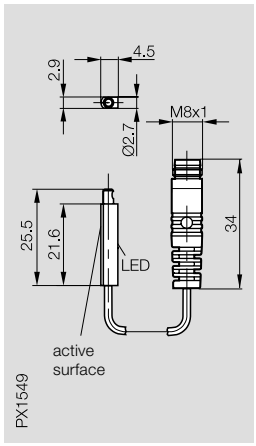
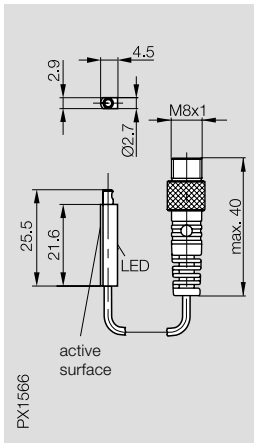
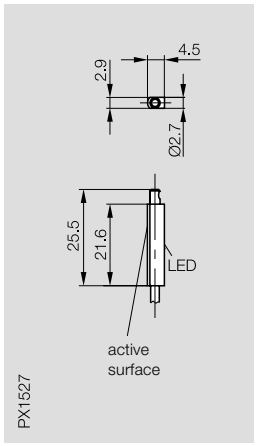
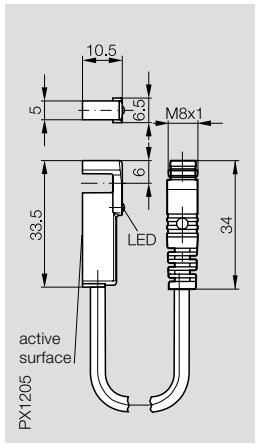
Series	**BMF 303**	**BMF 303**	**BMF 303**	**BMF 305**
Version		connector for direct connection to distribution box		



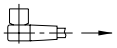






Ordering as a set
Sensor and bracket:
Please include code for bracket in ordering code
e. g. BMF 303K/**HW30**-PS-C-2-PU-03
or BMF 305K/**HW20**-PS-C-2-PU-05
Magnetic field sensor and bracket in one part number.

PNP	Normally-open	BMF 303K-PS-C-2-S49-	BMF 303K-PS-C-2-SA 2-S49-	BMF 303K-PS-C-2-	BMF 305K-PS-C-2-S49-
NPN	Normally-open				BMF 305K-NS-C-2-S49-
Rated operating field strength I H_n I		1.2 kA/m	1.2 kA/m	1.2 kA/m	1.2 kA/m
Assured operating field strength I H_a I		≥ 2 kA/m	≥ 2 kA/m	≥ 2 kA/m	≥ 2 kA/m
Hysteresis of I H_n I		≤ 45 %	≤ 45 %	≤ 45 %	≤ 45 %
Temperature drift of turn-on point of I H_n I		≤ 0.3 %/°C	≤ 0.3 %/°C	≤ 0.3 %/°C	≤ 0.3 %/°C
Supply voltage U_B		10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
Voltage drop U_d		≤ 3.1 V	≤ 3.1 V	≤ 3.1 V	≤ 3.1 V
Rated insulation voltage U_i		75 V DC	75 V DC	75 V DC	75 V DC
Rated operational current I_e		100 mA	100 mA	100 mA	200 mA
No-load supply current I_0 max.		≤ 12 mA	≤ 12 mA	≤ 12 mA	≤ 30 mA
Off-state current I_r		≤ 80 µA	≤ 80 µA	≤ 80 µA	≤ 80 µA
Protected against polarity reversal		yes	yes	yes	yes
Short circuit protected		yes	yes	yes	yes
Load capacity		≤ 1 µF	≤ 1 µF	≤ 1 µF	≤ 1 µF
Ambient temperature range T_a		–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C
Utilization category		DC 13	DC 13	DC 13	DC 13
Degree of protection per IEC 60529		IP 67	IP 67	IP 67	IP 67
Housing material		LCP	LCP	LCP	LCP
Connection		cable with connector	cable with connector	cable	cable with connector
No. of wires × conductor cross section				3 × 0,06 mm²	
Approval		cULus	cULus	cULus	cULus
Recommended connector		BKS-B 48			BKS-B 48


