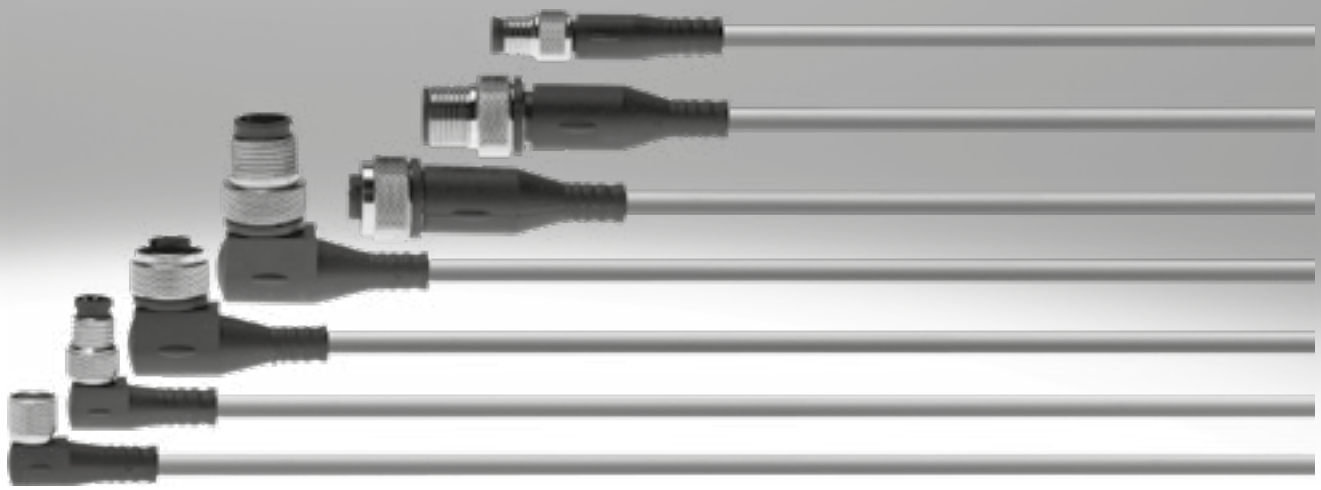
Connecting cables, universal



★/☆	Festo core product range Covers 80% of your automation tasks
Worldwide:	Always in stock
Superb:	Festo quality at an attractive price
Easy:	Simplified procurement and warehousing

★ Generally ready for dispatch from the factory within 24 hours
In stock at 13 Service Centres worldwide
More than 2200 products

☆ Generally ready for dispatch from the factory within 5 days
Assembled for you at 4 Service Centres worldwide
Up to 6 × 10^{12} variants per product family

Just look for the star!

Characteristics

Cable characteristic

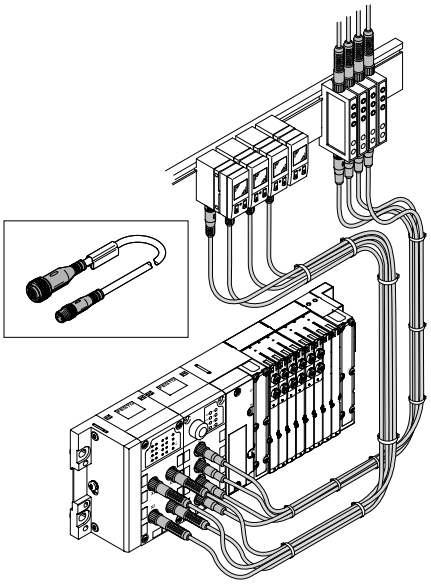
The connecting cables NEBU can be configured and ordered using a modular system. A range of characteristics can therefore be defined.

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 three qualities:
- Standard
- Suitable for energy chains
- Suitable for robot applications

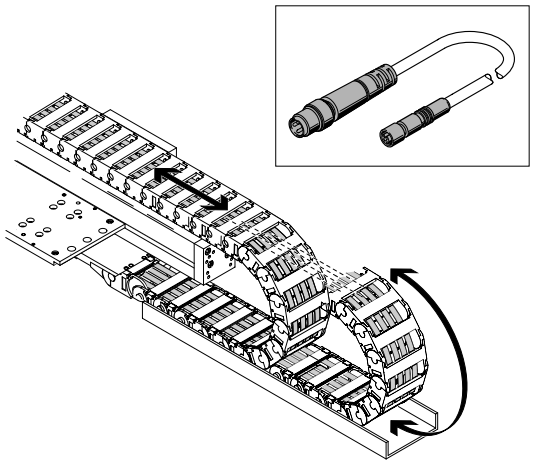
Cable characteristic: standard	Code K



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, is free of halogen, oil resistant and optimised for installation in contact with pneumatic tubing; free of phosphoric acid ester.

- 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.

Cable characteristic: suitable for energy chains	Code E



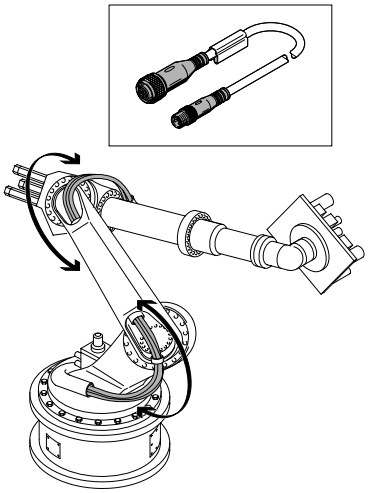
Energy chain applications involve high mechanical loads, particularly if very small radii are required.
The connecting cable can be used in a setting where it is constantly subjected to bending.
The cable sheath of the connecting cables is made of polyurethane, is free of halogen, oil resistant and optimised for installation in contact with pneumatic tubing; free of phosphoric acid ester.

- 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.

Characteristics

Cable characteristic

Cable characteristic: suitable for robot applications — Code R



Robot applications involve high mechanical loads that are primarily caused by torsion (twisting).
The cable sheath of the connecting cables is made of polyurethane, is free of halogen, oil resistant and optimised for installation in contact with pneumatic tubing; free of phosphoric acid ester.

- 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 ±270°/0.1 m.

Connection technology version

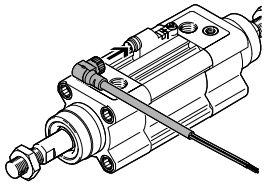
The type of plug for the connecting cable can be selected (e.g. angled or straight).

The rotatable version is a special type: with an angled socket, the cable outlet can be rotated 360° in increments of 15°.

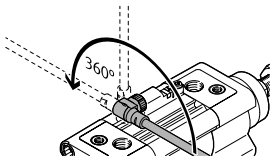
Benefit:
The cable outlet can be rotated to the optimum position in tight installation conditions.
The rotatable plug is not designed to be constantly adjusted.

Mounting

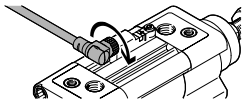
Observe the orientation of the pins.



Connect the plug to the socket.



Adjust the cable outlet.



Tighten the union nut.

