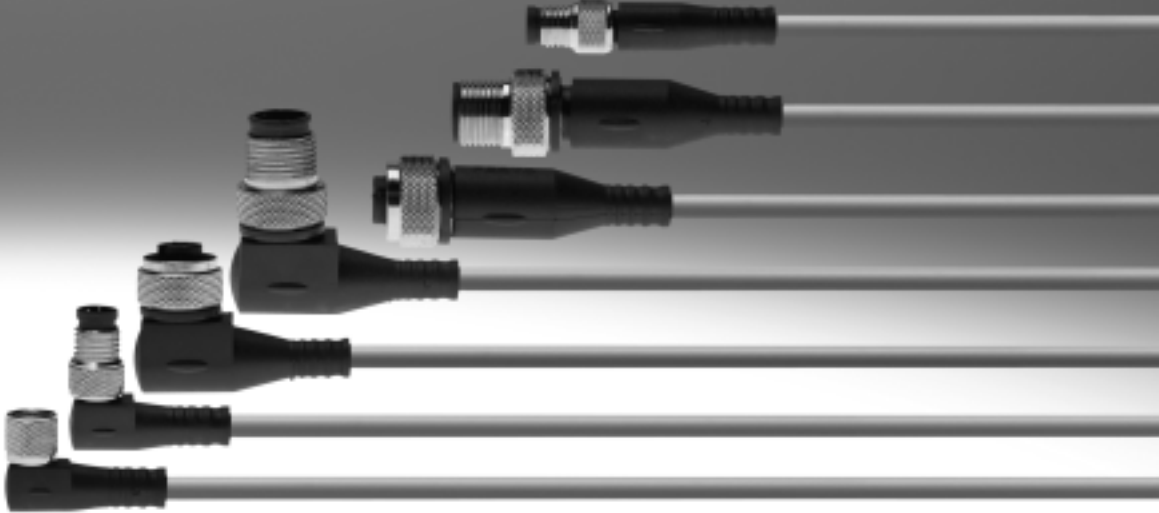


Connecting cables, universal



# Connecting cables, universal

Key features

FESTO

## 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:

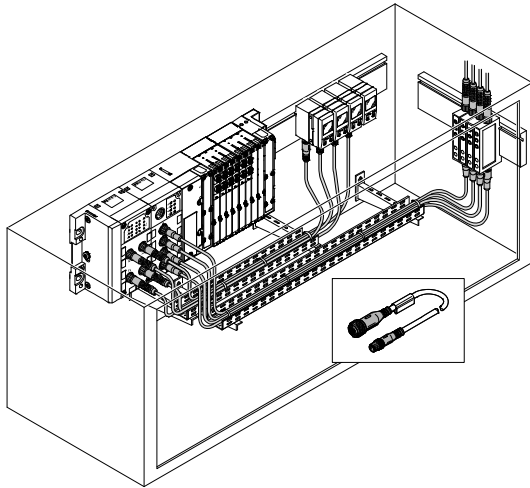
- Electrical connection
- Cable characteristics
- Length
- Number of pins/wires

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



Basic applications are characterised by fixed cable installation with no mechanical loads.

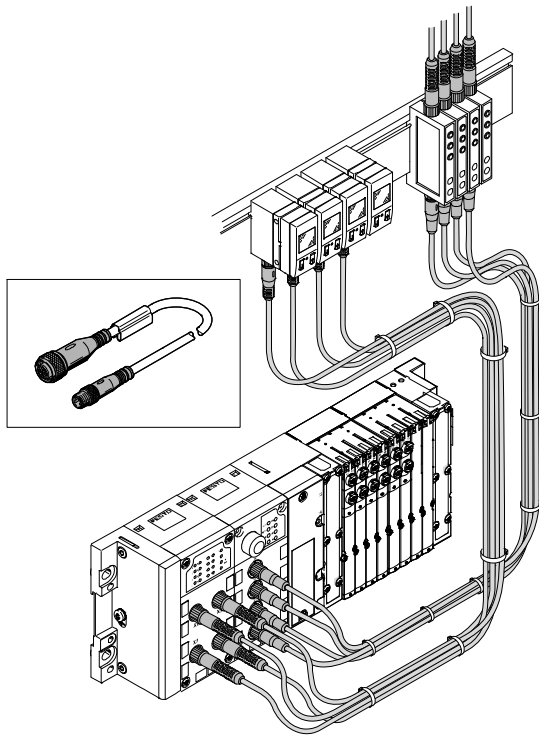
The connecting cable is not continuously moving (kinked or twisted).

The cable sheath of the connecting cables is usually made from PVC.

## Code P

- 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



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.

## Code K

- 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.

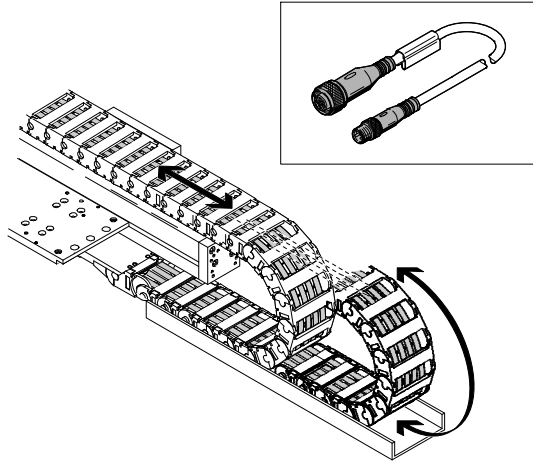
# Connecting cables, universal

Key features

## Cable characteristics

Cable characteristics: Suitable for use with energy chains

Code E

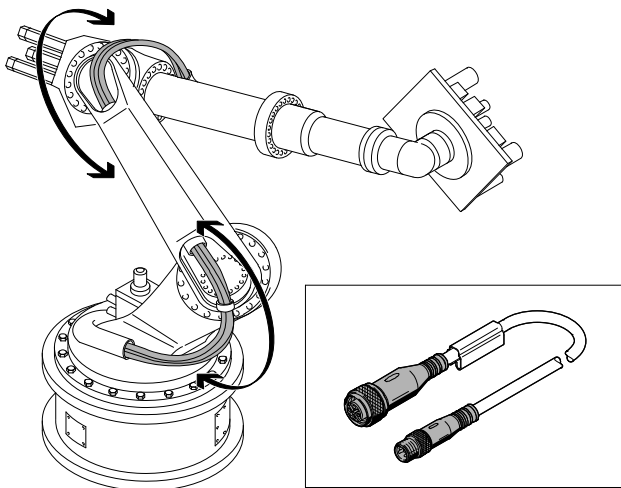


Energy chain applications involve high mechanical loads, particularly if the energy chains have small radii. It is possible that the connecting cable may be used in an environment where it is subject to continuous bending. The cable sheath of the connecting cables is made from polyurethane.