Connector orientation







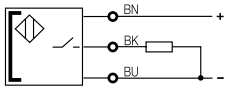


Please add the cable length to the ordering code for sensors with **cable!**
PU-03, PU-05 =
PUR, length 3 m or 5 m

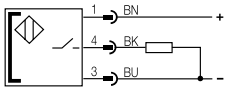
Please add the cable length to the ordering code for sensors with **cable and connector!**
00,2, 00,5 =
PUR, length 0.2 m or 0.5 m

Wiring diagrams

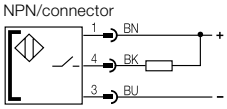
PNP/cable

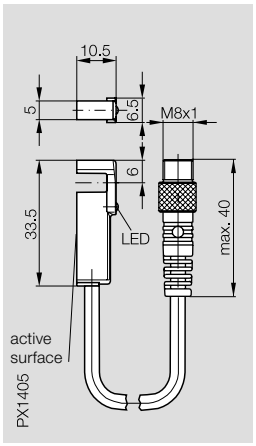
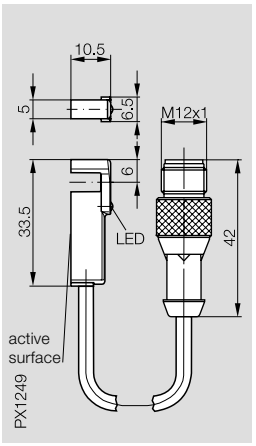
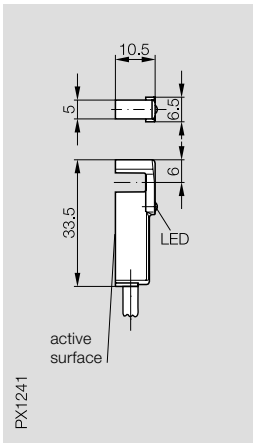
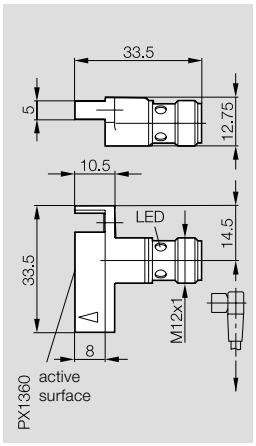
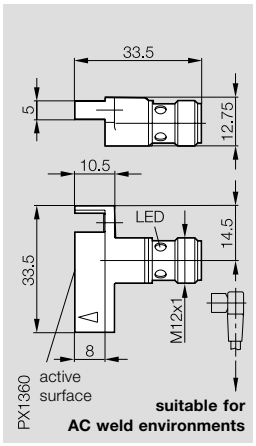


PNP/connector



NPN/connector



	BMF 305 connector for direct connection to distribution box	**BMF 305**	**BMF 305**	**BMF 305**	**BMF 305**
					
	BMF 305K-PS-C-2-SA 2-S49-	BMF 305K-PS-C-2-S 4-	BMF 305K-PS-C-2-	BMF 305M-PS-C-2-S 4	BMF 305M-PS-W-2-S 4
	1.2 kA/m	1.2 kA/m	1.2 kA/m	1.2 kA/m	1.2 kA/m
	≥ 2 kA/m	≥ 2 kA/m	≥ 2 kA/m	≥ 2 kA/m	≥ 2 kA/m
	≤ 45 %	≤ 45 %	≤ 45 %	≤ 45 %	≤ 45 %
	≤ 0.3 %/°C	≤ 0.3 %/°C	≤ 0.3 %/°C	≤ 0.3 %/°C	≤ 0.3 %/°C
	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
	≤ 3.1 V	≤ 3.1 V	≤ 3.1 V	≤ 3.1 V	≤ 4 V
	75 V DC	75 V DC	75 V DC	75 V DC	75 V DC
	200 mA	200 mA	200 mA	200 mA	200 mA
	≤ 30 mA	≤ 30 mA	≤ 30 mA	≤ 30 mA	≤ 30 mA
	≤ 80 µA	≤ 80 µA	≤ 80 µA	≤ 80 µA	≤ 80 µA
	yes	yes	yes	yes	yes
	yes	yes	yes	yes	yes
	≤ 1 µF	≤ 1 µF	≤ 1 µF	≤ 1 µF	≤ 1 µF
	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C
	DC 13	DC 13	DC 13	DC 13	DC 13
	IP 67	IP 67	IP 67	IP 67	IP 67
	LCP	LCP	LCP	Al	Al
	cable with connector	cable with connector	cable	connector	connector
			3 × 0.14 mm²		
	cULus	cULus	cULus	cULus	cULus
		BKS-B 19		BKS-B 19	BKS-B 19
					



stainless steel 1.4571

special sensor for pneumatic cylinders in the foods industry, see page **3.**17

3

Brackets selection guide page 3.7 ...

