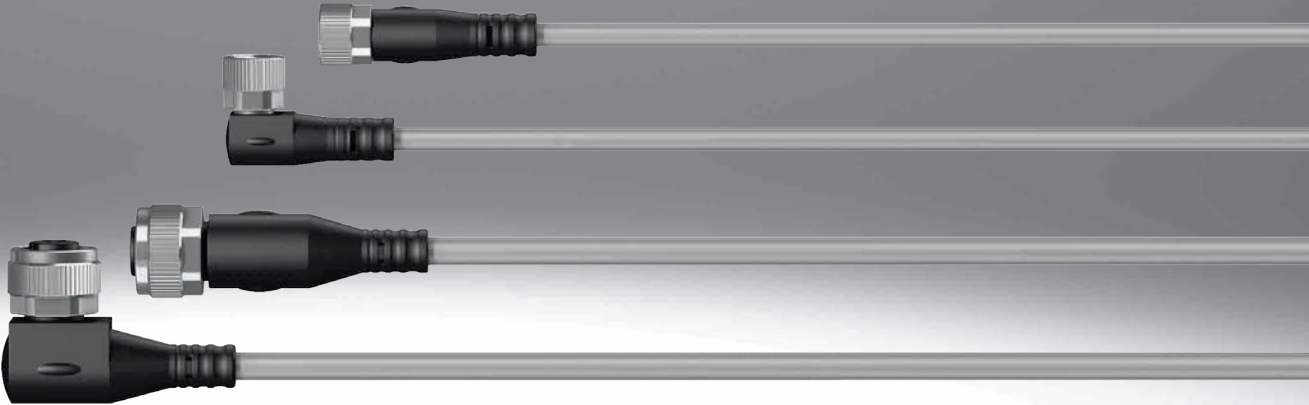
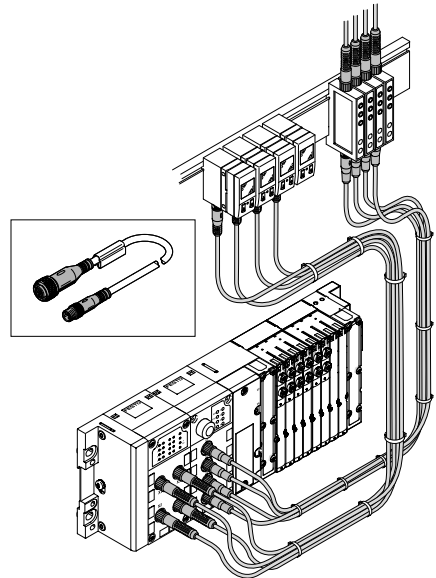
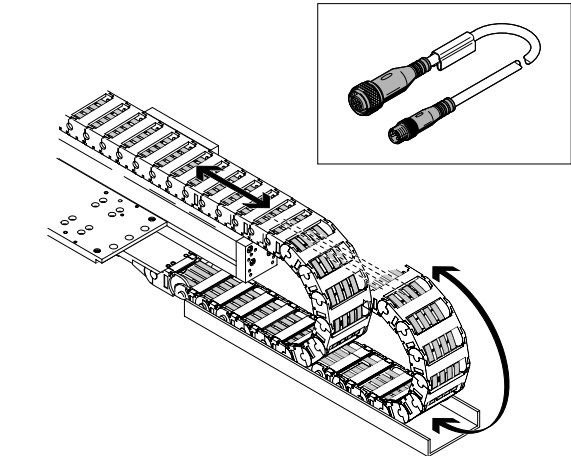


# Connecting cables, universal

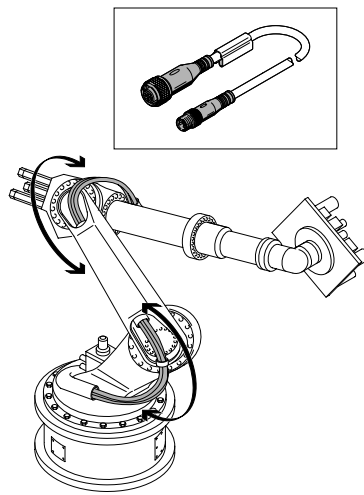


★	Festo Core Range Solves the majority of your automation tasks	With the Festo Core Range, we have selected the most important products and functions from our broad product catalogue, and added the quickest delivery.	
Worldwide:	Quickest delivery – wherever, whenever	The Core Range offers you the best value for your automation tasks.	
Simply good:	Expected high Festo quality		
Fast:	Easy and fast to select		

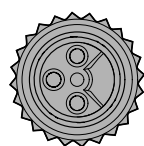
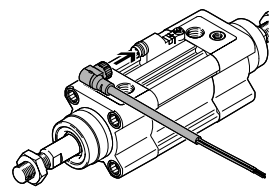
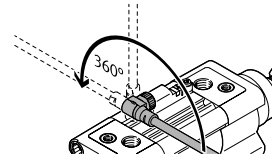
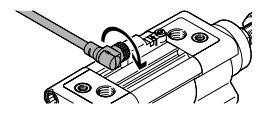
Key features

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: <ul style="list-style-type: none"><li>• Electrical connection</li><li>• Cable characteristic</li><li>• Length</li><li>• Number of pins/wires</li></ul>	The cable characteristic indicates the resistance of the connecting cable to the mechanical load.
There are three qualities: <ul style="list-style-type: none"><li>• Standard</li><li>• Suitable for energy chains</li><li>• Suitable for robot applications</li></ul>			
Cable characteristic: standard		Code K	
		<p>Standard applications are characterised by fixed cable installation or small to medium mechanical loads.</p> <p>The connecting cable can even be used for simple applications with energy chains with larger radii.</p> <p>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.</p>	
		<ul style="list-style-type: none"><li>• The connecting cable is tested for resistance to bending according to the Festo standard; test conditions are available on request.</li><li>• The connecting cable has been tested on an energy chain over 5 million cycles and at a bending radius of 75 mm.</li></ul>	
Cable characteristic: suitable for energy chains		Code E	
		<p>Energy chain applications involve high mechanical loads, particularly if very small radii are required.</p> <p>The connecting cable can be used in an environment where it is constantly subjected to bending.</p> <p>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.</p>	
		<ul style="list-style-type: none"><li>• The connecting cable is tested for resistance to bending according to the Festo standard; test conditions are available on request.</li><li>• The connecting cable has been tested on an energy chain over 5 million cycles and at a bending radius of 75 mm.</li><li>• The connecting cable has been tested on an energy chain over 5 million cycles and at a bending radius of 28 mm.</li></ul>	

Key features

Cable characteristic		Code R
Cable characteristic: suitable for robot applications		
		<p>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.</p> <ul style="list-style-type: none"><li>• The connecting cable is tested for resistance to bending according to the Festo standard; test conditions are available on request.</li><li>• The connecting cable has been tested on an energy chain over 5 million cycles and at a bending radius of 75 mm.</li><li>• The connecting cable has been tested on an energy chain over 5 million cycles and at a bending radius of 28 mm.</li><li>• The connecting cable has been tested for torsional resistance over more than 0.3 million cycles at <math>\pm 270^\circ/0.1</math> m.</li></ul>

Version Connection technology		
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°.	<p>Benefit:</p> <p>The cable outlet can be rotated to the optimum position in tight installation conditions.</p> <p>The position of the rotatable plug should not be constantly adjusted.</p>

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 (right)	Cable characteristic	Length	→ Page/ Internet
Electrical connecting cable	<b>Electrical connection (left), open cable end</b>					
	5-pin	NEBU-LE	Plug	Standard, suitable for energy chains, suitable for robot applications	0.1 ... 30 m	6
	<b>Electrical connection (left), socket M8</b>					
	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
	<b>Electrical connection (left), socket M12</b>					
	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
	<b>Electrical connection (left), socket G7/8</b>					
	5-pin	NEBU-G78	Open cable end	Standard	2 m	40
	<b>Electrical connection (left), snap-locking</b>					
	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
LE	Open end
M8	Socket M8x1 A-coded, EN 61076-2-104
M12	Socket M12x1 A-coded, EN 61076-2-101
G78	7/8"

