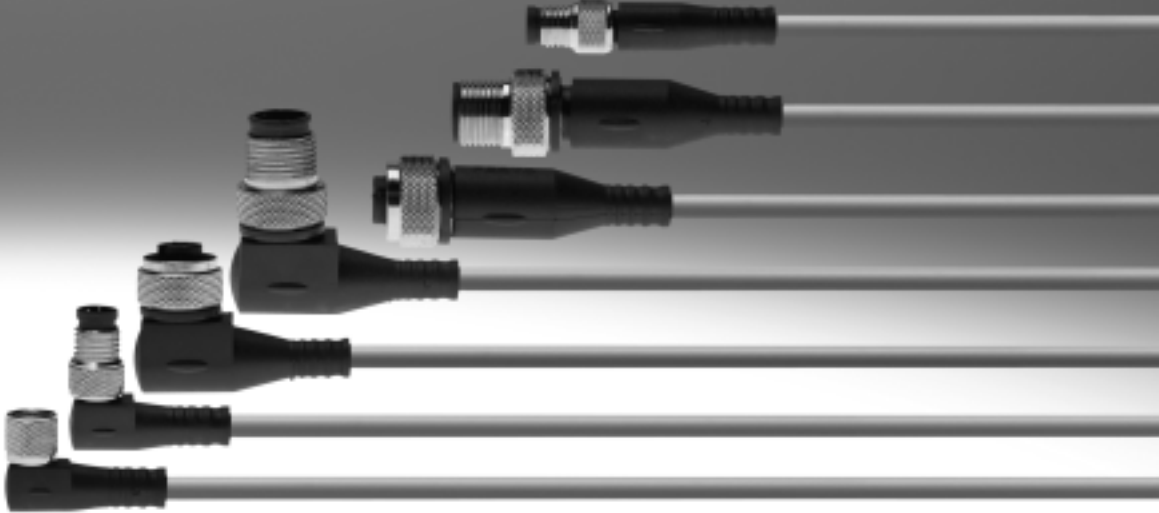


Connecting cables, universal



Connecting cables, universal

Key features

FESTO

Cable characteristic

The connecting cables NEBU can be configured and ordered using a modular system. A range of characteristics can therefore be defined.

These include, for example:

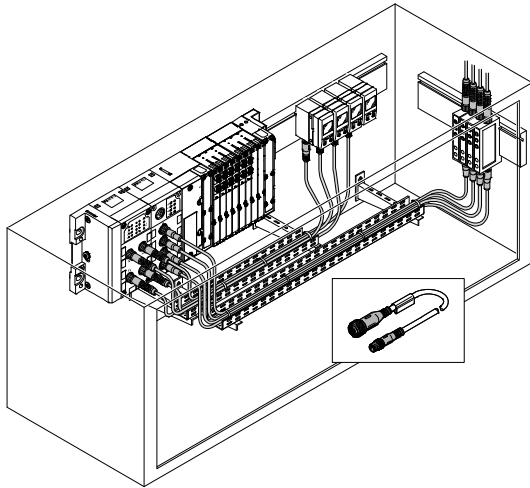
- Electrical connection
- Cable characteristic
- Length
- Number of pins/wires

The cable characteristic indicates the resistance of the connecting cable to the mechanical load.

There are four qualities:

- Basic
- Standard
- Suitable for energy chains
- Suitable for robot applications

Cable characteristic: basic

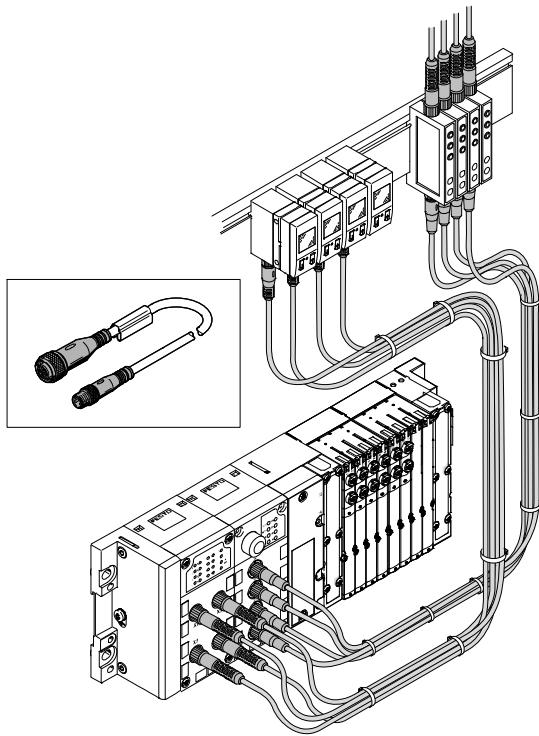


Basic applications are characterised by fixed cable installation with no mechanical loads. The connecting cable is not constantly moved (kinked or twisted). The cable sheath for the connecting cables is usually made of PVC.

Code P

- The connecting cable is tested for resistance to bending according to the Festo standard; test conditions are available on request.

Cable characteristic: standard



Standard applications are characterised by fixed cable installation or small to medium mechanical loads. The connecting cable can even be used for simple applications with energy chains with larger radii. The cable sheath of the connecting cables is made of polyurethane, free of halogen, oil resistant and optimised for installation in contact with pneumatic tubing; free of phosphoric acid ester.

Code K

- The connecting cable is tested for resistance to bending according to the Festo standard; test conditions are available on request.
- The connecting cable has been tested on an energy chain over 5 million cycles and at a bending radius of 75 mm.

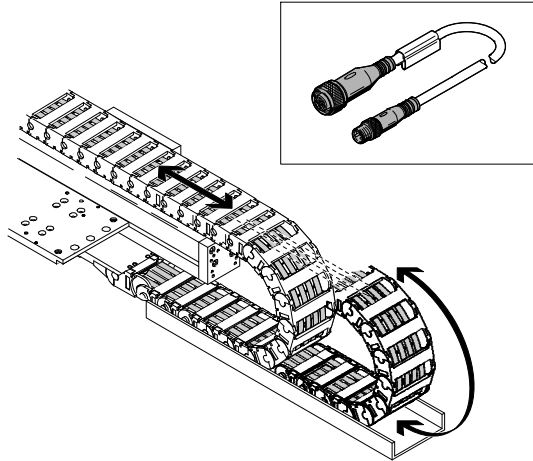
Connecting cables, universal

Key features

FESTO

Cable characteristic

Cable characteristic: suitable for energy chains



Energy chain applications involve high mechanical loads, particularly if very small radii are required.

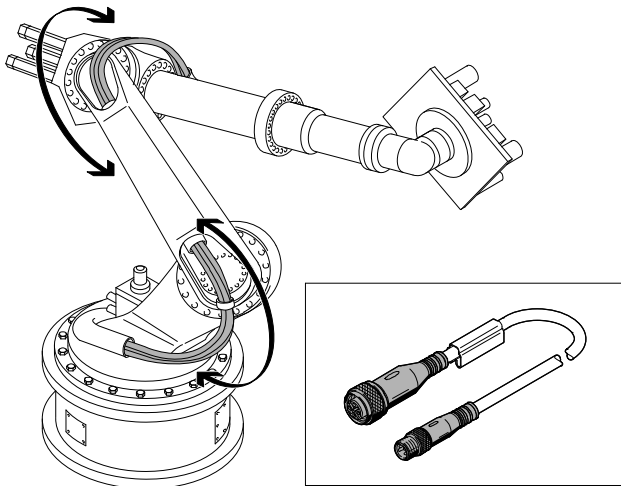
The connecting cable can be used in a setting where it is constantly subjected to bending.

The cable sheath of the connecting cables is made of polyurethane, free of halogen, oil resistant and optimised for installation in contact with pneumatic tubing; free of phosphoric acid ester.

Code E

- The connecting cable is tested for resistance to bending according to the Festo standard; test conditions are available on request.
- The connecting cable has been tested on an energy chain over 5 million cycles and at a bending radius of 75 mm.
- The connecting cable has been tested on an energy chain over 5 million cycles and at a bending radius of 28 mm.

Cable characteristic: suitable for robot applications



Robot applications involve high mechanical loads that are primarily caused by torsion (twisting).

The cable sheath of the connecting cables is made of polyurethane, free of halogen, oil resistant and optimised for installation in contact with pneumatic tubing; free of phosphoric acid ester.

Code R

- The connecting cable is tested for resistance to bending according to the Festo standard; test conditions are available on request.
- The connecting cable has been tested on an energy chain over 5 million cycles and at a bending radius of 75 mm.
- The connecting cable has been tested on an energy chain over 5 million cycles and at a bending radius of 28 mm.
- The connecting cable has been tested for torsional resistance over more than 0.3 million cycles at $\pm 270^\circ/0.1$ m.

Connecting cables, universal

Key features

FESTO

Connection technology version

The type of plug for the connecting cable can be selected (e.g. angled or straight).

The rotatable version is a special version.

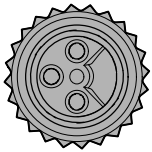
With an angled socket, the cable outlet can be rotated 360° in increments of 15°.

Benefit:

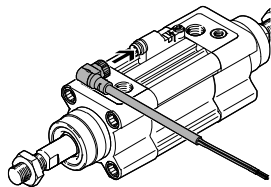
The cable outlet can be rotated to the optimum position in tight installation conditions.

The rotatable plug is not designed to be constantly adjusted.

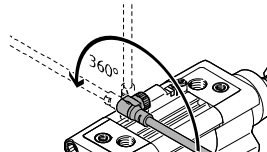
Assembly



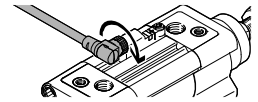
Observe the orientation of the pins.



Connect the plug to the socket.



Adjust the cable outlet.



Tighten the union nut.

Connecting cables, universal

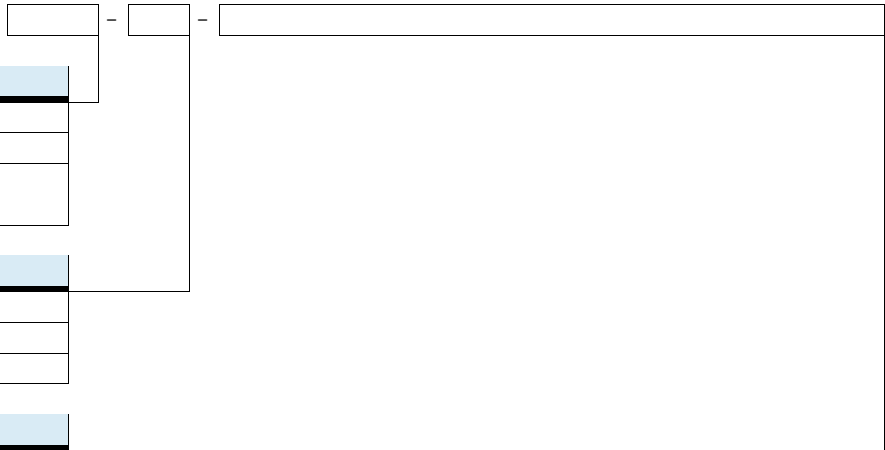
Product range overview

FESTO

| Function | Version | Type | Connection technology (on the right) | Cable characteristic | Length | → Page/ Internet |
|-----------------------------|--|-------------------------------------|---|--|--|---------------------|
| Electrical connecting cable | Electrical connection (on the left), open cable end | | | | | |
| | 5-pin | NEBU-LE | Plug | Basic, standard, suitable for energy chains, suitable for robot applications | 0.1 ... 30 m | 8 |
| | Electrical connection (on the left), socket M8 | | | | | |
| | 3-pin | NEBU-M8 SIM-M8 | Plug, open cable end | Basic, standard, suitable for energy chains, suitable for robot applications | 0.1 ... 30 m | 13 |
| | 4-pin | NEBU-M8 SIM-M8 | Plug, open cable end | Basic, standard, suitable for energy chains, suitable for robot applications | 0.1 ... 30 m | 20 |
| | Electrical connection (on the left), socket M12 | | | | | |
| | 4-pin | SIM-M12-RS-3 | Open cable end | Resistant to welding spatter | 3 m | 26 |
| | 5-pin | NEBU-M12G5 NEBU-M12W5 SIM-M12 | Plug, open cable end | Basic, standard, suitable for energy chains, suitable for robot applications | 0.1 ... 30 m | 29 |
| | 8-pin | NEBU-M12-W8 SIM-M12-8 KM12-8 | Plug, open cable end | Standard | 2 m, 5 m, 10 m, 15 m, 20 m, 25 m | 37 |
| | Electrical connection (on the left), socket G7/8 | | | | | |
| | 5-pin | NEBU-G78 | Open cable end | Standard | 2 m | 42 |
| | Electrical connection (on the left), clip | | | | | |
| | 3-pin | SIM-K | Open cable end | Standard | 2.5 m, 5 m, 10 m | 44 |
| | 4-pin | SIM-K-4 | Open cable end | Standard | 2.5 m, 5 m | 47 |

Connecting cables NEBU, universal

Type code



Connection technology on the right

| | |
|-----|--|
| LE | Open cable end |
| M8 | Plug with connecting thread M8 |
| M12 | Plug with connecting thread M12, A-coded |

Connection technology version, on the right

| | |
|---|----------------|
| | Open cable end |
| G | Straight |
| W | Angled |

Number of pins/wires (on the right)

| | |
|---|-------|
| 2 | 2-pin |
| 3 | 3-pin |
| 4 | 4-pin |
| 5 | 5-pin |
| 8 | 8-pin |

Connecting cables, open cable end

Technical data

**Connecting cable
NEBU-LE**

- Connecting cable for connecting inputs/outputs
- Pre-assembled
- Cable lengths 0.1 ... 30 m
- 3, 4, 5 wires
- Plug M8 or M12



| General technical data | |
|----------------------------------|---|
| Conforms to standard | EN 61076-2-104 EN 61076-2-101 Wire colours and connection numbers to EN 60947-5-2 |
| Cable designation | With 2x inscription label holders |
| Degree of protection to EN 60529 | IP65, IP68, IP69K |
| Note on degree of protection | In assembled state |

| Technical data – Electrical connection 1 | | | |
|--|-------------------|---|---|
| Function | Field device side | | |
| Connection type | Cable | | |
| Connection technology | Open end | | |
| Number of pins/wires | 3 | 4 | 5 |
| Assigned pins/wires | 3 | 4 | 5 |

| Technical data – Electrical components | | | | | | |
|--|--------|-----------|----------|------------|-----------|----------|
| Electrical connection 2 | | Plug M8x1 | | Plug M12x1 | | |
| | | 3-pin | 4-pin | 3-pin | 4-pin | 5-pin |
| Operating voltage range | [V DC] | 0 ... 60 | 0 ... 30 | 0 ... 250 | 0 ... 250 | 0 ... 60 |
| | [V AC] | 0 ... 60 | 0 ... 30 | 0 ... 250 | 0 ... 250 | 0 ... 60 |
| Surge resistance | [kV] | 1.5 | 0.8 | 2.5 | 2.5 | 1.5 |
| Current rating | [A] | 3 | 3 | 4 | 4 | 4 |

| Technical data – Cable | | | |
|---------------------------------|-------------------------------------|--|--|
| Cable characteristic | Code -P- | Basic | |
| | Code -K- | Standard | |
| | Code -E- | Suitable for energy chains | |
| | Code -R- | Suitable for robot applications | |
| Cable test conditions | Bending strength: to Festo standard | | |
| | Test conditions on request | | |
| | Cable characteristic | Basic | – |
| | | Standard | Energy chain: 5 million cycles, bending radius 75 mm |
| | | Suitable for energy chains | Energy chain: 5 million cycles, bending radius 28 mm |
| Suitable for robot applications | | Energy chain: 5 million cycles, bending radius 28 mm | |
| | | Torsional resistance more than 300,000 cycles, ±270°/0.1 m | |
| Cable diameter | [mm] | 4.5 | |
| Cable diameter tolerance | [mm] | ±0.1 | |
| Cable composition | [mm ²] | 3x 0.25 4x 0.25 5x 0.25 | |
| Conductor nominal cross section | [mm ²] | 0.25 | |