Connectors selection guide page 3.20 ...

6

Connectors ... page 6.2 ...

Reed Switch

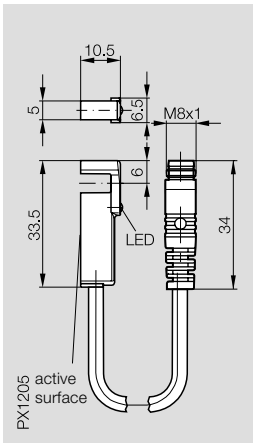


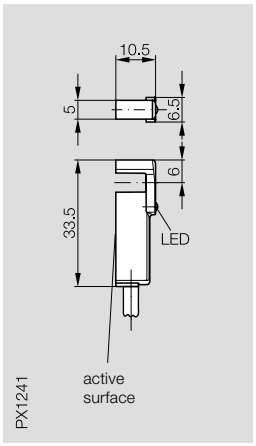
The BMF 305K-R reed switch has an LED for function display and as a setup aid. The recovery diode for switching an inductive load is already integrated.

For sensing the piston position in pneumatic cylinders you can choose between electronic and mechanical cylinder switches. Select whichever one fits your application. We'll be glad to help you.

- Fast and easy to install
- Fits any standard cylinder size using available brackets
- No loss of the switchpoint when replacing a switch

Ordering as a set
Sensor and bracket:
Please include code for bracket in ordering code
e. g. BMF 305K/**HW20**-R-PS-F-3-03
Magnetic field sensor and bracket in one part number.





Series	BMF 305	BMF 305
PNP Normally-open	BMF 305K-R-PS-F-3-S49-	BMF 305K-R-PS-F-3-
Sensed medium	magnetic field	magnetic field
Supply voltage U_B	10...30 V DC	10...30 V DC
Rated operational current I_e	500 mA	500 mA
Load capacity	≤ 0.5 µF	≤ 0.5 µF
Ambient temperature range T_a	–20...+70 °C	–20...+70 °C
Utilization category	DC 13	DC 13
Degree of protection per IEC 60529	IP 65	IP 65
Housing material	LCP	LCP
Connection	cable with connector	cable
No. of wires × conductor cross section		3 × 0.14 mm²
Recommended connector	BKS-B 48	



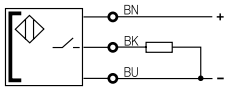


Please add the cable length to the ordering code for sensors with **cable!**
03, 05 = PVC, length 3 m or 5 m

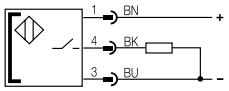
Please add the cable length to the ordering code for sensors with **cable and connector!**
00,2, 00,5 = PUR, length 0.2 m or 0.5 m

