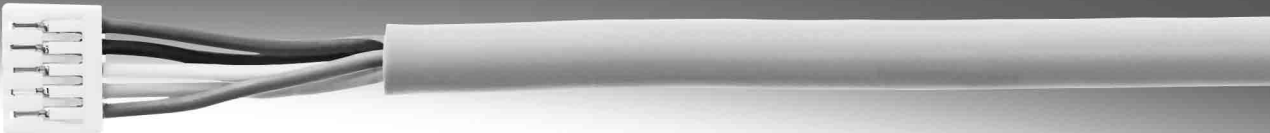


Connecting cables NEBS, for sensors



## Connecting cables NEBS, for sensors

Product range overview

Function	Design	Type	Connection technology (Electrical connection 2)	Cable characteristic	Length	→ Page/ Internet
Connecting cable	<b>Electrical connection 1: socket, rectangular design L1 (circuit board connector)</b>					
	4-pin	NEBS-L1G4	Plug M12, 4-pin Open cable end	Standard	1 m 2.5 m 5 m	4
	<b>Electrical connection 1: socket M12</b>					
	5-pin	NEBS-M12G5	Open cable end	Suitable for energy chains	5 m 10 m 15 m	8
	12-pin	NEBS-M12G12	Socket M12, 12-pin Open cable end	Basic	0.5 m 2 m 5 m 10 m	10
	<b>Electrical connection 1: plug M12</b>					
	12-pin	NEBS-SM12G12	Plug M12, 12-pin Open cable end	Suitable for energy chains	0.3 m 0.5 m 5 m	13
	<b>Electrical connection 1: plug M16</b>					
	24-pin	NEBS-SM16G24	Open cable end	Standard	5 m 10 m	17

# Connecting cables NEBS, for sensors

Type codes

NEBS - M12 G 12 - K S - 0.5 - N - M12 G 12

Function	
NEBS	Connecting cable for sensors

Connection technology on the left (field device side)	
L1	Socket, rectangular design L1
M12	Socket M12x1
SM12	Plug M12x1
SM16	Plug M16x0.75

Cable outlet on the left	
G	Straight

Number of pins/wires (on the left)	
4	4-pin
5	5-pin
12	12-pin
24	24-pin

Cable characteristic	
E	Suitable for energy chains
K	Basic/Standard

Cable design	
-	Standard
S	With screening

Cable length	
0,3	0.3 m
0.5	0.5 m
1	1 m
2	2 m
2,5	2.5 m
5	5 m
10	10 m
15	15 m

Cable identification	
-	With inscription label holder
N	Without inscription label holder

Connection technology on the right (controller side)	
LE	Open end
M12	Plug M12x1
SM12	Socket M12x1

Plug/socket	
-	Open end
G	Straight
W	Angled

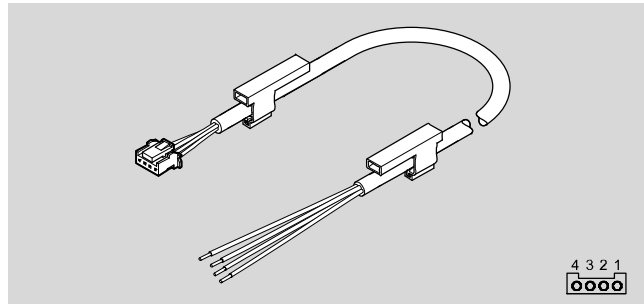
Number of pins/wires (on the right)	
4	4-pin
5	5-pin
12	12-pin
24	24-pin

## Connecting cables, socket, rectangular design L1, 4-pin

Technical data

### Connecting cable NEBS-L1G4

- Pre-assembled at one or both ends
- Cable lengths 1 m, 2.5 m and 5 m
- 4 wires
- Socket, rectangular design L1



General technical data		
Type	NEBS-...-M12G4	NEBS-...-LE4
Cable designation	Without label holder	–
Contact durability	100	–

