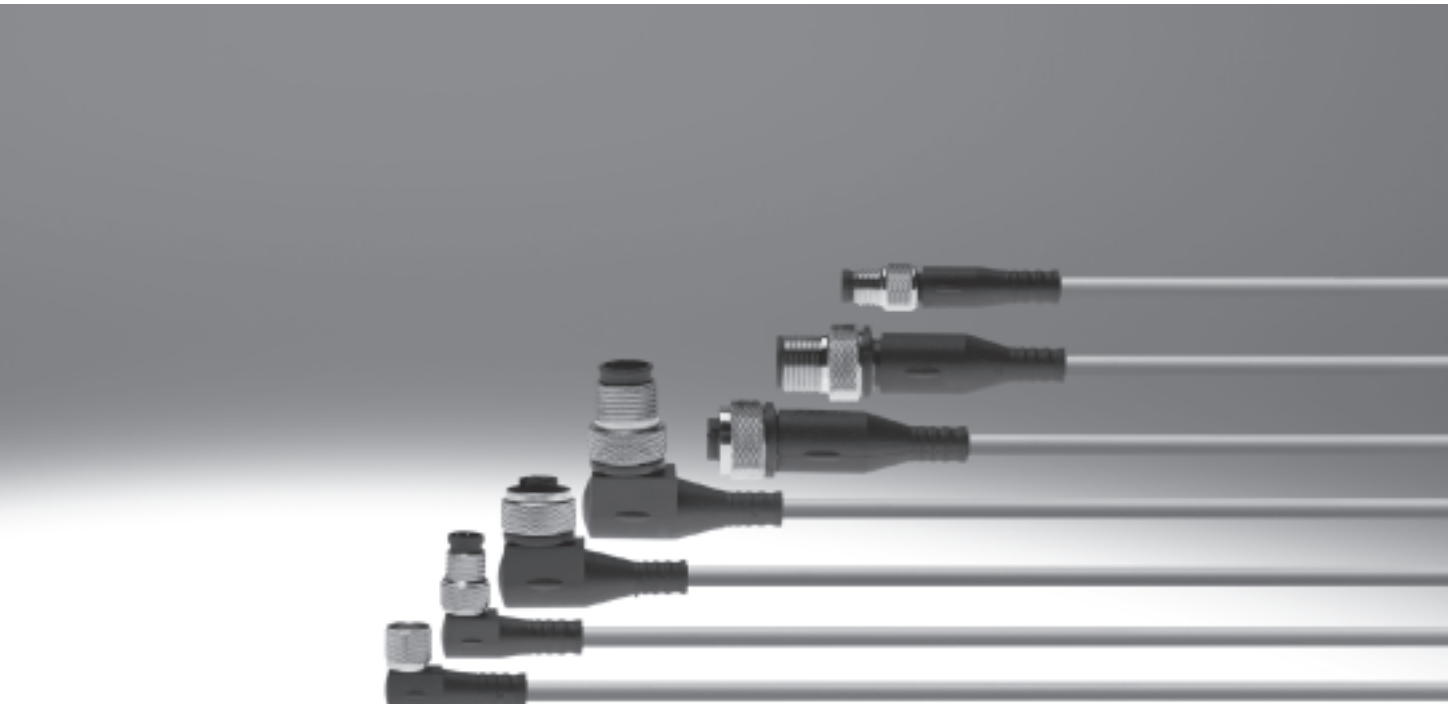




Connecting cables NEBU, plug sockets with cable SIM

Product overview

FESTO



- Connecting cables for standard, drag chain and robot applications
- Versions with switching status display
- Welding field immune designs
- Easy-to-clean designs approved for use in the food and packaging sector
- Cable length 0.1 ... 25 m freely selectable