- 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,  $\pm 270^\circ/0.1$  m.

# Connecting cables, universal

Key features

FESTO

## Connection technology types

Different types of plug connectors (e.g. angled or straight) can be chosen for the connecting cables.

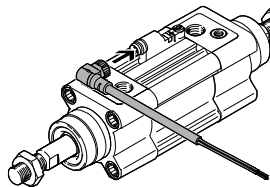
A special type of connector is the rotatable type: this enables the cable outlet of an angled socket to be rotated by 360° in 15° increments.

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

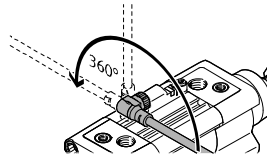
## Mounting



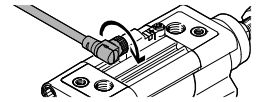
Note the orientation of the pins.



Place the socket on the plug.



Adjust the cable outlet.



Tighten the union nut.

# Connecting cables, universal

Product range overview

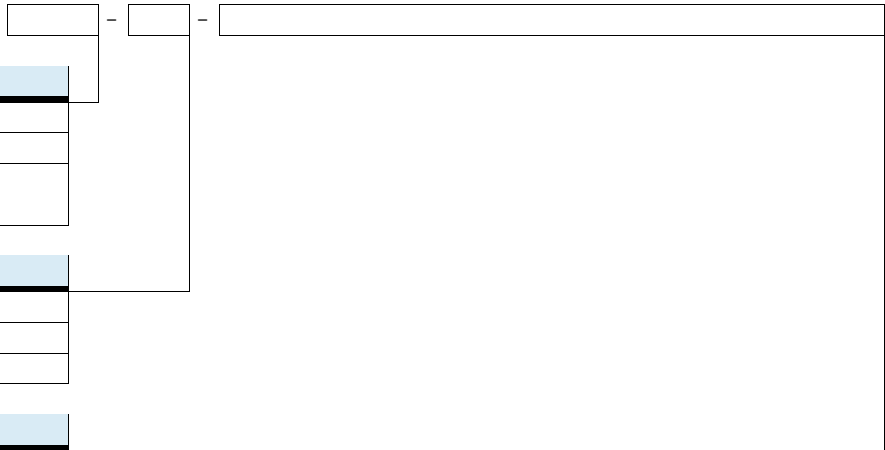
FESTO

Function	Version	Type	Connection technology (right-hand end)	Cable characteristics	Length	→ Page/ Internet
Electrical connecting cable	<b>Electrical connection (left-hand end), open cable end</b>					
	5-pin	NEBU-LE	Socket, plug	Standard	0.1 ... 30 m	8
	<b>Electrical connection (left-hand end), socket M8</b>					
	3-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	10
	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	16
	<b>Electrical connection (left-hand end), socket M12</b>					
	3-pin	SIM-M12-3 SIM-M12-RS-3	Plug, open cable end	Standard	0.6 m, 2.5 m, 3 m, 5 m	21
	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	24
	8-pin	NEBU-M12-W8 SIM-M12-8 KM12-8	Plug, open cable end	Standard	2 m, 5 m, 10 m	30
	<b>Electrical connection (left-hand end), socket 7/8"</b>					
	5-pin	NEBU-G78	Open cable end	Standard	2 m	33
	<b>Electrical connection (left-hand end), clip</b>					
	3-pin	SIM-K	Open cable end	Standard	2.5 m, 5 m, 10 m	35
	4-pin	SIM-K-4	Open cable end	Standard	2.5 m, 5 m	37



# 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

# 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	[mm <sup>2</sup> ] 5x 0.25
Cable diameter	[mm] 4.5
Nominal conductor cross section	[mm <sup>2</sup> ] 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, IP69K	

Materials	
Wire colour	Blue, brown, grey, black, white
Housing colour	Black
Cable sheath colour	Grey
Housing	TPE-U(PU)
Insulating sheath	PP
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



# Connecting cables, open cable end, 5-pin

Technical data

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

1) To IEC 757

### Dimensions

Connection technology, left-hand end

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

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

Connection technology, right-hand end

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

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	-	<b>569840</b>	<b>NEBU-LE5-K-1-M12G5</b>

# Connecting cables, M8, 3-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
- 3 wires
- M8



General technical data			
Conforms to standard		EN 61076-2-104	
		EN 61984	
		EN 61076-2-101	
Cable composition		[mm <sup>2</sup> ]	3x 0.25
Cable diameter		[mm]	4.5
Nominal conductor cross section		[mm <sup>2</sup> ]	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	SIM	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	Without display	[V]	0 ... 60 DC	0 ... 60 AC
	With display	[V]	10 ... 30 DC	-
Acceptable current load	Non-rotatable connection technology	[A]	3	
	Rotatable connection technology	[A]	0.5	
Surge resistance	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	SIM		IP65, IP68	
	NEBU		IP65, IP68, IP69K	

# Connecting cables, M8, 3-pin

Technical data

Materials		
Wire colour		Blue, brown, black
Housing colour		Black
Cable sheath colour		Grey
Housing		TPE-U(PU)
Insulating sheath	Cable characteristics: standard, suitable for energy chains and robot applications	PP
	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	All types	RoHS-compliant
	Cable characteristics: suitable for energy chains and robot applications	Halogen-free
Special features	NEBU Cable characteristics: suitable for energy chains and robot applications	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
CE marking (see declaration of conformity)	With switching status display	-
	Without switching status display	In accordance with EU Low Voltage Directive
Degree of contamination		3

# Connecting cables, M8, 3-pin

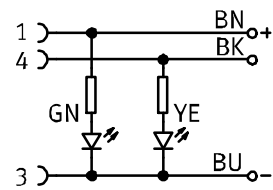
Technical data

Circuitry (socket view)				
Socket	Pin	Wire colour <sup>1)</sup>	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 
	-	-	2	
	3	BU	3	Plug M12 
	4	BK	4	