Product range overview

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	Standard, suitable for energy chains, suitable for robot applications	0.1 ... 30 m	6
	Electrical connection (on the left), socket M8					
	3-pin	NEBU-M8 SIM-M8	Plug, open cable end	Standard, suitable for energy chains, suitable for robot applications	0.1 ... 30 m	11
	4-pin	NEBU-M8 SIM-M8	Plug, open cable end	Standard, suitable for energy chains, suitable for robot applications	0.1 ... 30 m	18
	Electrical connection (on the left), socket M12					
	4-pin	SIM-M12-RS-3	Open cable end	Resistant to welding spatter	3 m	24
	5-pin	NEBU-M12G5 NEBU-M12W5 SIM-M12	Plug, open cable end	Standard, suitable for energy chains, suitable for robot applications	0.1 ... 30 m	27
	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	35
	Electrical connection (on the left), socket G7/8					
	5-pin	NEBU-G78	Open cable end	Standard	2 m	40
	Electrical connection (on the left), clip					
	3-pin	SIM-K	Open cable end	Standard	2.5 m, 5 m, 10 m	42
	4-pin	SIM-K-4	Open cable end	Standard	2.5 m, 5 m	45

Type codes

001	Series	
NEBU	Connecting cable, universal	

002	Connection technology left, field device side	
M8	Socket M8x1 A-coded, EN 61076-2-104	
M12	Socket M12x1 A-coded, EN 61076-2-101	
G78	7/8"	
LE	Open end	

003	Cable outlet left	
	None	
G	Straight	
R	Rotating	
W	Angled	

004	Number of pins/wires on the left	
3	3	
4	4	
5	5	
8	8	

005	Display	
	None	
L	LED signal status, DC	
N	LED switching state, NPN	
P	LED switching state, PNP	
P2	2x LED, PNP	

006	Cable characteristic	
P	Basic	
K	Standard	
E	Suitable for energy chains	
R	Suitable for robot applications	

007	Cable length [m]	
0.1	0.1	
0.5	0.5	
1	1	
1.5	1.5	
2	2	
2.5	2.5	
3	3	
3.5	3.5	
5	5	
7	7	
7.5	7.5	
9	9	
10	10	
15	15	
30	30	

008	Cable identification	
	With label holder	
N	Without label holder	

009	Wire cross section [mm²]	
	Standard	
Q8	1	

010	Connection technology right, controller side	
M8	Plug M8x1 A-coded, EN 61076-2-104	
M12	Plug M12x1 A-coded, EN 61076-2-101	
LE	Open end	

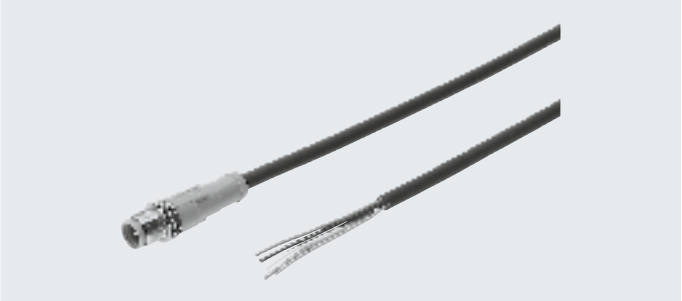
011	Plug	
	None	
G	Straight	
W	Angled	

012	Number of pins/wires on the right	
2	2	
3	3	
4	4	
5	5	
8	8	

Data sheet

Connecting cable
NEBU-LE

- Connecting cable for connecting inputs/outputs
- Pre-assembled at one end
- 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 -K-		Standard		
	Code -E-		Suitable for energy chains		
	Code -R-		Suitable for robot applications		
Cable testing conditions			Bending strength: to Festo standard		
			Test conditions on request		
	Cable characteristic	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 300000 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		

Data sheet

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
	Halogen-free
	Free of phosphoric acid ester
Special characteristics	Oil resistant

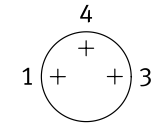
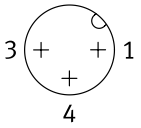
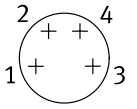
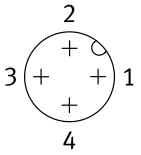
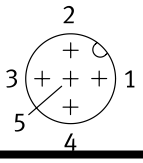
Operating and environmental conditions		
Ambient temperature	[°C]	–25 ... +70
Ambient temperature with flexible cable installation	[°C]	–5 ... +70
Corrosion resistance CRC[1)]		2
CE marking (see declaration of conformity)[2)]		To EU Low-Voltage Directive
Pollution degree		3

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

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

Data sheet

Circuitry (socket view)

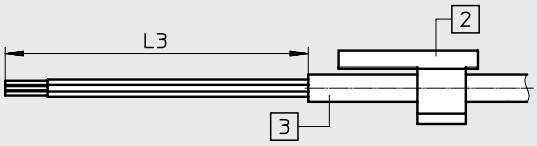
Electrical connection 1	Pin	Wire colour[1)]	Pin	Electrical connection 2	
Electrical connection, open cable end, 3-wire – plug, 3-pin				**Plug M8**	**Plug M12**
–	1	BN	1		
	2	WH	–		
	3	BU	3		
	4	BK	4		
Electrical connection, open cable end, 4-wire – plug, 4-pin				**Plug M8**	**Plug M12**
–	1	BN	1		
	2	WH	2		
	3	BU	3		
	4	BK	4		
Electrical connection, open cable end, 5-wire – plug, 5-pin, M12					**Plug M12**
–	–	BN	1		
	–	WH	2		
	–	BU	3		
	–	BK	4		
	–	GY	5		

1) To IEC 757

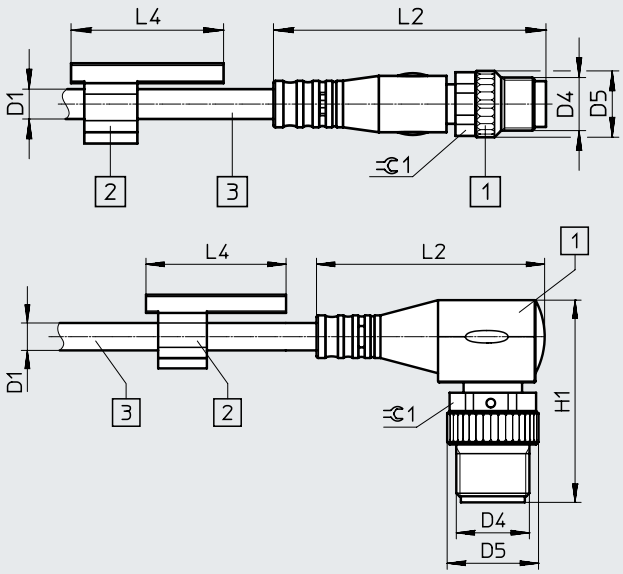
Data sheet

Dimensions Download CAD data ➔ www.festo.com

Connection technology, left



Connection technology, right



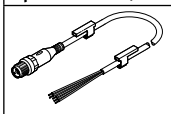
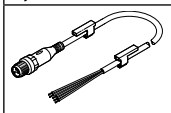
[1] Plug
[2] Inscription label holder
[3] Cable, length 0.1 ... 30 m depending on the order

Connection technology, left	L3
Open end	50

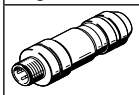
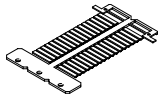
Connection technology, right	D1 ø	D4	D5 ø	L2	L4	H1	⇔1
Straight plug	4.5	M8x1	10	41.1	23	–	9
	4.5	M12x1	15	54.5	23	–	13
Angled plug	4.5	M8x1	10	26.9	23	24	9
	4.5	M12x1	15	37.5	23	33.2	13

Data sheet

Ordering data

	Cable characteristic	Cable length [m]	Outlet direction	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**

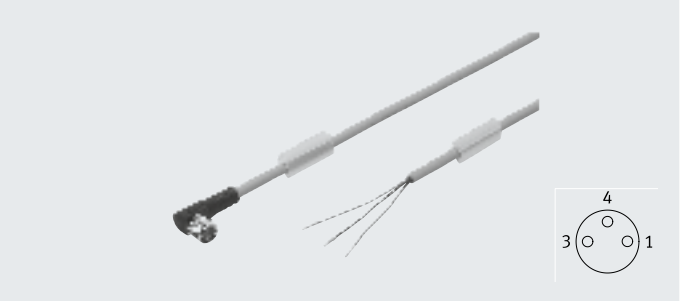
Ordering data – Accessories

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), to be fastened securely to the cable	For M12	**548068**	**NEAU-M12-GD**

Data sheet

Connecting cable
NEBU-M8
SIM-M8

- Connecting cable for connecting inputs/outputs
- Pre-assembled at one end, pre-assembled at both ends
- Cable lengths 0.1 … 30 m
- 3 wires
- M8x1 socket, 3-pin



General technical data

Type		NEBU	SIM
Conforms to standard	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
	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	4
	Connection technology rotatable	[A]	0.5	–