Detailed product information

➔ www.festo.com/catalogue/nebu

Product overview						
Design	Type	Electrical connection		Number of wires	Cable length [m]	➔ Page
		Left	Right			
Basic version	NEBU-M5	Socket M5x0.5	Open end	3	5	264
			Plug M8x1	3	1	
			Plug M12x1	4	1	
	NEBU-M8	Socket M8x1	Open end	3, 4	0.1 ... 25	264
			Plug M8x1			
			Plug M12x1			
	NEBU-M12	Socket M12x1	Open end	3, 4, 5	0.1 ... 25	264
			Plug M8x1			
			Plug M12x1			
With switching status display	NEBU-M8	Socket M8x1	Open end	3	0.1 ... 25	264
			Plug M8x1			
			Plug M12x1			
	NEBU-M12	Socket M12x1	Open end	3	0.1 ... 25	264
			Plug M8x1			
			Plug M12x1			
	SIM-M12-RS	Socket M12x1	Open end	3	3	269
Welding field immune	SIM-K	Socket, clip-on	Open end	3	2.5; 5; 10	269
				4	2.5; 5	
For food industry, easy to clean	SIM-K-CDN	Socket, clip-on	Open end	3	2.5; 5	269

Connecting cables NEBU, plug sockets with cable SIM

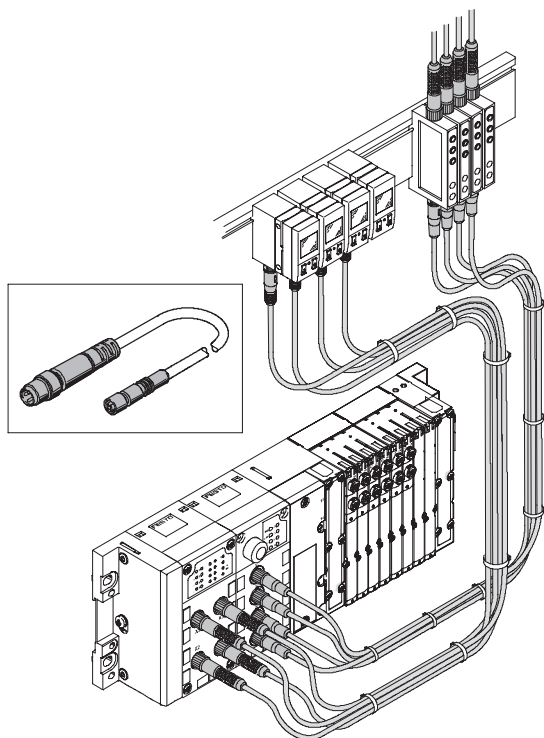
Key features

Cable qualitys

The sensor cables can be configured using the modular system. You can choose from qualitys that are suited to

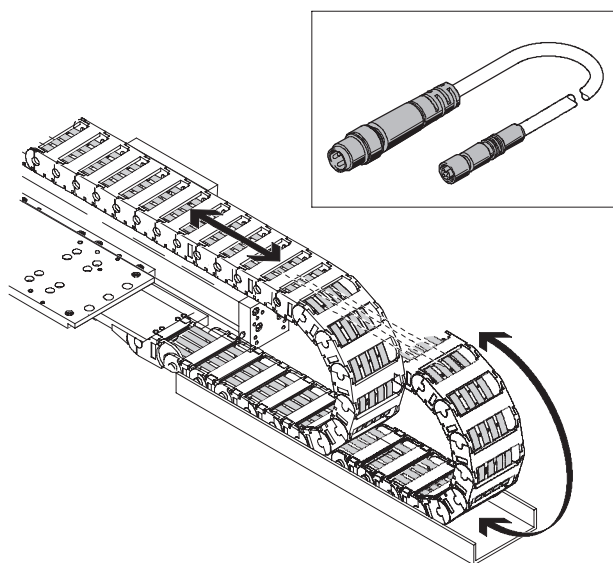
standard, drag chain or robot applications.

Standard application



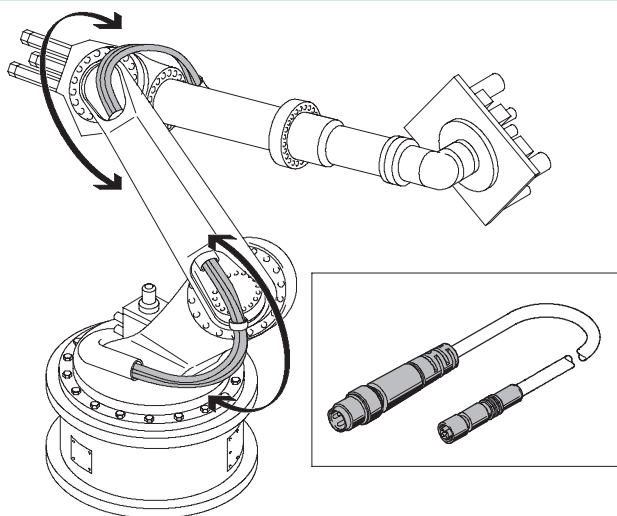
- Standard applications are characterised by fixed cable installation or low to average mechanical loads.

