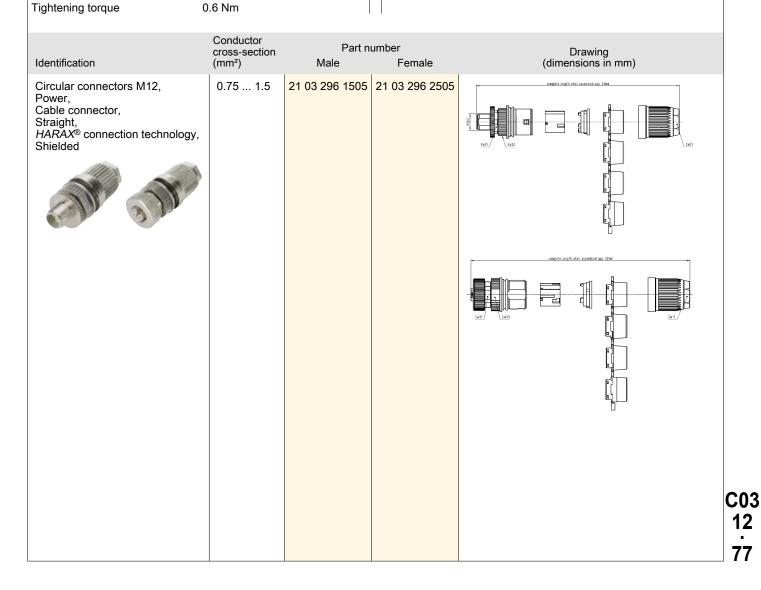
#### Technical characteristics

Material (insert) Polyamide (PA) Colour (insert) Grey Material (hood/housing) Zinc die-cast Material (contacts) Copper alloy Gold plated Surface (contacts) **RoHS** compliant

#### Specifications and approvals

IEC 61076-2-111

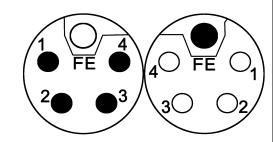








Crimp termination Shielded



#### Technical characteristics

Number of contacts 16 A Rated current 63 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥500 Mating cycles Screw locking

Locking type Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section

0.5 ... 2.5 mm<sup>2</sup>, 2.5 mm<sup>2</sup>, 1.5 mm², 0.75 mm², 0.5 mm²

Conductor cross-section

AWG 20 ... AWG 14, AWG 14, AWG 16, AWG 20, AWG 21

5.8 ... 13.5 mm Cable diameter 0.6 Nm

Tightening torque

## Technical characteristics

Material (insert) Polyamide (PA) Material (hood/housing) Zinc die-cast Material (contacts) Copper alloy Surface (contacts) Gold plated

RoHS compliant, compliant with

exemption

## Specifications and approvals

IEC 61076-2-111 UL 2238 CYJV2.E302521 CSA-C22.2 No. 182.3 CYJV8.E302521



	Identification	Conductor cross-section (mm²)	Part n	umber Female	Drawing (dimensions in mm)
	Circular connectors M12, Power, Cable connector, Straight, Crimp termination, Shielded	0.5 2.5	21 03 896 1505	21 03 896 2505	conplete length when assembled app. 53mm  SW17  SW20  SW17
	Please order crimp contacts separately.				complete length when assembled approx. 52mm
	Circular connectors M12, Power, Crimp contact, 23.2 mm length, Turned contacts	0.5 0.75 1.5 2.5	21 01 100 9923 21 01 100 9924 21 01 100 9925 21 01 100 9926		23,2
3					

## M12 Power

L-coding

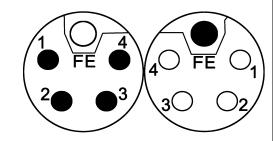


Conductor cross-section (mm²) Part number Drawing (dimensions in mm) Identification Male Female 0.5 0.75 1.5 2.5 21 01 100 9927 21 01 100 9928 21 01 100 9929 21 01 100 9930 Circular connectors M12, Power, Crimp contact, FE contact, 24.8 mm length, Turned contacts 24,8 use with M12 Power female contacts





Crimp termination Shielded



#### Technical characteristics

Number of contacts Rated current 16 A Rated voltage 63 V Rated impulse voltage 1.5 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ ≥500 Mating cycles Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section

2.5 mm<sup>2</sup>, 1.5 mm<sup>2</sup>, 0.75 mm<sup>2</sup>,

0.5 mm<sup>2</sup>

Conductor cross-section AWG 14, AWG 16, AWG 19,

AWG 21

#### Technical characteristics

Cable diameter 5.8 ... 13.5 mm
Tightening torque 0.6 Nm
Material (insert) Polyamide (PA)
Material (hood/housing) Zinc die-cast
Material (contacts) Copper alloy
Surface (contacts) Gold plated

#### Specifications and approvals

IEC 61076-2-111

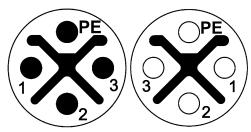


Identification	Conductor cross-section (mm²)	Part no Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Power, Cable connector, Straight, Crimp termination, Shielded, Screw locking Please order crimp contacts separately.		21 03 896 1510	21 03 896 2510	
Circular connectors M12, Power, Crimp contact, Turned contacts, Pack contents: 50 pieces	0.5 0.75 1.5 2.5	21 01 100 9962 21 01 100 9963 21 01 100 9937 21 01 100 9938	21 01 100 9965 21 01 100 9939	21.8 m. 22.1 mp. 3.4.55  12.3 mp. 4.2



Number of contacts

Crimp termination Shielded



#### Technical characteristics

Number of contacts 3 Rated current 12 A Rated voltage 630 V Rated impulse voltage 6 kV Pollution degree >10<sup>8</sup> Ω Insulation resistance Contact resistance ≤10 mΩ Mating cycles ≥500 Locking type Screw locking

Degree of protection acc. to IEC IP65 / IP67, when mated

60529

Conductor cross-section 2.5 mm<sup>2</sup>, 1.5 mm<sup>2</sup>, 0.75 mm<sup>2</sup>,

0.5 mm<sup>2</sup>

#### Technical characteristics

Conductor cross-section AWG 14, AWG 16, AWG 19,

AWG 21

Cable diameter 5.8 ... 13.5 mm

Tightening torque 0.6 Nm

Material (insert) Polyamide (PA) Material (hood/housing) Zinc die-cast Material (contacts) Copper alloy Surface (contacts) Gold plated

#### Specifications and approvals

IEC 61076-2-111

Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M12, Power, Cable connector, Straight, Crimp termination, Shielded, Screw locking		21 03 896 1415	21 03 896 2415	complete length when assembled age, S2en  spal insert, blow (0.1 time for the seal insert, blow) (2.5 time for the seal insert, green) (2.5 time for
Please order crimp contacts separately.				victh across fiats 8 Sviti Svi
Circular connectors M12, Power, Crimp contact, Turned contacts, Pack contents:	0.5 0.75 1.5 2.5	21 01 100 9962 21 01 100 9963 21 01 100 9937 21 01 100 9938	21 01 100 9939	
50 pieces				(21,841)
				0,8435 11 0,9455 20 0,8 0,8 0,8 0,8 0,8 0,8 0,8 0,8 0,8 0,

#### Technical characteristics

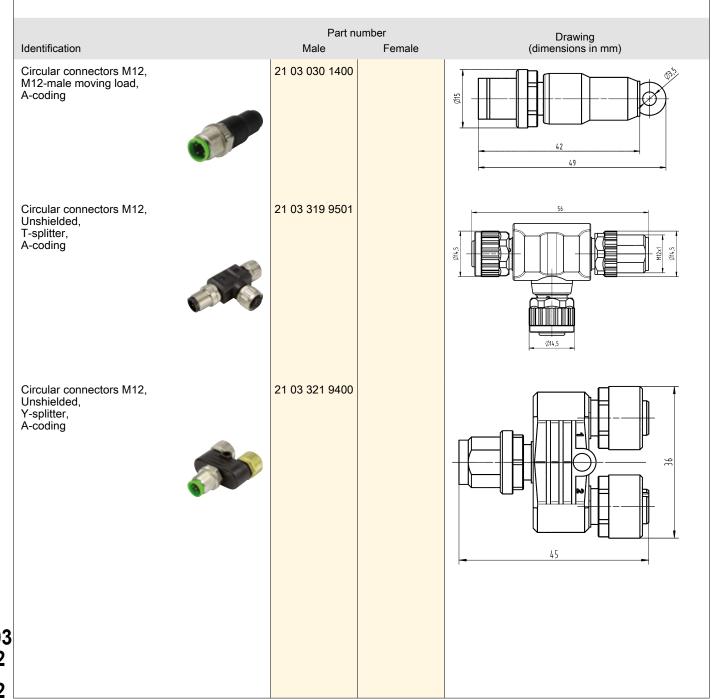
Mating cycles ≥100 Locking type PushPull

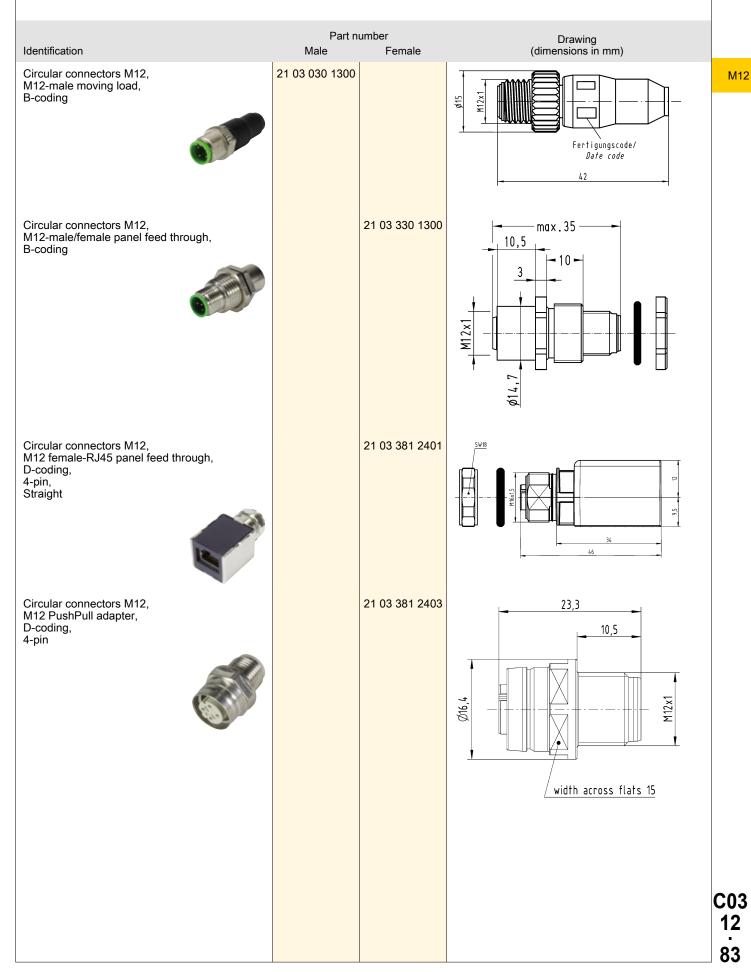
RoHS compliant, compliant with

exemption

## Specifications and approvals







# Adapter

M12



	Identification	Part n Male	umber Female	Drawing (dimensions in mm)
	Circular connectors M12, M12 female-RJ45 panel feed through, D-coding, 4-pin, Angled		21 03 381 4401	SW18  SW18  SW18  46
	Circular connectors M12, har-speed M12 adapter M12-RJ45, X-coding, Straight, Cat. 6 <sub>A</sub>		21 03 381 2800	SW18 width across flats  SW3  A5,5
	Circular connectors M12, har-speed M12 adapter M12-RJ45, X-coding, Angled, Cat. 6 <sub>A</sub>		21 03 381 4800	SW18  22  45.5
3 2 1				

C03 12 84

#### Technical characteristics

Locking type Material (accessories) Colour (accessories)

RoHS

PushPull, Screw locking Thermoplastic

Black

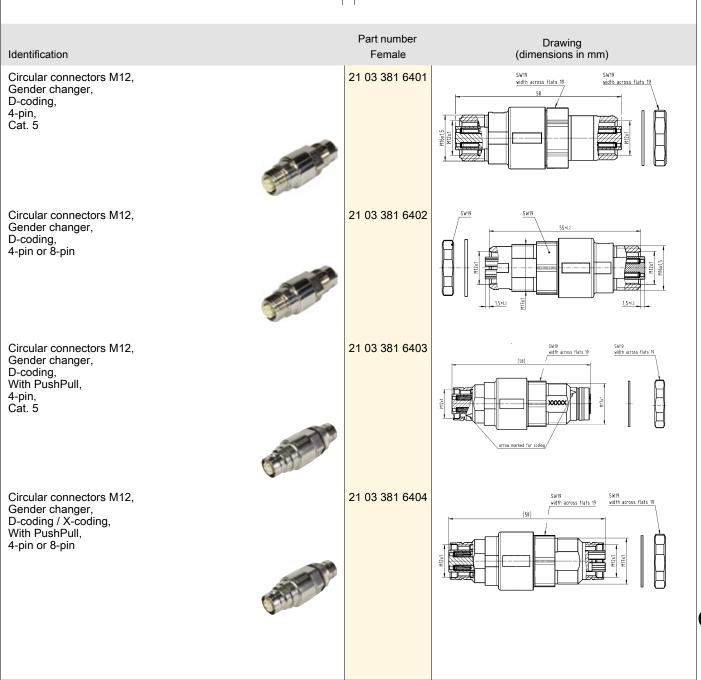
compliant with exemption,

compliant

## Specifications and approvals

UL 2238 CYJV2.E302521 CSA-C22.2 No. 182.3 CYJV8.E302521





# Adapter

M12



Part number Drawing (dimensions in mm) Identification Female Circular connectors M12, Gender changer, X-coding, Cat. 6<sub>A</sub> 21 03 381 6815 \SW19 <u>SW19</u> Circular connectors M12, Gender changer, 21 03 381 6816 X-coding, With PushPull, Cat. 6<sub>A</sub> Circular connectors M12, Panel mounting parts 21 01 000 0036 (50)

C03 12 ... 86

## Technical characteristics

RoHS

compliant with exemption

#### Identification

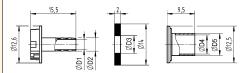
Circular connectors M12, Slim Design, Crimp flange set



HARTING offers to test and define the best crimp flange and ferrule combination for customer specific cables.

