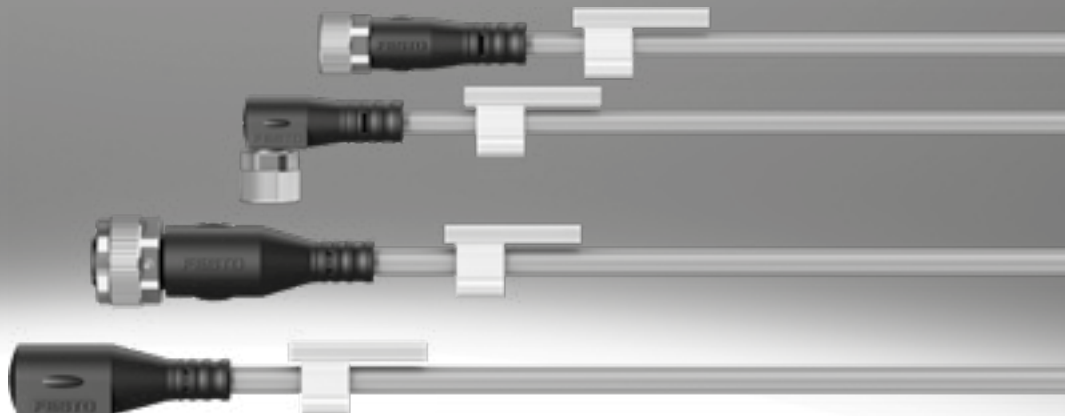# Connecting cables

FESTO

Key features

Cable characteristic

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

There are four qualities:
- For static applications
- Standard
- Suitable for energy chains
- Suitable for robot applications

The connecting cables NEBB are simple lines with a PVC cable sheath.

Connecting cables NEBB match the cable properties for static applications.

Cable properties for static applications

Static applications are characterised by fixed cable installation with no mechanical loads.
The connecting cable is not constantly moved (kinked or twisted).
The cable sheath for the connecting cables is usually made of PVC.
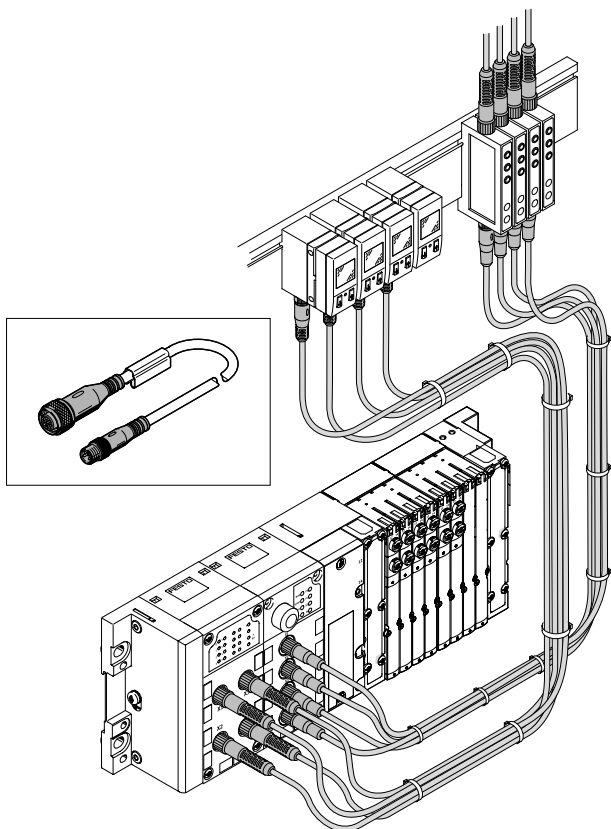
Connection technology version

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

Product range overview

Function	Version	Type	Connection technology (Electrical connection 2)	Cable characteristic	Length	→ Page/Internet
Electrical connecting cable	**Electrical connection 1: socket M8**					
	3-pin	NEBB-M8G3 NEBB-M8W3	Open cable end	For static applications	2.5 m 5 m 10 m	5
	4-pin	NEBB-M8G4 NEBB-M8W4	Open cable end	For static applications	2.5 m 5 m 10 m	8
	Electrical connection 1: socket M12					
	5-pin	NEBB-M12G5 NEBB-M12W5	Open cable end	For static applications	2.5 m 5 m 10 m	11

