

# P3MB

## Gage and Absolute Pressure Transducers



Version with fixed cable

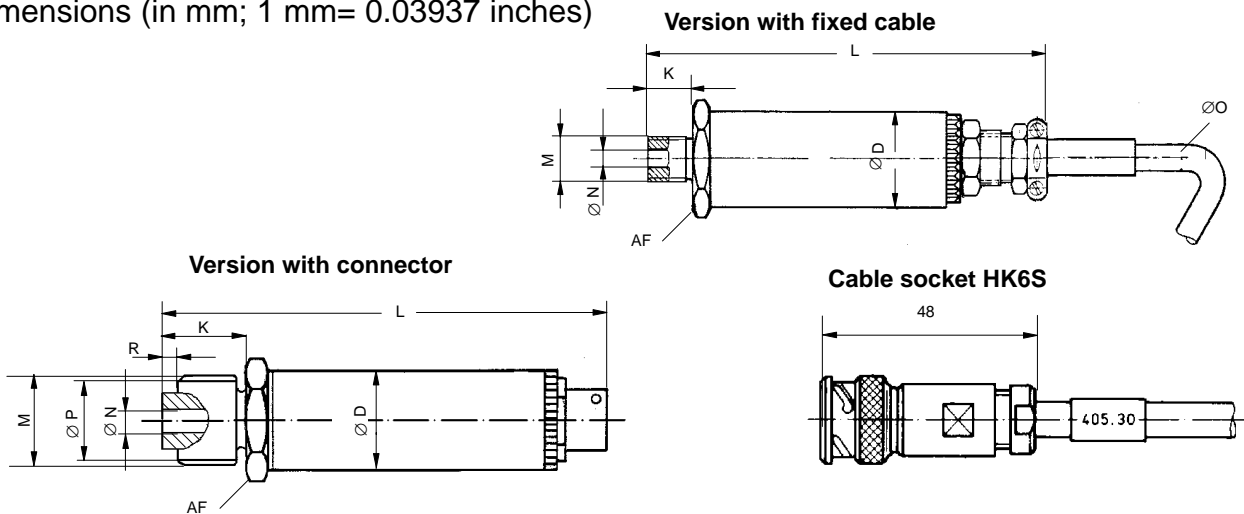


Version with connector

### Special features

- For static and dynamic pressure variances, pressure peaks, pressure fluctuations
- Measuring ranges 0–1 bar to 0–5 bar with piezoresistive principle of measurement
- Measuring ranges 0–10 bar to 0–3000 bar with S/G (strain gauge) principle of measurement
- Available in Ex-i version ( $\geq 10$  bar)
- Maximum reliability and stability
- Corrosion-resistant
- Degree of protection IP67 to DIN 40 050 (IEC 529)
- Connecting transducers in parallel facilitates differential pressure measurement ( $\geq 10$  bar)

Dimensions (in mm; 1 mm= 0.03937 inches)



P3MB		D	K	L	M	N	O	P	AF	R
with cable connection	1 bar...5 bar	25	12	101	M12x1.5	5	6.5	–	22	–
	10 bar...2 000 bar	25	12	112	M12x1.5	5	6.5	–	27	–
	3 000 bar	25	20	129	M20x1.5	5	6.5	17.5	27	3
with plug connection	1bar...5 bar	25	12	85	M12x1.5	5	–	–	22	–
	10 bar...2 000 bar	25	12	97	M12x1.5	5	–	–	27	–
	3 000 bar	25	20	105	M20x1.5	5	–	17.5	27	3



**Inexpensive standard versions available from stock:**

Measuring range, 0 bar...	Pressure type		Ordering details	
	Gage pressure	Absolute pressure	Cable connection 3 m cable, unterminated	HS6P (plug connection)
1 bar		◆	1-P3MB/A1BAR	1-P3MBP/A1BAR
1 bar	◆		1-P3MB/R1BAR	1-P3MBP/R1BAR
5 bar		◆	1-P3MB/A5BAR	1-P3MBP/A5BAR
5 bar	◆		1-P3MB/R5BAR	1-P3MBP/R5BAR
10 bar		◆	1-P3MB/10BAR	1-P3MBP/10BAR
20 bar		◆	1-P3MB/20BAR	1-P3MBP/20BAR
50 bar		◆	1-P3MB/50BAR	1-P3MBP/50BAR
100 bar		◆	1-P3MB/100BAR	1-P3MBP/100BAR
200 bar		◆	1-P3MB/200BAR	1-P3MBP/200BAR
500 bar		◆	1-P3MB/500BAR	1-P3MBP/500BAR
1000 bar		◆	1-P3MB/1000BAR	1-P3MBP/1000BAR
2000 bar		◆	1-P3MB/2000BAR	1-P3MBP/2000BAR
3000 bar		◆	1-P3MB/3000BAR	1-P3MBP/3000BAR

**Pin assignment**

Wiring pin assignment		Connector	
- BK (black)	} Excitation voltage $U_B$		BU Excitation voltage (+)
+ BU (blue)			GN Sense lead (+)
- GY (grey)	} Sense leads		WH Measurement signal (+)
+ GN (green)			RD Measurement signal (-)
+ WH (white)	} Measurement signal $U_A$		BK Excitation voltage (-)
- RD (red)			GY Sense lead (-)
Cable shielding (ground)			