Data sheet

Technical data – Cable

Type				NEBU	SIM
Cable characteristic		Code -K-		Standard	–
		Code -E-		Suitable for energy chains	–
		Code -R-		Suitable for robot applications	–
				–	Standard
Cable testing conditions				Bending strength: to Festo standard	Bending strength: to Festo standard
				Test conditions on request	Test conditions on request
	Cable characteristic	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	–
		Suitable for robot applications		Energy chain: 5 million cycles, bending radius 28 mm	–
				Torsional resistance more than 300000 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		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	3	4	3	3
Assigned pins/wires	Without switching status indication	3	3	3	3	3
	With switching status indication	3	3	3	3	–
Type of mounting		–	Screw-type lock		Screw-type lock	–

Data sheet

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

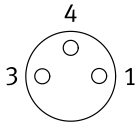
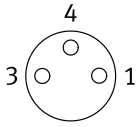
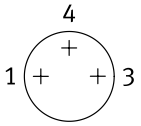
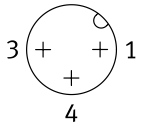
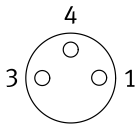
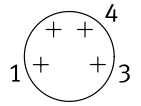
Operating and environmental conditions				
Type			NEBU	SIM
Ambient temperature	Cable characteristic: standard	[°C]	–25 … +70	–25 … +80
	Cable characteristic: suitable for energy chains, suitable for robot applications	[°C]	–25 … +80	–
Ambient temperature with flexible cable installation	Cable characteristic: standard	[°C]	–5 … +70	–5 … +80
	Cable characteristic: suitable for energy chains, suitable for robot applications	[°C]	–5 … +80	–
Corrosion resistance CRC[1)]			2	2
CE marking (see declaration of conformity)[2)]	All types		–	To EU RoHS Directive
	Without switching status indication		To EU Low-Voltage Directive	To EU Low-Voltage Directive
	With switching status indication		–	–
	Electrical connection 2 M8x1, 4-pin		–	–
Pollution degree			3	3

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

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

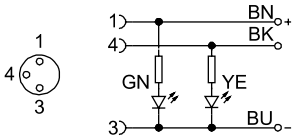
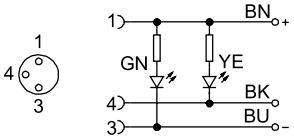
Data sheet

Circuitry (socket view)

Electrical connection 1	Pin	Wire colour[1)]	Pin	Electrical connection 2	
Electrical connection, socket, 3-pin, M8 – open cable end					
	1	BN	–	–	
	3	BU	–		
	4	BK	–		
Electrical connection, socket, 3-pin, M8 – plug, 3-pin				**Plug M8**	**Plug M12**
	1	BN	1		
	3	BU	3		
	4	BK	4		
Electrical connection, socket, 3-pin, M8 – plug, 4-pin, M8				**Plug M8**	
	1	BN	1		
	–	–	2		
	3	BU	3		
	4	BK	4		

1) To IEC 757

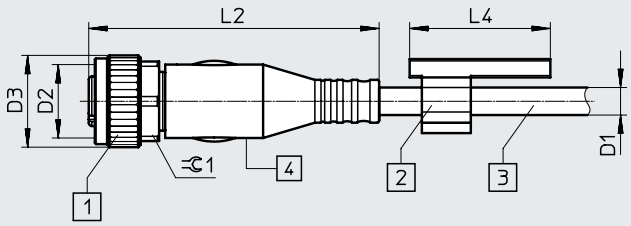
Circuitry, switching status indication

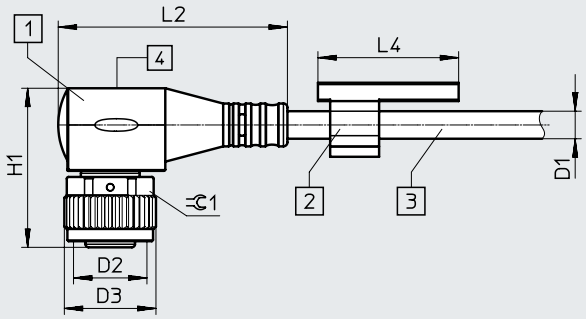
Display of code P, for PNP N/O contact	Display of code N, for NPN N/O contact
	

Data sheet

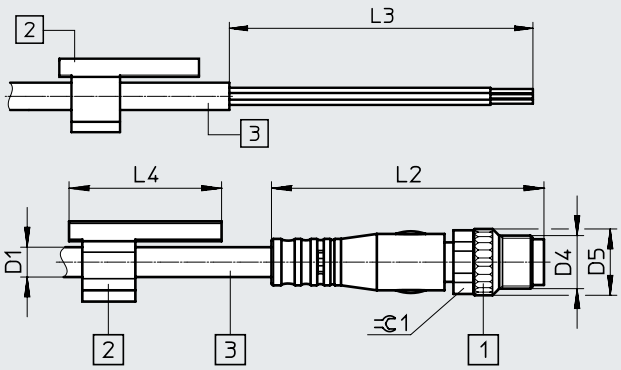
Dimensions Download CAD data ➔ www.festo.com

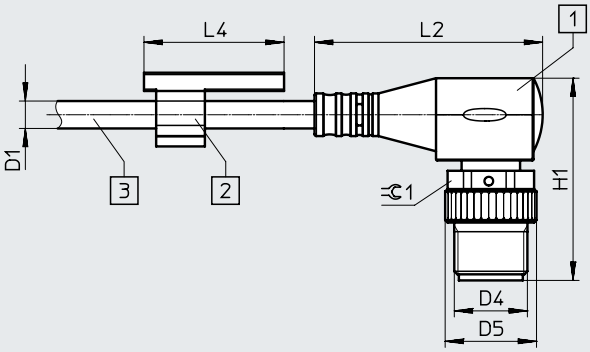
Connection technology, left





Connection technology, right





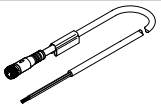
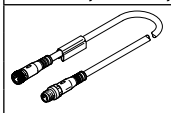
[1] Socket M8x1
[2] Inscription label holder
[3] Cable, length 0.1 ... 30 m depending on the order
[4] Display field with version P, N

Connection technology, left	D1 ø	D2	D3 ø	L2	L4	H1	⊂1
NEBU							
Straight socket	4.5	M8x1	10	34.6	23	–	9
Angled socket	4.5	M8x1	10	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	10	34.6	23	–	9
Angled socket	3.4	M8x1	10	26.9	23	17	9
SIM							
Straight socket	4.5	M8x1	10	34.6	–	–	9
Angled socket	4.5	M8x1	10	26.9	–	17	9

Connection technology, right	D1 ø	D4	D5 ø	L2	L3	L4	H1	⊂1
NEBU								
Open end	4.5	–	–	–	50	23	–	–
Straight plug	4.5	M8x1	10	41.1	–	23	–	9
	4.5	M12x1	15	54.5	–	23	–	13
Angled plug	4.5	M8x1	10	26.9	–	23	24	9
	4.5	M12x1	15	37.5	–	23	33.2	13
NEBU with display								
Straight plug	3.4	M8x1	10	41.1	–	23	–	9
	3.4	M12x1	15	54.5	–	23	–	13
Angled plug	3.4	M8x1	10	26.9	–	23	24	9
	3.4	M12x1	15	37.5	–	23	33.2	13
SIM								
Open end	4.5	–	–	–	50	–	–	–

Data sheet

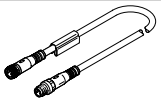
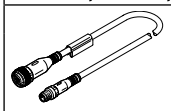
Ordering data

	Cable characteristic	Cable length [m]	Outlet direction	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 LED, ready status indication green LED	123	**541339**	**NEBU-M8W3N-K-5-LE3**
					–	**159427**	**SIM-M8-3WD-5-NSL-PU**
				For PNP N/O contact, switching status indication yellow LED, ready status indication green LED	123	**541340**	**NEBU-M8W3P-K-5-LE3**
					–	**159425**	**SIM-M8-3WD-5-PSL-PU**
		10	Straight	–	242	★ **541332**	**NEBU-M8G3-K-10-LE3**
				–	–	**192964**	**SIM-M8-3GD-10-PU**
			Angled	–	242	★ **541335**	**NEBU-M8W3-K-10-LE3**
				–	–	**192965**	**SIM-M8-3WD-10-PU**
	Suitable for use with 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**
		1			33	★ **541347**	**NEBU-M8G3-K-1-M8G3**
		1.5			45	**8003133**	**NEBU-M8G3-K-1.5-M8G3**
		2			57	**8003131**	**NEBU-M8G3-K-2-M8G3**
		2.5			69	★ **541348**	**NEBU-M8G3-K-2.5-M8G3**
		3			80	**8003132**	**NEBU-M8G3-K-3-M8G3**
		5			128	★ **541349**	**NEBU-M8G3-K-5-M8G3**
		10			246	**569844**	**NEBU-M8G3-K-10-M8G3**
	Suitable for use with energy chains	3.5	Straight – straight	–	92	**559364**	**NEBU-M8G3-E-3.5-M8G3**

