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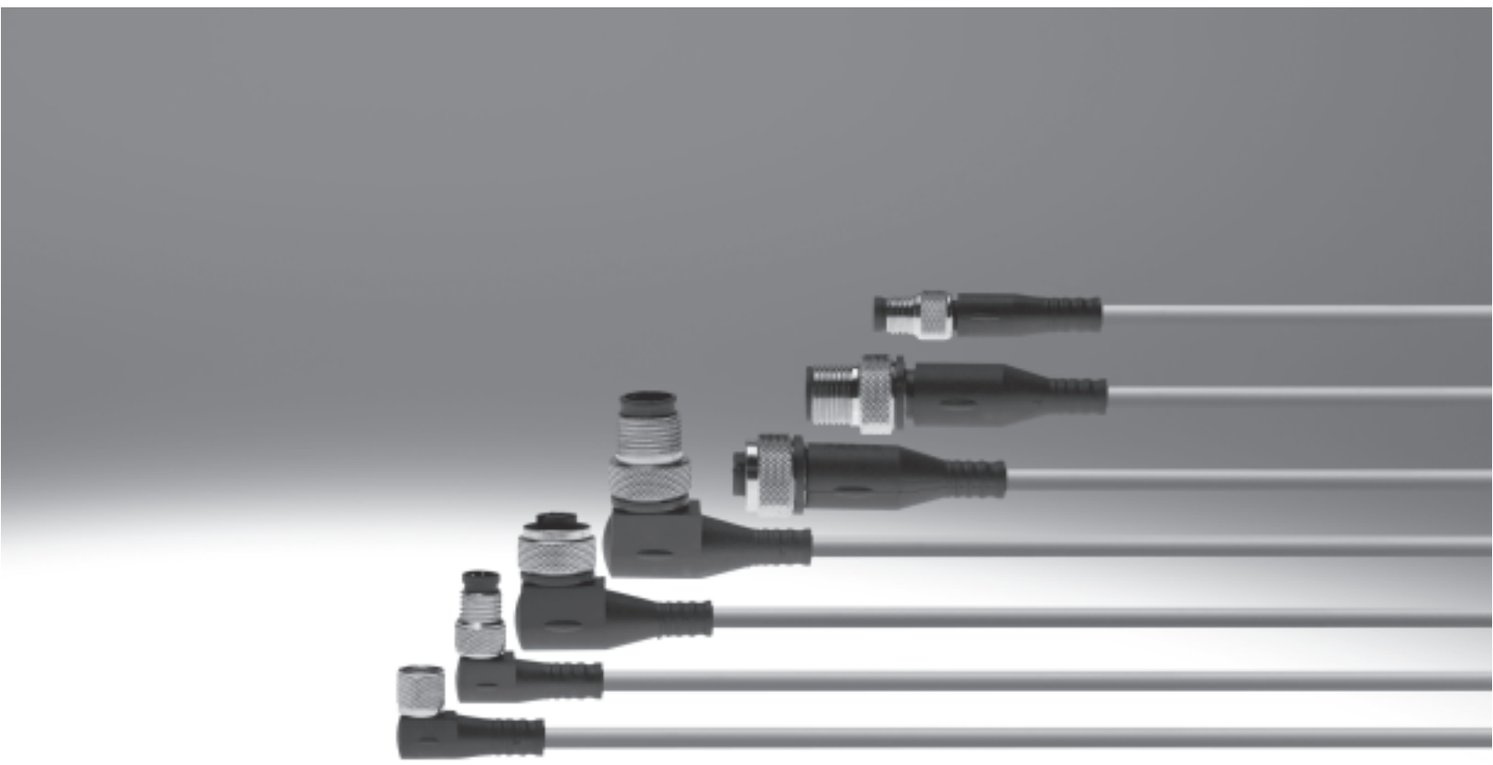
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Find the *Festo NEBU-M8G3-K-5-M8G3* at our website: *Click HERE*

Connecting cables, universal

FESTO



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Connecting cables, universal

Key features

Cable characteristics

The connecting cables NEBU can be configured and ordered using the modular system. This is done by defining a series of characteristics. These include:

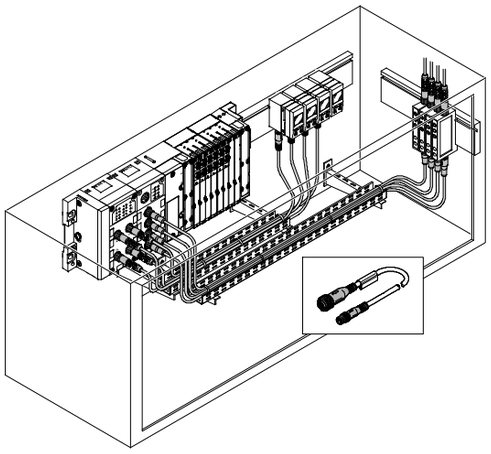
- Electrical connection
- Cable characteristics
- Length
- Number of pins/wires

The cable characteristics specify the resistance of the connecting cable to mechanical loads.

There are four quality classes:

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

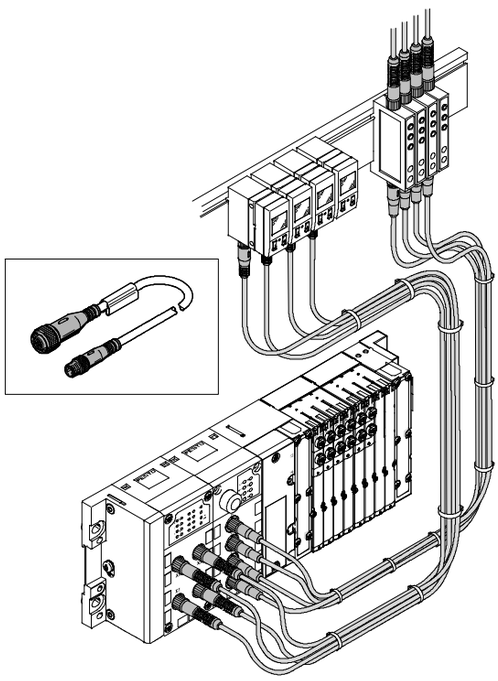
Cable characteristics: Basic — Code P



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

- The resistance to bending of the connecting cable is tested in accordance with the Festo standard; the test conditions are available on request.

Cable characteristics: Standard — Code K



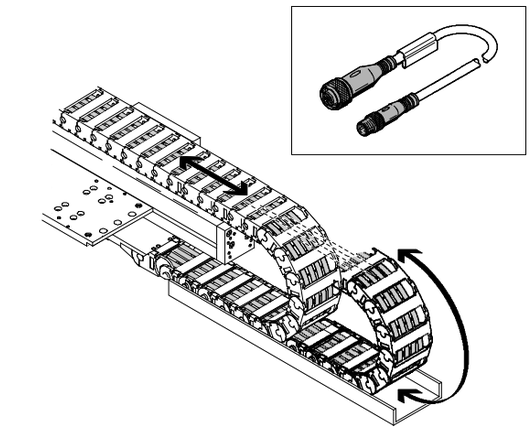
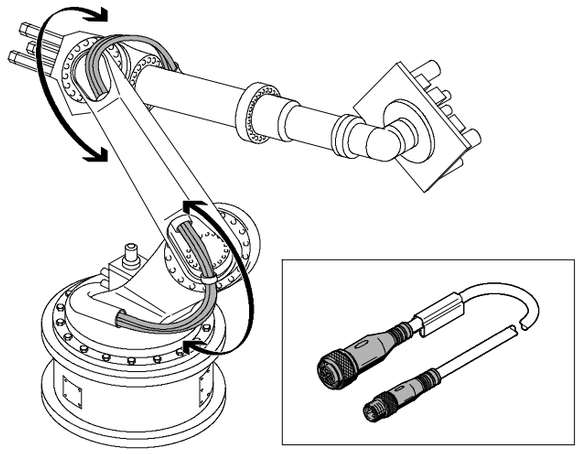
Standard applications are characterised by fixed cable installation or small to medium mechanical loads.
The connecting cable can even be used for simple energy chain applications with large radii.
The cable sheath of the connecting cables is made from polyurethane.

- The resistance to bending of the connecting cable is tested in accordance with the Festo standard; the test conditions are available on request.
- The connecting cable is tested for energy chains with 5 million cycles, bending radius 75 mm.

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Connecting cables, universal

Key features

Cable characteristics		
Cable characteristics: Suitable for use with energy chains		Code E
	Energy chain applications involve high mechanical loads, particularly if the energy chains have small radii. It is possible that the connecting cable may be used in an environment where it is subject to continuous bending. The cable sheath of the connecting cables is made from polyurethane.	• The resistance to bending of the connecting cable is tested in accordance with the Festo standard; the test conditions are available on request. • The connecting cable is tested for energy chains with 5 million cycles, bending radius 75 mm. • The connecting cable is tested for energy chains with 5 million cycles, bending radius 28 mm.
Cable characteristics: Suitable for robot applications		Code R
	Robot applications involve high mechanical loads, mainly caused by torsion. The cable sheath of the connecting cables is made from polyurethane and is halogen-free and oil-resistant.	• The resistance to bending of the connecting cable is tested in accordance with the Festo standard; the test conditions are available on request. • The connecting cable is tested for energy chains with 5 million cycles, bending radius 75 mm. • The connecting cable is tested for energy chains with 5 million cycles, bending radius 28 mm. • The connecting cable is tested for torsional strength with more than 0.3 million cycles, ±270°/0.1 m.

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Connecting cables, universal

Key features

Connection technology types

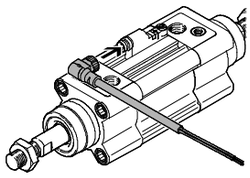
Different types of plug connectors (e.g. angled or straight) can be chosen for the connecting cables.
A special type of connector is the rotatable type:
this enables the cable outlet of an angled socket to be rotated by 360° in 15° increments.

Advantage:
This enables optimum positioning of the cable outlet in tight installation spaces.
The connectors are not designed for repeatedly changing the outlet direction.

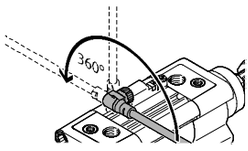
Mounting



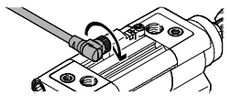
Note the orientation of the pins.



Place the socket on the plug.



Adjust the cable outlet.



Tighten the union nut.