Connecting cables, open cable end

Technical data

| Technical data – Electrical connection 2 | | | | | |
|--|----------------------------------|---|-----------------------------------|---|---|
| Function | Controller side | | | | |
| Design | Round | | | | |
| Connection type | Plug | | | | |
| Cable outlet | Straight | | | | |
| Connection technology | M8x1, A-coded, to EN 61076-2-104 | | M12x1, A-coded, to EN 61076-2-101 | | |
| Number of pins/wires | 3 | 4 | 3 | 4 | 5 |
| Assigned pins/wires | 3 | 4 | 3 | 4 | 5 |
| Type of mounting | Screw-type lock | | | | |

| Materials | |
|-------------------------|-------------------------------|
| Housing | TPE-U(PUR) |
| Housing colour | Black |
| Cable sheath | TPE-U(PUR) |
| Cable sheath colour | Grey |
| Insulating sheath | PP |
| Screw-type lock | Nickel-plated brass |
| Note on materials | RoHS-compliant |
| | Free of copper and PTFE |
| | Free of halogen |
| | Free of phosphoric acid ester |
| Special characteristics | Oil resistant |

| Operating and environmental conditions | | |
|--|------|---|
| Ambient temperature | [°C] | -25 ... +70 |
| Ambient temperature with flexible cable installation | [°C] | -5 ... +70 |
| Corrosion resistance class CRC ¹⁾ | | 2 |
| CE marking (see declaration of conformity) ²⁾ | | In accordance with EU Low Voltage Directive |
| Contamination level | | 3 |

- 1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
- 2) Additional information www.festo.com/sp → Certificates.

Connecting cables, open cable end

Technical data

| Circuitry (socket view) | | | | | |
|--|-----|---------------------------|-----|-------------------------|--------------|
| Electrical connection 1 | Pin | Wire colour ¹⁾ | Pin | Electrical connection 2 | |
| Electrical connection, open cable end, 3-wire – plug, 3-pin | | | | | |
| - | 1 | BN | 1 | Plug M8 | Plug M12 |
| | 2 | WH | - | | |
| | 3 | BU | 3 | | |
| | 4 | BK | 4 | | |
| Electrical connection, open cable end, 4-wire – plug, 4-pin | | | | | |
| - | 1 | BN | 1 | Plug M8 | Plug M12 |
| | 2 | WH | 2 | | |
| | 3 | BU | 3 | | |
| | 4 | BK | 4 | | |
| Electrical connection, open cable end, 5-wire – plug, 5-pin, M12 | | | | | |
| - | - | BN | 1 | | |
| | - | WH | 2 | | |
| | - | BU | 3 | | |
| | - | BK | 4 | | |
| | - | GY | 5 | | |

1) To IEC 757

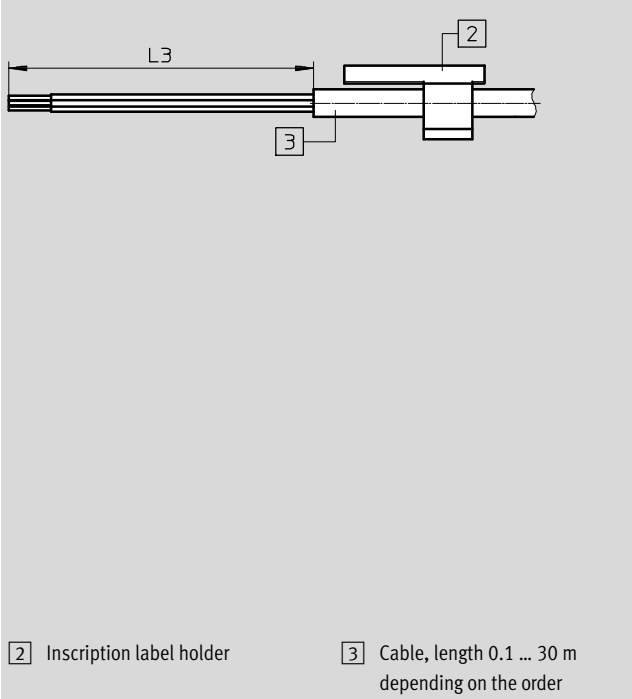
Connecting cables, open cable end

Technical data

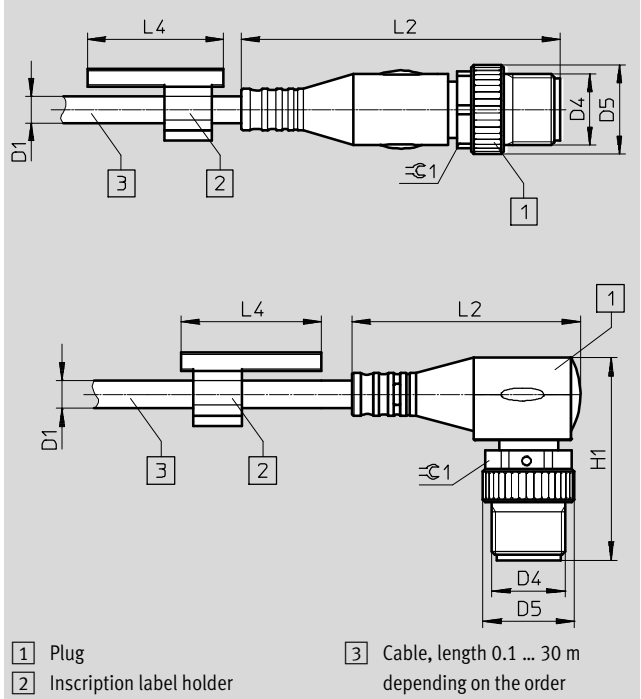
Dimensions

Download CAD data → www.festo.com

Connection technology on the left



Connection technology on the right

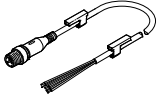

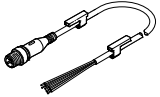


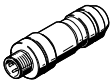
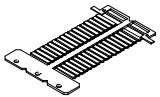

| | |
|-----------------------------------|----|
| Connection technology on the left | L3 |
| Open end | 50 |

| Connection technology on the right | D1 | D4 | D5 | L2 | L4 | H1 | ⌀1 |
|------------------------------------|-----|-------|-----|------|----|------|----|
| Straight plug | 4.5 | M8x1 | 9.6 | 41.1 | 23 | - | 9 |
| | 4.5 | M12x1 | 15 | 54.5 | 23 | - | 13 |
| Angled plug | 4.5 | M8x1 | 9.6 | 26.9 | 23 | 24 | 9 |
| | 4.5 | M12x1 | 15 | 37.5 | 23 | 33.2 | 13 |

Connecting cables, open cable end

Technical data

| Ordering data | | | | | | | |
|---|----------------------|------------------|--------------------|----------------------------------|--------------------|----------------|---|
| | Cable characteristic | Cable length [m] | Outlet orientation | Special features | Product weight [g] | Part no. | Type |
| Open cable end, 3-wire – plug, 3-pin, M12 | | | | | | | |
|  | Standard | 1 | Straight | Without inscription label holder | 35 | 8091515 | NEBU-LE3-K-1-N-M12G3  |
| Open cable end, 5-wire – plug, 5-pin, M12 | | | | | | | |
|  | Standard | 1 | Straight | – | 41 | 569840 | NEBU-LE5-K-1-M12G5 |

| Ordering data – Accessories | | | | | | | |
|---|---|--|--|---------|--|---------------|--------------------|
| Designation | | | | | | Part no. | Type |
| Plugs | | | | | | | |
|  | Plugs for self-assembly | | | | | – | → Internet: necu |
| | | | | | | – | → Internet: sea |
| Inscription labels | | | | | | | |
|  | Inscription labels 23 mm for holder, 34 pieces, in frame | | | | | 541598 | ASLR-L-423 |
| Safety clip | | | | | | | |
|  | Prevents the screw-type lock from being released easily (without a tool), fastens securely to the cable | | | For M12 | | 548068 | NEAU-M12-GD |

Connecting cables, M8 3-pin

Technical data

Connecting cable
NEBU-M8
SIM-M8

- Connecting cable for connecting inputs/outputs
- Pre-assembled at both ends
- Cable lengths 0.1 ... 30 m
- 3 wires
- Socket M8x1, 3-pin



| General technical data | | | |
|------------------------------|------------------------------|---|----------------|
| Type | | NEBU | SIM |
| Conforms to standard | Code -P-, code -K-, code -E- | EN 61076-2-104 | – |
| | | EN 61076-2-101 | – |
| | | Wire colours and connection numbers to EN 60947-5-2 | – |
| | Code -R- | Wire colours and connection numbers to EN 60947-5-2 | – |
| | | – | EN 61076-2-104 |
| | | – | EN 61984 |
| Based on standard | Code -R- | EN 61076-2-104 | – |
| Cable designation | | With 2x inscription label holders | – |
| Degree of protection | | IP65, IP68, IP69K | IP65, IP68 |
| Note on degree of protection | | In assembled state | – |

| Technical data – Electrical connection 1 | | | |
|--|--|----------------------------------|----------------------------------|
| Type | | NEBU | SIM |
| Function | | Field device side | Field device side |
| Design | | Round | Round |
| Connection type | | Socket | Socket |
| Cable outlet | | Straight, angled | Straight, angled |
| Connection technology | | M8x1, A-coded, to EN 61076-2-104 | M8x1, A-coded, to EN 61076-2-104 |
| Number of pins/wires | | 3 | 3 |
| Assigned pins/wires | | 3 | 3 |
| Type of mounting | | Screw-type lock | – |

| Technical data – Electrical components | | | | |
|--|--|--------|-----------|-----------|
| Type | | NEBU | SIM | |
| Operating voltage range | Without switching status indication | [V DC] | 0 ... 60 | 0 ... 60 |
| | | [V AC] | 0 ... 60 | 0 ... 60 |
| | With switching status indication | [V DC] | 10 ... 30 | 10 ... 30 |
| | | [V AC] | 10 ... 30 | 10 ... 30 |
| | Electrical connection 2 M8x1, 4-pin | [V DC] | 0 ... 30 | – |
| | | [V AC] | 0 ... 30 | – |
| Surge resistance | Connection technology not rotatable, without switching status indication | [kV] | 1.5 | 1.5 |
| | Connection technology rotatable | [kV] | 0.8 | – |
| | With switching status indication | [kV] | 0.8 | 0.8 |
| Current rating at 40 °C | Connection technology not rotatable | [A] | 3 | 3 |
| | Connection technology rotatable | [A] | 0.5 | – |

Connecting cables, M8 3-pin

Technical data

| Technical data – Cable | | | | | |
|---------------------------------|-------------------------------------|--|----------------------------|-------------------------------------|--|
| Type | | NEBU | | SIM | |
| Cable characteristic | Code -P- | Basic | | – | |
| | Code -K- | Standard | | – | |
| | Code -E- | Suitable for energy chains | | – | |
| | Code -R- | Suitable for robot applications | | – | |
| | | – | | Standard | |
| Cable test conditions | | Bending strength: to Festo standard | | Bending strength: to Festo standard | |
| | | Test conditions on request | | Test conditions on request | |
| | | Cable characteristic | Basic | | – |
| | | | Standard | | Energy chain: 5 million cycles, bending radius 75 mm |
| | | | Suitable for energy chains | | Energy chain: 5 million cycles, bending radius 28 mm |
| Suitable for robot applications | | Energy chain: 5 million cycles, bending radius 28 mm | – | | |
| | | Torsional resistance more than 300,000 cycles, ±270°/0.1 m | | – | |
| Cable diameter | Without switching status indication | [mm] | 4.5 | 4.5 | |
| | With switching status indication | [mm] | 3.4 | – | |
| Cable diameter tolerance | | [mm] | ±0.1 | – | |
| Cable composition | | [mm ²] | 3x 0.25 | 3x 0.25 | |
| Conductor nominal cross section | | [mm ²] | 0.25 | 0.25 | |

| Technical data – Electrical connection 2 | | | | | |
|--|-------------------------------------|-----------------|----------------------------------|---|-----------------------------------|
| Type | | NEBU | | | SIM |
| Function | | Controller side | | | |
| Connection type | | Cable | Plug | | Cable |
| Design | | – | Round | | – |
| Cable outlet | | – | Straight, angled | | – |
| Connection technology | | Open end | M8x1, A-coded, to EN 61076-2-104 | | M12x1, A-coded, to EN 61076-2-101 |
| Number of pins/wires | | 3 | 3 | 4 | 3 |
| Assigned pins/wires | Without switching status indication | 3 | 3 | 3 | 3 |
| | With switching status indication | 3 | 3 | 3 | – |
| Type of mounting | | – | Screw-type lock | | – |

Connecting cables, M8 3-pin

Technical data

| Materials | | |
|-----------------------------|---|-------------------------------|
| Type | | |
| Housing | | NEBU |
| Housing colour | | Black |
| Cable sheath | Cable characteristic: standard, suitable for energy chains, suitable for robot applications | TPE-U(PUR) |
| | Cable characteristic: basic | PVC-P |
| Cable sheath colour | | Grey |
| Insulating sheath | Cable characteristic: suitable for energy chains, suitable for robot applications, standard | PP |
| | Cable characteristic: basic | PVC-P |
| Wire insulation colour code | | – |
| Screw-type lock | | Nickel-plated brass |
| Note on materials | All types | RoHS-compliant |
| | | Free of copper and PTFE |
| | Cable characteristic: standard, suitable for energy chains, suitable for robot applications | Free of halogen |
| | | Free of phosphoric acid ester |
| Special characteristics | Cable characteristic: standard, suitable for energy chains, suitable for robot applications | Oil resistant |

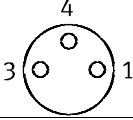
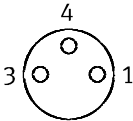
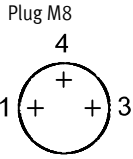
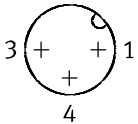
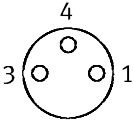
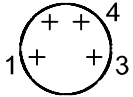
| Operating and environmental conditions | | | |
|--|--|------|---|
| Ambient temperature | Cable characteristic: basic, standard | [°C] | –25 ... +70 |
| | Cable characteristic: suitable for energy chains, suitable for robot applications | [°C] | –25 ... +80 |
| Ambient temperature with flexible cable installation | Cable characteristic: standard | [°C] | –5 ... +70 |
| | Cable characteristic: basic, suitable for energy chains, suitable for robot applications | [°C] | –5 ... +80 |
| Corrosion resistance class CRC ¹⁾ | | | 2 |
| CE marking (see declaration of conformity) ²⁾ | Without switching status indication | | In accordance with EU Low Voltage Directive |
| | With switching status indication | | – |
| | Electrical connection 2 M8x1, 4-pin | | – |
| Contamination level | | | 3 |

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

2) Additional information www.festo.com/sp → Certificates.