Wiring diagrams

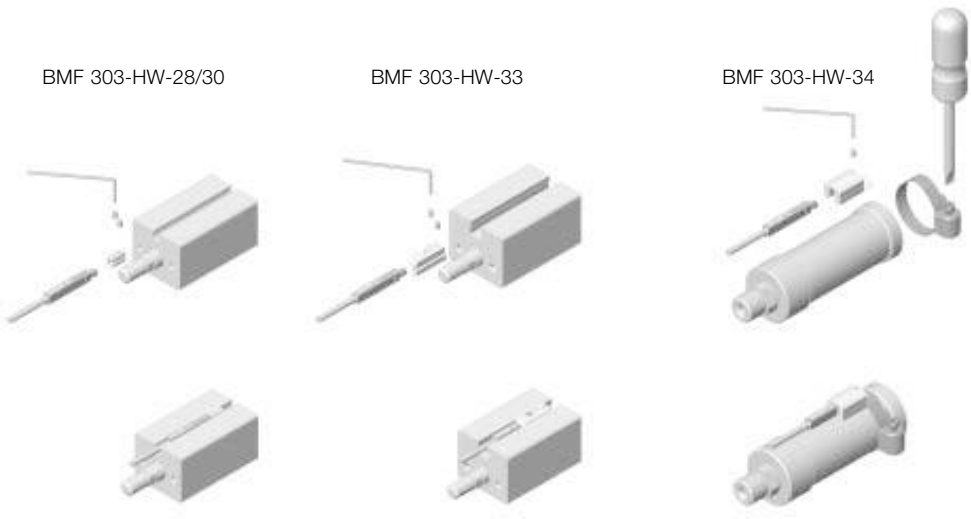
PNP/cable



PNP/connector



BMF 303-HW-28/30 BMF 303-HW-33 BMF 303-HW-34



Advantages

Sensor disappears in the slot!

Adjust switchpoint in seconds! Turn screw one revolution, adjust position, tighten.

Switchpoint can't be lost. Even if you replace the sensor, the adjusted switch-point is retained by the bracket.

Ordering code	Advantages	Cylinder slot	Bracket
BMF 303-HW-28		C-slot e. g. SMC	
BMF 303-HW-30		C-slot Festo slot-10	
BMF 303-HW-33		T-slot e. g. Festo, Bosch, SMC	
BMF 303-HW-40		T-slot e. g. Festo, Bosch, SMC	
BMF 303-HW-34		no slot round cylinder diameter < 8...80 mm	

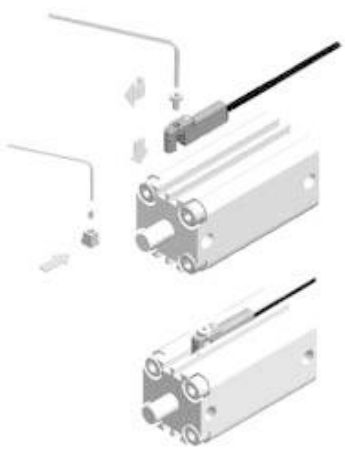
Tube cuffs for BMF 303-HW-34

Piston-Ø	Tube cuff size
< 8	0
8...16	1
20, 25	2
32	3
40	4
50	5
63	6
80	7

Tube cuff size _ please order separately

3
Brackets selection guide page 3.7 ...
Connectors selection guide page 3.20 ...
6
Connectors ... page 6.2 ...

BMF 305-HW-20



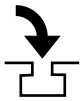
BMF 305-HW-23



BMF 305-HW-24



Advantages



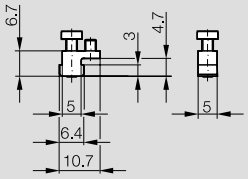
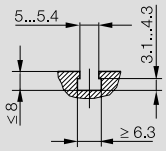
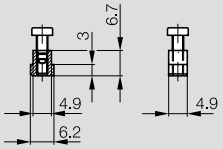
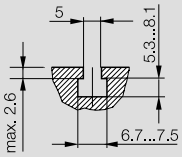
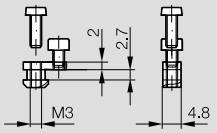
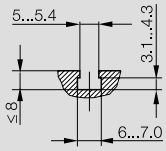
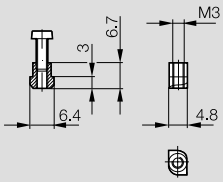
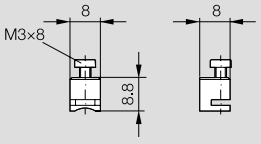
Can be inserted into slot from above. Anytime! Even later! Fast! Time-saving!



Adjust switchpoint in seconds! Turn screw one revolution, adjust position, tighten.



Switchpoint can't be lost. Even if you replace the sensor, the adjusted switch-point is retained by the bracket.