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Connecting cables NEBU, universal

Product range overview

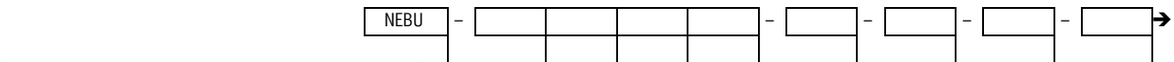
Function	Version	Type	Connection technology (right-hand end)	Cable characteristics	Length	➔ Page/ Internet
Electrical connecting cable	**Electrical connection (left-hand end), open cable end**					
	5-pin	NEBU-LE	Socket, plug	Standard	0.1 ... 30 m	8
	Electrical connection (left-hand end), socket M5					
	4-pin	NEBU-M5G4	Plug, open cable end	Suitable for use with energy chains	5 m	10
	Electrical connection (left-hand end), socket M8					
	3-pin	NEBU-M8 SIM-M8 KM8-M8	Plug, open cable end	Basic, standard, suitable for use with energy chains, suitable for robot applications	0.1 ... 30 m	12
	4-pin	NEBU-M8 SIM-M8	Plug, open cable end	Basic, standard, suitable for use with energy chains, suitable for robot applications	0.1 ... 30 m	18
	Electrical connection (left-hand end), socket M12					
	3-pin	SIM-M12-3 SIM-M12-RS-3	Plug, open cable end	Standard	0.6 m, 2.5 m, 3 m, 5 m	23
	4-pin	SIM-M12-4 KM12-M12	Plug, open cable end	Standard	0.6 m, 1 m, 2.5 m, 5 m	26
	5-pin	NEBU-LE5 NEBU-M12G5 NEBU-M12W5 SIM-M12-5	Plug, open cable end	Basic, standard, suitable for use with energy chains, suitable for robot applications	0.1 ... 30 m	29
	8-pin	NEBU-M12-W8 SIM-M12-8 KM12-8	Plug, open cable end	Standard	2 m, 5 m, 10 m	34
	Electrical connection (left-hand end), socket 7/8"					
	5-pin	NEBU-G78	Open cable end	Standard	2 m	37
	Electrical connection (left-hand end), clip					
	3-pin	SIM-K	Open cable end	Standard	2.5 m, 5 m, 10 m	39
	4-pin	SIM-K-4	Open cable end	Standard	2.5 m, 5 m	41

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Connecting cables NEBU, universal

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Type codes



Function	
NEBU	Connecting cable

Connection technology, left-hand end	
LE	Open cable end
M5	Socket with connecting thread M5
M8	Socket with connecting thread M8
M12	Socket with connecting thread M12

Connection technology type at left-hand end	
	Open cable end
G	Straight
W	Angled
R	Rotatable

Number of pins/wires (left-hand end)	
3	3-pin
4	4-pin
5	5-pin
8	8-pin

Display	
	Without LED (standard)
P	LED, PNP
N	LED, NPN
L	LED, DC
P2	2x LED, PNP

Cable characteristics	
P	Basic
K	Standard
E	Suitable for use with energy chains
R	Suitable for robot applications

Cable length	
0.1 ... 30	0.1 ... 30 m

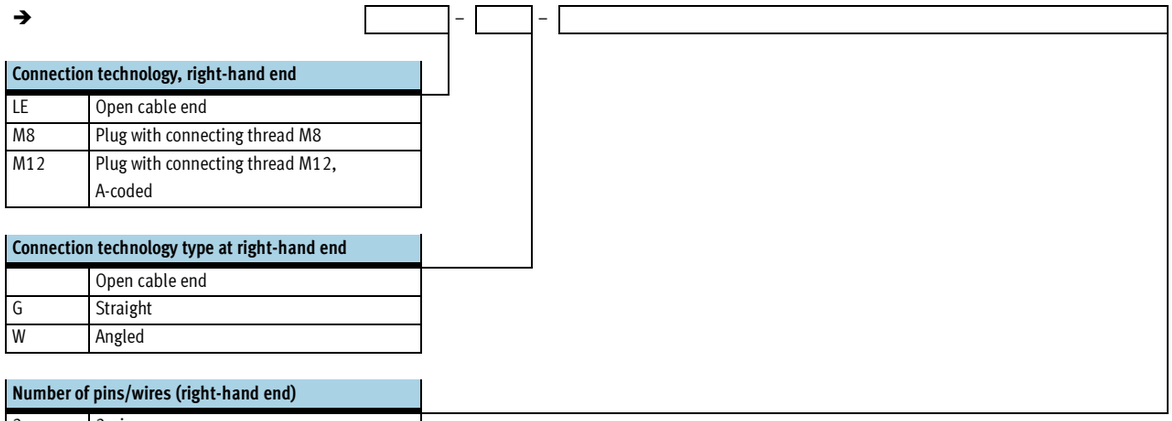
Cable designation	
	With inscription label holder (standard)
N	Without inscription label holder

Wire cross section	
	Standard
Q3	0.14 mm^2
Q8N	1 mm^2

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Connecting cables NEBU, universal

Type codes



Connection technology, right-hand end	
LE	Open cable end
M8	Plug with connecting thread M8
M12	Plug with connecting thread M12, A-coded

Connection technology type at right-hand end	
	Open cable end
G	Straight
W	Angled

Number of pins/wires (right-hand end)	
2	2-pin
3	3-pin
4	4-pin
5	5-pin
8	8-pin

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Connecting cables, open cable end, 5-pin

Technical data

Connecting cable
NEBU-LE5

- Plug socket with cable for connecting inputs/outputs
- Pre-assembled
- Cable length 1 m
- 5 wires
- Plug M12



General technical data		
Conforms to standard		EN 61984
		EN 61076-2-101
Plug coding		A
Cable composition	[mm²]	5x 0.25
Cable diameter	[mm]	4.5
Nominal conductor cross section	[mm²]	0.25
Cable characteristics		Standard
Cable test conditions		Resistance to bending: to Festo standard
		Test conditions on request
		Energy chain: 5 million cycles, bending radius 75 mm

Technical data			
Operating voltage range	[V]	0 ... 60 DC	0 ... 60 AC
Acceptable current load	[A]	4	
Surge resistance	[kV]	1.5	
Protection class to EN 60529		IP65, IP68	

Materials	
Wire colour	Blue, brown, grey, black, white
Housing colour	Black
Cable sheath colour	Grey
Housing	TPE-U(PU)
Insulating sheath	PVC
Union nut	Nickel-plated brass
Cable sheath	TPE-U(PU)
Note on materials	RoHS-compliant

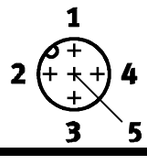
Operating and environmental conditions		
Ambient temperature	[°C]	–25 ... +70
Ambient temperature with flexible cable installation	[°C]	–5 ... +70
CE marking (see declaration of conformity)		In accordance with EU Low Voltage Directive
Degree of contamination		3

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Connecting cables, open cable end, 5-pin

Technical data

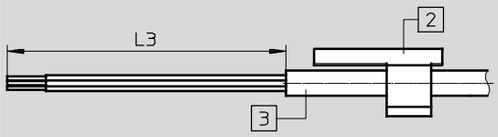
Circuitry (socket view)

Socket	Pin	Wire colour[1)]	Pin	Plug
Electrical connection: socket, 3-pin, M8 – plug, 3-pin				
–	–	BN	1	
	–	WH	2	
	–	BU	3	
	–	BK	4	
	–	GY	4	

1) To IEC 757

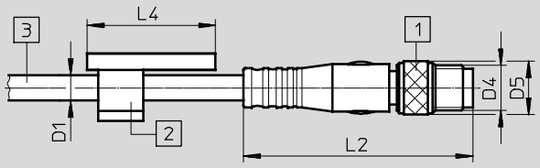
Dimensions Download CAD data ➔ **www.festo.com**

Connection technology, left-hand end



2 Inscription label holder
3 Cable, length 1 m

Connection technology, right-hand end

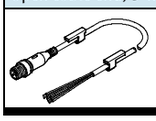


1 Plug
3 Cable, length 1 m
2 Inscription label holder

Connection technology, left-hand end	L3
NEBU	
Open end	50

Connection technology, right-hand end	D1 ∅	D4	D5 ∅	L2	L3	L4	H1
NEBU							
Straight plug	4.5	M12x1	15	54.5	–	23	–

Ordering data

	Cable length [m]	Cable characteristics	Outlet direction	Special features	Part No.	Type
Open cable end, 5-wire – plug, 5-pin, M12						
	1	Standard	Straight – straight	–	**569840**	**NEBU-LE5-K-1-M12G5**

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Connecting cables, M5, 4-pin

Technical data

Connecting cable
NEBU-M5

- Pre-assembled
- Cable length 5 m
- 3 wires
- M5



General technical data		
Electrical connection		Straight socket, M5x0.5/open end
		4-pin/3-wire
Cable composition	[mm²]	3x 0.14
Cable type		LifY11Y
Cable diameter	[mm]	2.9
Wire ends		Wire end sleeve
Nominal conductor cross section	[mm²]	0.14
Cable length	[m]	5
Cable characteristics		Suitable for use with energy chains
Type of mounting		Via knurled nut, via union nut
Min. cable bending radius	[mm]	30
Max. tightening torque of plug socket	[Nm]	0.3
Operating voltage range	[V DC]	30
	[V AC]	30
Acceptable current load	[A]	1.7
Protection class to EN 60529		IP65, IP67

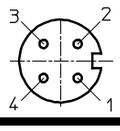
Materials	
Wire colour	Blue, brown, black
Housing colour	Black
Cable sheath colour	Grey
Housing	TPE-U(PU)
Union nut	Nickel-plated brass
Pin contact	Gold-plated brass
Cable sheath	TPE-U(PU)

Operating and environmental conditions	
Degree of contamination	3

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Connecting cables, M5, 4-pin

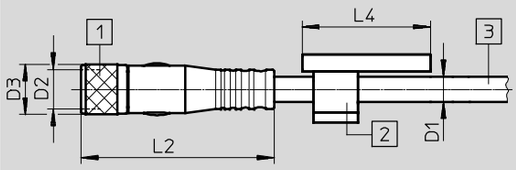
Technical data

Circuitry (socket view)				
Socket	Pin	Wire colour[1)]	Pin	Plug
Electrical connection: socket, 4-pin, M12 – open cable end				
	1	BN	–	–
	2	n.c.	–	
	3	BU	–	
	4	BK	–	

1) To IEC 757

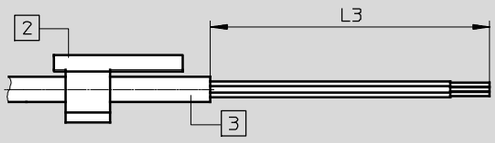
Dimensions Download CAD data ➔ **www.festo.com**

Connection technology, left-hand end



1 Socket M5x0.5
2 Inscription label holder
3 Cable, length 5 m

Connection technology, right-hand end



2 Inscription label holder
3 Cable, length 5 m

Connection technology, left-hand end	D1 ∅	D2	D3 ∅	L2	L4
NEBU					
Straight socket	2.9	M5x0.5	6	27.5	–

Connection technology, right-hand end	L3
NEBU	
Open end	50

Ordering data				
Electrical connection	Cable composition	Cable length [m]	Part No.	Type
Socket, M5, 4-pin	3x 0.14 mm^2	5	**539508**	**NEBU-M5G4-K-5-Q3-LE3**

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Connecting cables, M8, 3-pin

Technical data

Connecting cable
NEBU-M8
SIM-M8
KM8-M8

- Plug socket with cable for connecting inputs/outputs
- Pre-assembled at both ends
- Cable lengths 0.1 ... 30 m
- 3 wires
- M8



General technical data				
Conforms to standard	NEBU/SIM			EN 61076-2-104
				EN 61984
				EN 61076-2-101
Cable composition			[mm²]	3x 0.25
Cable diameter	NEBU/SIM		[mm]	4.5
Nominal conductor cross section	NEBU/SIM		[mm²]	0.25
Cable characteristics	NEBU	Code -P-		Basic
		Code -K-		Standard
		Code -E-		Suitable for use with energy chains
		Code -R-		Suitable for robot applications
	SIM			Standard
	KM8-M8			–
Cable test conditions	NEBU/SIM			Resistance to bending: to Festo standard
				Test conditions on request
	Cable characteristics	Basic		–
		Standard		Energy chain: 5 million cycles, bending radius 75 mm
		Suitable for use with energy chains		Energy chain: 5 million cycles, bending radius 28 mm
		Suitable for robot applications		Torsional strength greater than 300,000 cycles, ±270°/0.1 m

