

Universal connecting cables

FESTO



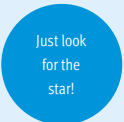
Festo Core Range
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Worldwide:
Simply good:
Fast:

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Easy and fast to select

With the Festo Core Range, we have selected the most important products and functions from our broad product catalogue, and added the quickest delivery.

The Core Range offers you the best value for your automation tasks.



Key features

Cable characteristic

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

These include, for example:

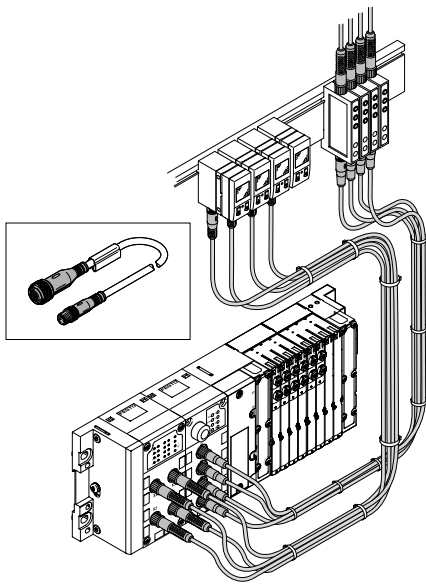
- Electrical connection
- Cable characteristic
- Length
- Number of pins/cores

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

There are three qualities:

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

Cable characteristic: standard

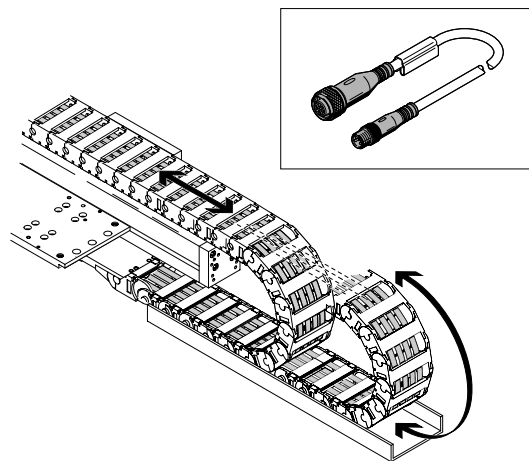


Standard applications are characterised by fixed cable installation or small to medium mechanical loads. The connecting cable can even be used for simple applications with energy chains with larger radii. The cable sheath of the connecting cables is made of polyurethane, is free of halogen, oil resistant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

Code K

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

Cable characteristic: suitable for energy chains



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

Code E

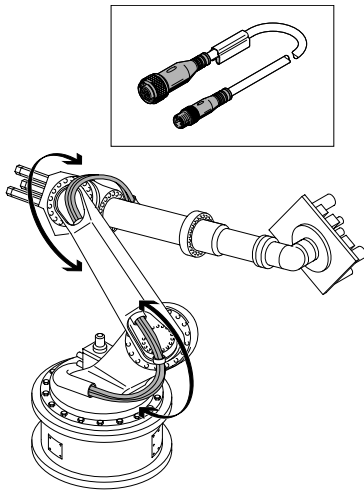
- The connecting cable is tested for resistance to bending according to the Festo standard; test conditions are available on request.
- The connecting cable has been tested on an energy chain at a bending radius of 75 mm for over 5 million cycles.
- The connecting cable has been tested on an energy chain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

Key features

Cable characteristic

Cable characteristic: suitable for robot applications

Code R



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

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

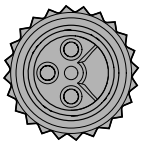
Connection technology version

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

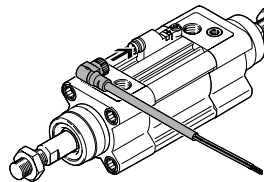
The rotatable version is a special type: with an angled socket, the cable outlet can be rotated 360° in increments of 15°.

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

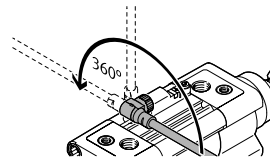
Assembly



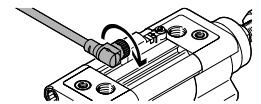
Observe the orientation of the pins.



Connect the plug to the socket.



Adjust the cable outlet



Tighten the union nut

Product range overview

Function	Version	Type	Connection technology (right)	Cable characteristic	Length	→ Page/Internet
Electrical connecting cable	Electrical connection (left), open cable end					
	5-pin	NEBU-LE	Plug	Standard, suitable for energy chains, suitable for robot applications	0.1 ... 30 m	6
	Electrical connection (left), socket M8					
	3-pin	NEBU-M8 SIM-M8	Plug, open cable end	Standard, suitable for energy chains, suitable for robot applications	0.1 ... 30 m	11
	4-pin	NEBU-M8 SIM-M8	Plug, open cable end	Standard, suitable for energy chains, suitable for robot applications	0.1 ... 30 m	18
	Electrical connection (left), socket M12					
	5-pin	NEBU-M12G5 NEBU-M12W5 SIM-M12	Plug, open cable end	Standard, suitable for energy chains, suitable for robot applications	0.1 ... 30 m	24
	8-pin	NEBU-M12-W8 SIM-M12-8 KM12-8	Plug, open cable end	Standard	2 m, 5 m, 10 m, 15 m, 20 m, 25 m	32
	Electrical connection (left), socket G7/8					
	5-pin	NEBU-G78	Open cable end	Standard	2 m	37
	Electrical connection (left), snap-locking					
	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	42

Type codes

001	Series
NEBU	Connecting cable, universal

002	Connection technology left, field device side
G78	Socket G7/8, coded to NFPA/T3.5.29 R1-2003
M12	Socket M12x1 A-coded, EN 61076-2-101

003	Cable outlet left
G	Straight
W	Angled

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

005	Cable characteristic
K	Standard
E	Suitable for energy chains

006	Cable length [m]
2	2
5	5
7.5	7.5
10	10
15	15

007	Wire cross section [mm ²]
	Standard
Q8	1

008	Cable identification
N	Without label holder

009	Connection technology right, controller side
LE	Open end
M12	Plug M12x1 A-coded, EN 61076-2-101

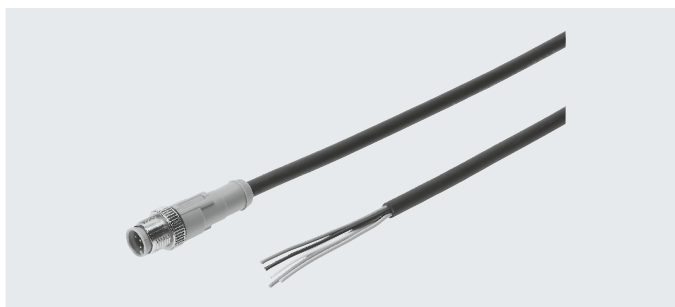
010	Plug
	None
G	Straight

011	Number of pins/wires on the right
5	5
8	8

Datasheet

Connecting cable NEBU-LE

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



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

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

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

Technical data – Cable		Plug M8x1		Plug M12x1			
Electrical connection 2		3-pin	4-pin	3-pin	4-pin	5-pin	
Cable characteristic	Code -K-	Standard					
	Code -E-	Suitable for energy chains					
	Code -R-	Suitable for robot applications					
Test conditions, cable	Cable characteristic	Bending strength: to Festo standard					
		Test conditions on request					
		Standard	Energy chain: 5 million cycles, bending radius 75 mm				
		Suitable for energy chains	Energy chain: 5 million cycles, bending radius 28 mm				
Cable diameter	[mm]	3.8	4.5	3.8	4.5	4.5	
		±0.1		±0.1			
Cable diameter tolerance	[mm]	±0.1		±0.1			
Cable structure	[mm ²]	3x 0.25	4x 0.25	3x 0.25	4x 0.25	5x 0.25	
Nominal conductor cross-section	[mm ²]	0.25		0.25			
Bending radius, fixed cable installation	[mm]	12	14	12	14	14	
Bending radius, flexible cable installation	[mm]	39	46	39	46	46	

Datasheet

Technical data – Electrical connection 2				
Function	Control side			
Design	Round			
Connection type	Plug			
Cable outlet	Straight			
Connection technology	M8x1, A-coded, to EN 61076-2-104		M12x1, A-coded, to EN 61076-2-101	
Number of pins/cores	3	4	3	5
Assigned pins/cores	3	4	3	5
Type of mounting	Screw-type lock			
Materials				
Housing	TPE-U(PUR)			
Housing colour	Black			
Cable sheath	TPE-U(PUR)			
Cable sheath colour	Grey			
Insulating sheath	PP			
Screw-type lock	Nickel-plated brass			
Note on materials	RoHS-compliant			
	Halogen-free			
	Free of phosphoric acid ester			
Special characteristics	Oil-resistant			
LABS (PWIS) conformity	VDMA24364-B2-L			
Operating and environmental conditions				
Ambient temperature	Cable characteristic: standard	[°C]	-25 ... +70	
	Cable characteristic: suitable for energy chains, suitable for robot applications	[°C]	-25 ... +80	
Ambient temperature with flexible cable installation	Cable characteristic: standard	[°C]	-5 ... +70	
	Cable characteristic: suitable for energy chains, suitable for robot applications	[°C]	-5 ... +80	
Corrosion resistance class CRC ¹⁾	2			
CE marking (see declaration of conformity) ²⁾	All types	To EU Low Voltage Directive		
		To EU RoHS Directive		
UKCA marking (see declaration of conformity) ²⁾	Electrical connection 2 M8x1, 4-pin	-		
		To EU RoHS Directive		
Pollution degree	To UK regulations for electrical equipment			
	To UK RoHS regulations			