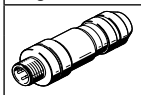
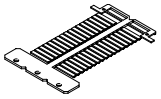
Festo core product range
★ Generally ready for dispatch from the factory within 24 hours
☆ Generally ready for dispatch from the factory within 5 days

Data sheet

Ordering data

	Cable characteristic	Cable length [m]	Outlet direction	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), to be fastened securely to the cable – For M8	**548067**	**NEAU-M8-GD**
	For M12	**548068**	**NEAU-M12-GD**

Data sheet

Connecting cable
NEBU-M8
SIM-M8

- Connecting cable for connecting inputs/outputs
- Pre-assembled at one end, pre-assembled at both ends
- Cable lengths 0.1 … 30 m
- 2, 3 or 4 wires
- M8x1 socket, 4-pin

General technical data

Type		NEBU	SIM
Conforms to standard	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	4

Data sheet

Technical data – Cable						
Type				NEBU		SIM
Cable characteristic		Code -K-		Standard		–
		Code -E-		Suitable for energy chains		–
		Code -R-		Suitable for robot applications		–
				–		Standard
Cable testing conditions				Bending strength: to Festo standard		Bending strength: to Festo standard
				Test conditions on request		Test conditions on request
	Cable characteristic	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		–
		Suitable for robot applications		Energy chain: 5 million cycles, bending radius 28 mm		–
				Torsional resistance more than 300000 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		[mm²]	3x 0.25	4x 0.25	4x 0.25
	With switching status indication		[mm²]	2x 0.25		–
Conductor nominal cross section			[mm²]	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	4
Assigned pins/wires	4	3	4	4	4
With switching status indication	2	3	4	2	–
Type of mounting	–	Screw-type lock		Screw-type lock	–

Data sheet

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 sheath colour		Grey	Grey
Insulating sheath	Cable characteristic: suitable for energy chains, suitable for robot applications, standard	PP	PP
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	–
	Cable characteristic: standard, suitable for energy chains, suitable for robot applications	Halogen-free	Halogen-free
		Free of phosphoric acid ester	Free of phosphoric acid ester
Special characteristics	Cable characteristic: standard, suitable for energy chains, suitable for robot applications	Oil resistant	–

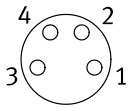
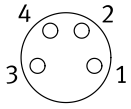
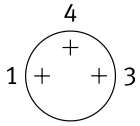
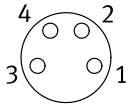
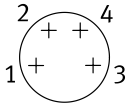
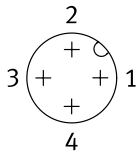
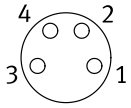
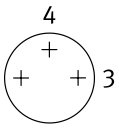
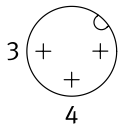
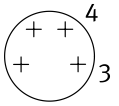
Operating and environmental conditions				
Type			NEBU	SIM
Ambient temperature	Cable characteristic: standard	[°C]	–25 … +70	–25 … +80
	Cable characteristic: suitable for energy chains, suitable for robot applications	[°C]	–25 … +80	–
Ambient temperature with flexible cable installation	Cable characteristic: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

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

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

Data sheet

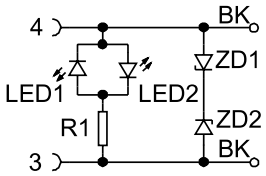
Circuitry (socket view)

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				**Plug M8**
	1	BN	1	
	2	WH	–	
	3	BU	3	
	4	BK	4	
Electrical connection, socket, 4-pin, M8 – plug, 4-pin				**Plug M8** / **Plug M12**
	1	BN	1	 
	2	WH	2	
	3	BU	3	
	4	BK	4	
Electrical connection, socket, 4-pin, M8, with display of code L				**Plug M8, 3-pin** / **Plug M12, 3-pin**
	1	–	1	 
	2	–	2	
	3	BK	3	
	4	BK	4	
				Plug M8, 4-pin / **Open cable end**
				 –

1) To IEC 757

Circuitry, switching status indication

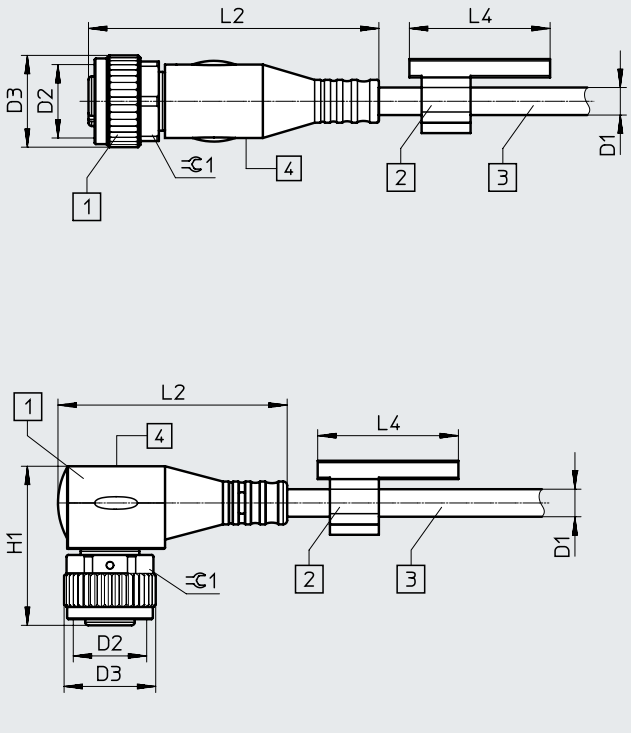
Display of code L



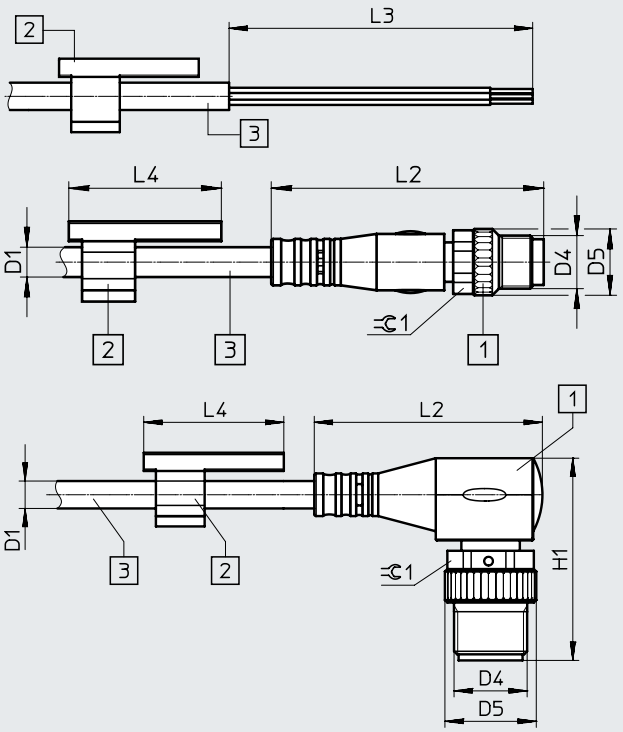
Data sheet

Dimensions Download CAD data ➔ www.festo.com

Connection technology, left



Connection technology, right



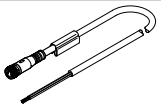
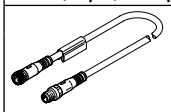
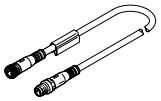
[1] Socket M8x1
[2] Inscription label holder
[3] Cable, length 0.1 ... 30 m depending on the order
[4] Display field with version L

