binder

M8-D

The Connector Programme

www.binder-connector.de

SPECIALIST FOR
CIRCULAR CONNECTORS

M8 FOR SPACE SAVING INSTALLATIONS

As an alternative to M12, there are now also M8 connectors for data transmission in network cabling.

M8 CONNECTORS WITH D-CODING

M8 connectors require up to thirty percent less installation space than comparable M12 connectors. The M8 D-coded connectors are predestined for Industrial Ethernet applications. Users who want to future-proof their network are ideally equipped with these Power over Ethernet plus (PoE+) capable connectors. Communication protocols such as Ethernet/IP or Profinet according to IEEE 802.3 are reliable via the twisted pair cables of category Cat5e. The 4-pole connectors enable a secure network connection of actuators and sensors with data rates of up to 100 Mbit/s. In addition, D-coded connectors can also supply power to those devices that require a higher power of up to 30 watts.

The small and compact connectors with D-coding are standardised according to the type specification for M8 connectors with screw locking for power supply and data transmission DIN EN 61076-2-114. They include 360 degree shielding and are available as field-wireable, overmoulded or panel mount connectors. Four symmetrically arranged, gold-plated brass contacts can be loaded with a rated voltage of 63 V DC and a rated current of 4 A. Field-wireable versions are available with two cable outlets of 4 to 5.5 mm and 5 to 8 mm, and panel mount parts with dip solder contacts in straight and angled versions. The M8-D connectors comply with protection class IP67 and can be used in a temperature range of -40°C to +80°C in an unmoved state.

M8-D Future In the field of automation technology data transmission, the M8-D product portfolio is being further expanded. New versions are already in development and customised variants are available on request.
The binder connectors conform to the guideline of the Profinet User Organisation (PNO).
D-coded connectors for Profinet offer decisive advantages in network communication. Field devices can be connected to each other regardless of the manufacturer and harmonised with other standards. Any topology can be set up with it and communicate via cable or Industrial WLAN. Network monitoring is possible via integrated diagnostics, even from remote locations with remote access. Fast start-up and continuous communication are guaranteed even with a large number of participants. This ensures high system availability and fast data exchange. Industrial communication will continue to be very important in the future. With high-quality and reliable M8 D-coded products from binder, data communication is ideally equipped for the future.

FEATURES

- Screw locking according to DIN EN 61076-2-114
- 4 contacts symmetric
- Data transmission up to 100 Mbit/s
- Field-wireable, moulded, straight and angled panel mount connectors
- Degree of protection IP67
- 360 degree shielding
- Cat5e
- Data transmission and power supply
- 30 percent less installation space than M12
- Ethernet applications, Profinet surroundings
- Future-proof network PoE+

SECTORS AND FIELDS OF APPLICATION

M8-D circular connectors are needed to automate production plants, buildings or infrastructure facilities. They are used for data communication to allow controllers and production control computers or sensors and actuators to communicate with each other via protocols such as Ethernet/IP or Profinet. Other applications are for image processing systems, sensors, Ethernet switches and gateway devices.

- Automation technology
- Image processing systems
- Data communication
- Ethernet switches
- Gateway devices
- Sensor technology

PRODUCT OVERVIEW

M8 Automation Technology
D-Coding 818 Series

- Connectors with screw locking acc. to DIN EN 61076-2-114
- 4 contacts with symmetrical arrangement
- Data transmission up to 100 Mbit/s
- Degree of protection IP67
- CAT5e
- 360 degree shielding

M8-D

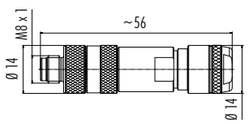
818 Series

CONTENTS

binder

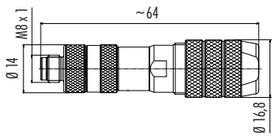
- Field-wireable, moulded, straight and angled panel mount connectors
- Ethernet applications, Profinet surroundings
- DIN EN 61076-2-114
- 30 percent less installation space than M12
- Data transmission and power supply
- Future-proof network PoE+

Male cable connector, screw clamp termination, iris type spring, shieldable



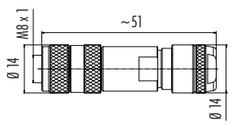
Contacts	Cable outlet	Ordering-No.
4	4–5.5 mm	99 3369 100 04