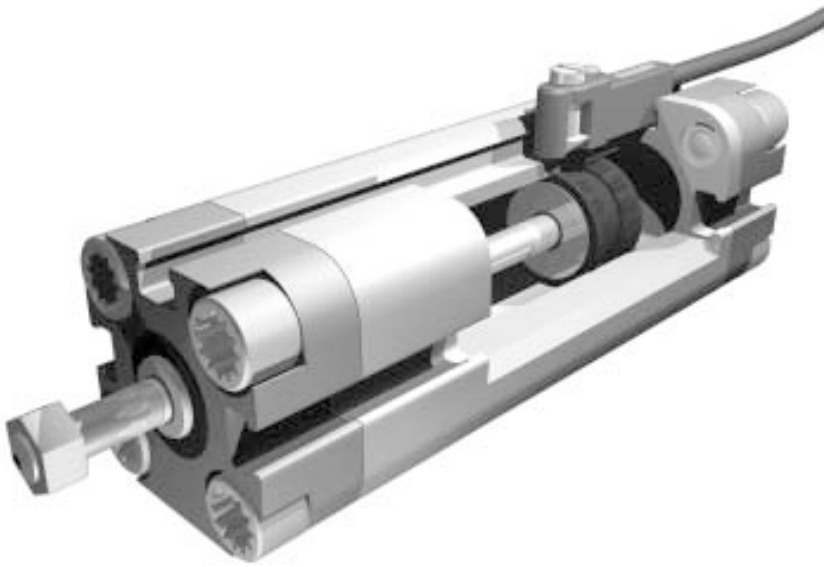
Ordering code	Advantages	Cylinder slot	Bracket
BMF 305-HW-17 	 	T-slot  e. g. Festo, SMC	
BMF 305-HW-20 	 	T-slot  e. g. Festo, SMC	
BMF 305-HW-22 	  	T-slot  e. g. Festo, Bosch	
BMF 305-HW-23 	 	T-slot  e. g. Festo, SMC	
BMF 305-HW-24 	 	no slot round cylinder diameter < 8...80 mm	

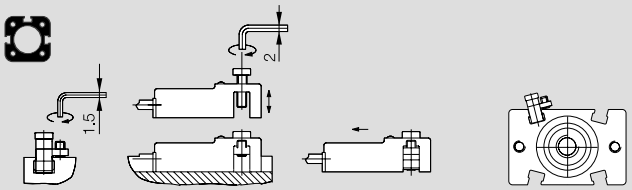
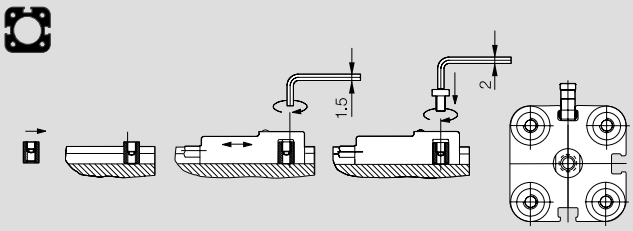
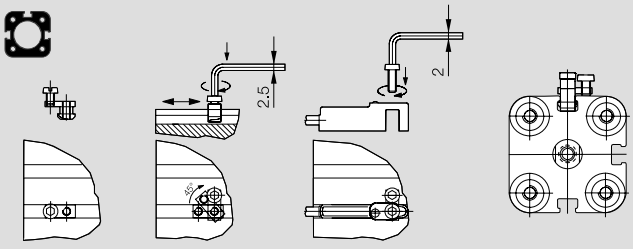
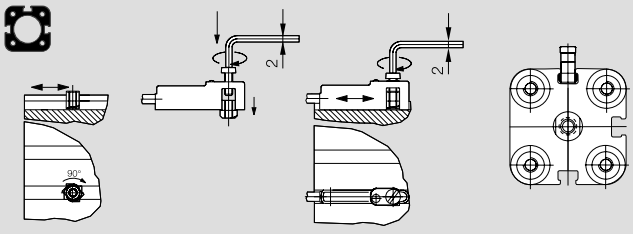
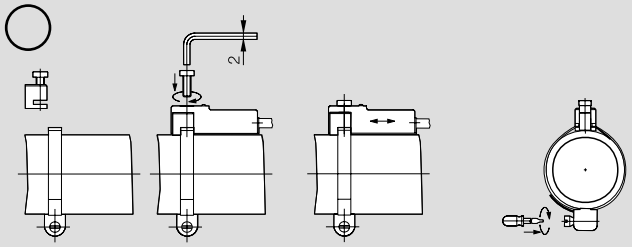
Tube cuffs for BMF 305-HW-24