Drag chain application



- High mechanical loads occur in drag chain applications, particularly when very small radii are required.

Robot application



- High mechanical loads, which are primarily caused by torsion, occur in robot applications.

Connecting cables NEBU

Type codes

FESTO

NEBU		–	M12	W	5	P	–	K	–	2.5	–		–	LE		3
Function																
NEBU	Connecting cable															
Connection, left																
M5	Socket with connecting thread															
M8	Socket with connecting thread															
M12	Socket with connecting thread, A-coded															
Socket design																
G	Straight															
W	Angled															
Number of pins/wires (left)																
3	3-pin (fitting for M8 plug)															
4	4-pin (fitting for M8 plug)															
5	5-pin (fitting for 3-, 4- and 5-pin M12 plug)															
Display																
–	Without LED (standard)															
P	LED, PNP															
N	LED, NPN															
Cable quality																
K	Standard															
E	Suitable for drag chain															
R	Suitable for robots															
Cable length																
0.1 ... 25	0.1 ... 25 m															
Alternative wire cross section																
–	0.25 mm ² (standard)															
Q3	0.14 mm ²															
Cable designation																
–	With inscription label holder (standard)															
N	Without inscription label holder															
Connection, right																
LE	Open end															
M8	Socket with connecting thread															
M12	Socket with connecting thread, A-coded															
Plug design																
G	Straight															
W	Angled															
Number of pins/wires (right)																
3	3-pin (fitting for M8/M12 socket)															
4	4-pin (fitting for M8/M12 socket)															
5	5-pin (fitting for M12 socket)															

Connecting cables NEBU

Technical data

FESTO

General technical data				
Electrical connection, left		Socket M5x0.5	Socket M8x1	Socket M12x1
Design				
Cable length	[m]	➔ Ordering data	0.1 ... 25	
Ready status display ¹⁾		–	Green LED	
Switching status display ¹⁾		–	Yellow LED	
Cable quality ¹⁾		Standard	Standard	
		–	Suitable for drag chain	
		–	Suitable for robots	
Test conditions for standard cables		Chain link trunking: 5 million cycles, bending radius 75 mm		
		Resistance to bending: To Festo standard; test conditions on request		
Test conditions for suitability for chain link trunking		Chain link trunking: 5 million cycles, bending radius 28 mm		
		Resistance to bending: To Festo standard; test conditions on request		
Test conditions for suitability for robots		Chain link trunking: 5 million cycles, bending radius 28 mm		
		Torsional strength: > 300,000 cycles, ±270°/0.1 m		
		Resistance to bending: To Festo standard; test conditions on request		
Operating and environmental conditions				
Ambient temperature	[°C]	–25 ... +70	–25 ... +80	
Ambient temperature with flexible cable installation	[°C]	–5 ... +70	–5 ... +80	
Protection class		IP65, IP67		
Materials				
Housing		Polyurethane		
Cable sheath		Polyurethane		

1) If the relevant option is selected ➔ Ordering table 265 and modular products266

Electrical data – Socket M5x0.5				
Electrical connection, left	Straight socket, M5x0.5, 3-pin			
Electrical connection, right	Cable, open end, 3-wire		Straight plug, M8x1, 3-pin	Straight plug, M12x1, 4-pin
Operating voltage range	AC [V]	125	60	125
	DC [V]	125	75	125

Electrical data – Socket M8x1			
Electrical connection, left ¹⁾	Socket M8x1, 3-pin, straight or angled		Socket M8x1, 4-pin, straight or angled
Electrical connection, right ¹⁾	Plug M8x1 or M12x1		Plug M8x1 or M12x1
	3-pin, straight or angled		4-pin, straight or angled
	Open end, 3-wire		Open end, 4-wire
Operating voltage range	AC [V]	0 ... 60	0 ... 30
	DC [V]	0 ... 60	0 ... 30