Male cable connector, screw clamp termination, iris type spring, shieldable



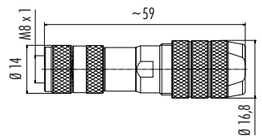
Contacts	Cable outlet	Ordering-No.
4	5–8 mm	99 3369 600 04

Female cable connector, screw clamp termination, iris type spring, shieldable



Contacts	Cable outlet	Ordering-No.
4	4–5.5 mm	99 3368 100 04

Female cable connector, screw clamp termination, iris type spring, shieldable

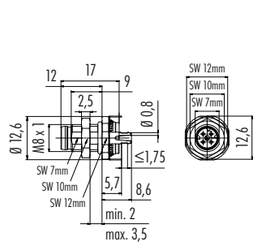


Contacts	Cable outlet	Ordering-No.
4	5–8 mm	99 3368 600 04

Number of contacts	4
Connector locking system	screw
Termination	screw
Wire gauge	solder AWG 24 (0,25 mm²), screw AWG 26–20 (0,14–0,5 mm²)
Cable outlet	4–5.5 mm, 5–8 mm
Degree of protection	IP67
Mechanical operation	> 100 mating cycles
Upper temperature	+ 85 °C
Lower temperature	– 25 °C
Rated voltage	63 V
Rated impulse voltage	1500 V
Pollution degree	3
Overvoltage categorie	II
Material group	III
Rated current (40 °C)	4 A
Material of contact	CuZn (brass)
Contact plating	Au (gold)
Material of contact body	PA
Material of housing	CuZn (brass nickel plated)
Material of locking	CuZn (brass nickel plated)

Male panel mount connector, front fastened, dip solder, with shielding sheet

Drilling scheme see page 15

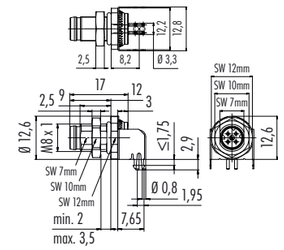


Thickness of PCB: ≤1,75 mm
Hexagon nut enclosed loose

Contacts	Ordering-No.
4	86 6321 1120 00404

Male angled panel mount connector, front fastened, dip solder, with shielding sheet

Drilling scheme see page 15

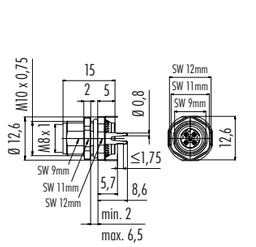


Thickness of PCB: ≤1,75 mm
Hexagon nut enclosed loose

Contacts	Ordering-No.
4	86 6321 1121 00404

Female panel mount connector, front fastened, dip solder, with shielding sheet

Drilling scheme see page 15

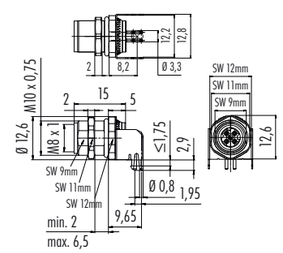


Thickness of PCB: ≤1,75 mm
Hexagon nut enclosed loose

Contacts	Ordering-No.
4	86 6620 1120 00404

Female angled panel mount connector, front fastened, dip solder, with shielding sheet

Drilling scheme see page 15

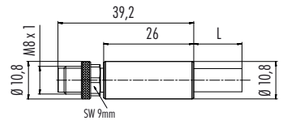


Thickness of PCB: ≤1,75 mm
Hexagon nut enclosed loose

Contacts	Ordering-No.
4	86 6620 1121 00404

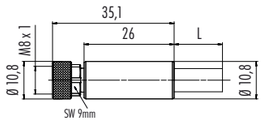
Number of contacts	4
Connector locking system	screw
Termination	dip solder
Wire gauge	—
Cable outlet	—
Degree of protection	IP67
Mechanical operation	> 100 mating cycles
Upper temperature	+ 85 °C
Lower temperature	– 40 °C
Rated voltage	63 V
Rated impulse voltage	1500 V
Pollution degree	3
Overvoltage categorie	II
Material group	III
Rated current (40 °C)	4 A
Material of contact	pin CuZn (brass), socket CuSn (bronze)
Contact plating	Au (gold)
Material of contact body	PA
Material of housing	CuZn (brass nickel plated)
Material of locking	zinc diecasting nickel plated