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
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
LE	Open end
M8	Plug M8x1 A-coded, EN 61076-2-104
M12	Plug M12x1 A-coded, EN 61076-2-101

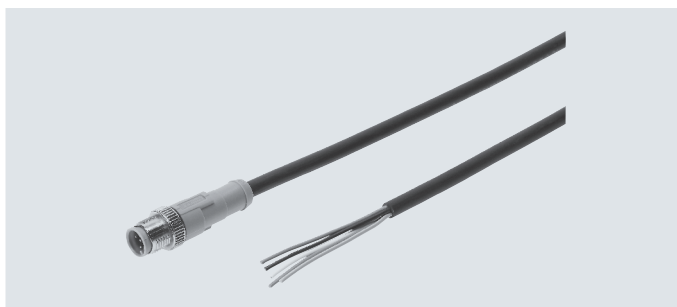
011	Plug
	None
G	Straight
W	Angled

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

## Datasheet

### 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 – Electrics

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

Electrical connection 2			Plug M8x1		Plug M12x1		
			3-pin	4-pin	3-pin	4-pin	5-pin
Cable characteristic	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	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, $\pm 270^\circ/0.1$ m			
Cable diameter	[mm]		3.8	4.5	3.8	4.5	4.5
Cable diameter tolerance	[mm]		$\pm 0.1$		$\pm 0.1$		
Cable composition	[mm <sup>2</sup> ]		3x 0.25	4x 0.25	3x 0.25	4x 0.25	5x 0.25
Nominal conductor cross section	[mm <sup>2</sup> ]		0.25				
Bending radius, fixed cable installation	[mm]		12	14	12	14	14
Bending radius, flexible cable installation	[mm]		39	46	39	46	46

## Datasheet

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 lock				
Materials					
Housing	TPE-U(PUR)				
Housing colour	Black				
Cable sheath	TPE-U(PUR)				
Cable sheath colour	Grey				
Insulating sheath	PP				
Screw lock	Nickel-plated brass				
Note on materials	RoHS-compliant				
	Halogen-free				
	Free of phosphoric acid ester				
Special characteristics	Oil-resistant				
PWIS conformity	VDMA24364-B2-L				
Operating and environmental conditions					
Ambient temperature	Cable characteristic: 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: suitable for energy chains, suitable for robot applications	[°C]	–5 ... +80		
Corrosion resistance class CRC <sup>1)</sup>		2			
CE marking (see declaration of conformity) <sup>2)</sup>	All types	To EU Low Voltage Directive			
		To EU RoHS Directive			
	Electrical connection 2 M8x1, 4-pin	–			
UKCA marking (see declaration of conformity) <sup>2)</sup>	To EU RoHS Directive				
	To UK regulations for electrical equipment				
	To UK RoHS instructions				
Pollution degree	3				

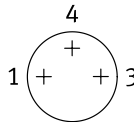
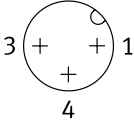
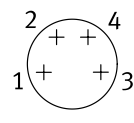
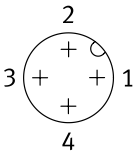
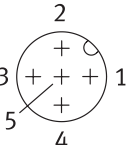
1) Corrosion resistance class CRC 2 to Festo standard FN 940070

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) For information about the area of use, see the EC declaration of conformity at: [www.festo.com/catalogue/nebu](http://www.festo.com/catalogue/nebu) → Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

Datasheet

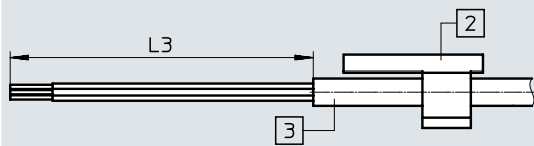
Circuitry (socket view)						
Electrical connection 1		Pin	Wire colour <sup>1)</sup>	Pin	Electrical connection 2	
Electrical connection, open cable end, 3-wire – plug, 3-pin				Plug M8	Plug M12	
–	1		BN	1		
	2		WH	–		
	3		BU	3		
	4		BK	4		
Electrical connection, open cable end, 4-wire – plug, 4-pin	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

## Datasheet

## Dimensions

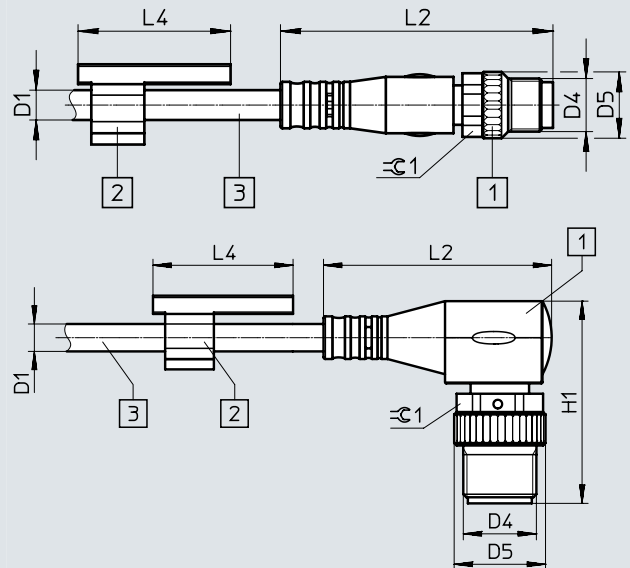
Connection technology, left



- [1] Plug  
[2] Inscription label holder

Connection technology, left	L3
–	
Open end	50

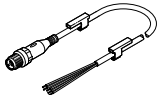
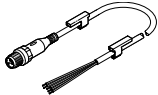
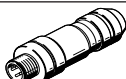
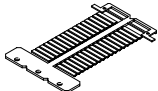


Connection technology, right



- [3] Cable, length 0.1 ... 30 m depending on the order

Connection technology, right	D1 $\varnothing$	D4	D5 $\varnothing$	L2	L4	H1	$\varnothing 1$
<b>3-pin</b>							
Straight plug	3.8	M8x1	10	41.1	23	–	9
	3.8	M12x1	15	54.5	23	–	13
Angled plug	3.8	M8x1	10	26.9	23	24	9
	3.8	M12x1	15	37.5	23	33.2	13
<b>4-pin, 5-pin</b>							
Straight plug	4.5	M12x1	15	54.5	23	–	13
Angled plug	4.5	M12x1	15	37.5	23	33.2	13

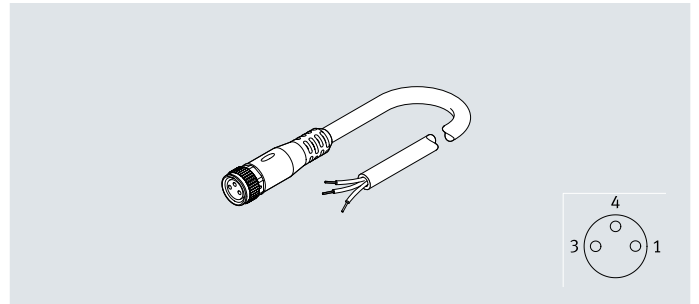
## Datasheet

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
Plug							
	Plugs for self-assembly				–	→ Internet: necu	
					–	→ Internet: sea	
Inscription labels							
	Inscription label holder 23 mm for inscription labels, pack of 34, in frame				541598	ASLR-L-423	
Safety clip							
	Prevents the screw lock from being released easily (without a tool), to be fastened securely to the cable			For M12	548068	NEAU-M12-GD	
Inscription label holders							
	For identifying connecting cables			For cable diameter 3.3 ... 4.8 mm	8078307	NEAU-LH-3	

