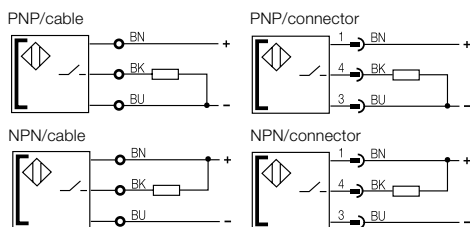


- Non-contact, wear-free piston sensing
- Insensitive to contamination
- Piston sensed through the cylinder wall
- Can be installed on any cylinder size using the corresponding bracket

Wiring diagrams



Please add the cable length to the ordering code for sensors with **cable!**
PU-03, PU-05 = PUR, length 3 m or 5 m

Please add the cable length to the ordering code for sensors with **cable and connector!**
00,2, 00,5 = PUR, length 0.2 m or 0.5 m



Series	BMF 307	BMF 307
--------	----------------	----------------

PNP	Normally-open	BMF 307K-PS-C-2-S49-	BMF 307K-PS-C-2-
NPN	Normally-open		
Rated operating field strength H _n		1.2 kA/m	1.2 kA/m
Assured operating field strength H _a		≥ 2 kA/m	≥ 2 kA/m
Hysteresis of H _n		≤ 45 %	≤ 45 %
Temperature drift of turn-on point of H _n		≤ 0.3 %/°C	≤ 0.3 %/°C
Supply voltage U _B		10...30 V DC	10...30 V DC
Voltage drop U _d		≤ 3.1 V	≤ 3.1 V
Rated insulation voltage U _i		75 V DC	75 V DC
Rated operational current I _e		200 mA	200 mA
No-load supply current I ₀ max.		≤ 30 mA	≤ 30 mA
Off-state current I _r		≤ 80 μA	≤ 80 μA
Protected against polarity reversal		yes	yes
Short circuit protected		yes	yes
Load capacity		≤ 1 μF	≤ 1 μF
Ambient temperature range T _a		-25...+70 °C	-25...+70 °C
Utilization category		DC 13	DC 13
Degree of protection per IEC 60529		IP 67	IP 67
Housing material		LCP	LCP
Connection		cable with connector	cable
No. of wires × conductor cross section			3 × 0.14 mm ²
Approval		cULus	cULus
Recommended connector		BKS-B 48	

Brackets for

	Cylinder with tie rod		
	Cylinder with DUO rail		
	Cylinder without tie rod/rail		
	Profile cylinder		
	Cylinder with trapezoidal rail		