Connection technology, left	D1 ø	D2	D3 ø	L2	L4	H1	⫧1
NEBU							
Straight socket	4.5	M8x1	10	34.6	23	–	9
Angled socket	4.5	M8x1	10	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	10	34.6	23	–	9
Angled socket	3.4	M8x1	10	26.9	23	17	9
SIM							
Straight socket	4.5	M8x1	10	34.6	–	–	9
Angled socket	4.5	M8x1	10	26.9	–	17	9

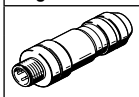
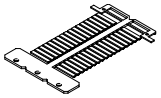
Connection technology, right	D1 ø	D4	D5 ø	L2	L3	L4	H1	⫧1
NEBU								
Open end	4.5	–	–	–	50	23	–	–
Straight plug	4.5	M8x1	10	41.1	–	23	–	9
	4.5	M12x1	15	54.5	–	23	–	13
Angled plug	4.5	M8x1	10	26.9	–	23	24	9
	4.5	M12x1	15	37.5	–	23	33.2	13
NEBU with display								
Straight plug	3.4	M8x1	10	41.1	–	23	–	9
	3.4	M12x1	15	54.5	–	23	–	13
Angled plug	3.4	M8x1	10	26.9	–	23	24	9
	3.4	M12x1	15	37.5	–	23	33.2	13
SIM								
Open end	4.5	–	–	–	50	–	–	–

Data sheet

Ordering data

	Cable characteristic	Cable length [m]	Outlet direction	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**
					–	**158960**	**SIM-M8-4GD-2,5-PU**
			Angled	–	72	**541344**	**NEBU-M8W4-K-2.5-LE4**
					–	**158962**	**SIM-M8-4WD-2,5-PU**
		5	Straight	–	138	**541343**	**NEBU-M8G4-K-5-LE4**
					–	**158961**	**SIM-M8-4GD-5-PU**
			Angled	–	138	**541345**	**NEBU-M8W4-K-5-LE4**
					–	**158963**	**SIM-M8-4WD-5-PU**
		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), to be fastened securely to the cable	For M8: **548067**	**NEAU-M8-GD**
		For M12: **548068**	**NEAU-M12-GD**

Data sheet

Connecting cable
SIM-M12

- Connecting cable for connecting inputs/outputs
- Pre-assembled at one end
- Cable length 3 m
- 3 wires
- M12x1 socket, 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

Data sheet

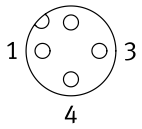
Technical data – Cable			
Cable characteristic			Resistant to welding spatter
Cable testing conditions			Bending strength: to Festo standard
			Test conditions on request
			Energy chain: 5 million cycles, bending radius 75 mm
Bending radius	Fixed cable installation	[mm]	≥28
	Flexible cable installation	[mm]	≥55
Cable diameter		[mm]	5.2
Cable diameter tolerance		[mm]	±0.3
Cable composition		[mm²]	3x 0.5
Conductor nominal cross section		[mm²]	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	Wire end sleeve

Materials	
Housing	TPE-U(PUR)
Housing colour	Black
Screw-type lock	Chrome-plated brass
Cable sheath	PVC, irradiated
Cable sheath colour	Orange
Insulating 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
Pollution degree		3

Circuitry (socket view)

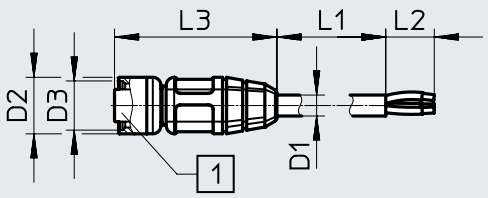
Socket	Pin	Wire colour[1)]	Pin	Plug
Electrical connection, socket, 4-pin, M12 – open cable end				
	1	BN	–	–
	2	–	–	
	3	BU	–	
	4	BK	–	

1) To IEC 757

Data sheet

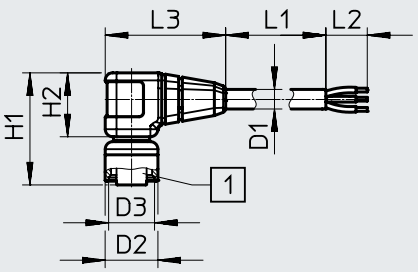
Dimensions Download CAD data ➔ www.festo.com

SIM-M12-RS-3GD-3



[1] Socket M12x1

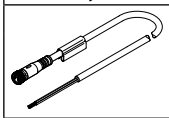
SIM-M12-RS-3WD-3



[1] Socket M12x1

Type	D1 ø	D2	D3 ø	L1	L2	L3	H1	H2	D1 ø
SIM-M12-RS-3GD-3	5.2	M12x1	14	3000	50	40	–	–	5.2
SIM-M12-RS-3WD-3	5.2	M12x1	14	3000	50	32	30	17	5.2

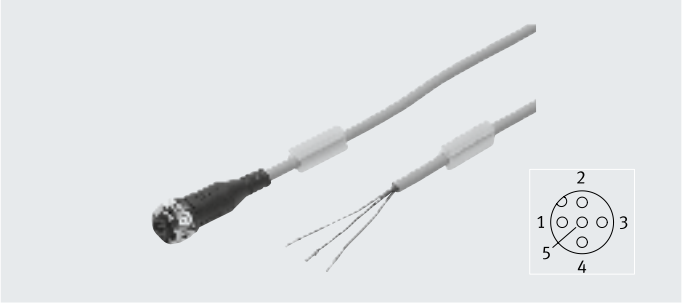
Ordering data

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

Data sheet

Connecting cable
NEBU-M12
SIM-M12

- Connecting cable for connecting inputs/outputs
- Pre-assembled at one end, 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		With 2x inscription label holders	–
	NEBU-M12G5-...-Q8N-M12G5	Without inscription label holder	–
	NEBU-M12G5-K-1-N-M12G3	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	–

Data sheet

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

Data sheet

Technical data – Cable

Type				NEBU					SIM		
Cable characteristic		Code -K-		Standard					–		
		Code -E-		Suitable for energy chains					–		
		Code -R-		Suitable for robot applications					–		
				–					Standard		
Cable testing conditions				Bending strength: to Festo standard					Bending strength: to Festo standard		
				Test conditions on request					Test conditions on request		
	Cable characteristic	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 300000 cycles, ±270°/0.1 m					–		
Cable diameter			[mm]	4.5					4.5		
		Code -Q8N-	[mm]	7					–		
Cable diameter tolerance			[mm]	±0.1					–		
Cable composition			[mm²]	–	2x 0.25	3x 0.25	4x 0.25	5x 0.25	3x 0.25	4x 0.25	5x 0.25
		Code -Q8N-	[mm²]	5x 1	–	–	–	–	–	–	–
Conductor nominal cross section			[mm²]	–	0.25	0.25	0.25	0.25	0.25	0.25	0.25
		Code -Q8N-	[mm²]	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	5	3	4	3	4	5	–	–	–
	With switching status indication	3	4	–	3	4	3	4	–	–	–	–
Type of mounting		–	–	–	Screw-type lock					–	–	–

Data sheet

Materials		
Type	NEBU	SIM
Housing	TPE-U(PUR)	TPE-U(PU)
Housing colour	Black	Black
Cable sheath	TPE-U(PUR)	TPE-U(PU)
Cable sheath colour	Grey	Grey
Insulating sheath	PP	PP
Wire insulation colour code	–	Blue, brown, black
	–	Blue, brown, black, white
	–	Blue, brown, grey, black, white
Screw-type lock	Nickel-plated brass	Nickel-plated brass
Note on materials	RoHS-compliant	RoHS-compliant
	Free of copper and PTFE	–
	Halogen-free	Halogen-free
	Free of phosphoric acid ester	Free of phosphoric acid ester
Special characteristics	Oil resistant	–