Connecting cables, M8 3-pin

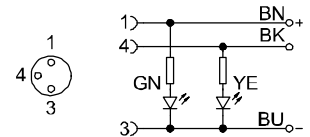
Technical data

| Circuitry (socket view) | | | | |
|--|-----|---------------------------|-----|--|
| Socket | Pin | Wire colour ¹⁾ | Pin | Plug |
| Electrical connection, socket, 3-pin, M8 – open cable end | | | | |
|  | 1 | BN | - | - |
| | 3 | BU | - | |
| | 4 | BK | - | |
| Electrical connection, socket, 3-pin, M8 – plug, 3-pin | | | | |
|  | 1 | BN | 1 | Plug M8  Plug M12  |
| | 3 | BU | 3 | |
| | 4 | BK | 4 | |
| Electrical connection, socket, 3-pin, M8 – plug, 4-pin, M8 | | | | |
|  | 1 | BN | 1 |  |
| | - | - | 2 | |
| | 3 | BU | 3 | |
| | 4 | BK | 4 | |

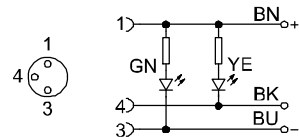
1) To IEC 757

Circuitry, switching status indication

Display of code P, for PNP N/O contact



Display of code N, for NPN N/O contact



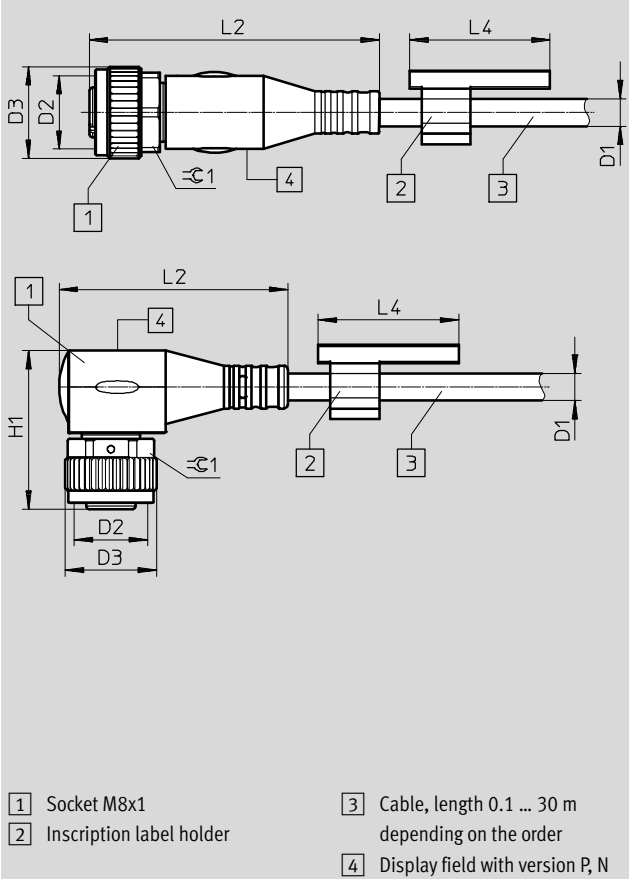
Connecting cables, M8 3-pin

Technical data

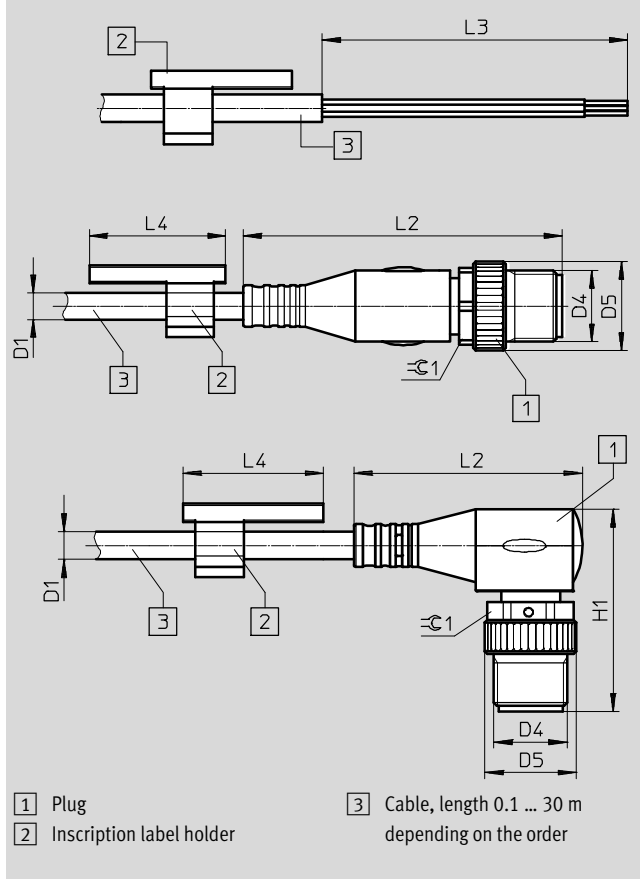
Dimensions

Download CAD data → www.festo.com

Connection technology on the left



Connection technology on the right

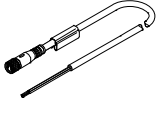
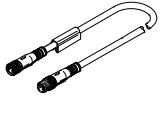


| Connection technology on the left | D1 | D2 | D3 | L2 | L4 | H1 | ⌀1 |
|-----------------------------------|-----|------|----|------|----|------|----|
| NEBU | | | | | | | |
| Straight socket | 4.5 | M8x1 | 9 | 34.6 | 23 | - | 9 |
| Angled socket | 4.5 | M8x1 | 9 | 26.9 | 23 | 17 | 9 |
| Rotatable socket | 4.5 | M8x1 | 10 | 20.9 | 23 | 16.3 | 9 |
| NEBU with display | | | | | | | |
| Straight socket | 3.4 | M8x1 | 9 | 34.6 | 23 | - | 9 |
| Angled socket | 3.4 | M8x1 | 9 | 26.9 | 23 | 17 | 9 |
| SIM | | | | | | | |
| Straight socket | 4.5 | M8x1 | 9 | 34.4 | - | - | 9 |
| Angled socket | 4.5 | M8x1 | 9 | 26.8 | - | 16.8 | 9 |

| Connection technology on the right | D1 | D4 | D5 | L2 | L3 | L4 | H1 | ⌀1 |
|------------------------------------|-----|-------|-----|------|----|----|------|----|
| NEBU | | | | | | | | |
| Open end | 4.5 | - | - | - | 50 | 23 | - | - |
| Straight plug | 4.5 | M8x1 | 9.6 | 41.1 | - | 23 | - | 9 |
| | 4.5 | M12x1 | 15 | 54.5 | - | 23 | - | 13 |
| Angled plug | 4.5 | M8x1 | 9.6 | 26.9 | - | 23 | 24 | 9 |
| | 4.5 | M12x1 | 15 | 37.5 | - | 23 | 33.2 | 13 |
| NEBU with display | | | | | | | | |
| Straight plug | 3.4 | M8x1 | 9 | 41.1 | - | 23 | - | 9 |
| | 3.4 | M12x1 | 15 | 54.5 | - | 23 | - | 13 |
| Angled plug | 3.4 | M8x1 | 9 | 26.9 | - | 23 | 24 | 9 |
| | 3.4 | M12x1 | 15 | 37.5 | - | 23 | 33.2 | 13 |
| SIM | | | | | | | | |
| Open end | 4.5 | - | - | - | 50 | - | - | - |

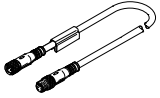
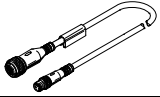

Connecting cables, M8 3-pin

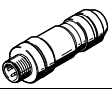
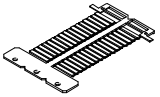

Technical data

| Ordering data | | | | | | | | | | |
|---|--|--|-------------------------------|--|------------------------------|----------------------------|------------------------------|----|---------------|-----------------------------|
| | Cable characteristic | Cable length [m] | Outlet orientation | Special features | Product weight [g] | Part no. | Type | | | |
| Socket, 3-pin, M8 – open cable end | | | | | | | | | | |
|  | Standard | 2.5 | Straight | – | 64 | 541333 | NEBU-M8G3-K-2.5-LE3 | | | |
| | | | | – | – | 159420 | SIM-M8-3GD-2,5-PU | | | |
| | | | Angled | – | 64 | 541338 | NEBU-M8W3-K-2.5-LE3 | | | |
| | | | | – | – | 159422 | SIM-M8-3WD-2,5-PU | | | |
| | | | | Rotatable socket | 64 | 8001660 | NEBU-M8R3-K-2.5-LE3 | | | |
| | | | | For NPN N/O contact, switching status indication yellow, ready status indication green | 64 | 541336 | NEBU-M8W3N-K-2.5-LE3 | | | |
| | | | | – | – | 159426 | SIM-M8-3WD-2,5-NSL-PU | | | |
| | | For PNP N/O contact, switching status indication yellow, ready status indication green | 64 | 541337 | NEBU-M8W3P-K-2.5-LE3 | | | | | |
| | | – | – | 159424 | SIM-M8-3WD-2,5-PSL-PU | | | | | |
| | | 5 | Straight | – | 123 | 541334 | NEBU-M8G3-K-5-LE3 | | | |
| | | | | – | – | 159421 | SIM-M8-3GD-5-PU | | | |
| | | | Angled | – | 123 | 541341 | NEBU-M8W3-K-5-LE3 | | | |
| | | | | – | – | 159423 | SIM-M8-3WD-5-PU | | | |
| | | | | Rotatable socket | 123 | 8001661 | NEBU-M8R3-K-5-LE3 | | | |
| | For NPN N/O contact, switching status indication yellow, ready status indication green | | | 123 | 541339 | NEBU-M8W3N-K-5-LE3 | | | | |
| | – | | | – | 159427 | SIM-M8-3WD-5-NSL-PU | | | | |
| | For PNP N/O contact, switching status indication yellow, ready status indication green | 123 | 541340 | NEBU-M8W3P-K-5-LE3 | | | | | | |
| | – | – | 159425 | SIM-M8-3WD-5-PSL-PU | | | | | | |
| | 10 | Straight | – | 242 | 541332 | NEBU-M8G3-K-10-LE3 | | | | |
| | | | Ready status indication green | – | 192964 | SIM-M8-3GD-10-PU | | | | |
| | | Angled | – | 242 | 541335 | NEBU-M8W3-K-10-LE3 | | | | |
| | | | Ready status indication green | – | 192965 | SIM-M8-3WD-10-PU | | | | |
| | Suitable for energy chains | 5 | Straight | – | 123 | 569843 | NEBU-M8G3-E-5-LE3 | | | |
| | | 10 | Straight | – | 242 | 569842 | NEBU-M8G3-E-10-LE3 | | | |
| Suitable for robot applications | 2.5 | Straight | – | 64 | 569845 | NEBU-M8G3-R-2.5-LE3 | | | | |
| | | Angled | – | 64 | 569847 | NEBU-M8W3-R-2.5-LE3 | | | | |
| | 5 | Straight | – | 123 | 569846 | NEBU-M8G3-R-5-LE3 | | | | |
| | 10 | Straight | – | 242 | 8003129 | NEBU-M8G3-R-10-LE3 | | | | |
| Socket, 3-pin, M8 – plug, 3-pin, M8 | | | | | | | | | | |
|  | Standard | 0.5 | Straight – straight | – | 22 | 541346 | NEBU-M8G3-K-0.5-M8G3 | | | |
| | | | | – | 33 | 541347 | NEBU-M8G3-K-1-M8G3 | | | |
| | | | | – | 45 | 8003133 | NEBU-M8G3-K-1.5-M8G3 | | | |
| | | | | – | 57 | 8003131 | NEBU-M8G3-K-2-M8G3 | | | |
| | | | | – | 69 | 541348 | NEBU-M8G3-K-2.5-M8G3 | | | |
| | | | | – | 80 | 8003132 | NEBU-M8G3-K-3-M8G3 | | | |
| | | | | – | 128 | 541349 | NEBU-M8G3-K-5-M8G3 | | | |
| | | | | – | 246 | 569844 | NEBU-M8G3-K-10-M8G3 | | | |
| | | | | Suitable for energy chains | 3.5 | Straight – straight | – | 92 | 559364 | NEBU-M8G3-E-3.5-M8G3 |

Connecting cables, M8 3-pin

Technical data

| Ordering data | | | | | | | |
|---|----------------------|------------------|---------------------|----------------------------------|--------------------|----------------|--|
| | Cable characteristic | Cable length [m] | Outlet orientation | Special features | Product weight [g] | Part no. | Type |
| Socket, 3-pin, M8 – plug, 4-pin, M8 | | | | | | | |
|  | Standard | 2.5 | Straight – straight | – | 69 | 554037 | NEBU-M8G3-K-2.5-M8G4 |
| Socket, 3-pin, M8 – plug, 3-pin, M12 | | | | | | | |
|  | Standard | 0.5 | Straight – straight | – | 29 | 8000209 | NEBU-M8G3-K-0.5-M12G3 |
| | | 1 | Straight – straight | Without inscription label holder | 39 | 8091512 | NEBU-M8G3-K-1-N-M12G3  |

| Ordering data – Accessories | | | | | | | |
|---|---|--|--|---------|---------------|--------------------|-------------------|
| Designation | | | | | | Part no. | Type |
| Plugs | | | | | | | |
|  | Plugs for self-assembly | | | | | – | → Internet: necu |
| | | | | | | – | → Internet: sea |
| Inscription labels | | | | | | | |
|  | Inscription labels 23 mm for holder, 34 pieces, in frame | | | | | 541598 | ASLR-L-423 |
| Safety clip | | | | | | | |
|  | Prevents the screw-type lock from being released easily (without a tool), fastens securely to the cable | | | For M8 | 548067 | NEAU-M8-GD | |
| | | | | For M12 | 548068 | NEAU-M12-GD | |