1) More information www.festo.com/x/topic/crc

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

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

Datasheet

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

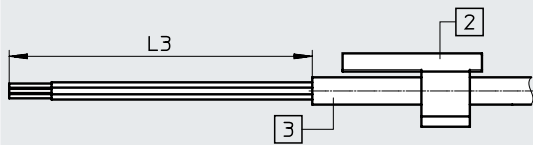
1) To IEC 757

Datasheet

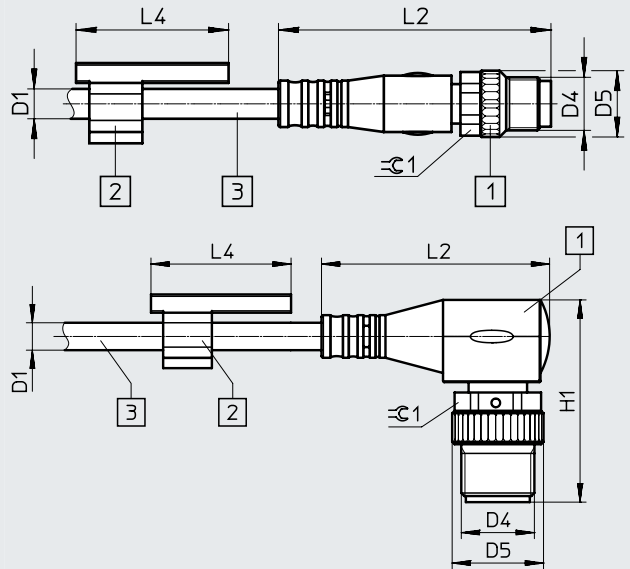
Dimensions

Download CAD data → www.festo.com

Connection technology, left



Connection technology, right



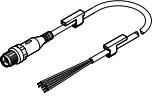
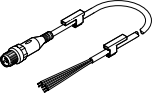
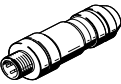
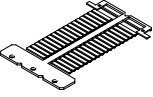


- [1] Plug
- [2] Inscription label holder

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

Connection technology, left	L3
-	
Open end	50

Connection technology, right	D1 ∅	D4	D5 ∅	L2	L4	H1	$\pm C1$
3-pin							
Straight plug	3.8	M8x1	10	41.1	23	-	9
	3.8	M12x1	15	54.5	23	-	13
Angled plug	3.8	M8x1	10	26.9	23	24	9
	3.8	M12x1	15	37.5	23	33.2	13
4-pin, 5-pin							
Straight plug	4.5	M12x1	15	54.5	23	-	13
Angled plug	4.5	M12x1	15	37.5	23	33.2	13

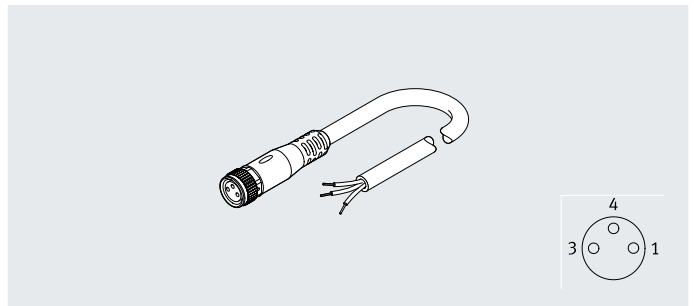
Datasheet

Ordering data							
	Cable characteristic	Cable length [m]	Outlet direction	Special features	Product weight [g]	Part no.	Type
Open cable end, 3-core – plug, 3-pin, M12							
	Standard	1	Straight	Without inscription label holder	35	8091515	NEBU-LE3-K-1-N-M12G3
Open cable end, 5-core – plug, 5-pin, M12							
	Standard	1	Straight	–	41	569840	NEBU-LE5-K-1-M12G5
Ordering data – Accessories							
Designation						Part no.	Type
Plug connector							
	Plug connectors for self-assembly					–	→ Internet: necu
						–	→ Internet: sea
Inscription labels							
	Inscription label holder 23 mm for inscription labels, pack of 34, in frame					541598	ASLR-L-423
Safety clip							
	Prevents the screw lock from being released easily (without a tool), to be fastened securely to the cable			For M12		548068	NEAU-M12-GD
Inscription label holder							
	For identifying connecting cables			For cable diameter 3.3 ... 4.8 mm		8078307	NEAU-LH-3

Datasheet

Connecting cable NEBU-M8 SIM-M8

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



General technical data		NEBU	SIM
Type			
Conforms to standard	Cable characteristic: standard, suitable for use with energy chains	EN 61076-2-104	–
		EN 61076-2-101	–
	Wire colours and connection numbers to EN 60947-5-2	–	
	Cable characteristics: Suitable for robot applications	Wire colours and connection numbers to EN 60947-5-2	–
		–	EN 61076-2-104
		–	EN 61984
Based on standard	Cable outlet on the left, rotatable	EN 61076-2-104	–
Cable identification		With 2x inscription label holders	–
Degree of protection		IP65, IP68, IP69K	IP65, IP68
Note on degree of protection		In mounted state	–

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

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

Datasheet

Technical data – Cable				
Type	NEBU		SIM	
Cable characteristic	Code -K-	Standard	–	
	Code -E-	Suitable for energy chains	–	
	Code -R-	Suitable for robot applications	–	
		–	Standard	
Test conditions, cable		Bending strength: to Festo standard	Bending strength: to Festo standard	
		Test conditions on request	Test conditions on request	
	Cable characteristic	Standard	Energy chain: 5 million cycles, bending radius 75 mm	Energy chain: 5 million cycles, bending radius 75 mm
		Suitable for energy chains	Energy chain: 5 million cycles, bending radius 28 mm	–
		Suitable for robot applications	Energy chain: 5 million cycles, bending radius 28 mm	–
	Torsional resistance more than 300000 cycles, $\pm 270^\circ/0.1$ m	–		
Cable diameter	[mm]	3.8	3.8	
Cable diameter tolerance	[mm]	± 0.1	–	
Cable structure	[mm ²]	3x 0.25	3x 0.25	
Nominal conductor cross-section	[mm ²]	0.25	0.25	
Bending radius, fixed cable installation	[mm]	12	–	
Bending radius, flexible cable installation	[mm]	39	–	

Technical data – Electrical connection 2					
Type	NEBU			SIM	
Function	Control side				
Connection type	Cable	Plug	Plug	Cable	
Design	–	Round	Round	–	
Cable outlet	–	Straight, angled	Straight, angled	–	
Connection technology	Open end	M8x1, A-coded to EN 61076-2-104	M12x1, A-coded to EN 61076-2-101	Open end	
Number of pins/cores	3	3	4	3	3
Assigned pins/cores	3	3	3	3	3
Type of mounting	–	Screw-type lock	Screw-type lock	–	

Datasheet

Materials		NEBU	SIM
Type			
Housing		TPE-U(PUR)	TPE-U(PU)
Housing colour		Black	Black
Cable sheath		TPE-U(PUR)	TPE-U(PU)
Cable sheath colour		Grey	Grey
Insulating sheath		PP	PP
Core insulation colour code		–	Blue, brown, black
Screw-type lock		Nickel-plated brass	–
Union nut		–	Nickel-plated brass
Seals		–	NBR
Pin contacts		–	Gold-plated brass
Note on materials		RoHS-compliant	RoHS-compliant
		Halogen-free	Halogen-free
		Free of phosphoric acid ester	Free of phosphoric acid ester
Special characteristics	Cable characteristic: standard, suitable for energy chains, suitable for robot applications	Oil-resistant	–
LABS (PWIS) conformity		VDMA24364-B2-L	VDMA24364-B2-L

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

1) More information www.festo.com/x/topic/crc

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

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Datasheet

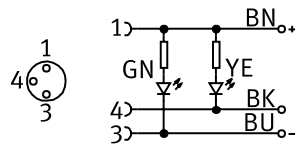
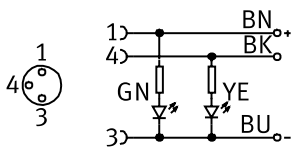
Wiring (socket view)		Pin	Wire colour ¹⁾	Pin	Electrical connection 2	
Electrical connection, socket, 3-pin, M8 – open cable end						
	1		BN	-		
	3		BU	-		
	4		BK	-		
Electrical connection, socket, 3-pin, M8 – plug, 3-pin				M8 plug	M12 plug	
	1		BN	1		
	3		BU	3		
	4		BK	4		
Electrical connection, socket,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

