



# Connecting cables NEBU, plug sockets with cable SIM

Product overview



- 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](http://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	172
			Plug M8x1	3	1	
			Plug M12x1	4	1	
	NEBU-M8	Socket M8x1	Open end	3, 4, 5	0.1 ... 25	172
			Plug M8x1			
			Plug M12x1			
	NEBU-M12	Socket M12x1	Open end	3, 4, 5	0.1 ... 25	172
Plug M8x1						
Plug M12x1						
SIM-M12-8	Socket M12x1	Open end	8	2; 5	177	
		Plug M8x1				
		Plug M12x1				
KSMH-1-M8-2-M8	Socket M8x1	Plug M8x1	4	2		
KM12-8	Socket M12x1	Plug M12x1	8	2		
With switching status display	NEBU-M8	Socket M8x1	Open end	3, 4, 5	0.1 ... 25	172
			Plug M8x1			
			Plug M12x1			
	NEBU-M12	Socket M12x1	Open end	3, 4, 5	0.1 ... 25	172
			Plug M8x1			
			Plug M12x1			
Welding field immune	SIM-M12-RS	Socket M12x1	Open end	3	3	177
With clip-on socket	SIM-K	Socket, clip-on	Open end	3	2.5; 5; 10	177
				4	2.5; 5	
For food industry, easy to clean	SIM-K-CDN	Socket, clip-on	Open end	3	2.5; 5	177

# Connecting cables NEBU, plug sockets with cable SIM

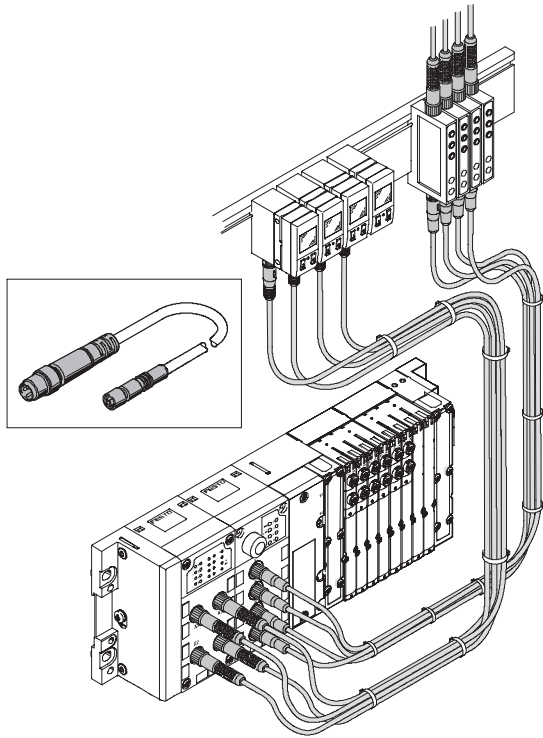
Key features



## Cable qualitys

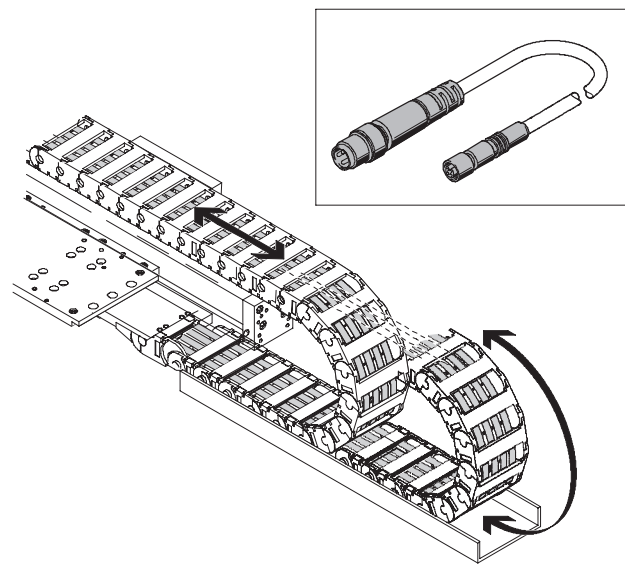
The sensor cables can be configured using the modular system. You can choose from qualitys that are suited to standard, drag chain or robot applications.