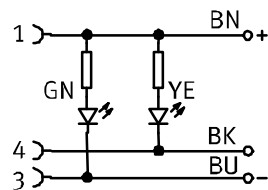
1) To IEC 757

## Circuitry – Switching status display

Display code P  
For NPN N/O contact



Display code N  
For PNP N/O contact



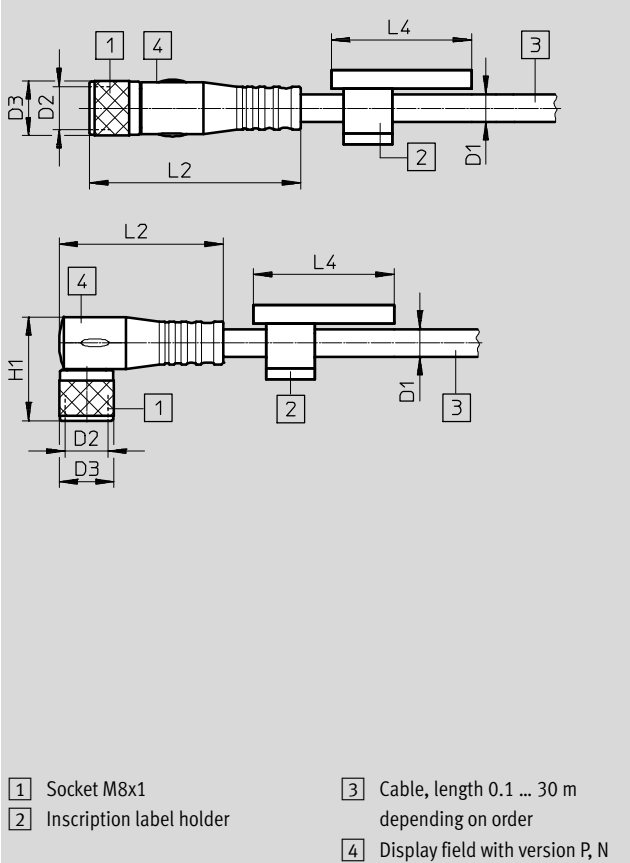
# Connecting cables, M8, 3-pin

Technical data

## Dimensions

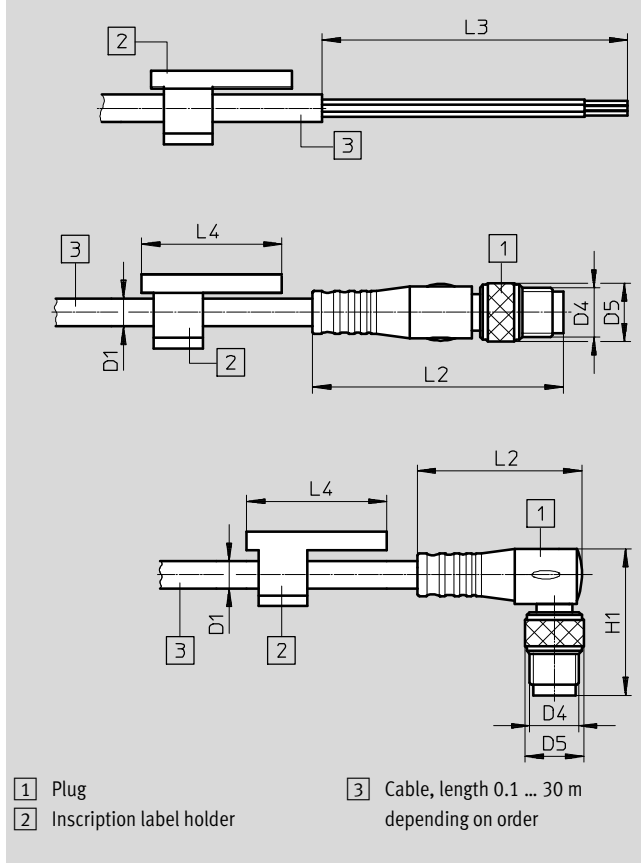
Download CAD data → [www.festo.com](http://www.festo.com)

### 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

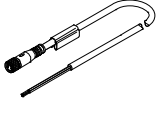

Connection technology, left-hand end	D1 Ø	D2	D3 Ø	L2	L4	H1
<b>NEBU</b>						
Straight socket	4.5	M8x1	9	34.6	23	–
Angled socket	4.5	M8x1	9	26.9	23	17
Rotatable socket	4.5	M8x1	10	20.9	23	16.3
<b>NEBU with display</b>						
Straight socket	3.4	M8x1	9	34.6	23	–
Angled socket	3.4	M8x1	9	26.9	23	17
<b>SIM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

Connection technology, right-hand end	D1 Ø	D4	D5 Ø	L2	L3	L4	H1
<b>NEBU</b>							
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
<b>NEBU with display</b>							
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
<b>SIM</b>							
Open end	4.5	–	–	–	50	–	–

# Connecting cables, M8, 3-pin

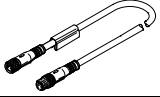
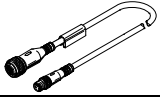
Technical data

FESTO

Ordering data								
	Cable length [m]	Cable characteristics	Outlet direction	Special features	Part No.	Type		
<b>Socket, 3-pin, M8 – open cable end</b>								
	2.5	Standard	Straight	–	541333	NEBU-M8G3-K-2.5-LE3		
				–	159420	SIM-M8-3GD-2,5-PU		
			Angled	–	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	Oil-resistant	569845	NEBU-M8G3-R-2.5-LE3	
				Angled	Oil-resistant	569847	NEBU-M8W3-R-2.5-LE3	
			5	Standard	Straight	–	541334	NEBU-M8G3-K-5-LE3
						–	159421	SIM-M8-3GD-5-PU
					Angled	–	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			Oil-resistant	569843	NEBU-M8G3-E-5-LE3	
	Suitable for robot applications	Straight			Oil-resistant	569846	NEBU-M8G3-R-5-LE3	
	10	Standard			Straight	–	541332	NEBU-M8G3-K-10-LE3
						–	192964	SIM-M8-3GD-10-PU
					Angled	–	541335	NEBU-M8W3-K-10-LE3
			–	192965		SIM-M8-3WD-10-PU		
			Suitable for use with energy chains	Straight	Oil-resistant	569842	NEBU-M8G3-E-10-LE3	
			Suitable for robot applications	Straight	Oil-resistant	8003129	NEBU-M8G3-R-10-LE3	
<b>Socket, 3-pin, M8 – plug, 3-pin, M8</b>								
		0.5	Standard	Straight – straight	–	541346	NEBU-M8G3-K-0.5-M8G3	
		1	Standard	Straight – straight	–	541347	NEBU-M8G3-K-1-M8G3	
		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		
	3	Standard	Straight – straight	–	8003132	NEBU-M8G3-K-3-M8G3		
	3.5	Suitable for use with energy chains	Straight – straight	Oil-resistant	559364	NEBU-M8G3-E-3.5-M8G3		
	5	Standard	Straight – straight	–	541349	NEBU-M8G3-K-5-M8G3		
	10	Standard	Straight – straight	–	569844	NEBU-M8G3-K-10-M8G3		