## Datasheet

### 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
- Socket M8x1, 3-pin



General technical data			
Type		NEBU	SIM
Conforms to standard	Cable characteristic: standard, suitable for use with energy chains	EN 61076-2-104	–
		EN 61076-2-101	–
		Wire colours and connection numbers to EN 60947-5-2	–
	Cable characteristics: Suitable for robot applications	Wire colours and connection numbers to EN 60947-5-2	–
		–	EN 61076-2-104
		–	EN 61984
Based on standard	Cable outlet on the left, rotatable	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 lock	–

Technical data – Electrics			
Type		NEBU	SIM
Operating voltage range	Without switching status indication	[V DC]	0 ... 60
		[V AC]	0 ... 60
	With switching status indication	[V DC]	10 ... 30
		[V AC]	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
	Connection technology rotatable	[kV]	–
	With switching status indication	[kV]	0.8
Acceptable current load at 40°C	Connection technology not rotatable	[A]	3
	Connection technology rotatable	[A]	0.5

## Datasheet

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 test 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	–
			Suitable for robot applications	–
			Torsional resistance more than 300000 cycles, ±270°/0.1 m	–
Cable diameter	[mm]	3.8	3.8	
Cable diameter tolerance	[mm]	±0.1	–	
Cable composition	[mm²]	3x 0.25	3x 0.25	
Nominal conductor cross section	[mm²]	0.25	0.25	
Bending radius, fixed cable installation	[mm]	12	–	
Bending radius, flexible cable installation	[mm]	39	–	

Technical data – Electrical connection 2				
Type		NEBU		SIM
Function		Controller side		
Connection type		Cable	Plug	Plug
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
Number of pins/wires		3	3 4	3 3
Assigned pins/wires		3	3 3	3 3
Type of mounting		–	Screw lock	Screw lock

## Datasheet

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 lock			Nickel-plated brass	Nickel-plated brass
Seals			–	NBR
Pin contacts			–	Gold-plated brass
Note on materials			RoHS-compliant	RoHS-compliant
			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	–
PWIS conformity			VDMA24364-B2-L	–

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 class CRC <sup>1)</sup>					2	2
CE marking (see declaration of conformity) <sup>2)</sup>	All types				To EU RoHS Directive	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				–	–
UKCA marking (see declaration of conformity) <sup>2)</sup>					To UK regulations for electrical equipment	–
					To UK RoHS instructions	–
Pollution degree					3	3

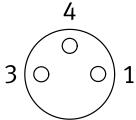
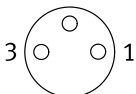
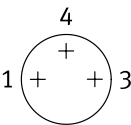
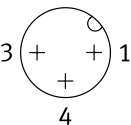
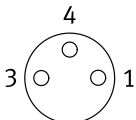
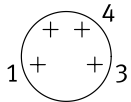
1) Corrosion resistance class CRC 2 to Festo standard FN 940070

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) For information about the area of use, see the EC declaration of conformity at: [www.festo.com/catalogue/nebu](http://www.festo.com/catalogue/nebu) → Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

Datasheet

Circuitry (socket view)					
Electrical connection 1	Pin	Wire colour <sup>1)</sup>	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					
	1	BN	1		
	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**

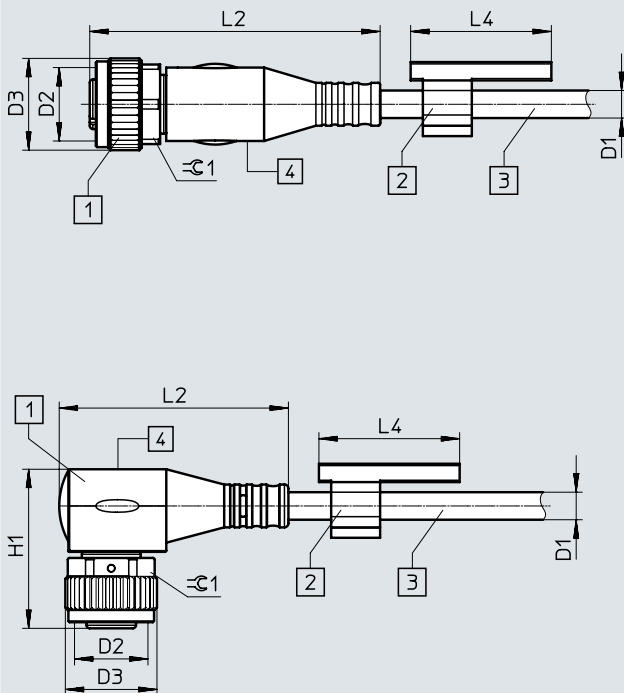
Display of code P,  
for PNP N/O contact

Display of code N,  
for NPN N/O contact

## Datasheet

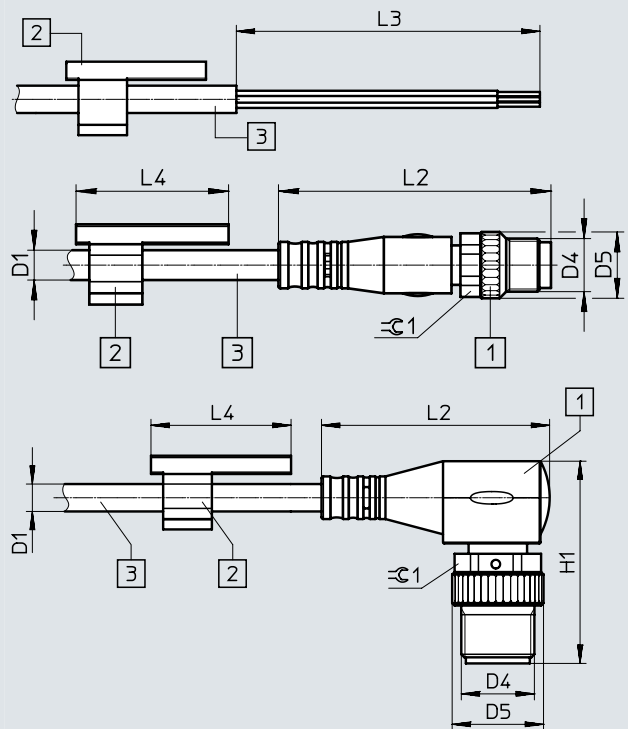
## Dimensions

Connection technology, left



- [1] Socket M8x1  
[2] Inscription label holder

Connection technology, right

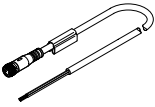
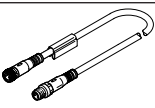


- [3] Cable, length 0.1 ... 30 m depending on the order  
[4] Display field with version P, N

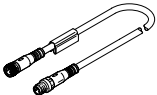
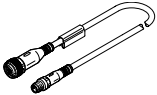
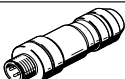
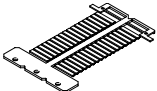


Connection technology, left	D1 ø	D2	D3 ø	L2	L4	H1	≙1
<b>NEBU</b>							
Straight socket	3.8	M8x1	10	34.6	23	–	9
Angled socket	3.8	M8x1	10	26.9	23	17	9
Rotatable socket	3.8	M8x1	10	20.9	23	16.3	9
<b>SIM</b>							
Straight socket	3.8	M8x1	10	34.6	–	–	9
Angled socket	3.8	M8x1	10	26.9	–	17	9

Connection technology, right	D1 ø	D4	D5 ø	L2	L3	L4	H1	≙1
<b>NEBU</b>								
Open end	3.8	–	–	–	50	23	–	–
Straight plug	3.8	M8x1	10	41.1	–	23	–	9
	3.8	M12x1	15	54.5	–	23	–	13
Angled plug	3.8	M8x1	10	26.9	–	23	24	9
	3.8	M12x1	15	37.5	–	23	33.2	13
<b>SIM</b>								
Open end	3.8	–	–	–	50	–	–	–

## Datasheet

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 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 energy chains	5	Straight	–	123	569843	NEBU-M8G3-K-5-LE3			
		10	Straight	–	242	569842	NEBU-M8G3-K-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 1 1.5 2 2.5 3 5 10	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