Type codes

001	Series	
NEBB	Connecting cable	

002	Connection technology left, field device side	
M8	Socket M8x1 A-coded, EN 61076-2-104	
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	
3	3	
4	4	
5	5	

005	Cable characteristic	
P	Basic	

006	Cable length [m]	
2.5	2.5	
5	5	
10	10	

007	Connection technology right, controller side	
LE	Open end	

008	Number of pins/wires on the right	
3	3	
4	4	
5	5	

Datasheet

Connecting cable
NEBB-M8

- Connecting cable for connecting sensors and actuators
- Pre-assembled
- Cable lengths 2.5 m, 5 m and 10 m
- 3 cores
- M8

General technical data	
Conforms to standard	Wire colours and connection numbers to EN 60947-5-2
	EN 61076-2-104
Cable designation	With inscription label holder
Degree of protection	IP65, IP68, IP69K
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	M8x1, A-coded to EN 61076-2-104
Number of pins/cores	3
Assigned pins/cores	3
Type of mounting	Screw-type lock with AF9

Technical data – Electrics		
Operating voltage range	[V DC]	0 … 60
	[V AC]	0 … 60
Surge resistance	[kV]	1.5
Acceptable current load at 40°C	[A]	4

Technical data – Cable		
Cable characteristic		For static applications
Test conditions, cable		Test conditions according to request
Bending radius, fixed cable installation	[mm]	≥12
Cable diameter	[mm]	3.8
Cable composition	[mm^2]	3 x 0.25
Nominal conductor cross section	[mm^2]	0.25
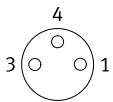
Technical data – Electrical connection 2	
Function	Controller side
Connection type	Cable
Connection technology	Open end
Number of pins/cores	3
Assigned pins/cores	3
Wire ends	Sheath removed, cut off bluntly

Datasheet

Materials

Housing	TPE-U(PU)
Housing colour	Black
Cable sheath	PVC
Cable sheath colour	Grey
Insulating sheath	PVC
Screw-type lock	Nickel-plated brass
Seals	NBR
Pin contacts	Gold-plated copper alloy
Note on materials	RoHS-compliant

Operating and environmental conditions

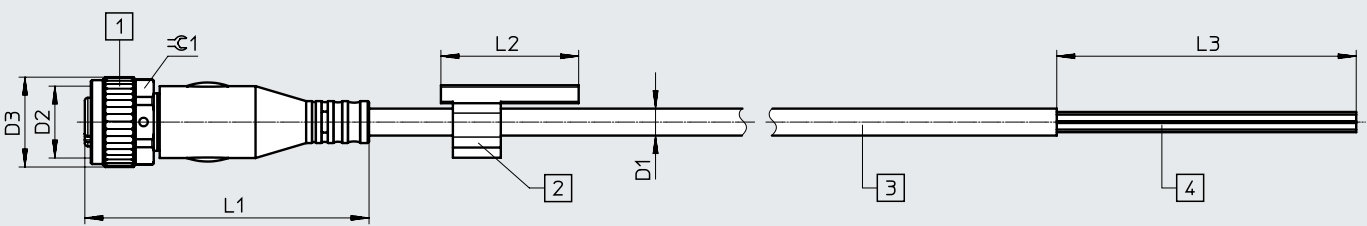| Ambient temperature	[°C]	−25 ... +70
Corrosion resistance class CRC[1]		2
CE marking (see declaration of conformity)[2]		To EU Low Voltage Directive
		To EU RoHS Directive
UKCA marking (see declaration of conformity)[2]		To UK regulations for electrical equipment
		To UK RoHS regulations
LABS (PWIS) conformity		VDMA24364-B2-L
Cleanroom class		Class 4 to ISO 14644-1
Pollution degree		3

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements that are in direct contact with a normal industrial environment.