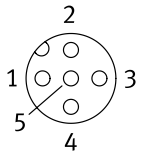
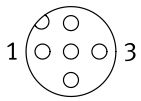
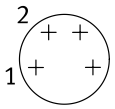
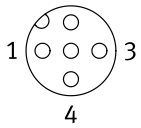
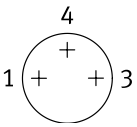
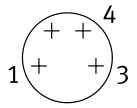
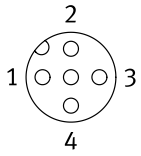
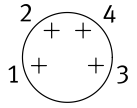
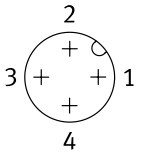
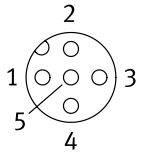
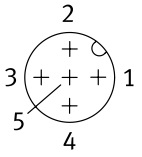
Operating and environmental conditions			NEBU	SIM
Ambient temperature	Cable characteristic: standard	[°C]	–25 ... +70	–25 ... +80
	Cable characteristic: suitable for energy chains, suitable for robot applications	[°C]	–25 ... +80	–
Ambient temperature with flexible cable installation	Cable characteristic: standard	[°C]	–5 ... +70	–5 ... +80
	Cable characteristic: suitable for energy chains, suitable for robot applications	[°C]	–5 ... +80	–
Corrosion resistance CRC[1)]			2	2
CE marking (see declaration of conformity)[2)]	Without switching status indication		To EU Low-Voltage Directive	To EU Low-Voltage Directive
	With switching status indication		–	–
	With plug M8, 4-pin		–	–
			To EU RoHS Directive	To EU RoHS Directive
Pollution degree			3	3

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

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

Data sheet

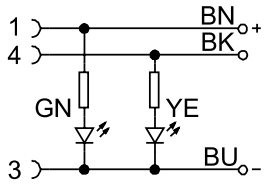
Circuitry (socket view)

Socket	Pin	Wire colour[1]			Pin	Plug
Electrical connection, socket, 5-pin, M12 – open cable end						**Open cable end**
		3-wire	4-wire	5-wire		–
	1	BN	BN	BN	–	
	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						**Plug M8**
	1	BN			1	
	2	–			–	
	3	BU			2	
	4	–			–	
	5	–			–	
Electrical connection, socket, 5-pin, M12 – cable, 3-wire – plug, 3-pin/4-pin						**Plug M8** / **Plug M12**
	1	BN			1	 
	2	–			–	
	3	BU			3	
	4	BK			4	
	5	–			–	
Electrical connection, socket, 5-pin, M12 – plug, 4-pin						**Plug M8** / **Plug M12**
	1	BN			1	 
	2	WH			2	
	3	BU			3	
	4	BK			4	
	5	–			–	
Electrical connection, socket, 5-pin, M12 – plug, 5-pin						**Plug M12**
	1	BN			1	
	2	WH			2	
	3	BU			3	
	4	BK			4	
	5	GY			5	

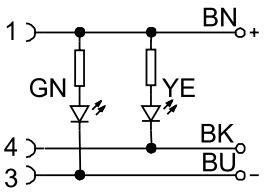
1) To IEC 757

Circuitry, switching status indication

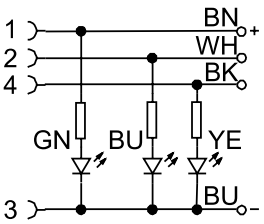
Display of code -P-



Display of code N



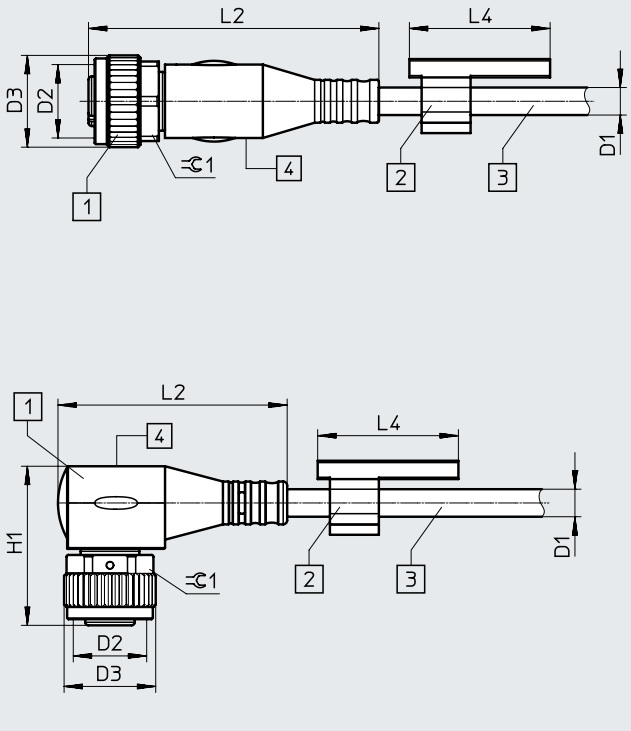
Display of code -P2



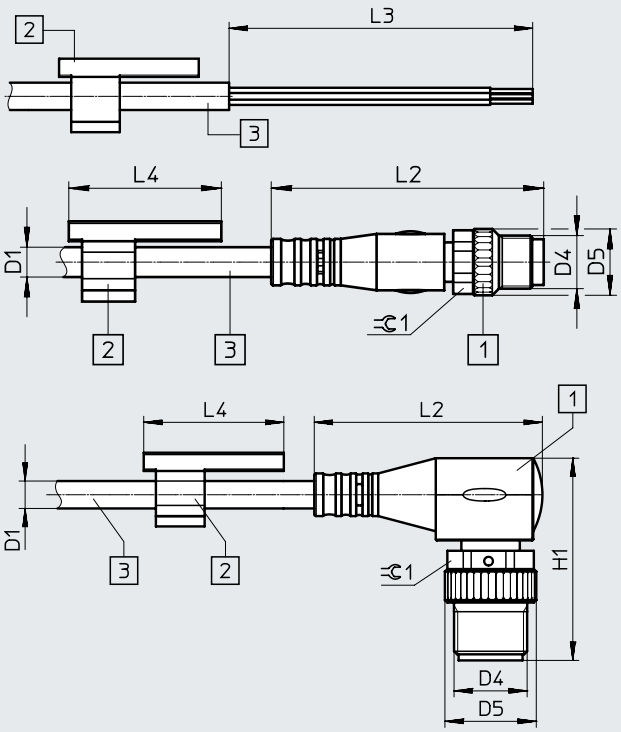
Data sheet

Dimensions Download CAD data ➔ www.festo.com

Connection technology, left



Connection technology, right



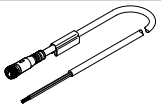
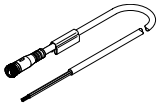
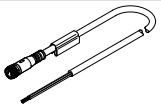
[1] Socket M12x1
[2] Inscription label holder
[3] Cable, length 0.1 ... 30 m depending on the order
[4] Display field with version P, N or P2

Connection technology, left	D1 ø	D2	D3 ø	L2	L4	H1	⫧1
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	47.5	–	–	13
Angled socket	4.5	M12x1	15	37.5	–	26	13

Connection technology, right	D1 ø	D4	D5 ø	L2	L3	L4	H1	⫧1
NEBU								
Open end	4.5	–	–	–	50	23	–	–
Straight plug	4.5	M8x1	10	41.1	–	23	–	9
	4.5	M12x1	15	54.5	–	23	–	13
Angled plug	4.5	M8x1	10	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	10	41.1	–	23	–	9
	4.5	M12x1	15	54.5	–	23	–	13
Angled plug	4.5	M8x1	10	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	–	–	–

Data sheet

Ordering data

	Cable characteristic	Cable length [m]	Outlet direction	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**
				For PNP N/O contact, switching status indication yellow, ready status indication green	–	**159432**	**SIM-M12-3WD-2.5-PSL-PU**
		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**
				For PNP N/O contact, switching status indication yellow, ready status indication green	–	**159433**	**SIM-M12-3WD-5-PSL-PU**
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**
			Angled	–	79	**567843**	**NEBU-M12W5-K-2.5-LE5**
		5	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**

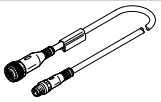
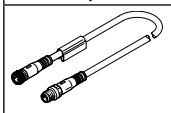
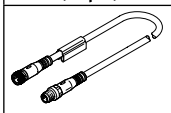
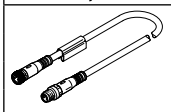
Festo core product range