Male cable connector, moulded,
Ethernet cable



Contacts	Cable length	Ordering-No. [2]
4	2 m	77 5429 0000 50704–0200
	5 m	77 5429 0000 50704–0500

Female cable connector, moulded,
Ethernet cable



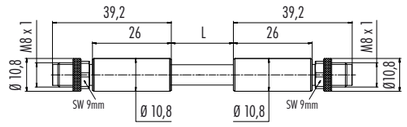
Contacts	Cable length	Ordering-No. [2]
4	2 m	77 5430 0000 50704–0200
	5 m	77 5430 0000 50704–0500

Specifications of cable	4
Wire gauge mm² [1]	4 x AWG 22
Material jacket	PUR
Insulation wire	Polyolefin
Design of wire (mm)	7 x AWG 22
Cable jacket Ø (mm)	6.7
Resistance of wire	55 Ω/Km (20 °C)
Temperature range (cable in move)	– 20 °C /+ 60 °C
Temperature range (static cable)	– 40 °C /+ 80 °C
Bending radius (cable in move)	min. 15 x d
Bending radius (static cable)	min. 5 x d
Bending cycles (at 10 x D)	2 Mio.
Permitted acceleration	2 m/s²
Traverse path horizontal 5 m/s²	5 m
Traverse path vertical 5 m/s²	5 m
Traverse speed	At 5 m horizontal traverse up to 200 m/min.
Remark	—
Approval	PROFINET, UL/CSA
UL-style	AWM 20549

Number of contacts	4
Connector locking system	screw
Termination	crimp, moulded
Wire gauge	AWG 22 (0.34 mm²)
Cable outlet	4–5.5 mm, 5–8 mm
Degree of protection	IP67
Mechanical operation	> 100 mating cycles
Upper temperature	+ 85 °C
Lower temperature	– 25 °C
Rated voltage	63 V
Rated impulse voltage	1500 V
Pollution degree	3
Overvoltage categorie	II
Material group	III
Rated current (40 °C)	4 A
Material of contact	CuZn (brass)
Contact plating	Au (gold)
Material of contact body	PUR
Material of housing	PUR
Material of locking	CuZn (brass nickel plated)

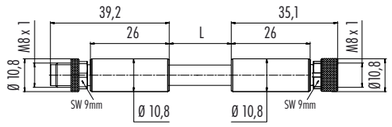
[1] Comparable AWG conductors see technical information. [2] Standard cable length is 2 m/5 m. Other lengths upon request.

Male cable connector M8 x 1 –
Male cable connector M8 x 1



Contacts	Cable length	Ordering-No. [2]
4	0.3 m	77 5429 5429 50704-0030
	0.6 m	77 5429 5429 50704-0060
	2 m	77 5429 5429 50704-0200
	5 m	77 5429 5429 50704-0500

Male cable connector M8 x 1 –
Female cable connector M8 x 1



Contacts	Cable length	Ordering-No. [2]
4	0.3 m	77 5430 5429 50704-0030
	0.6 m	77 5430 5429 50704-0060
	2 m	77 5430 5429 50704-0200
	5 m	77 5430 5429 50704-0500

Specifications of cable	4
Wire gauge mm² [1]	4 x AWG 22
Material jacket	PUR
Insulation wire	Polyolefin
Design of wire (mm)	7 x AWG 22
Cable jacket Ø (mm)	6.7
Resistance of wire	55 Ω/Km (20 °C)
Temperature range (cable in move)	– 20 °C /+ 60 °C
Temperature range (static cable)	– 40 °C /+ 80 °C
Bending radius (cable in move)	min. 15 x d
Bending radius (static cable)	min. 5 x d
Bending cycles (at 10 x D)	2 Mio.
Permitted acceleration	2 m/s²
Traverse path horizontal 5 m/s²	5 m
Traverse path vertical 5 m/s²	5 m
Traverse speed	At 5 m horizontal traverse up to 200 m/min.
Remark	—
Approval	PROFINET, UL/CSA
UL-style	AWM 20549

Number of contacts	4
Connector locking system	screw
Termination	crimp, moulded
Wire gauge	AWG 22 (0.34 mm²)
Cable outlet	4–5.5 mm, 5–8 mm
Degree of protection	IP67
Mechanical operation	> 100 mating cycles
Upper temperature	+ 85 °C
Lower temperature	– 25 °C
Rated voltage	63 V
Rated impulse voltage	1500 V
Pollution degree	3
Overvoltage categorie	II
Material group	III
Rated current (40 °C)	4 A
Material of contact	CuZn (brass)
Contact plating	Au (gold)
Material of contact body	PUR
Material of housing	PUR
Material of locking	Zink Druckguss vernickelt/zinc diecasting nickel plated