Connecting cables, M8 4-pin

Technical data



Connecting cable
NEBU-M8
SIM-M8

- Connecting cable for connecting inputs/outputs
- Pre-assembled at both ends
- Cable lengths 0.1 ... 30 m
- 2, 3 or 4 wires
- Socket M8x1, 4-pin



| General technical data | | | |
|------------------------------|------------------------------|---|----------------|
| Type | | NEBU | SIM |
| Conforms to standard | Code -P-, code -K-, code -E- | EN 61076-2-104 | - |
| | | EN 61076-2-101 | - |
| | | Wire colours and connection numbers to EN 60947-5-2 | - |
| | Code -R- | Wire colours and connection numbers to EN 60947-5-2 | - |
| | | - | EN 61076-2-104 |
| | | - | EN 61984 |
| Based on standard | Code -R- | EN 61076-2-104 | - |
| Cable designation | | With 2x inscription label holders | - |
| Degree of protection | | IP65, IP68, IP69K | IP65, IP68 |
| Note on degree of protection | | In assembled state | - |

| Technical data – Electrical connection 1 | | | |
|--|--|----------------------------------|----------------------------------|
| Type | | NEBU | SIM |
| Function | | Field device side | Field device side |
| Design | | Round | Round |
| Connection type | | Socket | Socket |
| Cable outlet | | Straight, angled | Straight, angled |
| Connection technology | | M8x1, A-coded, to EN 61076-2-104 | M8x1, A-coded, to EN 61076-2-104 |
| Number of pins/wires | | 4 | 4 |
| Assigned pins/wires | | 2 3 4 | 4 |
| Type of mounting | | Screw-type lock | - |

| Technical data – Electrical components | | | | |
|--|-------------------------------------|--------|-------------|----------|
| Type | | | NEBU | SIM |
| Operating voltage range | Without switching status indication | [V DC] | 0 ... 30 | 0 ... 30 |
| | | [V AC] | 0 ... 30 | 0 ... 30 |
| | With switching status indication | [V DC] | 21.6 ... 30 | - |
| | | [V AC] | 21.6 ... 30 | - |
| Surge resistance | | [kV] | 0.8 | 0.8 |
| Current rating at 40 °C | | [A] | 3 | 3 |

Connecting cables, M8 4-pin

Technical data

| Technical data – Cable | | | | | | | |
|--|--|--|-------------------------------------|----------|--|--|---|
| Type | | | NEBU | | SIM | | |
| Cable characteristic | Code -P- | | Basic | | – | | |
| | Code -K- | | Standard | | – | | |
| | Code -E- | | Suitable for energy chains | | – | | |
| | Code -R- | | Suitable for robot applications | | – | | |
| | | | – | Standard | | | |
| Cable test conditions | | | Bending strength: to Festo standard | | Bending strength: to Festo standard | | |
| | | | Test conditions on request | | Test conditions on request | | |
| | | | Cable characteristic | Basic | | – | |
| | | | | Standard | | Energy chain: 5 million cycles, bending radius 75 mm | |
| | | | Suitable for energy chains | | Energy chain: 5 million cycles, bending radius 28 mm | | – |
| Suitable for robot applications | | Energy chain: 5 million cycles, bending radius 28 mm | | – | | | |
| | | Torsional resistance more than 300,000 cycles, ±270°/0.1 m | | – | | | |
| Cable diameter | Without switching status indication [mm] | | 4.5 | | 4.5 | | |
| | With switching status indication [mm] | | 3.4 | | – | | |
| Cable diameter tolerance [mm] | | | ±0.1 | | – | | |
| Cable composition | Without switching status indication [mm ²] | | 3x 0.25 | 4x 0.25 | 4x 0.25 | | |
| | With switching status indication [mm ²] | | 2x 0.25 | | – | | |
| Conductor nominal cross section [mm ²] | | | 0.25 | | 0.25 | | |

| Technical data – Electrical connection 2 | | | | | | |
|--|-------------------------------------|--|-----------------|----------------------------------|-----------------------------------|----------|
| Type | | | NEBU | | SIM | |
| Function | | | Controller side | | | |
| Connection type | | | Cable | Plug | Plug | Cable |
| Design | | | – | Round | Round | – |
| Cable outlet | | | – | Straight, angled | Straight, angled | – |
| Connection technology | | | Open end | M8x1, A-coded, to EN 61076-2-104 | M12x1, A-coded, to EN 61076-2-101 | Open end |
| Number of pins/wires | | | 4 | 3 | 4 | 4 |
| Assigned pins/wires | Without switching status indication | | 4 | 3 | 4 | 4 |
| | With switching status indication | | 2 | 3 | 4 | 2 |
| Type of mounting | | | – | Screw-type lock | Screw-type lock | – |

Connecting cables, M8 4-pin

Technical data

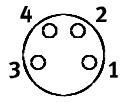
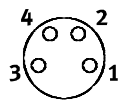
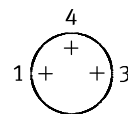
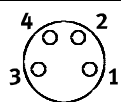
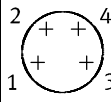
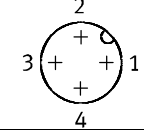
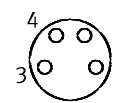
| Materials | | | | |
|-----------------------------|---|--|-------------------------------|---------------------------|
| Type | | | NEBU | SIM |
| Housing | | | TPE-U(PUR) | TPE-U(PU) |
| Housing colour | | | Black | Black |
| Cable sheath | Cable characteristic: standard, suitable for energy chains, suitable for robot applications | | TPE-U(PUR) | TPE-U(PU) |
| | Cable characteristic: basic | | PVC-P | – |
| Cable sheath colour | | | Grey | Grey |
| Insulating sheath | Cable characteristic: suitable for energy chains, suitable for robot applications, standard | | PP | PVC |
| | Cable characteristic: basic | | PVC-P | – |
| Wire insulation colour code | | | – | Blue, brown, black, white |
| Screw-type lock | | | Nickel-plated brass | Nickel-plated brass |
| Note on materials | All types | | RoHS-compliant | RoHS-compliant |
| | | | Free of copper and PTFE | Free of copper and PTFE |
| | Cable characteristic: standard, suitable for energy chains, suitable for robot applications | | Free of halogen | – |
| | | | Free of phosphoric acid ester | – |
| Special characteristics | Cable characteristic: standard, suitable for energy chains, suitable for robot applications | | Oil resistant | – |

| Operating and environmental conditions | | | | |
|--|--|------|---|-------------|
| Type | | | NEBU | SIM |
| Ambient temperature | Cable characteristic: basic, standard | [°C] | –25 ... +70 | –25 ... +70 |
| | Cable characteristic: suitable for energy chains, suitable for robot applications | [°C] | –25 ... +80 | –25 ... +80 |
| Ambient temperature with flexible cable installation | Cable characteristic: standard | [°C] | –5 ... +70 | –5 ... +70 |
| | Cable characteristic: basic, suitable for energy chains, suitable for robot applications | [°C] | –5 ... +80 | –5 ... +80 |
| Corrosion resistance class CRC ¹⁾ | | | 2 | 2 |
| CE marking (see declaration of conformity) ²⁾ | | | – | – |
| | Electrical connection 2: | | In accordance with EU Low Voltage Directive | – |
| | • Plug M8, 3-pin | | | |
| | • Plug M12, 3-pin • Plug M12, 4-pin | | | |
| Contamination level | | | 3 | 3 |

- 1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
- 2) Additional information www.festo.com/sp → Certificates.

Connecting cables, M8 4-pin

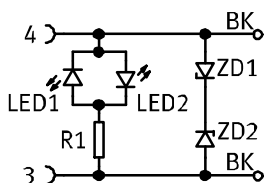
Technical data

| Circuitry (socket view) | | | | | |
|---|-----|---------------------------|-----|---|---|
| Socket | Pin | Wire colour ¹⁾ | Pin | Plug | |
| Electrical connection, socket, 4-pin, M8 – open cable end | | | | | |
|  | 1 | BN | - | | |
| | 2 | WH | - | | |
| | 3 | BU | - | | |
| | 4 | BK | - | | |
| Electrical connection, socket, 4-pin, M8 – plug, 3-pin | | | | | |
|  | 1 | BN | 1 |  | |
| | 2 | WH | - | | |
| | 3 | BU | 3 | | |
| | 4 | BK | 4 | | |
| Electrical connection, socket, 4-pin, M8 – plug, 4-pin | | | | | |
|  | 1 | BN | 1 | Plug M8 | Plug M12 |
| | 2 | WH | 2 | | |
| | 3 | BU | 3 |  |  |
| | 4 | BK | 4 | | |
| Electrical connection, socket, 4-pin, M8, with display of code L | | | | | |
|  | 1 | - | 1 | Open cable end | Plug M8 |
| | 2 | - | 2 | | |
| | 3 | BK | 3 | Plug M8 | Plug M12 |
| | 4 | BK | 4 | | |

1) To IEC 757

Circuitry, switching status indication

Display of code L



Connecting cables, M8 4-pin

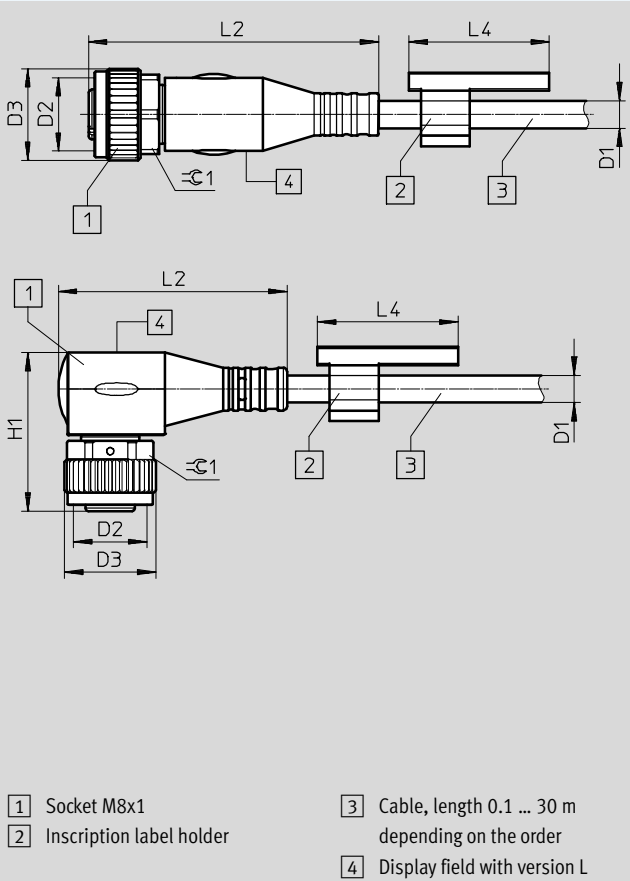
Technical data

FESTO

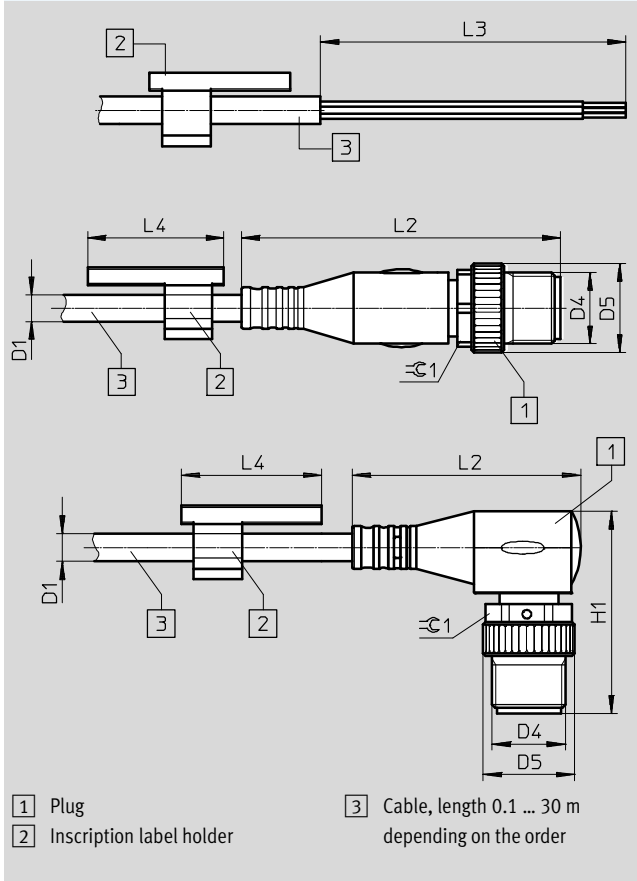
Dimensions

Download CAD data → www.festo.com

Connection technology on the left



Connection technology on the right



| Connection technology on the left | D1 Ø | D2 | D3 Ø | L2 | L4 | H1 | ≙C1 |
|-----------------------------------|---------|------|---------|------|----|------|-----|
| NEBU | | | | | | | |
| Straight socket | 4.5 | M8x1 | 9 | 34.6 | 23 | - | 9 |
| Angled socket | 4.5 | M8x1 | 9 | 26.9 | 23 | 17 | 9 |
| Rotatable socket | 4.5 | M8x1 | 10 | 20.9 | 23 | 16.3 | 9 |
| NEBU with display | | | | | | | |
| Straight socket | 3.4 | M8x1 | 9 | 34.6 | 23 | - | 9 |
| Angled socket | 3.4 | M8x1 | 9 | 26.9 | 23 | 17 | 9 |
| SIM | | | | | | | |
| Straight socket | 4.5 | M8x1 | 9 | 34.4 | - | 16.8 | 9 |
| Angled socket | 4.5 | M8x1 | 9 | 26.8 | - | 16.8 | 9 |

| Connection technology on the right | D1 Ø | D4 | D5 Ø | L2 | L3 | L4 | H1 | ≙C1 |
|------------------------------------|---------|-------|---------|------|----|----|------|-----|
| NEBU | | | | | | | | |
| Open end | 4.5 | - | - | - | 50 | 23 | - | - |
| Straight plug | 4.5 | M8x1 | 9.6 | 41.1 | - | 23 | - | 9 |
| | 4.5 | M12x1 | 15 | 54.5 | - | 23 | - | 13 |
| Angled plug | 4.5 | M8x1 | 9.6 | 26.9 | - | 23 | 24 | 9 |
| | 4.5 | M12x1 | 15 | 37.5 | - | 23 | 33.2 | 13 |
| NEBU with display | | | | | | | | |
| Straight plug | 3.4 | M8x1 | 9 | 41.1 | - | 23 | - | 9 |
| | 3.4 | M12x1 | 15 | 54.5 | - | 23 | - | 13 |
| Angled plug | 3.4 | M8x1 | 9 | 26.9 | - | 23 | 24 | 9 |
| | 3.4 | M12x1 | 15 | 37.5 | - | 23 | 33.2 | 13 |
| SIM | | | | | | | | |
| Open end | 4.5 | - | - | - | 50 | - | - | - |

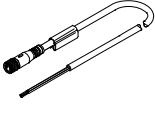
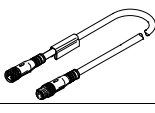
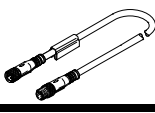

**New**

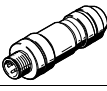
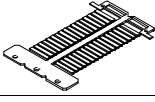