1) To IEC 757

Wiring, switching status indication

Display of code P,
For PNP N/O contact

Display of code N,
for NPN N/O contact



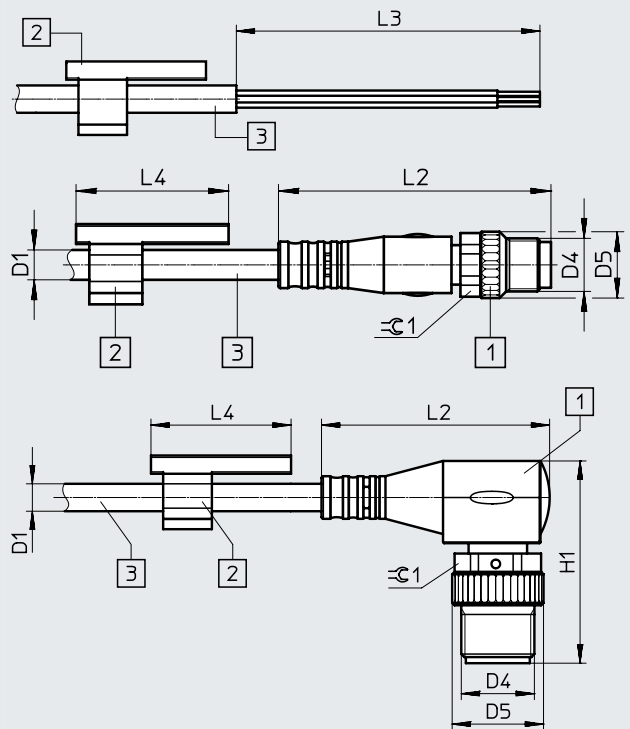
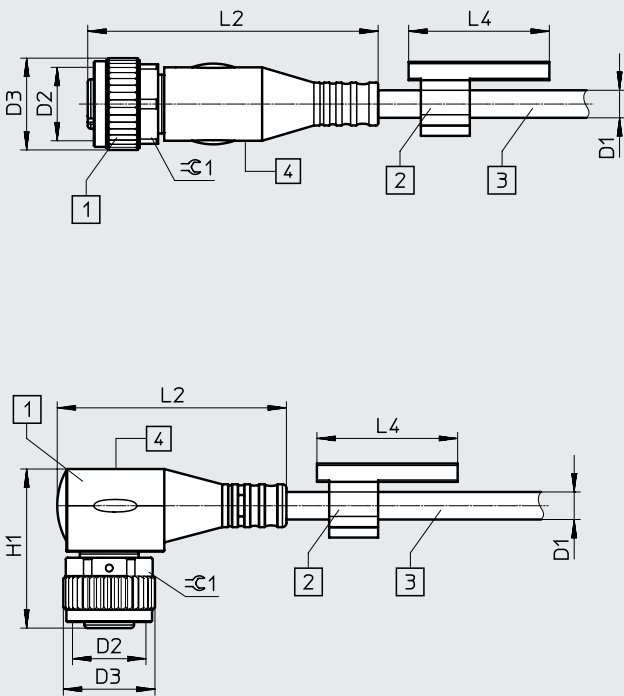
Datasheet

Dimensions

Download CAD data → www.festo.com

Connection technology, left

Connection technology, right



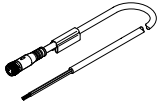
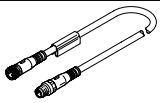
- [1] Socket M8x1
- [2] Inscription label holder

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

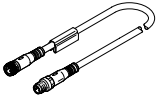
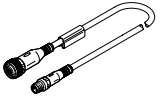
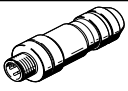
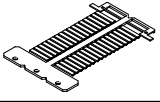


Connection technology, left	D1 ø	D2	D3 ø	L2	L4	H1	⊕1
NEBU							
Straight socket	3.8	M8x1	10	34.6	23	-	9
Angled socket	3.8	M8x1	10	26.9	23	17	9
Rotatable socket	3.8	M8x1	10	20.9	23	16.3	9
SIM							
Straight socket	3.8	M8x1	10	34.6	-	-	9
Angled socket	3.8	M8x1	10	26.9	-	17	9

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

Datasheet

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

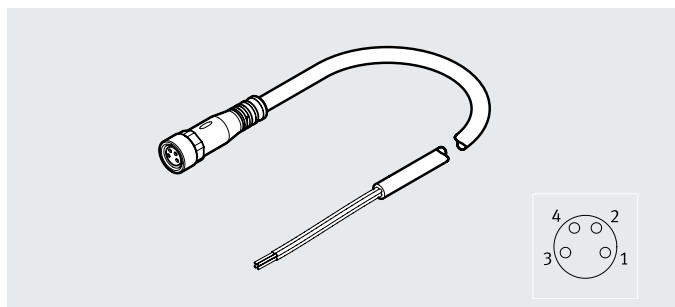
Datasheet

Ordering data							
	Cable characteristic	Cable length [m]	Outlet direction	Special features	Product weight [g]	Part no.	Type
Socket, 3-pin, plug M8, 4-pin, M8							
	Standard	2.5	Straight – straight	–	69	554037	NEBU-M8G3-K-2.5-M8G4
Socket, 3-pin, plug M8, 3-pin, M12							
	Standard	0.5	Straight – straight	–	29	8000209	NEBU-M8G3-K-0.5-M12G3
		1	Straight – straight	Without inscription label holder	39	8091512	NEBU-M8G3-K-1-N-M12G3
Ordering data – Accessories							
Designation						Part no.	Type
Plug connector							
	Plug connectors for self-assembly					–	→ Internet: necu
						–	→ Internet: sea
Inscription labels							
	Inscription labels 23 mm for holder, pack of 34, in frame					541598	ASLR-L-423
Inscription label holder							
	For identifying connecting cables			For cable diameter 3.3 ... 4.8 mm		8078307	NEAU-LH-3
Safety clip							
	Prevents the screw lock from being released easily (without a tool), to be fastened securely to the cable			For M8		548067	NEAU-M8-GD
				For M12		548068	NEAU-M12-GD

Datasheet

Connecting cable
NEBU-M8
SIM-M8

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



General technical data		NEBU	SIM
Type			
Conforms to standard	Cable characteristic: standard, suitable for use with energy chains	EN 61076-2-104	–
		EN 61076-2-101	–
	Cable characteristics: Suitable for robot applications	Wire colours and connection numbers to EN 60947-5-2	–
		Wire colours and connection numbers to EN 60947-5-2	–
		–	EN 61076-2-104
		–	EN 61984
Based on standard	Cable outlet on the left, rotatable	EN 61076-2-104	–
Cable identification		With 2x inscription label holders	–
Degree of protection		IP65, IP68, IP69K	IP65, IP68
Note on degree of protection		In mounted state	–

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

Technical data – Electrics			
Type	NEBU		SIM
Operating voltage range	Without switching status indication	[V DC]	0 ... 30
		[V AC]	0 ... 30
	With switching status indication	[V DC]	21.6 ... 30
		[V AC]	21.6 ... 30
Surge resistance	[kV]	0.8	0.8
Current rating at 40 °C	[A]	3	4

Datasheet

Technical data – Cable		NEBU			SIM	
Type		Electrical connection 2				
		2-pin	3-pin	4-pin		
Cable characteristic	Code -K-	Standard			–	
	Code -E-	Suitable for energy chains			–	
	Code -R-	Suitable for robot applications			–	
		–			Standard	
Test conditions, cable			Bending strength: to Festo standard		Bending strength: to Festo standard	
			Test conditions on request		Test conditions on request	
	Cable characteristic	Standard	Energy chain: 5 million cycles, bending radius 75 mm		Energy chain: 5 million cycles, bending radius 75 mm	
		Suitable for energy chains	Energy chain: 5 million cycles, bending radius 28 mm		–	
Suitable for robot applications		Energy chain: 5 million cycles, bending radius 28 mm		–		
		Torsional resistance more than 300000 cycles, $\pm 270^\circ/0.1$ m		–		
Cable diameter	Without switching status indication	[mm]	–	3.8	4.5	4.5
	With switching status indication	[mm]	3.4	3.4	3.4	–
Cable diameter tolerance		[mm]	±0.1			–
Cable structure	Without switching status indication	[mm ²]	–	3x 0.25	4x 0.25	4x 0.25
	With switching status indication	[mm ²]	2x 0.25	2x 0.25	2x 0.25	–
Nominal conductor cross-section		[mm ²]	0.25			0.25
Bending radius, fixed cable installation	Without switching status indication	[mm]	–	12	14	–
	With switching status indication	[mm]	11	11	11	–
Bending radius, flexible cable installation	Without switching status indication	[mm]	–	39	46	–
	With switching status indication	[mm]	35	35	35	–