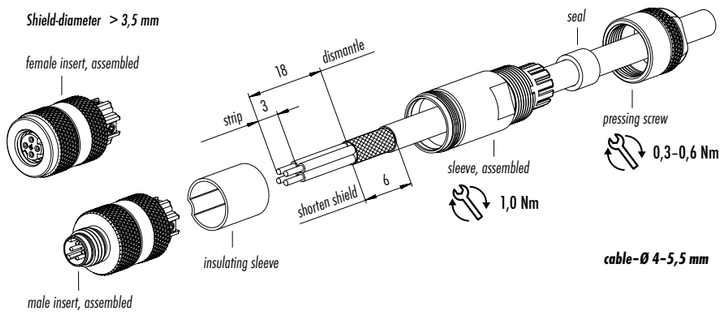
[1] Comparable AWG conductors see technical information. [2] Standard cable length is 2 m/5 m. Other lengths upon request.

Assembly instruction

Cable connectors, shieldable, screw clamp connection, iris type spring

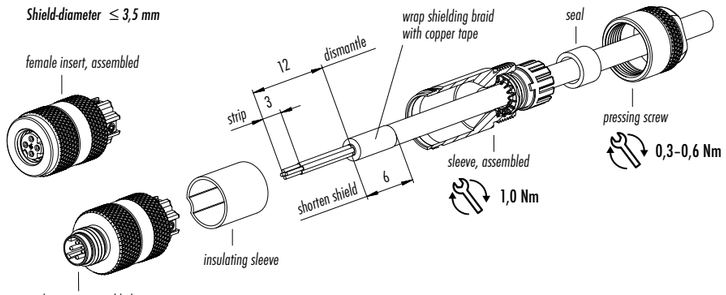
Shielding braid diameter > 3,5 mm

1. *Bead pre-assembled housing to cable (consisting of: assembled sleeve, seal and pressing screw).*
2. *Dismantle cable, strip single wires, shorten shielding braid. (Wrap with copper tape if necessary)*
3. *Screw on single wires.*
4. *Screw sleeve to male/female insert.*
5. *Tighten pressing screw.*



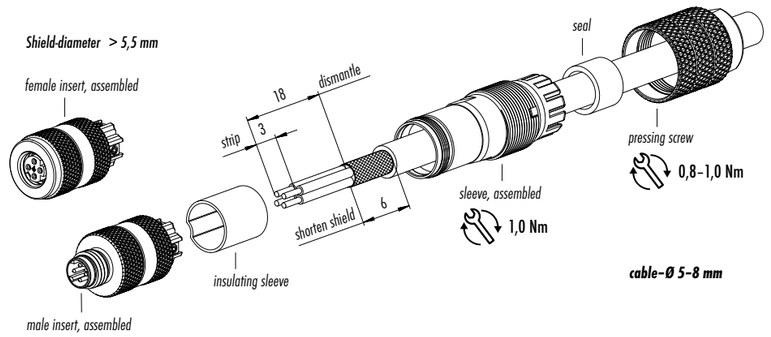
Shielding braid diameter ≤ 3,5 mm

1. *Bead pre-assembled housing to cable (consisting of: assembled sleeve, seal and pressing screw).*
2. *Dismantle cable, strip single wires, shorten shielding braid, revert to cable and wrap with copper tape.*
3. *Screw on single wires.*
4. *Screw sleeve to male/female insert.*
5. *Tighten pressing screw.*