# 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	–	<b>554037</b>	<b>NEBU-M8G3-K-2.5-M8G4</b>
Socket, 3-pin, M8 – plug, 3-pin, M12						
	0.5	Standard	Straight – straight	–	<b>8000209</b>	<b>NEBU-M8G3-K-0.5-M12G3</b>

# 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		[mm <sup>2</sup> ]	4x 0.25
Cable diameter	NEBU	With display	[mm] 3.4
		Without display	[mm] 4.5
	SIM	[mm]	4.5
Nominal conductor cross section		[mm <sup>2</sup> ]	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	SIM	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	NEBU	IP65, IP68, IP69K		
	SIM	IP65, IP68		



# 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: standard, suitable for energy chains and robot applications	PP
	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
Special features	Cable characteristics: suitable for energy chains and robot applications	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



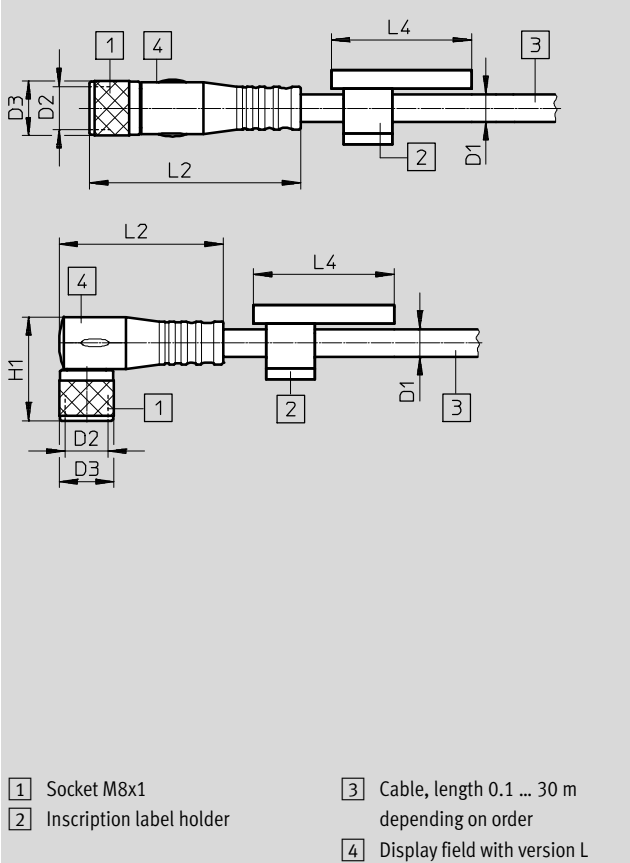
# Connecting cables, M8, 4-pin

Technical data

## Dimensions

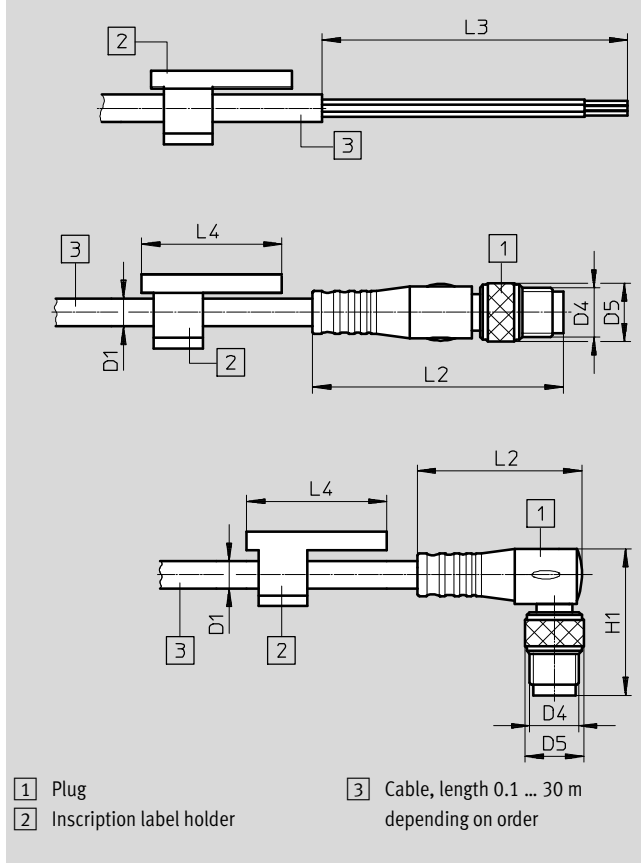
Download CAD data → [www.festo.com](http://www.festo.com)

### 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

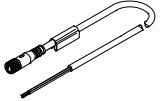
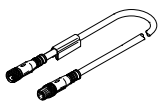
Connection technology, left-hand end	D1 Ø	D2	D3 Ø	L2	L4	H1
<b>NEBU</b>						
Straight socket	4.5	M8x1	9	34.6	23	-
Angled socket	4.5	M8x1	9	26.9	23	17
Rotatable socket	4.5	M8x1	10	20.9	23	16.3
<b>NEBU with display</b>						
Straight socket	3.4	M8x1	9	34.6	23	-
Angled socket	3.4	M8x1	9	26.9	23	17
<b>SIM</b>						
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 Ø	D4	D5 Ø	L2	L3	L4	H1
<b>NEBU</b>							
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
<b>NEBU with display</b>							
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
<b>SIM</b>							
Open end	4.5	-	-	-	50	-	-