#### Part number

## Drawing (dimensions in mm)



	D1	D2	D3	D4	D5
21 01 010 0017	3.5	4.5	6.0	6.5	7.5
21 01 010 0018	4.5	5.5	6.6	7.5	8.5
21 01 010 0019	4.5	5.5	6.8	8.0	9.0
21 01 010 0020	5.0	6.0	7.8	9.0	10.0
21 01 010 0021	6.5	7.5	8.0	10.0	10.8
21 01 010 0022	5.0	6.0	7.4	9.0	10.0
21 01 010 0024	5.5	6.5	8.8	10.0	10.8

## Technical characteristics

Material (accessories)

Thermoplastic

## Technical characteristics

Colour (accessories) RoHS Black compliant

Identification	Cable diameter (mm)	Part number	Drawing (dimensions in mm)
Circular connectors M12, M12-S, Seal, Unshielded	2.9 4 4 5.1	21 01 010 2011 21 01 010 2001	12
Circular connectors M12, M12-L, Seal, Unshielded	4.7 6 6 8	21 01 010 2015 21 01 010 2007	10,7
			10,7
Circular connectors M12, M12-L, Set of seals, Shielded	4.5 8.8	21 01 010 2017	45-5,4 00 5,4-72 0 72-8,8

## Accessories



Drawing (dimensions in mm) Identification Cable diameter (mm) Part number Circular connectors M12, Slim Design, Set of seals, Shielded 4.5 ... 8.8 5.7 ... 8.8 21 01 010 2038 21 01 010 2028 67,5 C03

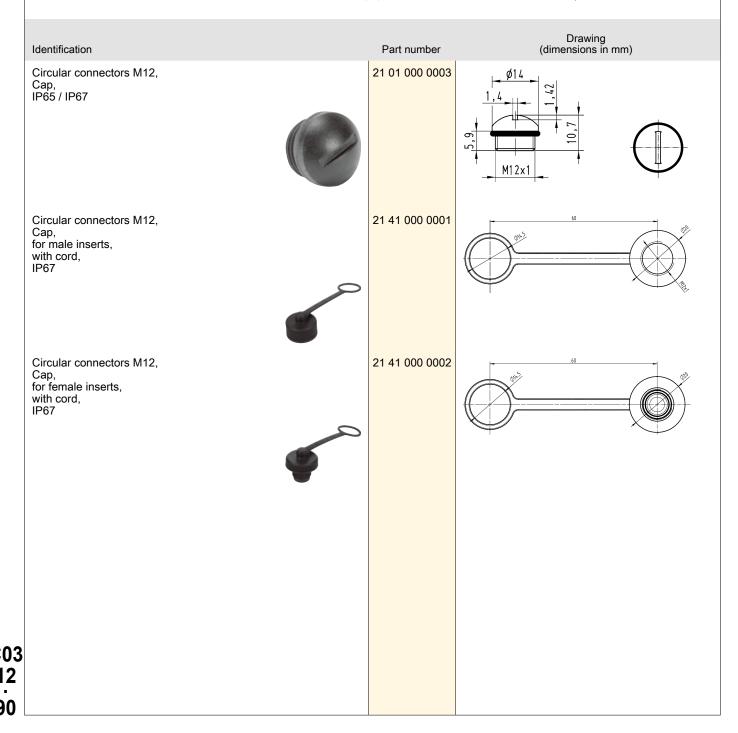
M12

. 89

#### Technical characteristics

#### Technical characteristics

Material (accessories) Colour (accessories) RoHS Thermoplastic Black compliant



## Technical characteristics

Degree of protection acc. to IEC IP65 / IP67 60529

## Technical characteristics

Material (accessories) RoHS Metal compliant with exemption

Identification	Part number	Drawing (dimensions in mm)
Circular connectors M12, Cap, for female inserts, with cord	21 01 000 0030	
Circular connectors M12, Cap, for female inserts, with cable clip	21 01 000 0031	§ 19a
Circular connectors M12, Cap, for male inserts, with cord	21 01 000 0033	(6·1)
Circular connectors M12, Cap, for male inserts, with cable clip	21 01 000 0038	(S).



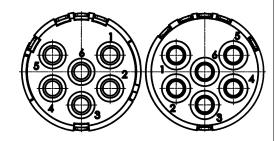
Contents	Page	
M23 Signal inserts	C03 23.2	ı
M23 Signal contacts	C03 23.16	
M23 Signal Hoods/Housings	C03 23.17	
M23 Power inserts	C03 23.20	
M23 Power contacts	C03 23.25	
M23 Power Hoods/Housings	C03 23.26	
		C( 2
		;



Number of contacts



Crimp termination



#### Technical characteristics

Conductor cross-section 0.75 ... 2.5 mm² Material (insert) Polyamide (PA)

#### Technical characteristics

Colour (insert) White Material flammability class acc. V-0 to UL 94

RoHS compliant

## Specifications and approvals

UL 1977 ECBT2.E235076

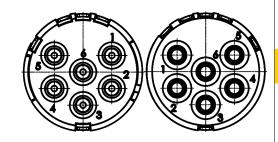
Identification	Conductor cross-section (mm²)	Part n Male	Part number Male Female (dime		ng in mm)
Circular connectors M23, Signal, Inserts, Crimp termination	0.75 2.5	09 15 106 3001	09 15 106 3101	11,6 -	Ø17 —
Please order crimp contacts separately. 6x 2 mm				20,1	Ø17 —



Number of contacts



Solder termination



#### Technical characteristics

Number of contacts 20 A Rated current Rated voltage 300 V Rated impulse voltage  $2.5 \, kV$ Pollution degree  $>10^{10} \Omega$ Insulation resistance Limiting temperature -40 ... +125 °C ≥500 Mating cycles Conductor cross-section 2.5 mm² max. Material (insert) Polyamide (PA) Colour (insert) White

#### Technical characteristics

Material (contacts)

Surface (contacts)

Gold plated

Material flammability class acc. V-0

to UL 94

RoHS compliant with exemption

## Specifications and approvals

UL 1977 ECBT2.E235076

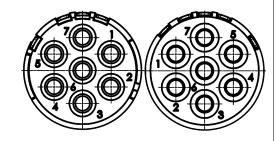
Identification	Conductor cross-section (mm²)	Part n	umber Female	Drawing (dimensions in	mm)
Circular connectors M23, Signal, Inserts, Solder termination	2.5 max.	09 15 106 2602	09 15 106 2702	7,5	Ø17 —
				(22,2)	Ø17



Number of contacts

7

Crimp termination



#### Technical characteristics

Conductor cross-section 0.75 ... 2.5 mm²
Material (insert) Polyamide (PA)

#### Technical characteristics

Colour (insert) White Material flammability class acc. V-0

to UL 94

RoHS compliant with exemption

## Specifications and approvals

UL 1977 ECBT2.E235076

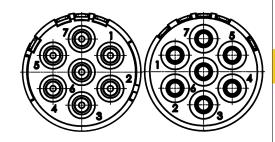
Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawi (dimensions	ng s in mm)
Circular connectors M23, Signal, Inserts, Crimp termination	0.75 2.5	09 15 107 3001	09 15 107 3101	- 11,6 - S'SIN	Ø17 —
Please order crimp contacts separately. 7x 2 mm				20,1	Ø17 —



Number of contacts

7

Solder termination



Copper alloy

Gold plated

V-0

#### Technical characteristics

Number of contacts 20 A Rated current 300 V Rated voltage Rated impulse voltage 2.5 kV Pollution degree  $>10^{10} \Omega$ Insulation resistance Limiting temperature -40 ... +125 °C Mating cycles ≥500 Conductor cross-section 2.5 mm<sup>2</sup> max. Material (insert) Polyamide (PA) Colour (insert) White

## RoHS compliant with exemption

Technical characteristics

UL 1977 ECBT2.E235076

Material flammability class acc.

Material (contacts)

Surface (contacts)

to UL 94

## Specifications and approvals

Identification

Circular connectors M23, Signal, Inserts, Solder termination

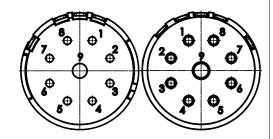
Op 15 107 2602

Op 15 107 2702



Number of contacts

+ 1 additional special contact Crimp termination



#### Technical characteristics

Number of contacts

+ 1 additional special contact Additional contacts

Rated current 8 A Rated voltage 200 V Rated impulse voltage 2.5 kVPollution degree Rated current (special contact) 20 A Rated voltage (special contact) 200 V Rated impulse voltage (special 2.5 kV contact)

Pollution degree (special

contact)

Insulation resistance  $>10^{10} \Omega$ 

#### Technical characteristics

Limiting temperature -40 ... +125 °C

≥500 Mating cycles

Conductor cross-section 0.08 ... 1.5 mm<sup>2</sup> Material (insert) Polyamide (PA)

Colour (insert) White Material flammability class acc.

to UL 94

RoHS compliant with exemption

## Specifications and approvals

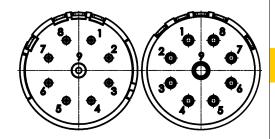
UL 1977 ECBT2.E235076

Identification	Conductor cross-section (mm²)	Part no Male	umber Female	Drawi (dimension:	ng s in mm)
Circular connectors M23, Signal, Inserts, Crimp termination	0.08 1.5	09 15 109 3001	09 15 109 3101	12	Ø17
separately. 8x 1 mm 1x 2 mm				20 5550	Ø17  2
3					



Number of contacts

+ 1 additional special contact Solder termination



#### Technical characteristics

Number of contacts

+ 1 additional special contact Additional contacts

Rated current 8 A Rated voltage 200 V Rated impulse voltage 2.5 kV Pollution degree Rated current (special contact) 20 A Rated voltage (special contact) 200 V Rated impulse voltage (special 2.5 kV contact)

Pollution degree (special

contact)

Insulation resistance  $>10^{10} \Omega$ Limiting temperature -40 ... +125 °C

#### Technical characteristics

≥500 Mating cycles Conductor cross-section 1 mm² max. Material (insert) Polyamide (PA) Colour (insert) White Material (contacts) Copper alloy Surface (contacts) Gold plated

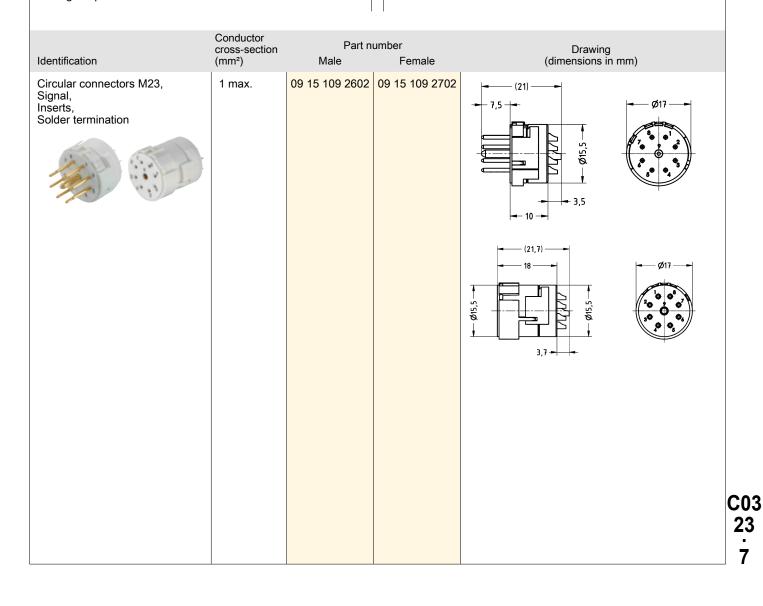
Material flammability class acc.

to UL 94

RoHS compliant with exemption

## Specifications and approvals

UL 1977 ECBT2.E235076

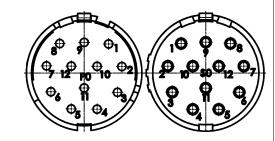




Number of contacts

11+ 😩

Crimp termination



#### Technical characteristics

Conductor cross-section 0.08 ... 1.5 mm²
Material (insert) Polyamide (PA)

#### Technical characteristics

Colour (insert) Grey Material flammability class acc. V-0

to UL 94

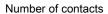
RoHS compliant with exemption

## Specifications and approvals

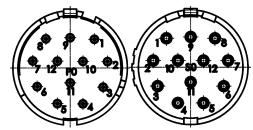
UL 1977 ECBT2.E235076

Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drav (dimension	ving ns in mm)
Circular connectors M23, Signal, Inserts, Crimp termination  Please order crimp contacts separately.	0.08 1.5	09 15 112 3021	09 15 112 3121	18 ————————————————————————————————————	Ø17
separately. 12x 1 mm				Ø15,5	

## M23 Signal inserts



Solder termination



#### Technical characteristics

Number of contacts Rated current 8 A Rated voltage 200 V Rated impulse voltage 2.5 kV Pollution degree  $>10^{10} \Omega$ Insulation resistance Limiting temperature -40 ... +125 °C ≥500 Mating cycles Conductor cross-section 1 mm² max. Material (insert) Polyamide (PA) Grey

Colour (insert)

#### Technical characteristics

Material (contacts) Copper alloy Gold plated Surface (contacts)

Material flammability class acc.

to UL 94

RoHS compliant with exemption

## Specifications and approvals

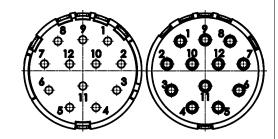
UL 1977 ECBT2.E235076

Identification	Conductor cross-section (mm²)	Part number Male Female		Drawing (dimensions in mm)
Circular connectors M23, Signal, Inserts, Solder termination	1 max.	09 15 112 2622	09 15 112 2722	7,5 — Ø17 —
				3,7



Number of contacts

Crimp termination



#### Technical characteristics

Number of contacts 8 A Rated current Rated voltage 200 V Rated impulse voltage 2.5 kV Pollution degree  $>10^{10} \Omega$ Insulation resistance -40 ... +125 °C Limiting temperature ≥500 Mating cycles

Conductor cross-section 0.08 ... 1.5 mm<sup>2</sup> Material (insert) Polyamide (PA)

#### Technical characteristics

Colour (insert) White Material flammability class acc. V-0

to UL 94

RoHS compliant with exemption,

compliant

## Specifications and approvals

UL 1977 ECBT2.E235076

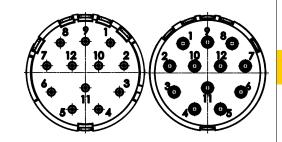
Identification	Conductor cross-section (mm²)	Part number Male Female		Drawin (dimensions	g in mm)
Circular connectors M23, Signal, Inserts, Crimp termination  Please order crimp contacts separately. 12x 1 mm	0.08 1.5	09 15 112 3001	09 15 112 3101	19,6	Ø17
Circular connectors M23, Signal, Inserts, Marking in opposite direction, Crimp termination Please order crimp contacts separately. 12x 1 mm	0.08 1.5	09 15 112 3011	09 15 112 3111		



Number of contacts

12

Solder termination



#### Technical characteristics

Number of contacts 12 Rated current 8 A 200 V Rated voltage Rated impulse voltage 2.5 kV Pollution degree  $>10^{10} \Omega$ Insulation resistance Limiting temperature -40 ... +125 °C Mating cycles ≥500 Conductor cross-section 1 mm<sup>2</sup> max. Material (insert) Polyamide (PA) Colour (insert) White

#### Technical characteristics

Material (contacts)

Surface (contacts)