Technical data					
Operating voltage range	NEBU/SIM	Without display	[V]	0 ... 60 DC	0 ... 60 AC
		With display	[V]	10 ... 30 DC	–
	KM8-M8		[V]	0 ... 75 DC	0 ... 60 AC
Acceptable current load	NEBU/SIM	Non-rotatable connection technology	[A]	3	
		Rotatable connection technology	[A]	0.5	
	KM8-M8		[A]	4	
Surge resistance	NEBU/SIM	Non-rotatable connection technology, without switching status display	[kV]	1.5	
		Rotatable connection technology	[kV]	0.8	
		With switching status display	[kV]	0.8	
Protection class to EN 60529	NEBU/SIM			IP65, IP68	
	KM8-M8			IP65	

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Connecting cables, M8, 3-pin

Technical data

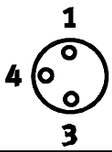
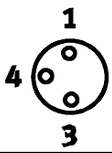
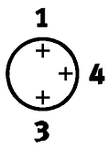
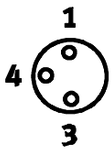
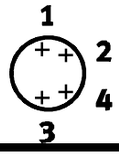
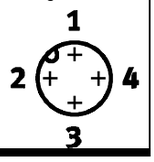
Materials			
Wire colour	NEBU/SIM		Blue, brown, black
Housing colour	NEBU/SIM		Black
Cable sheath colour			Grey
Housing	NEBU/SIM		TPE-U(PU)
Insulating sheath	NEBU/SIM	Cable characteristics: suitable for energy chains and robot applications	TPE-E
		Cable characteristics: basic, standard	PVC-P
Union nut	NEBU/SIM		Nickel-plated brass
Cable sheath	NEBU/SIM	Cable characteristics: standard, suitable for energy chains and robot applications	TPE-U(PU)
		Cable characteristics: basic	PVC-P
	KM8-M8		PUR
Note on materials	NEBU/SIM	All types	RoHS-compliant
		Cable characteristics: suitable for energy chains and robot applications	Halogen-free, oil-resistant

Operating and environmental conditions				
Ambient temperature	NEBU/SIM	Cable characteristics: basic, standard	[°C]	–25 ... +70
		Cable characteristics: suitable for energy chains and robot applications	[°C]	–25 ... +80
	KM8-M8		[°C]	–25 ... +85
Ambient temperature with flexible cable installation	NEBU/SIM	Cable characteristics: standard	[°C]	–5 ... +70
		Cable characteristics: basic, suitable for energy chains and robot applications	[°C]	–5 ... +80
CE marking (see declaration of conformity)	NEBU/SIM	With switching status display		–
		Without switching status display		In accordance with EU Low Voltage Directive
	KM8-M8			–
Degree of contamination				3

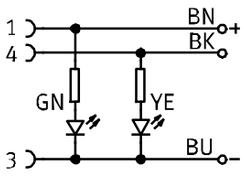
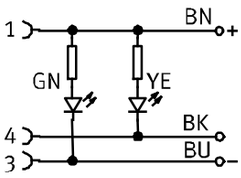
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Connecting cables, M8, 3-pin

Technical data

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

1) To IEC 757

Circuitry – Switching status display	
Display code -P-	Display code N
	

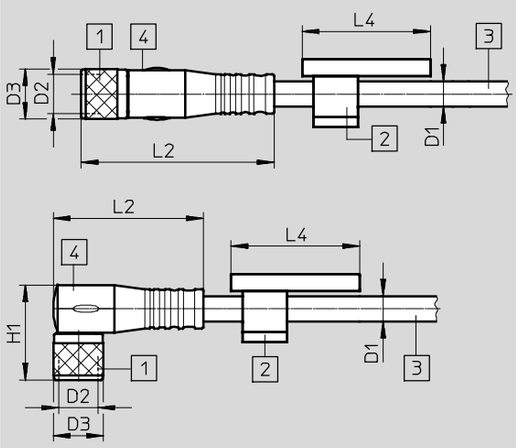
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Connecting cables, M8, 3-pin

Technical data

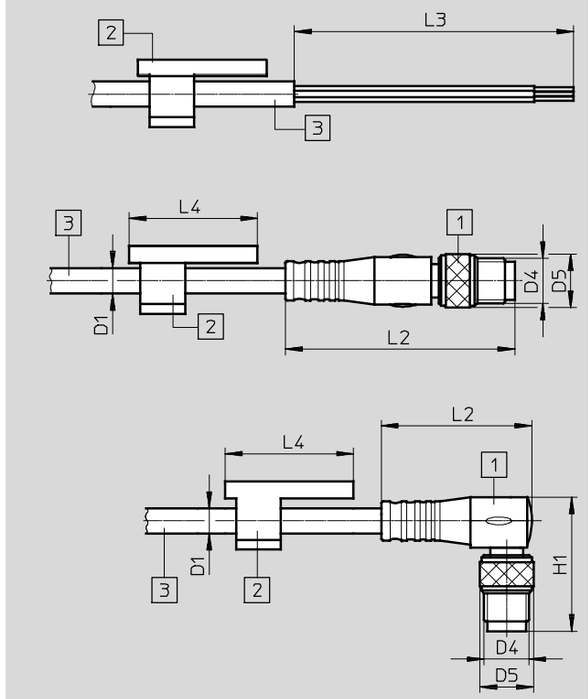
Dimensions Download CAD data ➔ **www.festo.com**

Connection technology, left-hand end



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

Connection technology, right-hand end



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

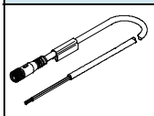
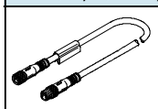
Connection technology, left-hand end	D1 ∅	D2	D3 ∅	L2	L4	H1
NEBU						
Straight socket	4.5	M8x1	9	34.6	23	–
Angled socket	4.5	M8x1	9	26.9	23	17
Rotatable socket	4.5	M8x1	10	20.9	23	16.3
NEBU with display						
Straight socket	3.4	M8x1	9	34.6	23	–
Angled socket	3.4	M8x1	9	26.9	23	17
SIM						
Straight socket	4.5	M8x1	9	34.4	–	–
Angled socket	4.5	M8x1	9	26.8	–	16.8
KM8-M8						
Straight socket	4.5	M8x1	9.7	32	–	–

Connection technology, right-hand end	D1 ∅	D4	D5 ∅	L2	L3	L4	H1
NEBU							
Open end	4.5	–	–	–	50	23	–
Straight plug	4.5	M8x1	9.6	41.1	–	23	–
	4.5	M12x1	15	54.5	–	23	–
Angled plug	4.5	M8x1	9.6	26.9	–	23	24
	4.5	M12x1	15	37.5	–	23	33.2
NEBU with display							
Straight plug	3.4	M8x1	9	41.1	–	23	–
	3.4	M12x1	15	54.5	–	23	–
Angled plug	3.4	M8x1	9	26.9	–	23	24
	3.4	M12x1	15	37.5	–	23	33.2
SIM							
Open end	4.5	–	–	–	50	–	–
KM8-M8							
Straight plug	4.5	M8x1	9.7	39	–	–	–

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Connecting cables, M8, 3-pin

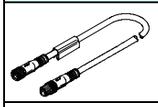
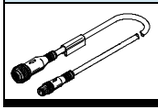
Technical data

Ordering data						
	Cable length [m]	Cable characteristics	Outlet direction	Special features	Part No.	Type
Socket, 3-pin, M8 – open cable end						
	2.5	Standard	Straight – straight	–	541333	NEBU-M8G3-K-2.5-LE3
					159420	SIM-M8-3GD-2,5-PU
			Angled – straight	–	541338	NEBU-M8W3-K-2.5-LE3
				–	159422	SIM-M8-3WD-2,5-PU
				Rotatable socket	8001660	NEBU-M8R3-K-2.5-LE3
				For NPN N/O contact, yellow switching status display, green ready status display	541336	NEBU-M8W3N-K-2.5-LE3
					159426	SIM-M8-3WD-2,5-NSL-PU
				For PNP N/O contact, yellow switching status display, green ready status display	541337	NEBU-M8W3P-K-2.5-LE3
					159424	SIM-M8-3WD-2,5-PSL-PU
		Suitable for robot applications	Straight – straight	–	569845	NEBU-M8G3-R-2.5-LE3
			Angled – straight	–	569847	NEBU-M8W3-R-2.5-LE3
	5	Standard	Straight – straight	–	541334	NEBU-M8G3-K-5-LE3
				–	159421	SIM-M8-3GD-5-PU
			Angled – straight	–	541341	NEBU-M8W3-K-5-LE3
				–	159423	SIM-M8-3WD-5-PU
				Rotatable socket	8001661	NEBU-M8R3-K-5-LE3
				For NPN N/O contact, yellow switching status display, green ready status display	541339	NEBU-M8W3N-K-5-LE3
					159427	SIM-M8-3WD-5-NSL-PU
				For PNP N/O contact, yellow switching status display, green ready status display	541340	NEBU-M8W3P-K-5-LE3
					159425	SIM-M8-3WD-5-PSL-PU
		Suitable for use with energy chains	Straight – straight	–	569843	NEBU-M8G3-E-5-LE3
		Suitable for robot applications	Straight – straight	–	569846	NEBU-M8G3-R-5-LE3
	10	Standard	Straight – straight	–	541332	NEBU-M8G3-K-10-LE3
				–	192964	SIM-M8-3GD-10-PU
			Angled – straight	–	541335	NEBU-M8W3-K-10-LE3
				–	192965	SIM-M8-3WD-10-PU
		Suitable for use with energy chains	Straight – straight	–	569842	NEBU-M8G3-E-10-LE3
		Suitable for robot applications	Angled – straight	–	8003129	NEBU-M8G3-R-10-LE3
Socket, 3-pin, M8 – plug, 3-pin, M8						
	0.5	Standard	Straight – straight	–	541346	NEBU-M8G3-K-0.5-M8G3
		–	Straight – straight	–	175488	KM8-M8-GSGD-0,5
	1	Standard	Straight – straight	–	541347	NEBU-M8G3-K-1-M8G3
		–	Straight – straight	–	175489	KM8-M8-GSGD-1
	1.5	Standard	Straight – straight	–	8003133	NEBU-M8G3-K-1.5-M8G3
	2	Standard	Straight – straight	–	8003131	NEBU-M8G3-K-2-M8G3
	2.5	Standard	Straight – straight	–	541348	NEBU-M8G3-K-2.5-M8G3
		–	Straight – straight	–	165610	KM8-M8-GSGD-2,5
	3	Standard	Straight – straight	–	8003132	NEBU-M8G3-K-3-M8G3
	3.5	Suitable for use with energy chains	Straight – straight	–	559364	NEBU-M8G3-E-3.5-M8G3
	5	Standard	Straight – straight	–	541349	NEBU-M8G3-K-5-M8G3
		–	Straight – straight	–	165611	KM8-M8-GSGD-5
	10	Standard	Straight – straight	–	569844	NEBU-M8G3-K-10-M8G3

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Connecting cables, M8, 3-pin

