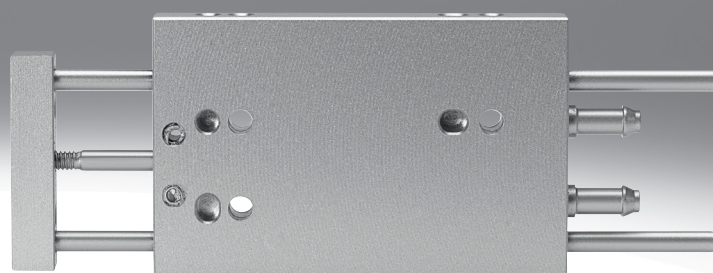
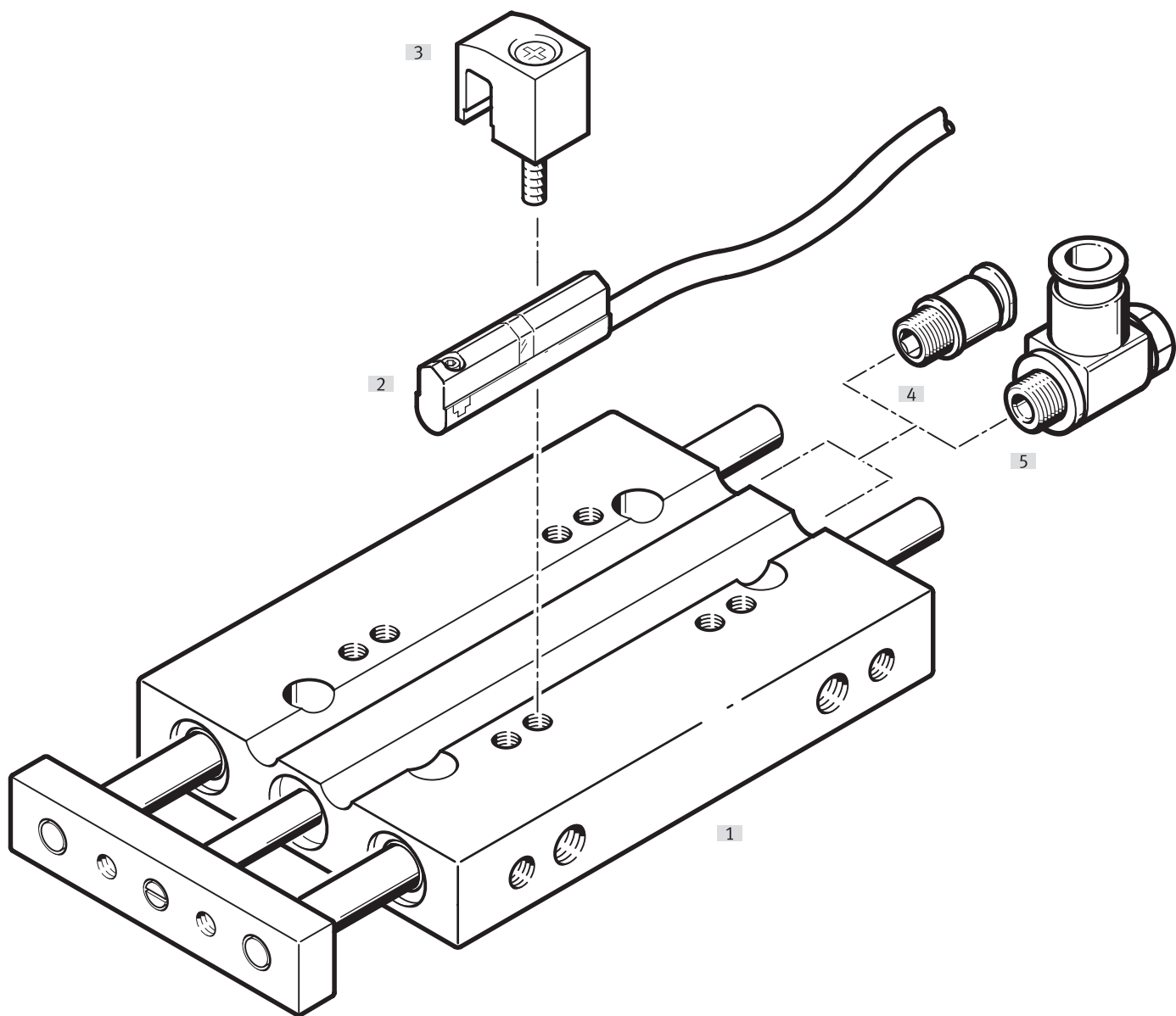