# Connecting cables, M8, 4-pin

Technical data

**FESTO**

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	–	<b>541342</b>	<b>NEBU-M8G4-K-2.5-LE4</b>		
				–	<b>158960</b>	<b>SIM-M8-4GD-2,5-PU</b>		
			Angled	–	<b>541344</b>	<b>NEBU-M8W4-K-2.5-LE4</b>		
				–	<b>158962</b>	<b>SIM-M8-4WD-2,5-PU</b>		
	5	Standard	Straight	–	<b>541343</b>	<b>NEBU-M8G4-K-5-LE4</b>		
				–	<b>158961</b>	<b>SIM-M8-4GD-5-PU</b>		
			Angled	–	<b>541345</b>	<b>NEBU-M8W4-K-5-LE4</b>		
				–	<b>158963</b>	<b>SIM-M8-4WD-5-PU</b>		
			9	Standard	Straight	–	<b>8003130</b>	<b>NEBU-M8G4-K-9-LE4</b>
			10	Standard	Angled	–	<b>575833</b>	<b>NEBU-M8W4-K-10-LE4</b>
Socket, 4-pin, M8 – plug, 4-pin, M8								
	2	Suitable for robot applications	Straight – straight	Oil-resistant	<b>556946</b>	<b>NEBU-M8G4-R-2-M8G4</b>		
	2.5	Standard	Straight – straight	–	<b>554035</b>	<b>NEBU-M8G4-K-2.5-M8G4</b>		

# 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 design		[mm <sup>2</sup> ]	3 x 0.25
	SIM-...-RS	[mm <sup>2</sup> ]	3 x 0.5
Cable diameter		[mm]	4.5
	SIM-...-RS	[mm]	5.2
Cable diameter tolerance		[mm]	±0.3
Wire ends		SIM-...-RS	Tin-plated
Nominal conductor cross section		[mm <sup>2</sup> ]	0.25
	SIM-...-RS	[mm <sup>2</sup> ]	0.5
Cable characteristic			Standard
Cable test conditions			Bending strength: to Festo standard Test conditions on request Energy chain: 5 million cycles, bending radius 75 mm
Cable identification		SIM-...-RS	Without inscription label holder
Bending radius, fixed cable installation		[mm]	≥17
Bending radius, flexible cable installation		[mm]	≥55

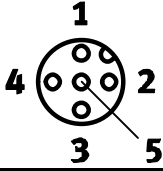
Technical data				
Operating voltage range	Without switching status indication	[V]	0 ... 250 DC	0 ... 250 AC
	With switching status indication	[V]	10 ... 30 DC	–
	SIM-...-RS	[V]	0 ... 70 DC	0 ... 45 AC
Current rating		[A]	4	
Surge resistance	Without switching status indication	[kV]	2.5	
	With switching status indication	[kV]	0.8	
	SIM-...-RS	[kV]	2.5	
Degree of protection to EN 60529			IP65, IP68	
	SIM-...-RS		IP65, IP67	

# Connecting cables, M12 3-pin

Technical data

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

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 indication		To EU Low Voltage Directive
	SIM-...-RS		-
Contamination level			3

Circuitry (socket view)				
Socket	Pin	Wire colour <sup>1)</sup>	Pin	Plug connector
Electrical connection, socket, 3-pin, M12 – open cable end				
	1	BN	-	-
	2	-	-	
	3	BU	-	
	4	BK	-	
	5	-	-	

1) To IEC 757

# Connecting cables, M12 3-pin

Technical data

## Dimensions

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

### Connection technology, left

1 Socket M12x1  
2 Inscription label holder, must be ordered separately as an accessory  
3 Cable, length 2.5 m, 3 m or 5 m depending on order  
4 Display field with version PSL

### Connection technology, right

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

Connection technology, left	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	D1	L3
SIM		
Open end	4.5	50
SIM-...-RS		
Open end	5.2	50

## Ordering data

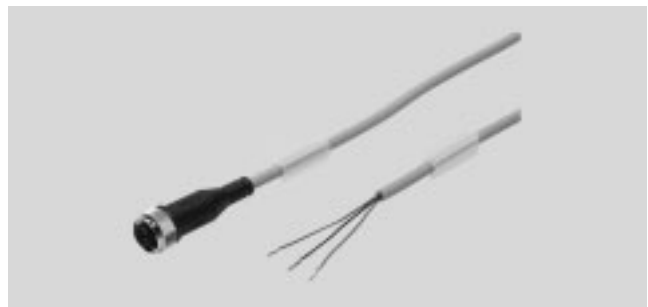
	Cable length [m]	Cable characteristic	Outlet direction	Special features	Part No.	Type
Socket, 3-pin, M12 – open cable end						
	2.5	Standard	Straight	–	159428	SIM-M12-3GD-2,5-PU
			Angled	–	159430	SIM-M12-3WD-2,5-PU
				For PNP N/O contact, switching status indication yellow, ready status indication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

# Connecting cables, M12 5-pin

Technical data

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	[mm <sup>2</sup> ]	2 x 0.25	
	3-wire	[mm <sup>2</sup> ]	3 x 0.25	
	4-wire	[mm <sup>2</sup> ]	4x 0.25	
	5-wire	[mm <sup>2</sup> ]	5 x 0.25	
	NEBU-M12G5-...-Q8N-M12G5	[mm <sup>2</sup> ]	5 x 1	
Cable diameter	NEBU/SIM	With display code L	[mm]	3.4
		Without display	[mm]	4.5
	NEBU-M12G5-...-Q8N-M12G5	[mm]	7	
Nominal conductor cross section	NEBU/SIM	[mm <sup>2</sup> ]	0.25	
	NEBU-M12G5-...-Q8N-M12G5	[mm <sup>2</sup> ]	1	
Cable properties	NEBU	Code -P-		Basic
		Code -K-		Standard
		Code -E-		Suitable for energy chains
		Code -R-		Suitable for robot applications
	SIM			Standard
Cable test conditions				Bending strength: according to Festo standard
				Test conditions on request
	Cable properties	Basic		-
		Standard		Energy chain: 5 million cycles, bending radius 75 mm
		Suitable for energy chains		Energy chain: 5 million cycles, bending radius 28 mm
		Suitable for robot applications		Torsional strength: > 300,000 cycles, ±270°/0.1 m
NEBU-M12G5-...-Q8N-M12G5		Energy chain: 5 million cycles, bending radius 75 mm		

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	-	
Current-carrying capacity	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	
Degree of protection to EN 60529	SIM			IP65, IP68	
	NEBU			IP65, IP68, IP69K	