1) Possible combinations ➔ Ordering table 265 and modular products266

Electrical data – Socket M12x1			
Electrical connection, left ¹⁾	Socket M12x1, 5-pin, straight or angled		
Electrical connection, right ¹⁾	Plug M8x1 or M12x1	Plug M8x1 or M12x1	Plug M8x1 or M12x1
	3-pin, straight or angled	4-pin, straight or angled	5-pin, straight or angled
	Open end, 3-wire	Open end, 4-wire	Open end, 5-wire
Operating voltage range	AC [V]	0 ... 300	0 ... 60
	DC [V]	0 ... 300	0 ... 60

1) Possible combinations ➔ Ordering table 265 and modular products266

Connecting cables NEBU

Technical data

FESTO

Electrical connection technology
Connecting cables

3.1

Ordering data – Basic version					
Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type	
Straight socket, M5x0.5, 3-pin	Cable, open end, 3-wire	5	539 508	NEBU-M5G4-K-5-Q3-LE3	
	Straight plug, M8x1, 3-pin	1	539 510	NEBU-M5G4-K-1-Q3-M8G3	
	Straight plug, M12x1, 4-pin	1	539 512	NEBU-M5G4-K-1-Q3-M12G4	
Straight socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541 333	NEBU-M8G3-K-2.5-LE3	
		5	541 334	NEBU-M8G3-K-5-LE3	
		10	541 332	NEBU-M8G3-K-10-LE3	
	Straight plug, M8x1, 3-pin	0.5	541 346	NEBU-M8G3-K-0.5-M8G3	
		1	541 347	NEBU-M8G3-K-1-M8G3	
		2.5	541 348	NEBU-M8G3-K-2.5-M8G3	
		5	541 349	NEBU-M8G3-K-5-M8G3	
		10	541 335	NEBU-M8W3-K-10-LE3	
Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	2.5	541 338	NEBU-M8W3-K-2.5-LE3	
		5	541 341	NEBU-M8W3-K-5-LE3	
		10	541 335	NEBU-M8W3-K-10-LE3	
Straight socket, M8x1, 4-pin	Cable, open end, 4-wire	2.5	541 342	NEBU-M8G4-K-2.5-LE4	
		5	541 343	NEBU-M8G4-K-5-LE4	
Angled socket, M8x1, 4-pin	Cable, open end, 4-wire	2.5	541 344	NEBU-M8W4-K-2.5-LE4	
		5	541 345	NEBU-M8W4-K-5-LE4	
Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541 363	NEBU-M12G5-K-2.5-LE3	
		5	541 364	NEBU-M12G5-K-5-LE3	
	Cable, open end, 4-wire	2.5	530 326	NEBU-M12G5-K-2.5-LE4	
		5	541 328	NEBU-M12G5-K-5-LE4	
	Cable, open end, 5-wire	2.5	541 330	NEBU-M12G5-K-2.5-LE5	
		5	541 331	NEBU-M12G5-K-5-LE5	
Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	541 367	NEBU-M12W5-K-2.5-LE3	
		5	541 370	NEBU-M12W5-K-5-LE3	
	Cable, open end, 4-wire	2.5	530 325	NEBU-M12W5-K-2.5-LE4	
		5	541 329	NEBU-M12W5-K-5-LE4	

Ordering data – With switching status display					
Electrical connection, left	Electrical connection, right	Switch output	Cable length [m]	Part No.	Type
Angled socket, M8x1, 3-pin	Cable, open end, 3-wire	PNP	2.5	541 337	NEBU-M8W5P-K-2.5-LE3
			5	541 340	NEBU-M8W5P-K-5-LE3
		NPN	2.5	541 336	NEBU-M8W5N-K-2.5-LE3
			5	541 339	NEBU-M8W5N-K-5-LE3
Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	PNP	2.5	541 366	NEBU-M12W5P-K-2.5-LE3
			5	541 369	NEBU-M12W5P-K-5-LE3
		NPN	2.5	541 365	NEBU-M12W5N-K-2.5-LE3
			5	541 368	NEBU-M12W5N-K-5-LE3



Note

Additional variants can be configured and ordered via the NEBU modular product system → 266.