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

Datasheet

Materials			NEBU	SIM
Type				
Housing			TPE-U(PUR)	TPE-U(PU)
Housing colour			Black	Black
Cable sheath	Cable characteristic: standard, suitable for energy chains, suitable for robot applications		TPE-U(PUR)	TPE-U(PU)
Cable sheath colour			Grey	Grey
Insulating sheath	Cable characteristic: suitable for energy chains, suitable for robot applications, standard		PP	PP
Core insulation colour code			–	Blue, brown, black, white
Screw-type lock			Nickel-plated brass	–
Union nut			–	Nickel-plated brass
Seals			–	NBR
Pin contacts			–	Gold-plated brass
Note on materials	All types		RoHS-compliant	RoHS-compliant
	Cable characteristic: standard, suitable for energy chains, suitable for robot applications		Halogen-free	Halogen-free
			Free of phosphoric acid ester	Free of phosphoric acid ester
Special characteristics	Cable characteristic: standard, suitable for energy chains, suitable for robot applications		Oil-resistant	–
LABS (PWIS) conformity			VDMA24364-B2-L	VDMA24364-B2-L

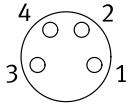
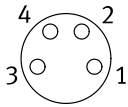
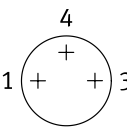
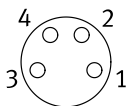
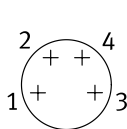
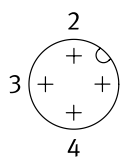
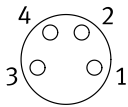
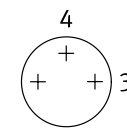
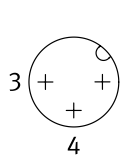
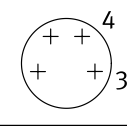
Operating and environmental conditions				
Type			NEBU	SIM
Ambient temperature	Cable characteristic: standard	[°C]	–25 ... +70	–25 ... +80
	Cable characteristic: suitable for energy chains, suitable for robot applications	[°C]	–25 ... +80	–
Ambient temperature with flexible cable installation	Cable characteristic: standard	[°C]	–5 ... +70	–5 ... +80
	Cable characteristic: suitable for energy chains, suitable for robot applications	[°C]	–5 ... +80	–
Corrosion resistance class CRC ¹⁾			2	2
CE marking (see declaration of conformity) ²⁾			To EU RoHS Directive	To EU RoHS Directive
	Electrical connection 2: • Plug M8, 3-pin, without switching status indication • Plug M12, 4-pin		To EU Low Voltage Directive	–
UKCA marking (see declaration of conformity) ²⁾			To UK RoHS regulations	To UK RoHS regulations
	Electrical connection 2: • Plug M8, 3-pin, without switching status indication • Plug M12, 4-pin		To UK regulations for electrical equipment	–
Pollution degree			3	3

1) More information www.festo.com/x/topic/crc

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

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

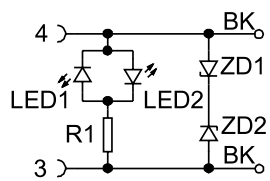
Datasheet

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

1) To IEC 757

Wiring, switching status indication

Display of code L

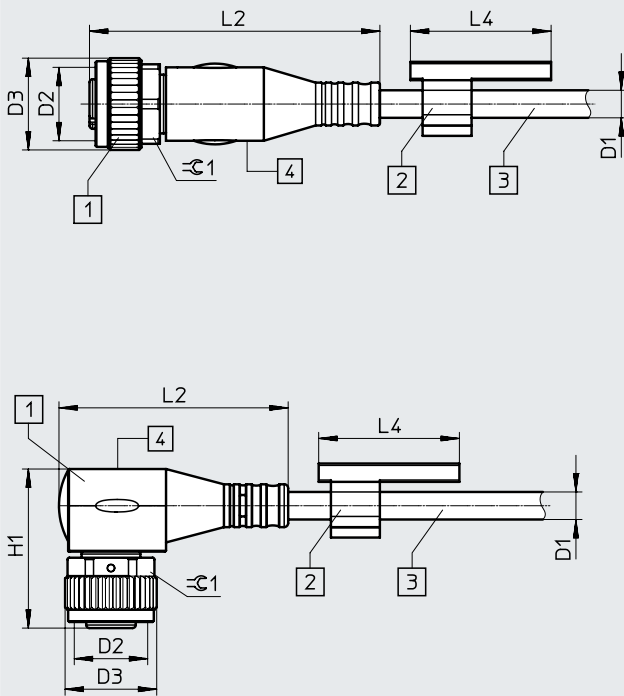


Datasheet

Dimensions

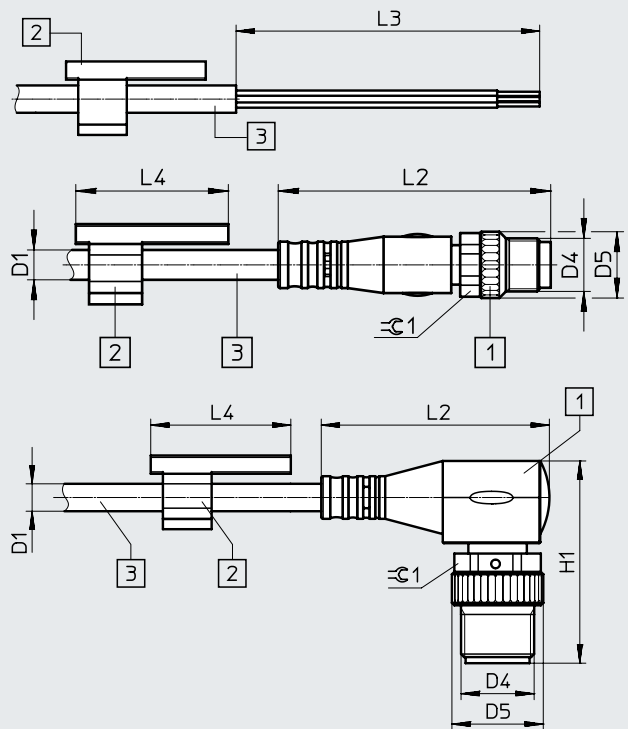
Download CAD data → www.festo.com

Connection technology, left



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

Connection technology, right

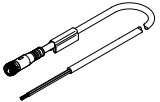
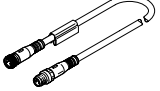
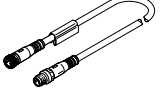
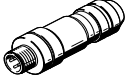
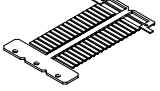




- [3] Cable, length 0.1 ... 30 m depending on the order
- [4] Display field with version L

Connection technology, left	D1 ø	D2	D3 ø	L2	L4	H1	±C1
NEBU, electrical connection 2, 3-pin							
Straight socket	3.8	M8x1	10	34.6	23	-	9
Angled socket	3.8	M8x1	10	26.9	23	17	9
Rotatable socket	3.8	M8x1	10	20.9	23	16.3	9
NEBU, electrical connection 2, 4-pin							
Straight socket	4.5	M8x1	10	34.6	23	-	9
Angled socket	4.5	M8x1	10	26.9	23	17	9
NEBU with LED signal status indication, DC							
Straight socket	3.4	M8x1	10	34.6	23	-	9
Angled socket	3.4	M8x1	10	26.9	23	17	9
SIM							
Straight socket	4.5	M8x1	10	34.6	-	-	9
Angled socket	4.5	M8x1	10	26.9	-	17	9

Connection technology, right	D1 ø	D4	D5 ø	L2	L3	L4	H1	±C1
NEBU, electrical connection 2, 3-pin								
Straight plug	3.8	M8x1	10	41.1	-	23	-	9
Angled plug	3.8	M8x1	10	26.9	-	23	24	9
NEBU, electrical connection 2, 4-pin								
Open end	4.5	-	-	-	50	23	-	-
Straight plug	4.5	M8x1	10	41.1	-	23	-	9
	4.5	M12x1	15	54.5	-	23	-	13
Angled plug	4.5	M8x1	10	26.9	-	23	24	9
	4.5	M12x1	15	37.5	-	23	33.2	13
NEBU with LED signal status indication, DC								
Straight plug	3.4	M8x1	10	41.1	-	23	-	9
	3.4	M12x1	15	54.5	-	23	-	13
Angled plug	3.4	M8x1	10	26.9	-	23	24	9
	3.4	M12x1	15	37.5	-	23	33.2	13
SIM								
Open end	4.5	-	-	-	50	-	-	-