Technical data – Electrical connection 1		
Type	NEBS-...-M12G4	NEBS-...-LE4
Function	Field device side	–
Connection type	Socket	Socket
Cable outlet	Straight	–
Design	Angular	–
Connection technology	Connection pattern L1]	Rectangular design L1
Number of pins/wires	4	4
Assigned pins/wires	4	–
Type of mounting	Snap-locking	–

Technical data – Electrical connection 2		
Type	NEBS-...-M12G4	NEBS-...-LE4
Function	Controller side	–
Connection type	Plug	Cable
Cable outlet	Straight	–
Design	Round	–
Connection technology	M12x1, A-coded, to EN 61076-2-101	Open end
Number of pins/wires	4	4
Assigned pins/wires	4	–
Type of mounting	Screw-type lock with 13 mm A/F hexagon and longitudinal knurl	–

Technical data – Electrical components		
Operating voltage range	[V DC]	0 ... 30
Surge resistance	[kV]	0.8
Current rating at 40 °C	[A]	1
Contamination level		2

# Connecting cables, socket, rectangular design L1, 4-pin

Technical data

Technical data – Cable		
Type	NEBS-...-M12G4	NEBS-...-LE4
Cable diameter [mm]	4.5	4.1
Cable diameter tolerance [mm]	±0.1	–
Cable characteristic	Standard	Standard
Cable test conditions	Test conditions on request	Test conditions on request
	–	Bending strength: to Festo standard
Bending radius, fixed cable installation [mm]	≥14	–
Bending radius, flexible cable installation [mm]	≥46	–
Cable composition [mm <sup>2</sup> ]	4x0.25	4x0.14
Conductor nominal cross section [mm <sup>2</sup> ]	0.25	0.14

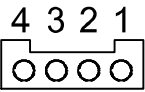
Materials		
Type	NEBS-...-M12G4	NEBS-...-LE4
Housing	PA	PA
	TPE-U(PUR)	
Housing colour	Black	–
	White	
Screw-type lock	Nickel-plated brass	–
Pin contacts	Tin-plated bronze	–
	Gold-plated brass	–
Cable sheath	TPE-U(PUR)	PVC
Cable sheath colour	Grey	Grey
Insulating sheath	PP	PP
Note on materials	RoHS-compliant	RoHS-compliant
	Free of halogen	Free of copper and PTFE

Operating and environmental conditions		
Type	NEBS-...-M12G4	NEBS-...-LE4
Ambient temperature [°C]	–20 ... +60	–20 ... +60
Temperature of medium [°C]	–5 ... +60	–5 ... +60
Storage temperature [°C]	–20 ... +60	–
Corrosion resistance class CRC <sup>1)</sup>	2	4
Degree of protection	IP65	IP40
	IP67	
	IP69K	
Note on degree of protection	In assembled state	–
	IP40 for plug connection pattern L1]	

- 1) Corrosion resistance class CRC 2 to Festo standard FN 940070  
 Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.  
 Corrosion resistance class CRC 4 to Festo standard FN 940070  
 Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, for instance in the chemical or food industries. These applications may need to be supported by special tests (→ also FN 940082) using appropriate media.