# Connecting cables, M12 5-pin

Technical data

FESTO

Materials		
Wire colours		Blue, brown, black, white, grey
Housing colour		Black
Cable sheath colour		Grey
Housing		TPE-U(PU)
Insulating sheath	Cable properties: suitable for use with energy chains, suitable for robot applications, standard	PP
	Cable property: basic	PVC-P
Union nut		Nickel-plated brass
Cable sheath	Cable properties: standard, suitable for use with energy chains, suitable for robot applications	TPE-U(PU)
	Cable property: basic	PVC
Note on materials		RoHS compliant
	Cable properties: suitable for use with energy chains, suitable for robot applications	Halogen-free
Special features	Cable properties: suitable for use with energy chains, suitable for robot applications	Oil-resistant

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

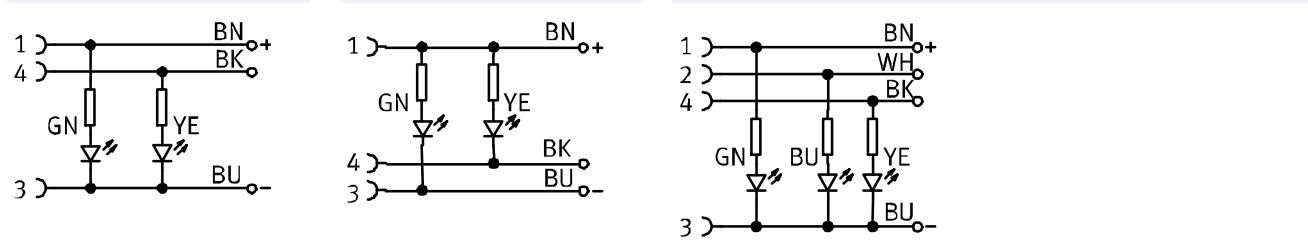
# Connecting cables, M12 5-pin

Technical data

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



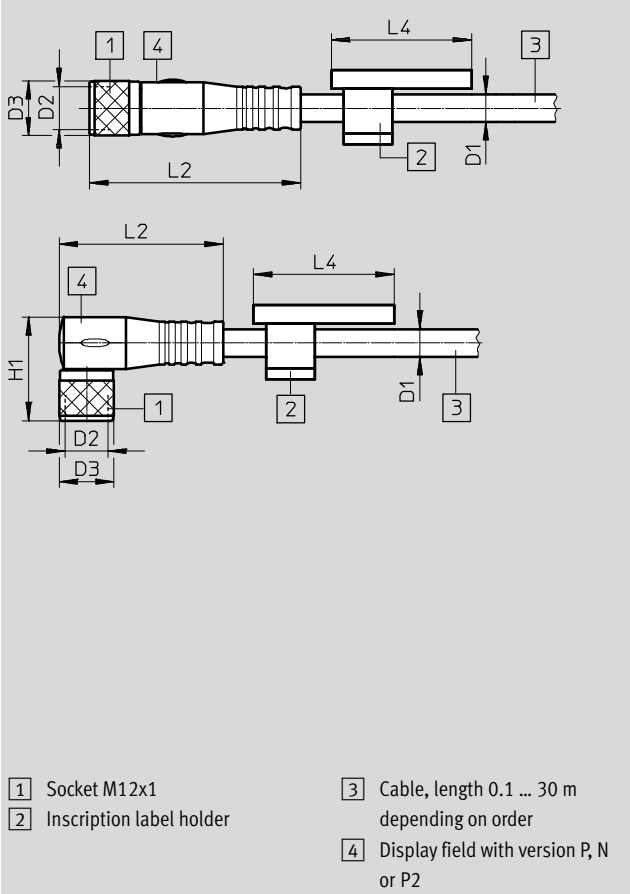
# Connecting cables, M12 5-pin

Technical data

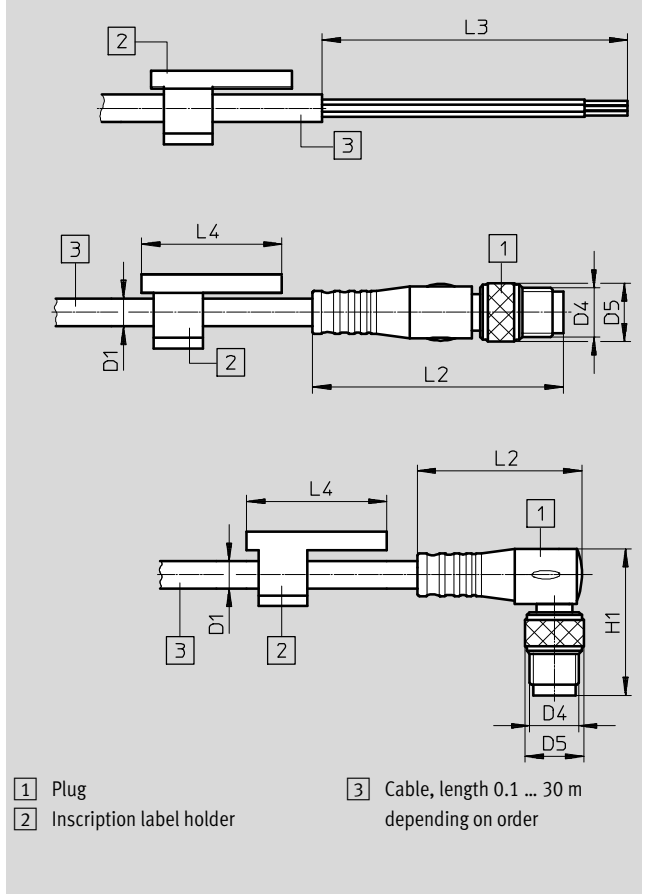
## Dimensions

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

### Connection technology, left



### Connection technology, right

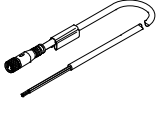
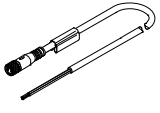
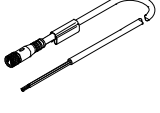
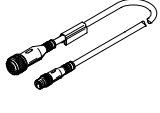
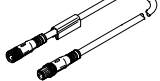


Connection technology, left	D1	D2	D3	L2	L4	H1
<b>NEBU</b>						
Straight socket	4.5	M12x1	15	47.5	23	-
Angled socket	4.5	M12x1	15	37.5	23	26
<b>NEBU with display</b>						
Angled socket	4.5	M12x1	15	37.5	23	26
<b>NEBU-M12G5-...-Q8N-M12G5</b>						
Straight socket	7	M12x1	15	47.5	-	-
<b>SIM</b>						
Straight socket	4.5	M12x1	15	48.5	-	-
Angled socket	4.5	M12x1	-	37.5	-	26