Gold plated

Material flammability class acc. V-0

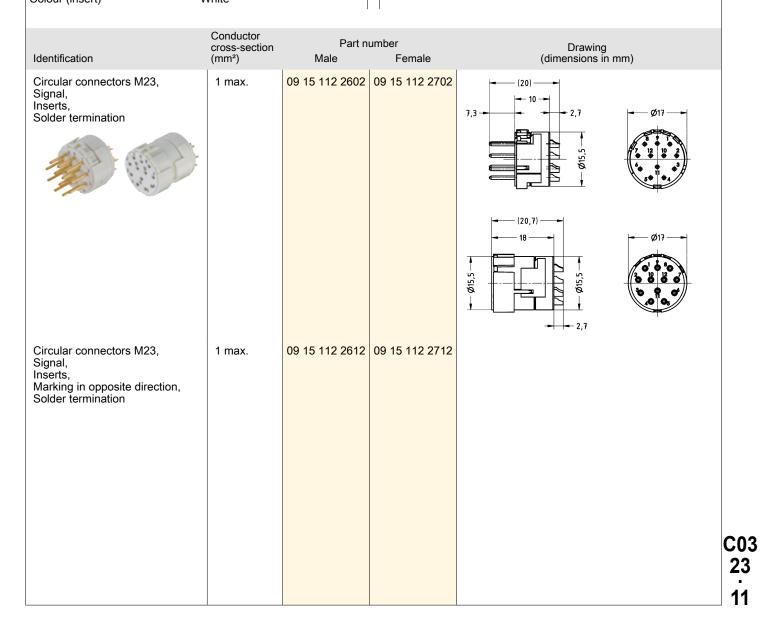
to UL 94

RoHS compliant with exemption,

compliant

## Specifications and approvals

UL 1977 ECBT2.E235076

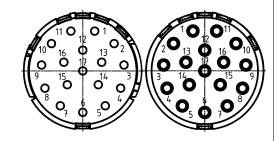




Number of contacts

17

Crimp termination



#### Technical characteristics

Conductor cross-section 0.08 ... 1.5 mm²
Material (insert) Polyamide (PA)

#### Technical characteristics

Colour (insert) White Material flammability class acc. V-0

to UL 94

RoHS compliant with exemption

## Specifications and approvals

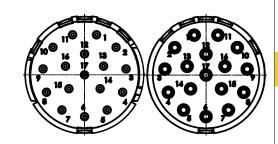
UL 1977 ECBT2.E235076

	o.y aao (i. 7 i)	'	1	
Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M23, Signal, Inserts, Crimp termination  Please order crimp contacts separately	0.08 1.5	09 15 117 3001	09 15 117 3101	917 917 918 919 919 919 919 919 919 919
separately. 17x 1 mm				19,6 Ø17



Number of contacts

Solder termination



#### Technical characteristics

Number of contacts 8 A Rated current 160 V Rated voltage Rated impulse voltage 1.5 kV Pollution degree 3 >10<sup>6</sup> Ω Insulation resistance Limiting temperature -40 ... +125 °C Mating cycles ≥500 Conductor cross-section 1 mm<sup>2</sup> max. Material (insert) Polyamide (PA) Colour (insert) White

### Technical characteristics

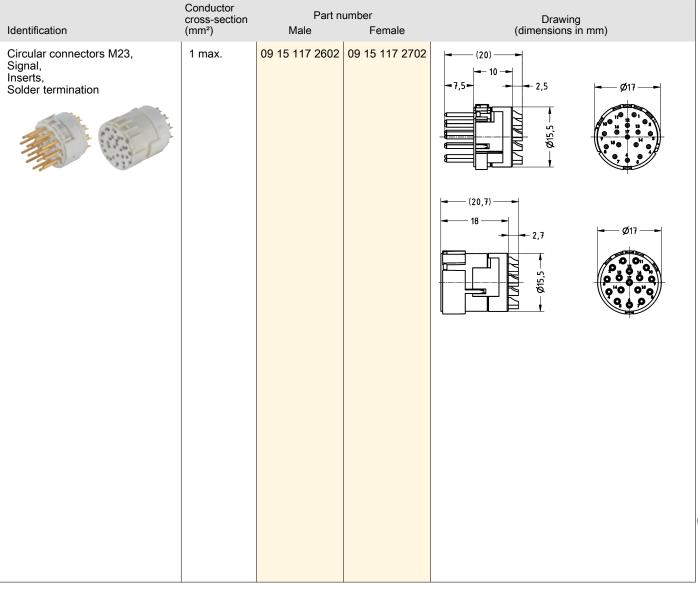
Material (contacts) Copper alloy Gold plated Surface (contacts)

Material flammability class acc.

to UL 94

RoHS compliant with exemption

### Specifications and approvals



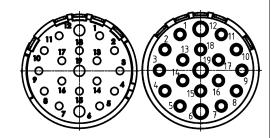
### M23 Signal inserts



Number of contacts

16

+ 3 additional special contacts Crimp termination



#### Technical characteristics

Number of contacts 16

Additional contacts + 3 additional special contacts

Rated current 8 A
Rated voltage 100 V
Rated impulse voltage 1.5 kV
Pollution degree 3
Rated current (special contact) 10 A
Rated voltage (special contact) 100 V
Rated impulse voltage (special 5 kV contact)

Pollution degree (special

contact)

Insulation resistance  $>10^6 \Omega$ 

#### Technical characteristics

Limiting temperature -40 ... +125 °C

Mating cycles ≥500

Conductor cross-section 0.08 ... 1.5 mm² Material (insert) Polyamide (PA)

Colour (insert) White Material flammability class acc. V-0

to UL 94

RoHS compliant with exemption

### Specifications and approvals

UL 1977 ECBT2.E235076

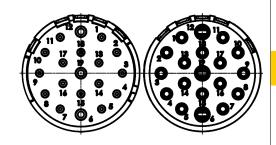
Identification	Conductor cross-section (mm²)	Part no Male	umber Female	Drawir (dimensions	ng in mm)
Circular connectors M23, Signal, Inserts, Crimp termination	0.08 1.5	09 15 119 3001	09 15 119 3101	- 11,6 5,5 6,0 11,6 11	Ø17  10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Please order crimp contacts separately. 16x 1 mm 3x 1.5 mm				19,6	Ø17 —
3 3					

M23



Number of contacts

+ 3 additional special contacts Solder termination



#### Technical characteristics

Number of contacts

+ 3 additional special contacts Additional contacts

Rated current 8 A Rated voltage 100 V Rated impulse voltage 1.5 kV Pollution degree 3 Rated current (special contact) 10 A Rated voltage (special contact) 100 V Rated impulse voltage (special 1.5 kV contact) 3

Pollution degree (special

contact)

Insulation resistance >10<sup>6</sup> Ω Limiting temperature -40 ... +125 °C

#### Technical characteristics

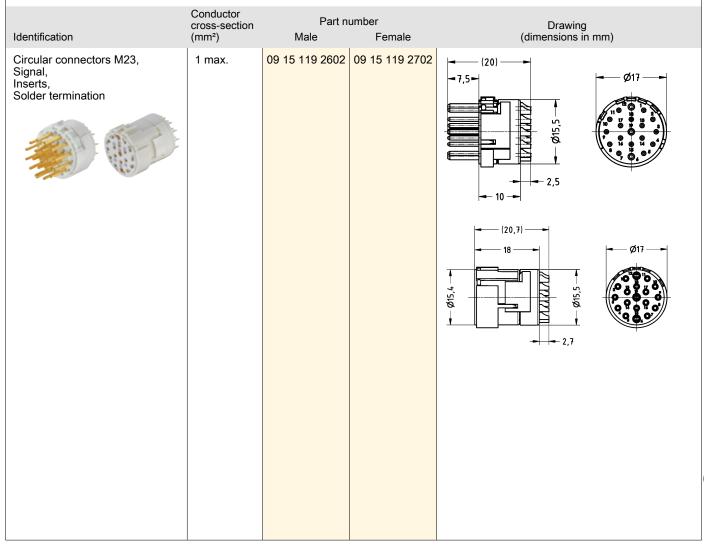
≥500 Mating cycles Conductor cross-section 1 mm² max. Material (insert) Polyamide (PA) Colour (insert) White Material (contacts) Copper alloy Surface (contacts) Gold plated

Material flammability class acc.

to UL 94

RoHS compliant with exemption

### Specifications and approvals



M23

#### **Technical characteristics**

 $\begin{array}{lll} \text{Contact resistance} & \leq 3 \ m\Omega \\ \text{Conductor cross-section} & 0.08 \ ... \ 0.56 \ mm^2, \ 0.14 \ ... \ 1 \ mm^2, \\ 0.75 \ ... \ 1.5 \ mm^2, \ 0.75 \ ... \ 2.5 \ mm^2, \\ 0.34 \ ... \ 1 \ mm^2, \ 0.14 \ ... \ 0.56 \ mm^2, \\ 0.56 \ ... \ 1 \ mm^2 \\ \text{Conductor cross-section} & AWG \ 28 \ ... \ AWG \ 20, \\ AWG \ 26 \ ... \ AWG \ 17, \\ AWG \ 19 \ ... \ AWG \ 14, \\ AWG \ 22 \ ... \ AWG \ 17, \\ AWG \ 26 \ ... \ AWG \ 20, \\ AWG \ 20 \ ... \ AWG \ 20, \\ AWG \ 20 \ ... \ AWG \ 17 \\ \end{array}$ 

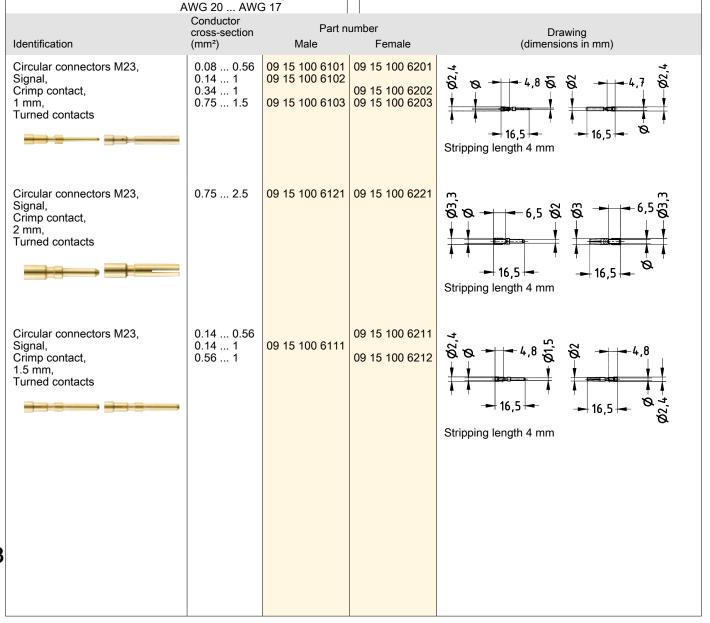
#### Technical characteristics

Material (contacts) Copper alloy Surface (contacts) Gold plated

RoHS compliant with exemption

#### Specifications and approvals

EN 60664-1 IEC 61984



#### **Features**

- · Screw locking
- · ComLock rapid locking
- ComLock-S rapid locking (Compatible to Speedtec from TE)

#### Technical characteristics

Limiting temperature -40 ... +125 °C

Screw locking, ComLock rapid locking, ComLock-S rapid Locking type

locking

Degree of protection acc. to IEC IP67, in locked position, IP69 / 60529 IPX9K acc. to ISO 20653

Material (hood/housing) Copper-zinc alloy Surface (hood/housing) Nickel plated

Material (seal) Colour (seal) Black

compliant with exemption RoHS

## Specifications and approvals

Identification	Clamping range (mm	) Part number	Drawing (dimensions in mm)
Circular connectors M23, Signal, Hood, EMC version, Top entry	3 7 7 12 11 17	09 15 100 0401 09 15 100 0402 09 15 100 0403	(approx. 65) 1
Circular connectors M23, Signal, Hood, Angled entry	7 12	09 15 100 0601	50,8 (approx. 68)

## M23 Signal Hoods/Housings



				Describer
	Identification	Clamping range (mm)	Part number	Drawing (dimensions in mm)
M23	Circular connectors M23, Signal, Hood, EMC version, Angled entry	7 12	09 15 100 0602	256.9 (approx. 74)
	Circular connectors M23, Signal, Hood, EMC version, Rotatable, Angled entry	7 12	09 15 100 0603	M23 × 18 (approx. 78)
	Circular connectors M23, Signal, Hood, EMC version, Top entry, ComLock rapid locking	3 7 7 12 11 17	09 15 100 0491 09 15 100 0492 09 15 100 0493	(approx. 68)
	Circular connectors M23, Signal, Hood, EMC version, Top entry, ComLock-S rapid locking	3 7 7 12 11 17	09 15 100 0481 09 15 100 0482 09 15 100 0483	(aprrox. 69)
C03 23 .18	Circular connectors M23, Signal, Cable to cable housing, EMC version, Top entry	3 7 7 12 11 17	09 15 100 0701 09 15 100 0702 09 15 100 0703	(approx. 67)

## M23 Signal Hoods/Housings

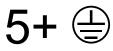


Identification	Clamping range (mm)	Part number	Drawing (dimensions in mm)	
Circular connectors M23, Signal, Cover, for hoods, With chain (100 mm)		09 15 100 9103	- (20,7) (30,7) (30,7) (30,7) (30,7) - (3	M23
Not compatible to ComLock				
Circular connectors M23, Signal, Cover, for bulkhead mounted housings, for cable to cable housing		09 15 100 9101	12 - XE & ZE &	
Circular connectors M23,		09 15 100 9102	<del> </del> 12 <del> </del>	
Signal, Cover, for bulkhead mounted housings, for cable to cable housing, With chain (70 mm)			Ø26,2 (14,7)	
				C03
				23
				19

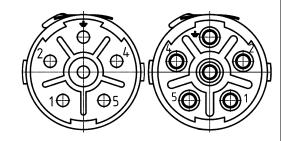
### M23 Power inserts



Number of contacts



Crimp termination



#### Technical characteristics

Number of contacts 28 A Rated current Rated voltage 600 V Rated impulse voltage 4 kV Pollution degree  $>10^{13} \Omega$ Insulation resistance -40 ... +125 °C Limiting temperature ≥500 Mating cycles Conductor cross-section 0.14 ... 4 mm<sup>2</sup>

### Technical characteristics

Colour (insert) Blue Material flammability class acc. V-0 to UL 94

RoHS compliant

### Specifications and approvals

Material (insert)	Polyamide (PA)				
Identification	Conductor cross-section (mm²)	Part n Male	umber Female	D (dimens	rawing sions in mm)
Circular connectors M23, Power, Inserts, Crimp termination	0.14 4	09 15 606 3001	09 15 606 3101	Ø21 F 66 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	30,2
Please order crimp contacts separately. 6x 2 mm				921	30,2

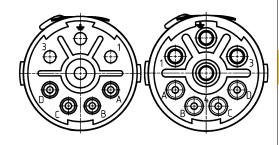
M23



Number of contacts

3+ 😩

+ 4 additional signal contacts Crimp termination



#### Technical characteristics

Number of contacts 3

Additional contacts + 4 additional signal contacts

Rated current 28 A Rated voltage 600 V Rated impulse voltage 4 kV Pollution degree 3 Rated current (signal) 8 A 300 V Rated voltage (signal) Rated impulse voltage (signal) 2.5 kV Pollution degree (signal)  $>10^{13} \Omega$ Insulation resistance Limiting temperature -40 ... +125 °C