Mini guided drives DFC

FESTO



Peripherals overview



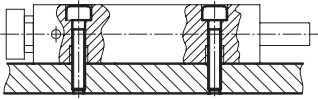
Peripherals overview

Accessories		Description	Piston ø 6 mm	Piston ø 10 mm	→ Page/Internet
[1]	Mini guided drive DFC				
[2]	Proximity switch SME/SMT-10	–	■	■	12
[3]	Sensor bracket	Included in the scope of delivery of the mini guide unit	■	■	–
[4]	Push-in fitting QSM	For connecting tubing with standard O.D.	■	■	qs
[5]	One-way flow control valve GRLZ	For regulating speed	–	■	12

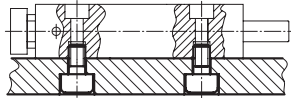
Key features

Mounting options

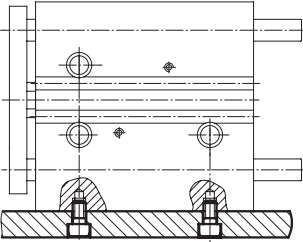
Horizontal mounting from above



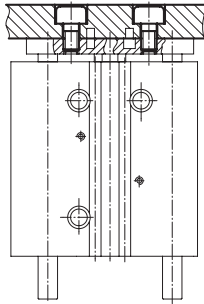
Horizontal mounting from below



Side mounting from below



Yoke mounting



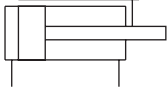
Type codes

001	Series	
DFC	Mini guided drive, double-acting	
002	Piston diameter [mm]	
6	6	
10	10	
003	Stroke [mm]	
...	5 ... 30	

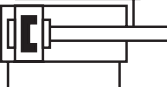
004	Cushioning	
P	Elastic cushioning rings/plates on both sides	
005	Position sensing	
A	For proximity sensor	
006	Guide	
GF	Plain bearing	
KF	Recirculating ball bearing guide	

Datasheet

Without position sensing



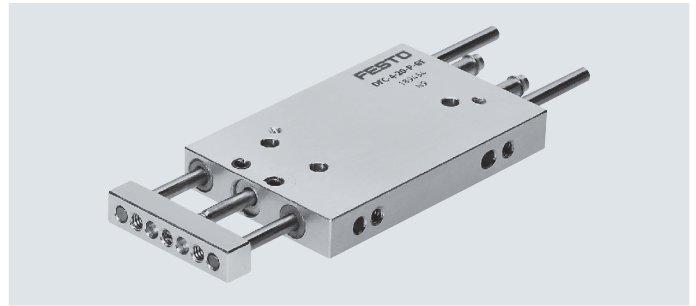
With position sensing



Ø - Diameter
6, 10 mm

— - Stroke length
5 ... 30 mm

 www.festo.com



General technical data		
Piston Ø	6	10
Pneumatic connection	M3	M5
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]	
Note on the operating/ pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)	
Operating pressure	[MPa]	0.15 ... 1
	[bar]	1.5 ... 10.0
Design	Piston	
	Piston rod	
	Guide rods with yoke	
Cushioning	Elastic cushioning rings/plates at both ends	
Position sensing	Via proximity switch	
Type of mounting	With through-hole	
	With female thread	
Mounting position	Any	
Protection against rotation/guide	Guide rod with yoke	
	With plain-bearing or recirculating ball bearing guide	

Environmental conditions		
Variants	Plain-bearing guide GF	Recirculating ball bearing guide KF
Ambient temperature ¹⁾	[°C]	−5 ... +60
Corrosion resistance class CRC ²⁾	2	–