★ Generally ready for dispatch from the factory within 24 hours

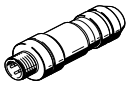
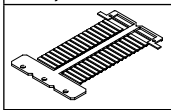
☆ Generally ready for dispatch from the factory within 5 days

Data sheet

Ordering data

	Cable characteristic	Cable length [m]	Outlet direction	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 use with 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 use with 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), to be fastened securely to the cable	For M8	**548067**	**NEAU-M8-GD**
		For M12	**548068**	**NEAU-M12-GD**

Data sheet

Plug socket with cable
NEBU-M12
SIM-M12-8
KM12-8

- Pre-assembled at one end, pre-assembled at both ends
- Cable lengths 2 m, 5 m, 10 m, 15 m, 20 m and 25 m
- 8 wires
- M12x1 socket, 8-pin

General technical data				
Type		NEBU	SIM	KM12
Conforms to standard		EN 61076-2-101	EN 61076-2-101	–
		–	DIN 47100	–
Cable designation		Without inscription label holder	Without inscription label holder	Without inscription label holder
Degree of protection		IP67	IP67	IP67
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		
Connection frequency		–	–	50

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

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

Data sheet

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	PP
	–	–	TPE-U(PUR)
Screw-type lock	–	Nickel-plated brass	Nickel-plated brass
	–	–	Chrome-plated brass
Union nut	Nickel-plated brass	–	–
Seals	NBR	–	NBR
Pin contacts	Gold-plated brass	Gold-plated bronze	Nickel-plated and gold-plated brass
Note on materials	RoHS-compliant	RoHS-compliant	RoHS-compliant

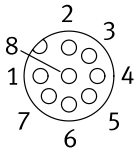
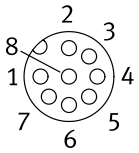
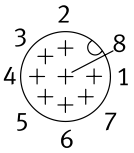
Operating and environmental conditions					
Type			NEBU	SIM	KM12
Ambient temperature		[°C]	–25 … +80	–25 … +80	–25 … +80
	With flexible cable installation	[°C]	–5 … +80	–5 … +80	0 … +80
Corrosion resistance CRC[1]			2	2	2
CE marking (see declaration of conformity)[2]			To EU EMC Directive	To EU EMC Directive	To EU EMC Directive
Pollution degree			3	3	3

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment.

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

Data sheet

Circuitry (socket view)

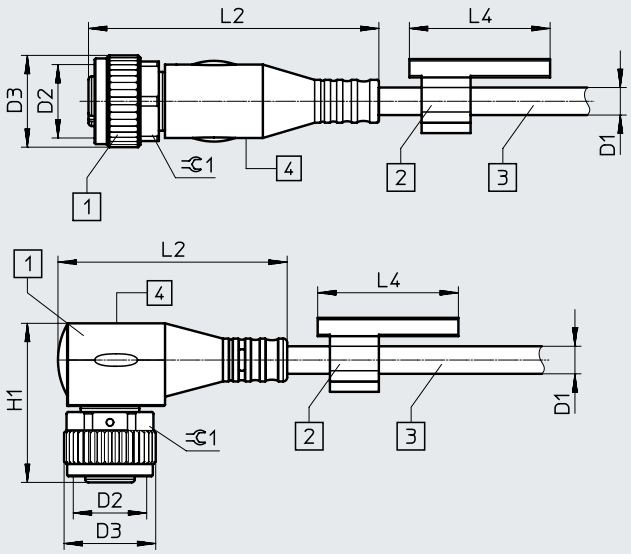
Socket	Pin	Wire colour[1)]	Pin	Plug
Electrical connection, socket, 8-pin, M12 – open cable end				
	1	WH	–	–
	2	BN	–	
	3	GN	–	
	4	YE	–	
	5	GY	–	
	6	RS	–	
	7	BU	–	
	8	RD	–	
Electrical connection, socket, 8-pin, M12 – plug, 8-pin				
	1	WH	1	
	2	BN	2	
	3	GN	3	
	4	YE	4	
	5	GY	5	
	6	RS	6	
	7	BU	7	
	8	RD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

1) To IEC 757

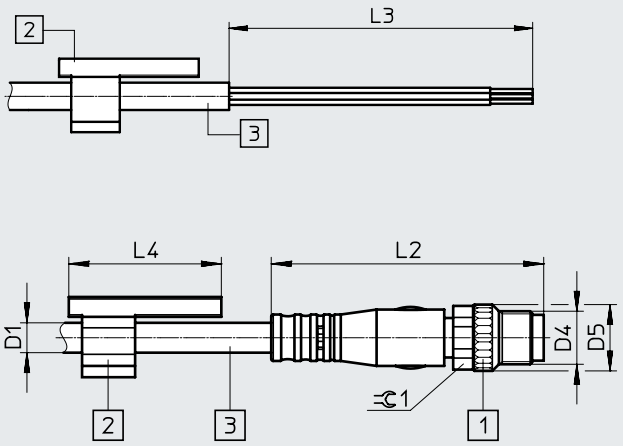
Data sheet

Dimensions Download CAD data ➔ www.festo.com

Connection technology, left



Connection technology, right



[1] Socket M12x1

[2] Inscription label holder, must be ordered separately as an accessory

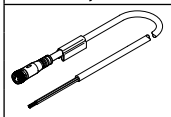
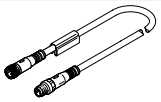
[3] Cable, length 2 m, 5 m, 10 m, 15 m, 20 m, 25 m depending on the order

Connection technology, left	D1 ø	D2	D3 ø	L2	L4	H1	⫧1
NEBU							
Angled socket	6.3	M12x1	14.5	33.5	–	26.2	–
SIM							
Straight socket	6.2	M12x1	14.5	–	–	–	–
KM12							
Straight socket	6.2	M12x1	–	–	–	–	–

Connection technology, right	D1 ø	D4	D5 ø	L2	L3	L4	⫧1
NEBU							
Open end	6.3	–	–	–	70	–	–
SIM							
Open end	6.2	–	–	–	70	–	–
KM12							
Straight plug	6.2	M12x1	14.6	–	–	–	–

Data sheet

Ordering data

	Cable characteristic	Cable length [m]	Outlet direction	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, plug M12, 8-pin, M12							
	–	2	Straight – straight	–	140	**525617**	**KM12-8GD8GS-2-PU**

Data sheet

Power supply socket
NEBU-G78W5

- Connecting cable for power supply
- Pre-assembled at one end
- 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 testing 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

Data sheet

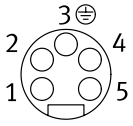
Materials	
Housing	TPE-U(PUR)
Housing colour	Black
Cable sheath	TPE-U(PUR)
Cable sheath colour	Black
Screw-type lock	Nickel-plated brass
Pin contacts	Gold-plated brass
Note on materials	RoHS-compliant

Operating and environmental conditions		
Ambient temperature	[°C]	–20 ... +80
Corrosion resistance CRC[1)]		1
CE marking (see declaration of conformity)[2)]		To EU Low-Voltage Directive
Pollution degree		3

1) Corrosion resistance class CRC 1 to Festo standard FN 940070
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind coverings, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

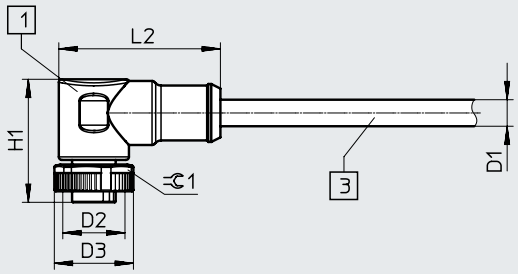
2) Additional information www.festo.com/sp ➔ Certificates.