## Specifications to DIN 16086

Type		1-P3MB/A		1-P3MB/R		1-P3MB								
Accuracy class		0.2		0.2		0.2	0.15	0.2	0.15	0.1	0.2			
Mechanical input quantities														
Pressure type		Absolute pressure		Gage pressure		Absolute pressure								
Measuring range, 0 bar...	bar	1	5	1	5	10	20	50	100	200	500	1000	2000	3000
Initial value	bar	0		Ambient air press.		0								
Mechanical values to VDI/VDE 2600, by reference to full scale value														
Operating range at reference temperature	%	0...100				0...200			0...150					
Overload limit at reference temperature	%	300				250			200					
Test pressure	%	300				250			200			150		
Destructive range	%	600				>250			>200					
Max. dynamic pressure	%	100							100					
Max. dynamic vibration amplitude to DIN 50 100	%	70							70					
Natural frequency of the membrane	kHz	12	25	12	25	13	15	26	38	67	>100			
Dead volume	mm <sup>3</sup>	350				2000			800			900		
Control volume	mm <sup>3</sup>	-				9	7			1.5				
Material														
of the parts in contact with the measurement medium		1.4401				1.4301, 1.4542			1.4542					
of the parts in contact with environment		1.4401/1.4301				1.4542, 1.4301, nickel-plated brass, chloropren rubber, silicone								
of the membrane		Hastelloy C				-								
of the fluid		Carbon halide oil				-								
Output characteristics														
Output signal span	mV/V	2 ± 1 %		precise value at transducer (tol. ≤ 0.1%)		2 ± 0.15 %							1.5 ± 0.15 %	
Linearity deviation incl. hysteresis	%	± 0.1				± 0.2	± 0.15	± 0.2	± 0.15	± 0.1	± 0.2			
Repeatability to DIN 1319	%	< 0.05				± 0.05								
Effect of temperature on sensitivity in the nominal range of the excitation voltage per 10 K, by reference to the actual value														
in the nominal temperature range	%	± 0.15				± 0.1								
in the operating temperature range	%	± 0.2				± 0.2								
Effect of temperature on the zero signal in the nominal range of the excitation voltage per 10 K, by reference to nominal sensitivity														
in the nominal temperature range	%	± 0.15				± 0.1								
in the operating temperature range	%	± 0.2				± 0.15								
Nominal range of the excitation voltage (rms value)														
Input resistance at reference temperature	Ω	570...2200				350 ± 5								
Output resistance at reference temperature	Ω	300...700				350 ± 1.5								
Isolation resistance at 500 V AC	GΩ	5				5								
Ambient conditions														
Reference temperature	°C[°F]	+23 [+73.4]				+23[+73.4]								
Nominal temperature range	°C[°F]	-20...+80 [-4...+176]				-10...+80[+14...+176]								
Limiting temperature range	°C[°F]	-40...+125[-40...+257]				-40...+100[-40...+212] (...120°C[+248°F] up to 24 hours)								
Storage temperature range	°C[°F]	-40...+125[-40...+257]				-50...+100[-58...+212]								
Degree of protection (to DIN 40050, IEC 529)		IP67		IP65		IP67								
Mechanical specifications														
Pressure connection 1-P3MB		M12x1.5				M12x1.5							M20x1.5	
Weight without cable approx.	g	100				200								

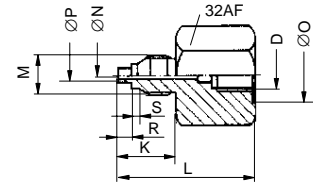
**Accessories:**

**List of components supplied:**

- 1 USIT ring U12.7x20x1.5 for P3MB..../1 Bar ... 200 Bar
- 1 double-cone seal, 1.4305, for P3MB..../500 Bar ... 3000 Bar

**Also available:**

**Connecting thread**  
for measuring ranges up to 500 bar  
Material: Stainless steel 1.4305



Type	D	K	L	M	N	O	P	R	S
P3M/500/M20	M12x1,5	25	50	M20x1,5	4	20,2	5	5	3
P3M/500/R1/2	M12x1,5	20	50	G1/2	4	20,2	5	5	3

Connection cable Kab 405.30A-3 (for version with connector HS6P)

Cable socket HK6S, order no. 3-3312.0095

Cable connector for Greenline Order no. 1-MS3106PEMV

15-pin sub-D connector, order no. 2-9278.0321

**Options:**

Code	Option 1: Measuring range
01AM	1 bar Absolute pressure M12x1.5
01RM	1 bar Gage pressure M12x1.5
05AM	5 bar Absolute pressure M12x1.5
05RM	5 bar Gage pressure M12x1.5
010B	10 bar Absolute pressure M12x1.5
020B	20 bar Absolute pressure M12x1.5
050B	50 bar Absolute pressure M12x1.5
100B	100 bar Absolute pressure M12x1.5
200B	200 bar Absolute pressure M12x1.5
500B	500 bar Absolute pressure M12x1.5
01KB	1000 bar Absolute pressure M12x1.5
02KB	2000 bar Absolute pressure M12x1.5
03KB	3000 bar Absolute pressure M20x1.5

Code	Option 2: Electrical connection
Y	with cable, ≤ 20 m, unterminated <sup>*)</sup>
M	with cable, 3 m, MS-connector
D	with cable, 3 m, D15 connector
N	with cable, ≤ 20 m, MS-connector <sup>*)</sup>
F	with cable, ≤ 20 m, D15 connector <sup>*)</sup>
E	with cable, 3 m, unterminated Ex-i, for ≥ 10 bar
X	with cable, ≤ 20 m, unterminated Ex-i, ≥ 10 bar <sup>*)</sup>
Q	with connector HS6P Ex-i, for ≥ 10 bar

<sup>\*)</sup> Please specify required length of cable

Ordering details K-P3MB -     -   
Example order K-P3MB - 010B - D

Modifications reserved.  
All details describe our products in general form only. They are not to be understood as express warranty and do not constitute any liability whatsoever.

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