1) Note operating range of proximity switches

2) More information www.festo.com/x/topic/crc

Speeds [m/s] with maximum stroke length		
Piston Ø	6	10
Maximum speed	1.0	1.0
Minimum speed	0.1	0.1

Forces [N]		
Piston Ø	6	10
Theoretical force at 0.6 MPa (6 bar), advancing	17	47
Theoretical force at 0.6 MPa (6 bar), retracting	12.5	35

Impact energy [J]		
Piston Ø	6	10
Max. impact energy in the end positions	0.008	0.05

Permissible impact velocity:

$$v = \sqrt{\frac{2 \cdot E}{m_1 + m_2}}$$

Maximum permissible mass:

$$m_2 = \frac{2 \cdot E}{v^2} - m_1$$

v Permissible impact speed

E Max. impact energy

m₁ Moving mass (drive)m₂ Moving payload

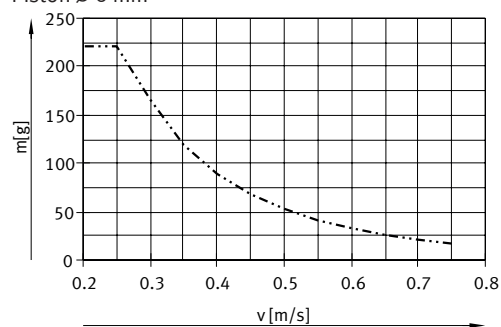
 **Note**

These specifications represent the maximum values that can be achieved. The maximum permissible impact energy must be observed.

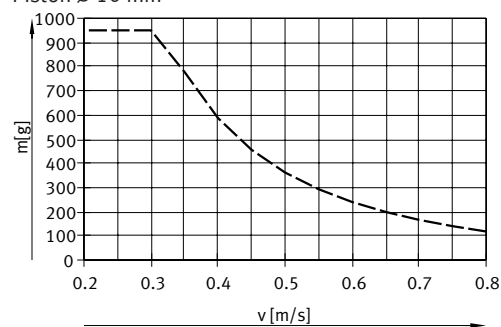
Datasheet

Maximum permissible mass m as a function of impact velocity v

Piston Ø 6 mm



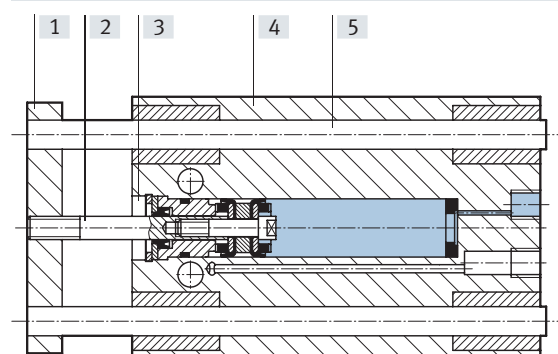
Piston Ø 10 mm



Weight [g]			
Piston Ø		6	10
Product weight	with 5 mm stroke	28	91
	with 10 mm stroke	34	100
	with 15 mm stroke	39	108
	with 20 mm stroke	44	117
	with 25 mm stroke	49	125
	with 30 mm stroke	55	134
Moving mass with 0 mm stroke		8.8	27.2
Additional mass per 10 mm stroke		2.8	7.2

Materials

Sectional view

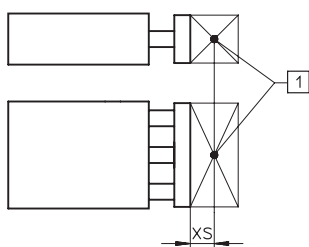


Mini guided drive		
[1]	Yoke plate	Wrought aluminium alloy
[2]	Piston rod	High-alloy stainless steel
[3]	Cover	Wrought aluminium alloy
[4]	Housing	Wrought aluminium alloy
[5]	Guide rods	High-alloy steel
-	Seals	Polyurethane, nitrile rubber
LABS (PWIS) conformity		VDMA24364-B2-L

Datasheet

Maximum payload F [N]