#### Technical characteristics

Mating cycles ≥500

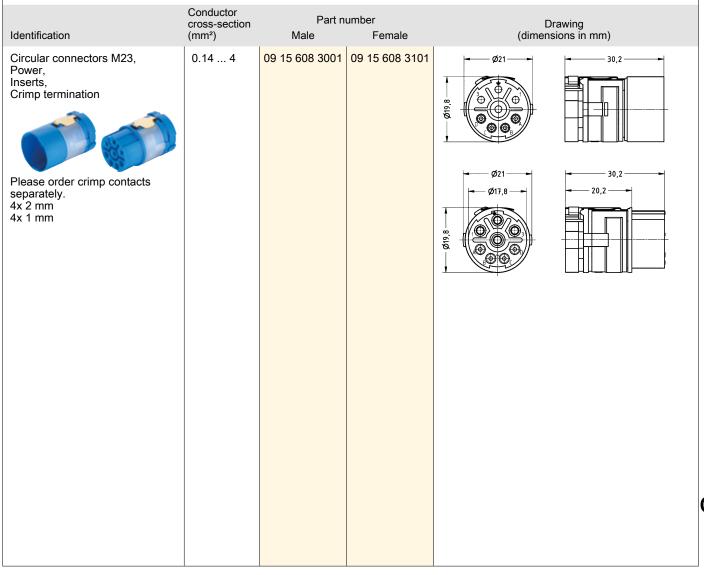
Conductor cross-section 0.14 ... 4 mm² Material (insert) Polyamide (PA)

Colour (insert) Blue Material flammability class acc. V-0

to UL 94

RoHS compliant

### Specifications and approvals



### M23 Power inserts

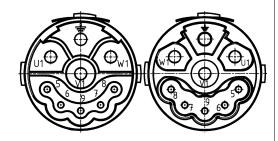


Number of contacts

3+



+ 5 additional signal contacts Crimp termination



#### Technical characteristics

Number of contacts 3

Additional contacts + 5 additional signal contacts

Rated current 28 A Rated voltage 630 V Rated impulse voltage 4 kV Pollution degree 3 Rated current (signal) 10 A 250 V Rated voltage (signal) Rated impulse voltage (signal) 2.5 kV Pollution degree (signal)  $>10^{13} \Omega$ Insulation resistance

Insulation resistance >10 Ω Ω
Limiting temperature -40 ... +125 °C

#### Technical characteristics

Mating cycles ≥500
Conductor cross-section 0.14 ... 4 mm²
Material (insert) Polyamide (PA)

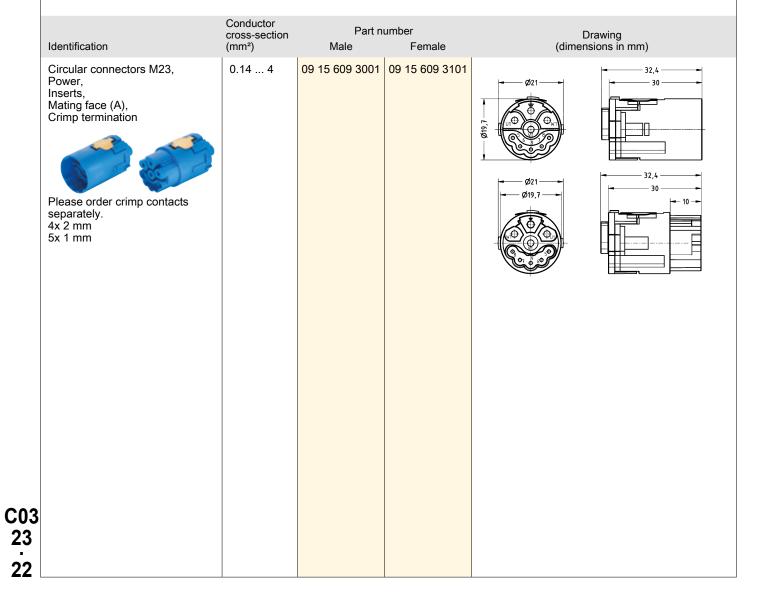
Colour (insert) Blue Material flammability class acc. V-0

to UL 94

RoHS compliant

## Specifications and approvals

UL 1977 ECBT2.E235076



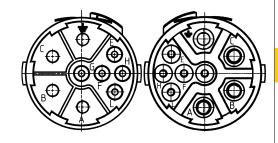
VI23



Number of contacts

**3+**  $\oplus$ 

+ 5 additional signal contacts Crimp termination



#### Technical characteristics

Number of contacts 3

Additional contacts + 5 additional signal contacts

Rated current 28 A Rated voltage 630 V Rated impulse voltage 4 kV Pollution degree 3 Rated current (signal) 10 A Rated voltage (signal) 250 V Rated impulse voltage (signal) 2.5 kV Pollution degree (signal)  $>10^{13} \Omega$ Insulation resistance Limiting temperature -40 ... +125 °C

#### Technical characteristics

Mating cycles ≥500

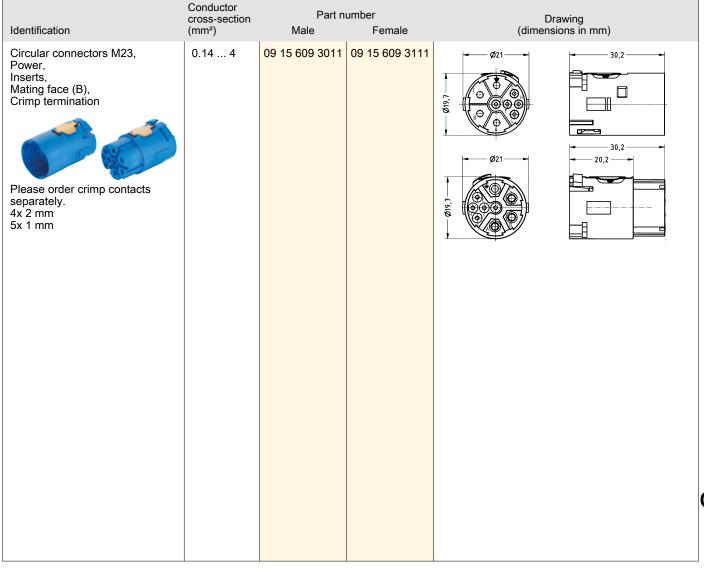
Conductor cross-section 0.14 ... 4 mm² Material (insert) Polyamide (PA)

Colour (insert) Blue Material flammability class acc. V-0

to UL 94

RoHS compliant

### Specifications and approvals

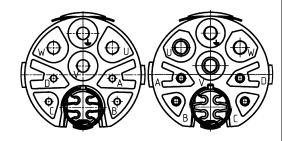


M23

Number of contacts

3+ ⊕

+ 4 additional signal contacts + 4 Data Crimp termination



#### Technical characteristics

Number of contacts Additional contacts + 4 additional signal contacts, + 4 Data Rated current 28 A 630 V Rated voltage Rated impulse voltage 4 kV 3 Pollution degree Rated current (signal) 8 A Rated voltage (signal) 300 V 2.5 kV Rated impulse voltage (signal) Pollution degree (signal) 3 Rated current (data) 2 A Rated voltage (data) 60 V Rated impulse voltage (data) 0.5 kV

#### Technical characteristics

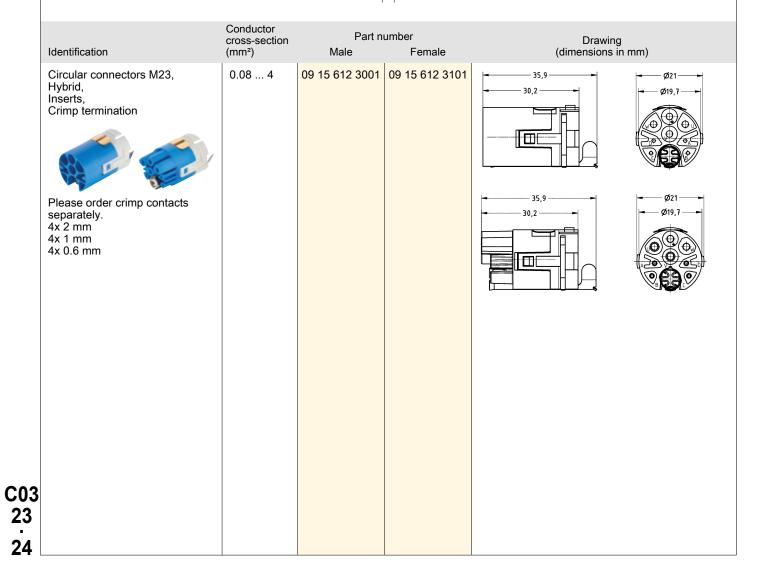
Pollution degree (data) 3 Limiting temperature -40 ... +125 °C Mating cycles ≥500

Conductor cross-section 0.08 ... 4 mm²
Material (insert) Polyamide (PA)

Colour (insert) Blue Material flammability class acc. V-0 to UL 94

RoHS compliant

### Specifications and approvals



### Technical characteristics

Contact resistance

Conductor cross-section

Material (contacts) Surface (contacts) RoHS

≤3 mΩ

0.08 ... 0.34 mm², 0.14 ... 1 mm², 0.75 ... 2.5 mm², 2.5 ... 4 mm²

Copper alloy

Gold plated compliant, compliant with

exemption

## Specifications and approvals

EN 60664-1 IEC 61984

Identification	Conductor cross-section (mm²)	Part n Male	umber Female	Drawing (dimensions in mm)
Circular connectors M23, Power, Crimp contact, 0.6 mm, Turned contacts	0.08 0.34	09 15 600 6191	09 15 600 6291	15.8 17.9 Stripping length 4 mm
Circular connectors M23, Power, Crimp contact, 1 mm, Turned contacts	0.14 1	09 15 600 6101	09 15 600 6201	Stripping length 4 mm
Circular connectors M23, Power, Crimp contact, 2 mm, Turned contacts	0.75 2.5 2.5 4	09 15 600 6121 09 15 600 6122	09 15 600 6221 09 15 600 6222	7,8 7,8 7,8 7,8 7,8 7,8 7,8 7,8 7,8 7,8

M23

#### **Features**

- · Screw locking
- · ComLock rapid locking
- ComLock-S rapid locking (Compatible to Speedtec from TE)

#### Technical characteristics

Limiting temperature -40 ... +125 °C

Screw locking, ComLock Locking type

rapid locking, ComLock-S rapid

locking

Degree of protection acc. to IEC

IP67 / IP69 / IPX9K acc. to ISO 20653, in locked position

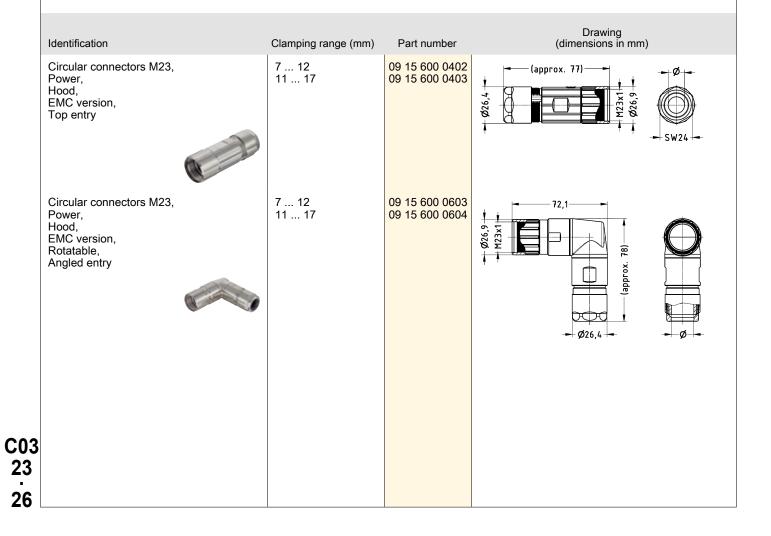
Material (hood/housing) Copper-zinc alloy Nickel plated Surface (hood/housing)

Material (seal) **NBR** Colour (seal) Black

RoHS compliant with exemption,

compliant

### Specifications and approvals



## M23 Power Hoods/Housings

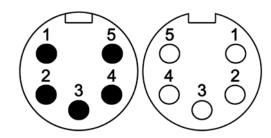


Identification	Clamping range (mm)	Part number	Drawing (dimensions in mm)	
Circular connectors M23, Power, Hood, EMC version, Top entry, ComLock rapid locking	7 12 11 17	09 15 600 0492 09 15 600 0493	(approx. 77)	M23
Circular connectors M23, Power, Hood, EMC version, Top entry, ComLock-S rapid locking  Compatible to Speedtec (TE)	7 12 11 17	09 15 600 0482 09 15 600 0483	(approx. 80)  Sw24  Ø28	
Circular connectors M23, Power, Cable to cable housing, EMC version, Top entry	7 12 11 17	09 15 600 0702 09 15 600 0703	(approx. 72)	
Circular connectors M23, Power, Cover, for hoods, With chain (100 mm)		09 15 600 9103	(22,2) 15 19,5	
Circular connectors M23, Power, Cover, for bulkhead mounted housings, for cable to cable housing, With chain (70 mm)		09 15 600 9102	Ø26 11 XE CE (14,7)	
				C03 23 27

7/8" HARAX®	HARTING	
Contents	Page	
Contents 7/8" HARAX®	C03 35.2	7/8
		C03 35 1

Number of contacts

HARAX® connection technology Unshielded



#### Technical characteristics

Number of contacts Rated current 10 A 230 V Rated voltage conductor-earth Rated voltage conductor-con-400 V ductor 4.8 kV Rated impulse voltage Pollution degree 3 Insulation resistance >108 Ω Contact resistance ≤10 mΩ ≥100 Mating cycles Wire outer diameter ≤2.8 mm Locking type Screw locking

#### Technical characteristics

Degree of protection acc. to IEC IP65 / IP67, when mated 60529

Conductor cross-section 0.75 ... 1.5 mm<sup>2</sup> Conductor cross-section AWG 18 ... AWG 16 Cable diameter 6.8 ... 12.5 mm Tightening torque 1.5 Nm

Polyamide (PA), Thermoplastic polyurethane (TPU) Material (insert)

Polyamide (PA), Zinc die-cast, Material (hood/housing)

Thermoplastic polyurethane

(TPU)

Material (contacts) Copper alloy Surface (contacts) Gold plated

RoHS compliant with exemption

Identification	Conductor cross-section (mm²)	Part no Male	umber Female	Drawing (dimensions in mm)
Circular connectors 7/8", Cable connector, Straight, HARAX® connection technology, Unshielded	0.75 1.5	21 04 116 1505	21 04 116 2505	Gesamtlänge im verschraubten Zustand co.73mm complete length when assembled app. 73mm W12/ SW12/ SW12/ Vials 22  Gesamtlänge im verschraubten Zustand co.70mm complete length when assembled app. 70mm
				Width across last 22
3				

