

## Universal connecting cables

**FESTO**



Product range overview

Function	Version	Type	Connection technology (right)	Cable characteristic	Length	→ Page/ Internet
Electrical connecting cable	<b>Electrical connection (left), socket M12</b>					
	5-pin	NEBU-M12G5	Plug, open cable end	Suitable for energy chains	5 m, 7.5 m, 10 m	4
	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	7
	<b>Electrical connection (left), socket G7/8</b>					
	5-pin	NEBU-G78	Open cable end	Standard	2 m	12

## 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 <sup>2</sup> ]
	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

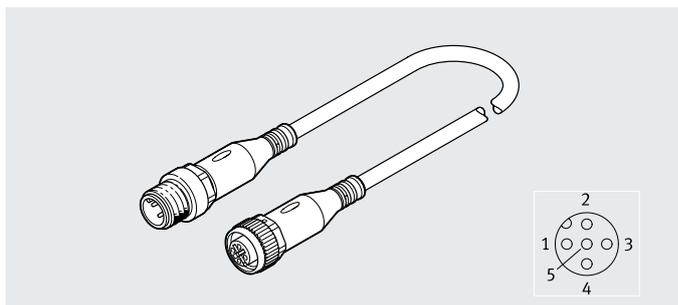
010	Plug
	None
G	Straight

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

## Datasheet

### Connecting cable NEBU-M12

- Connecting cable for connecting inputs/outputs
- Pre-assembled at one end, pre-assembled at both ends
- Cable lengths 5 m, 7.5 m and 10 m
- 5 cores
- M12x1, 5-pin



#### General technical data

Conforms to standard	EN 61076-2-101 EN 61076-2-104
Cable identification	Without inscription label holder
Contact durability	100

#### Technical data – Electrical connection 1

Function	Field device side
Design	Round
Connection type	Socket
Cable outlet	Straight
Connection technology	M12x1, A-coded, to EN 61076-2-101
Number of pins/cores	5
Assigned pins/cores	5
Type of mounting	Screw-type lock

#### Technical data – Electrical components

Operating voltage range	[V DC]	0 ... 60
	[V AC]	0 ... 60
Surge resistance	[kV]	1.5
Current rating at 40 °C	[A]	4
Pollution degree		3

#### Technical data – Cable

Cable characteristic	Suitable for energy chains	
Test conditions, cable	Bending strength: to Festo standard	
	Test conditions on request	
	Energy chain: 5 million cycles, bending radius 75 mm	
Cable diameter	[mm]	7
Cable diameter tolerance	[mm]	±0.1
Bending radius, fixed cable installation	[mm]	21
Bending radius, flexible cable installation	[mm]	71
Cable structure	[mm <sup>2</sup> ]	5x 1
Nominal conductor cross-section	[mm <sup>2</sup> ]	1

#### Technical data – Electrical connection 2

Function	Control side	
Connection type	Cable	Plug
Design	–	Round
Cable outlet	–	Straight
Connection technology	Open end	M12x1, A-coded to EN 61076-2-101
Number of pins/cores	5	5
Assigned pins/cores	5	5
Wire ends	Stripped Cut off bluntly	–
Type of mounting	–	Screw-type lock

## Datasheet

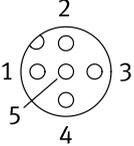
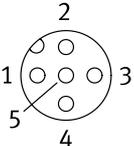
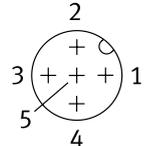
Materials	
Housing	TPE-U(PUR)
Housing colour	Black
Cable sheath	TPE-U(PUR)
Cable sheath colour	Grey
Insulating sheath	PP
Seals	NBR
Pin contacts	Gold-plated copper alloy
Screw-type lock	Nickel-plated brass
Note on materials	RoHS-compliant
	Halogen-free
	Free of phosphoric acid ester
Special characteristics	Oil-resistant
LABS (PWIS) conformity	VDMA24364-B2-L

Operating and environmental conditions		
Ambient temperature	[°C]	-25 ... +80
Ambient temperature with flexible cable installation	[°C]	-5 ... +80
Corrosion resistance class CRC <sup>1)</sup>		2
CE marking (see declaration of conformity) <sup>2)</sup>		To EU Low Voltage Directive
		To EU RoHS Directive
UKCA marking (see declaration of conformity) <sup>2)</sup>		To UK regulations for electrical equipment
		To UK RoHS regulations
Degree of protection		IP65; IP68; IP69K
Note on degree of protection		In mounted state