Piston ∅	Tube cuff size
< 8	0
8...16	1
20, 25	2
32	3
40	4
50	5
63	6
80	7

Tube cuff size _ please order separately



	Installation	Included
	1. Insert bracket into slot from head end 2. Insert sensor from above and tighten 3. Position sensor, tighten bracket	Setscrew DIN 916 M3×5-A2 Screw DIN 7984 M3×10-A2 Bracket
	1. Insert bracket into slot from head end 2. Insert sensor from above, position and tighten bracket 3. Tighten down sensor with bracket	Setscrew DIN 916 M3×4-A2 Screw ISO 1207 M3×6-A2 Bracket also: Screw DIN 7984 M3×6-A2
	1. Insert bracket into slot from above, rotate 90° 2. Insert sensor from above and tighten 3. Position sensor, tighten bracket	Screw DIN 912 M3×4-A2 Screw DIN 7984 M3×8-A2 Bracket also: Screw ISO 1207 M3×4-A2 Screw ISO 1207 M3×8-A2
	1. Attach bracket to sensor with 1 to 2 turns 2. Insert sensor and bracket from above and tighten (bracket rotates by 90°)	Screw DIN 7984-KL M3×10-A2 Bracket also: Screw ISO 1207-KL M3×10-A2
	1. Place tube cuff on loosely 2. Attach sensor with bracket to tube cuff 3. Position and tighten	Screw DIN 7984 M3×8-A2 Bracket Tube cuff size _ please order separately (see table at left)

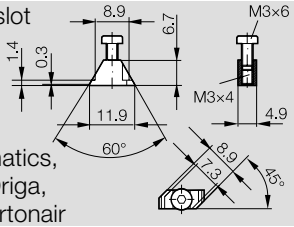
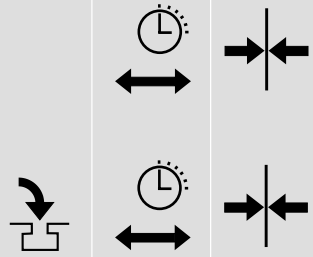
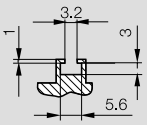
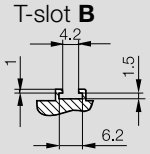
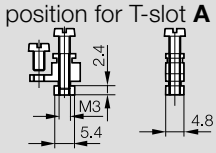
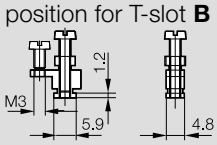
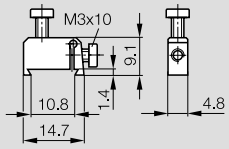
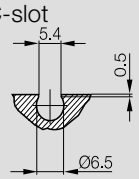
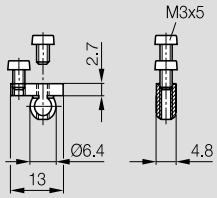
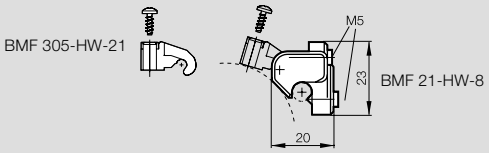
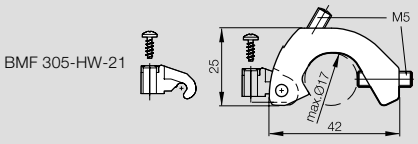
3