Technical data

Ordering data						
	Cable length [m]	Cable characteristics	Outlet direction	Special features	Part No.	Type
Socket, 3-pin, M8 – plug, 4-pin, M8						
	2.5	Standard	Straight – straight	–	**554037**	**NEBU-M8G3-K-2.5-M8G4**
Socket, 3-pin, M8 – plug, 3-pin, M12						
	0.5	Standard	Straight – straight	–	**8000209**	**NEBU-M8G3-K-0.5-M12G3**

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Connecting cables, M8, 4-pin

Technical data

Connecting cable
NEBU-M8
SIM-M8

- Plug socket with cable for connecting inputs/outputs
- Pre-assembled at both ends
- Cable lengths 0.1 ... 30 m
- 4 wires
- M8



General technical data				
Conforms to standard				EN 61076-2-104
				EN 61984
				EN 61076-2-101
Cable composition			[mm²]	4x 0.25
Cable diameter	NEBU	With display	[mm]	3.4
		Without display	[mm]	4.5
	SIM		[mm]	4.5
Nominal conductor cross section			[mm²]	0.25
Cable characteristics	NEBU	Code -P-		Basic
		Code -K-		Standard
		Code -E-		Suitable for use with energy chains
		Code -R-		Suitable for robot applications
	SIM			Standard
Cable test conditions				Resistance to bending: to Festo standard
				Test conditions on request
	Cable characteristics	Basic		–
		Standard		Energy chain: 5 million cycles, bending radius 75 mm
		Suitable for use with energy chains		Energy chain: 5 million cycles, bending radius 28 mm
		Suitable for robot applications		Torsional strength greater than 300,000 cycles, ±270°/0.1 m

Technical data					
Operating voltage range	NEBU	Without display	[V]	0 ... 30 DC	0 ... 30 AC
		With display	[V]	21.6 ... 30 DC	21.6 ... 30 AC
	SIM		[V]	0 ... 30 DC	0 ... 30 AC
Acceptable current load			[A]	3	
Surge resistance	NEBU		[kV]	0.8	
	SIM		[kV]	0.8	
Protection class to EN 60529				IP65, IP68	

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Connecting cables, M8, 4-pin

Technical data

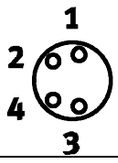
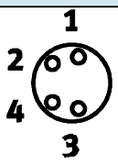
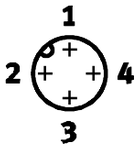
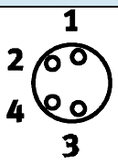
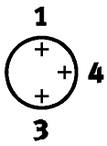
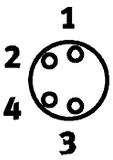
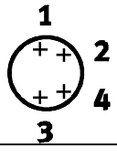
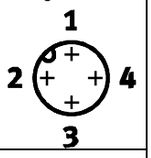
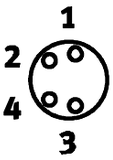
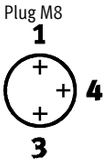
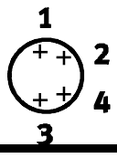
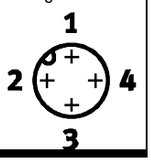
Materials			
Wire colour			Blue, brown, black, white
Housing colour			Black
Cable sheath colour			Grey
Housing			TPE-U(PU)
Insulating sheath	Cable characteristics: suitable for energy chains and robot applications		TPE-E
	Cable characteristics: basic, standard		PVC-P
Union nut			Nickel-plated brass
Cable sheath	Cable characteristics: standard, suitable for energy chains and robot applications		TPE-U(PU)
	Cable characteristics: basic		PVC-P
Note on materials			RoHS-compliant
	Cable characteristics: suitable for energy chains and robot applications		Halogen-free, oil-resistant

Operating and environmental conditions			
Ambient temperature	Cable characteristics: basic, standard	[°C]	–25 ... +70
	Cable characteristics: suitable for energy chains and robot applications	[°C]	–25 ... +80
Ambient temperature with flexible cable installation	Cable characteristics: standard	[°C]	–5 ... +70
	Cable characteristics: basic, suitable for energy chains and robot applications	[°C]	–5 ... +80
Degree of contamination			3

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Connecting cables, M8, 4-pin

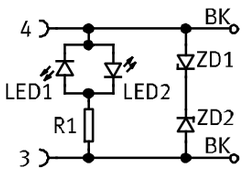
Technical data

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

1) To IEC 757

Circuitry – Switching status display

Display code L



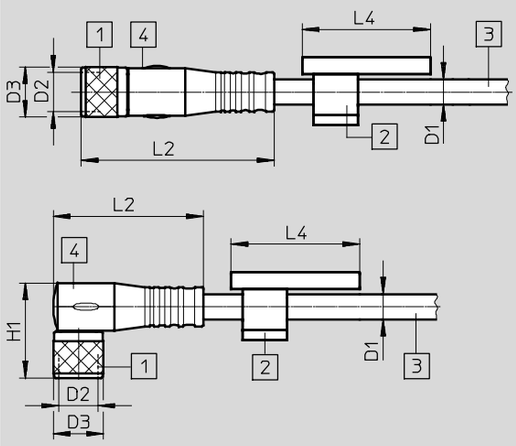
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Connecting cables, M8, 4-pin

Technical data

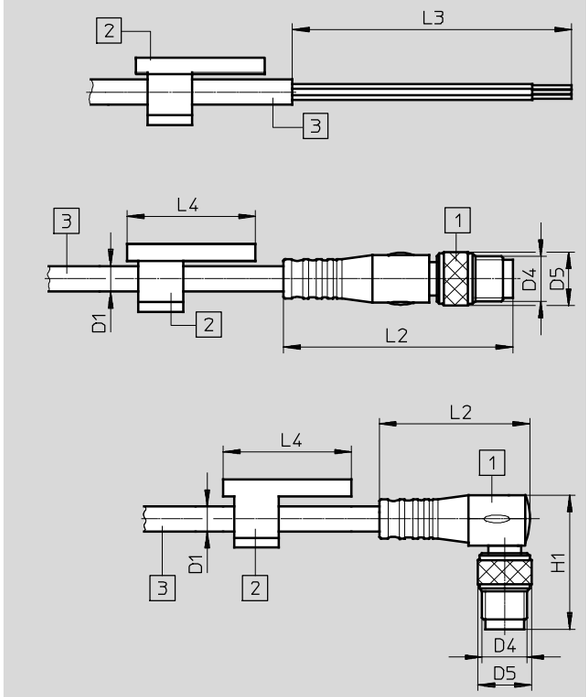
Dimensions Download CAD data ➔ **www.festo.com**

Connection technology, left-hand end



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

Connection technology, right-hand end



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

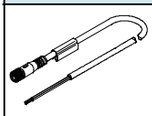
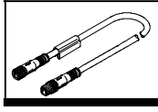
Connection technology, left-hand end	D1 ∅	D2	D3 ∅	L2	L4	H1
NEBU						
Straight socket	4.5	M8x1	9	34.6	23	–
Angled socket	4.5	M8x1	9	26.9	23	17
Rotatable socket	4.5	M8x1	10	20.9	23	16.3
NEBU with display						
Straight socket	3.4	M8x1	9	34.6	23	–
Angled socket	3.4	M8x1	9	26.9	23	17
SIM						
Straight socket	4.5	M8x1	9	34.4	–	16.8
Angled socket	4.5	M8x1	9	26.8	–	16.8

Connection technology, right-hand end	D1 ∅	D4	D5 ∅	L2	L3	L4	H1
NEBU							
Open end	4.5	–	–	–	50	23	–
Straight plug	4.5	M8x1	9.6	41.1	–	23	–
	4.5	M12x1	15	54.5	–	23	–
Angled plug	4.5	M8x1	9.6	26.9	–	23	24
	4.5	M12x1	15	37.5	–	23	33.2
NEBU with display							
Straight plug	3.4	M8x1	9	41.1	–	23	–
	3.4	M12x1	15	54.5	–	23	–
Angled plug	3.4	M8x1	9	26.9	–	23	24
	3.4	M12x1	15	37.5	–	23	33.2
SIM							
Open end	4.5	–	–	–	50	–	–

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Connecting cables, M8, 4-pin

Technical data

Ordering data						
	Cable length [m]	Cable characteristics	Outlet direction	Special features	Part No.	Type
Socket, 4-pin, M8 – open cable end						
	2.5	Standard	Straight – straight	–	**541342**	**NEBU-M8G4-K-2.5-LE4**
					158960	**SIM-M8-4GD-2,5-PU**
			Angled – straight	–	**541344**	**NEBU-M8W4-K-2.5-LE4**
				–	**158962**	**SIM-M8-4WD-2,5-PU**
	5	Standard	Straight – straight	–	**541343**	**NEBU-M8G4-K-5-LE4**
				–	**158961**	**SIM-M8-4GD-5-PU**
			Angled – straight	–	**541345**	**NEBU-M8W4-K-5-LE4**
					158963	**SIM-M8-4WD-5-PU**
	9	Standard	Straight – straight	–	**8003130**	**NEBU-M8G4-K-9-LE4**
	10	Standard	Angled – straight	–	**575833**	**NEBU-M8W4-K-10-LE4**
Socket, 4-pin, M8 – plug, 4-pin, M8						
	2	Suitable for robot applications	Straight – straight	–	**556946**	**NEBU-M8G4-R-2-M8G4**
	2.5	Standard	Straight – straight	–	**554035**	**NEBU-M8G4-K-2.5-M8G4**

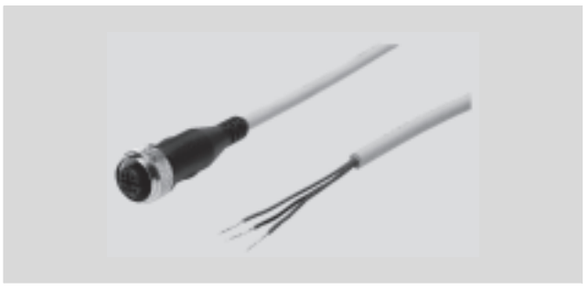
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Connecting cables, M12, 3-pin

Technical data

Connecting cable SIM-M12

- Plug socket with cable for connecting inputs/outputs
- Pre-assembled
- Cable lengths 2.5 m, 3 m, 5 m
- 3 wires
- M12



General technical data			
Conforms to standard			EN 61984
			EN 61076-2-101
Plug coding			A
Cable composition		[mm²]	3x 0.25
	SIM-...-RS	[mm²]	3x 0.5
Cable diameter		[mm]	4.5
	SIM-...-RS	[mm]	5.2
Nominal conductor cross section		[mm²]	0.25
	SIM-...-RS	[mm²]	0.5
Cable characteristics			Standard
Cable test conditions			Resistance to bending: to Festo standard
			Test conditions on request
			Energy chain: 5 million cycles, bending radius 75 mm

Technical data				
Operating voltage range	Without switching status display	[V]	0 ... 250 DC	0 ... 250 AC
	With switching status display	[V]	10 ... 30 DC	–
	SIM-...-RS		0 ... 70 DC	0 ... 45 AC
Acceptable current load		[A]	4	
Surge resistance	Without switching status display	[kV]	2.5	
	With switching status display	[kV]	0.8	
	SIM-...-RS	[kV]	2.5	
Protection class to EN 60529			IP65, IP68	
	SIM-...-RS		IP65, IP67	