1) More information [www.festo.com/x/topic/crc](http://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](http://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 <sup>1)</sup>	Pin	Plug
<b>Electrical connection, socket, 5-pin, M12 – open cable end, 5-pin</b>			<b>Open cable end</b>	
	1	BN	–	
	2	WH	–	
	3	BU	–	
	4	BK	–	
	5	GY	–	
<b>Electrical connection, socket, 5-pin, M12 – plug, 5-pin</b>			<b>M12 plug</b>	
	1	BN	1	
	2	WH	2	
	3	BU	3	
	4	BK	4	
	5	GY	5	

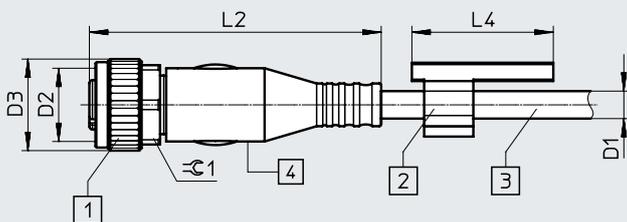
1) To IEC 757

Datasheet

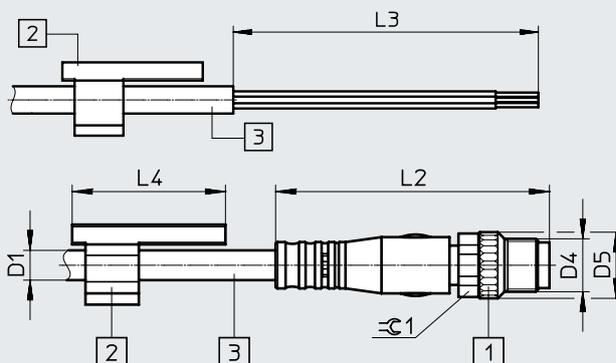
Dimensions

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Connection technology, left



Connection technology, right



[1] Socket M12x1

[2] Inscription label holder

[3] Cable, length depending on the order

[4] Display field with version P, N or P2

Connection technology, left	D1 ø	D2	D3 ø	L2	L4	H1	≈±1
<b>NEBU-M12G5-...-Q8N</b>							
Straight socket	7	M12x1	15	47.5	-	-	13

Connection technology, right	D1 ø	D4	D5 ø	L2	L3	L4	H1	≈±1
<b>NEBU-M12G5-...-Q8N</b>								
Open end	7	-	-	-	50	-	-	-
Straight plug	7	M12x1	15	54.5	-	-	-	13

Ordering data

	Cable characteristic	Cable length [m]	Outlet direction	Special features	Product weight [g]	Part no.	Type
<b>Socket, 5-pin, M12 – open cable end, 5-core</b>							
	Suitable for energy chains	5	Straight	Nominal conductor cross section 1 mm <sup>2</sup>	422	<b>8078303</b>	<b>NEBU-M12G5-E-5-Q8N-LE5</b>
		10			822	<b>8078304</b>	<b>NEBU-M12G5-E-10-Q8N-LE5</b>

Ordering data

	Cable characteristic	Cable length [m]	Outlet direction	Special features	Product weight [g]	Part no.	Type
<b>Socket, 5-pin, M12 – plug, 5-pin, M12</b>							
	Suitable for energy chains	5	Straight – straight	Nominal conductor cross section 1 mm <sup>2</sup>	434	<b>574321</b>	<b>NEBU-M12G5-E-5-Q8N-M12G5</b>
		7.5			635	<b>574322</b>	<b>NEBU-M12G5-E-7.5-Q8N-M12G5</b>
		10			835	<b>574323</b>	<b>NEBU-M12G5-E-10-Q8N-M12G5</b>

Ordering data – Accessories

Designation	Part no.	Type
<b>Plug connector</b>		
Plug connectors for self-assembly	-	→ Internet: necu