## Cable assemblies



Contents	Page
M8 system cables	CAB 03.02
M8 system cables D-coding	CAB 03.04
M12 system cables A-coding	CAB 03.06
M12 system cables B-coding	CAB 03.12
M12 system cables D-coding	CAB 03.14
M12 system cables X-coding	CAB 03.22
M12 system cables L-coding	CAB 03.30
7/8" system cables	CAB 03.32
M23 system cables, signal	CAB 03.34
M23 system cables, power	CAB 03.36

Cable

## M8 system cables



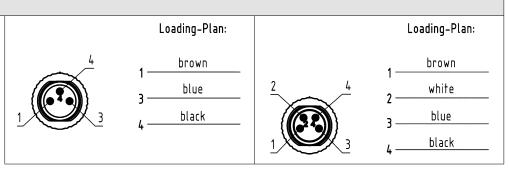
Cable



#### Technical characteristics

System cables with M8 circular connectors without PE

	3 p	oles	4 p	4 poles		
	PVC	PUR	PVC	PUR		
Rated voltage	max. 60 V AC/DC	max. 60 V AC/DC	max. 30 V AC/DC	max. 30 V AC/DC		
Rated currrent / contact	max. 3 A @ +40 °C					
Screw locking	M8x1, self securing	M8x1, self securing	M8x1, self securing	M8x1, self securing		
Recommended torque	0.4 Nm	0.4 Nm	0.4 Nm	0.4 Nm		
Temperature range (working and storage)	-30 °C +80 °C					
Degree of protection	IP67	IP67	IP67	IP67		
Number of wires / wire gauge	3 x 0.25 mm <sup>2</sup>					
Conductor insulation	PVC (bn, bu, bk)	PVC (bn, bu, bk)	PVC (bn, wh, bu, bk)	PVC (bn, wh, bu, bk)		
Arrangement of insulated strands	32 x Ø 0.1 mm					
Sheath	PVC	PUR (UL, CSA)	PVC	PUR (UL, CSA)		
Sheath colour	grey	black	grey	black		
Outer diameter	Ø 4.40 ± 0.15 mm	Ø 4.40 ± 0.15 mm	Ø 4.70 ± 0.15 mm	Ø 4.40 ± 0.15 mm		
Useable as trailing cable	no	yes	no	yes		
Halogen free acc. to	_	DIN VDE 0472 part 815	_	DIN VDE 0472 part 815		
Flame retardant acc. to	DIN EN 60 332-2-2	cUL20549	DIN EN 60332-2-2	cUL20549		
Oil-resistant	_	DIN EN 60811-2-1	_	_		



#### M8 system cables Male, 3 poles Male, 4 poles Female, 3 poles Female, 4 poles Part number definition 2 1 3 4 Χ Χ Χ Χ Χ Χ Χ Χ Χ Χ Connector 1 80 Male straight 81 Female straight 82 Male angled 83 Female angled **Connector 2** 00 No connector 80 Male straight 81 Female straight 82 Male angled 83 Female angled **Number of contacts** 3 3 poles 4 4 poles Cable material 80 PVC (3 poles) 81 PVC (4 poles) 88 PUR (3 poles) 89 PUR (4 poles) Preferred length\* 005 0.5 m 1.0 m 010 015 1.5 m

020

050

075

2.0 m

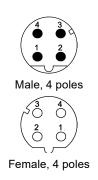
5.0 m

7.5 m 100 10.0 m Cable

<sup>\*</sup> Other cable lengths on request!



Cable

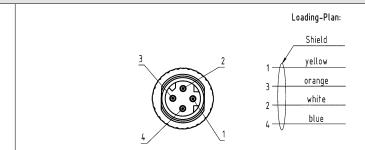




#### Technical characteristics

System cables with M8 circular connectors shielded, D-coding

	4 poles	4 poles
	PVC	PUR
Rated voltage	max. 50 V AC/60 V DC	max. 50 V AC/60 V DC
Rated currrent / contact	max. 4 A @ +40 °C	max. 4 A @ +40 °C
Screw locking	M8x1, self securing	M8x1, self securing
Recommended torque	0.4 Nm	0.4 Nm
Temperature range (working and storage)	-30 °C +70 °C	-30 °C +70 °C
Degree of protection	IP67	IP67
Number of wires / wire gauge	4 x AWG22	4 x AWG22
Conductor insulation	PE (wh, ye, bu, or)	PE (wh, ye, bu, or)
Arrangement of insulated strands	7 x Ø 0.25 mm	7 x Ø 0.25 mm
Sheath	PVC	PUR
Sheath colour	green	green
Outer diameter	Ø 6.20 ± 0.20 mm	Ø 6.20 ± 0.20 mm
Useable as trailing cable	no	yes
Halogen free acc. to	-	IEC 60754
Flame retardant acc. to	UL 1685	IEC 60332-1-2 and UL 2556 VW1
Oil-resistant	IEC 60811-2-1	IEC 60 811-2-1 and UL13



#### M8 system cables D-coding Male, 4 poles Female, 4 poles Part number definition 2 1 3 4 Χ Χ Χ Χ Χ Χ Χ Χ Χ Χ Connector 1 C1 Male straight D1 Female straight Connector 2 00 No connector C7 Male straight D7 Female straight **Number of contacts** 4 4 poles Cable material 05 PVC 77 PUR Preferred length\* 005 0.5 m 010 1.0 m 1.5 m 015 020 2.0 m 050 5.0 m 7.5 m 075 100 10.0 m

Cable

CAB

<sup>\*</sup> Other cable lengths on request!



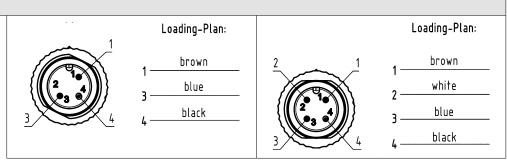
Cable



#### Technical characteristics

System cables with M12 circular connectors without PE, A-coding

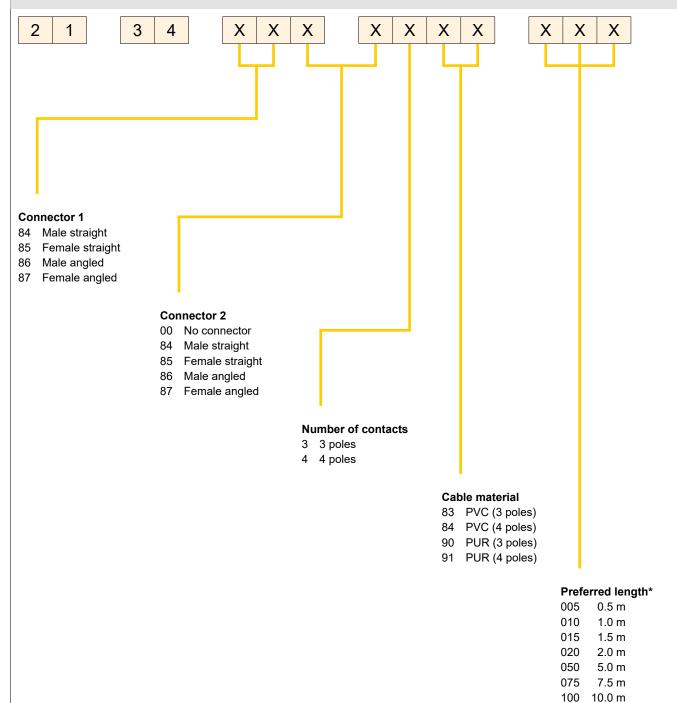
	3 poles		4 poles	
	PVC	PUR	PVC	PUR
Rated voltage	max. 250 V AC/DC			
Rated currrent / contact	max. 4 A @ +40 °C			
Screw locking	M12x1, self securing	M12x1, self securing	M12x1, self securing	M12x1, self securing
Recommended torque	0.6 Nm	0.6 Nm	0.6 Nm	0.6 Nm
Temperature range (working and storage)	-30 °C +80 °C			
Degree of protection	IP67	IP67	IP67	IP67
Number of wires / wire gauge	3 x 0.34 mm <sup>2</sup>	3 x 0.34 mm <sup>2</sup>	4 x 0.34 mm <sup>2</sup>	4 x 0.34 mm <sup>2</sup>
Conductor insulation	PVC (bn, bu, bk)	PP (bn, bu, bk)	PVC (bn, wh, bu, bk)	PP (bn, wh, bu, bk)
Arrangement of insulated strands	42 x Ø 0.1 mm			
Sheath	PVC	PUR (UL, CSA)	PVC	PUR (UL, CSA)
Sheath colour	grey	black	grey	black
Outer diameter	Ø 4.4 ± 0.15 mm	Ø 4.4 ± 0.15 mm	Ø 4.7 ± 0.15 mm	Ø 4.7 ± 0.15 mm
Useable as trailing cable	no	yes	no	yes
Halogen free acc. to	-	DIN VDE 0472 part 815	-	DIN VDE 0472 part 815
Flame retardant acc. to	DIN EN 60332-2-2	cUL20549	DIN EN 60332-2-2	cUL20549
Oil-resistant	_	_	_	DIN EN 60811-2-1







#### Part number definition



<sup>\*</sup> Other cable lengths on request!

03



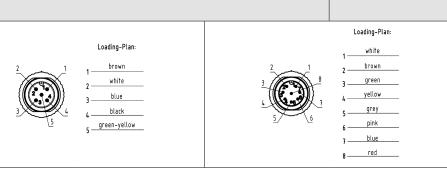
Cable



#### Technical characteristics

System cables with M12 circular connectors without PE, A-coding

	5 poles	5 poles	8 poles	8 poles
	PVC	PUR	PVC	PUR
Rated voltage	max. 60 V AC/DC	max. 60 V AC/DC	max. 30 V AC/DC	max. 30 V AC/DC
Rated currrent / contact	max. 4 A @ +40 °C	max. 4 A @ +40 °C	max. 2 A @ +40 °C	max. 2 A @ +40 °C
Screw locking	M12x1, self securing	M12x1, self securing	M12x1, self securing	M12x1, self securing
Recommended torque	0.6 Nm	0.6 Nm	0.6 Nm	0.6 Nm
Temperature range (working and storage)	-30 °C +80 °C	-30 °C +80 °C	-30 °C +80 °C	-30 °C +80 °C
Degree of protection	IP67	IP67	IP67	IP67
Number of wires / wire gauge	5 x 0.34 mm <sup>2</sup>	5 x 0.34 mm <sup>2</sup>	8 x 0.25 mm <sup>2</sup>	8 x 0.25 mm <sup>2</sup>
Conductor insulation	PVC (bn, wh, bu, bk, gn/ye)	PP (bn, wh, bu, bk, gn/ye)	PVC (wh, bn, gn, ye, gy, pk, bu, rd)	PP (wh, bn, gn, ye, gy, pk, bu, rd)
Arrangement of insulated strands	42 x Ø 0.1 mm	42 x Ø 0.1 mm	32 x Ø 0.1 mm	32 x Ø 0.1 mm
Sheath	PVC	PUR	PVC	PUR
Sheath colour	grey	black	grey	black
Outer diameter	Ø 5.2 ± 0.15 mm	Ø 5.1 ± 0.15 mm	Ø 6.2 ± 0.2 mm	Ø 6.0 ± 0.2 mm
Useable as trailing cable	no	yes	no	yes
Halogen free acc. to	_	DIN VDE 0472 part 815	_	DIN VDE 0472 part 815
Flame retardant acc. to	DIN EN 60 332-2-2	cULus 20549	DIN EN 60332-2-2	cULus 20549
Oil-resistant	_	DIN EN 60811-2-1	_	DIN EN 60811-2-1

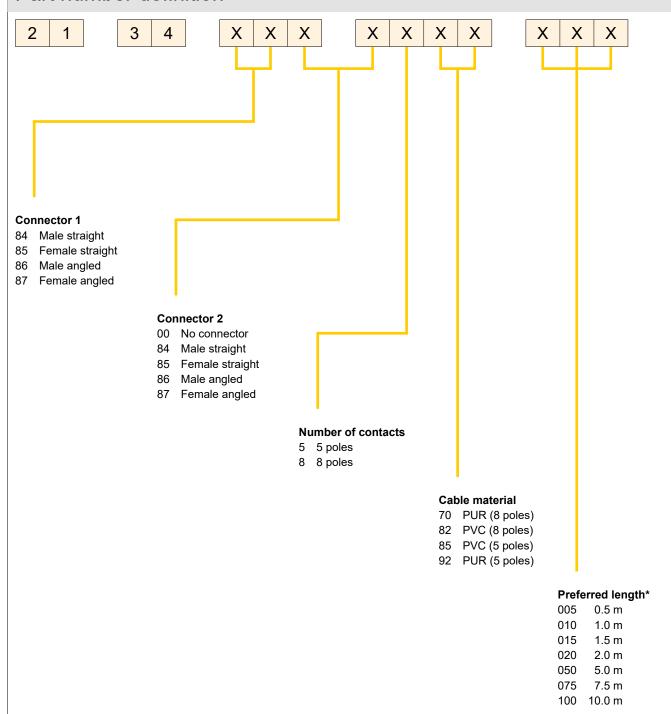








#### Part number definition

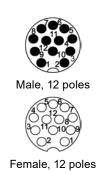


<sup>\*</sup> Other cable lengths on request!