Materials		
Wire colour		Blue, brown, black
Housing colour		Black
Cable sheath colour		Grey
	SIM-...-RS	Orange
Housing		TPE-U(PU)
Insulating sheath		PVC
	SIM-...-RS	PVC, screened
Union nut		Nickel-plated brass
Cable sheath		TPE-U(PU)
	SIM-...-RS	PVC, screened
Note on materials		RoHS-compliant, free of copper and PTFE

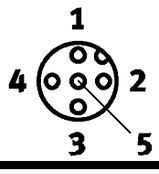
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Connecting cables, M12, 3-pin

Technical data

Operating and environmental conditions			
Ambient temperature		[°C]	–25 ... +70
	SIM-...-RS	[°C]	–25 ... +80
Ambient temperature with flexible cable installation		[°C]	–5 ... +70
	SIM-...-RS	[°C]	0 ... +80
CE marking (see declaration of conformity)	Without switching status display		In accordance with EU Low Voltage Directive
	SIM-...-RS		–
Degree of contamination			3

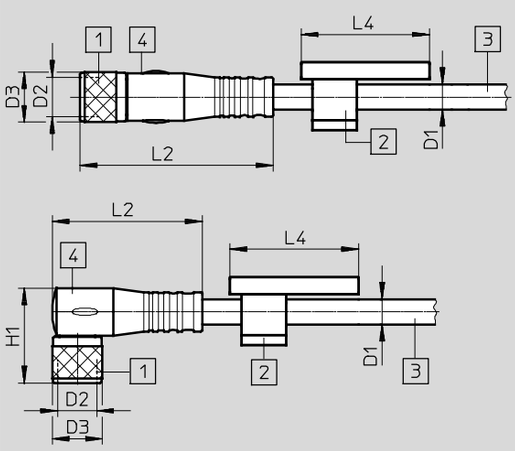
Circuitry (socket view)

Socket	Pin	Wire colour[1)]	Pin	Plug
Electrical connection: socket, 3-pin, M8 – open cable end				
	1	BN	–	–
	2	–	–	
	3	BU	–	
	4	BK	–	
	5	–	–	

1) To IEC 757

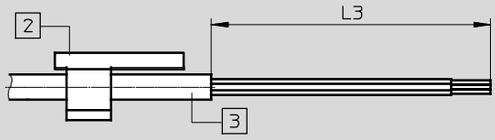
Dimensions Download CAD data ➔ **www.festo.com**

Connection technology, left-hand end



1 Socket M12x1
2 Inscription label holder
3 Cable, length 2.5 m, 3 m or 5 m depending on order
4 Display field with version NSL, PSL

Connection technology, right-hand end



2 Inscription label holder
3 Cable, length 2.5 m, 3 m or 5 m depending on order

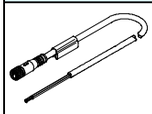
Connection technology, left-hand end	D1 ∅	D2	D3 ∅	L2	L4	H1
SIM						
Straight socket	4.5	M12x1	15	48.5	–	–
Angled socket	4.5	M12x1	–	37.5	–	26
SIM-...-RS						
Straight socket	5.2	M12x1	15	38	–	–
Angled socket	5.2	M12x1	13.5	31	–	25

Connection technology, right-hand end	D1 ∅	L3
SIM		
Open end	4.5	50
SIM-...-RS		
Open end	5.2	50

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Connecting cables, M12, 3-pin

Technical data

Ordering data						
	Cable length [m]	Cable characteristics	Outlet direction	Special features	Part No.	Type
Socket, 3-pin, M8 – open cable end						
	2.5	Standard	Straight – straight	–	**159428**	**SIM-M12-3GD-2,5-PU**
			Angled – straight	–	**159430**	**SIM-M12-3WD-2,5-PU**
				For NPN N/O contact, yellow switching status display, green ready status display	**159434**	**SIM-M12-3WD-2,5-NSL-PU**
				For PNP N/O contact, yellow switching status display, green ready status display	**159432**	**SIM-M12-3WD-2,5-PSL-PU**
	3	Standard	Straight – straight	Resistant to welding spatter	**30450**	**SIM-M12-RS-3GD-3**
			Angled – straight	Resistant to welding spatter	**30451**	**SIM-M12-RS-3WD-3**
	5	Standard	Straight – straight	–	**159429**	**SIM-M12-3GD-5-PU**
			Angled – straight	–	**159431**	**SIM-M12-3WD-5-PU**
				For NPN N/O contact, yellow switching status display, green ready status display	**159435**	**SIM-M12-3WD-5-NSL-PU**
				For PNP N/O contact, yellow switching status display, green ready status display	**159433**	**SIM-M12-3WD-5-PSL-PU**

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Connecting cables, M12, 4-pin

Technical data

Connecting cable
SIM-M12-4
KM12-M12

- Plug socket with cable for connecting inputs/outputs
- Pre-assembled at both ends
- Cable lengths 1 m, 2.5 m, 5 m
- 4 wires
- M12



General technical data				
Conforms to standard			EN 61076-2-101	
			EN 61984	
Plug coding			A	
Cable composition	KM12-M12-GSWD-1-4	[mm²]	4x 0.34	
	Other types	[mm²]	4x 0.25	
Cable diameter	SIM	[mm]	4.5	
Nominal conductor cross section	SIM	[mm²]	0.25	
Cable characteristics	SIM		Standard	
Cable test conditions	SIM		Test conditions on request	
			Resistance to bending: to Festo standard	
			Energy chain: 5 million cycles, bending radius 75 mm	

Technical data				
Operating voltage range	SIM	[V]	0 ... 250 DC	0 ... 250 AC
	KM12-M12	[V]	0 ... 75 DC	0 ... 60 AC
Acceptable current load	SIM	[A]	4	
	KM12-M12-GSGD-2,5	[A]	3.8	
	KM12-M12-GSGD-5	[A]	2.8	
	KM12-M12-GSWD-1-4	[A]	3.8	
Surge resistance	SIM	[kV]	2.5	
Protection class to EN 60529	SIM		IP65, IP68	
	KM12-M12		IP67	

Materials		
Wire colour	SIM	Blue, brown, black, white
Housing colour	SIM	Black
Cable sheath colour		Grey
Housing	SIM	TPE-U(PU)
	KM12-M12-GSWD-1-4	TPE-U(PU)
Insulating sheath	SIM	PVC
Union nut	SIM	Nickel-plated brass
Cable sheath	SIM	TPE-U(PU)
	KM12-M12-GSGD-2,5	PUR
	KM12-M12-GSGD-5	PUR
	KM12-M12-GSWD-1-4	TPE-U(PU)
Note on materials	SIM	RoHS-compliant, free of copper and PTFE

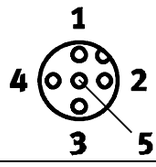
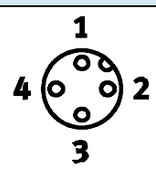
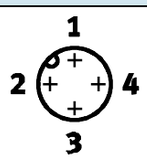
Operating and environmental conditions			
Ambient temperature	SIM	[°C]	–25 ... +70
	KM12-M12	[°C]	–30 ... +70
Ambient temperature with flexible cable installation		[°C]	–5 ... +70
CE marking (see declaration of conformity)	SIM		In accordance with EU Low Voltage Directive
Degree of contamination	SIM		3

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Connecting cables, M12, 4-pin

Technical data

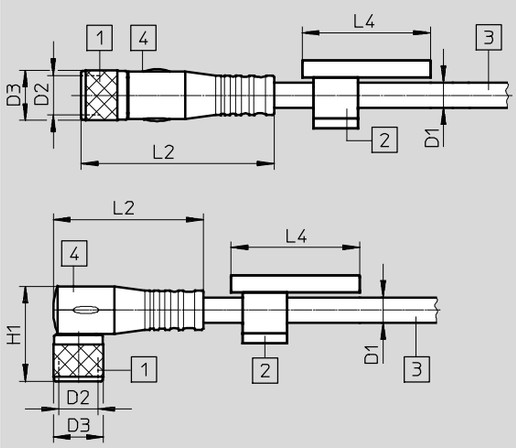
Circuitry (socket view)

Socket	Pin	Wire colour[1)]	Pin	Plug
Electrical connection: socket, 4-pin, M12 – open cable end				
	1	BN	–	–
	2	WH	–	
	3	BU	–	
	4	BK	–	
	5	–	–	
Electrical connection: socket, 4-pin, M12 – plug, 4-pin				
	1	BN	1	
	2	WH	2	
	3	BU	3	
	4	BK	4	

1) To IEC 757

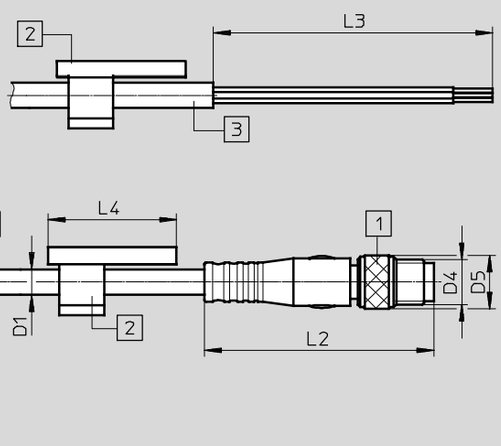
Dimensions Download CAD data ➔ **www.festo.com**

Connection technology, left-hand end



1 Socket M12x1
2 Inscription label holder
3 Cable, length 1 m, 2.5 m, 5 m depending on order
4 Display field

Connection technology, right-hand end



1 Plug M12x1
2 Inscription label holder
3 Cable, length 1 m, 2.5 m, 5 m depending on order

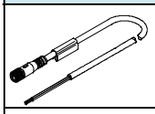
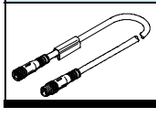
Connection technology, left-hand end	D1 ∅	D2	D3 ∅	L2	L4	H1
SIM						
Straight socket	4.5	M12x1	15	48.5	–	–
Angled socket	4.5	M12x1	–	37.5	–	26
KM12-M12						
Straight socket	–	M12x1	14	40.3	–	–
Angled socket	–	M12x1	14	38.5	–	–

Connection technology, right-hand end	D1 ∅	D4	D5 ∅	L2	L3	L4
SIM						
Open end	4.5	–	–	–	50	–
KM12-M12						
Straight plug	–	M12x1	14	46	–	–

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Connecting cables, M12, 4-pin

Technical data

Ordering data						
	Cable length [m]	Cable characteristics	Outlet direction	Special features	Part No.	Type
Socket, 3-pin, M8 – open cable end						
	5	Standard	Straight – straight	–	**164259**	**SIM-M12-4GD-5-PU**
			Angled – straight	–	**164258**	**SIM-M12-4WD-5-PU**
Socket, 3-pin, M8 – plug, 3-pin, M8						
	1	–	Straight – straight	–	**185499**	**KM12-M12-GSWD-1-4**
	2.5	–	Straight – straight	–	**18684**	**KM12-M12-GSGD-2,5**
	5	–	Straight – straight	–	**18686**	**KM12-M12-GSGD-5**

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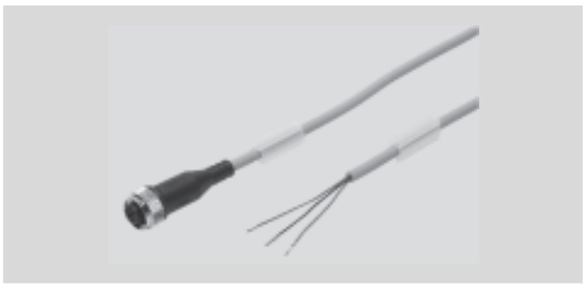
Connecting cables, M12, 5-pin