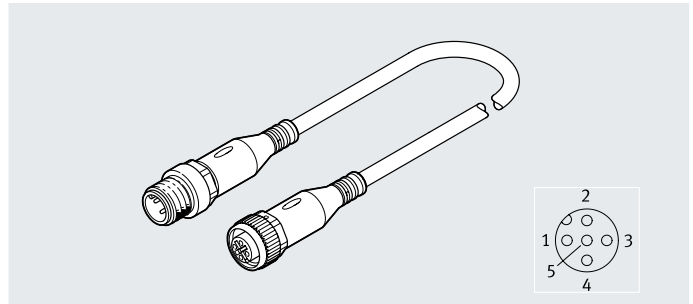
Datasheet

Ordering data							
	Cable characteristic	Cable length [m]	Outlet direction	Special features	Product weight [g]	Part no.	Type
Socket, 4-pin, M8 – open cable end							
	Standard	2.5	Straight	–	72	541342	NEBU-M8G4-K-2.5-LE4
			Angled	–	72	158960	SIM-M8-4GD-2.5-PU
		5	Straight	–	138	541343	NEBU-M8G4-K-5-LE4
			Angled	–	138	158961	SIM-M8-4GD-5-PU
		9	Straight	–	245	8003130	NEBU-M8G4-K-9-LE4
			Angled	–	272	158963	SIM-M8-4WD-5-PU
		10	Straight	–	245	8003130	NEBU-M8G4-K-9-LE4
			Angled	–	272	575833	NEBU-M8W4-K-10-LE4
Socket, 4-pin, plug M8, 4-pin, M8							
	Standard	2.5	Straight – straight	–	76	554035	NEBU-M8G4-K-2.5-M8G4
	Suitable for robot applications	2	Straight – straight	–	63	556946	NEBU-M8G4-R-2-M8G4
Socket, 4-pin, plug M8, 4-pin, M12							
	Standard	1	Straight – straight	Without inscription label holder	42.5	8091513	NEBU-M8G4-K-1-N-M12G4
Ordering data – Accessories							
Designation						Part no.	Type
Plug connector							
	Plug connectors for self-assembly				–	–	→ Internet: necu
					–	–	→ Internet: sea
Inscription labels							
	Inscription labels 23 mm for holder, pack of 34, in frame				541598	ASLR-L-423	
Inscription label holder							
	For identifying connecting cables			For cable diameter 3.3 ... 4.8 mm		8078307	NEAU-LH-3
Safety clip							
	Prevents the screw lock from being released easily (without a tool), to be fastened securely to the cable			For M8		548067	NEAU-M8-GD
				For M12		548068	NEAU-M12-GD

Datasheet

Connecting cable
NEBU-M12
SIM-M12

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



General technical data			
Type	NEBU	SIM	
Conforms to standard	EN 61076-2-101	EN 61076-2-101	
	EN 61076-2-104	–	
	Wire colours and connection numbers to EN 60947-5-2	–	
	–	EN 61984	
	NEBU-M12G5-...-Q8N-LE5	IEC 61010-1	–
Cable identification		With 2x inscription label holders	–
	NEBU-M12G5-...-Q8N	Without inscription label holder	–
	NEBU-M12G5-K-1-N-M12G3	Without inscription label holder	–
Degree of protection	IP65, IP68, IP69K	IP65, IP68	
Note on degree of protection	In mounted state	–	

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

Datasheet

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

Datasheet

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

Technical data – Electrical connection 2		NEBU						SIM				
Type												
Function	Control side											
Connection type	Cable			Plug		Plug		Cable				
Design	–			Round		Round		–				
Cable outlet	–			Straight, angled		Straight, angled		–				
Connection technology	Open end			M8x1, A-coded to EN 61076-2-104		M12x1, A-coded to EN 61076-2-101		Open end				
Number of pins/cores	3	4	5	3	4	3	4	5	3	4	5	
Assigned pins/cores	Without switching status indication											
	With switching status indication											
Wire ends	Code -Q8N-			Stripped		–		–		–		
					Cut off bluntly							
Type of mounting	–			–		–		Screw-type lock		–		

Datasheet

Materials			NEBU	SIM
Type				
Housing			TPE-U(PUR)	TPE-U(PU)
Housing colour			Black	Black
Cable sheath			TPE-U(PUR)	TPE-U(PU)
Cable sheath colour			Grey	Grey
Insulating sheath			PP	PP
Core insulation colour code			–	Blue, brown, black
			–	Blue, brown, black, white
			–	Blue, brown, grey, black, white
Seals			NBR	NBR
Pin contacts			Gold-plated copper alloy	Gold-plated brass
Screw-type lock			Nickel-plated brass	–
Union nut			–	Nickel-plated brass
Note on materials			RoHS-compliant	RoHS-compliant
			Halogen-free	Halogen-free
			Free of phosphoric acid ester	Free of phosphoric acid ester
Special characteristics			Oil-resistant	–
LABS (PWIS) conformity			VDMA24364-B2-L	VDMA24364-B2-L

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

1) More information www.festo.com/x/topic/crc

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

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

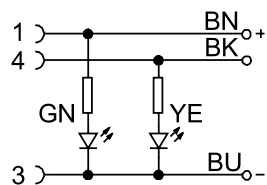
Datasheet

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

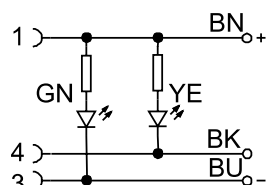
1) To IEC 757

Wiring, switching status indication

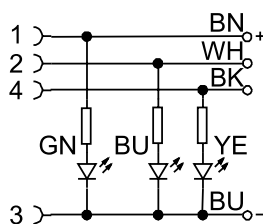
Display of code -P-



Display of code N



Display of code -P2

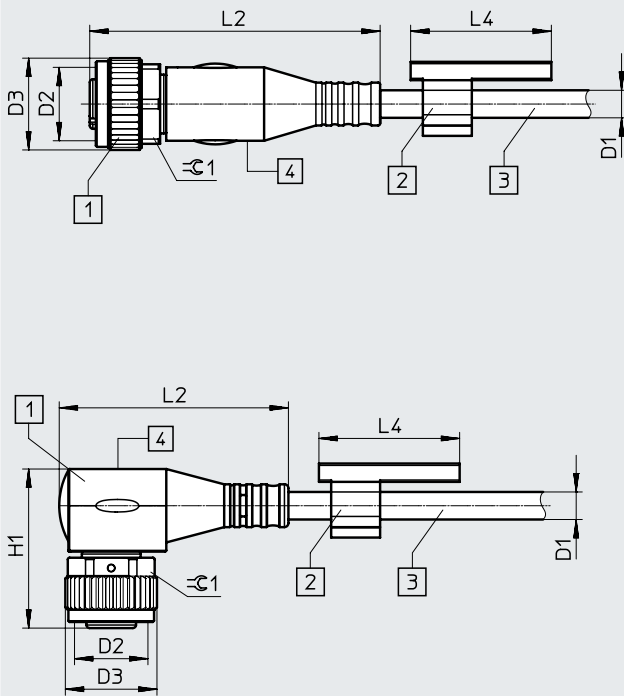


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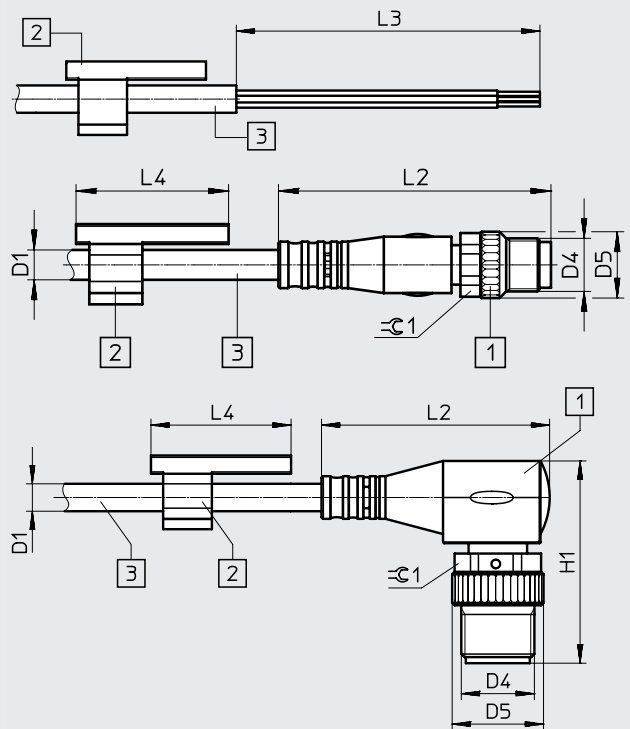
Download CAD data → www.festo.com

Dimensions

Connection technology, left



Connection technology, right



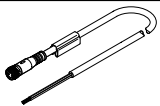
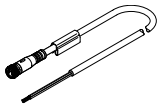
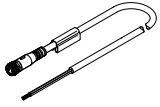
- [1] Socket M12x1
- [2] Inscription label holder

- [3] Cable, length 0.1 ... 30 m depending on the order
- [4] Display field with version P, N or P2