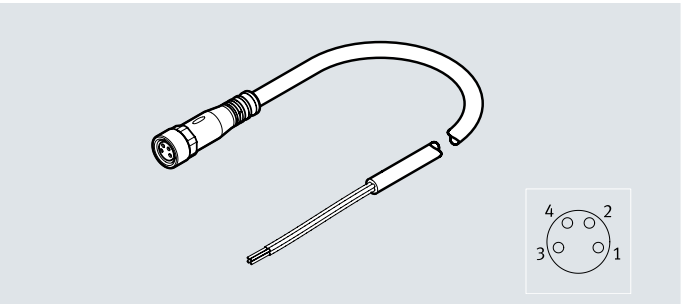
## Datasheet

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
Plug							
	Plugs for self-assembly				–	→ Internet: necu	
					–	→ Internet: sea	
Inscription labels							
	Inscription labels 23 mm for holder, pack of 34, in frame					541598	ASLR-L-423
Inscription label holders							
	For identifying connecting cables			For cable diameter 3.3 ... 4.8 mm		8078307	NEAU-LH-3
Safety clip							
	Prevents the screw 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

Datasheet

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
- Socket M8x1, 4-pin



General technical data				
Type			NEBU	SIM
Conforms to standard	Cable characteristic: standard, suitable for use with energy chains		EN 61076-2-104	–
			EN 61076-2-101	–
			Wire colours and connection numbers to EN 60947-5-2	–
	Cable characteristics: Suitable for robot applications		Wire colours and connection numbers to EN 60947-5-2	–
			–	EN 61076-2-104
			–	EN 61984
Based on standard	Cable outlet on the left, rotatable		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 lock			–

Technical data – Electrics				
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
Acceptable current load at 40°C		[A]	3	4

## Datasheet

Technical data – Cable			NEBU			SIM	
Type			Electrical connection 2				
			2-pin	3-pin	4-pin		
Cable characteristic	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	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]	–	3.8	4.5	4.5
With switching status indication		[mm]	3.4	3.4	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	2x 0.25	2x 0.25	–	
Nominal conductor cross section		[mm²]	0.25			0.25	
Bending radius, fixed cable installation	Without switching status indication	[mm]	–	12	14	–	
	With switching status indication	[mm]	11	11	11	–	
Bending radius, flexible cable installation	Without switching status indication	[mm]	–	39	46	–	
	With switching status indication	[mm]	35	35	35	–	

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		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	–
Type of mounting		–	Screw lock		–

## Datasheet

Materials		NEBU	SIM
Type			
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 lock		Nickel-plated brass	Nickel-plated brass
Seals		–	NBR
Pin contacts		–	Gold-plated brass
Note on materials	All types	RoHS-compliant	RoHS-compliant
	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	–
PWIS conformity		VDMA24364-B2-L	–

Operating and environmental conditions		NEBU	SIM
Type			
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 class CRC <sup>1)</sup>		2	2
CE marking (see declaration of conformity) <sup>2)</sup>		To EU RoHS Directive	To EU RoHS Directive
	Electrical connection 2: • Plug M8, 3-pin, without switching status indication • Plug M12, 4-pin	To EU Low Voltage Directive	–
UKCA marking (see declaration of conformity) <sup>2)</sup>		To UK RoHS instructions	–
Pollution degree		3	3

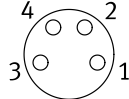
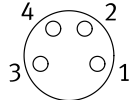
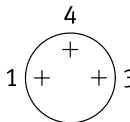
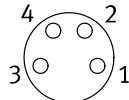
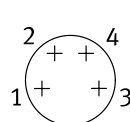
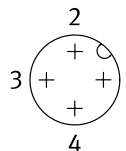
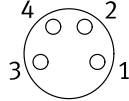
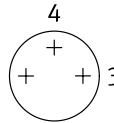
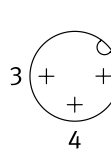
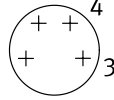
1) Corrosion resistance class CRC 2 to Festo standard FN 940070

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) For information about the area of use, see the EC declaration of conformity at: [www.festo.com/catalogue/nebu](http://www.festo.com/catalogue/nebu) → Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

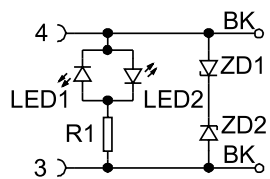
## Datasheet

Circuitry (socket view)				Pin	Wire colour <sup>1)</sup>	Pin	Plug
Socket							
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

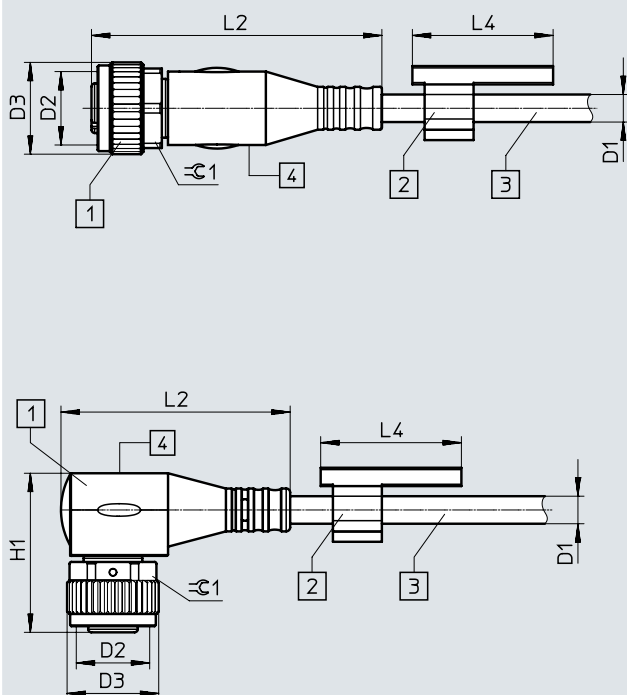


## Datasheet

## Dimensions

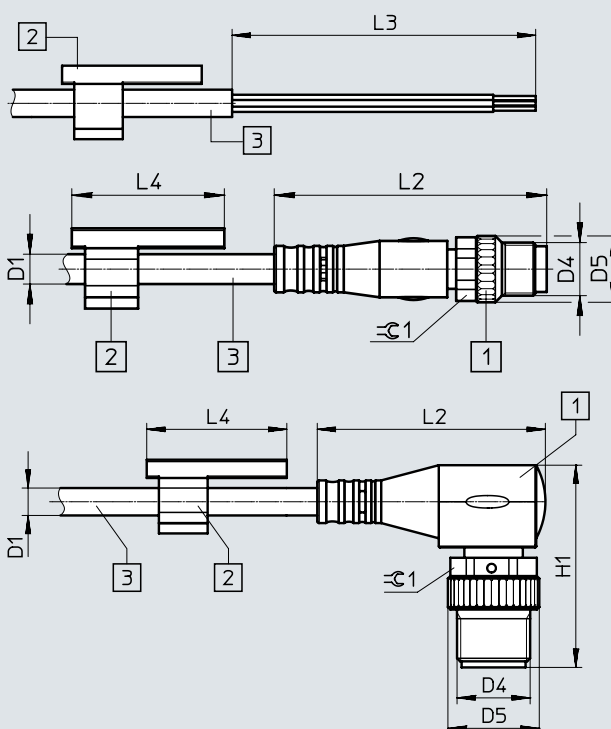
Download CAD data → [www.festo.com](http://www.festo.com)

Connection technology, left



- [1] Socket M8x1  
[2] Inscription label holder

Connection technology, right

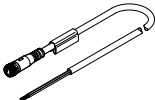
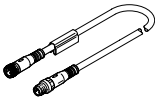
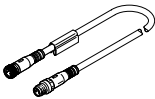
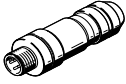
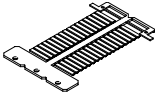




- [3] Cable, length 0.1 ... 30 m depending on the order  
[4] Display field with version L