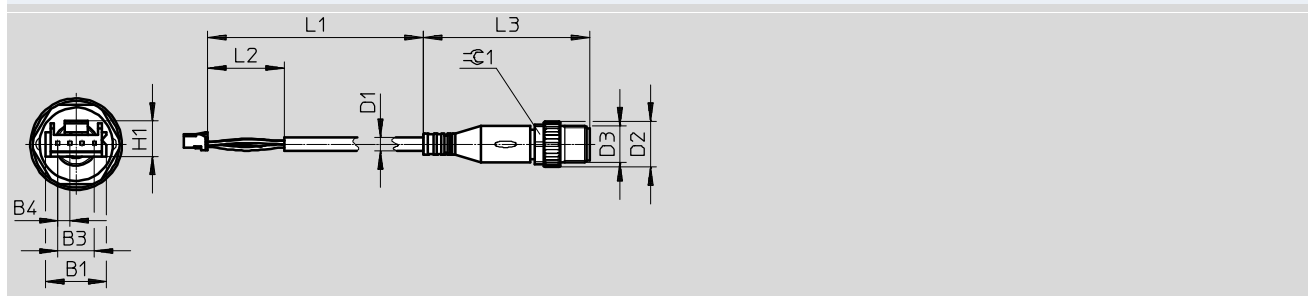
# Connecting cables, socket, rectangular design L1, 4-pin

Technical data

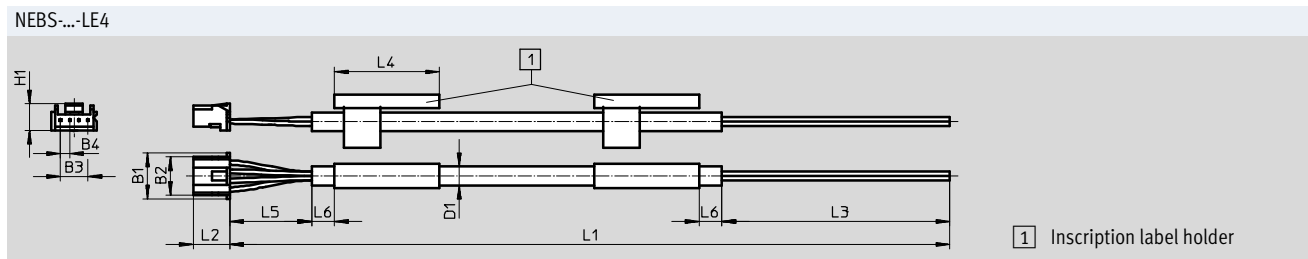
Circuitry (socket view)				
Electrical connection 1	Pin	Wire colour <sup>1)</sup>	Pin	Electrical connection 2
NEBS-...-LE4				
	1	BN	-	-
	2	BK	-	
	3	WH	-	
	4	BU	-	

1) To IEC 757

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



Type	B1	B3	B4	D1	D2	D3	H1	L1	L2	L3	⌀
NEBS-L1G4-K-1-N-M12G4	10	6	2	4.5	15	M12x1	5.8	1000	25	54.5	13




Type	B1	B2	B3	B4	D1	H1	L1	L2	L3	L4	L5	L6
NEBS-L1G4-K-2.5-LE4	10	8.4	6	2	4.1	5.8	2500	8	50	23	15	≥ 5
5000												
NEBS-L1G4-K-5-LE4												

## Connecting cables, socket, rectangular design L1, 4-pin

Technical data

Ordering data							
Electrical connection				Cable length [m]	Weight [g]	Part No.	Type code
Connection 1		Connection 2					
Socket, rectangular design L1	4-pin	Plug M12x1, A-coded	4-pin	1	40	<b>8091514</b>	<b>NEBS-L1G4-K-1-N-M12G4</b>
		Open end	4-wire	2.5	–	<b>572576</b>	<b>NEBS-L1G4-K-2.5-LE4</b>
				5	–	<b>572577</b>	<b>NEBS-L1G4-K-5-LE4</b>

Ordering data – Accessories						
	Usage		Size	Part No.	Type code	PU <sup>1)</sup>
	Inscription label for insertion in label holder		23x4 mm	<b>541598</b>	<b>ASLR-L-423</b>	<b>30</b>