Plain-bearing guide GF and recirculating ball bearing guide KF

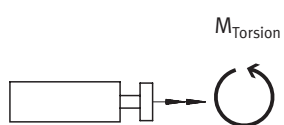


Piston ø [mm]	XS [mm]	Stroke [mm]					
		5	10	15	20	25	30
6	GF	10	4.8	4.8	4.8	4.8	4.8
	KF	10	4.6	4.6	4.6	4.6	4.6
10	GF	15	12.2	12.2	12.2	12.2	12.2
	KF	15	9.8	9.8	9.8	9.8	9.8

[1] Centre of gravity of payload

Permissible torque load M [Nm]

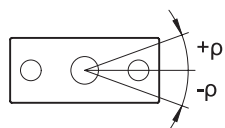
Plain-bearing guide GF and recirculating ball bearing guide KF



Piston ø [mm]		Stroke [mm]					
		5	10	15	20	25	30
6	GF	0.1	0.1	0.1	0.1	0.1	0.1
	KF	0.1	0.1	0.1	0.1	0.1	0.1
10	GF	0.4	0.4	0.4	0.4	0.4	0.4
	KF	0.3	0.3	0.3	0.3	0.3	0.3

Torsional backlash p

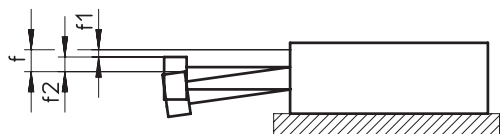
Plain-bearing guide GF and recirculating ball bearing guide KF



Piston ø		6	10
In retracted state			
Torsional backlash [°]	GF	±0.05	±0.04
	KF	±0.05	±0.03
In advanced position with maximum stroke			
Torsional backlash [°]	GF	±0.07	±0.06
	KF	±0.08	±0.05

Datasheet

Deflection of the piston rod



$$f = f_1 + f_2$$

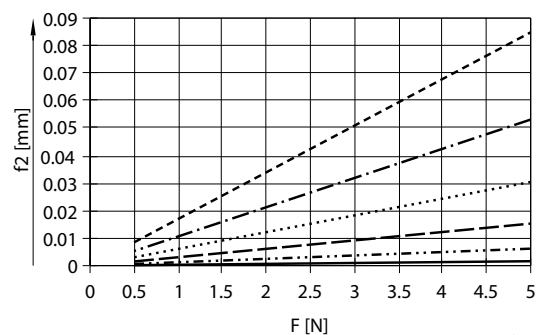
f = total deflection of the piston rod

f_1 = deflection due to bearing backlash = max. 0.02 mm

f_2 = deflection due to lateral force

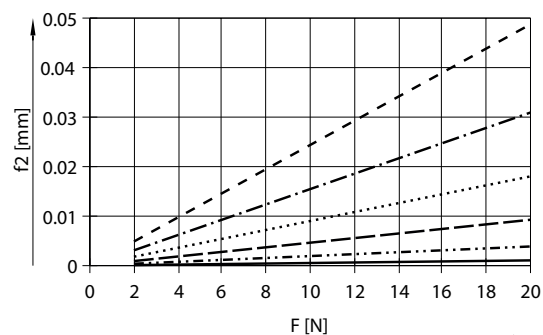
Deflection f_2 due to lateral force F as a function of the stroke