Connection technology, left	D1 ø	D2	D3 ø	L2	L4	H1	≈G1
<b>NEBU, electrical connection 2, 3-pin</b>							
Straight socket	3.8	M8x1	10	34.6	23	–	9
Angled socket	3.8	M8x1	10	26.9	23	17	9
Rotatable socket	3.8	M8x1	10	20.9	23	16.3	9
<b>NEBU, electrical connection 2, 4-pin</b>							
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
<b>NEBU with LED signal status indication, DC</b>							
Straight socket	3.4	M8x1	10	34.6	23	–	9
Angled socket	3.4	M8x1	10	26.9	23	17	9
<b>SIM</b>							
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	≈G1
<b>NEBU, electrical connection 2, 3-pin</b>								
Straight plug	3.8	M8x1	10	41.1	–	23	–	9
Angled plug	3.8	M8x1	10	26.9	–	23	24	9
<b>NEBU, electrical connection 2, 4-pin</b>								
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
<b>NEBU with LED signal status indication, DC</b>								
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
<b>SIM</b>								
Open end	4.5	–	–	–	50	–	–	–

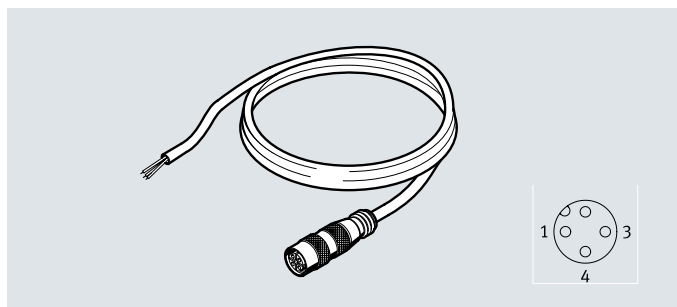
## Datasheet

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	–	–	158960	SIM-M8-4GD-2.5-PU
		5	Straight	–	72	541344	NEBU-M8W4-K-2.5-LE4
			Angled	–	–	158962	SIM-M8-4WD-2.5-PU
			Straight	–	138	541343	NEBU-M8G4-K-5-LE4
			Angled	–	–	158961	SIM-M8-4GD-5-PU
	9	Straight	–	138	541345	NEBU-M8W4-K-5-LE4	
		Angled	–	–	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
Plug							
	Plugs for self-assembly				–	→ Internet: necu	
					–	→ Internet: sea	
Inscription labels							
	Inscription labels 23 mm for holder, pack of 34, in frame					541598	ASLR-L-423
Inscription label holders							
	For identifying connecting cables			For cable diameter 3.3 ... 4.8 mm		8078307	NEAU-LH-3
Safety clip							
	Prevents the screw 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

## Datasheet

### Connecting cable SIM-M12

- Connecting cable for connecting inputs/outputs
- Resistant to welding spatter
- Pre-assembled at one end
- 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 lock

#### Technical data – Electrics

Operating voltage range	[V DC]	0 ... 70
	[V AC]	0 ... 45
Surge resistance	[kV]	2.5
Acceptable current load at 40°C	[A]	4

## Datasheet

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]	≥28
	Flexible cable installation	[mm]	≥55
Cable diameter		[mm]	5.2
Cable diameter tolerance		[mm]	±0.3
Cable composition		[mm <sup>2</sup> ]	3x 0.5
Nominal conductor cross section		[mm <sup>2</sup> ]	0.5

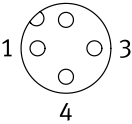
Technical data – Electrical connection 2	
Function	Controller side
Connection type	Cable
Connection technology	Open end
Number of pins/wires	3
Assigned pins/wires	3
Wire ends	Wire end sleeve

Materials	
Housing	TPE-U(PUR)
Housing colour	Black
Screw 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
CE marking (see declaration of conformity) <sup>1)</sup>		To EU RoHS Directive
Pollution degree		3

1) For information about the area of use, see the EC declaration of conformity at: [www.festo.com/catalogue/sim](http://www.festo.com/catalogue/sim) → Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

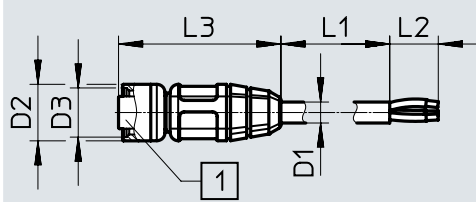
Circuitry (socket view)				
Socket	Pin	Wire colour <sup>1)</sup>	Pin	Plug
<b>Electrical connection, socket, 4-pin, M12 – open cable end</b>				
	1	BN	–	–
	2	–	–	
	3	BU	–	
	4	BK	–	

1) To IEC 757

Datasheet

**Dimensions**

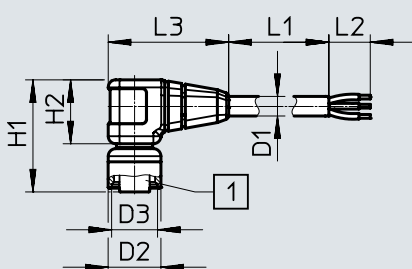
SIM-M12-RS-3GD-3



[1] Socket M12x1

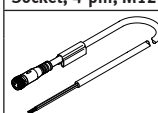
Download CAD data → [www.festo.com](http://www.festo.com)



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

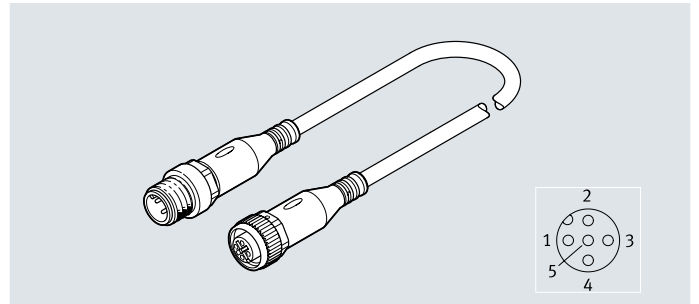
Ordering data							
	Cable characteristic	Cable length [m]	Outlet orientation	Special features	Product weight [g]	Part no.	Type
Socket, 4-pin, M12 – open cable end							
	Resistant to welding spatter	3	Straight	Resistant to welding spatter	–	30450	SIM-M12-RS-3GD-3
			Angled	Resistant to welding spatter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

Ordering data – Accessories			
Designation		Part no.	Type
Inscription labels			
	Inscription labels 23 mm for holder, pack of 34, in frame	541598	ASLR-L-423
Inscription label holders			
	For identifying connecting cables	For cable diameter 4.2 ... 5.6 mm	8143238 NEAU-LH-4

## Datasheet

### 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 lock	–

## Datasheet

Technical data – Electrics			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			
Acceptable current load at 40°C		[A]	4	4
	Electrical connection 2	[A]	3	–
	Plug M8			

## Datasheet

Technical data – Cable				NEBU			SIM		
Type				Electrical connection 2			Electrical connection 2		
				3-pin	4-pin	5-pin	3-wire	4-wire	5-wire
Cable characteristic	Code -K- Code -E- Code -R-			Standard			–		
				Suitable for energy chains			–		
				Suitable for robot applications			–		
				–			Standard		
Cable test conditions	Cable characteristic	Standard Suitable for energy chains Code -Q8N- Suitable for robot applications		Bending strength: to Festo standard			Bending strength: to Festo standard		
				Test conditions on request			Test conditions on request		
				Energy chain: 5 million cycles, bending radius 75 mm			Energy chain: 5 million cycles, bending radius 75 mm		
				Energy chain: 5 million cycles, bending radius 28 mm			–		
				Energy chain: 5 million cycles, bending radius 75 mm			–		
				Energy chain: 5 million cycles, bending radius 28 mm			–		
Cable diameter				Torsional resistance more than 300000 cycles, $\pm 270^\circ/0.1$ m			–		
Cable diameter			[mm]	3.8	4.5	4.5	3.8	4.5	4.5
	Code -Q8N-		[mm]	–	–	7	–	–	–
Cable diameter tolerance			[mm]	$\pm 0.1$			–		
Cable composition			[mm <sup>2</sup> ]	3x 0.25	4x 0.25	5x 0.25	3x 0.25	4x 0.25	5x 0.25
	Code -Q8N-		[mm <sup>2</sup> ]	–	–	5 x 1	–	–	–
Nominal conductor cross section			[mm <sup>2</sup> ]	0.25	0.25	0.25	0.25	–	–
	Code -Q8N-		[mm <sup>2</sup> ]	–	–	1	–	–	–
Bending radius, fixed cable installation			[mm]	12	14	14	–	–	–
	Code -Q8N-		[mm]	–	–	21	–	–	–
Bending radius, flexible cable installation			[mm]	39	46	46	–	–	–
	Code -Q8N-		[mm]	–	–	71	–	–	–