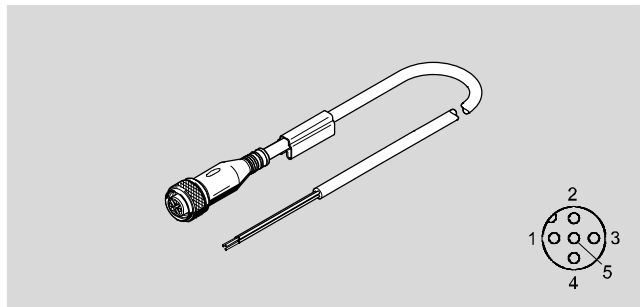
1) Packaging unit

# Connecting cables, socket M12x1, 5-pin

Technical data

**Connecting cable**  
**NEBS-M12G5**

- Pre-assembled at one end
- Cable lengths: 5 m and 10 m
- 5 wires
- Socket M12x1



General technical data	
Cable identification	With 2x label holders
Degree of protection	IP65, IP67
Note on degree of protection	In assembled state

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/wires	5
Assigned pins/wires	5
Type of mounting	Screw-type lock

Technical data – Electrical connection 2	
Function	Controller side
Connection type	Cable
Connection technology	Open end
Number of pins/wires	5
Assigned pins/wires	5

Technical data – Electrical components		
Operating voltage range	[V DC]	0 ... 60
	[V AC]	0 ... 48
Surge resistance	[kV]	1.5
Current rating at 40 °C	[A]	4
Shielding		Yes
Contamination level		3

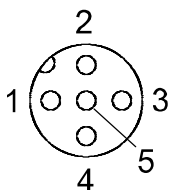
Technical data – Cable		
Cable diameter	[mm]	5.25
Cable diameter tolerance	[mm]	±0.2
Cable design	[mm <sup>2</sup> ]	5x0.34
		Shielded
Nominal conductor cross section	[mm <sup>2</sup> ]	0.34
Cable characteristics		Suitable for energy chains
Cable test conditions		Test conditions on request
Bending radius, fixed cable installation	[mm]	≥26
Bending radius, flexible cable installation	[mm]	≥52

# Connecting cables, socket M12x1, 5-pin

Technical data

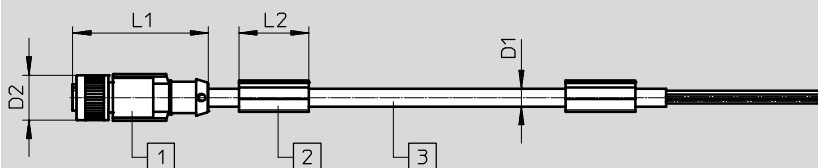
Materials	
Seals	NBR
Pin contacts	Nickel-plated and gold-plated bronze
Cable sheath	TPE-U(PUR)
Cable sheath colour	Black
Insulating sheath	PP
Note on materials	RoHS-compliant

Operating and environmental conditions		
Ambient temperature	[°C]	-25 ... +60
Ambient temperature with flexible cable installation	[°C]	-25 ... +60

Circuitry (socket view)				
Electrical connection 1	Pin	Wire colour <sup>1)</sup>	Pin	Electrical connection 2
	1	BN	-	-
	2	WH	-	
	3	BU	-	
	4	BK	-	
	5	GY	-	

1) To IEC 757

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



1 Socket, straight, M12x1, A-coded     
 2 Label holder     
 3 Cable, length depending on the order

Type code	D1 ∅	D2 ∅	L1	L2
NEBS-M12G5-ES-5-LE5	5.25	14.8	44.5	22
NEBS-M12G5-ES-10-LE5				

Ordering data				Cable length [m]	Weight [g]	Part no.	Type code
Electrical connection		Electrical connection					
Connection 1		Connection 2					
Socket, straight design	5-pin	Open end	5-wire	5	276	<b>8030962</b>	<b>NEBS-M12G5-ES-5-LE5</b>
				10	528	<b>8030963</b>	<b>NEBS-M12G5-ES-10-LE5</b>