Note

Pin allocations and circuit diagrams → www.festo.com

Ordering data – Inscription labels, safety clips						
	Material	Use	Size	Part No.	Type	PU ¹⁾
	Polycarbonate	For insertion in the inscription label holder	18x4 mm	546 111	ASLR-L-418	57
			23x4 mm	541 598	ASLR-L-423	51
	Polyamide	For protecting push-in connectors from inadvertent disconnection (no tool needed)	M8	548 067	NEAU-M8-GD	1
			M12	548 068	NEAU-M12-GD	1

1) Packaging unit in quantity per frame

Connecting cables NEBU, M8/M12

Ordering data – Modular products

FESTO

M Mandatory data					O Options →
Module No.	Function	Connection, left	Socket design	Number of pins/wires (left)	Display
539 052	NEBU	M8 M12	G W	3 4 5	– P N
Order example					
539 052	NEBU	– M12	W	5	P

Ordering table					Condi- tions	Code	Enter code
M	Module No.	539 052					
	Function	Connecting cable				NEBU	NEBU
						–	–
	Connection, left	Socket with connecting thread				M8	
		Socket with connecting thread, A-coded				M12	
	Socket design	Straight				G	
		Angled				W	
	Number of pins/wires (left)	3-pin (fitting for M8 plug)				3	
		4-pin (fitting for M8 plug)				4	
		5-pin (fitting for 3-, 4- and 5-pin M12 plug)				5	
O	Display	Without LED (standard)					
		LED, PNP			1	P	
		LED, NPN			1	N	

- 1 P, N Only in combination with M8 connection technology at left-hand end with socket design W and number of pins/wires (left-hand end) 3
or
only in combination with M12 connection technology at left-hand end with socket design W and number of pins/wires (left-hand end) 5 and number of pins/wires (right-hand end) 3.

Transfer order code

539 052	NEBU	–				
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Connecting cables NEBU, M8/M12

Ordering data – Modular products

FESTO

→ [M] Mandatory data		[O] Options	[M]	[O]	[M]
Cable quality	Cable length	Cable designation	Connection, right	Plug design	Number of pins/wires (right)
K E R	0.1 ... 25	– N	LE M8 M12	G W	3 4 5
– E	– 3.5	– N	– M8	G	3

Ordering table					
Module No.	539 052	Condi- tions	Code		Enter code
↓			–		–
[M]	Cable quality	Standard	K		
		Suitable for drag chain	E		
		Suitable for robots	R		
			–		–
	Cable length	0.1 ... 25 m (0.1 ... 2.5 m in 0.1 m increments, 2.5 ... 25 m in 0.5 m increments)	...		
[O]			–		–
	Cable designation	With inscription label holder (standard)			
		Without inscription label holder	N		
[M]			–		–
	Connection, right	Open end	LE		
		Plug with connecting thread	M8		
		Plug with connecting thread, A-coded	M12		
[O]	Plug design	Straight	[2]	G	
		Angled	[2]	W	
[M]	Number of pins/wires (right)	3-pin (fitting for M8/M12 socket)	[3]	3	
		4-pin (fitting for M8/M12 socket)	[4]	4	
		5-pin (fitting for M12 socket)	[5]	5	

- [2] **G, W** Must be selected with M8, M12 connection technology at right-hand end.
Not in combination with LE connection technology at right-hand end.
- [3] **3** Not in combination with M8 connection technology at left-hand end, number of pins/wires (left-hand end) 4 and LE, M12 connection technology at right-hand end.

- [4] **4** Not in combination with M8 connection technology at left-hand end, number of pins/wires (left-hand end) 3 and LE, M12 connection technology at right-hand end.
Only in combination with LE, M12 connection technology at right-hand end.
- [5] **5** Not in combination with M8 connection technology at left-hand end and LE, M12 connection technology at right-hand end.