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

Circuitry (socket view)

Electrical connection 1	Pin	Wire colour[1]	Pin	Electrical connection 2
	1	BN	–	–
	3	BU	–	
	4	BK	–	

1) According to IEC 757

Dimensions   Download CAD data ➔ www.festo.com

Cable outlet straight

[1] Socket M8x1

[2] Inscription label holder

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

[4] Wire ends cut off bluntly

Type	D1 ∅	D2	D3 ∅	L1	L2	L3	⌒C 1
NEBB-M8G3	3.8	M8x1	10	34.6	23	50	9

Datasheet

Dimensions Download CAD data → www.festo.com

Cable outlet angled
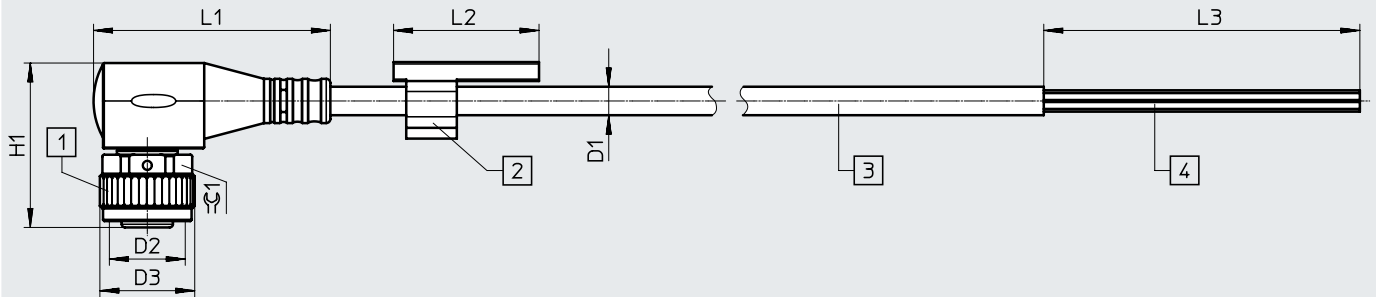
[1] Socket M8x1	[3] Cable, length 2.5 m, 5 m or 10 m depending on the order	[4] Wire ends cut off bluntly
[2] Inscription label holder		

Type	D1 ⌀	D2 ⌀	D3 ⌀	H1	L1	L2	L3	⊏ 1
NEBB-M8W3	3.8	M8x1	10	17	26.9	23	50	9

Ordering data

		Cable length [m]	Part no.	Type
Open cable end, 3-core				
	Cable outlet straight	2.5	**8066658**	**NEBB-M8G3-P-2.5-LE3**
		5	**8066659**	**NEBB-M8G3-P-5-LE3**
		10	**8066660**	**NEBB-M8G3-P-10-LE3**
	Cable outlet angled	2.5	**8066664**	**NEBB-M8W3-P-2.5-LE3**
		5	**8066665**	**NEBB-M8W3-P-5-LE3**
		10	**8066666**	**NEBB-M8W3-P-10-LE3**

Ordering data – Accessories

Designation		Part no.	Type
Plug			
	Plugs for self-assembly	–	→ Internet: necu
		–	→ Internet: sea
Inscription labels			
	Inscription labels 23 mm for holder, pack of 34, in frame	541598	ASLR-L-423

Datasheet

**Connecting cable
NEBB-M8**

- Connecting cable for connecting sensors and actuators
- Pre-assembled
- Cable lengths 2.5 m, 5 m and 10 m
- 4 cores
- M8

General technical data	
Conforms to standard	Wire colours and connection numbers to EN 60947-5-2
	EN 61076-2-104
Cable designation	With inscription label holder
Degree of protection	IP65, IP68, IP69K
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	M8x1, A-coded to EN 61076-2-104
Number of pins/cores	4
Assigned pins/cores	4
Type of mounting	Screw-type lock with AF9

Technical data – Electrics		
Operating voltage range	[V DC]	0 ... 30
	[V AC]	0 ... 30
Surge resistance	[kV]	0.8
Acceptable current load at 40°C	[A]	4