Connection technology, right	D1	D4	D5	L2	L3	L4	H1
<b>NEBU</b>							
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
<b>NEBU with display</b>							
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
<b>NEBU-M12G5-...-Q8N-M12G5</b>							
Straight plug	7	M12x1	15	54.5	-	-	-
<b>SIM</b>							
Open end	4.5	-	-	-	50	-	-

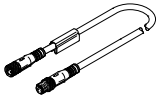
# Connecting cables, M12 5-pin

Technical data

Ordering data						
	Cable length [m]	Cable properties	Outlet orientation	Special features	Part No.	Type
Socket, 5-pin, M12 – open cable end, 3-wire						
	2.5	Standard	Straight	–	541363	NEBU-M12G5-K-2.5-LE3
				Switching status display for PNP N/O contact	541366	NEBU-M12W5P-K-2.5-LE3
	5	Standard	Angled	–	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	–	541364	NEBU-M12G5-K-5-LE3
				–	541370	NEBU-M12W5-K-5-LE3
5	Standard	Angled	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	–	550326	NEBU-M12G5-K-2.5-LE4
				–	550325	NEBU-M12W5-K-2.5-LE4
	5	Standard	Straight	–	541328	NEBU-M12G5-K-5-LE4
				–	164259	SIM-M12-4GD-5-PU
	5	Standard	Angled	–	541329	NEBU-M12W5-K-5-LE4
				–	164258	SIM-M12-4WD-5-PU
7	Standard	Straight	–	8003134	NEBU-M12G5-K-7-LE4	
10	Standard	Angled	–	569841	NEBU-M12W5-K-10-LE4	
Socket, 5-pin, M12 – open cable end, 5-wire						
	2.5	Standard	Straight	–	541330	NEBU-M12G5-K-2.5-LE5
				–	175715	SIM-M12-5GD-2,5-PU
	5	Standard	Angled	–	567843	NEBU-M12W5-K-2.5-LE5
				–	541331	NEBU-M12G5-K-5-LE5
	5	Standard	Straight	–	175716	SIM-M12-5GD-5-PU
				–	567844	NEBU-M12W5-K-5-LE5
10	Standard	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						
	0.5	Standard	Straight - straight	–	8000208	NEBU-M12G5-K-0.5-M12G4

# Connecting cables, M12 5-pin

Technical data

Ordering data						
Socket, 5-pin, M12 – plug, 5-pin, M12						
	0.5	Standard	Straight - angled	–	<b>8003617</b>	<b>NEBU-M12G5-K-0.5-M12W5</b>
			Angled - angled	–	<b>570733</b>	<b>NEBU-M12W5-K-0.5-M12W5</b>
	2	Standard	Straight - angled	–	<b>8003618</b>	<b>NEBU-M12G5-K-2-M12W5</b>
			Angled - angled	–	<b>570734</b>	<b>NEBU-M12W5-K-2-M12W5</b>
	5	Suitable for use with energy chains	Straight - straight	Nominal conductor cross section 1 mm <sup>2</sup> , oil-resistant	<b>574321</b>	<b>NEBU-M12G5-E-5-Q8N-M12G5</b>
	7.5	Suitable for use with energy chains	Straight - straight	Nominal conductor cross section 1 mm <sup>2</sup> , oil-resistant	<b>574322</b>	<b>NEBU-M12G5-E-7.5-Q8N-M12G5</b>
	10	Suitable for use with energy chains	Straight - straight	Nominal conductor cross section 1 mm <sup>2</sup> , oil-resistant	<b>574323</b>	<b>NEBU-M12G5-E-10-Q8N-M12G5</b>

# Connecting cables, M12 8-pin

Technical data

**Plug socket with cable**

**NEBU-M12**

**SIM-M12-8**

**KM12-8**

- Pre-assembled at both ends
- Cable lengths: 2 m, 5 m, 10 m and 15 m
- 8 wires
- M12



General technical data				
Conforms to standard	NEBU/SIM/KM12		EN 61076-2-101	
	SIM/KM12		DIN 47100	
Cable design		[mm <sup>2</sup> ]	8 x 0.25, screened	
Nominal conductor cross section		[mm <sup>2</sup> ]	0.25	
Cable diameter	NEBU/SIM	[mm]	6.3	
	KM12	[mm]	6.2	
Cable diameter tolerance	SIM	[mm]	±0.2	
Wire ends	NEBU/SIM		Tin-plated	
Type of mounting			Screw lock	
Cable characteristic	NEBU/SIM		Standard	
Cable identification			Without inscription label holder	
Cable bending radius	NEBU/SIM/	Fixed cable installation	[mm]	≥32
	NEBU/SIM	Flexible cable installation	[mm]	≥66
	KM12	Flexible cable installation	[mm]	≥64

Technical data					
Operating voltage range			[V DC]	0 ... 30	
			[V AC]	0 ... 30	
Current rating	At 40 °C		[A]	2	
Surge resistance	NEBU/SIM			[kV]	0.8
	KM12			[kV]	1.5
Degree of protection	NEBU/SIM		IP67, to IEC 60529, in assembled state		
	KM12		IP68, to IEC 60529, in assembled state		

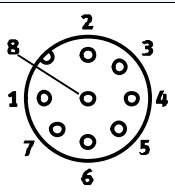
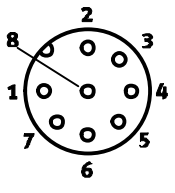
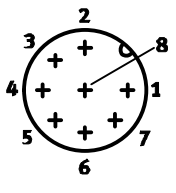
Materials				
Cable sheath colour			Grey	
Housing	NEBU/SIM		TPE-U (PUR)	
Insulating sheath	NEBU/SIM		PP	
	KM12		PVC	
Screw lock			Nickel-plated brass	
Seals	KM12		FPM	
Cable sheath			TPE-U (PUR)	
Pin contacts	NEBU		Gold-plated brass	
	SIM		Gold-plated bronze	
	KM12		Nickel-plated and gold-plated bronze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

# Connecting cables, M12 8-pin

Technical data

Operating and environmental conditions			
Ambient temperature	NEBU	[°C]	-35 ... +85
		With flexible cable installation	[°C]
	SIM	[°C]	-25 ... +80
		With flexible cable installation	[°C]
KM12	[°C]	-25 ... +80	
	With flexible cable installation	[°C]	0 ... +80
Corrosion resistance class CRC <sup>1)</sup>			2
Contamination level		NEBU/SIM	3