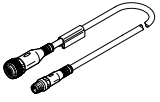
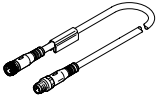
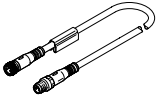
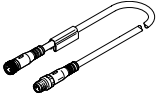
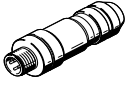
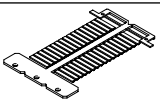


Connection technology, left	D1 ∅	D2	D3 ∅	L2	L4	H1	⊕1
NEBU, electrical connection 2, 3-pin							
Straight socket	3.8	M12x1	15	47.5	23	-	13
Angled socket	3.8	M12x1	15	37.5	23	26	13
NEBU, electrical connection 2, 4-pin and 5-pin							
Straight socket	4.5	M12x1	15	47.5	23	-	13
Angled socket	4.5	M12x1	15	37.5	23	26	13
NEBU-M12G5...-Q8N							
Straight socket	7	M12x1	15	47.5	-	-	13
SIM							
Straight socket	4.5	M12x1	15	47.5	-	-	13
Angled socket	4.5	M12x1	15	37.5	-	26	13

Connection technology, right	D1 ∅	D4	D5 ∅	L2	L3	L4	H1	⊕1
NEBU, electrical connection 2, 3-pin								
Open end	3.8	-	-	-	50	23	-	-
Straight plug	3.8	M8x1	10	41.1	-	23	-	9
	3.8	M12x1	15	54.5	-	23	-	13
Angled plug	3.8	M8x1	10	26.9	-	23	24	9
	3.8	M12x1	15	37.5	-	23	33.2	13
NEBU, electrical connection 2, 4-pin and 5-pin								
Open end	4.5	-	-	-	50	23	-	-
Straight plug	4.5	M8x1	10	41.1	-	23	-	9
	4.5	M12x1	15	54.5	-	23	-	13
Angled plug	4.5	M8x1	10	26.9	-	23	24	9
	4.5	M12x1	15	37.5	-	23	33.2	13
NEBU-M12G5...-Q8N								
Open end	7	-	-	-	50	-	-	-
Straight plug	7	M12x1	15	54.5	-	-	-	13
SIM								
Open end	4.5	-	-	-	50	-	-	-
SIM 3-core								
Open end	3.8	-	-	-	50	-	-	-

Datasheet

Ordering data							
	Cable characteristic	Cable length [m]	Outlet direction	Special features	Product weight [g]	Part no.	Type
Socket, 5-pin, M12 – open cable end, 3-core							
	Standard	2.5	Straight	–	69	★ 541363	NEBU-M12G5-K-2.5-LE3
				–	–	159428	SIM-M12-3GD-2.5-PU
			Switching status indication, for PNP N/O contact	70	541366	NEBU-M12W5P-K-2.5-LE3	
				Angled	–	70	541367
			–		–	159430	SIM-M12-3WD-2.5-PU
			Switching status indication, for NPN N/O contact	70	541365	NEBU-M12W5N-K-2.5-LE3	
		For PNP N/O contact, switching status indication yellow, ready status indication green		–	–	159432	SIM-M12-3WD-2.5-PSL-PU
			5	Straight	–	128	★ 541364
		–			–	159429	SIM-M12-3GD-5-PU
		Angled		–	129	541370	NEBU-M12W5-K-5-LE3
				–	–	159431	SIM-M12-3WD-5-PU
		Switching status indication, for NPN N/O contact		130	541368	NEBU-M12W5N-K-5-LE3	
				Switching status indication, for PNP N/O contact	130	541369	NEBU-M12W5P-K-5-LE3
		For PNP N/O contact, switching status indication yellow, ready status indication green	–		–	159433	SIM-M12-3WD-5-PSL-PU
Socket, 5-pin, M12 – open cable end, 4-core							
	Standard	2.5	Straight	–	77	★ 550326	NEBU-M12G5-K-2.5-LE4
			Angled	–	78	550325	NEBU-M12W5-K-2.5-LE4
		5	Straight	–	143	★ 541328	NEBU-M12G5-K-5-LE4
				–	–	164259	SIM-M12-4GD-5-PU
		Angled	–	144	541329	NEBU-M12W5-K-5-LE4	
			–	–	164258	SIM-M12-4WD-5-PU	
		7	Straight	–	197	8003134	NEBU-M12G5-K-7-LE4
		10	Angled	–	278	569841	NEBU-M12W5-K-10-LE4
Socket, 5-pin, M12 – open cable end, 5-core							
	Standard	2.5	Straight	–	78	541330	NEBU-M12G5-K-2.5-LE5
				–	–	175715	SIM-M12-5GD-2,5-PU
		Angled	–	79	567843	NEBU-M12W5-K-2.5-LE5	
			5	Straight	–	146	541331
		–			–	175716	SIM-M12-5GD-5-PU
		5	Angled	–	147	567844	NEBU-M12W5-K-5-LE5
		10	Straight	–	283	554038	NEBU-M12G5-K-10-LE5
		Suitable for energy chains	5	Straight	Nominal conductor cross-section 1 mm ²	422	8078303
822	8078304					NEBU-M12G5-E-10-Q8N-LE5	

Datasheet

Ordering data							
	Cable characteristic	Cable length [m]	Outlet direction	Special features	Product weight [g]	Part no.	Type
Socket, 5-pin, M12 – plug, 4-pin, M8							
	Standard	2.5	Straight – straight	–	81	554036	NEBU-M12G5-K-2.5-M8G4
	Suitable for energy chains		Straight – straight	Cable, 2-core	74	554034	NEBU-M12G5-E-2.5-W2-M8G4-V1
				Cable, 3-core	74	554033	NEBU-M12G5-E-2.5-W3-M8G4-V2
Socket, 5-pin, plug M12, 3-pin, M12							
	Standard	1	Straight – straight	Without inscription label holder	44	8091511	NEBU-M12G5-K-1-N-M12G3
Socket, 5-pin, plug M12, 4-pin, M12							
	Standard	0.5	Straight – straight	–	36	8000208	NEBU-M12G5-K-0.5-M12G4
Socket, 5-pin, plug M12, 5-pin, M12							
	Standard	0.5	Straight – angled	–	37	8003617	NEBU-M12G5-K-0.5-M12W5
			Angled – angled	–	38	570733	NEBU-M12W5-K-0.5-M12W5
		2	Straight – angled	–	77	8003618	NEBU-M12G5-K-2-M12W5
			Angled – angled	–	78	570734	NEBU-M12W5-K-2-M12W5
	Suitable for energy chains	5	Straight – straight	Nominal conductor cross-section 1 mm ²	434	574321	NEBU-M12G5-E-5-Q8N-M12G5
		7.5	Straight – straight	Nominal conductor cross-section 1 mm ²	635	574322	NEBU-M12G5-E-7.5-Q8N-M12G5
		10	Straight – straight	Nominal conductor cross-section 1 mm ²	835	574323	NEBU-M12G5-E-10-Q8N-M12G5
Ordering data – Accessories							
Designation						Part no.	Type
Plug connector							
	Plug connectors for self-assembly				–	→ Internet: necu	
					–	→ Internet: sea	
Inscription labels							
	Inscription labels 23 mm for holder, pack of 34, in frame					541598	ASLR-L-423
Inscription label holder							
	For identifying connecting cables			For cable diameter 3.3 ... 4.8 mm		8078307	NEAU-LH-3
Safety clip							
	Prevents the screw lock from being released easily (without a tool), to be fastened securely to the cable			For M8		548067	NEAU-M8-GD
				For M12		548068	NEAU-M12-GD

Datasheet

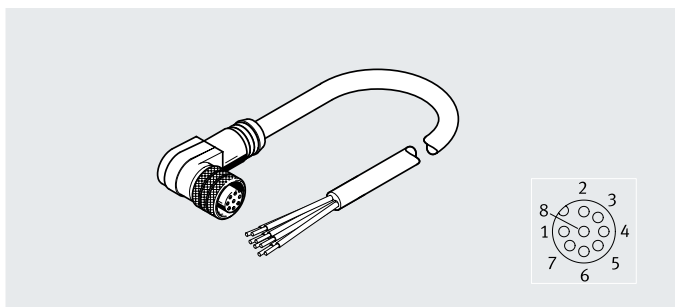
Plug socket with cable

NEBU-M12

SIM-M12-8

KM12-8

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



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

Technical data – Electrical connection 1			
Type	NEBU	SIM	KM12
Function	Field device side		
Design	Round		
Connection type	Socket		
Cable outlet	Angled	Straight	Straight
Connection technology	M12x1, A-coded to EN 61076-2-101		
Number of pins/cores	8		
Assigned pins/cores	8		
Compatible mounting type	Compatible with rotatable/non-rotatable screw-type lock		–
Type of mounting	Screw-type lock		
Contact durability	–	–	50