Technical data

FESTO

Connecting cable
NEBU-M12
SIM-M12

- Plug socket with cable for connecting inputs/outputs
- Pre-assembled at both ends
- Cable lengths 0.1 ... 30 m
- 5 wires
- M12



General technical data				
Conforms to standard				EN 61076-2-101
				EN 61984
				EN 61076-2-104
Cable composition	2-wire		[mm²]	2x 0.25
	3-wire		[mm²]	3x 0.25
	4-wire		[mm²]	4x 0.25
	5-wire		[mm²]	5x 0.25
	NEBU-M12G5-F-0.2-M12G4		[mm²]	4x 0.34
	NEBU-M12G5-...-Q8N-M12G5		[mm²]	5x 1
Cable diameter	NEBU/SIM	With display code L	[mm]	3.4
		Without display	[mm]	4.5
	NEBU-M12G5-F-0.2-M12G4		[mm]	5.2
	NEBU-M12G5-...-Q8N-M12G5		[mm]	7
Nominal conductor cross section	NEBU/SIM		[mm²]	0.25
	NEBU-M12G5-F-0.2-M12G4		[mm²]	0.34
	NEBU-M12G5-...-Q8N-M12G5		[mm²]	1
Cable characteristics	NEBU	Code -P-		Basic
		Code -K-		Standard
		Code -E-		Suitable for use with energy chains
		Code -R-		Suitable for robot applications
	SIM			Standard
Cable test conditions				Resistance to bending: to Festo standard
				Test conditions on request
	Cable characteristics	Basic		–
		Standard		Energy chain: 5 million cycles, bending radius 75 mm
		Suitable for use with energy chains		Energy chain: 5 million cycles, bending radius 28 mm
		Suitable for robot applications		Torsional strength greater than 300,000 cycles, ±270°/0.1 m

Technical data					
Operating voltage range	NEBU/SIM	With plug M8	[V]	0 ... 30 DC	0 ... 30 AC
		3-wire, 4-wire	[V]	0 ... 250 DC	0 ... 250 AC
		5-wire	[V]	0 ... 60 DC	0 ... 60 AC
		With display code -P-, N or P2	[V]	10 ... 30 DC	–
Acceptable current load	NEBU/SIM	Other types	[A]	4	
		With plug M8	[A]	3	
Surge resistance			[kV]	1.5	
	With plug M8, 4-pin or with switching status display		[kV]	0.8	
	With open cable end, 3-pin or 4-pin		[kV]	2.5	
	NEBU-M12G5-F-0.2-M12G4		[kV]	–	
Protection class to EN 60529	NEBU/SIM			IP65, IP68	
	NEBU-M12G5-F-0.2-M12G4			IP65, IP67	

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Connecting cables, M12, 5-pin

Technical data

FESTO

Materials			
Wire colour			Blue, brown, black, white, grey
Housing colour			Black
Cable sheath colour			Grey
Housing			TPE-U(PU)
Insulating sheath	Cable characteristics: suitable for energy chains and robot applications		TPE-E
	Cable characteristics: basic, standard		PVC
	NEBU-M12G5-F-0.2-M12G4		–
Union nut	NEBU/SIM		Nickel-plated brass
	NEBU-M12G5-F-0.2-M12G4		Die-cast zinc
Cable sheath	Cable characteristics: standard, suitable for energy chains and robot applications		TPE-U(PU)
	Cable characteristics: basic		PVC
	NEBU-M12G5-F-0.2-M12G4		PVC
Note on materials	NEBU/SIM		RoHS-compliant
	NEBU-M12G5-...-V1, NEBU-M12G5-...-V2		Halogen-free, oil-resistant
	NEBU-M12G5-F-0.2-M12G4		–

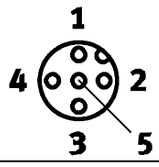
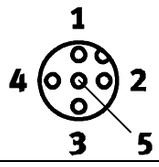
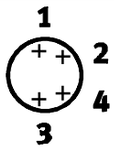
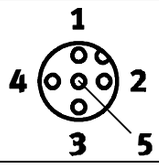
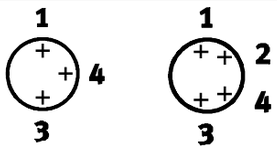
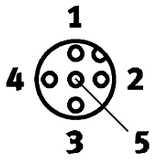
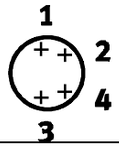
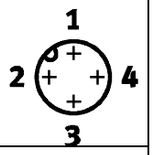
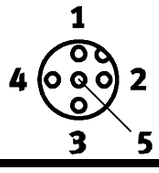
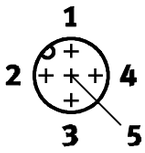
Operating and environmental conditions				
Ambient temperature	Cable characteristics: basic, standard		[°C]	–25 ... +70
	Cable characteristics: suitable for energy chains and robot applications		[°C]	–25 ... +80
	NEBU-M12G5-F-0.2-M12G4		[°C]	–5 ... +70
Ambient temperature with flexible cable installation	Cable characteristics: standard		[°C]	–5 ... +70
	Cable characteristics: basic, suitable for energy chains and robot applications		[°C]	–5 ... +80
CE marking (see declaration of conformity)	NEBU	With switching status display		In accordance with EU Low Voltage Directive
		Without switching status display		–
		With plug M8, 4-pin		–
	NEBU-M12G5-F-0.2-M12G4			–
	NEBU-M12G5-...-Q8N-M12G5			In accordance with EU Low Voltage Directive
	SIM			In accordance with EU Low Voltage Directive
Degree of contamination	NEBU/SIM			3
	NEBU-M12G5-F-0.2-M12G4			–

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Connecting cables, M12, 5-pin

Technical data

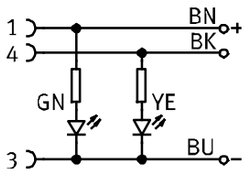
Circuitry (socket view)

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

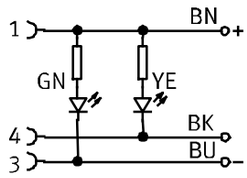
1) To IEC 757

Circuitry – Switching status display

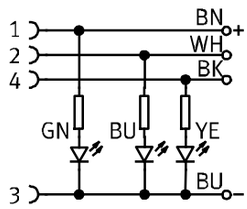
Display code -P-



Display code N



Display code -P-2



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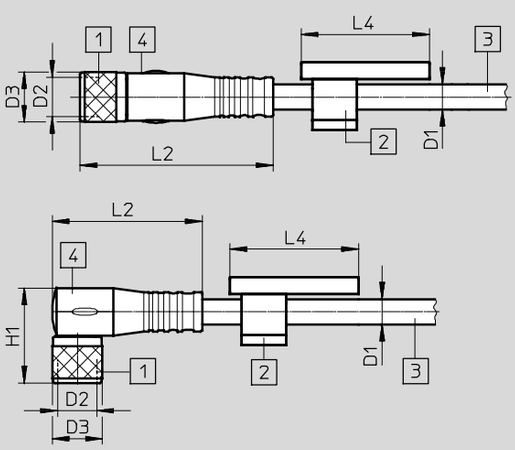
Connecting cables, M12, 5-pin

Technical data

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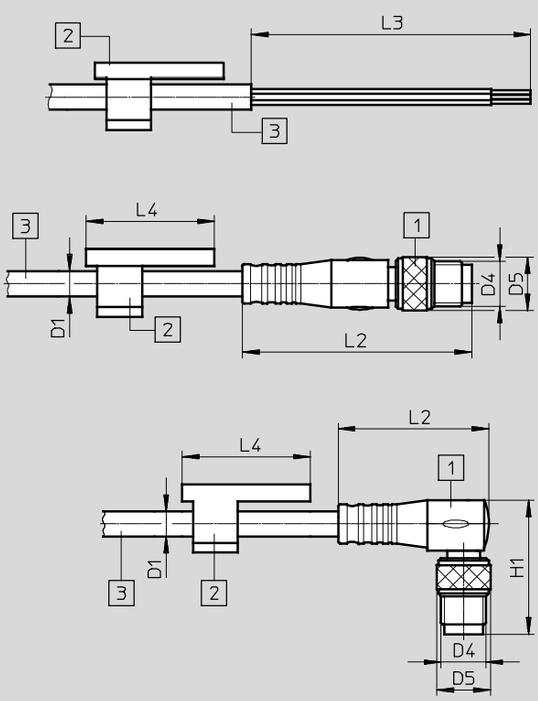
Dimensions Download CAD data ➔ **www.festo.com**

Connection technology, left-hand end



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

Connection technology, right-hand end



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

Connection technology, left-hand end	D1 ∅	D2	D3 ∅	L2	L4	H1
NEBU						
Straight socket	4.5	M12x1	15	47.5	23	–
Angled socket	4.5	M12x1	15	37.5	23	26
NEBU with display						
Angled socket	4.5	M12x1	15	37.5	23	26
NEBU-M12G5-F-0.2-M12G4						
Straight socket	5.2	M12x1	15	47.5	–	–
NEBU-M12G5-...-Q8N-M12G5						
Straight socket	7	M12x1	15	47.5	–	–
SIM						
Straight socket	4.5	M12x1	15	48.5	–	–

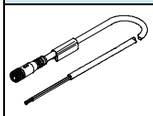
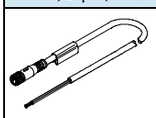
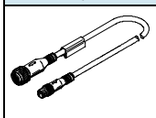
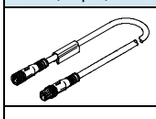
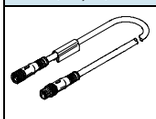
Connection technology, right-hand end	D1 ∅	D4	D5 ∅	L2	L3	L4	H1
NEBU							
Open end	4.5	–	–	–	50	23	–
Straight plug	4.5	M8x1	9.6	41.1	–	23	–
	4.5	M12x1	15	54.5	–	23	–
Angled plug	4.5	M8x1	9.6	26.9	–	23	24
	4.5	M12x1	15	37.5	–	23	33.2
NEBU with display							
Open end	4.5	–	–	–	50	23	–
Straight plug	4.5	M8x1	9	41.1	–	23	–
	4.5	M12x1	15	54.5	–	23	–
Angled plug	4.5	M8x1	9	26.9	–	23	24
	4.5	M12x1	15	37.5	–	23	33.2
NEBU-M12G5-F-0.2-M12G4							
Straight plug	5.2	M12x1	15	54.5	–	–	–
NEBU-M12G5-...-Q8N-M12G5							
Straight plug	7	M12x1	15	54.5	–	–	–
SIM							
Open end	4.5	–	–	–	50	–	–

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Connecting cables, M12, 5-pin