Without brackets

	Cylinder with T-slot/trapezoidal slot	useable without bracket in cylinder with T-slot e. g. Festo ADVU, DRQ, DGP	
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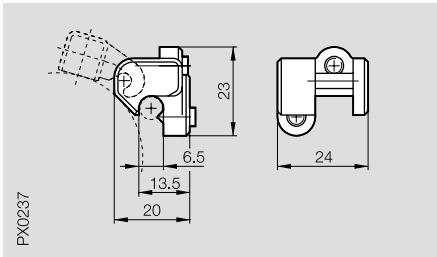
BMF 21	BMF 21	BMF 32	BMF 32	BMF 32
BMF 21K-PS-C-2-S49	BMF 21K-PS-C-2-	BMF 32M-PS-C-2-S49	BMF 32M-PS-C-2-S 4	BMF 32M-PS-W-2-S 4
BMF 21K-NS-C-2-S49	BMF 21K-NS-C-2-	BMF 32M-NS-C-2-S49	BMF 32M-NS-C-2-S 4	
1.2 kA/m ≥ 2 kA/m ≤ 45 % ≤ 0.3 %/°C	1.2 kA/m ≥ 2 kA/m ≤ 45 % ≤ 0.3 %/°C	1.2 kA/m ≥ 2 kA/m ≤ 45 % ≤ 0.3 %/°C	1.2 kA/m ≥ 2 kA/m ≤ 45 % ≤ 0.3 %/°C	1.2 kA/m ≥ 2 kA/m ≤ 45 % ≤ 0.3 %/°C
10...30 V DC ≤ 3.1 V 75 V DC 200 mA ≤ 30 mA ≤ 80 µA yes yes ≤ 1 µF -25...+70 °C DC 13 IP 67	10...30 V DC ≤ 3.1 V 75 V DC 200 mA ≤ 30 mA ≤ 80 µA yes yes ≤ 1 µF -25...+70 °C DC 13 IP 67	10...30 V DC ≤ 3.1 V 75 V DC 200 mA ≤ 30 mA ≤ 80 µA yes yes ≤ 1 µF -25...+70 °C DC 13 IP 67	10...30 V DC ≤ 3.1 V 75 V DC 200 mA ≤ 30 mA ≤ 80 µA yes yes ≤ 1 µF -25...+70 °C DC 13 IP 67	10...30 V DC ≤ 4 V 75 V DC 200 mA ≤ 30 mA ≤ 80 µA yes yes ≤ 0.15 µF -25...+70 °C DC 13 IP 67
PBT (fiberglass reinforced) connector	PBT (fiberglass reinforced) cable 3 × 0.14 mm ²	Al connector	Al connector	Al connector
cULus BKS-B 48/BKS-B 49		cULus BKS-B 48/BKS-B 49	cULus BKS-B 19/BKS-B 20	cULus BKS-B 19/BKS-B 20
BMF 21-HW-8 BMF 21-HW-10	BMF 21-HW-8 BMF 21-HW-10	BMF 32-HW-13 BMF 32-HW-15	BMF 32-HW-13 BMF 32-HW-15	BMF 32-HW-13 BMF 32-HW-15
BMF 21-HW-8	BMF 21-HW-8	BMF 32-HW-16 BMF tube cuff	BMF 32-HW-16 BMF tube cuff	BMF 32-HW-16 BMF tube cuff
BMF 21-HW-11 BMF tube cuff	BMF 21-HW-11 BMF tube cuff	BMF tube cuff	BMF tube cuff	BMF tube cuff
BMF 21-HW-10	BMF 21-HW-10	BMF 32-HW-15	BMF 32-HW-15	BMF 32-HW-15
		BMF 32-HW-12 (Mecman) BMF 32-HW-14 (Bosch)	BMF 32-HW-12 (Mecman) BMF 32-HW-14 (Bosch)	BMF 32-HW-12 (Mecman) BMF 32-HW-14 (Bosch)
useable without bracket on cylinders with 60°- or 90°-trapezoidal slot e. g. Festo, Bosch, Martonair				

3

Brackets
page 3.14 ...
Connectors
selection guide
page 3.20 ...

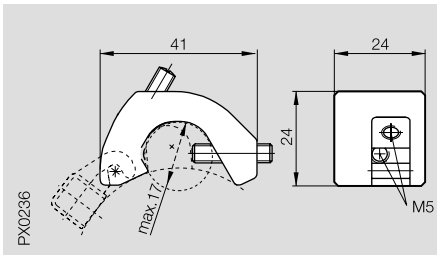
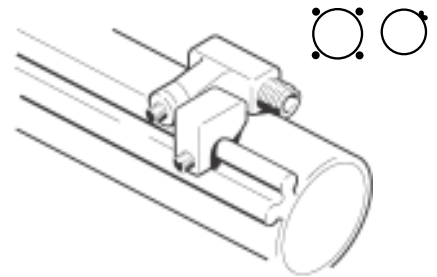
6

Connectors ...
page 6.2 ...

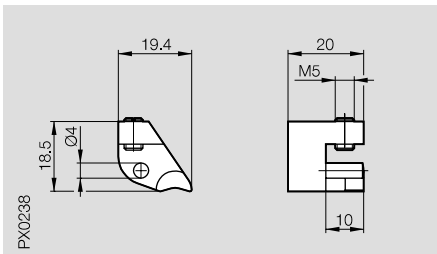
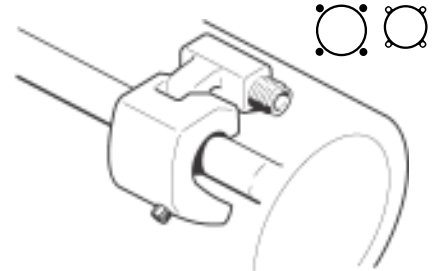