Technical data – Cable		
Cable characteristic		For static applications
Test conditions, cable		Test conditions according to request
Bending radius, fixed cable installation	[mm]	≥14
Cable diameter	[mm]	4.5
Cable composition	[mm²]	4 x 0.25
Nominal conductor cross section	[mm²]	0.25

Technical data – Electrical connection 2	
Function	Controller side
Connection type	Cable
Connection technology	Open end
Number of pins/cores	4
Assigned pins/cores	4
Wire ends	Sheath removed, cut off bluntly

Datasheet

Materials

Housing	TPE-U(PU)
Housing colour	Black
Cable sheath	PVC
Cable sheath colour	Grey
Insulating sheath	PVC
Screw-type lock	Nickel-plated brass
Seals	NBR
Pin contacts	Gold-plated copper alloy
Note on materials	RoHS-compliant
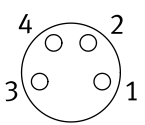
Operating and environmental conditions

Ambient temperature	[°C]	–25 … +70
Corrosion resistance class CRC[1]		2
CE marking (see declaration of conformity)[2]		To EU RoHS Directive
UKCA marking (see declaration of conformity)[2]		To UK RoHS regulations
LABS (PWIS) conformity		VDMA24364-B2-L
Cleanroom class		Class 4 to ISO 14644-1
Pollution degree		3

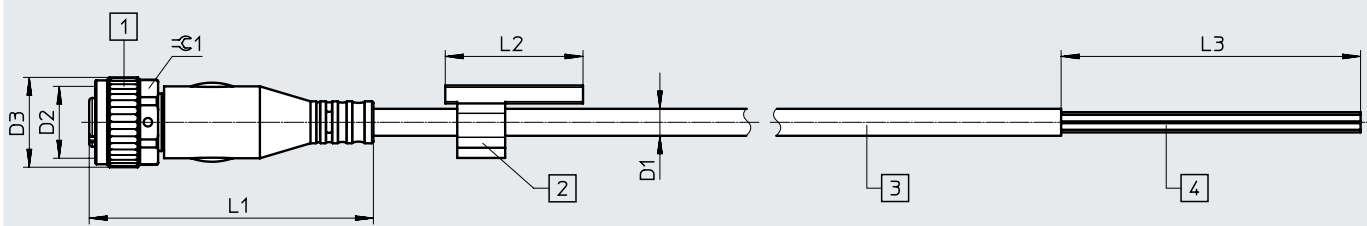1) Corrosion resistance class CRC 2 to Festo standard FN 940070
   Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements that are in direct contact with a normal industrial environment.
2) For information about the area of use, see the EC declaration of conformity at: www.festo.com/catalogue/... ➜ 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.

Circuitry (socket view)

Socket	Pin	Wire colour[1]	Pin	Plug
Electrical connection, socket, 4-pin, M8 – open cable end				
	1	BN	–	–
	2	WH	–	
	3	BU	–	
	4	BK	–	

1) According to IEC 757

Dimensions   Download CAD data ➜ www.festo.com

Cable outlet straight

[1] Socket M8x1
[2] Inscription label holder
[3] Cable, length 2.5 m, 5 m or 10 m depending on the order
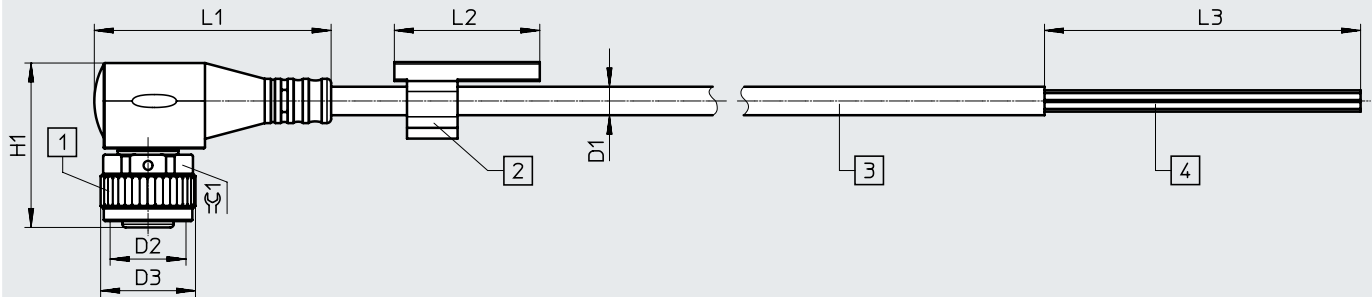[4] Wire ends cut off bluntly