Technical data

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Ordering data						
	Cable length [m]	Cable characteristics	Outlet direction	Special features	Part No.	Type
Socket, 5-pin, M12 – open cable end, 3-wire						
	2.5	Standard	Straight – straight	–	541363	NEBU-M12G5-K-2.5-LE3
				Switching status display, for PNP N/O contact	541366	NEBU-M12W5P-K-2.5-LE3
			Angled – straight	–	541367	NEBU-M12W5-K-2.5-LE3
				Switching status display, for NPN N/O contact	541365	NEBU-M12W5N-K-2.5-LE3
	5	Standard	Straight – straight	–	541364	NEBU-M12G5-K-5-LE3
			Angled – straight	–	541370	NEBU-M12W5-K-5-LE3
				Switching status display, for NPN N/O contact	541368	NEBU-M12W5N-K-5-LE3
				Switching status display, for PNP N/O contact	541369	NEBU-M12W5P-K-5-LE3
Socket, 5-pin, M12 – open cable end, 4-wire						
	2.5	Standard	Straight – straight	–	550326	NEBU-M12G5-K-2.5-LE4
			Angled – straight	–	550325	NEBU-M12W5-K-2.5-LE4
	5	Standard	Straight – straight	–	541328	NEBU-M12G5-K-5-LE4
			Angled – straight	–	541329	NEBU-M12W5-K-5-LE4
	7	Standard	Straight – straight	–	8003134	NEBU-M12G5-K-7-LE4
Socket, 5-pin, M12 – open cable end, 5-wire						
	2.5	Standard	Straight – straight	–	541330	NEBU-M12G5-K-2.5-LE5
				–	175715	SIM-M12-5GD-2,5-PU
			Angled – straight	–	567843	NEBU-M12W5-K-2.5-LE5
	5	Standard	Straight – straight	–	541331	NEBU-M12G5-K-5-LE5
				–	175716	SIM-M12-5GD-5-PU
			Angled – straight	–	567844	NEBU-M12W5-K-5-LE5
	10	Standard	Straight – straight	–	554038	NEBU-M12G5-K-10-LE5
Socket, 5-pin, M12 – plug, 4-pin, M8						
	2.5	Standard	Straight – straight	–	554036	NEBU-M12G5-K-2.5-M8G4
		Suitable for use with energy chains	Straight – straight	Cable, 2-wire, halogen-free and oil-resistant	554034	NEBU-M12G5-E-2.5-W2-M8G4-V1
			Straight – straight	Cable, 3-wire, halogen-free and oil-resistant	554033	NEBU-M12G5-E-2.5-W3-M8G4-V2
Socket, 5-pin, M12 – plug, 4-pin, M12						
	0.15	Standard	Straight – straight	–	542129	NEBU-M12G5-F-0.2-M12G4
	0.5	Standard	Straight – straight	–	8000208	NEBU-M12G5-K-0.5-M12G4
Socket, 5-pin, M12 – plug, 5-pin, M12						
	0.5	Standard	Straight – angled	–	8003617	NEBU-M12G5-K-0.5-M12W5
			Angled – angled	–	570733	NEBU-M12W5-K-0.5-M12W5
	2	Standard	Straight – angled	–	8003618	NEBU-M12G5-K-2-M12W5
			Angled – angled	–	570734	NEBU-M12W5-K-2-M12W5
	5	Suitable for use with energy chains	Straight – straight	Nominal conductor cross section 1 mm²	574321	NEBU-M12G5-E-5-Q8N-M12G5
	7.5	Suitable for use with energy chains	Straight – straight	Nominal conductor cross section 1 mm²	574322	NEBU-M12G5-E-7.5-Q8N-M12G5
	10	Suitable for use with energy chains	Straight – straight	Nominal conductor cross section 1 mm²	574323	NEBU-M12G5-E-10-Q8N-M12G5

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Connecting cables, M12, 8-pin

Technical data

Connecting cable
NEBU-M12
SIM-M12-8
KM12-8

- Pre-assembled at both ends
- Cable lengths 2 m, 5 m and 10 m
- 8 wires
- M12



General technical data				
Cable composition	NEBU	[mm²]	8x 0.25, screened	
	SIM/KM12	[mm²]	8x 0.25	
Cable diameter	KM12	[mm]	6.2	

Technical data				
Operating voltage range	NEBU/KM12	[V]	0 ... 36 DC	0 ... 30 AC
	SIM	[V]	0 ... 70 DC	0 ... 45 AC
Acceptable current load		[A]	1.5	
	SIM-M12-8GD-5-PU	[A]	4	
Protection class to EN 60529	NEBU		IP67	
	SIM/KM12		IP68	

Materials		
Cable sheath colour		Grey
Housing		PUR
Union nut	KM12	Nickel-plated brass
Cable sheath		PUR
Pin contacts	KM12	Nickel-plated and gold-plated bronze
Note on materials	NEBU/SIM	RoHS-compliant

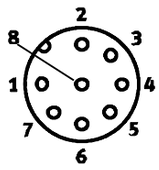
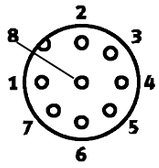
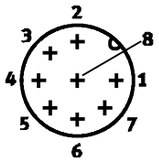
Operating and environmental conditions			
Ambient temperature	NEBU	[°C]	–25 ... +90
	SIM/KM12	[°C]	–25 ... +80

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Connecting cables, M12, 8-pin

Technical data

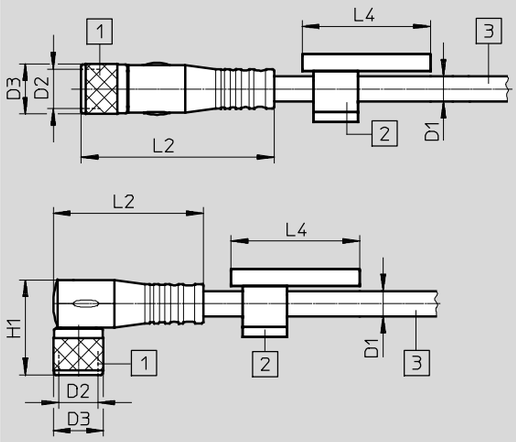
Circuitry (socket view)

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

1) To IEC 757

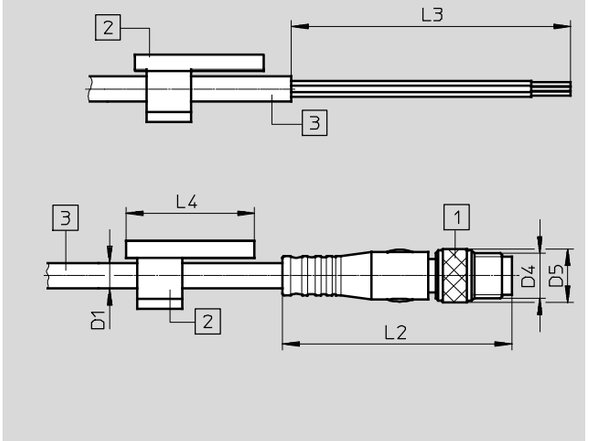
Dimensions Download CAD data ➔ **www.festo.com**

Connection technology, left-hand end



1 Socket M12x1
2 Inscription label holder
3 Cable, length 2 m, 5 m, 10 m depending on order

Connection technology, right-hand end



1 Plug
2 Inscription label holder
3 Cable, length 2 m, 5 m, 10 m depending on order

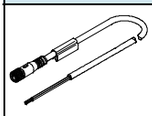
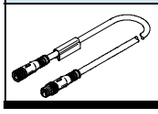
Connection technology, left-hand end	D1 ∅	D2	D3 ∅	L2	L4	H1
NEBU						
Angled socket	6.6	M12x1	14.5	38	–	28
SIM						
Straight socket	6.2	M12x1	14.6	–	–	–
KM12						
Straight socket	6.2	M12x1	–	–	–	–

Connection technology, right-hand end	D1 ∅	D4	D5 ∅	L2	L3	L4
NEBU						
Open end	6.6	–	–	–	50	–
SIM						
Open end	6.2	–	–	–	50	–
KM12						
Straight plug	6.2	M12x1	14.6	–	–	–

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Connecting cables, M12, 8-pin

Technical data

Ordering data						
	Cable length [m]	Cable characteristics	Outlet direction	Special features	Part No.	Type
Socket, 8-pin, M12 – open cable end, 8-wire						
	2	Standard	Angled – straight	Screened	**542256**	**NEBU-M12W8-2-N-LE8**
			Straight – straight	–	**525616**	**SIM-M12-8GD-2-PU**
	5	Standard	Angled – straight	Screened	**542257**	**NEBU-M12W8-5-N-LE8**
			Straight – straight	–	**525618**	**SIM-M12-8GD-5-PU**
	10	Standard	Angled – straight	Screened	**570007**	**NEBU-M12W8-10-N-LE8**
			Straight – straight	–	**570008**	**SIM-M12-8GD-10-PU**
Socket, 8-pin, M12 – plug, 8-pin, M12						
	2	Standard	Straight – straight	–	**525617**	**KM12-8GD8GS-2-PU**

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Connecting cables, 7/8", 5-pin

Technical data

Connecting cable
NEBU-G78W5

- Connecting cable for power supply
- Pre-assembled
- Cable length 2 m
- 5 wires
- 7/8"



General technical data			
Electrical connection		Angled socket/open end	
		7/8'' round plug connector	
		5-pin	
Plug coding		NFPA/T3.5.29 R1-2003	
Based on standard		EN 61984	
Cable composition	[mm^{2}]	5x 1.5	
Cable diameter	[mm]	8.7	
Cable diameter tolerance	[mm]	±2	
Cable characteristics		Standard	
Min. cable bending radius	[mm]	65	
Operating voltage range	[V]	0 ... 300 DC	0 ... 300 AC
Surge resistance	[kV]	4	
Acceptable current load at 40 °C	[A]	9	
Protection class to EN 60529		IP65, IP67	
Product weight	[g]	300	

Materials	
Housing	TPE-U(PU)
Union nut	Nickel-plated brass
Pin contact	Gold-plated brass
Cable sheath	PUR
Cable characteristics	For static applications
Note on materials	RoHS-compliant

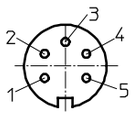
Operating and environmental conditions		
Ambient temperature	[°C]	–20 ... +80
CE marking (see declaration of conformity)		In accordance with EU Low Voltage Directive
Degree of contamination		3

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Connecting cables, 7/8", 5-pin

Technical data

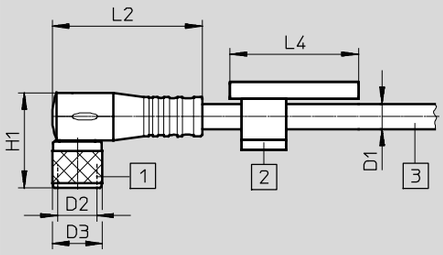
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Circuitry (socket view)				
Socket	Pin	Wire colour[1]	Pin	Plug
Electrical connection: socket, 5-pin, 7/8" – open cable end				
	1	SW	–	–
	2	BU	–	
	3	GN/YE	–	
	4	BN	–	
	5	WH	–	

1) To IEC 757

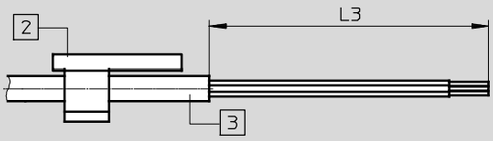
Dimensions Download CAD data ➔ **www.festo.com**

Connection technology, left-hand end



1 Socket 7/8"
2 Inscription label holder
3 Cable, length 2 m

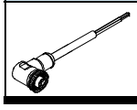
Connection technology, right-hand end



2 Inscription label holder
3 Cable, length 2 m

Connection technology, left-hand end	D1 ∅	D2	D3 ∅	L2	L4	H1
Angled socket	8.7	7/8"	26	53	–	40.4