Transfer order code

– – – –

Plug sockets with cable SIM

Type codes

FESTO

		SIM	—	M12	—	RS	—	3	GD	—	3	—		—	
Type															
SIM	Plug socket with cable for sensors														
Electrical connection															
M12	M12x1 locknut														
K	Clip-on plug														
Welding field immunity															
	Basic type, no welding field immunity														
RS	Welding field immune														
Number of wires															
	3-wire														
4	4-wire														
8	8-wire														
Connection direction															
GD	In-line														
WD	Angled														
Cable length															
2	2 m														
2.5	2.5 m														
3	3 m														
5	5 m														
10	10 m														
Material, cable sheath															
PU	Polyurethane														
Easy cleaning															
	Basic version														
CDN	Clean Design, suitable for foodstuffs														

Plug sockets with cable SIM, KSMH, KM12

Technical data

FESTO

Technical data – Connecting cables M8x1, M12x1			
Type		KSMH	KM12
Cable attribute		Standard	
Electrical connection, left		Straight socket, M8x1, 4-pin	Straight socket, M12x1, 8-pin
Electrical connection, right		Straight plug, M8x1, 4-pin	Straight plug, M12x1, 8-pin
Operating voltage range	DC [V]	≤ 75	≤ 70
	AC [V]	≤ 60	≤ 45
Ambient temperature	[°C]	–5 ... +70	–25 ... +80
Protection class		IP68	

Technical data – Plug sockets with cable M12x1, 8-pin			
Cable attribute		Standard	
Electrical connection, left		Straight socket, M12x1, 8-pin	
Electrical connection, right		Cable, open end, 8-wire	
Operating voltage range	DC [V]	≤ 70	
	AC [V]	≤ 45	
Ambient temperature	[°C]	–25 ... +80	
Protection class		IP68	

Technical data – Plug sockets with cable M12x1, welding field immune			
Cable attribute		Standard	
Electrical connection, left		Straight or angled socket, M12x1, 3-pin	
Electrical connection, right		Cable, open end, 3-wire	
Operating voltage range	DC [V]	≤ 70	
	AC [V]	≤ 45	
Ambient temperature	[°C]	–25 ... +80	
Ambient temperature with flexible cable installation	[°C]	0 ... +80	
Protection class		IP65, IP67	

Technical data – Plug sockets with cable, clip-on			
Type		SIM-K	SIM-K-4
Cable attribute		Standard	
Electrical connection, left		Straight or angled socket, clip-on, 3-pin	Straight or angled socket, clip-on, 4-pin
Electrical connection, right		Cable, open end, 3-wire	Cable, open end, 4-wire
Operating voltage range	DC [V]	≤ 70	
	AC [V]	≤ 45	
Ambient temperature	[°C]	–40 ... +70	
Ambient temperature with flexible cable installation	[°C]	–5 ... +70	
Protection class		IP65, IP67	

Technical data – Plug sockets with cable, clip-on, Clean Design			
Cable attribute		Standard	
Electrical connection, left		Straight or angled socket, clip-on, 3-pin	
Electrical connection, right		Cable, open end, 3-wire	
Operating voltage range	DC [V]	≤ 70	
	AC [V]	≤ 45	
Ambient temperature	[°C]	–30 ... +70	
Ambient temperature with flexible cable installation	[°C]	–5 ... +70	
Protection class		IP65, IP67, IP69	

Plug sockets with cable SIM, KSMH, KM12

Technical data

FESTO

Ordering data				
Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type
Connecting cable				
Straight socket, M8x1, 4-pin	Straight plug, M8x1, 4-pin	2	175 714	KSMH-1-M8-2-M8
Straight socket, M12x1, 8-pin	Straight plug, M12x1, 8-pin	2	525 617	KM12-8GD8GS-2-PU
Plug socket with cable M12x1, basic version				
Straight socket, M12x1, 8-pin	Cable, open end, 8-wire	2	525 616	SIM-M12-8GD-2-PU
		5	525 618	SIM-M12-8GD-5-PU
Plug socket with cable M12x1, welding field immune				
Straight socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	30 450	SIM-M12-RS-3GD-3
Angled socket, M12x1, 5-pin	Cable, open end, 3-wire	2.5	30 451	SIM-M12-RS-3WD-3
Plug socket with cable, clip-on, basic version				
Straight socket, clip-on, 3-pin	Cable, open end, 3-wire	2.5	164 257	SIM-K-GD-2,5-PU
		5	164 256	SIM-K-GD-5-PU
		10	192 962	SIM-K-GD-10-PU
Angled socket, clip-on, 3-pin	Cable, open end, 3-wire	2.5	164 255	SIM-K-WD-2,5-PU
		5	164 254	SIM-K-WD-5-PU
		10	192 963	SIM-K-WD-10-PU
Straight socket, clip-on, 4-pin	Cable, open end, 4-wire	2.5	164 250	SIM-K-4-GD-2,5-PU
		5	164 251	SIM-K-4-GD-5-PU
Angled socket, clip-on, 4-pin	Cable, open end, 4-wire	2.5	164 252	SIM-K-4-WD-2,5-PU
		5	164 253	SIM-K-4-WD-5-PU
Plug socket with cable, clip-on, Clean Design				
Straight socket, clip-on, 3-pin	Cable, open end, 3-wire	2.5	525 259	SIM-K-GD-2,5-CDN
		5	525 260	SIM-K-GD-5-CDN
Angled socket, clip-on, 3-pin	Cable, open end, 3-wire	2.5	525 261	SIM-K-WD-2,5-CDN
		5	525 262	SIM-K-WD-5-CDN