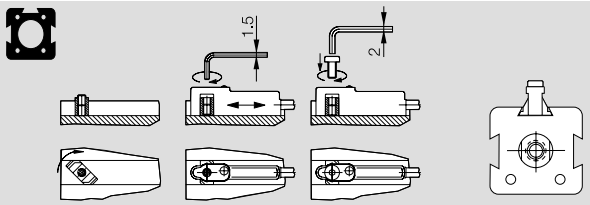
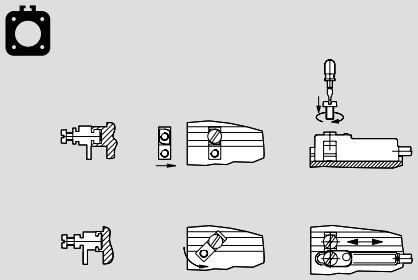
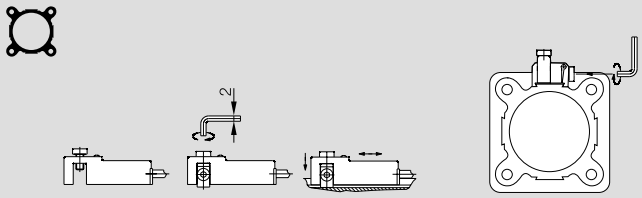
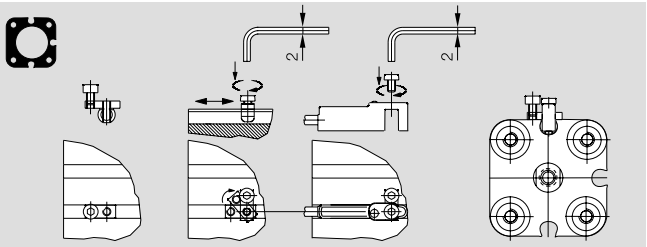
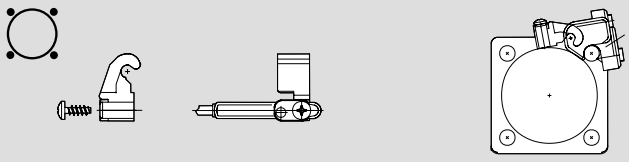
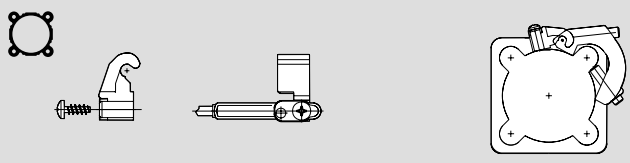
Advantages

Can be inserted into slot from above.
Anytime!
Even later!
Fast!
Time-saving!

Adjust switchpoint in seconds! Turn screw one revolution, adjust position, tighten.

Switchpoint can't be lost. Even if you replace the sensor, the adjusted switch-point is retained by the bracket.

Ordering code	Advantages	Cylinder slot	Bracket
BMF 305-HW-25 		trapezoidal slot 60°/90°  e. g. Festo, Bosch, Numatics, Hoerbiger-Origa, Norgren-Martonair	
BMF 305-HW-26 		T-slot **A**  T-slot **B**  e.g. SMC	position for T-slot **A**  position for T-slot **B** 
BMF 305-HW-27 		trapezoidal guide  e. g. Bosch	
BMF 305-HW-32 		C-slot  e. g. Norgren	
BMF 305-HW-21 together with BMF 21-HW-8 			
BMF 305-HW-21 together with BMF 21-HW-10 			

	Installation	Included
	1. Insert bracket from above and rotate 90° 2. Insert sensor, position, tighten bracket 3. Tighten down sensor with bracket	Setscrew DIN 916 M3×4-A2 Screw DIN 7984 M3×6-A2 Bracket
 The bracket can be used for two slot dimensions.	T-slot **A**: insert bracket, insert sensor from above, position and tighten both screws. T-slot **B**: insert bracket from above and rotate 90°. Insert sensor from above, position and tighten both screws.	Cheese head screw ISO 1207 M3×5 A2 Cheese head screw ISO 1207 M3×14 A2 Bracket
	1. Insert bracket from above 2. Insert sensor from above and tighten 3. Position sensor, tighten bracket	Screw DIN 912 M3×4-A2 Screw DIN 7984 M3×10-A2 Bracket
	1. Insert bracket from above and rotate 90° 2. Insert sensor, position, tighten bracket 3. Tighten down sensor with bracket	Screws DIN 7984 M3×5-A2 Bracket
	BMF 305-HW-21 together with BMF 21-HW-8 for installation on a tie rod cylinder	PT-screw KBL 30x8-A2 Bracket BMF 305-HW-21 (bracket BMF 21-HW-8 please order separately)
	BMF 305-HW-21 together with BMF 21-HW-10 for installation on an profile cylinder	PT-screw KBL 30x8-A2 Bracket BMF 305-HW-21 (bracket BMF 21-HW-10 please order separately)