## Datasheet

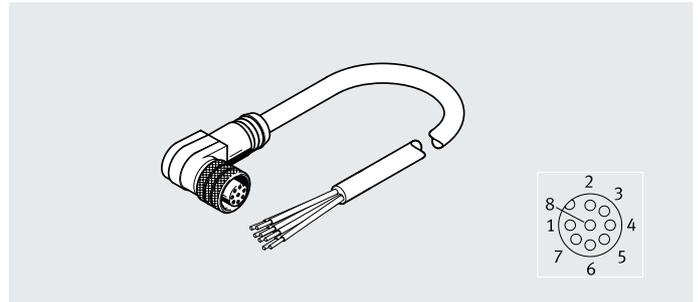
### Plug socket with cable

#### 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 identification	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 – Electrical components				
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	≥66
Cable diameter	[mm]	6.3	6.2
Cable diameter tolerance	[mm]	±0.2	±0.2
Cable structure	[mm <sup>2</sup> ]	8x 0.25	
Nominal conductor cross-section	[mm <sup>2</sup> ]	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)	–
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

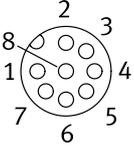
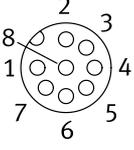
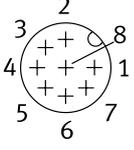
Operating and environmental conditions			
Type	NEBU	SIM	KM12
Ambient temperature	[°C]	–25 ... +80	–25 ... +80
	With flexible cable installation [°C]	–5 ... +80	–5 ... +80
Corrosion resistance class CRC <sup>1)</sup>	2	2	2
CE marking (see declaration of conformity) <sup>2)</sup>	To EU RoHS Directive	To EU RoHS Directive	To EU RoHS Directive
UKCA marking (see declaration of conformity) <sup>2)</sup>	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](http://www.festo.com/x/topic/crc)

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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 <sup>1)</sup>	Pin	Plug
<b>Electrical connection, socket, 8-pin, M12 – open cable end</b>				
	1	WH	–	–
	2	BN	–	
	3	GN	–	
	4	YE	–	
	5	GY	–	
	6	PK	–	
	7	BU	–	
	8	RD	–	
<b>Electrical connection, socket, 8-pin, M12 – plug, 8-pin</b>				
	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	

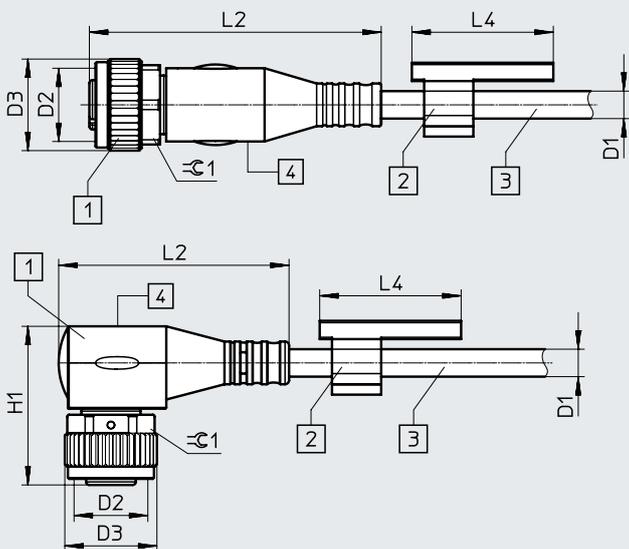
1) To IEC 757

Datasheet

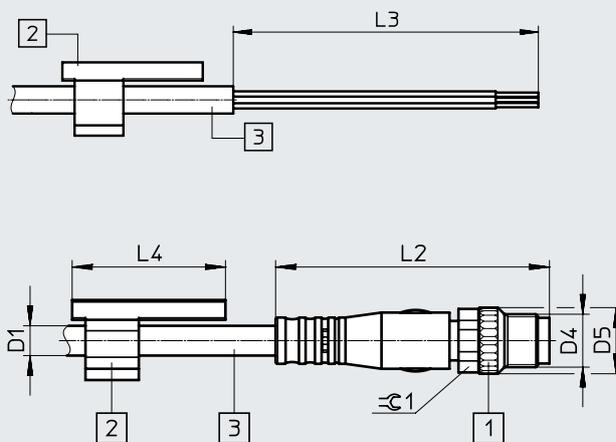
Dimensions

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Connection technology, left



Connection technology, right



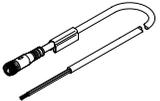
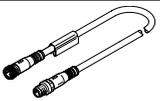
- [1] Socket M12x1
- [2] Inscription label holder, must be ordered separately as an accessory