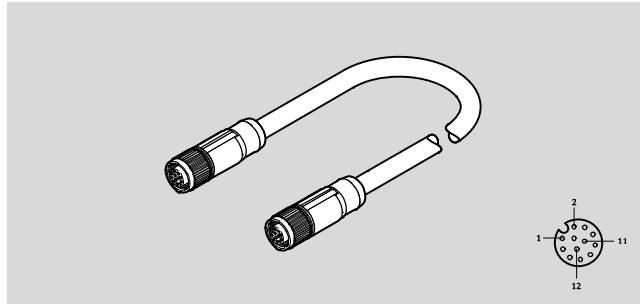
# Connecting cables, socket M12x1, 12-pin

Technical data

FESTO

## Connecting cable NEBS-M12G12

- Pre-assembled at one or both ends
- Cable lengths: 0.5 m, 2 m, 5 m and 10 m
- 12 wires
- Socket M12x1



General technical data	
Cable identification	With inscription label holder

Technical data – Electrical connection 1	
Connection type	Socket
Cable outlet	Straight
Connection technology	M12x1, A-coded
Number of pins/wires	12

Technical data – Electrical connection 2		
Connection type	Socket	Cable
Cable outlet	Straight	–
Connection technology	M12x1, A-coded	Open end
Number of pins/wires	12	12

Technical data – Electrical		
Electrical connection 2	Socket, M12x1, A-coded	Cable, open end
Nominal operating voltage [V DC]	30	30
Operating voltage range [V DC]	0 ... 30	0 ... 30
Surge resistance [kV]	0.8	–
Current rating at 40 °C [A]	1.5	1.5
Contamination level	3	3

Technical data – Cable		
Cable diameter [mm]	8.5	
Cable diameter tolerance [mm]	±0.2	
Cable design [mm <sup>2</sup> ]	12x0.14	
	Shielded	
Nominal conductor cross section [mm <sup>2</sup> ]	0.14	
Cable characteristic	Basic	
Minimum cable bending radius [mm]	85	
Cable test conditions	Bending strength: to Festo standard	

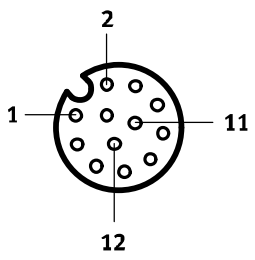
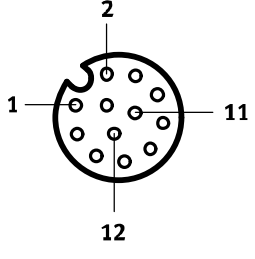
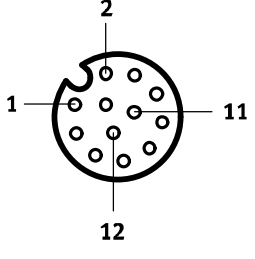
Materials	
Screw-type lock	Die-cast zinc
Seals	NBR
Pin contacts	Nickel-plated and gold-plated brass
Cable sheath	TPE-U(PUR)
Cable sheath colour	Black
Note on materials	RoHS-compliant

# Connecting cables, socket M12x1, 12-pin

Technical data

Operating and environmental conditions	
Ambient temperature [°C]	-30 ... +80
Ambient temperature with flexible cable installation [°C]	-25 ... +80
Degree of protection	IP67
Corrosion resistance class CRC <sup>1)</sup>	0

1) Corrosion resistance class CRC 0 to Festo standard FN 940070  
 No corrosion stress. Applies to small, optically irrelevant standard parts such as threaded pins, circlips and clamping sleeves which are usually only available in a phosphated or burnished version (and possibly oiled) as well as to ball bearings (for components < CRC 3) and plain bearings.