CAB 03



Cable

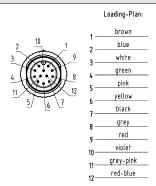




#### Technical characteristics

System cables with M12 circular connectors without PE, A-coding

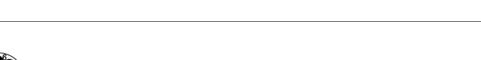
	12 p	12 poles		
	PVC	PUR		
Rated voltage	max. 30 V AC/DC	max. 30 V AC/DC		
Rated currrent / contact	max. 1.5 A @ +40 °C	max. 1.5 A @ +40 °C		
Screw locking	M12x1, self securing	M12x1, self securing		
Recommended torque	0.6 Nm	0.6 Nm		
Temperature range (working and storage)	-30 °C +80 °C	-30 °C +80 °C		
Degree of protection	IP67	IP67		
Number of wires / wire gauge	12 x 0.14 mm <sup>2</sup>	12 x 0.14 mm <sup>2</sup>		
Conductor insulation	PVC (wh, bu, bn, gy, rd, bk, ye, pk, gn, vt, rd/bu, gy/pk)	PP (wh, bu, bn, gy, rd, bk, ye, pk, gn, vrd/bu, gy/pk)		
Arrangement of insulated strands	18 x Ø 0.1 mm	18 x Ø 0.1 mm		
Sheath	PVC	PUR (UL, CSA)		
Sheath colour	grey	black		
Outer diameter	Ø 6.2 ± 0.2 mm	Ø 6.1 ± 0.2 mm		
Useable as trailing cable	no	yes		
Halogen free acc. to	-	DIN VDE 0472 part 815		
Flame retardant acc. to	DIN EN 60332-1-2	cUL20549		
Oil-resistant	DIN EN 60811-2-1	_		



03



Cable



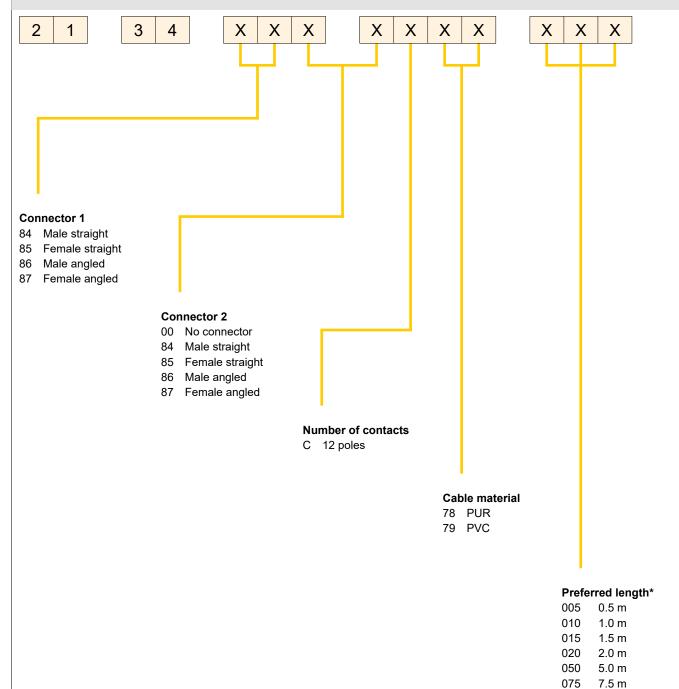
Male, 12 poles



Female, 12 poles



#### Part number definition



<sup>\*</sup> Other cable lengths on request!

CAB 03

100 10.0 m



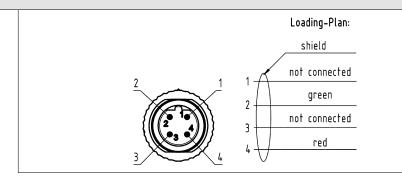
Cable



#### Technical characteristics

System cables with M12 circular connectors shielded, B-coding

	4 poles		
	PVC	PUR	
Rated voltage	max. 160 V AC/DC	max. 160 V AC/DC	
Rated currrent / contact	max. 4 A @ +40 °C	max. 4 A @ +40 °C	
Screw locking	M12x1, self securing M12x1, self sec		
Recommended torque	0.6 Nm	0.6 Nm	
Temperature range (working and storage)	-30 °C +80 °C -30 °C +80		
Degree of protection	IP67	IP67	
Number of wires / wire gauge	2 x AWG 22	2 x AWG 24	
Conductor insulation	PVC (rd, gn)	PE (rd, gn)	
Arrangement of insulated strands	1 x Ø 0.65 mm	19 x Ø 0.14 mm	
Sheath	PVC	PUR (UL, CSA)	
Sheath colour	violet	violet	
Outer diameter	Ø 8.0 ± 0.4 mm Ø 8.5 ± 0.4		
Useable as trailing cable	no	yes	
Halogen free acc. to	-	DIN VDE 0472 part 815	
Flame retardant acc. to	DIN EN 60 332-1-2	DIN EN 60332-1-2	
Oil-resistant	IEC 80811-2-1 (4h/60°C) DIN EN 6081		



CAB 03 .

#### M12 system cables B-coding Male, 4 poles Female, 4 poles Part number definition 2 1 3 4 Χ Χ Χ Χ Χ Χ Χ Χ Χ Χ Connector 1 88 Male straight 89 Female straight 90 Male angled 91 Female angled **Connector 2** 00 No connector 88 Male straight 89 Female straight 90 Male angled 91 Female angled **Number of contacts** 4 4 poles Cable material 86 PVC 87 PUR Preferred length\* 005 0.5 m 1.0 m 010 015 1.5 m 020 2.0 m CAB 050 5.0 m 075 7.5 m 100 10.0 m

Cable

<sup>\*</sup> Other cable lengths on request!



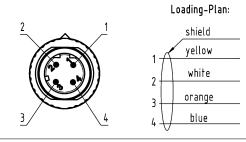
Cable



#### Technical characteristics

System cables with M12 circular connectors shielded, D-coding

	4 poles		
	PVC	PUR	
Rated voltage	max. 160 V AC/DC	max. 160 V AC/DC	
Rated currrent / contact	max. 4 A @ +40 °C	max. 4 A @ +40 °C	
Screw locking	M12x1, self securing	M12x1, self securing	
Recommended torque	0.6 Nm	0.6 Nm	
Temperature range (working and storage)	-30 °C +80 °C	-30 °C +80 °C	
Degree of protection	IP67	IP67	
Number of wires / wire gauge	4 x AWG 22	4 x AWG 22	
Conductor insulation	PE (ye, wh, og, bu)	PE (ye, wh, og, bu)	
Arrangement of insulated strands	7 x Ø 0.25 mm (AWG 22)	7 x Ø 0.25 mm (AWG 22)	
Sheath	PVC	PUR (UL, CSA)	
Sheath colour	green	green	
Outer diameter	Ø 6.5 ± 0.2 mm	Ø 6.5 ± 0.2 mm	
Useable as trailing cable	no	yes	
Halogen free acc. to	-	IEC 60754	
Flame retardant acc. to	UL 1685 (CSA FT4)	IEC 60332-1-2 und UL 2556 VW1	
Oil-resistant	IEC 80811-2-1 (4h/70°C) IEC 60811-2-1 und		





#### M12 system cables D-coding Cable Male, 4 poles Female, 4 poles Part number definition 2 1 3 4 Χ Χ Χ Χ Χ Χ Χ Χ Χ Χ Connector 1 92 Male straight 93 Female straight 94 Male angled 95 Female angled **Connector 2** 00 No connector 92 Male straight 93 Female straight 94 Male angled 95 Female angled **Number of contacts** 4 4 poles Cable material 05 PVC 77 PUR Preferred length\* 005 0.5 m 1.0 m 010 015 1.5 m 020 2.0 m CAB 050 5.0 m 075 7.5 m 100 10.0 m

<sup>\*</sup> Other cable lengths on request!



Cable

# HARTING M12 system cable, 4-wire, straight resp. angled

#### **Features**

• Connector types M12 D-coding,

connector straight resp. angled

• Category Cat. 5

Number of wires

• Wiring 1:1

• Sheath material Elastomer,

electron beam cross-linked

#### **Application**

- For harsh industrial environments
- · For installation in railway applications

#### **Benefits**

- · Robust design
- Protection degree IP65/IP67
- Fire protection acc. to EN 45545-1, -2 and -5

#### Technical characteristics

Connector types HARTING M12 D-coding,

overmoulded

Railway cords type 4 x AWG 22/7, stranded

Sheath material Elastomer,

electron beam cross-linked

Wiring 4 pole, 1:1

Transmission performance Class D up to 100 MHz

acc. to ISO/IEC 11801,

EN 50 173-1

Transmission rate 10/100 Mbit/s

Shielding Fully shielded,

360° shielding contact

Operating temperature range

fix operation -40 °C ... +85 °C

Colour Black or blue





Cable

January of the bulk of the bul

HARTING M12 system cable, 4-wire, straight resp. angled

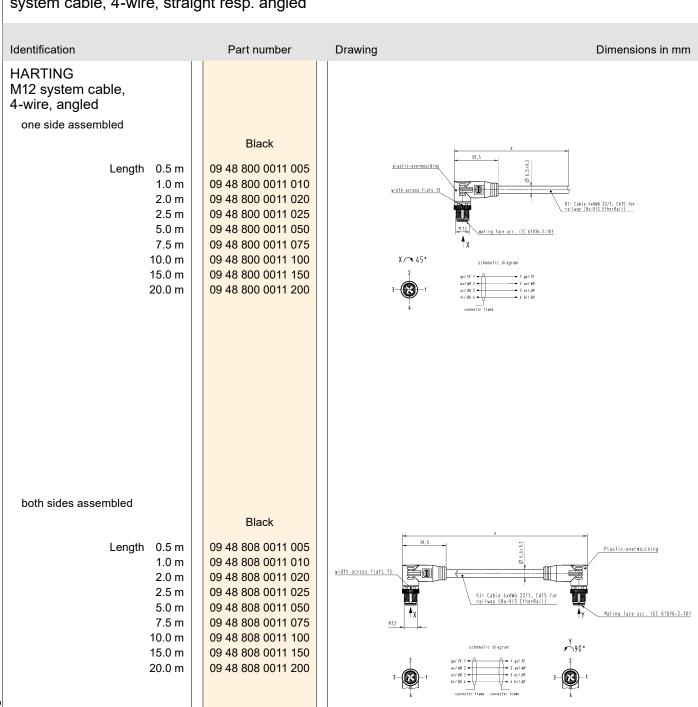
Identification	Part number	Drawing	Dimensions in mm
HARTING M12 system cable, 4-wire, straight one side assembled  Length 0.5 m 1.0 m 2.0 m 2.5 m 5.0 m	Black  09 48 220 0011 005  09 48 220 0011 010  09 48 220 0011 020  09 48 220 0011 025  09 48 220 0011 050	nating face acc. IEC 61076-2-101  X   X   X    X    X    X   X   X	
7.5 m 10.0 m 15.0 m 20.0 m	09 48 220 0011 075 09 48 220 0011 100 09 48 220 0011 150 09 48 220 0011 200	plastic-overnoutding width across flats 13  X schemetic diagram 2 set #1 1	RJI Cable &xANG 22/7, CAIS for railway (Ha-VIS EtherRail)
	Blue	3 - 1	
Length 0.5 m 1.0 m 2.0 m 2.5 m 5.0 m 7.5 m 10.0 m 15.0 m 20.0 m	21 33 390 0413 005 21 33 390 0413 010 21 33 390 0413 020 21 33 390 0413 025 21 33 390 0413 075 21 33 390 0413 100 21 33 390 0413 150 21 33 390 0413 200		
both sides assembled			
Length 0.5 m 1.0 m 2.0 m 2.5 m 5.0 m 7.5 m 10.0 m 15.0 m 20.0 m	Black  09 48 222 2011 005  09 48 222 2011 010  09 48 222 2011 020  09 48 222 2011 050  09 48 222 2011 075  09 48 222 2011 100  09 48 222 2011 150  09 48 222 2011 150  09 48 222 2011 200	width across flats 13  RJI Cable AxMG 22/7, CAT 5 for railway, (Na-VIS EtherBail)  schematic diagram  2  9/// 1	Plastic-overmoulding  Y  Mating face acc. IEC 61076-2-10

CAE 03



Cable

# HARTING M12 system cable, 4-wire, straight resp. angled



03

Other cable lengths on request!



Cable

The state of the s

HARTING M12/RJ45 system cable, 4-wire, straight

Identification Part number Drawing Dimensions in mm **HARTING** M12/RJ45 system cable, 4-wire both sides assembled Black Length 1.0 m 09 48 022 2011 010 1.5 m 09 48 022 2011 015 2.0 m 09 48 022 2011 020 3.0 m 09 48 022 2011 030 Mating face RJ45 acc. to IEC 60603-7 5.0 m 09 48 022 2011 050 7.5 m 09 48 022 2011 075 10.0 m 09 48 022 2011 100 15.0 m 09 48 022 2011 150 20.0 m 09 48 022 2011 200

03



Cable



# HARTING M12 system cable, 4-wire, straight, PushPull Press & Go

# Features Technical characteristics

Connector types M12 D-coding PushPull
 Category Cat. 5

• Number of wires 4

• Wiring 1:1

• Sheath material Elastomer,

electron beam cross-linked

### **Application**

- For harsh industrial environments
- For installation in railway applications

### **Benefits**

- · Robust design
- Protection degree IP65/IP67
- Fire protection acc. to EN 45545-1, -2 and -5
- M12 PushPull for a fast and vibration-free connection

Connector types HARTING M12 D-coding PushPull

Railway cords type 4 x AWG 22/7, stranded

Sheath material Elastomer,

electron beam cross-linked

Wiring 4 pole, 1:1

Transmission performance Class D up to 100 MHz

acc. to ISO/IEC 11801,

EN 50 173-1

Transmission rate 10/100 Mbit/s

Shielding Fully shielded,

360° shielding contact

Operating temperature range

fix operation -40 °C ... +85 °C

Colour Black

Iden	tification	Part number	Drawing	Dimensions in mm
M12	RTING 2 system cable, 4-wire oth sides assembled			
		Black		
	Length 1.0 m 1.5 m 2.0 m 3.0 m 5.0 m	21 33 232 3401 010 21 33 232 3401 015 21 33 232 3401 020 21 33 232 3401 030 21 33 232 3401 050	165 F22 F22 F23 F23 F23 F23 F23 F23 F23 F23	
3	10.0 m	21 33 232 3401 100	Mating face acc. to IEC 61076-2-101	M12 PushPull crimp male 4-pole O-coded/

Notes	HARTING	
		Cab
		CAI
		CAI 03

В

. 21



Cable

Press & Go M12 system cable, 8-wire, Cat. 6<sub>A</sub>

M12 X-coding

Cat. 6<sub>A</sub>

PVC/PUR

1:1

### Technical characteristics

Connector types Press & Go M12 connector

X coding acc. to IEC 61076-2-109

The same

Cable types PVC: 4 x 2 x AWG 26/7, cat. 6<sub>A</sub>,

S/FTP, shielded PUR: 4 x 2 x AWG 26/7, cat. 7,

S/FTP, shielded

Sheath material PVC/PUR

Wiring 8 pole, 1:1

Transmission performance Category 6<sub>A</sub>,

Class E<sub>A</sub> up to 500 MHz acc. to ISO/IEC 11801,

EN 50 173-1

Transmission rate 10/100 Mbit/s

1/ 10 Gbit/s

Shielding Fully shielded,

360° shielding contact

Operating

temperature range -40 °C ... +70 °C

Colour Yellow

# **Application**

**Features** 

Connector types

· Number of wires

· Sheath material

Category

Wiring

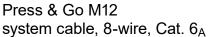
- Industrial cabling IP65/IP67
- Transmission up to 10 Gbit/s
- · Camera systems