NEBU-M8G4-K-1-N-M12G4

FESTO

Connecting cables, M8 4-pin

Technical data

| Ordering data | | | | | | | | |
|---|---|---------------------------------|---------------------|----------------------------------|--------------------|----------------|--|-----------------------------|
| | Cable characteristic | Cable length [m] | Outlet orientation | Special features | Product weight [g] | Part no. | Type | |
| Socket, 4-pin, M8 – open cable end | | | | | | | | |
|  | Standard | 2.5 | Straight | – | 72 | 541342 | NEBU-M8G4-K-2.5-LE4 | |
| | | | Angled | – | 72 | 541344 | NEBU-M8W4-K-2.5-LE4 | |
| | | 5 | Straight | – | 138 | 541343 | NEBU-M8G4-K-5-LE4 | |
| | | | Angled | – | 138 | 541345 | NEBU-M8W4-K-5-LE4 | |
| | | 9 | Straight | – | 245 | 8003130 | NEBU-M8G4-K-9-LE4 | |
| | | 10 | Angled | – | 272 | 575833 | NEBU-M8W4-K-10-LE4 | |
| | Socket, 4-pin, M8 – plug, 4-pin, M8 | | | | | | | |
| |  | Standard | 2.5 | Straight – straight | – | 76 | 554035 | NEBU-M8G4-K-2.5-M8G4 |
| | | Suitable for robot applications | 2 | Straight – straight | – | 63 | 556946 | NEBU-M8G4-R-2-M8G4 |
| | Socket, 4-pin, M8 – plug, 4-pin, M12 | | | | | | | |
|  | Standard | 1 | Straight – straight | Without inscription label holder | 42.5 | 8091513 | NEBU-M8G4-K-1-N-M12G4  | |

| Ordering data – Accessories | | | | | | | |
|---|---|--|--|---------|---------------|--------------------|-------------------|
| Designation | | | | | | Part no. | Type |
| Plugs | | | | | | | |
|  | Plugs for self-assembly | | | | | – | → Internet: necu |
| | | | | | | – | → Internet: sea |
| Inscription labels | | | | | | | |
|  | Inscription labels 23 mm for holder, 34 pieces, in frame | | | | | 541598 | ASLR-L-423 |
| Safety clip | | | | | | | |
|  | Prevents the screw-type lock from being released easily (without a tool), fastens securely to the cable | | | For M8 | 548067 | NEAU-M8-GD | |
| | | | | For M12 | 548068 | NEAU-M12-GD | |

Connecting cables, M12 4-pin

Technical data

**Connecting cable
SIM-M12**

- Connecting cable for connecting inputs/outputs
- Pre-assembled
- Cable length 3 m
- 3 wires
- Socket M12x1, 4-pin



| General technical data | |
|------------------------------|---|
| Conforms to standard | EN 61076-2-101 |
| | EN 61984 |
| | Wire colours and connection numbers to EN 60947-5-2 |
| Cable designation | Without inscription label holder |
| Degree of protection | IP65, IP67 |
| Note on degree of protection | In assembled state |

| Technical data – Electrical connection 1 | |
|--|-----------------------------------|
| Function | Field device side |
| Design | Round |
| Connection type | Socket |
| Cable outlet | Straight, angled |
| Connection technology | M12x1, A-coded, to EN 61076-2-101 |
| Number of pins/wires | 4 |
| Assigned pins/wires | 3 |
| Type of mounting | Screw-type lock |

| Technical data – Electrical components | | |
|--|--------|----------|
| Operating voltage range | [V DC] | 0 ... 70 |
| | [V AC] | 0 ... 45 |
| Surge resistance | [kV] | 2.5 |
| Current rating at 40 °C | [A] | 4 |

Connecting cables, M12 4-pin

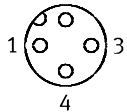
Technical data

| Technical data – Cable | | | |
|---------------------------------|-----------------------------|--|--------|
| Cable characteristic | | Resistant to welding spatter | |
| Cable test conditions | | Bending strength: to Festo standard | |
| | | Test conditions on request | |
| | | Energy chain: 5 million cycles, bending radius 75 mm | |
| Bending radius | Fixed cable installation | [mm] | ≥17 |
| | Flexible cable installation | [mm] | ≥55 |
| Cable diameter | | [mm] | 5.2 |
| Cable diameter tolerance | | [mm] | ±0.3 |
| Cable composition | | [mm ²] | 3x 0.5 |
| Conductor nominal cross section | | [mm ²] | 0.5 |

| Technical data – Electrical connection 2 | |
|--|-----------------|
| Function | Controller side |
| Connection type | Cable |
| Connection technology | Open end |
| Number of pins/wires | 3 |
| Assigned pins/wires | 3 |
| Wire ends | Tin-plated |

| Materials | |
|---------------------|---------------------|
| Housing colour | Black |
| Cable sheath colour | Orange |
| Housing | TPE-U(PU) |
| Union nut | Nickel-plated brass |
| Cable sheath | PVC, irradiated |
| Pin contacts | Gold-plated brass |

| Operating and environmental conditions | | |
|--|------|-------------|
| Ambient temperature | [°C] | -25 ... +80 |
| Ambient temperature with flexible cable installation | [°C] | 0 ... +80 |
| Contamination level | | 3 |

| Circuitry (socket view) | | | | |
|---|-----|---------------------------|-----|------|
| Socket | Pin | Wire colour ¹⁾ | Pin | Plug |
| Electrical connection, socket, 4-pin, M12 – open cable end | | | | |
|  | 1 | BN | - | - |
| | 2 | - | - | |
| | 3 | BU | - | |
| | 4 | BK | - | |

1) To IEC 757

Connecting cables, M12 4-pin

Technical data

Dimensions

Download CAD data → www.festo.com

Connection technology on the left

1 Socket M12x1
2 Inscription label holder, must be ordered separately as an accessory
3 Cable, length 3 m

Connection technology on the right

2 Inscription label holder, must be ordered separately as an accessory
3 Cable, length 3 m

| Connection technology on the left | D1 Ø | D2 | D3 Ø | L2 | L4 | H1 | ≈C1 |
|-----------------------------------|---------|-------|---------|----|----|----|-----|
| Straight socket | 5.2 | M12x1 | 15 | 38 | - | - | - |
| Angled socket | 5.2 | M12x1 | 13.5 | 31 | - | 25 | - |

| Connection technology on the right | D1 Ø | L3 |
|------------------------------------|---------|----|
| Open end | 5.2 | 50 |

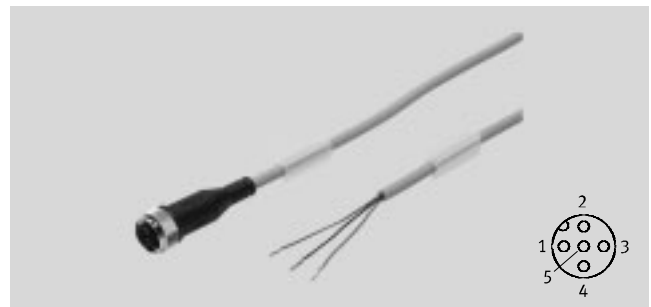
| Ordering data | | | | | | | |
|-------------------------------------|------------------------------|------------------|--------------------|------------------|--------------------|----------|------------------|
| | Cable characteristic | Cable length [m] | Outlet orientation | Special features | Product weight [g] | Part no. | Type |
| Socket, 4-pin, M12 – open cable end | | | | | | | |
| | Resistant to welding spatter | 3 | Straight | - | - | 30450 | SIM-M12-RS-3GD-3 |
| | | | Angled | - | - | 30451 | SIM-M12-RS-3WD-3 |

Connecting cables, M12 5-pin

Technical data

Connecting cable
NEBU-M12
SIM-M12

- Connecting cable for connecting inputs/outputs
- Pre-assembled at both ends
- Cable lengths 0.1 ... 30 m
- 2, 3, 4 or 5 wires
- M12x1, 5-pin



| General technical data | | |
|---|---|----------------|
| Type | NEBU | SIM |
| Conforms to standard | EN 61076-2-101 | EN 61076-2-101 |
| | EN 61076-2-104 | – |
| | Wire colours and connection numbers to EN 60947-5-2 | – |
| | – | EN 61984 |
| Cable designation NEBU-M12G5-...-Q8N-M12G5 | With 2x inscription label holders | – |
| | Without inscription label holder | – |
| Degree of protection | IP65, IP68, IP69K | IP65, IP68 |
| Note on degree of protection | In assembled state | – |

| Technical data – Electrical connection 1 | | |
|--|-----------------------------------|-------------------|
| Type | NEBU | SIM |
| Function | Field device side | Field device side |
| Design | Round | Round |
| Connection type | Socket | Socket |
| Cable outlet | Straight, angled | Straight, angled |
| Connection technology | M12x1, A-coded, to EN 61076-2-101 | M12x1, A-coded |
| Number of pins/wires | 5 | 5 |
| Assigned pins/wires | 2 3 4 5 | – |
| Type of mounting | Screw-type lock | – |

Connecting cables, M12 5-pin

Technical data



| Technical data – Electrical components | | | Without switching status indication | With switching status indication |
|--|-------------------------|----------|-------------------------------------|----------------------------------|
| Operating voltage range | Electrical connection 2 | [V DC] | 0 ... 60 | 10 ... 30 |
| | Plug M8, 3-pin | [V AC] | 0 ... 60 | – |
| | Electrical connection 2 | [V DC] | 0 ... 30 | 10 ... 30 |
| | Plug M8, 4-pin | [V AC] | 0 ... 30 | – |
| | Electrical connection 2 | [V DC] | 0 ... 250 | 10 ... 30 |
| | Plug M12, 3-pin | [V AC] | 0 ... 250 | – |
| | Electrical connection 2 | [V DC] | 0 ... 250 | 10 ... 30 |
| | Plug M12, 4-pin | [V AC] | 0 ... 250 | – |
| | Electrical connection 2 | [V DC] | 0 ... 60 | – |
| | Plug M12, 5-pin | [V AC] | 0 ... 60 | – |
| | Electrical connection 2 | [V DC] | 0 ... 250 | 10 ... 30 |
| | Open end, 3-wire | [V AC] | 0 ... 250 | – |
| | Electrical connection 2 | [V DC] | 0 ... 250 | 10 ... 30 |
| | Open end, 4-wire | [V AC] | 0 ... 250 | – |
| Electrical connection 2 | [V DC] | 0 ... 60 | – | |
| Open end, 5-wire | [V AC] | 0 ... 60 | – | |
| Surge resistance | Electrical connection 2 | [kV] | 1.5 | 0.8 |
| | Plug M8, 3-pin | | | |
| | Electrical connection 2 | [kV] | 0.8 | 0.8 |
| | Plug M8, 4-pin | | | |
| | Electrical connection 2 | [kV] | 2.5 | 0.8 |
| | Plug M12, 3-pin | | | |
| | Electrical connection 2 | [kV] | 2.5 | 0.8 |
| | Plug M12, 4-pin | | | |
| | Electrical connection 2 | [kV] | 1.5 | – |
| | Plug M12, 5-pin | | | |
| Electrical connection 2 | [kV] | 2.5 | 0.8 | |
| Open end, 3-wire | | | | |
| Electrical connection 2 | [kV] | 2.5 | 0.8 | |
| Open end, 4-wire | | | | |
| Electrical connection 2 | [kV] | 1.5 | – | |
| Open end, 5-wire | | | | |
| Current rating at 40 °C | | [A] | 4 | 4 |
| | Electrical connection 2 | [A] | 3 | – |
| | Plug M8 | | | |

Connecting cables, M12 5-pin

Technical data

| Technical data – Cable | | | | | | | | | | | |
|---------------------------------|----------------------|--|--|---------|---------|---------|-------------------------------------|--|---------|--|--|
| Type | NEBU | | | | | SIM | | | | | |
| Cable characteristic | Code -P- | Basic | | | | | – | | | | |
| | Code -K- | Standard | | | | | – | | | | |
| | Code -E- | Suitable for energy chains | | | | | – | | | | |
| | Code -R- | Suitable for robot applications | | | | | – | | | | |
| | | – | | | | | Standard | | | | |
| Cable test conditions | | Bending strength: to Festo standard | | | | | Bending strength: to Festo standard | | | | |
| | | Test conditions on request | | | | | Test conditions on request | | | | |
| | Cable characteristic | Basic | – | | | | | – | | | |
| | | Standard | Energy chain: 5 million cycles, bending radius 75 mm | | | | | Energy chain: 5 million cycles, bending radius 75 mm | | | |
| | | Suitable for energy chains | Energy chain: 5 million cycles, bending radius 28 mm | | | | | – | | | |
| | | Code -Q8N- | Energy chain: 5 million cycles, bending radius 75 mm | | | | | – | | | |
| Suitable for robot applications | | Energy chain: 5 million cycles, bending radius 28 mm | | | | | – | | | | |
| | | Torsional resistance more than 300,000 cycles, ±270°/0.1 m | | | | | – | | | | |
| Cable diameter | [mm] | 4.5 | | | | | 4.5 | | | | |
| | Code -Q8N- | [mm] | 7 | | | | | – | | | |
| Cable diameter tolerance | [mm] | ±0.1 | | | | | – | | | | |
| Cable composition | [mm ²] | – | 2x 0.25 | 3x 0.25 | 4x 0.25 | 5x 0.25 | 3x 0.25 | 4x 0.25 | 5x 0.25 | | |
| | Code -Q8N- | [mm ²] | 5x 1 | – | – | – | – | – | – | | |
| Conductor nominal cross section | [mm ²] | – | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | | |
| | Code -Q8N- | [mm ²] | 1 | – | – | – | – | – | – | | |

| Technical data – Electrical connection 2 | | | | | | | | | | | | | |
|--|-------------------------------------|---|---|----------------------------------|---|------------------|-----------------------------------|---|-------|----------|---|---|---|
| Type | NEBU | | | | | | | | SIM | | | | |
| Function | Controller side | | | | | | | | | | | | |
| Connection type | Cable | | | Plug | | Plug | | | Cable | | | | |
| Design | – | | | Round | | Round | | | – | | | | |
| Cable outlet | – | | | Straight, angled | | Straight, angled | | | – | | | | |
| Connection technology | Open end | | | M8x1, A-coded, to EN 61076-2-104 | | | M12x1, A-coded, to EN 61076-2-101 | | | Open end | | | |
| Number of pins/wires | 3 | 4 | 5 | 3 | 4 | 3 | 4 | 5 | 3 | 4 | 5 | | |
| Assigned pins/wires | Without switching status indication | | | 3 | 4 | 3 | 4 | 3 | 4 | 5 | – | – | – |
| | With switching status indication | | | 3 | 4 | – | 3 | 4 | – | – | – | – | – |
| Type of mounting | – | – | – | Screw-type lock | | | | | – | – | – | | |

Connecting cables, M12 5-pin

Technical data

FESTO

| Materials | | |
|-----------------------------|---|-------------------------------|
| Type | | |
| Housing | | NEBU |
| Housing colour | | Black |
| Cable sheath | Cable characteristic: standard, suitable for energy chains, suitable for robot applications | TPE-U(PUR) |
| | Cable characteristic: basic | PVC-P |
| Cable sheath colour | | Grey |
| Insulating sheath | Cable characteristic: suitable for energy chains, suitable for robot applications, standard | PP |
| | Cable characteristic: basic | PVC-P |
| Wire insulation colour code | | – |
| | | – |
| | | – |
| Screw-type lock | | Nickel-plated brass |
| Note on materials | All types | RoHS-compliant |
| | | Free of copper and PTFE |
| | Cable characteristic: standard, suitable for energy chains, suitable for robot applications | Free of halogen |
| | | Free of phosphoric acid ester |
| Special characteristics | Cable characteristic: standard, suitable for energy chains, suitable for robot applications | Oil resistant |

| Operating and environmental conditions | | |
|--|--|---|
| Ambient temperature | Cable characteristic: basic, standard | [°C] |
| | Cable characteristic: suitable for energy chains, suitable for robot applications | [°C] |
| Ambient temperature with flexible cable installation | Cable characteristic: standard | [°C] |
| | Cable characteristic: basic, suitable for energy chains, suitable for robot applications | [°C] |
| Corrosion resistance class CRC ¹⁾ | | 2 |
| CE marking (see declaration of conformity) ²⁾ | Without switching status indication | In accordance with EU Low Voltage Directive |
| | With switching status indication | – |
| | With plug M8, 4-pin | – |
| Contamination level | | 3 |

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

2) Additional information www.festo.com/sp → Certificates.