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	5	–	–	–
					With switching status indication			3	4	–	3	4	3	4	–	–
Type of mounting					–			–			Screw lock			–	–	–

## Datasheet

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
Seals	–	NBR
Pin contacts	–	Gold-plated brass
Screw lock	Nickel-plated brass	Nickel-plated brass
Note on materials	RoHS-compliant	RoHS-compliant
	Halogen-free	Halogen-free
	Free of phosphoric acid ester	Free of phosphoric acid ester
Special characteristics	Oil-resistant	–
PWIS conformity	VDMA24364-B2-L	–

Operating and environmental conditions		
	NEBU	SIM
Ambient temperature	Cable characteristic: 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: suitable for energy chains, suitable for robot applications [°C]	–5 ... +80
Corrosion resistance class CRC <sup>1)</sup>	2	2
CE marking (see declaration of conformity) <sup>2)</sup>	Without switching status indication	To EU Low Voltage Directive
	With switching status indication	–
	With plug M8, 4-pin	–
UKCA marking (see declaration of conformity) <sup>2)</sup>	To EU RoHS Directive	To EU RoHS Directive
	To UK regulations for electrical equipment	–
Pollution degree	To UK RoHS instructions	–
	3	3

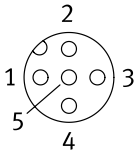
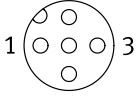
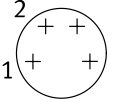
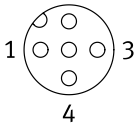
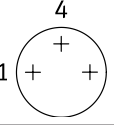
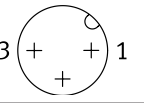
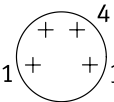
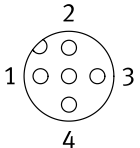
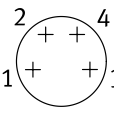
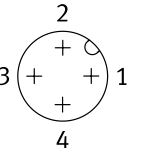
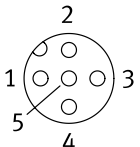
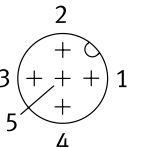
1) Corrosion resistance class CRC 2 to Festo standard FN 940070

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) For information about the area of use, see the EC declaration of conformity at: [www.festo.com/catalogue/nebu](http://www.festo.com/catalogue/nebu) → Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

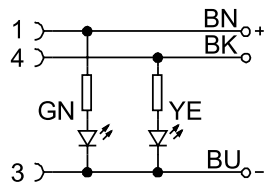
## Datasheet

Circuitry (socket view)							
Socket	Pin	Wire colour <sup>1)</sup>			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		

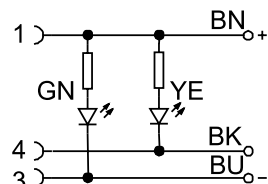
1) To IEC 757

## Circuitry, switching status indication

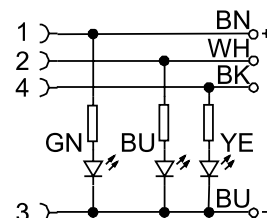
Display of code -P-



Display of code N



Display of code -P2

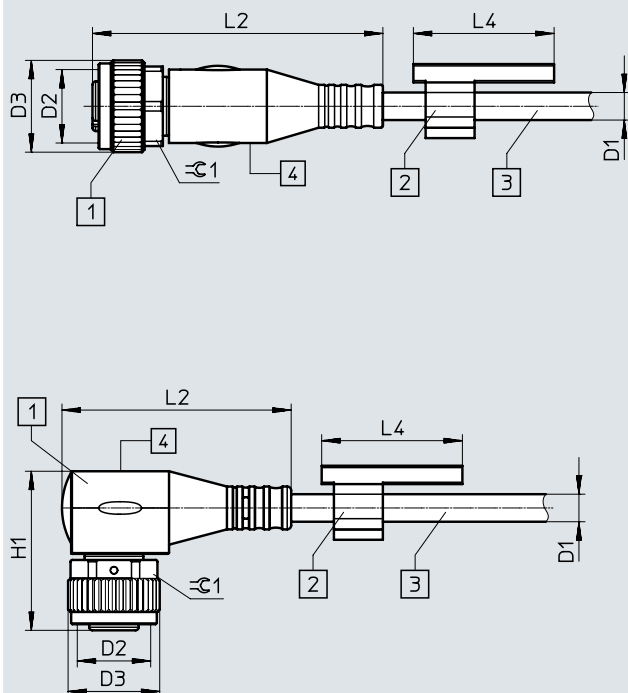


## Datasheet

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

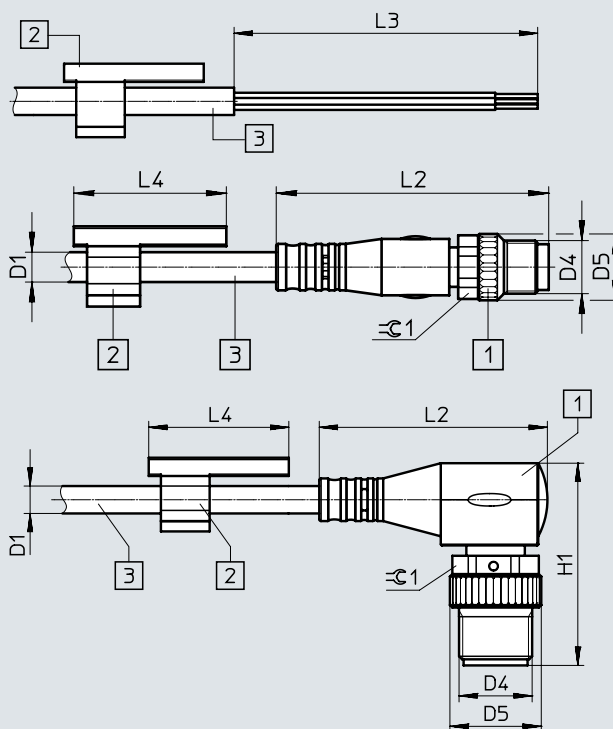
Connection technology, left



[1] Socket M12x1

[2] Inscription label holder

Connection technology, right



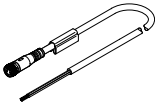
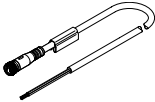
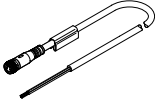
[3] Cable, length 0.1 ... 30 m depending on the order

[4] Display field with version P, N or P2

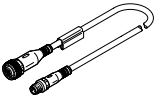
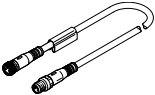
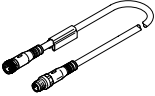
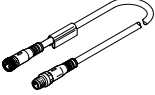
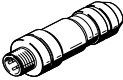
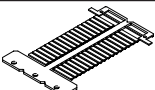