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

Technical data – Cable			
Type	NEBU	SIM	KM12
Cable characteristic	Standard	Standard	Standard
	–	–	Test conditions on request
Bending radius	fixed cable installation [mm]	≥32	≥32
	flexible cable installation [mm]	≥66	≥64
Cable diameter	[mm]	6.3	6.2
Cable diameter tolerance	[mm]	±0.2	±0.2
Cable structure	[mm ²]	8x 0.25	
Nominal conductor cross-section	[mm ²]	0.25	

Datasheet

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

Materials			
Type	NEBU	SIM	KM12
Housing	TPE-U(PUR)	TPE-U(PUR)	–
Housing colour	–	–	–
Cable sheath	TPE-U(PUR)	TPE-U(PUR)	TPE-U(PUR)
Cable sheath colour	Grey	Grey	Grey
Insulating sheath	PP	PP	PP
	–	–	TPE-U(PUR)
Screw-type lock	Chrome-plated brass	Chrome-plated brass	Nickel-plated brass
	–	–	Chrome-plated brass
Seals	NBR	NBR	NBR
Pin contacts	Gold-plated copper alloy	Gold-plated copper alloy	Nickel-plated and gold-plated brass
Note on materials	RoHS-compliant	RoHS-compliant	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B2-L	VDMA24364-B2-L	VDMA24364-B2-L

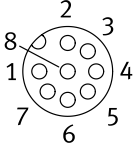
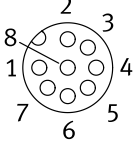
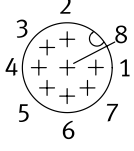
Operating and environmental conditions			
Type	NEBU	SIM	KM12
Ambient temperature	[°C]	–25 ... +80	–25 ... +80
	With flexible cable installation [°C]	–5 ... +80	–5 ... +80
Corrosion resistance class CRC ¹⁾	2	2	2
CE marking (see declaration of conformity) ²⁾	To EU RoHS Directive	To EU RoHS Directive	To EU RoHS Directive
UKCA marking (see declaration of conformity) ²⁾	To UK RoHS regulations	To UK RoHS regulations	To UK RoHS regulations
Pollution degree	3	3	3
Note on the contamination level	In mounted state		

1) More information www.festo.com/x/topic/crc

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

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

Datasheet

Wiring (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	
	Housing	Shielding	Housing	

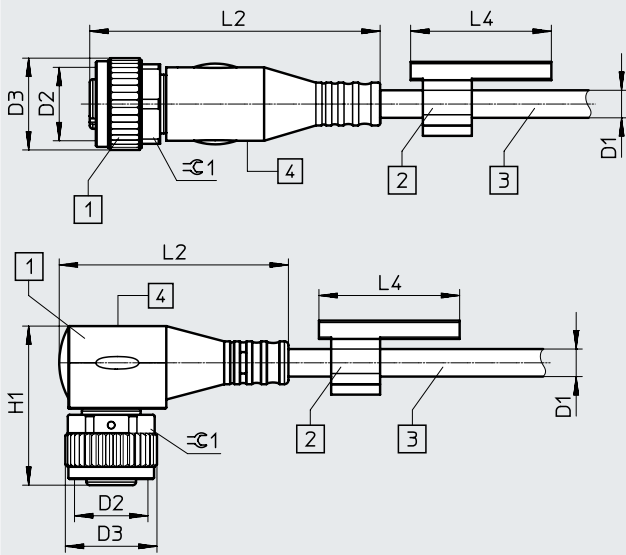
1) To IEC 757

Datasheet

Download CAD data → www.festo.com

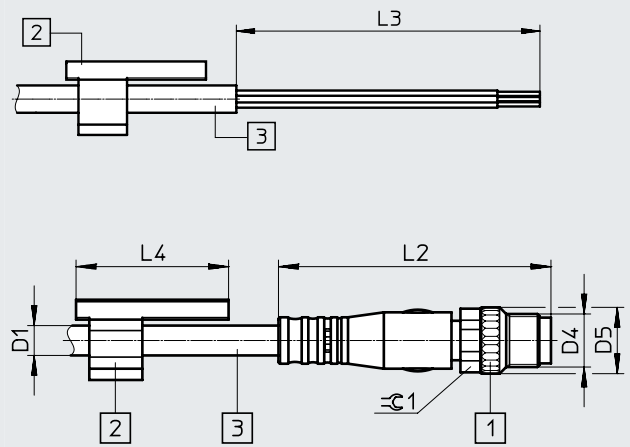
Dimensions

Connection technology, left



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

Connection technology, right

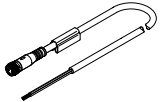
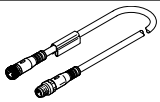


- [3] Cable, length 2 m, 5 m, 10 m, 15 m, 20 m, 25 m depending on the order

Connection technology, left	D1 ø	D2	D3 ø	L2	L4	H1	±G1
NEBU							
Angled socket	6.3	M12x1	14.5	33.5	-	26.2	-
SIM							
Straight socket	6.2	M12x1	14.5	-	-	-	-
KM12							
Straight socket	6.2	M12x1	-	-	-	-	-

Connection technology, right	D1 ø	D4	D5 ø	L2	L3	L4	±G1
NEBU							
Open end	6.3	-	-	-	70	-	-
SIM							
Open end	6.2	-	-	-	70	-	-
KM12							
Straight plug	6.2	M12x1	14.6	-	-	-	-

Datasheet

Ordering data							
	Cable characteristic	Cable length [m]	Outlet direction	Special features	Product weight [g]	Part no.	Type
Socket, 8-pin, M12 – open cable end, 8-core							
	Standard	2	Angled	–	125	542256	NEBU-M12W8-K-2-N-LE8
			Straight	–	–	525616	SIM-M12-8GD-2-PU
		5	Angled	–	292	542257	NEBU-M12W8-K-5-N-LE8
			Straight	–	343	525618	SIM-M12-8GD-5-PU
		10	Angled	–	570	570007	NEBU-M12W8-K-10-N-LE8
			Straight	–	–	570008	SIM-M12-8GD-10-PU
		15	Angled	–	848	8048086	NEBU-M12W8-K-15-N-LE8
			Straight	–	–	5105631	SIM-M12-8GD-15-PU
		20	Straight	–	–	5105632	SIM-M12-8GD-20-PU
		25	Straight	–	–	5105633	SIM-M12-8GD-25-PU
Socket, 8-pin, plug M12, 8-pin, M12							
	–	2	Straight – straight	–	140	525617	KM12-8GD8GS-2-PU

Datasheet

Power supply socket NEBU-G78W5

- Connecting cable for power supply
- Pre-assembled at one end
- Cable lengths 2 m
- 5 cores
- Socket G7/8, 5-pin



General technical data

Based on standard	NFPA/T3.5.29 R1-2007
Cable identification	Without inscription label holder
Degree of protection	IP65, IP67
Note on degree of protection	In mounted state

Technical data – Electrical connection 1

Function	Field device side
Design	Round
Connection type	Socket
Cable outlet	Angled
Note on cable outlet	Not to industry standard, matched to CPX protective hood
Connection technology	G7/8 coded to NFPA/T3.5.29 R1-2007
Number of pins/cores	5
Assigned pins/cores	5
Type of mounting	Screw-type lock
Contact durability	100

Technical data – Electrics

Operating voltage range	[V DC]	0 ... 300
	[V AC]	0 ... 300
Surge resistance	[kV]	4
Current rating at 40 °C	[A]	9

Technical data – Cable

Cable characteristic	Standard	
Test conditions, cable	Test conditions on request	
Bending radius, fixed cable installation	[mm]	≥65
Cable diameter	[mm]	8.7
Cable diameter tolerance	[mm]	±0.2
Cable structure	[mm ²]	5x 1.5
Nominal conductor cross-section	[mm ²]	1.5

Technical data – Electrical connection 2

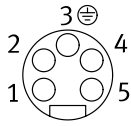
Function	Control side
Connection type	Cable
Connection technology	Open end
Number of pins/cores	5
Assigned pins/cores	5

Datasheet

Materials	
Housing	TPE-U(PUR)
Housing colour	Black
Cable sheath	TPE-U(PUR)
Cable sheath colour	Black
Screw-type lock	Nickel-plated brass
Pin contacts	Gold-plated brass
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B2-L

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

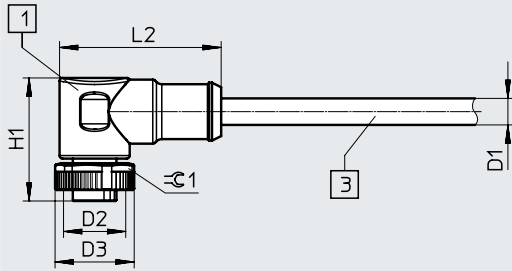
- 1) More information www.festo.com/x/topic/crc
 2) For information about the area of use, see the EC declaration of conformity at: www.festo.com/catalogue/nebu → Support/Downloads.
 If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