Connecting cables, M12 5-pin

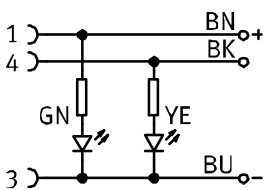
Technical data

| Circuitry (socket view) | | | | | | | |
|---|-----|---------------------------|--------|--------|-----|---------|----------|
| Socket | Pin | Wire colour ¹⁾ | | | Pin | Plug | |
| Electrical connection, socket, 5-pin, M12 – open cable end | | | | | | | |
| | 1 | 3-wire | 4-wire | 5-wire | - | - | |
| | 2 | - | WH | WH | - | | |
| | 3 | BU | BU | BU | - | | |
| | 4 | BK | BK | BK | - | | |
| | 5 | - | - | GY | - | | |
| Electrical connection, socket, 5-pin, M12 – cable, 2-wire – plug, 4-pin | | | | | | | |
| | 1 | | BN | | 1 | | |
| | 2 | | - | | - | | |
| | 3 | | BU | | 2 | | |
| | 4 | | - | | - | | |
| | 5 | | - | | - | | |
| Electrical connection, socket, 5-pin, M12 – cable, 3-wire – plug, 3-pin/4-pin | | | | | | | |
| | 1 | | BN | | 1 | Plug M8 | Plug M12 |
| | 2 | | - | | - | | |
| | 3 | | BU | | 3 | | |
| | 4 | | BK | | 4 | | |
| | 5 | | - | | - | | |
| Electrical connection, socket, 5-pin, M12 – plug, 4-pin | | | | | | | |
| | 1 | | BN | | 1 | Plug M8 | Plug M12 |
| | 2 | | WH | | 2 | | |
| | 3 | | BU | | 3 | | |
| | 4 | | BK | | 4 | | |
| | 5 | | - | | - | | |
| Electrical connection, socket, 5-pin, M12 – plug, 5-pin | | | | | | | |
| | 1 | | BN | | 1 | | |
| | 2 | | WH | | 2 | | |
| | 3 | | BU | | 3 | | |
| | 4 | | BK | | 4 | | |
| | 5 | | GY | | 5 | | |

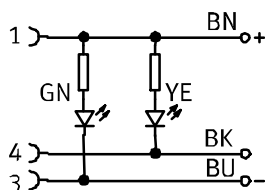
1) To IEC 757

Circuitry, switching status indication

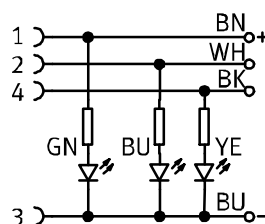
Display of code -P-



Display of code N



Display of code -P2

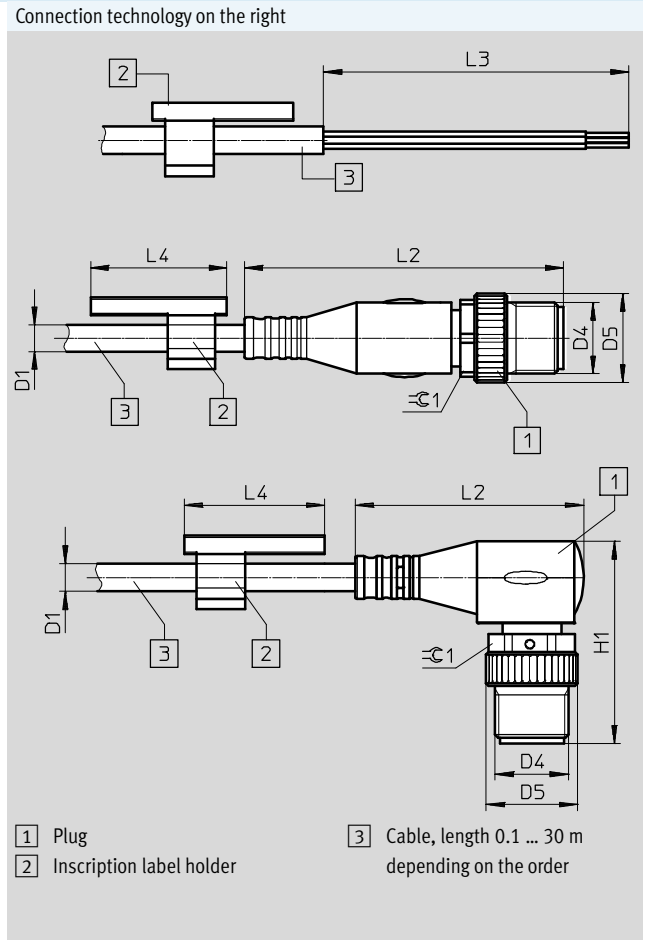
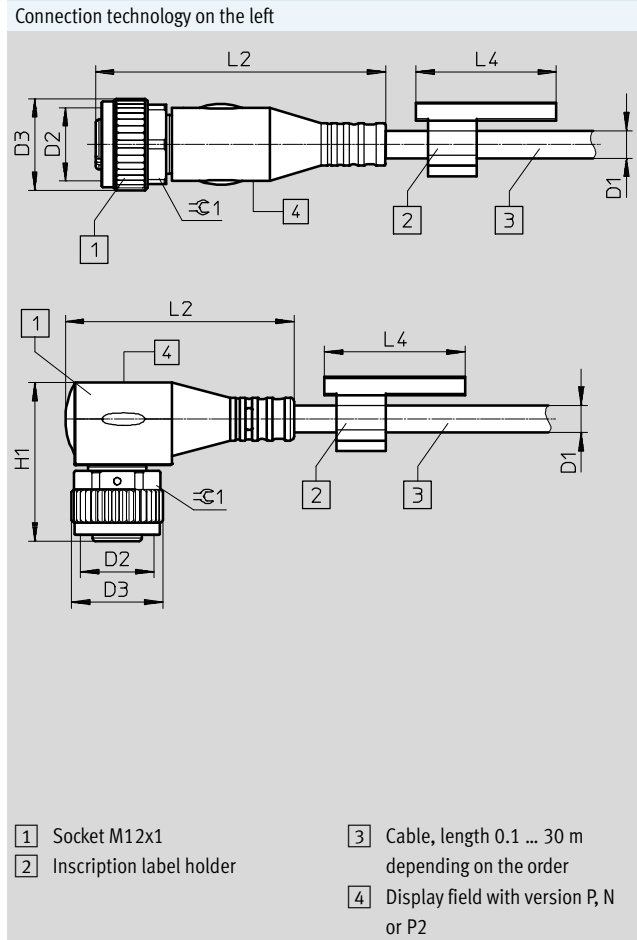


Connecting cables, M12 5-pin

Technical data

Dimensions

Download CAD data → www.festo.com

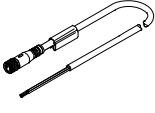
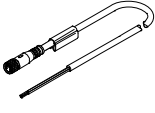
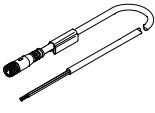


| Connection technology on the left | D1 Ø | D2 | D3 Ø | L2 | L4 | H1 | ≙C1 |
|-----------------------------------|---------|-------|---------|------|----|----|-----|
| NEBU | | | | | | | |
| Straight socket | 4.5 | M12x1 | 15 | 47.5 | 23 | - | 13 |
| Angled socket | 4.5 | M12x1 | 15 | 37.5 | 23 | 26 | 13 |
| NEBU with display | | | | | | | |
| Angled socket | 4.5 | M12x1 | 15 | 37.5 | 23 | 26 | 13 |
| NEBU-M12G5-...-Q8N-M12G5 | | | | | | | |
| Straight socket | 7 | M12x1 | 15 | 47.5 | - | - | 13 |
| SIM | | | | | | | |
| Straight socket | 4.5 | M12x1 | 15 | 48.5 | - | - | 13 |
| Angled socket | 4.5 | M12x1 | - | 37.5 | - | 26 | 13 |

| Connection technology on the right | D1 Ø | D4 | D5 Ø | L2 | L3 | L4 | H1 | ≙C1 |
|------------------------------------|---------|-------|---------|------|----|----|------|-----|
| NEBU | | | | | | | | |
| Open end | 4.5 | - | - | - | 50 | 23 | - | - |
| Straight plug | 4.5 | M8x1 | 9.6 | 41.1 | - | 23 | - | 9 |
| | 4.5 | M12x1 | 15 | 54.5 | - | 23 | - | 13 |
| Angled plug | 4.5 | M8x1 | 9.6 | 26.9 | - | 23 | 24 | 9 |
| | 4.5 | M12x1 | 15 | 37.5 | - | 23 | 33.2 | 13 |
| NEBU with display | | | | | | | | |
| Open end | 4.5 | - | - | - | 50 | 23 | - | - |
| Straight plug | 4.5 | M8x1 | 9 | 41.1 | - | 23 | - | 9 |
| | 4.5 | M12x1 | 15 | 54.5 | - | 23 | - | 13 |
| Angled plug | 4.5 | M8x1 | 9 | 26.9 | - | 23 | 24 | 9 |
| | 4.5 | M12x1 | 15 | 37.5 | - | 23 | 33.2 | 13 |
| NEBU-M12G5-...-Q8N-M12G5 | | | | | | | | |
| Straight plug | 7 | M12x1 | 15 | 54.5 | - | - | - | 13 |
| SIM | | | | | | | | |
| Open end | 4.5 | - | - | - | 50 | - | - | - |

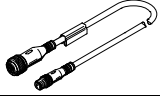
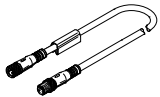

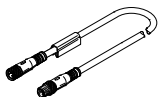
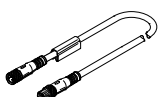
Connecting cables, M12 5-pin

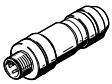
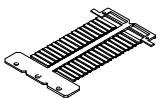

Technical data

| Ordering data | | | | | | | | |
|---|----------------------|------------------|--|--|---------------------|---------------------|-----------------------|--------------------|
| | Cable characteristic | Cable length [m] | Outlet orientation | Special features | Product weight [g] | Part no. | Type | |
| Socket, 5-pin, M12 – open cable end, 3-wire | | | | | | | | |
|  | Standard | 2.5 | Straight | – | 69 | 541363 | NEBU-M12G5-K-2.5-LE3 | |
| | | | | – | – | 159428 | SIM-M12-3GD-2,5-PU | |
| | | | | Switching status indication, for PNP N/O contact | 70 | 541366 | NEBU-M12W5P-K-2.5-LE3 | |
| | | | Angled | – | 70 | 541367 | NEBU-M12W5-K-2.5-LE3 | |
| | | | | – | – | 159430 | SIM-M12-3WD-2,5-PU | |
| | | | | Switching status indication, for NPN N/O contact | 70 | 541365 | NEBU-M12W5N-K-2.5-LE3 | |
| | | 5 | Straight | – | 128 | 541364 | NEBU-M12G5-K-5-LE3 | |
| | | | | – | – | 159429 | SIM-M12-3GD-5-PU | |
| | | | | Angled | – | 129 | 541370 | NEBU-M12W5-K-5-LE3 |
| | | | | | – | – | 159431 | SIM-M12-3WD-5-PU |
| | | | Switching status indication, for NPN N/O contact | 130 | 541368 | NEBU-M12W5N-K-5-LE3 | | |
| | | | | Switching status indication, for PNP N/O contact | 130 | 541369 | NEBU-M12W5P-K-5-LE3 | |
| | | | | | – | 159433 | SIM-M12-3WD-5-PSL-PU | |
| | | | | For PNP N/O contact, switching status indication yellow, ready status indication green | – | – | – | |
| Socket, 5-pin, M12 – open cable end, 4-wire | | | | | | | | |
|  | Standard | 2.5 | Straight | – | 77 | 550326 | NEBU-M12G5-K-2.5-LE4 | |
| | | | Angled | – | 78 | 550325 | NEBU-M12W5-K-2.5-LE4 | |
| | | 5 | Straight | – | 143 | 541328 | NEBU-M12G5-K-5-LE4 | |
| | | | | – | – | 164259 | SIM-M12-4GD-5-PU | |
| | | | Angled | – | 144 | 541329 | NEBU-M12W5-K-5-LE4 | |
| | | | | – | – | 164258 | SIM-M12-4WD-5-PU | |
| | | 7 | Straight | – | 197 | 8003134 | NEBU-M12G5-K-7-LE4 | |
| | | 10 | Angled | – | 278 | 569841 | NEBU-M12W5-K-10-LE4 | |
| Socket, 5-pin, M12 – open cable end, 5-wire | | | | | | | | |
|  | Standard | 2.5 | Straight | – | 78 | 541330 | NEBU-M12G5-K-2.5-LE5 | |
| | | | – | – | 175715 | SIM-M12-5GD-2,5-PU | | |
| | | 5 | Angled | – | 79 | 567843 | NEBU-M12W5-K-2.5-LE5 | |
| | | | | Straight | – | 146 | 541331 | NEBU-M12G5-K-5-LE5 |
| | | | – | | – | 175716 | SIM-M12-5GD-5-PU | |
| | | | Angled | – | 147 | 567844 | NEBU-M12W5-K-5-LE5 | |
| 10 | Straight | – | 283 | 554038 | NEBU-M12G5-K-10-LE5 | | | |

Connecting cables, M12 5-pin

Technical data

| Ordering data | | | | | | | |
|--|----------------------------|---------------------|---|---|--------------------|----------------------------------|---|
| | Cable characteristic | Cable length [m] | Outlet orientation | Special features | Product weight [g] | Part no. | Type |
| Socket, 5-pin, M12 – plug, 4-pin, M8 | | | | | | | |
|  | Standard | 2.5 | Straight – straight | – | 81 | 554036 | NEBU-M12G5-K-2.5-M8G4 |
| | Suitable for energy chains | | Straight – straight | Cable, 2-wire | 74 | 554034 | NEBU-M12G5-E-2.5-W2-M8G4-V1 |
| | | | | Cable, 3-wire | 74 | 554033 | NEBU-M12G5-E-2.5-W3-M8G4-V2 |
| Socket, 5-pin, M12 – plug, 3-pin, M12 | | | | | | | |
|  | Standard | 1 | Straight – straight | Without inscription label holder | 44 | 8091511 | NEBU-M12G5-K-1-N-M12G3  |
| Socket, 5-pin, M12 – plug, 4-pin, M12 | | | | | | | |
|  | Standard | 0.5 | Straight – straight | – | 36 | 8000208 | NEBU-M12G5-K-0.5-M12G4 |
| Socket, 5-pin, M12 – plug, 5-pin, M12 | | | | | | | |
|  | Standard | 0.5 | Straight – angled | – | 37 | 8003617 | NEBU-M12G5-K-0.5-M12W5 |
| | | | Angled – angled | – | 38 | 570733 | NEBU-M12W5-K-0.5-M12W5 |
| | | 2 | Straight – angled | – | 77 | 8003618 | NEBU-M12G5-K-2-M12W5 |
| | | | Angled – angled | – | 78 | 570734 | NEBU-M12W5-K-2-M12W5 |
| | Suitable for energy chains | 5 | Straight – straight | Conductor nominal cross section 1 mm ² | 158 | 574321 | NEBU-M12G5-E-5-Q8N-M12G5 |
| | | 7.5 | Straight – straight | Conductor nominal cross section 1 mm ² | 227 | 574322 | NEBU-M12G5-E-7.5-Q8N-M12G5 |
| | 10 | Straight – straight | Conductor nominal cross section 1 mm ² | 295 | 574323 | NEBU-M12G5-E-10-Q8N-M12G5 | |

| Ordering data – Accessories | | | |
|---|---|---------------|----------------------------------|
| Designation | | Part no. | Type |
| Plugs | | | |
|  | Plugs for self-assembly | – | → Internet: necu |
| | | – | → Internet: sea |
| Inscription labels | | | |
|  | Inscription labels 23 mm for holder, 34 pieces, in frame | 541598 | ASLR-L-423 |
| Safety clip | | | |
|  | Prevents the screw-type lock from being released easily (without a tool), fastens securely to the cable | For M8 | 548067 NEAU-M8-GD |
| | | For M12 | 548068 NEAU-M12-GD |