Circuitry (socket view)				
Electrical connection 1	Pin	Wire colour <sup>1)</sup>	Pin	Electrical connection 2
Electrical connection, socket M12x1, 12-pin – open cable end				
	1	BN	-	-
	2	BU	-	
	3	WH	-	
	4	GN	-	
	5	PK	-	
	6	YE	-	
	7	BK	-	
	8	GY	-	
	9	RD	-	
	10	VT	-	
	11	GY PK	-	
	12	RD BU	-	
Electrical connection, socket M12x1, 12-pin – socket M12x1, 12-pin				
	1	BN	1	
	2	BU	2	
	3	WH	3	
	4	GN	4	
	5	PK	5	
	6	YE	6	
	7	BK	7	
	8	GY	8	
	9	RD	9	
	10	VT	10	
	11	GY PK	11	
	12	RD BU	12	

1) To IEC 757

# Connecting cables, socket M12x1, 12-pin

Technical data

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

1 Socket, straight, M12x1, A-coded      2 Inscription label holder      3 Cable, length depending on the order

Type code	D1 Ø	D2 Ø	L1	L2
NEBS-M12G12-KS-05-SM12G12	8.5	14.8	45.2	22
NEBS-M12G12-KS-2-SM12G12				

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

1 Socket, straight, M12x1, A-coded      2 Inscription label holder      3 Cable, length depending on the order

Type code	D1 Ø	D2 Ø	L1	L2
NEBS-M12G12-KS-5-LE12	8.5	14.8	45.2	22
NEBS-M12G12-KS-10-LE12				

**Ordering data**

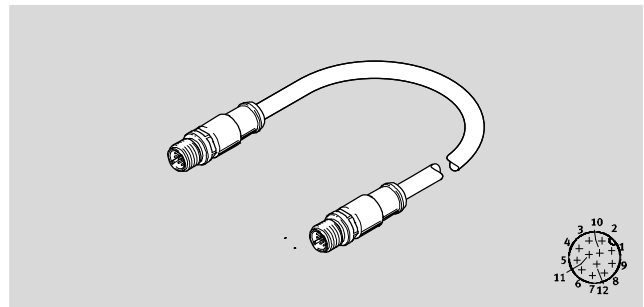
Electrical connection		Cable length [m]	Weight [g]	Part No.	Type code			
Connection 1	Connection 2							
Socket, straight design	12-pin	Socket, straight design	12-pin	0.5	87	<b>3056124</b>	<b>NEBS-M12G12-KS-05-SM12G12</b>	
		Socket, straight design	12-pin	2	223	<b>3058527</b>	<b>NEBS-M12G12-KS-2-SM12G12</b>	
	Open end	12-wire	Open end	12-wire	5	492	<b>3058614</b>	<b>NEBS-M12G12-KS-5-LE12</b>
			Open end	12-wire	10	945	<b>2912452</b>	<b>NEBS-M12G12-KS-10-LE12</b>

# Connecting cables, plug M12x1, 12-pin

Technical data

**Connecting cable**  
**NEBS-SM12G12**

- Pre-assembled at one or both ends
- Cable lengths: 0.3 m, 0.5 m and 5 m
- 12 wires
- Plug M12x1



General technical data	
Conforms to standard	EN 61076-2-101
Cable identification	With accessories

Technical data – Electrical connection 1	
Function	Field device side
Connection type	Plug
Cable outlet	Straight
Design	Round
Connection technology	M12x1, A-coded, to EN 61076-2-101
Number of pins/wires	12
Assigned pins/wires	12
Type of mounting	Screw-type lock with hexagon, size 13

Technical data – Electrical connection 2		
Function	Controller side	Controller side
Connection type	Plug	Cable
Cable outlet	Straight	–
Design	Round	–
Connection technology	M12x1, A-coded, to EN 61076-2-101	Open end
Wire ends	–	Cut off bluntly
Number of pins/wires	12	12
Assigned pins/wires	12	12
Type of mounting	Screw-type lock with hexagon, size 13	–

Technical data – Electrical		
Operating voltage range	[V DC]	0 ... 30
	[V AC]	0 ... 30
Surge resistance	[kV]	0.5
Current rating at 40 °C	[A]	1.5
Contamination level		3
Contact durability		100