BMF 21-HW-8
for pneumatic cylinder with tie rod
any piston diameter
tie rod diameter up to 6.5 mm

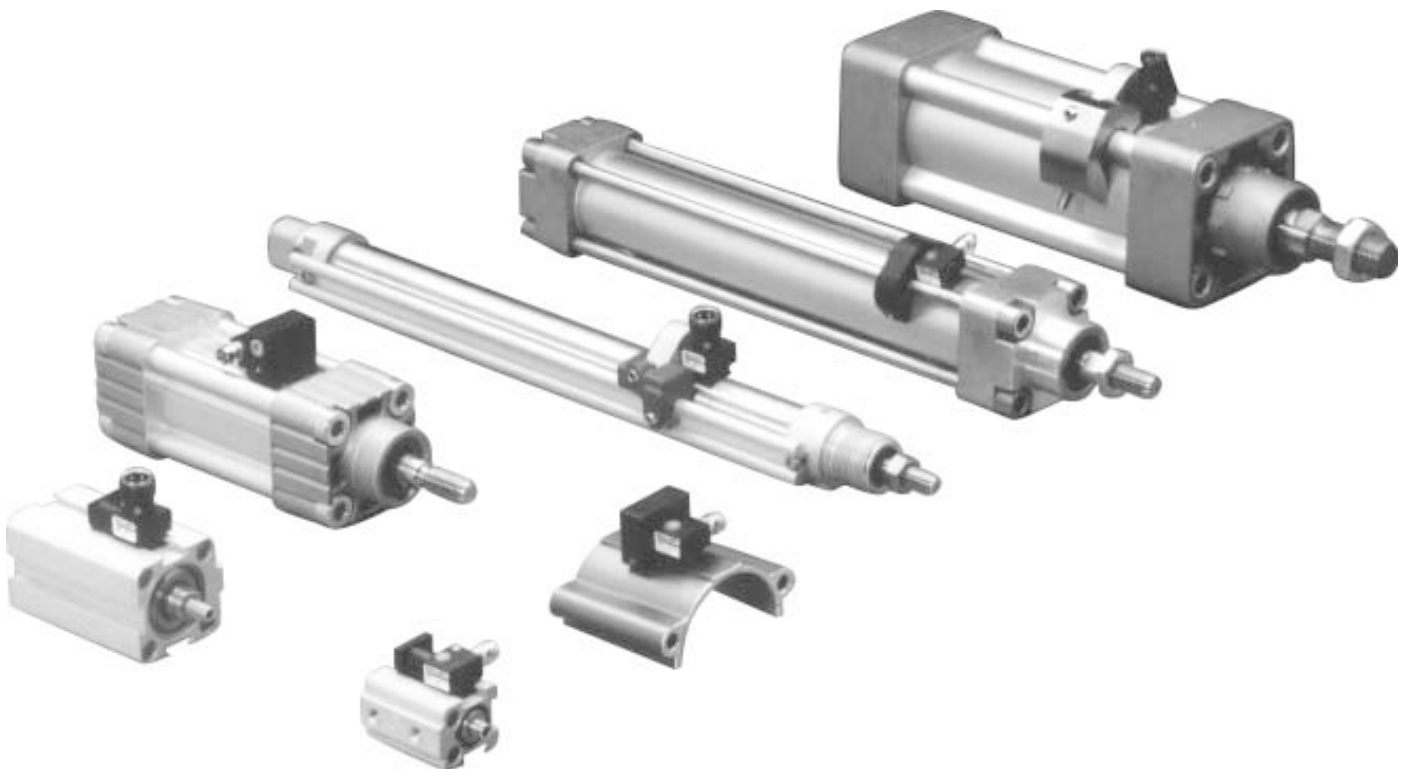
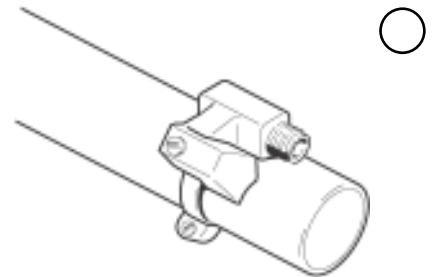
pneumatic cylinder with DUO rail
(Festo), any piston diameter