Connecting cables, M12 8-pin

Technical data

Plug socket with cable

NEBU-M12

SIM-M12-8

KM12-8

- Pre-assembled at both ends
- Cable lengths 2 m, 5 m, 10 m, 15 m and 25 m
- 8 wires
- Socket M12x1, 8-pin



| General technical data | | | |
|------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Type | NEBU | SIM | KM12 |
| Conforms to standard | EN 61076-2-101 | EN 61076-2-101 | EN 61076-2-101 |
| | – | DIN 47100 | DIN 47100 |
| Cable designation | Without inscription label holder | Without inscription label holder | Without inscription label holder |
| Degree of protection | IP67 | IP67 | IP68 |
| Note on degree of protection | In assembled state | In assembled state | In assembled state |

| Technical data – Electrical connection 1 | | | |
|--|-----------------------------------|----------|----------|
| Type | NEBU | SIM | KM12 |
| Function | Field device side | | |
| Design | Round | | |
| Connection type | Socket | | |
| Cable outlet | Angled | Straight | Straight |
| Connection technology | M12x1, A-coded, to EN 61076-2-101 | | |
| Number of pins/wires | 8 | | |
| Assigned pins/wires | 8 | | |
| Type of mounting | Screw-type lock | | |

| Technical data – Electrical components | | | |
|--|--------|----------|----------|
| Type | NEBU | SIM | KM12 |
| Operating voltage range | [V DC] | 0 ... 30 | 0 ... 30 |
| | [V AC] | 0 ... 30 | 0 ... 30 |
| Surge resistance | [kV] | 0.8 | 1.5 |
| Current rating at 40 °C | [A] | 2 | 2 |

| Technical data – Cable | | | |
|---------------------------------|----------------------------------|----------|------|
| Type | NEBU | SIM | KM12 |
| Cable characteristic | Standard | Standard | – |
| Bending radius | Fixed cable installation [mm] | ≥32 | ≥32 |
| | Flexible cable installation [mm] | ≥66 | ≥64 |
| Cable diameter | [mm] | 6.3 | 6.2 |
| Cable diameter tolerance | [mm] | ±0.2 | – |
| Cable composition | [mm ²] | 8x 0.25 | |
| | | Shielded | |
| Conductor nominal cross section | [mm ²] | 0.25 | |

Connecting cables, M12 8-pin

Technical data

| Technical data – Electrical connection 2 | | | |
|--|-----------------|------------|-----------------------------------|
| Type | NEBU | SIM | KM12 |
| Function | Controller side | | |
| Connection type | Cable | Cable | Plug |
| Design | – | – | Round |
| Cable outlet | – | – | Straight |
| Connection technology | Open end | Open end | M12x1, A-coded, to EN 61076-2-101 |
| Number of pins/wires | 8 | 8 | 8 |
| Assigned pins/wires | 8 | 8 | 8 |
| Wire ends | Tin-plated | Tin-plated | |
| Type of mounting | – | – | Screw-type lock |

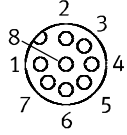
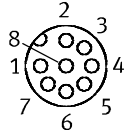
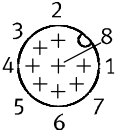
| Materials | | | |
|---------------------|---------------------|---------------------|--------------------------------------|
| Type | NEBU | SIM | KM12 |
| Housing | TPE-U(PUR) | TPE-U(PUR) | – |
| Housing colour | – | – | – |
| Cable sheath | TPE-U(PUR) | TPE-U(PUR) | TPE-U(PUR) |
| Cable sheath colour | Grey | Grey | Grey |
| Insulating sheath | PP | PP | PVC |
| Screw-type lock | – | Nickel-plated brass | Nickel-plated brass |
| Union nut | Nickel-plated brass | – | – |
| Seals | NBR | – | FPM |
| Pin contacts | Gold-plated brass | Gold-plated bronze | Nickel-plated and gold-plated bronze |
| Note on materials | RoHS-compliant | RoHS-compliant | – |

| Operating and environmental conditions | | | |
|--|------|-------------|-------------|
| Type | NEBU | SIM | KM12 |
| Ambient temperature | [°C] | –25 ... +80 | –25 ... +80 |
| With flexible cable installation | [°C] | –5 ... +80 | 0 ... +80 |
| Corrosion resistance class CRC ¹⁾ | 2 | 2 | 2 |
| Contamination level | 3 | 3 | – |

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
 Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Connecting cables, M12 8-pin

Technical data

| Circuitry (socket view) | | | | |
|---|---------|---------------------------|---------|---|
| Socket | Pin | Wire colour ¹⁾ | Pin | Plug |
| Electrical connection, socket, 8-pin, M12 – open cable end | | | | |
|  | 1 | WH | - | - |
| | 2 | BN | - | |
| | 3 | GN | - | |
| | 4 | YE | - | |
| | 5 | GY | - | |
| | 6 | RS | - | |
| | 7 | BU | - | |
| | 8 | RD | - | |
| Electrical connection, socket, 8-pin, M12 – plug, 8-pin | | | | |
|  | 1 | WH | 1 |  |
| | 2 | BN | 2 | |
| | 3 | GN | 3 | |
| | 4 | YE | 4 | |
| | 5 | GY | 5 | |
| | 6 | RS | 6 | |
| | 7 | BU | 7 | |
| | 8 | RD | 8 | |
| | Housing | Shield | Housing | |

1) To IEC 757

Connecting cables, M12 8-pin

Technical data

Dimensions

Download CAD data → www.festo.com

Connection technology on the left

1 Socket M12x1
2 Inscription label holder, must be ordered separately as an accessory
3 Cable, length 2 m, 5 m, 10 m, 15 m, 20 m, 25 m depending on the order

Connection technology on the right

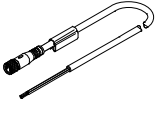
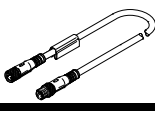
1 Plug
2 Inscription label holder, must be ordered separately as an accessory
3 Cable, length 2 m, 5 m, 10 m, 15 m, 20 m, 25 m depending on the order

| Connection technology on the left | D1 ∅ | D2 | D3 ∅ | L2 | L4 | H1 | ≈C1 |
|-----------------------------------|---------|-------|---------|----|----|----|-----|
| NEBU | | | | | | | |
| Angled socket | 6.3 | M12x1 | 14.5 | 38 | - | 28 | - |
| SIM | | | | | | | |
| Straight socket | 6.3 | M12x1 | 14.6 | - | - | - | - |
| KM12 | | | | | | | |
| Straight socket | 6.2 | M12x1 | - | - | - | - | - |

| Connection technology on the right | D1 ∅ | D4 | D5 ∅ | L2 | L3 | L4 | ≈C1 |
|------------------------------------|---------|-------|---------|----|----|----|-----|
| NEBU | | | | | | | |
| Open end | 6.3 | - | - | - | 50 | - | - |
| SIM | | | | | | | |
| Open end | 6.3 | - | - | - | 50 | - | - |
| KM12 | | | | | | | |
| Straight plug | 6.2 | M12x1 | 14.6 | - | - | - | - |

Connecting cables, M12 8-pin

Technical data

| Ordering data | | | | | | | | | |
|---|----------------------|---|--------------------|------------------|---------------------|----------------|------------------------------|---------------|-------------------------|
| | Cable characteristic | Cable length [m] | Outlet orientation | Special features | Product weight [g] | Part no. | Type | | |
| Socket, 8-pin, M12 – open cable end, 8-wire | | | | | | | | | |
|  | Standard | 2 | Angled | – | 125 | 542256 | NEBU-M12W8-K-2-N-LE8 | | |
| | | | Straight | – | – | 525616 | SIM-M12-8GD-2-PU | | |
| | | 5 | Angled | – | 292 | 542257 | NEBU-M12W8-K-5-N-LE8 | | |
| | | | Straight | – | 343 | 525618 | SIM-M12-8GD-5-PU | | |
| | | 10 | Angled | – | 570 | 570007 | NEBU-M12W8-K-10-N-LE8 | | |
| | | | Straight | – | – | 570008 | SIM-M12-8GD-10-PU | | |
| | | 15 | Angled | – | 848 | 8048086 | NEBU-M12W8-K-15-N-LE8 | | |
| | | | Straight | – | – | 5105631 | SIM-M12-8GD-15-PU | | |
| | | 20 | Straight | – | – | 5105632 | SIM-M12-8GD-20-PU | | |
| | | 25 | Straight | – | – | 5105633 | SIM-M12-8GD-25-PU | | |
| | | Socket, 8-pin, M12 plug, 8-pin, M12 | | | | | | | |
| | |  | – | 2 | Straight – straight | – | 156 | 525617 | KM12-8GD8GS-2-PU |

Connecting cables, G7/8 5-pin

Technical data

Power supply socket
NEBU-G78W5

- Connecting cable for power supply
- Pre-assembled
- 2 m cable length
- 5 wires
- Socket G7/8, 5-pin



| General technical data | |
|------------------------------|----------------------------------|
| Based on standard | NFPA/T3.5.29 R1-2007 |
| Cable designation | Without inscription label holder |
| Degree of protection | IP65, IP67 |
| Note on degree of protection | In assembled state |

| Technical data – Electrical connection 1 | |
|--|------------------------------------|
| Function | Field device side |
| Design | Round |
| Connection type | Socket |
| Cable outlet | Angled |
| Connection technology | G7/8 coded to NFPA/T3.5.29 R1-2007 |
| Number of pins/wires | 5 |
| Assigned pins/wires | 5 |
| Type of mounting | Screw-type lock |
| Contact durability | 100 |

| Technical data – Electrical components | | |
|--|--------|-----------|
| Operating voltage range | [V DC] | 0 ... 300 |
| | [V AC] | 0 ... 300 |
| Surge resistance | [kV] | 4 |
| Current rating at 40 °C | [A] | 9 |

| Technical data – Cable | | |
|--|--------------------|----------------------------|
| Cable characteristic | | Standard |
| Cable test conditions | | Test conditions on request |
| Bending radius, fixed cable installation | [mm] | ≥65 |
| Cable diameter | [mm] | 8.7 |
| Cable diameter tolerance | [mm] | ±0.2 |
| Cable composition | [mm ²] | 5x 1.5 |
| Conductor nominal cross section | [mm ²] | 1.5 |

| Technical data – Electrical connection 2 | |
|--|-----------------|
| Function | Controller side |
| Connection type | Cable |
| Connection technology | Open end |
| Number of pins/wires | 5 |
| Assigned pins/wires | 5 |

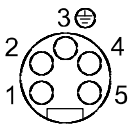
Connecting cables, G7/8 5-pin

Technical data

| Materials | |
|---------------------|---------------------|
| Housing | TPE-U(PUR) |
| Housing colour | Black |
| Cable sheath | TPE-U(PUR) |
| Cable sheath colour | Black |
| Screw-type lock | Nickel-plated brass |
| Pin contacts | Gold-plated brass |
| Note on materials | RoHS-compliant |

| Operating and environmental conditions | | |
|--|------|---|
| Ambient temperature | [°C] | -20 ... +80 |
| Corrosion resistance class CRC ¹⁾ | | 1 |
| CE marking (see declaration of conformity) ²⁾ | | In accordance with EU Low Voltage Directive |
| Contamination level | | 3 |

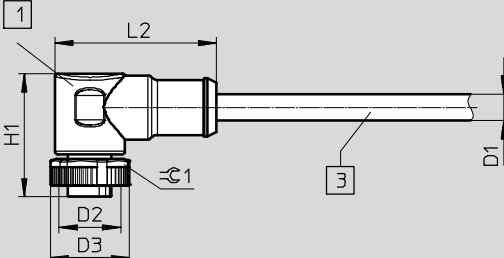
- 1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).
- 2) Additional information www.festo.com/sp → Certificates.

| Circuitry (socket view) | | | | |
|---|-----|---------------------------|-----|------|
| Socket | Pin | Wire colour ¹⁾ | Pin | Plug |
| Electrical connection, socket, 5-pin, G7/8 – open cable end | | | | |
|  | 1 | BK | - | - |
| | 2 | BU | - | |
| | 3 | GN YE | - | |
| | 4 | BN | - | |
| | 5 | WH | - | |

1) To IEC 757

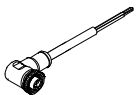
Dimensions

Download CAD data → www.festo.com



1) Socket G7/8
3) Cable, length 2 m

| | D1 | D2 | D3 | L2 | H1 | ⌀ |
|------------|-----|------|----|----|------|----|
| NEBU-G78W5 | 8.7 | 7/8" | 26 | 53 | 40.4 | 24 |

| Ordering data | | | | | | | |
|---|----------------------|------------------|--------------------|------------------|--------------------|----------|----------------------|
| | Cable characteristic | Cable length [m] | Outlet orientation | Special features | Product weight [g] | Part no. | Type |
| Socket, 5-pin, G7/8 – open cable end | | | | | | | |
|  | Standard | 2 | Angled | - | 300 | 573855 | NEBU-G78W5-K-2-N-LE5 |