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

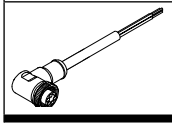
Dimensions Download CAD data ➔ www.festo.com



[1] Socket G7/8
[3] Cable, length 2 m

	D1 ø	D2	D3 ø	L2	H1	SW1
NEBU-G78W5	8.7	7/8"	26	53	40.4	24

Ordering data

	Cable characteristic	Cable length [m]	Outlet direction	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**

Data sheet

Connecting cable
SIM-K

- Connecting cable for low-voltage applications
- Easy-to-clean design
- Pre-assembled at one end
- 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 testing 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		[mm²]	3x 0.25
Conductor nominal cross section		[mm²]	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	Wire end sleeve

Data sheet

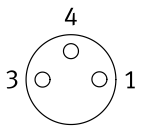
Materials	
Housing	TPE-U(PUR)
Housing colour	Black
Cable sheath	TPE-U(PUR)
Cable sheath colour	Grey
Insulating sheath	PP
Seals	NBR
Pin contacts	Gold-plated brass
Note on materials	RoHS-compliant
	Free of copper and PTFE
	Halogen-free

Operating and environmental conditions			
Ambient temperature		[°C]	–25 ... +70
	With flexible cable installation	[°C]	–5 ... +70
Storage temperature		[°C]	–25 ... +70
Corrosion resistance CRC[1)]			4
CE marking (see declaration of conformity)[2)]			To EU Low-Voltage Directive
Pollution degree			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, e.g. in the chemical or food industries. Such applications may need to be safeguarded by special tests (→ also FN 940082), using appropriate media.

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

Circuitry (socket view)

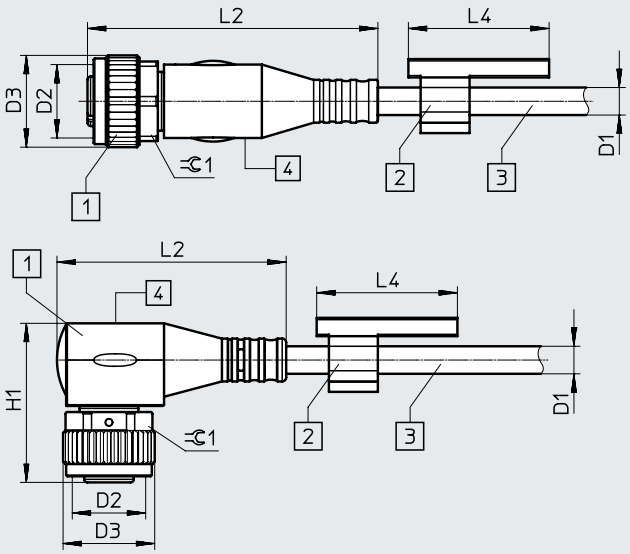
Socket	Pin	Wire colour[1)]	Pin	Plug
Electrical connection, socket, 3-pin, clip – open cable end				
	1	BN	–	–
	3	BU	–	
	4	BK	–	

1) To IEC 757

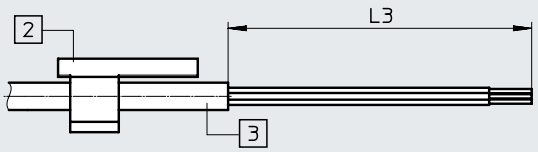
Data sheet

Dimensions Download CAD data ➔ www.festo.com

Connection technology, left



Connection technology, right



[1] Socket

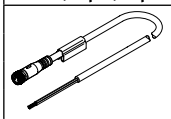
[2] Inscription label holder, must be ordered separately as an accessory

[3] Cable, length 2.5 m, 5 m, 10 m depending on the order

Connection technology, left	D1 ⌀	D2	D3 ⌀	L2	L4	H1	⫧1
Straight socket	4.5	–	8.5	33.6	–	–	–
Angled socket	4.5	8.3	8.5	26.1	–	18.4	–

Connection technology, right	D1 ⌀	L3
Open end	4.5	50

Ordering data

	Cable characteristic	Cable length [m]	Outlet direction	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**

Data sheet

Connecting cable
SIM-K

- Connecting cable for low-voltage applications
- Easy-to-clean design
- Pre-assembled at one end
- 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 testing 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		[mm²]	4x 0.25
Conductor nominal cross section		[mm²]	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	Wire end sleeve

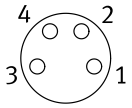
Data sheet

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
	Halogen-free

Operating and environmental conditions			
Ambient temperature		[°C]	–25 ... +70
	With flexible cable installation	[°C]	–5 ... +70
Storage temperature		[°C]	–25 ... +70
Corrosion resistance CRC[1)]			4
Pollution degree			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, e.g. in the chemical or food industries. Such applications may need to be safeguarded 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

Data sheet

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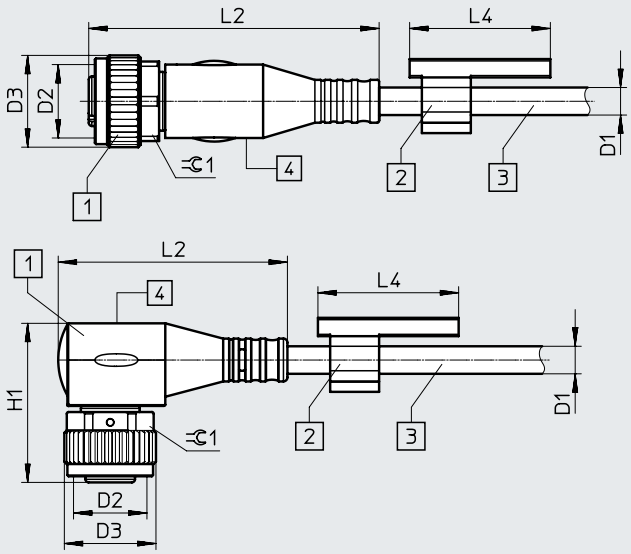
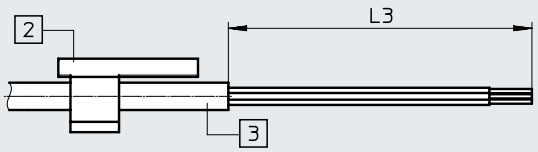
Connection technology, left



Connection technology, right

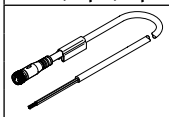


[1] Socket
[2] Inscription label holder, must be ordered separately as an accessory
[3] Cable, length 2.5 m, 5 m depending on the order

Connection technology, left	D1 ø	D2	D3 ø	L2	L4	H1	⌯1
Straight socket	4.5	–	8.5	33.6	–	–	–
Angled socket	4.5	–	8.3	26.1	–	18.4	–

Connection technology, right	D1 ø	L3
Open end	4.5	50

Ordering data

	Cable characteristic	Cable length [m]	Outlet direction	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**

Ordering data – Modular product system

Ordering table

		Conditions	Code		Enter code
Module no.	**539052**				
Function	Connecting cable		**NEBU**		NEBU
Connection technology, left	Open end	[1]	**-LE**		
	Socket with connecting thread M8		**-M8**		
	Socket with connecting thread M12, A-coded		**-M12**		
Socket design	Without (only in the case of open end as connection technology on the left)				
	Straight		**G**		
	Angled		**W**		
	Rotatable	[2]	**R**		
Number of pins/wires (on the left)	3-pin (suitable for open end, plug M8)		**3**		
	4-pin (suitable for open end, plug M8)		**4**		
	5-pin (suitable for 3, 4 and 5-pin plug M12)		**5**		
Indicators	Without LED, DC (standard)				
	LED, NPN	[3]	**N**		
	LED, DC	[4]	**L**		
	2x LED, PNP	[5]	**P2**		
Cable characteristic	Standard		**-K**		
	Suitable for energy chains		**-E**		
	Suitable for robot 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)		**-...**		
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**		
Connection technology, 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**		
Plug design	Without (only in the case of open end as connection technology on the right)				
	Straight		**G**		
	Angled		**W**		
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**		

[1] LE With open end LE the number of pins/wires of the open end must be less than or equal to the number of pins of the opposite side.

[2] R Can only be combined with M8 (connection technology, left), 3-pin (pins/wires on the left), without display, standard wire cross section.

[3] 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).

[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.

[5] P2 Can only be combined with M12 connection technology on the left and socket design W with 4 PINS/wires (on the right).

[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.

[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.

[8] 3, 4, 5
With LE connection technology on the left, the number of wires (on the left) is copied over.

[9] 5 Can only be combined with M12 or LE connection technology on the left.