Connection technology, left	D1 ø	D2	D3 ø	L2	L4	H1	≈G1
<b>NEBU, electrical connection 2, 3-pin</b>							
Straight socket	3.8	M12x1	15	47.5	23	–	13
Angled socket	3.8	M12x1	15	37.5	23	26	13
<b>NEBU, electrical connection 2, 4-pin and 5-pin</b>							
Straight socket	4.5	M12x1	15	47.5	23	–	13
Angled socket	4.5	M12x1	15	37.5	23	26	13
<b>NEBU-M12G5-...-Q8N-M12G5</b>							
Straight socket	7	M12x1	15	47.5	–	–	13
<b>SIM</b>							
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	≈G1
<b>NEBU, electrical connection 2, 3-pin</b>								
Open end	3.8	–	–	–	50	23	–	–
Straight plug	3.8	M8x1	10	41.1	–	23	–	9
	3.8	M12x1	15	54.5	–	23	–	13
Angled plug	3.8	M8x1	10	26.9	–	23	24	9
	3.8	M12x1	15	37.5	–	23	33.2	13
<b>NEBU, electrical connection 2, 4-pin and 5-pin</b>								
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
<b>NEBU-M12G5-...-Q8N-M12G5</b>								
Straight plug	7	M12x1	15	54.5	–	–	–	13
<b>SIM</b>								
Open end	4.5	–	–	–	50	–	–	–
<b>SIM, 3-wire</b>								
Open end	3.8	–	–	–	50	–	–	–

## Datasheet

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
				Switching status indication, for PNP N/O contact	–	159428	SIM-M12-3GD-2.5-PU
			Angled	–	70	541366	NEBU-M12W5P-K-2.5-LE3
				–	70	541367	NEBU-M12W5-K-2.5-LE3
				Switching status indication, for NPN N/O contact	–	159430	SIM-M12-3WD-2.5-PU
				For PNP N/O contact, switching status indication yellow, ready status indication green	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
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
		5	Angled	–	79	567843	NEBU-M12W5-K-2.5-LE5
				–	146	541331	NEBU-M12G5-K-5-LE5
			Straight	–	–	175716	SIM-M12-5GD-5-PU
				Angled	–	147	567844
		10	Straight	–	283	554038	NEBU-M12G5-K-10-LE5

## Datasheet

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	Nominal conductor cross section 1 mm <sup>2</sup>	434	574321	NEBU-M12G5-E-5-Q8N-M12G5
		7.5	Straight – straight	Nominal conductor cross section 1 mm <sup>2</sup>	635	574322	NEBU-M12G5-E-7.5-Q8N-M12G5
		10	Straight – straight	Nominal conductor cross section 1 mm <sup>2</sup>	835	574323	NEBU-M12G5-E-10-Q8N-M12G5
Ordering data – Accessories							
Designation						Part no.	Type
Plug							
	Plugs for self-assembly				–	→ Internet: necu	
					–	→ Internet: sea	
Inscription labels							
	Inscription labels 23 mm for holder, pack of 34, in frame					541598	ASLR-L-423
Inscription label holders							
	For identifying connecting cables			For cable diameter 3.3 ... 4.8 mm		8078307	NEAU-LH-3
Safety clip							
	Prevents the screw 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	

## Datasheet

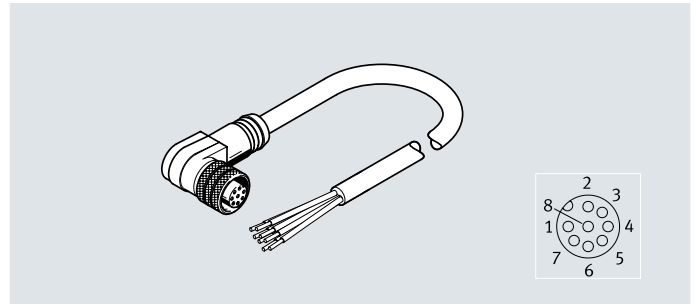
### Plug socket with cable

#### 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
- Socket M12x1, 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 lock		
Contact durability	–	–	50

Technical data – Electrics			
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
Acceptable current load 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
	Flexible cable installation [mm]	≥66	≥64
Cable diameter	[mm] 6.3	6.3	6.2
Cable diameter tolerance	[mm] ±0.2	±0.2	±0.2
Cable composition	[mm²] 8x 0.25		
	Shielded		
Nominal conductor cross section	[mm²] 0.25		

## Datasheet

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 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 lock	–	Nickel-plated brass	Nickel-plated brass
	–	–	Chrome-plated brass
Union nut	Nickel-plated brass	–	–
Seals	NBR	–	NBR
Pin contacts	Gold-plated brass	Bronze, gold-plated	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 class CRC <sup>1)</sup>	2	2	2
CE marking (see declaration of conformity) <sup>2)</sup>	To EU RoHS Directive	To EU EMC Directive	To EU RoHS Directive
UKCA marking (see declaration of conformity) <sup>2)</sup>	To UK RoHS instructions	–	To UK RoHS instructions
Pollution degree	3	3	3

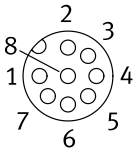
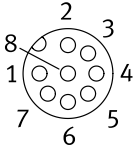
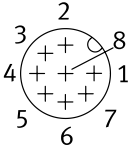
1) Corrosion resistance class CRC 2 to Festo standard FN 940070

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) For information about the area of use, see the EC declaration of conformity at: [www.festo.com/catalogue/nebu](http://www.festo.com/catalogue/nebu) → Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

## Datasheet

Circuitry (socket view)				
Socket	Pin	Wire colour <sup>1)</sup>	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

Datasheet

Dimensions

Connection technology, left

[1] Socket M12x1  
[2] Inscription label holder, must be ordered separately as an accessory

Download CAD data → [www.festo.com](http://www.festo.com)

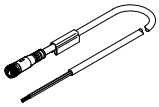
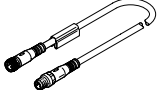
Connection technology, right

[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	–	–	–	–

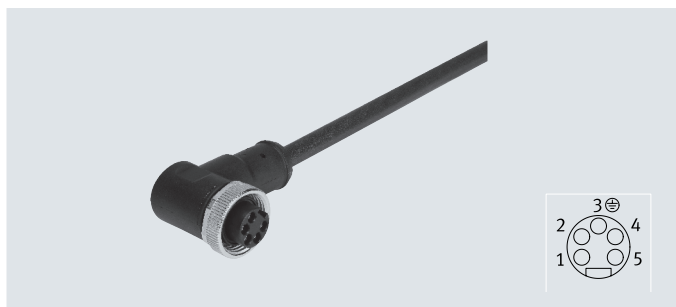
## Datasheet

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	–	140	525617	KM12-8GD8GS-2-PU

## Datasheet

### Power supply socket NEBU-G78W5

- Connecting cable for power supply
- Pre-assembled at one end
- Cable lengths 2 m
- 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
Note on cable outlet	Not according to industry standard, matched to CPX protective hood
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 lock
Contact durability	100

#### Technical data – Electrics

Operating voltage range	[V DC]	0 ... 300
	[V AC]	0 ... 300
Surge resistance	[kV]	4
Acceptable current load 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 <sup>2</sup> ]	5x 1.5
Nominal conductor cross section	[mm <sup>2</sup> ]	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

# Datasheet

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

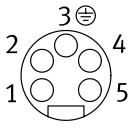
Operating and environmental conditions		
Ambient temperature	[°C]	–20 ... +80
Corrosion resistance class CRC <sup>1)</sup>		1
CE marking (see declaration of conformity) <sup>2)</sup>		To EU Low Voltage Directive
UKCA marking (see declaration of conformity) <sup>2)</sup>		To UK regulations for electrical equipment
Pollution degree		3

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

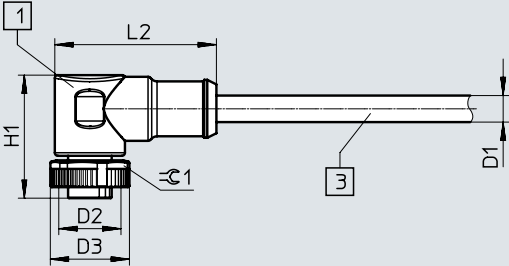
Low corrosion stress. Dry internal application or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, or parts which are covered in the application (e.g. drive trunnions).