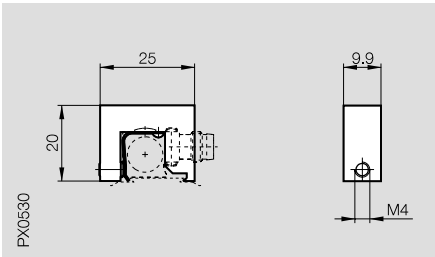


BMF 21-HW-10/BMF 21-HW-10-E
for pneumatic cylinder with tie rod
any piston diameter
tie rod diameter up to 17 mm
for pneumatic cylinder with integral
tie rod (profile)
any piston diameter
profile width up to 17 mm
BMF 21-HW-10-E: stainless steel 1.4305

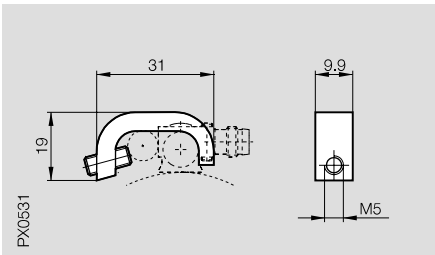
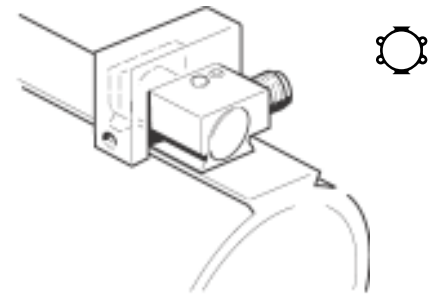


BMF 21-HW-11
for pneumatic cylinder without tie
rod/rail
piston diameter 8...80 mm
bracket for use only with tube cuff
please order tube cuff separately
(see page 3.15).

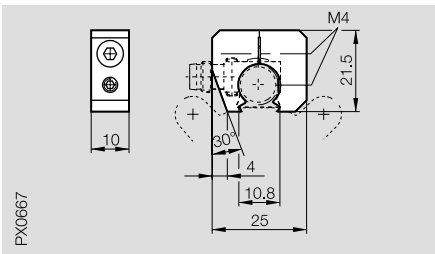
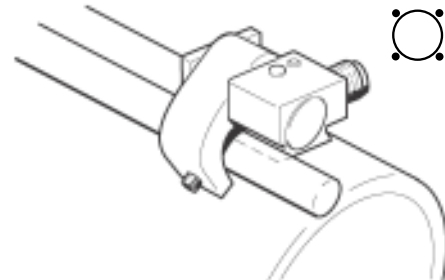




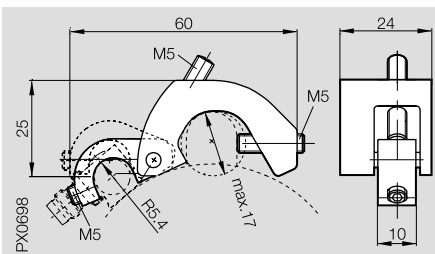
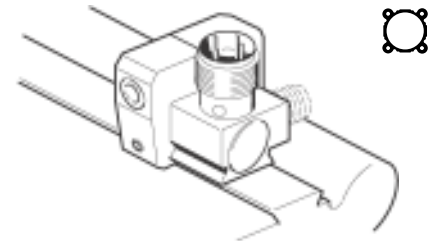
BMF 32-HW-12
for pneumatic cylinder with
trapezoidal rail (Rexroth-Mecman)
any piston diameter



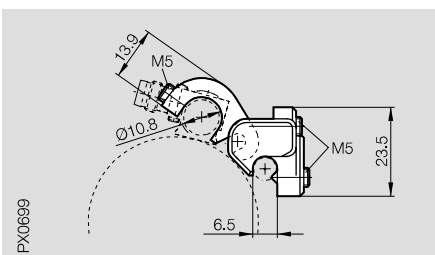
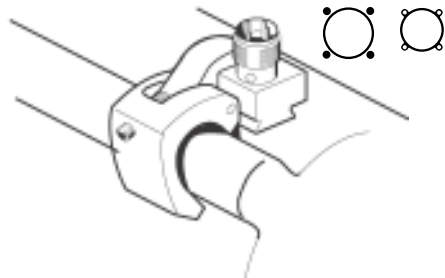
BMF 32-HW-13
for pneumatic cylinder with tie rod
any piston diameter
tie rod diameter max. 11 mm