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

1) To IEC 757

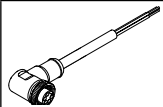
Dimensions

Download CAD data → www.festo.com



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

	D1 ∅	D2	D3 ∅	L2	H1	±0.1
NEBU-G78W5	8.7	7/8"	26	53	40.4	24

Ordering data							
	Cable characteristic	Cable length [m]	Outlet direction	Special features	Product weight [g]	Part no.	Type
Socket, 5-pin, G7/8 – open cable end							
	Standard	2	Angled	-	680	573855	NEBU-G78W5-K-2-N-LE5

Datasheet

Connecting cable SIM-K

- Connecting cable for low-voltage applications
- Easy-to-clean design
- Pre-assembled at one end
- Cable lengths 2.5 m, 5 m and 10 m
- 3 cores
- Mounting via snap-locking



General technical data

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

Technical data – Electrical connection 1

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

Technical data – Electrics

Operating voltage range	[V DC]	0 ... 60
	[V AC]	0 ... 60
Surge resistance	[kV]	1.5
Current rating at 40 °C	[A]	3

Technical data – Cable

Cable characteristic	Standard	
Test conditions, cable	Bending strength: to Festo standard	
	Test conditions on request	
	Energy chain: 5 million cycles, bending radius 28 mm	
Bending radius	fixed cable installation [mm]	≥23
	flexible cable installation [mm]	≥46
Cable diameter	[mm]	4.5
Cable diameter tolerance	[mm]	±0.1
Cable structure	[mm ²]	3x 0.25
Nominal conductor cross-section	[mm ²]	0.25

Technical data – Electrical connection 2

Function	Control side
Connection type	Cable
Connection technology	Open end
Number of pins/cores	3
Assigned pins/cores	3
Wire ends	Wire ferrule

Datasheet

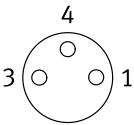
Materials	
Housing	TPE-U(PUR)
Housing colour	Black
Cable sheath	TPE-U(PUR)
Cable sheath colour	Grey
Insulating sheath	PP
Seals	NBR
Pin contacts	Gold-plated brass
Note on materials	RoHS-compliant Halogen-free
LABS (PWIS) conformity	VDMA24364-B2-L

Operating and environmental conditions			
Ambient temperature	[°C]	-25 ... +70	
With flexible cable installation	[°C]	-5 ... +70	
Storage temperature	[°C]	-25 ... +70	
Corrosion resistance class CRC ¹⁾		4	
CE marking (see declaration of conformity) ²⁾		To EU Low Voltage Directive To EU RoHS Directive	
UKCA marking (see declaration of conformity) ²⁾		To UK regulations for electrical equipment To UK RoHS regulations	
Pollution degree		3	

1) More information www.festo.com/x/topic/crc

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

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

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

1) To IEC 757

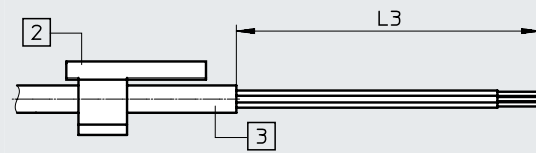
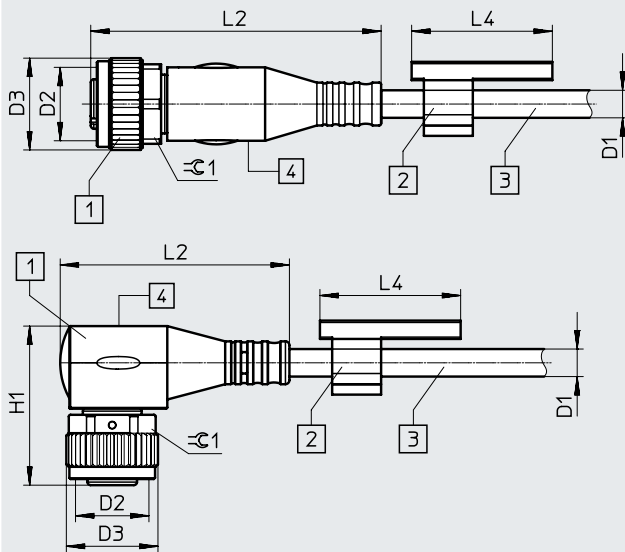
Datasheet

Download CAD data → www.festo.com

Dimensions

Connection technology, left

Connection technology, right



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

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

Connection technology, left	D1 ø	D2	D3 ø	L2	L4	H1	≈C1
Straight socket	4.5	–	8.5	33.6	–	–	–
Angled socket	4.5	8.3	8.5	26.1	–	18.4	–

Connection technology, right	D1 ø	L3
Open end	4.5	50

Ordering data

	Cable characteristic	Cable length [m]	Outlet direction	Special features	Product weight [m]	Part no.	Type
	Standard	2.5	Straight	–	–	164257	SIM-K-GD-2.5-PU
			Angled	–	–	164255	SIM-K-WD-2.5-PU
	5	5	Straight	–	–	164256	SIM-K-GD-5-PU
			Angled	–	–	164254	SIM-K-WD-5-PU
	10	10	Straight	–	–	192962	SIM-K-GD-10-PU
			Angled	–	–	192963	SIM-K-WD-10-PU

Ordering data – Accessories

Designation	Part no.	Type
Inscription labels 	541598	ASLR-L-423
Inscription label holder 	8143238	NEAU-LH-4

Datasheet

Connecting cable SIM-K

- Connecting cable for low-voltage applications
- Easy-to-clean design
- Pre-assembled at one end
- Cable lengths 2.5 m and 5 m
- 4 cores
- Mounting via snap-locking



General technical data

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

Technical data – Electrical connection 1

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

Technical data – Electrics

Operating voltage range	[V DC]	0 ... 30
	[V AC]	0 ... 30
Surge resistance	[kV]	0.8
Current rating at 40 °C	[A]	3

Technical data – Cable

Cable characteristic	Standard	
Test conditions, cable	Bending strength: to Festo standard	
	Test conditions on request	
Bending radius	fixed cable installation [mm]	≥23
	flexible cable installation [mm]	≥46
Cable diameter	[mm]	4.5
Cable diameter tolerance	[mm]	±0.1
Cable structure	[mm ²]	4x 0.25
Nominal conductor cross-section	[mm ²]	0.25

Technical data – Electrical connection 2

Function	Control side
Connection type	Cable
Connection technology	Open end
Number of pins/cores	4
Assigned pins/cores	4
Wire ends	Wire ferrule

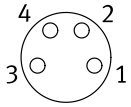
Datasheet

Materials	
Housing	TPE-U(PUR)
Housing colour	Black
Cable sheath	TPE-U(PUR)
Cable sheath colour	Grey
Insulating sheath	PP
Seals	NBR
Pin contacts	Gold-plated brass
Note on materials	RoHS-compliant Halogen-free
LABS (PWIS) conformity	VDMA24364-B2-L

Operating and environmental conditions			
Ambient temperature	[°C]	-25 ... +70	
With flexible cable installation	[°C]	-5 ... +70	
Storage temperature	[°C]	-25 ... +70	
Corrosion resistance class CRC ¹⁾		4	
CE marking (see declaration of conformity) ²⁾		To EU RoHS Directive	
UKCA marking (see declaration of conformity) ²⁾		To UK RoHS regulations	
Pollution degree		3	

1) More information www.festo.com/x/topic/crc

2) More information: www.festo.com/catalogue/... → Support/Downloads.

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

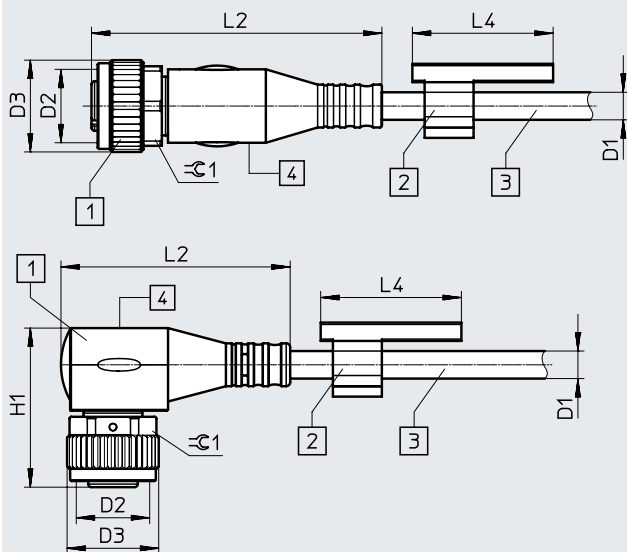
1) To IEC 757

Datasheet

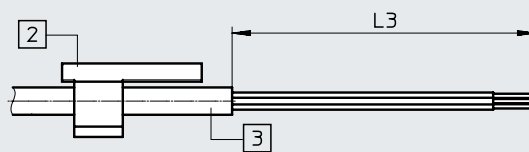
Dimensions

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Connection technology, left



Connection technology, right



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

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

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

Connection technology, right	D1 ø	L3
Open end	4.5	50

Ordering data

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

Ordering data – Accessories

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

Ordering data – Modular product system

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

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