2) For information about the area of use, see the EC declaration of conformity at: [www.festo.com/catalogue/nebu](http://www.festo.com/catalogue/nebu) → Support/Downloads.

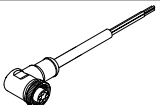
If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

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

1) To IEC 757

Dimensions		Download CAD data → <a href="http://www.festo.com">www.festo.com</a>
		<p>[1] Socket G7/8</p> <p>[3] Cable, length 2 m</p>

	D1	D2	D3	L2	H1	$\varnothing 1$
	ø		ø			
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
<b>Socket, 5-pin, G7/8 – open cable end</b>							
	Standard	2	Angled	–	300	573855	NEBU-G78W5-K-2-N-LE5

## Datasheet

### 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 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 – Electrics

Operating voltage range	[V DC]	0 ... 60
	[V AC]	0 ... 60
Surge resistance	[kV]	1.5
Acceptable current load 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		[mm²]	3x 0.25
Nominal conductor 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

## Datasheet

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

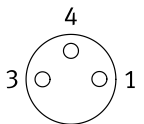
Operating and environmental conditions			
Ambient temperature		[°C]	–25 ... +70
	With flexible cable installation	[°C]	–5 ... +70
Storage temperature		[°C]	–25 ... +70
Corrosion resistance class CRC <sup>1)</sup>			4
CE marking (see declaration of conformity) <sup>2)</sup>			To EU Low Voltage Directive
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 means of special testing (→ also FN 940082), using appropriate media.

2) For information about the area of use, see the EC declaration of conformity at: [www.festo.com/catalogue/sim](http://www.festo.com/catalogue/sim) → Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

Circuitry (socket view)				
Socket	Pin	Wire colour <sup>1)</sup>	Pin	Plug
Electrical connection, socket, 3-pin, snap-locking – open cable end				
	1	BN	–	–
	3	BU	–	–
	4	BK	–	–

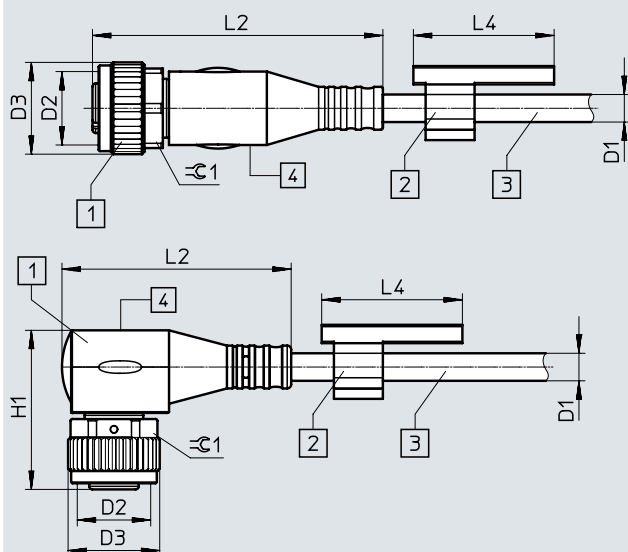
1) To IEC 757

## Datasheet

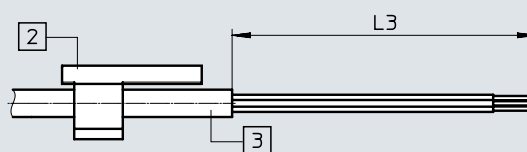
## Dimensions

Download CAD data → [www.festo.com](http://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 Ø	D2	D3 Ø	L2	L4	H1	±G1
Straight socket	4.5	–	8.5	33.6	–	–	–
Angled socket	4.5	8.3	8.5	26.1	–	18.4	–

Connection technology, right	D1 Ø	L3
Open end	4.5	50

## Ordering data

	Cable characteristic	Cable length [m]	Outlet orientation	Special features	Product weight [m]	Part no.	Type
<b>Socket, 3-pin, snap-locking – open cable end</b>							
	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

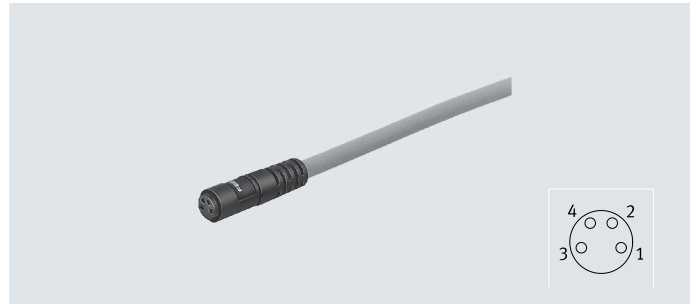
## Ordering data – Accessories

Designation	Part no.	Type
<b>Inscription labels</b>		
Inscription labels 23 mm for holder, pack of 34, in frame	541598	ASLR-L-423
<b>Inscription label holders</b>		
For identifying connecting cables	8143238	NEAU-LH-4

## Datasheet

### 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 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 – Electrics

Operating voltage range	[V DC]	0 ... 30
	[V AC]	0 ... 30
Surge resistance	[kV]	0.8
Acceptable current load 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 <sup>2</sup> ]	4x 0.25
Nominal conductor cross section		[mm <sup>2</sup> ]	0.25

#### Technical data – Electrical connection 2

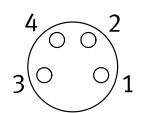
Function	Controller side
Connection type	Cable
Connection technology	Open end
Number of pins/wires	4
Assigned pins/wires	4
Wire ends	Wire end sleeve

Datasheet

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 class CRC <sup>1)</sup>			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 means of special testing (→ also FN 940082), using appropriate media.

Circuitry (socket view)				
Socket	Pin	Wire colour <sup>1)</sup>	Pin	Plug
Electrical connection, socket, 4-pin, snap-locking – open cable end				
	1	BN	–	–
	2	WH	–	
	3	BU	–	
	4	BK	–	

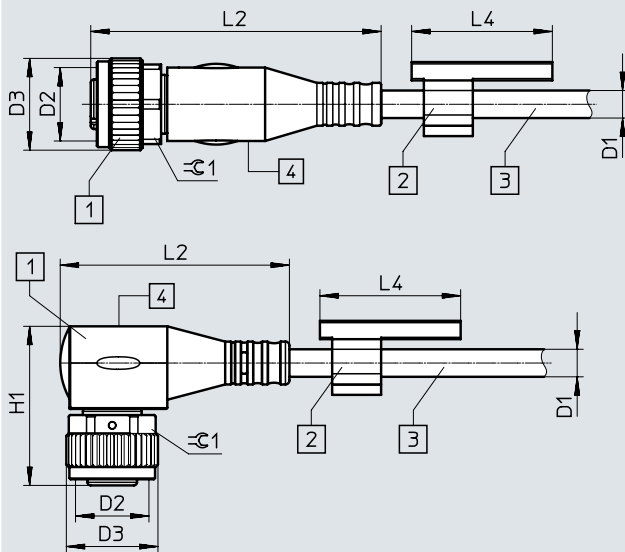
1) To IEC 757

## Datasheet

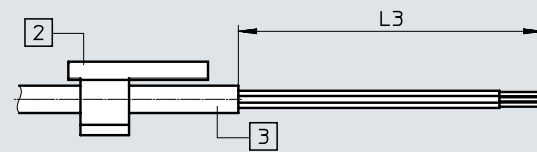
## Dimensions

Download CAD data → [www.festo.com](http://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 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 orientation	Special features	Product weight [g]	Part no.	Type
<b>Socket, 4-pin, snap-locking – open cable end</b>							
	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 – Accessories

Designation	Part no.	Type
<b>Inscription labels</b>		
Inscription labels 23 mm for holder, pack of 34, in frame	541598	ASLR-L-423
<b>Inscription label holders</b>		
For identifying connecting cables	8143238	NEAU-LH-4

## 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 (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	
Display	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 <sup>2</sup> (standard)			
	1.00 mm <sup>2</sup>	[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 (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 3 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.

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