Ordering data – Safety clip				
	Material	Use	Size	Part No. Type
	Polyamide	For protecting push-in connectors from inadvertent disconnection (no tool needed)	M8	548 067 NEAU-M8-GD
			M12	548 068 NEAU-M12-GD

Plug sockets and push-in T-connectors

Product overview

FESTO



- Customised fabrication of cables
- Connection sizes M8 and M12
- Interconnection of signals

Detailed product information

➔ www.festo.com/catalogue/nedu

Product overview			
Variant	Type	Electrical connection	
		Left	Right
Plug	SEA	Straight plug, M8x1, 3-pin	Screw terminals Solder lugs
Plug socket	SIE	Straight socket, M8x1, 4-pin Angled socket, M8x1, 4-pin	Screw terminals
Cable socket	NECU	Straight socket, M8x1, 4-pin	Screw terminals
Push-in T-connector	NEDU	Sockets, M8x1, 3-pin	Plug, M8x1, 4-pin Plug M12x1, 4-pin
		Sockets, M12x1, 3-pin	Plugs, M12x1, A-coded, 4-pin

General technical data – SEA		
Type	SEA-3GS-M8-S	SEA-GS-M8
Operating and environmental conditions		
Ambient temperature [°C]	–40 ... +85	
Protection class	IP65	IP67
Materials		
Housing	Polyamide	

Plug sockets and push-in T-connectors

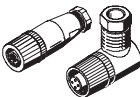
Technical data

FESTO

General technical data – SIE		
Operating and environmental conditions		
Ambient temperature	[°C]	–40 ... +85
Protection class		IP67
Materials		
Housing		Polyamide

General technical data – NECU		
Operating and environmental conditions		
Ambient temperature	[°C]	–40... +80
Protection class		IP67
Materials		
Housing		Polybutene terephthalate

General technical data – NEDU			
Type	NEDU-M8D3-M8T4	NEDU-M8D3-M12T4	NEDU-M12D5-M12T4
Operating and environmental conditions			
Ambient temperature	[°C]	–25 ... +85	
Protection class	IP65, IP67		
Materials			
Housing	Polyamide	Reinforced polyurethane	
Circuit			

Technical data and order codes						
	Electrical connection		Operating voltage range		Part No.	Type
	Left	Right	[V DC]	[V AC]		
Plug SEA						
	Straight plug, M8x1, 3-pin	Screw terminals	≤ 75	≤ 48	192 009	SEA-3GS-M8-S
		Solder lugs	≤ 75	≤ 60	18 696	SEA-GS-M8
Plug socket SIE						
	Straight socket, M12x1, 4-pin	Screw terminals	≤ 150	≤ 125	18 494	SIE-GD
	Angled socket, M8x1, 4-pin		≤ 150	≤ 125	12 956	SIE-WD-TR
Cable socket NECU						
	Straight socket, M8x1, 4-pin	Screw terminals	0 ... 60	0 ... 60	544 392	NECU-M8G4
Push-in T-connector NEDU						
	Socket, M8x1, 3-pin	Plug, M8x1, 4-pin	32	32	544 391	NEDU-M8D3-M8T4
		Plug, M12x1, 4-pin	60	60	541 597	NEDU-M8D3-M12T4
	Socket, M12x1, 3-pin	Plug, M12x1, A-coded, 4-pin	250	250	541 596	NEDU-M12D5-M12T4