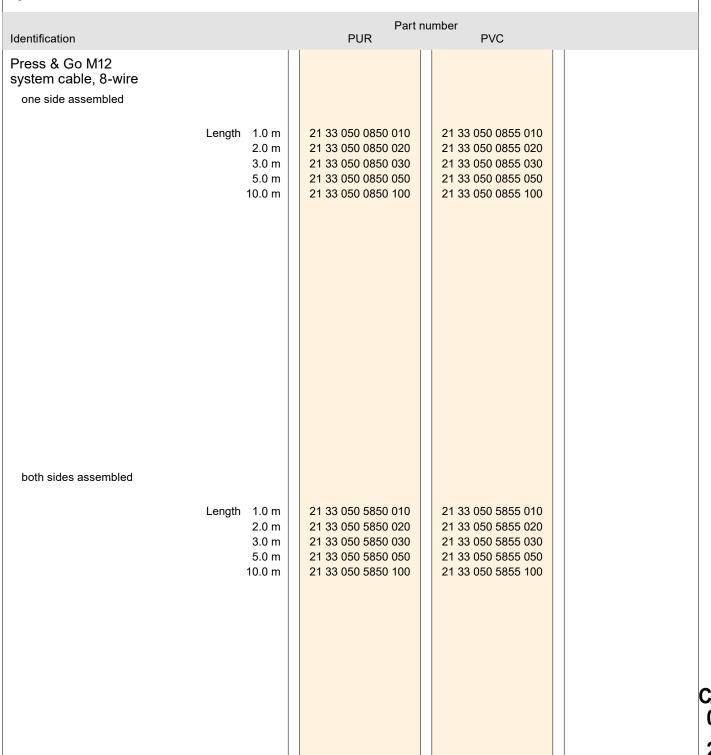
### **Benefits**

- Very robust metal housing M12 with degree of protection IP65/IP67
- Vibration proof crimp connection
- Maximum data rates through the configuration of the contacts in conformance with Ethernet technology
- Minimal interaction and perfect shielding through paired shielding of the contacts
- Fault proof connection through coding of the connector face. A connection error with other 8 pole M12's is impossible
- PROFINET compliant Type X mating face
- Oil proof acc. to EN 60811-2-1 (PUR)



Cable







Cable



M12/RJ45 system cable, 8-wire, Cat. 6<sub>A</sub>

### **Features**

Connector types M12 X-coding to RJ45
 Category Cat. 6<sub>A</sub>

Number of wires 8Wiring 1:1

• Sheath material PVC/PUR

### **Application**

- Industrial cabling IP65/IP67
- Transmission up to 10 Gbit/s
- Camera systems

### **Benefits**

- Very robust metal housing M12 with degree of protection IP65
- · Vibration proof crimp connection
- Maximum data rates through the configuration of the contacts in conformance with Ethernet technology
- Minimal interaction and perfect shielding through paired shielding of the contacts
- Fault proof connection through coding of the connector face.
   A connection error with other 8 pole M12's is impossible
- PROFINET compliant Type X mating face

### Technical characteristics

Connector types har-speed M12 connector

X coding acc. to IEC 61076-2-109

and RJ45 Gigalink

Cable types 4 x 2 x AWG 26/7, cat. 6<sub>A</sub>,

S/FTP, shielded

Sheath material PVC/PUR

Wiring 8 pole, 1:1

Transmission performance Category 6A,

Class  $E_A$  up to 500 MHz acc. to ISO/IEC 11 801,

EN 50173-1

Transmission rate 10/100 Mbit/s

1/ 10 Gbit/s

Shielding Fully shielded,

360° shielding contact

Operating

temperature range

-40 °C ... +70 °C

Colour Yellow

Part number Identification PUR PVC									
M12/RJ45 system cable, 8-wire	Yellow	Yellow							
Length 0.5 m	09 48 932 3756 005	09 48 932 3757 005							
1.0 m	09 48 932 3756 010	09 48 932 3757 010							
1.5 m	09 48 932 3756 015	09 48 932 3757 015							
2.0 m	09 48 932 3756 020	09 48 932 3757 020							
2.5 m	09 48 932 3756 025	09 48 932 3757 025							
5.0 m	09 48 932 3756 050	09 48 932 3757 050							
7.5 m	09 48 932 3756 075	09 48 932 3757 075							
10.0 m	09 48 932 3756 100	09 48 932 3757 100							
			I .						

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### har-speed M12 Panel feed-throughs with cable



Identification	Part number	Drawing	Dimensions in mm
nar-speed M12 PFT with cable		width across	viith across flats 19
with 0.3 m cable "Cat. $7_A$ (2 x AWG 27/7) PIMF". Other lengths on request	21 33 080 0850 003		
with 0.3 m cable "HA-VIS EtherRail Cat. 7 4 x (2 x AWG 24/7)". Other lengths on request	21 33 070 0853 003		

Other cable lengths on request!

Cable



Cable



# HARTING M12 system cable, 8-wire, straight

### **Features**

Category 6<sub>A</sub>Number of wires 8

• Wire design AWG 24/7

• Wire diameter  $(8.1 \pm 0.4) \text{ mm}$ 

• Sheath material Elastomer,

electron beam cross-linked

### **Application**

- For harsh industrial environments
- · For installation in railway applications

### **Benefits**

- Transmission of Gigabit and 10 Gigabit Ethernet acc. IEEE 802.3 and multimedia services
- Fire protection acc. EN 45545-1, -2 and -5, flame retardant and heat resistant acc. DIN 5510 (1-4) and EN 50264-1
- UV resistant, RoHS conform, halogen free LSZH

### Technical characteristics

Connector types HARTING M12 X-coding

Cable structure 4 x 2, Twisted Pair, shielded, PIMF

Railway cords type 4 x 2 x AWG 24/7

Category 7, Class F up to 600 MHz acc. to ISO/IEC 11 801 and EN 50 173-1

Sheath material Elastomer, electron beam,

cross-linked

Cable sheath diameter  $(8.1 \pm 0.4)$  mm

Transmission performance Category 6A, Class EA

up to 500 MHz acc. to ISO/IEC 11801 and EN 50173-1

Transmission rate 1/10 Gbit/s

Shielding Paired shielded with additional

cable shield

Operating

temperature range -40 °C ... +80 °C

Colour Black





HARTING M12 system cable, 8-wire, straight

Identification Part number Drawing Dimensions in mm HARTING M12 system cable, 8-wire, Slim Design both sides assembled Black 21 33 010 1853 005 Length 0.5 m 21 33 010 1853 010 1.0 m 2.0 m 21 33 010 1853 020 Mating face acc. to IEC 61076-2-109 21 33 010 1853 025 2.5 m 5.0 m 21 33 010 1853 050 7.5 m 21 33 010 1853 075 Loading-Plan 10.0 m 21 33 010 1853 100 15.0 m 21 33 010 1853 150 20.0 m 21 33 010 1853 200 HARTING M12 system cable, 8-wire, Press & Go one side assembled Black Length 0.5 m 21 33 050 0853 005 1.0 m 21 33 050 0853 010 2.0 m 21 33 050 0853 020 2.5 m 21 33 050 0853 025 5.0 m 21 33 050 0853 050 7.5 m 21 33 050 0853 075 10.0 m 21 33 050 0853 100 21 33 050 0853 150 15.0 m 20.0 m 21 33 050 0853 200 both sides assembled Black Length 0.5 m 21 33 050 5853 005 1.0 m 21 33 050 5853 010 2.0 m 21 33 050 5853 020 2.5 m 21 33 050 5853 025 5.0 m 21 33 050 5853 050 7.5 m 21 33 050 5853 075 10.0 m 21 33 050 5853 100 15.0 m 21 33 050 5853 150 21 33 050 5853 200 20.0 m



Cable

# HARTING M12 system cable, 8-wire, straight, PushPull Press & Go

### **Features**

Category 6<sub>A</sub>Number of wires 8

• Wire design AWG 24/7

• Wire diameter  $(8.1 \pm 0.4)$  mm

• Sheath material Elastomer,

electron beam cross-linked

### **Application**

- For harsh industrial environments
- · For installation in railway applications

### **Benefits**

- Transmission of Gigabit and 10 Gigabit Ethernet acc. IEEE 802.3 and multimedia services
- Fire protection acc. EN 45545-1, -2 and -5, flame retardant and heat resistant acc. DIN 5510 (1-4) and EN 50264-1
- UV resistant, RoHS conform, halogen free LSZH
- M12 PushPull for a fast and vibration-free connection

### Technical characteristics

Connector types HARTING M12 X-coding PushPull

Cable structure 4 x 2, Twisted Pair, shielded, PIMF

Railway cords type 4 x 2 x AWG 24/7

Category 7, Class F up to 600 MHz acc. to ISO/IEC 11801 and EN 50173-1

Sheath material Elastomer, electron beam,

cross-linked

Cable sheath diameter  $(8.1 \pm 0.4)$  mm

Transmission performance Category 6<sub>A</sub>, Class E<sub>A</sub>

up to 500 MHz acc. to ISO/IEC 11801 and EN 50173-1

Transmission rate 1/10 Gbit/s

Shielding Paired shielded with additional

cable shield

Operating

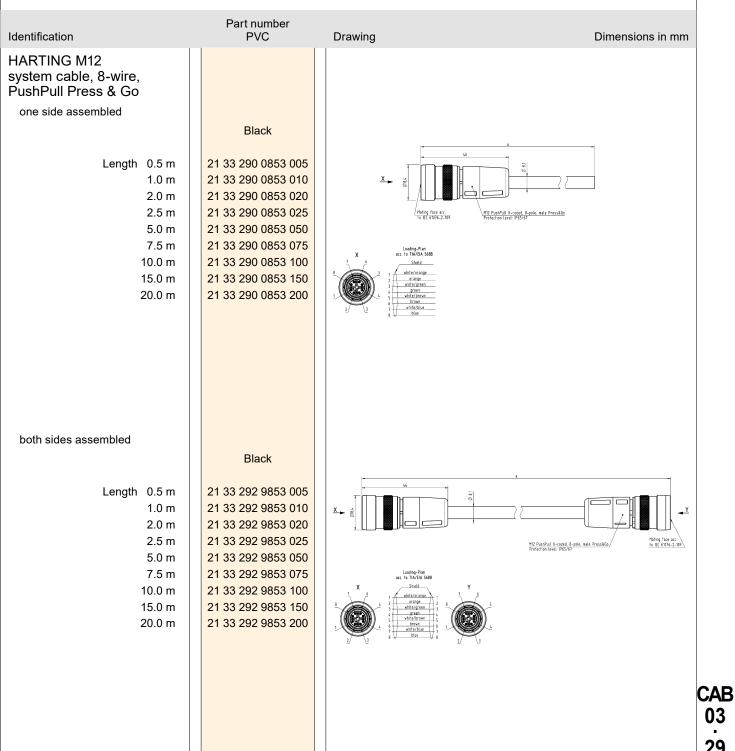
temperature range -40 °C ... +80 °C

Colour Black



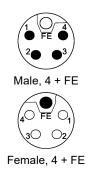
Cable







Cable

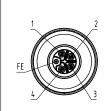


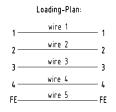


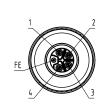
### Technical characteristics

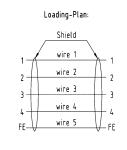
System cables with M12 circular connectors with FE, L-coding

	5 poles	5 poles	5 poles	5 poles
	PVC	PVC	PVC shielded	PVC shielded
Rated voltage	max. 63 V AC/DC			
Rated currrent / contact	max. 16 A	max. 16 A	max. 16 A	max. 16 A
Screw locking	M12x1, self securing	M12x1, self securing	M12x1, self securing	M12x1, self securing
Recommended torque	0.6 Nm	0.6 Nm	0.6 Nm	0.6 Nm
Temperature range connector (working and storage)	-5 °C +50 °C			
Degree of protection	IP67	IP67	IP67	IP67
Number of wires / wire gauge	5 x 1.5 mm <sup>2</sup>	5 x 2.5 mm <sup>2</sup>	5 x 1.5 mm <sup>2</sup>	5 x 2.5 mm <sup>2</sup>
Conductor insulation	PVC	PVC	PVC	PVC
Sheath	PVC	PVC	PVC	PVC
Sheath colour	grey	grey	grey	grey
Outer diameter	Ø 8.3 mm	Ø 10.1 mm	Ø 9.2 mm	Ø 11.0 mm
Temperature range cable (flexible / fixed)	-15 °C +80 °C -40 °C +80 °C	-15 °C +80 °C -40 °C +80 °C	-10 °C +80 °C -40 °C +80 °C	-10 °C +80 °C -40 °C +80 °C
Useable as trailing cable	no	no	no	no
Halogen free acc. to	no	no	no	no
Flame retardant acc. to	IEC 60332-1-2	IEC 60332-1-2	IEC 60332-1-2	IEC 60 332-1-2
Oil-resistant	yes	yes	yes	yes









03





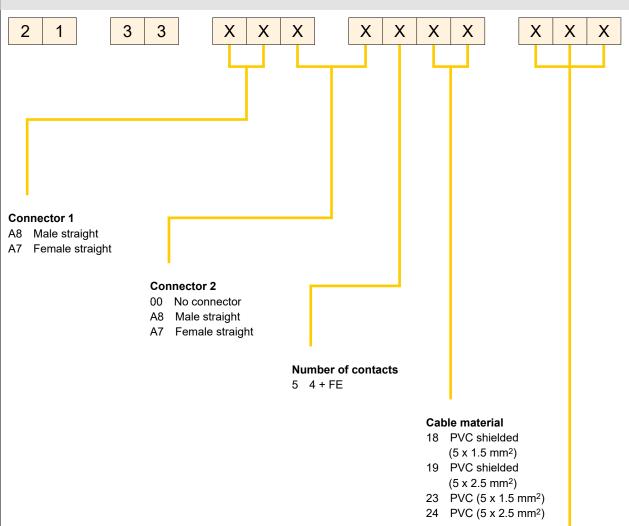
Male, 4 + FE



Female, 4 + FE



### Part number definition



### Preferred length\*

005 0.5 m 010 1.0 m 015 1.5 m 020 2.0 m 050 5.0 m 075 7.5 m 100 10.0 m

<sup>\*</sup> Other cable lengths on request!