Type	D1 ∅	D2	D3 ∅	L1	L2	L3	⊂1
NEBB-M8G4	4.5	M8x1	10	34.6	23	50	9

Datasheet

Dimensions   Download CAD data → www.festo.com

Cable outlet angled

[1]	Socket M8x1	[3]	Cable, length 2.5 m, 5 m or 10 m depending on the order	[4]	Wire ends cut off bluntly
[2]	Inscription label holder				

Type	D1 ⌀	D2 ⌀	D3 ⌀	H1	L1	L2	L3	⊏⊐ 1
NEBB-M8W4	4.5	M8x1	10	17	26.9	23	50	9

Ordering data

		Cable length [m]	Part no.	Type
Open cable end, 4-core				
	Cable outlet straight	2.5	**8066661**	**NEBB-M8G4-P-2.5-LE4**
		5	**8066662**	**NEBB-M8G4-P-5-LE4**
		10	**8066663**	**NEBB-M8G4-P-10-LE4**
	Cable outlet angled	2.5	**8066667**	**NEBB-M8W4-P-2.5-LE4**
		5	**8066668**	**NEBB-M8W4-P-5-LE4**
		10	**8066669**	**NEBB-M8W4-P-10-LE4**

Ordering data – Accessories

Designation		Part no.	Type
Plug			
	Plugs for self-assembly	–	→ Internet: necu
		–	→ Internet: sea
Inscription labels			
	Inscription labels 23 mm for holder, pack of 34, in frame	541598	**ASLR-L-423**

Datasheet

Connecting cable
NEBB-M12

- Connecting cable for connecting sensors and actuators
- Pre-assembled
- Cable lengths 2.5 m, 5 m and 10 m
- 3, 4 or 5 cores
- M12x1, 5-pin
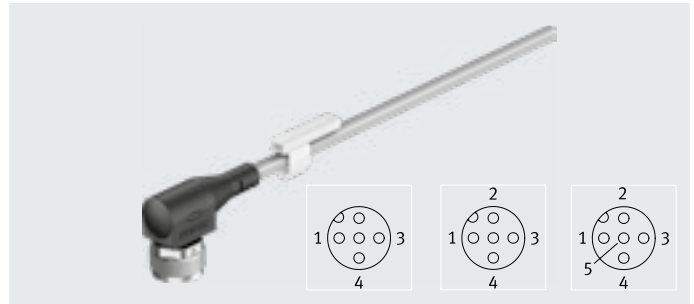
General technical data	
Conforms to standard	Wire colours and connection numbers to EN 60947-5-2
	EN 61076-2-101
Cable designation	With inscription label holder
Degree of protection	IP65, IP68, IP69K
Note on degree of protection	In mounted state

Technical data – Electrical connection 1			
Function	Field device side		
Design	Round		
Connection type	Socket		
Cable outlet	Straight, angled		
Connection technology	M12x1, A-coded to EN 61076-2-101		
Number of pins/cores	5		
Assigned pins/cores	3	4	5
Type of mounting	Screw-type lock with AF13		

Technical data – Electrics				
Assigned pins/cores		3	4	5
Operating voltage range	[V DC]	0 … 250	0 … 250	0 … 60
	[V AC]	0 … 250	0 … 250	0 … 60
Surge resistance	[kV]	2.5	2.5	1.5
Acceptable current load at 40°C	[A]	4	4	4