# Connecting cables, plug M12x1, 12-pin

Technical data

Technical data – Cables		
Cable diameter	[mm]	6.5
Cable design	[mm <sup>2</sup> ]	12x0.25
Nominal conductor cross section	[mm <sup>2</sup> ]	0.25
Cable characteristic		Suitable for energy chains
Bending radius, fixed cable installation	[mm]	≥32
Bending radius, flexible cable installation	[mm]	≥65
Cable test conditions		Test conditions on request

Materials	
Housing	TPE-U(PUR)
Housing colour	Black
Screw-type lock	Nickel-plated die-cast zinc
Pin contacts	Brass, gold-plated
Cable sheath	TPE-U(PUR)
Cable sheath colour	Black
Note on materials	RoHS-compliant

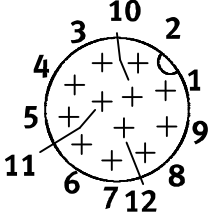
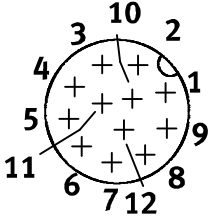
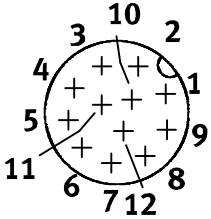
Operating and environmental conditions		
Ambient temperature	[°C]	-5 ... +70
Ambient temperature with flexible cable installation	[°C]	-5 ... +70
Degree of protection		IP67
Note on degree of protection		In assembled state
Corrosion resistance class CRC <sup>1)</sup>		1

1) Corrosion resistance class CRC 1 to Festo standard FN 940070

Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

# Connecting cables, plug M12x1, 12-pin

Technical data

Circuitry (plug view)				
Electrical connection 1	Pin	Wire colour <sup>1)</sup>	Pin	Electrical connection 2
Electrical connection, plug M12x1, 12-pin – open cable end				
	1	BN	-	-
	2	BU	-	
	3	WH	-	
	4	GN	-	
	5	PK	-	
	6	YE	-	
	7	BK	-	
	8	GY	-	
	9	RD	-	
	10	VT	-	
	11	GY PK	-	
	12	RD BU	-	
Electrical connection, plug M12x1, 12-pin – plug M12x1, 12-pin				
	1	BN	1	
	2	BU	2	
	3	WH	3	
	4	GN	4	
	5	PK	5	
	6	YE	6	
	7	BK	7	
	8	GY	8	
	9	RD	9	
	10	VT	10	
	11	GY PK	11	
	12	RD BU	12	

1) To IEC 757

# Connecting cables, plug M12x1, 12-pin

Technical data

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

1 Plug, straight, 12-pin, M12x1, A-coded      3 Cable, length depending on the order

Type code	D1 ∅	D2	D3 ∅	L1	L2	L3	± 1
NEBS-SM12G12-E-03-N-M12G12	6.5	M12x1	14.5	45.4	16	2.5	13

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

1 Plug, straight, 12-pin, M12x1, A-coded      3 Cable, length depending on the order

Type code	D1 ∅	D2	D3 ∅	L1	L2	L3	± 1
NEBS-SM12G12-E-05-N-LE12	6.5	M12x1	14.5	45.4	16	2.5	13
NEBS-SM12G12-E-5-N-LE12							

**Ordering data**

Electrical connection				Cable length [m]	Part No.	Type code
Connection 1		Connection 2				
Plug, straight design	12-pin	Plug, straight design	12-pin	0.3	3947404	NEBS-SM12G12-E-03-N-M12G12
		Open end	12-wire	0.5	3947401	NEBS-SM12G12-E-05-N-LE12
				5	3947395	NEBS-SM12G12-E-5-N-LE12