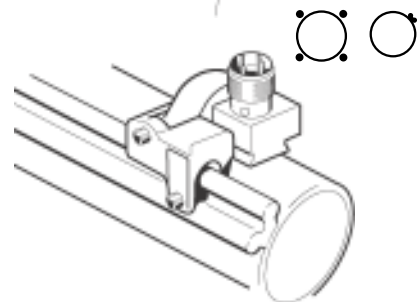
BMF 32-HW-14
for pneumatic cylinder with
trapezoidal rail (Bosch) type:
0 822 350/351/352/353/354/355
any piston diameter



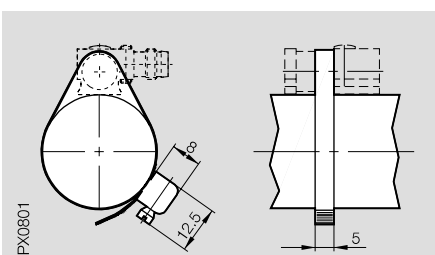
BMF 32-HW-15
for pneumatic cylinder with tie rod
any piston diameter
tie rod diameter up to 17 mm
for pneumatic cylinder with integral
tie rod (profile)
any piston diameter
profile width up to 17 mm



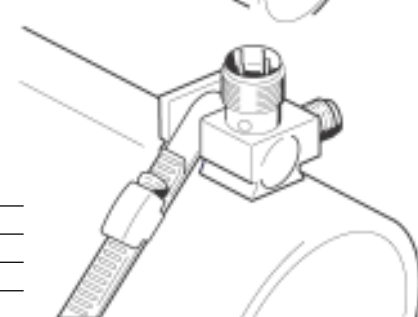
BMF 32-HW-16
for pneumatic cylinder with tie rod
any piston diameter
tie rod diameter up to 6.5 mm



pneumatic cylinder with DUO rail
(Festo), any piston diameter



BMF Tube cuff size 1...8
stainless steel for pneumatic cylinder
without tie rod/rail
piston diameter 8...80 mm



Piston Ø	Tube cuff size for BMF 21-HW-11	Tube cuff size for BMF 32
8, 10	1	1
12	1	2
16, 20	2	2
25	2	3
32	3	3
40	4	4
50	5	5
63	6	8
80	7	7

Tube cuff size _ please order separately

Magnetic Field Sensors

Cylindrical Housings
 Ø 6.5 mm, Ø 10 mm,
 M8, M12

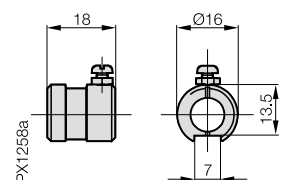
BMF 07M	BMF 07M	BMF 08M	BMF 12M	BMF 10E
Ø 6.5 mm	Ø 6.5 mm	M8x1	M12x1	for foods industry bracket BMF 10E-HW-19 Ø 10 mm
BMF 07M-PS-D-2-S 4-	BMF 07M-PS-C-2-KPU-	BMF 08M-PS-C-2-KPU-	BMF 12M-PS-D-2-S 4	BMF 10E-PS-D-2-SA 1-S49
	BMF 07M-NS-C-2-KPU-	BMF 08M-NS-C-2-KPU-	BMF 12M-NS-D-2-S 4	
1.2 kA/m ≥ 2 kA/m ≤ 45 % ≤ 0.3 %/°C	1.2 kA/m ≥ 2 kA/m ≤ 45 % ≤ 0.3 %/°C	1.2 kA/m ≥ 2 kA/m ≤ 45 % ≤ 0.3 %/°C	1.2 kA/m ≥ 2 kA/m ≤ 45 % ≤ 0.3 %/°C	1.2 kA/m ≥ 2 kA/m ≤ 45 % ≤ 0.3 %/°C
10...30 V DC ≤ 2.5 V 75 V DC 200 mA ≤ 12 mA ≤ 80 µA yes yes ≤ 1 µF -25...+70 °C DC 13 IP 67 CuZn nickel plated cable with connector cULus BKS-B 19	10...30 V DC ≤ 2.5 V 75 V DC 200 mA ≤ 22 mA ≤ 80 µA yes yes ≤ 1 µF -25...+70 °C DC 13 IP 67 CuZn nickel plated cable 3 × 0.14 mm ² cULus	10...30 V DC ≤ 3.1 V 75 V DC 200 mA ≤ 22 mA ≤ 80 µA yes yes ≤ 1 µF -25...+70 °C DC 13 IP 67 CuZn nickel plated cable 3 × 0.14 mm ² cULus	10...30 V DC ≤ 2.5 V 75 V DC 200 mA ≤ 12 mA ≤ 80 µA yes yes ≤ 1 µF -25...+70 °C DC 13 IP 67 CuZn nickel plated connector cULus BKS-B 19/BKS-B 20	10...30 V DC ≤ 2.5 V 75 V DC 200 mA ≤ 12 mA ≤ 80 µA yes yes ≤ 1 µF -25...+70 °C DC 13 IP 67 stainless steel 1.4571 connector BKS-B 48/BKS-B 49