# 7/8" system cables



Cable



Male, 2 + PE



Female, 2 + PE





Female, 4 poles





Female, 4 + PE



# Technical characteristics

### 7/8" system cables

	3 poles	(2+PE)	4 p	oles	5 poles (4+PE)		
	PVC	PUR	PVC	PUR	PVC	PUR	
Rated voltage	max. 300 V AC/DC	max. 300 V AC/DC	max. 300 V AC/DC	max. 300 V AC/DC	max. 300 V AC/DC	max. 300 V AC/DC	
Rated currrent / contact	max. 10 A @ +40 °C	max. 10 A @ +40 °C	max. 10 A @ +40 °C	max. 10 A @ +40 °C	max. 10 A @ +40 °C	max. 10 A @ +40 °C	
Screw locking	7/8", self securing	7/8", self securing	7/8", self securing	7/8", self securing	7/8", self securing	7/8", self securing	
Temperature range (working and storage)	-30 °C +80 °C	-30 °C +80 °C	-30 °C +80 °C	-30 °C +80 °C	-30 °C +80 °C	-30 °C +80 °C	
Degree of protection	IP67	IP67	IP67	IP67	IP67	IP67	
Number of wires / wire gauge	3 x 1.5 mm <sup>2</sup>	3 x 1.5 mm <sup>2</sup>	4 x 1.5 mm <sup>2</sup>	4 x 1.5 mm <sup>2</sup>	5 x 1.5 mm <sup>2</sup>	5 x 1.5 mm <sup>2</sup>	
Conductor insulation	PVC (bn, bu, gn/ye)	PP (bn, bu, gn/ye)	PVC (bn, wh, bu, bk)	PP (bn, wh, bu, bk)	PVC (bu, bk, wh, bn, gn/ye)	PP (bu, bk, wh, bn, gn/ye)	
Arrangement of insulated strands	84 x Ø 0.15 mm	84 x Ø 0.15 mm	84 x Ø 0.15 mm	84 x Ø 0.15 mm	84 x Ø 0.15 mm	84 x Ø 0.15 mm	
Sheath	PVC	PUR (UL, CSA)	PVC	PUR (UL, CSA)	PVC	PUR (UL, CSA)	
Sheath colour	grey	black	grey	black	grey	black	
Outer diameter	Ø 7.0 ± 0.2 mm	Ø 7.0 ± 0.2 mm	Ø 7.8 ± 0.2 mm	Ø 7.1 ± 0.2 mm	Ø 8.5 ± 0.2 mm	Ø 7.8 ± 0.2 mm	
Useable as trailing cable	no	yes	no	yes	no	yes	
Halogen free acc. to	-	DIN VDE 0472 part 815	_	DIN VDE 0472 part 815	-	DIN VDE 0472 part 815	
Flame retardant acc. to	DIN EN 60332-1-2	DIN EN 60332-1-2	DIN EN 60332-1-2	cUL20549	DIN EN 60332-1-2	cUL20549	
Oil-resistant	IEC 60811-2-1	DIN EN 60811-2-1	_	-	-	_	
	3 PE	Loading-Plan: PE——green-yellow—— 2 ——brown——— 3 ——blue	2 4	Loading-Plan:  1	5 1 1 1 PE	Loading-Plan:  1	

# 7/8" system cables





Male, 2 + PE



Female, 2 + PE



Male, 4 poles



Female, 4 poles



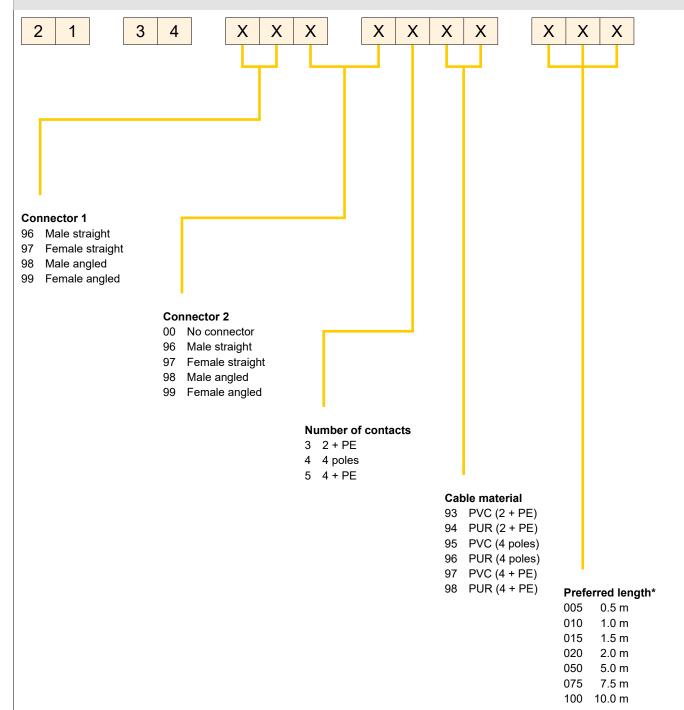
Male, 4 + PE



Female, 4 + PE



### Part number definition



<sup>\*</sup> Other cable lengths on request!

# M23 system cables, signal



Cable

## M23 signal encoder cable, straight, screw, ComLock, ComLock-S

### Technical characteristics **Features**

 Connector type M23 signal D-Sub male, angled Screw Locking type ComLock ComLock-S

• Number of contacts M23: 12 D-Sub: 9

• Degree of protection IP65 / IP67 when mated

### **Application**

- For harsh industrial environments
- For servo drives
- Standard in acc. to Lenze

### **Benefits**

- 360° shielding
- · Cables suitable for industry
- Drag chain compatible
- Fast lock technology ComLock-S compatible with Speedtec locking
- EMC conform

Cable structure	Copper conductor in acc. to DIN
	VDE 0205 d. 6

Fine wire BS 6360 cl. 6 IEC 60 228 cl. 6

Core structure 3 x (2 x 0.14) mm<sup>2</sup> + (2 x 0.5) mm<sup>2</sup>

Sheath material **PUR** 

Cable sheath diameter 9.8 mm

4 shielded pairs Shielding

Temperature range

-30 °C ... +80 °C moved fixed -40 °C ... +80 °C

Bending radius

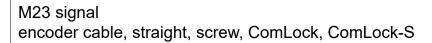
10 x cable diameter moved fixed 6 x cable diameter

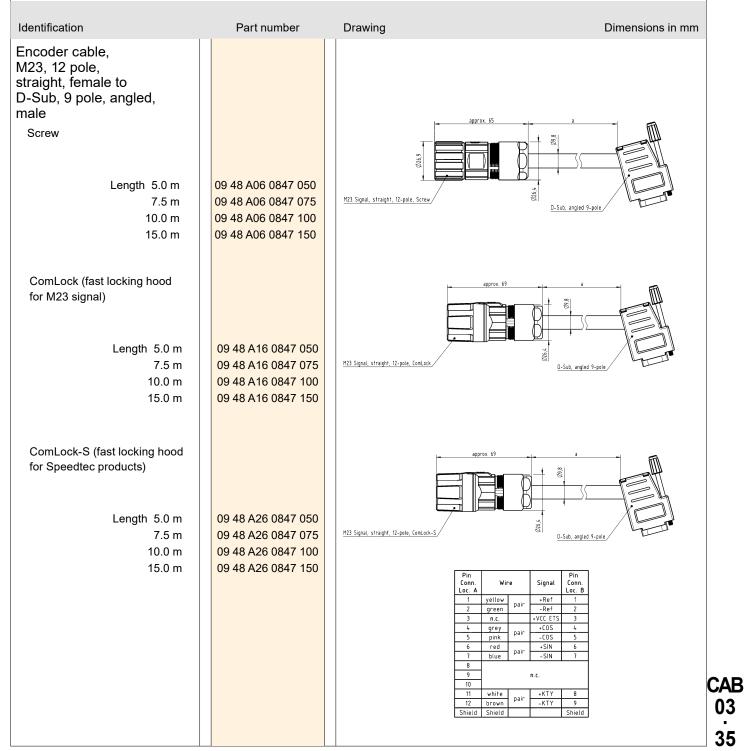
Colour Black

Lenze System



Cable





# M23 system cables, power



Cable



### M23 power motor cable, straight, screw, ComLock, ComLock-S

ComLock-S

**Application** 

For servo drives

• Standard in acc. to Lenze

• Drag chain compatible

locking

### Technical characteristics **Features**

Connector type	M23 power	Cable structure	Copper conductor in acc. to DIN VDE 0295 cl. 6
Locking type	Screw Coml ock		Fine wire IEC 60 228 cl. 6

			Core structure	(4 x 1.5 + (2 x 0.5)) mm <sup>2</sup>
Number of contacts	5 + PE			

**PUR** Sheath material • Degree of protection IP65 / IP67 when mated

Cable sheath diameter 11.5 mm

Shielding Shielded pair for the control • For harsh industrial environments

unit and additional overall cable

shielding

Temperature range

moved **Benefits** fixed

-30 °C ... +80 °C -40 °C ... +90 °C • 360° shielding

7.5 x cable diameter moved · Cables suitable for industry fixed 6 x cable diameter

Bending radius

Colour • Fast lock technology ComLock-S compatible with Speedtec Orange

• EMC conform System Lenze

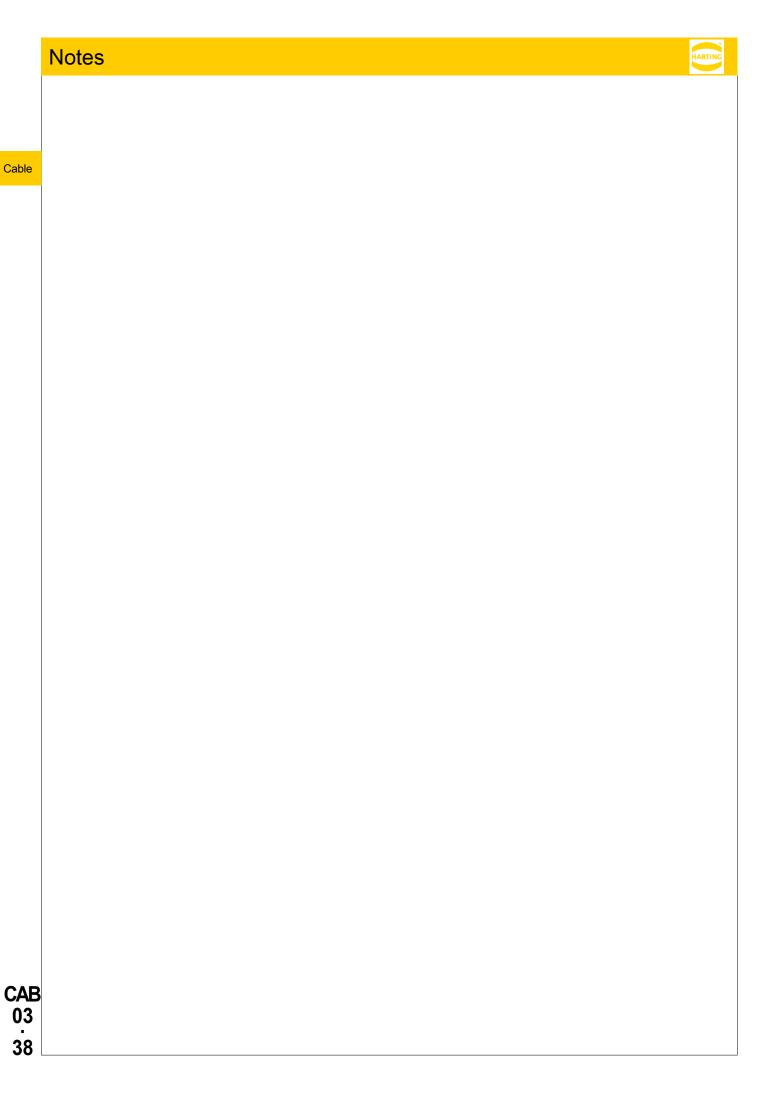


Cable



M23 power motor cable, straight, screw, ComLock, ComLock-S

Identification	Part number	Drawing	Dimensions in mm
Motor cable, M23, 5 + PE, straight, female		approx. 77 -   - a	
Length 5.0 m 7.5 m 10.0 m 15.0 m	21 37 010 0637 050 21 37 010 0637 075 21 37 010 0637 100 21 37 010 0637 150	M23 Power straight, 6-pole, Screw	Copper foil
ComLock (fast locking hood for M23 signal)  Length 5.0 m 7.5 m 10.0 m 15.0 m	21 37 020 0637 050 21 37 020 0637 075 21 37 020 0637 100 21 37 020 0637 150	approx. 77  a  M23 Power straight, 6-pole, ComLock	30 Copper foil
ComLock-S (fast locking hood for Speedtec products)  Length 5.0 m 7.5 m 10.0 m 15.0 m	21 37 030 0637 050 21 37 030 0637 075 21 37 030 0637 100 21 37 030 0637 150	1 white 801+ 0.2 Legz 2 brown 80- 0.2 Legz 4622	Copper foil  Pin Conn. Loc. B minal DIN 8-4 0.5 m/r minal DIN 8-4 0.5 m/r Pinal DIN 8-5
		5 2 V 0.2 4622 6 3 W 0.2 1et 0.5 3) consequence BE 0.22 Tet	minal DIN Pase 4. 15mm² rminal DIN Pase 4. 15mm² rminal DIN Pase 4. 15mm² rminal DIN Pase 4. 15mm² Pase 4. 15mm²



# Tools



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Tools

# Technical characteristics

compliant

RoHS

Identification	Conductor cross-section (mm²)	Part number	
Crimping tool, for turned male and female contact, 4 indent crimp in acc. to MIL 22 520/2-01	0.09 0.82	09 99 000 0501	
Locator, for single D-Sub standard contacts		09 99 000 0531	
Locator, for part number 09 99 000 0501 and Data- und Power contacts Y-coding		09 99 000 0618	
Locator, for <i>har</i> -speed M12 male contacts		09 99 000 0525	
Locator, for <i>har</i> -speed M12 female contacts		09 99 000 0635	
Locator, for M12 male contacts, 21 01 100 9020		61 03 600 0023	\$ 13 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Locator, for M12 female contacts, 21 01 100 9025		09 99 000 0637	

# Crimping tool



Identification	Conductor cross-section (mm²)	Part number	
Crimping tool, for power contacts	0.5 2.5	09 99 000 0509	
Locator, for part number 09 99 000 0509		09 99 000 0638	

# Crimping tool



Identification	Wrench size	Part number	
Crimping tool, for flange Head openable		09 99 000 0647	
Crimping insert, for part number 09 99 000 0647	6.5 7 7.5 8 8.5 9 9.5 10	09 99 000 0652 09 99 000 0648 09 99 000 0650 09 99 000 0653 09 99 000 0654 09 99 000 0655	



Identification	Conductor cross-section (mm²)	Part number	
Circular connectors M23, Crimping tool, for M23 signal contacts, Pack contents: incl. locator, Handling instruction	0.08 2.5	09 99 000 0890	
Circular connectors M23, Crimping tool, for M23 power contacts, for M23 signal contacts, Pack contents: incl. locator, Handling instruction Not to be used for 0.6 mm contacts.	0.14 4	09 99 000 0896	
Circular connectors M23, Crimping tool, for shielded bushing		09 99 000 0898	
Circular connectors M23, Locator, for 0.6 mm data contacts, for crimping tool 09 99 000 0890		09 99 000 0961	The second secon

# Assembly tool



Identification	Wrench size	Part number	Drawing (dimensions in mm)
Assembly tool, for flange		09 99 000 0639	9=
Dynamometric screwdriver, for M12 Power	18	09 99 000 0659	29
Dynamometric screwdriver, for M8	9 13	09 99 000 0380 09 99 000 0660	78
Dynamometric screwdriver, for M12-S	13	09 99 000 0382	
Dynamometric screwdriver, for M12-L	17	09 99 000 0384	
Dynamometric screwdriver, for M12 Slim Design	15	09 99 000 0646	
Dynamometric screwdriver, for 7/8"	22	09 99 000 0395	
Assembly tool, for preLink® terminal module		20 82 000 9901	

Identification	Conductor cross-section (mm²)	Part number	
Stripping tool	0.08 10	09 99 000 0159	
Stripping tool, Pack contents: Stripping blade set, Straight	0.03 16	09 99 000 0980	
Stripping blade set, Straight		09 99 000 0981	Jo Jo
Stripping blade set, Oval	10 16	09 99 000 0982	
Stripping blade set, V-shape		09 99 000 0983	10.50

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