**Ordering data – Accessories**

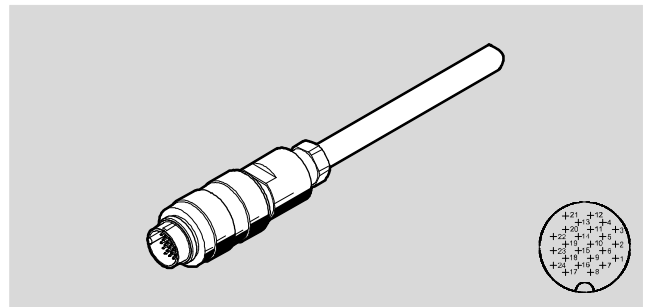
			Part No.	Type code
	Inscription labels for placing on a cable with diameter 5 ... 8 mm	11x20 mm	33361	KM-BZ

# Connecting cables, plug M16x0.75, 24-pin

Technical data

**Connecting cable**  
**NEBS-SM16G24**

- Connecting cable for Checkbox CHB-C
- Pre-assembled at one end
- Cable lengths: 5 m and 10 m
- 25 wires
- Plug M16x0.75



General technical data	
Based on standard	EN 61076-2-106
Conforms to standard	DIN 47100
Cable identification	Without inscription label holder

Technical data – Electrical connection 1	
Function	Field device side
Connection type	Plug
Cable outlet	Straight
Design	Round
Connection technology	M16x0.75
Number of pins/wires	24
Assigned pins/wires	24
Type of mounting	Screw-type lock

Technical data – Electrical connection 2	
Function	Controller side
Connection type	Cable
Connection technology	Open end
Wire ends	Cut off bluntly
Number of pins/wires	25
Assigned pins/wires	24

Technical data – Electrical		
Operating voltage range	[V DC]	30
Surge resistance	[kV]	0.5
Current rating at 40 °C	[A]	1
Contamination level		1

Technical data – Cable		
Cable diameter	[mm]	8.5
Cable design	[mm <sup>2</sup> ]	25x0.14
Nominal conductor cross section	[mm <sup>2</sup> ]	0.14
Cable characteristic		Standard
Bending radius, fixed cable installation	[mm]	≥51
Bending radius, flexible cable installation	[mm]	≥127.5

# Connecting cables, plug M16x0.75, 24-pin

Technical data

Materials	
Housing	PA
Screw-type lock	Brass, nickel-plated
Pin contacts	Brass, gold-plated
Cable sheath	PVC
Cable sheath colour	Grey
Insulating sheath	PVC
Note on materials	RoHS-compliant

Operating and environmental conditions		
Ambient temperature	[°C]	-30 ... +70
Ambient temperature with flexible cable installation	[°C]	-5 ... +70
Degree of protection		IP67

Circuitry (plug view)				
Electrical connection 1	Pin	Wire colour <sup>1)</sup>	Pin	Electrical connection 2
	1	WH	-	-
	2	BN	-	
	3	GN	-	
	4	YE	-	
	5	GY	-	
	6	PK	-	
	7	BU	-	
	8	RD	-	
	9	BK	-	
	10	VT	-	
	11	GY PK	-	
	12	RD BU	-	
	13	WH GN	-	
	14	BN GN	-	
	15	WH YE	-	
	16	YE BN	-	
	17	WH GY	-	
	18	GY BN	-	
	19	WH PK	-	
	20	PK BN	-	
	21	WH BU	-	
	22	BN BU	-	
	23	WH RD	-	
	24	BN RD	-	
	n.c.	WH BK	-	

1) To IEC 757

Ordering data							
Electrical connection				Cable length [m]	Weight [g]	Part No.	Type code
Connection 1		Connection 2					
Plug, straight design	24-pin	Open end	25-wire	5	745	<b>8048653</b>	<b>NEBS-SM16G24-K-5-N-LE24</b>
				10	1490	<b>8048654</b>	<b>NEBS-SM16G24-K-10-N-LE24</b>

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