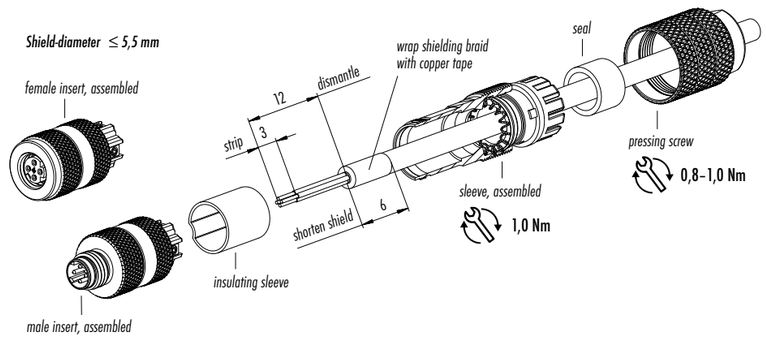
Shielding braid diameter > 5,5 mm

1. *Bead pre-assembled housing to cable (consisting of: assembled sleeve, seal and pressing screw).*
2. *Dismantle cable, strip single wires, shorten shielding braid. (Wrap with copper tape if necessary)*
3. *Screw on single wires.*
4. *Screw sleeve to male/female insert.*
5. *Tighten pressing screw.*



Shielding braid diameter ≤ 5,5 mm

1. *Bead pre-assembled housing to cable (consisting of: assembled sleeve, seal and pressing screw).*
2. *Dismantle cable, strip single wires, shorten shielding braid, revert to cable and wrap with copper tape.*
3. *Screw on single wires.*
4. *Screw sleeve to male/female insert.*
5. *Tighten pressing screw.*

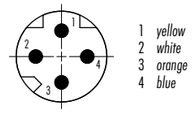


Contact arrangements

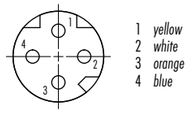
Male insert (mating side)

Female insert (mating side)

4 contacts



1 *yellow*
2 *white*
3 *orange*
4 *blue*

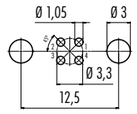


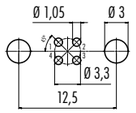
1 *yellow*
2 *white*
3 *orange*
4 *blue*

Drilling schemes male insert (PCB), shielding sheet

Drilling schemes female insert (PCB), shielding sheet

4 contacts



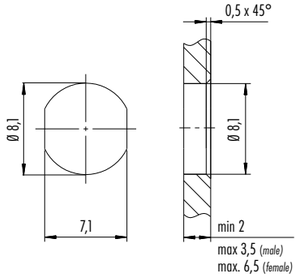


Panel cut out [1)]

Panel mount connectors, front fastened

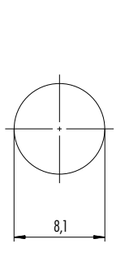
1st Installation proposal

With flats as anti-rotation device



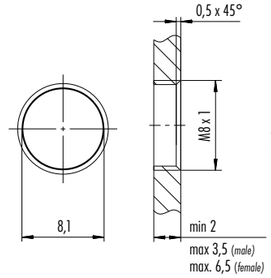
2nd Installation proposal

With bore hole



3rd Installation proposal

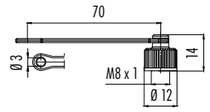
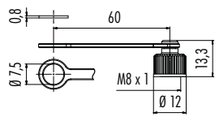
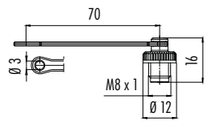
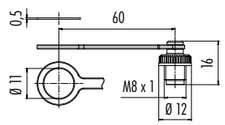
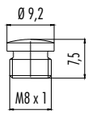
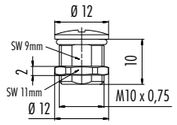
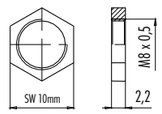
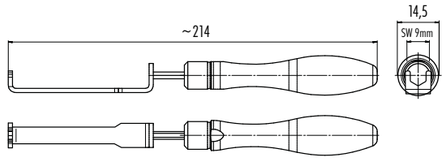
With thread to screw in



Tightening moment

Metal housing	1 Nm
Plastic housing	1 Nm

[1)] **Attention:** Installation proposals are valid for M8-D panel mount connectors with thread.

Description	Drawing	Ordering-No.
Protection cap for male panel mount connector 		08 2842 000 000
Protection cap for male panel mount connector, front fastened 		08 2972 000 000
Protection cap for female panel mount connector 		08 2843 000 000
Protection cap for female panel mount connector, front fastened 		08 2973 000 000
Protection cap for female connectors 		08 2441 000 000
Dummy plug M10 x 0.75 		08 3130 000 000
Hexagonal nut M8 x 0.5 		01 0769 001
Mounting tool for M8 locking ring, 0.4 Nm 		07 0085 000

M8-D

The Connector Programme

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11/2022

Ordering-No. W M8-D EN 2023

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