Connecting cables, clip, 3-pin

Technical data

FESTO

Connecting cable SIM-K

- Connecting cable for low-voltage applications
- Easy-to-clean design
- Pre-assembled
- Cable lengths 2.5 m, 5 m and 10 m
- 3 wires
- Mounting via clip (snap-locking)



| General technical data | |
|------------------------------|---|
| Conforms to standard | EN 61076-2-104 |
| | EN 61984 |
| | Wire colours and connection numbers to EN 60947-5-2 |
| Cable designation | Without inscription label holder |
| Degree of protection | IP65, IP67 |
| Note on degree of protection | In assembled state |

| Technical data – Electrical connection 1 | |
|--|---|
| Function | Field device side |
| Design | Round |
| Connection type | Socket |
| Cable outlet | Straight, angled |
| Connection technology | M8 snap-locking A-coded to EN 61076-2-104 |
| Number of pins/wires | 3 |
| Assigned pins/wires | 3 |
| Type of mounting | Snap-locking |
| Contact durability | 100 |

| Technical data – Electrical components | | |
|--|--------|----------|
| Operating voltage range | [V DC] | 0 ... 60 |
| | [V AC] | 0 ... 60 |
| Surge resistance | [kV] | 1.5 |
| Current rating at 40 °C | [A] | 3 |

| Technical data – Cable | | | |
|---------------------------------|--|--------------------|---------|
| Cable characteristic | Standard | | |
| Cable test conditions | Bending strength: to Festo standard | | |
| | Test conditions on request | | |
| | Energy chain: 5 million cycles, bending radius 28 mm | | |
| Bending radius | Fixed cable installation | [mm] | ≥23 |
| | Flexible cable installation | [mm] | ≥46 |
| Cable diameter | | [mm] | 4.5 |
| Cable diameter tolerance | | [mm] | ±0.1 |
| Cable composition | | [mm ²] | 3x 0.25 |
| Conductor nominal cross section | | [mm ²] | 0.25 |

| Technical data – Electrical connection 2 | |
|--|------------------|
| Function | Controller side |
| Connection type | Cable |
| Connection technology | Open end |
| Number of pins/wires | 3 |
| Assigned pins/wires | 3 |
| Wire ends | Cable end sleeve |

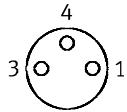
Connecting cables, clip, 3-pin

Technical data

| Materials | |
|---------------------|-------------------------|
| Housing | TPE-U(PUR) |
| Housing colour | Black |
| Cable sheath | TPE-U(PUR) |
| Cable sheath colour | Grey |
| Insulating sheath | PP |
| Seals | NBR |
| Pin contacts | Gold-plated brass |
| Note on materials | RoHS-compliant |
| | Free of copper and PTFE |
| | Free of halogen |

| Operating and environmental conditions | | |
|--|------|---|
| Ambient temperature | [°C] | -25 ... +70 |
| With flexible cable installation | [°C] | -5 ... +70 |
| Storage temperature | [°C] | -25 ... +70 |
| Corrosion resistance class CRC ¹⁾ | | 4 |
| CE marking (see declaration of conformity) ²⁾ | | In accordance with EU Low Voltage Directive |
| Contamination level | | 3 |

- 1) Corrosion resistance class CRC 4 to Festo standard FN 940070
Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, for instance in the chemical or food industries. These applications may need to be supported by special tests (→ also FN 940082) using appropriate media.
- 2) Additional information www.festo.com/sp → Certificates.

| Circuitry (socket view) | | | | |
|---|-----|---------------------------|-----|------|
| Socket | Pin | Wire colour ¹⁾ | Pin | Plug |
| Electrical connection, socket, 3-pin, clip – open cable end | | | | |
|  | 1 | BN | - | - |
| | 3 | BU | - | |
| | 4 | BK | - | |

1) To IEC 757

Connecting cables, clip, 3-pin

Technical data

Dimensions

Download CAD data → www.festo.com

Connection technology on the left

1 Socket
2 Inscription label holder, must be ordered separately as an accessory
3 Cable, length 2.5 m, 5 m, 10 m depending on the order

Connection technology on the right

2 Inscription label holder, must be ordered separately as an accessory
3 Cable, length 2.5 m, 5 m, 10 m depending on the order

| Connection technology on the left | D1 ∅ | D2 | D3 ∅ | L2 | L4 | H1 | ≈C1 |
|-----------------------------------|---------|-----|---------|------|----|------|-----|
| Straight socket | 4.5 | – | 8.5 | 33.6 | – | – | – |
| Angled socket | 4.5 | 8.3 | 8.5 | 26.1 | – | 18.4 | – |

| Connection technology on the right | D1 ∅ | L3 |
|------------------------------------|---------|----|
| Open end | 4.5 | 50 |

| Ordering data | | | | | | | |
|--------------------------------------|----------------------|------------------|--------------------|------------------|--------------------|----------|-----------------|
| | Cable characteristic | Cable length [m] | Outlet orientation | Special features | Product weight [m] | Part no. | Type |
| Socket, 3-pin, clip – open cable end | | | | | | | |
| | Standard | 2.5 | Straight | – | – | 164257 | SIM-K-GD-2,5-PU |
| | | | Angled | – | – | 164255 | SIM-K-WD-2,5-PU |
| | | 5 | Straight | – | – | 164256 | SIM-K-GD-5-PU |
| | | | Angled | – | – | 164254 | SIM-K-WD-5-PU |
| | | 10 | Straight | – | – | 192962 | SIM-K-GD-10-PU |
| | | | Angled | – | – | 192963 | SIM-K-WD-10-PU |

Connecting cables, clip, 4-pin

Technical data

**Connecting cable
SIM-K**

- Connecting cable for low-voltage applications
- Easy-to-clean design
- Pre-assembled
- Cable lengths 2.5 m and 5 m
- 4 wires
- Mounting via clip (snap-locking)



| General technical data | |
|------------------------------|---|
| Conforms to standard | EN 61076-2-104 |
| | EN 61984 |
| | Wire colours and connection numbers to EN 60947-5-2 |
| Cable designation | Without inscription label holder |
| Degree of protection | IP65, IP67 |
| Note on degree of protection | In assembled state |

| Technical data – Electrical connection 1 | |
|--|---|
| Function | Field device side |
| Design | Round |
| Connection type | Socket |
| Cable outlet | Straight, angled |
| Connection technology | M8 snap-locking A-coded to EN 61076-2-104 |
| Number of pins/wires | 4 |
| Assigned pins/wires | 4 |
| Type of mounting | Snap-locking |
| Contact durability | 100 |

| Technical data – Electrical components | | |
|--|--------|----------|
| Operating voltage range | [V DC] | 0 ... 30 |
| | [V AC] | 0 ... 30 |
| Surge resistance | [kV] | 0.8 |
| Current rating at 40 °C | [A] | 3 |

| Technical data – Cable | | | |
|---------------------------------|-----------------------------|--|---------|
| Cable characteristic | | Standard | |
| Cable test conditions | | Bending strength: to Festo standard | |
| | | Test conditions on request | |
| | | Energy chain: 5 million cycles, bending radius 28 mm | |
| Bending radius | Fixed cable installation | [mm] | ≥23 |
| | Flexible cable installation | [mm] | ≥46 |
| Cable diameter | | [mm] | 4.5 |
| Cable diameter tolerance | | [mm] | ±0.1 |
| Cable composition | | [mm ²] | 4x 0.25 |
| Conductor nominal cross section | | [mm ²] | 0.25 |

| Technical data – Electrical connection 2 | |
|--|------------------|
| Function | Controller side |
| Connection type | Cable |
| Connection technology | Open end |
| Number of pins/wires | 4 |
| Assigned pins/wires | 4 |
| Wire ends | Cable end sleeve |

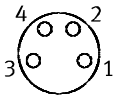
Connecting cables, clip, 4-pin

Technical data

| Materials | |
|---------------------|-------------------------|
| Housing | TPE-U(PUR) |
| Housing colour | Black |
| Cable sheath | TPE-U(PUR) |
| Cable sheath colour | Grey |
| Insulating sheath | PP |
| Seals | NBR |
| Pin contacts | Gold-plated brass |
| Note on materials | RoHS-compliant |
| | Free of copper and PTFE |
| | Free of halogen |

| Operating and environmental conditions | | | |
|--|----------------------------------|------|-------------|
| Ambient temperature | | [°C] | -25 ... +70 |
| | With flexible cable installation | [°C] | -5 ... +70 |
| Storage temperature | | [°C] | -25 ... +70 |
| Corrosion resistance class CRC ¹⁾ | | | 4 |
| Contamination level | | | 3 |

1) Corrosion resistance class CRC 4 to Festo standard FN 940070
 Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, for instance in the chemical or food industries. These applications may need to be supported by special tests (→ also FN 940082) using appropriate media.

| Circuitry (socket view) | | | | |
|---|-----|---------------------------|-----|------|
| Socket | Pin | Wire colour ¹⁾ | Pin | Plug |
| Electrical connection, socket, 4-pin, clip – open cable end | | | | |
|  | 1 | BN | - | - |
| | 2 | WH | - | - |
| | 3 | BU | - | - |
| | 4 | BK | - | - |

1) To IEC 757

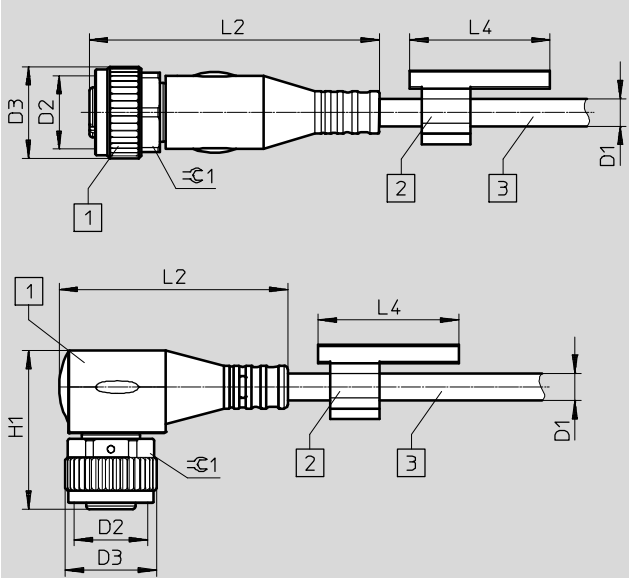
Connecting cables, clip, 4-pin

Technical data

Dimensions

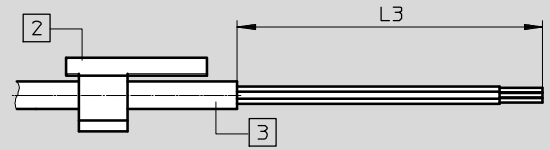
Download CAD data → www.festo.com

Connection technology on the left



- 1 Socket
- 2 Inscription label holder, must be ordered separately as an accessory
- 3 Cable, length 2.5 m, 5 m depending on the order

Connection technology on the right



- 2 Inscription label holder, must be ordered separately as an accessory
- 3 Cable, length 2.5 m, 5 m depending on the order

| Connection technology on the left | D1 Ø | D2 | D3 Ø | L2 | L4 | H1 | ≈C1 |
|-----------------------------------|---------|----|---------|------|----|------|-----|
| Straight socket | 4.5 | - | 8.5 | 33.6 | - | - | - |
| Angled socket | 4.5 | - | 8.3 | 26.1 | - | 18.4 | - |

| Connection technology on the right | D1 Ø | L3 |
|------------------------------------|---------|----|
| Open end | 4.5 | 50 |

Ordering data

| | Cable characteristic | Cable length [m] | Outlet orientation | Special features | Product weight [g] | Part no. | Type |
|--------------------------------------|----------------------|------------------|--------------------|------------------|--------------------|----------|-------------------|
| Socket, 4-pin, clip – open cable end | | | | | | | |
| | Standard | 2.5 | Straight | - | - | 164250 | SIM-K-4-GD-2,5-PU |
| | | | Angled | - | - | 164252 | SIM-K-4-WD-2,5-PU |
| | | 5 | Straight | - | - | 164251 | SIM-K-4-GD-5-PU |
| | | | Angled | - | - | 164253 | SIM-K-4-WD-5-PU |

Connecting cables NEBU, universal

Ordering data – Modular product system



| Ordering table | | Condi- tions | Code | Entry code |
|--|--|-----------------|-------------|---------------|
| M Module no. | 539052 | | | |
| Function | Connecting cable | | NEBU | NEBU |
| Connection technology on the left | Open end | 1 | -LE | |
| | Socket with connecting thread M8 | | -M8 | |
| | Socket with connecting thread M12, A-coded | | -M12 | |
| M Socket design | Without (only in the case of open end as connection technology on the left) | | | |
| | Straight | | G | |
| | Angled | | W | |
| | Rotatable | 2 | R | |
| M Number of pins/wires (on the left) | 3-pin (suitable for open end, M8 plug) | | 3 | |
| | 4-pin (suitable for open end, M8 plug) | | 4 | |
| | 5-pin (suitable for 3, 4 and 5-pin M12 plug) | | 5 | |
| O Display | Without LED, DC (standard) | | | |
| | LED, PNP | 3 | P | |
| | LED, NPN | 3 | N | |
| | LED, DC | 4 | L | |
| | 2x LED, PNP | 5 | P2 | |
| M Cable characteristic | Basic | | -P | |
| | Standard | | -K | |
| | Suitable for energy chains | | -E | |
| | Suitable for robots applications | | -R | |
| Cable length | 0.1 ... 30 m (0.1 ... 2.5 m in 0.1 m increments, 2.5 ... 30 m in 0.5 m increments) | | -... | |
| O Wire cross section | 0.25 mm ² (standard) | | | |
| | 1.00 mm ² | 6 | Q8 | |
| Cable colour | Grey (standard) | | | |
| Cable designation | With inscription label holder (standard) | | | |
| | Without inscription label holder | | -N | |
| M Connection technology on the right | Open end (not possible in the case of open end as connection technology on the left) | 1 | -LE | |
| | Plug with connecting thread M8 | | -M8 | |
| | Plug with connecting thread M12, A-coded | | -M12 | |
| M Plug design | Without (only in the case of open end as connection technology on the right) | | | |
| | Straight | | G | |
| | Angled | | W | |
| M Number of pins/wires (on the right) | 2-pin | 7 | 2 | |
| | 3-pin (suitable for M8/M12 socket) | 8 | 3 | |
| | 4-pin (suitable for M8/M12 socket) | 8 | 4 | |
| | 5-pin (suitable for M12 socket) | 8 9 | 5 | |

- | | |
|---|---|
| <p>1 LE With open end LE the number of pins/wires of the open end must be equal or less than the number of pins of the opposite side.</p> <p>2 R Can only be combined with M8 (connection technology on the left), 3-pin (pins/wires on the left), without display, standard wire cross section.</p> <p>3 P, N Can only be combined with M8 connection technology on the left and socket design W with 3 PINS/wires (on the left), or with M12 connection technology on the left and socket design W with 5 PINS/wires (on the left) and 3 PINS/wires (on the right).</p> <p>4 L Can only be combined with M8 connection technology on the left and 4 PINS/wires (on the left) and M8 connection technology on the right with 3 or 4 PINS/wires (on the left) or M12 connection technology on the right with 2 PINS/wires (on the left) or LE connection technology on the right with 2 PINS/wires (on the left). Can only be combined with cable characteristic K.</p> | <p>5 P2 Can only be combined with M12 connection technology on the left and socket design W with 4 PINS/wires (on the right).</p> <p>6 Q8 Can only be combined with M12 connection technology on the left and socket design G with 5 PINS/wires (on the left), and with M12 connection technology on the right and plug design G with 5 PINS/wires (on the left). Can only be combined with cable characteristic E.</p> <p>7 2 Can only be combined with M12 or LE connection technology on the right and L display. Can only be combined with cable characteristic K.</p> <p>8 3, 4, 5 With LE connection technology on the left, the number of wires (on the left) is copied over.</p> <p>9 5 Can only be combined with M12 or LE connection technology on the left.</p> |
|---|---|

Transfer order code

539052 NEBU - [] - [] - [] - [] - [] - [] - [] - []