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

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

# Connecting cables, M12 8-pin

Technical data

FESTO

## Dimensions

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

### Connection technology, left

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

### Connection technology, right

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

Connection technology, left	D1 Ø	D2	D3 Ø	L2	L4	H1
<b>NEBU</b>						
Angled socket	6.3	M12x1	14.5	38	-	28
<b>SIM</b>						
Straight socket	6.3	M12x1	14.6	-	-	-
<b>KM12</b>						
Straight socket	6.2	M12x1	-	-	-	-

Connection technology, right	D1 Ø	D4	D5 Ø	L2	L3	L4
<b>NEBU</b>						
Open end	6.3	-	-	-	50	-
<b>SIM</b>						
Open end	6.3	-	-	-	50	-
<b>KM12</b>						
Straight plug connector	6.2	M12x1	14.6	-	-	-

## Ordering data

	Cable length [m]	Cable characteristic	Outlet direction	Special features	Product weight [g]	Part No.	Type
<b>Socket, 8-pin, M12 – open cable end, 8-wire</b>							
	2	Standard	Angled	-	-	<b>542256</b>	<b>NEBU-M12W8-K-2-N-LE8</b>
			Straight	-	-	<b>525616</b>	<b>SIM-M12-8GD-2-PU</b>
	5	Standard	Angled	-	-	<b>542257</b>	<b>NEBU-M12W8-K-5-N-LE8</b>
			Straight	-	343	<b>525618</b>	<b>SIM-M12-8GD-5-PU</b>
	10	Standard	Angled	-	-	<b>570007</b>	<b>NEBU-M12W8-K-10-N-LE8</b>
			Straight	-	-	<b>570008</b>	<b>SIM-M12-8GD-10-PU</b>
15	Standard	Angled	-	-	<b>8048086</b>	<b>NEBU-M12W8-K-15-N-LE8</b>	
<b>Socket, 8-pin, M12 plug connector, 8-pin, M12</b>							
	2	Standard	Straight - straight	-	156	<b>525617</b>	<b>KM12-8GD8GS-2-PU</b>



# 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"



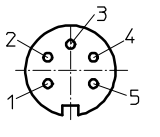
General technical data			
Electrical connection		Angled socket/open end	
		7/8" round plug connector	
		5-pin	
Plug coding		NFPA/T3.5.29 R1-2003	
Based on standard		EN 61984	
Cable composition	[mm <sup>2</sup> ]	5x 1.5	
Cable diameter	[mm]	8.7	
Cable diameter tolerance	[mm]	±2	
Cable characteristics		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

# Connecting cables, 7/8", 5-pin

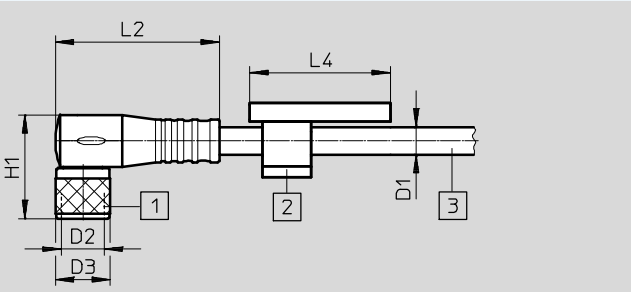
Technical data

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

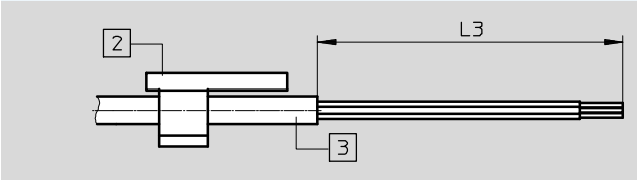
Connection technology, left-hand end



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

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

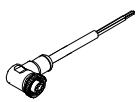
Connection technology, right-hand end



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	-	573855	NEBU-G78W5-K-2-N-LE5

# 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 <sup>2</sup> ]	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

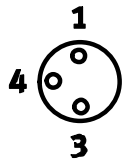
Technical data	
Operating voltage range [V]	0 ... 60 DC
Acceptable current load [A]	3
Surge resistance [kV]	1.5
Protection class to EN 60529	IP65, IP67

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

# Connecting cables, clip, 3-pin

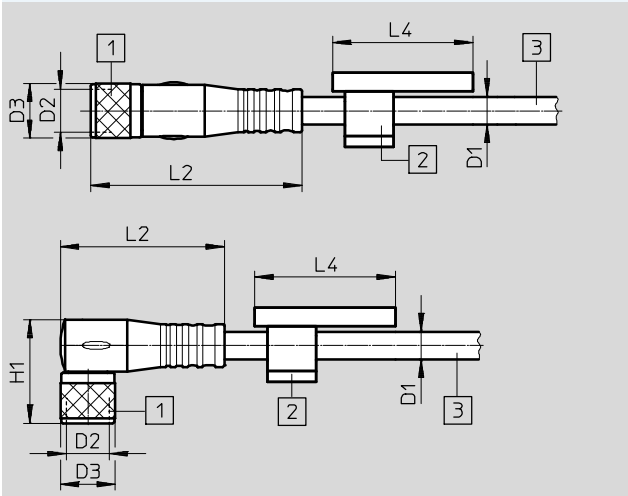
Technical data

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

1) To IEC 757

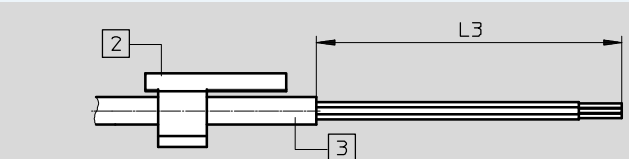
## Dimensions Download CAD data → [www.festo.com](http://www.festo.com)

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

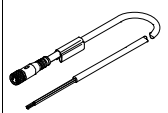


2 Inscription label holder  
3 Cable, length 2.5 m, 5 m, 10 m depending on order

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	-	164257	SIM-K-GD-2,5-PU
			Angled	-	164255	SIM-K-WD-2,5-PU
	5	Standard	Straight	-	164256	SIM-K-GD-5-PU
			Angled	-	164254	SIM-K-WD-5-PU
	10	Standard	Straight	-	192962	SIM-K-GD-10-PU
			Angled	-	192963	SIM-K-WD-10-PU

# Connecting cables, clip, 4-pin

Technical data

**Connecting cable**  
**SIM-K**

- 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 [mm <sup>2</sup> ]	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
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