Piston $\varnothing$ 6 mm



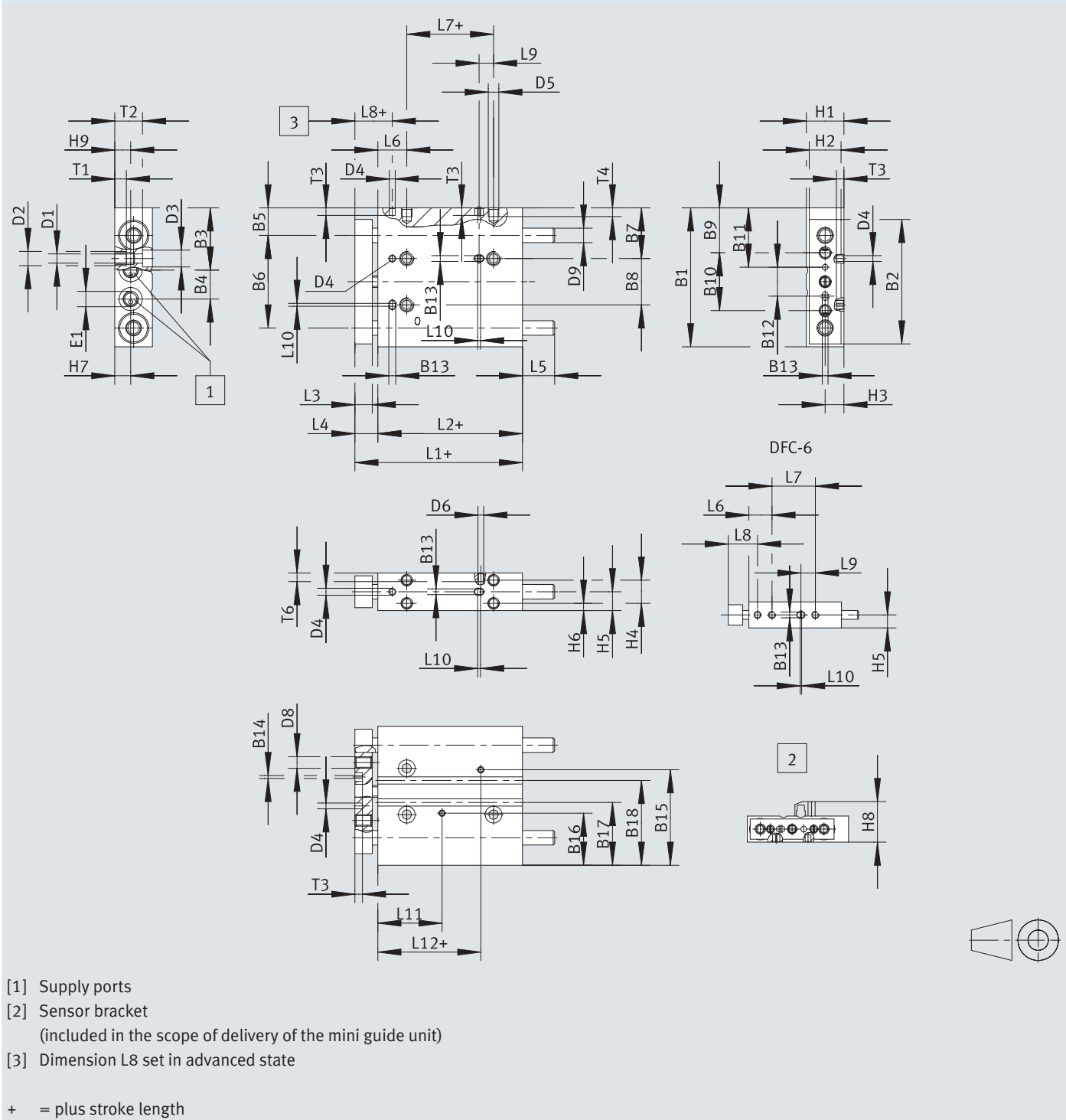
- 5 mm stroke
- 10 mm stroke
- 15 mm stroke
- . - . - . 20 mm stroke
- · — · — 25 mm stroke
- - - - - 30 mm stroke

Piston $\varnothing$ 10 mm



Datasheet

Dimensions Download CAD data → www.festo.com



Datasheet

∅ [mm]	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13 H8	B14	B15	B16	B17	B18
6	35	29	17	6.5	8.5	22	14	11	12	15	15.8	8	2	1	26.2	12.8	16.5	22.5
10	48	43	21.5	10	9.5	32	17.5	16	15.5	20	20.5	10	2	1	33	18	21.7	29.3

∅ [mm]	D1 ∅	D2	D3 ∅	D4 ∅ H8	D5	D6	D8	D9 ∅	E1	H1	H2	H3	H4	H5	H6	H7	H8	H9
6	2	M2.5	4	2	M2.5	M2	M2.5	3	M3	9	7	4.5	–	4.5	4.5	3.5	15	4.5
10	3.2	M4	5.8	2	M3	M2	M4	5	M5	13	11	6.5	8	6.5	2.5	5.5	19	5.5