Operating distance magnet – sensor

Magnet type	Samarium-Cobalt	Hard ferrite	Strontium-Ferrite
Ordering code	630 620 260	350 620 961	320 709 084
Housing size	16 × 12 mm	Ø 10 mm	Ø 4 mm
Height	3 mm	10 mm	5 mm
Assured operating distance S _a	28 mm	15 mm	5 mm
Hysteresis	8 mm	2 mm	2 mm

Within the operating zone scheduled, a secure switch is guaranteed. The operating zones have been determined in measuring series and help to choose a magnet suitable.

Bracket BMF 10E-HW-19 (please order separately)



Piston-Ø	Tube cuff size
8, 10, 12	2
16, 20, 25	3
32	4
40	5
50	6
63	8
Tube cuff size _ please order separately	

3

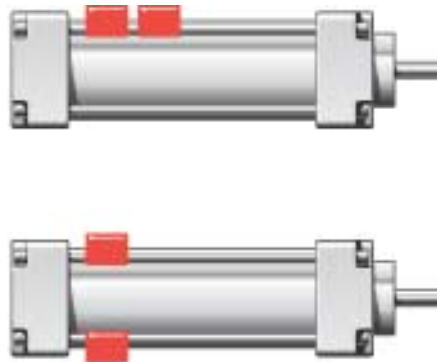
Connectors
 selection guide
 page 3.20 ...

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Connectors,
 clamps ...
 page 6.2 ...

Mounting distances

The response travel of a magnetic field sensitive sensor is virtually independent of the field strength of typical piston magnets. Still the sensor does not exhibit false switching. When using more than one of the magnetic field switches, the BMF sensors can be mounted directly next to or beside each other.

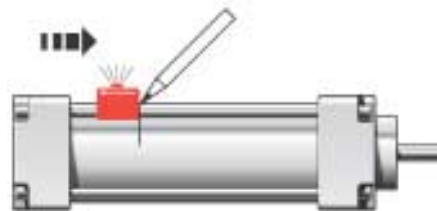


**Adjustment
and installation**

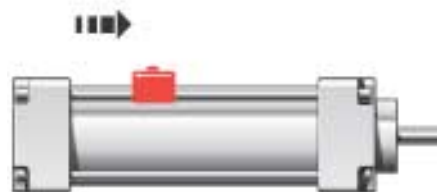
1. Set piston to end of travel.



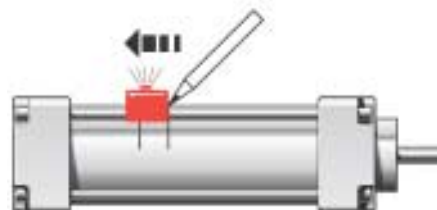
2. Slide sensor (with power on) until the output turns on (LED on). Mark front edge of sensor on cylinder.



3. Continue to slide the sensor until the output is off (LED off).



4. Slide sensor back to 2nd turn-on point. Mark front edge of sensor on cylinder.



5. Fasten sensor down with front edge is between the two marked points.