Connection technology, right-hand end	D1 ∅	D4	D5 ∅	L2	L3	L4	H1
Open end	4.5	–	–	–	–	–	–

Ordering data						
	Cable length [m]	Cable characteristics	Outlet direction	Special features	Part No.	Type
Socket, 5-pin, 7/8" – open cable end						
	2	Standard	Angled – straight	–	**573855**	**NEBU-G78W5-K-2-N-LE5**

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Connecting cables, clip, 3-pin

Technical data

Connecting cable
SIM-K

- Plug socket with cable for connecting inputs/outputs
- Pre-assembled
- Cable lengths 2.5 m, 5 m and 10 m
- 3 wires
- Mounting via clip



General technical data		
Conforms to standard		EN 61076-2-104
		EN 61984
Cable diameter	[mm]	4.5
Nominal conductor cross section	[mm^2]	0.25
Cable characteristics		Standard
Cable test conditions		Resistance to bending: to Festo standard
		Test conditions on request
		Energy chain: 5 million cycles, bending radius 75 mm

Technical data			
Operating voltage range	[V]	0 ... 60 DC	0 ... 60 AC
Acceptable current load	[A]	3	
Surge resistance	[kV]	1.5	
Protection class to EN 60529		IP65, IP67	

Materials	
Wire colour	Blue, brown, black
Housing colour	Black
Cable sheath colour	Grey
Housing	TPE-U(PU)
Insulating sheath	PVC
Cable sheath	TPE-U(PU)
Note on materials	RoHS-compliant

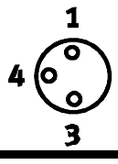
Operating and environmental conditions		
Ambient temperature	[°C]	–25 ... +70
Ambient temperature with flexible cable installation	[°C]	–5 ... +70
CE marking (see declaration of conformity)		In accordance with EU Low Voltage Directive
Degree of contamination		3

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Connecting cables, clip, 3-pin

Technical data

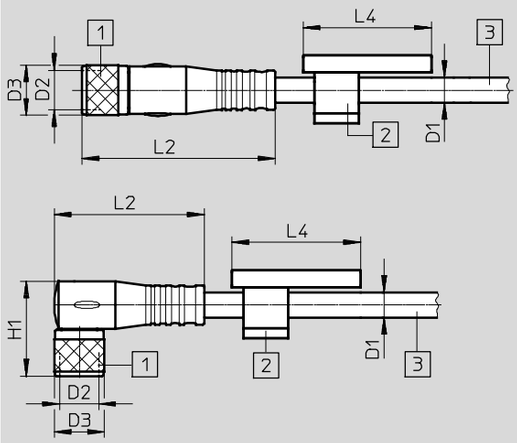
Circuitry (socket view)

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

1) To IEC 757

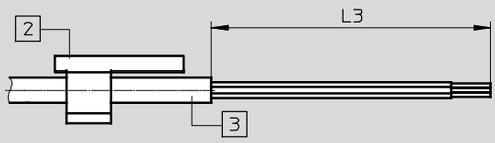
Dimensions Download CAD data ➔ **www.festo.com**

Connection technology, left-hand end



1 Socket
2 Inscription label holder
3 Cable, length 2.5 m, 5 m, 10 m depending on order

Connection technology, right-hand end

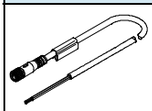


2 Inscription label holder
3 Cable, length 2.5 m, 5 m, 10 m depending on order

Connection technology, left-hand end	D1 ∅	D2	D3 ∅	L2	L4	H1
Straight socket	4.5	–	8.5	33.6	–	–
Angled socket	4.5	8.3	8.5	26.1	–	18.4

Connection technology, right-hand end	D1 ∅	L3	L4	H1
Open end	4.5	50	–	–

Ordering data

	Cable length [m]	Cable characteristics	Outlet direction	Special features	Part No.	Type
Socket, 3-pin, clip – open cable end						
	2.5	Standard	Straight – straight	–	**164257**	**SIM-K-GD-2,5-PU**
			Angled – straight	–	**164255**	**SIM-K-WD-2,5-PU**
	5	Standard	Straight – straight	–	**164256**	**SIM-K-GD-5-PU**
			Angled – straight	–	**164254**	**SIM-K-WD-5-PU**
	10	Standard	Straight – straight	–	**192962**	**SIM-K-GD-10-PU**
			Angled – straight	–	**192963**	**SIM-K-WD-10-PU**

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Connecting cables, clip, 4-pin

Technical data

Connecting cable
SIM-K

- Plug socket with cable for connecting inputs/outputs
- Pre-assembled
- Cable lengths 2.5 m and 5 m
- 4 wires
- Mounting via clip



General technical data		
Conforms to standard		EN 61076-2-104
		EN 61984
Cable diameter	[mm]	4.5
Nominal conductor cross section	[mm²]	0.25
Cable characteristics		Standard
Cable test conditions		Resistance to bending: to Festo standard
		Test conditions on request
		Energy chain: 5 million cycles, bending radius 75 mm

Technical data			
Operating voltage range	[V]	0 ... 30 DC	0 ... 30 AC
Acceptable current load	[A]	3	
Surge resistance	[kV]	0.8	
Protection class to EN 60529		IP65, IP67	

Materials	
Wire colour	Blue, brown, black, white
Housing colour	Black
Cable sheath colour	Grey
Housing	TPE-U(PU)
Insulating sheath	PVC
Cable sheath	TPE-U(PU)
Note on materials	RoHS-compliant

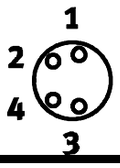
Operating and environmental conditions		
Ambient temperature	[°C]	–25 ... +70
Ambient temperature with flexible cable installation	[°C]	–5 ... +70
Degree of contamination		3

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Connecting cables, clip, 4-pin

Technical data

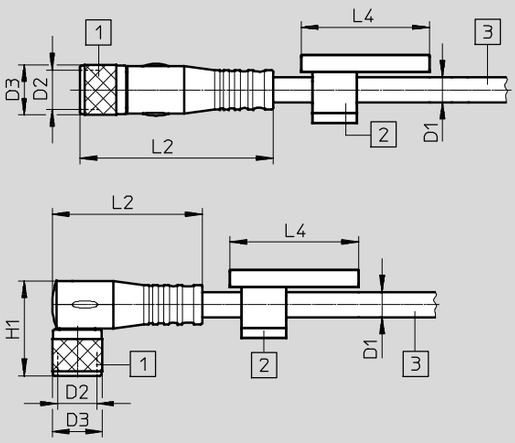
Circuitry (socket view)

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

1) To IEC 757

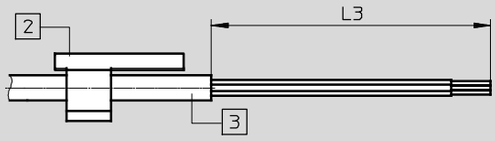
Dimensions Download CAD data ➔ **www.festo.com**

Connection technology, left-hand end



1 Socket
2 Inscription label holder
3 Cable, length 2.5 m, 5 m, 10 m depending on order

Connection technology, right-hand end

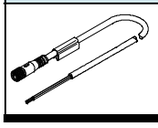


2 Inscription label holder
3 Cable, length 2.5 m, 5 m, 10 m depending on order

Connection technology, left-hand end	D1 ∅	D2	D3 ∅	L2	L4	H1
Straight socket	4.5	–	8.5	33.6	–	–
Angled socket	4.5	–	8.3	26.1	–	18.4

Connection technology, right-hand end	D1 ∅	L3	L4	H1
Open end	4.5	50	–	–

Ordering data

	Cable length [m]	Cable characteristics	Outlet direction	Special features	Part No.	Type
Socket, 4-pin, clip – open cable end						
	2.5	Standard	Straight – straight	–	**164250**	**SIM-K-4-GD-2,5-PU**
			Angled – straight	–	**164252**	**SIM-K-4-WD-2,5-PU**
	5	Standard	Straight – straight	–	**164251**	**SIM-K-4-GD-5-PU**
			Angled – straight	–	**164253**	**SIM-K-4-WD-5-PU**

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Connecting cables NEBU-LE

Ordering data – Modular products

FESTO

Ordering table

			Conditions	Code		Enter code
M	Module No.	**539052**				
	Function	Connecting cable		**NEBU**		NEBU
	Connection technology, left-hand end	Open end	1	**-LE**		
		Socket with connecting thread M8		**-M8**		
		Socket with connecting thread M12, A-coded		**-M12**		
M	Socket design	None (only with open end connection technology at left-hand end)				
		Straight		**G**		
		Angled		**W**		
		Rotatable	2	**R**		
M	Number of pins/wires (left-hand end)	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**		
O	Display	Without LED, DC (standard)				
		LED, PNP	3	**P**		
		LED, NPN	3	**N**		
		LED, DC	4	**L**		
		2x LED, PNP	5	**P2**		
M	Cable characteristics	Basic		**-P**		
		Standard		**-K**		
		Suitable for use with 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)		**-...**		
O	Wire cross section	0.25 mm^2 (standard)				
		1.00 mm^2	6	**Q8**		
	Cable colour	Grey (standard)				
	Cable designation	With inscription label holder (standard)				
		Without inscription label holder		**-N**		
M	Connection technology, right-hand end	Open end (not possible with open end connection technology at left-hand end)	1	**-LE**		
		Plug with connecting thread M8		**-M8**		
		Plug with connecting thread M12, A-coded		**-M12**		
M	Plug design	None (only with open end connection technology at right-hand end)				
		Straight		**G**		
		Angled		**W**		
M	Number of pins/wires (right-hand end)	2-pin	7	**2**		
		3-pin (suitable for socket M8/M12)	8	**3**		
		4-pin (suitable for socket M8/M12)	8	**4**		
		5-pin (suitable for socket M12)	8 9	**5**		

1 **LE** With open end LE, the number of pins/wires at the open end must be equal or less than the number of pins on the opposite side.

2 **R** Can only be combined with M8 (connection technology at left-hand end), 3-pin (pins/wires at left-hand end), without display, standard wire cross section.

3 **P, N** Can only be combined with M8 connection technology at left-hand end in combination with socket design W and 3 pins/wires (left-hand end) or M12 connection technology at left-hand end in combination with socket design W and 5 pins/wires (left-hand end) and 3 pins/wires (right-hand end).

4 **L** Can only be combined with M8 connection technology at left-hand end with 4 pins/wires (left-hand end) and M8 connection technology at right-hand end with 3 or 4 pins/wires (left-hand end) or M12 connection technology at right-hand end with 2 pins/wires (left-hand end) or LE connection technology at right-hand end with 2 pins/wires (left-hand end).
Can only be combined with cable characteristics K.

5 **P2** Can only be combined with M12 connection technology at left-hand end in combination with socket design W and 4 pins/wires (right-hand end).

6 **Q8** Can only be combined with M12 connection technology at left-hand end in combination with socket design G and 5 pins/wires (left-hand end) and M12 connection technology at right-hand end in combination with plug design G and 5 pins/wires (left-hand end).
Can only be combined with cable characteristics E.

7 **2** Can only be combined with M12 connection technology at right-hand end or LE in combination with display L.
Can only be combined with cable characteristics K.

8 **3, 4, 5** With LE connection technology at left-hand end, the number of wires (left-hand end) is copied over.

9 **5** Can only be combined with M12 or LE connection technology at left-hand end.

Transfer order code

539052	NEBU	–			–		–		–		–				

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