∅ [mm]	L1	L2	L3	L4 +0.3 –0.9	L5	L6	L7	L8 +0.2	L9	L10	L11	L12	T1	T2	T3	T4	T6
6	34	27	5	7	1	8	10	10	5	0.5	16	19.4	3	6.1	2.6	5	2.5
10	48	40	6	8	1	10	20	13	5	1	22.2	25.6	4	9.6	2.6	3	3

Ordering data

Mini guided drives DFC ¹⁾							
Piston ∅ [mm]	Stroke [mm]	Plain-bearing guide GF		Recirculating ball bearing guide KF			
		Part no.	Type	Part no.	Type		
6	5	189455	DFC-6-5-P-A-GF	189461	DFC-6-5-P-A-KF		
	10	189456	DFC-6-10-P-A-GF	189462	DFC-6-10-P-A-KF		
	15	189457	DFC-6-15-P-A-GF	189463	DFC-6-15-P-A-KF		
	20	189458	DFC-6-20-P-A-GF	189464	DFC-6-20-P-A-KF		
	25	189459	DFC-6-25-P-A-GF	189465	DFC-6-25-P-A-KF		
	30	189460	DFC-6-30-P-A-GF	189466	DFC-6-30-P-A-KF		
10	5	189467	DFC-10-5-P-A-GF	189473	DFC-10-5-P-A-KF		
	10	189468	DFC-10-10-P-A-GF	189474	DFC-10-10-P-A-KF		
	15	189469	DFC-10-15-P-A-GF	189475	DFC-10-15-P-A-KF		
	20	189470	DFC-10-20-P-A-GF	189476	DFC-10-20-P-A-KF		
	25	189471	DFC-10-25-P-A-GF	189477	DFC-10-25-P-A-KF		
	30	189472	DFC-10-30-P-A-GF	189478	DFC-10-30-P-A-KF		

1) Mounting kits for proximity switches included in the scope of delivery

Accessories

Ordering data – Proximity switch for C-slot, magneto-resistive

Datasheets → Internet: smt

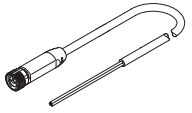
	Type of mounting	Switching output	Electrical connection, outlet direction of connection	Cable length [m]	Part no.	Type
N/O						
	Inserted in the slot from above	PNP	Plug M8x1, 3-pin, in-line	0.3	551375	SMT-10M-PS-24V-E-0.3-L-M8D
			Cable, 3-core, lengthwise	2.5	551373	SMT-10M-PS-24V-E-2.5-L-OE

Ordering data – Proximity switch for C-slot, magnetic reed

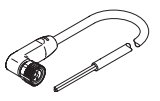
Datasheets → Internet: sme

	Type of mounting	Switching output	Electrical connection, outlet direction of connection	Cable length [m]	Part no.	Type
N/O						
	Inserted into the slot lengthwise	Contacting	Plug M8x1, 3-pin, lengthways	0.3	173212	SME-10-SL-LED-24
			Cable, 3-core, lengthwise	2.5	173210	SME-10-KL-LED-24

Connecting cables NEBA, straight

	Electrical connection 1, connection technology	Electrical connection 2, connection technology	Electrical connection 2, number of pins/cores	Cable length	Part no.	Type
	M8x1 A-coded to EN 61076-2-104	Open end	3	2.5 m	8078223	NEBA-M8G3-U-2.5-N-LE3
				5 m	8078224	NEBA-M8G3-U-5-N-LE3

Connecting cables NEBA, angled

	Electrical connection 1, connection technology	Electrical connection 2, connection technology	Electrical connection 2, number of pins/cores	Cable length	Part no.	Type
	M8x1 A-coded to EN 61076-2-104	Open end	3	2.5 m	8078230	NEBA-M8W3-U-2.5-N-LE3
				5 m	8078231	NEBA-M8W3-U-5-N-LE3

Ordering data – One-way flow control valves

Datasheets a Internet: grlz

	Connection Thread	For tubing O.D. Ø	Material	Part no.	Type
	M5	3	Metal design	193153	GRLZ-M5-QS-3-D
		4		193154	GRLZ-M5-QS-4-D
		6		193155	GRLZ-M5-QS-6-D