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

Connection technology, left	D1 ø	D2	D3 ø	L2	L4	H1	≈C1
<b>NEBU</b>							
Angled socket	6.3	M12x1	14.5	33.5	-	26.2	-
<b>SIM</b>							
Straight socket	6.2	M12x1	14.5	-	-	-	-
<b>KM12</b>							
Straight socket	6.2	M12x1	-	-	-	-	-

Connection technology, right	D1 ø	D4	D5 ø	L2	L3	L4	≈C1
<b>NEBU</b>							
Open end	6.3	-	-	-	70	-	-
<b>SIM</b>							
Open end	6.2	-	-	-	70	-	-
<b>KM12</b>							
Straight plug	6.2	M12x1	14.6	-	-	-	-

## Datasheet

Ordering data						
	Cable characteristic	Cable length [m]	Outlet direction	Product weight [g]	Part no.	Type
<b>Socket, 8-pin, M12 – open cable end, 8-core</b>						
	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
<b>Socket, 8-pin, plug M12, 8-pin, M12</b>						
	–	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 – Electrical components

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 <sup>2</sup> ]	5x 1.5
Nominal conductor cross-section	[mm <sup>2</sup> ]	1.5

#### Technical data – Electrical connection 2

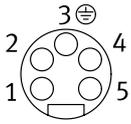
Function	Control side
Connection type	Cable
Connection technology	Open end
Number of pins/cores	5
Assigned pins/cores	5

## 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 <sup>1)</sup>		1
CE marking (see declaration of conformity) <sup>2)</sup>		To EU Low Voltage Directive
UKCA marking (see declaration of conformity) <sup>2)</sup>		To UK regulations for electrical equipment
Pollution degree		3

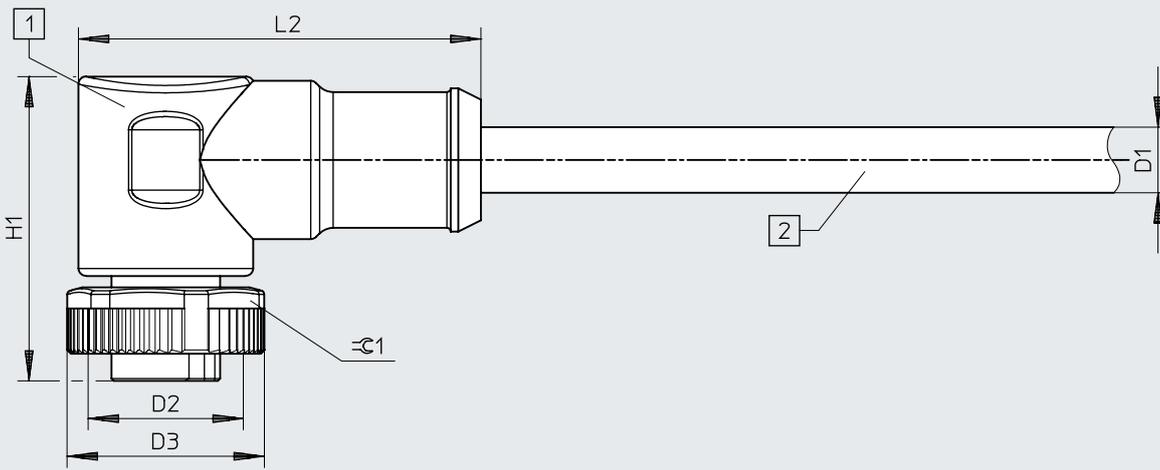
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Wiring (socket view)				
Socket	Pin	Wire colour <sup>1)</sup>	Pin	Plug
<b>Electrical connection, socket, 5-pin, G7/8 – open cable end</b>				
	1	BK	-	-
	2	BU	-	-
	3	GN YE	-	-
	4	BN	-	-
	5	WH	-	-

1) To IEC 757

### Dimensions

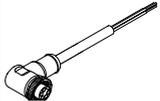
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[1] Socket G7/8                      [3] Cable, length 2 m

	D1	D2	D3	L2	H1	⌀1
	∅		∅			
NEBU-G78W5	8.7	7/8"	26	53	40.4	24

Datasheet

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