### Standard application



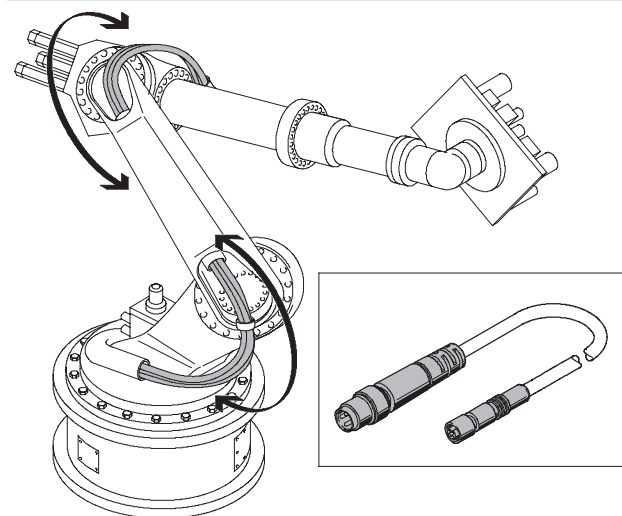
- Standard applications are characterised by fixed cable installation or low to average mechanical loads.

### 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

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



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 <sup>1)</sup>	–	Green LED	
Switching status display <sup>1)</sup>	–	Yellow LED	
Cable quality <sup>1)</sup>	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 173 and modular products174

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
	DC [V]	125	75

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

1) Possible combinations → Ordering table 173 and modular products174

Electrical data – Socket M12x1			
Electrical connection, left <sup>1)</sup>	Socket M12x1, 5-pin, straight or angled		
Electrical connection, right <sup>1)</sup>	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 173 and modular products174

# Connecting cables NEBU

Technical data

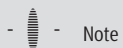
FESTO

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		
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	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	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 → 174.



Note

Pin allocations and circuit diagrams → [www.festo.com](http://www.festo.com)

Ordering data – Inscription labels, safety clips						
	Material	Use	Size	Part No.	Type	PU <sup>1)</sup>
	Polycarbonate	For insertion in the inscription label holder	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



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
<b>Order example</b>					
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, DC (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

<b>M</b> Mandatory data		<b>O</b> Options	<b>M</b>	<b>O</b>	<b>M</b>
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
- <b>E</b>	- <b>3.5</b>	- <b>N</b>	- <b>M8</b>	- <b>G</b>	- <b>3</b>

Ordering table						
Module No.	539 052			Condi- tions	Code	Enter code
<b>M</b>	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)			...	
<b>O</b>					-	-
	Cable designation	With inscription label holder (standard)				
		Without inscription label holder			N	
<b>M</b>					-	-
	Connection, right	Open end			LE	
		Plug with connecting thread			M8	
		Plug with connecting thread, A-coded			M12	
<b>O</b>	Plug design	Straight	[2]		G	
		Angled	[2]		W	
<b>M</b>	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

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

# Plug sockets with cable SIM, KSMH, KM12

Technical data

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



Ordering data				
Electrical connection, left	Electrical connection, right	Cable length [m]	Part No.	Type
<b>Connecting cable</b>				
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
<b>Plug socket with cable M12x1, basic version</b>				
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
<b>Plug socket with cable M12x1, welding field immune</b>				
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
<b>Plug socket with cable, clip-on, basic version</b>				
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
<b>Plug socket with cable, clip-on, Clean Design</b>				
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



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

Detailed product information

➔ [www.festo.com/catalogue/nedu](http://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	Screw terminals
		Angled socket, M8x1, 4-pin	
Cable socket	NECU	Straight socket, M8x1, 4-pin	Screw terminals
Push-in T-connector	NEDU	Sockets, M8x1, 3-pin	Plug, M8x1, 4-pin
		Sockets, M12x1, 3-pin	Plug M12x1, 4-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



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]		
<b>Plug SEA</b>						
	Straight plug, M8x1, 3-pin	Screw terminals	≤ 75	≤ 48	192 009	SEA-3GS-M8-S
		Solder lugs	≤ 75	≤ 60	18 696	SEA-GS-M8
<b>Plug socket SIE</b>						
	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
<b>Cable socket NECU</b>						
	Straight socket, M8x1, 4-pin	Screw terminals	0 ... 60	0 ... 60	544 392	NECU-M8G4
<b>Push-in T-connector NEDU</b>						
	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