Technical data – Cable				
Assigned pins/cores		3	4	5
Cable characteristic		For static applications		
Test conditions, cable		Test conditions according to request		
Bending radius, fixed cable installation	[mm]	≥12	≥14	≥14
Cable diameter	[mm]	3.8	4.5	4.5
Cable composition	[mm²]	3 x 0.25	4 x 0.25	5 x 0.25
Nominal conductor cross section	[mm²]	0.25	0.25	0.25
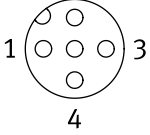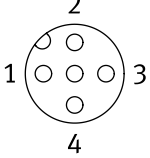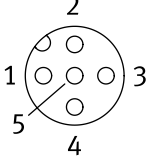
Technical data – Electrical connection 2			
Assigned pins/cores	3	4	5
Function	Controller side		
Connection type	Cable		
Connection technology	Open end		
Number of pins/cores	3	4	5
Assigned pins/cores	3	4	5
Wire ends	Sheath removed, cut off bluntly		

Datasheet

Materials

Housing	TPE-U(PU)
Housing colour	Black
Cable sheath	PVC
Cable sheath colour	Grey
Insulating sheath	PVC
Screw-type lock	Nickel-plated brass
Seals	NBR
Pin contacts	Gold-plated copper alloy
Note on materials	RoHS-compliant

Operating and environmental conditions

Ambient temperature [°C]	−25 … +70
Corrosion resistance class CRC[1]	2
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
LABS (PWIS) conformity	VDMA24364-B2-L
Cleanroom class	Class 4 to ISO 14644-1
Pollution degree	3

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
   Moderate corrosion stress. Indoor applications in which condensation can occur. External visible parts with primarily decorative surface requirements that are in direct contact with a normal industrial environment.
2) For information about the area of use, see the EC declaration of conformity at: www.festo.com/catalogue/... → 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.

Circuitry (socket view)

Electrical connection 1	Pin	Wire colour[1]	Pin	Electrical connection 2
Electrical connection 2: open cable end, 3-core				
	1	BN	–	–
	3	BU	–	
	4	BK	–	
Electrical connection 2: open cable end, 4-core				
	1	BN	–	–
	2	WH	–	
	3	BU	–	
	4	BK	–	
Electrical connection 2: open cable end, 5-core				
	1	BN	–	–
	2	WH	–	
	3	BU	–	
	4	BK	–	
	5	GY	–	

1) According to IEC 757

Datasheet

Dimensions
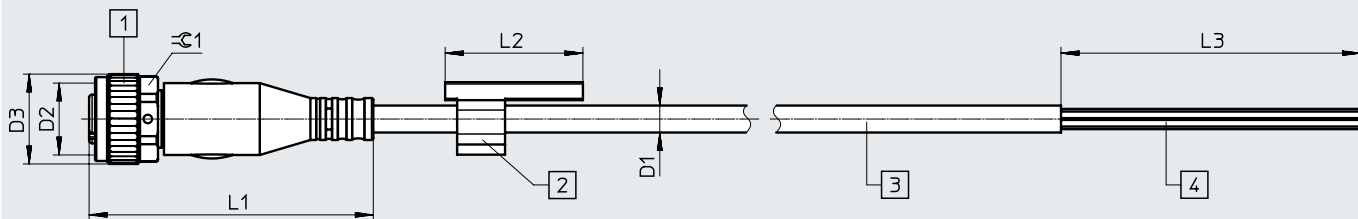
Cable outlet straight

[1]	Socket M12x1	[3]	Cable, length 2.5 m, 5 m or	[4]	Wire ends cut off bluntly
[2]	Inscription label holder		10 m depending on the order		

Type	D1 Ø	D2	D3 Ø	L1	L2	L3	⊏⊂ 1
NEBB-M12G5-...-LE3	3.8	M12x1	15	47.5	23	50	13
NEBB-M12G5-...-LE4	4.5	M12x1	15	47.5	23	50	13
NEBB-M12G5-...-LE5	4.5	M12x1	15	47.5	23	50	13
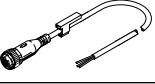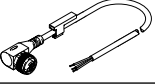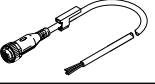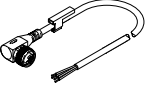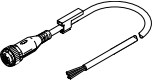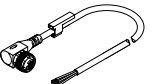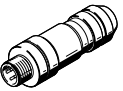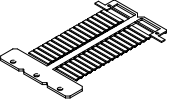
Cable outlet angled
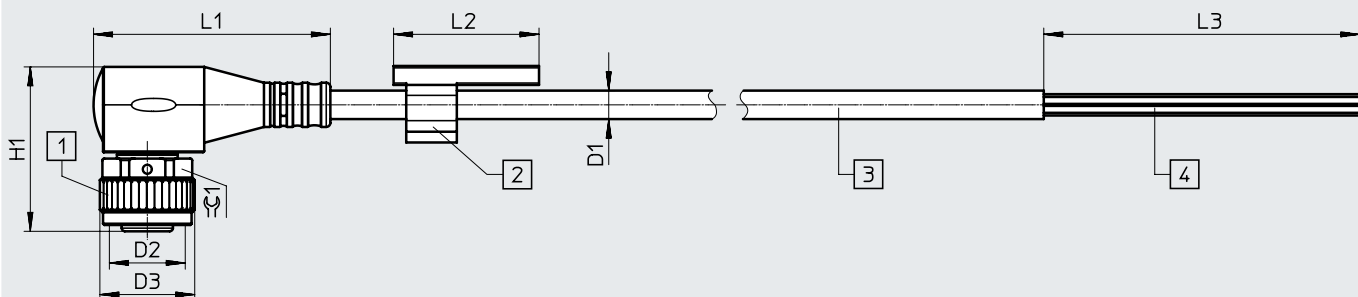
[1]	Socket M12x1	[3]	Cable, length 2.5 m, 5 m or	[4]	Wire ends cut off bluntly
[2]	Inscription label holder		10 m depending on the order		

Type	D1 Ø	D2	D3 Ø	H1	L1	L2	L3	⊏⊂ 1
NEBB-M12W5-...-LE3	3.8	M12x1	15	26	37.5	23	50	13
NEBB-M12W5-...-LE4	4.5	M12x1	15	26	37.5	23	50	13
NEBB-M12W5-...-LE5	4.5	M12x1	15	26	37.5	23	50	13

Datasheet

Ordering data		Cable length [m]	Part no.	Type
Open cable end, 3-core				
	Cable outlet straight	2.5	**8066670**	**NEBB-M12G5-P-2.5-LE3**
		5	**8066671**	**NEBB-M12G5-P-5-LE3**
		10	**8066672**	**NEBB-M12G5-P-10-LE3**
	Cable outlet angled	2.5	**8066679**	**NEBB-M12W5-P-2.5-LE3**
		5	**8066680**	**NEBB-M12W5-P-5-LE3**
		10	**8066681**	**NEBB-M12W5-P-10-LE3**
Open cable end, 4-core				
	Cable outlet straight	2.5	**8066673**	**NEBB-M12G5-P-2.5-LE4**
		5	**8066674**	**NEBB-M12G5-P-5-LE4**
		10	**8066675**	**NEBB-M12G5-P-10-LE4**
	Cable outlet angled	2.5	**8066682**	**NEBB-M12W5-P-2.5-LE4**
		5	**8066683**	**NEBB-M12W5-P-5-LE4**
		10	**8066684**	**NEBB-M12W5-P-10-LE4**
Open cable end, 5-core				
	Cable outlet straight	2.5	**8066676**	**NEBB-M12G5-P-2.5-LE5**
		5	**8066677**	**NEBB-M12G5-P-5-LE5**
		10	**8066678**	**NEBB-M12G5-P-10-LE5**
	Cable outlet angled	2.5	**8066685**	**NEBB-M12W5-P-2.5-LE5**
		5	**8066686**	**NEBB-M12W5-P-5-LE5**
		10	**8066687**	**NEBB-M12W5-P-10-LE5**

Ordering data – Accessories			
Designation		Part no.	Type
Plug			
	Plugs for self-assembly	–	➔ Internet: necu
		–	➔ Internet: sea
Inscription labels			
	Inscription labels 23 mm for holder, pack of 34, in frame	**541598**	**ASLR-L-423**