Data Sheet

P3MB

Gage and Absolute Pressure Transducers

Version with fixed cable

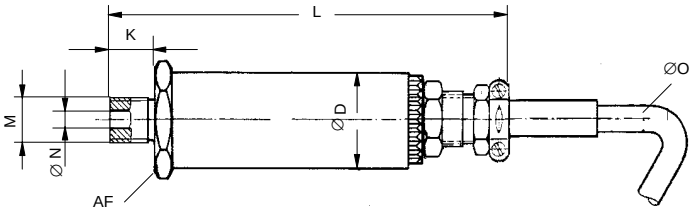
Version with connector

Special features

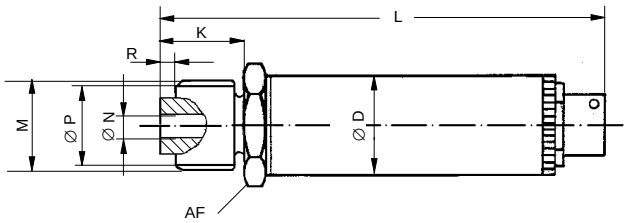
- **For static and dynamic pressure variances, pressure peaks, pressure fluctuations**
- **Measuring ranges 0–1 bar to 0–5 bar with piezoresistive principle of measurement**
- **Measuring ranges 0–10 bar to 0–3000 bar with S/G (strain gauge) principle of measurement**
- **Available in Ex-i version (≥10 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 (≥10 bar)**

Dimensions (in mm; 1 mm= 0.03937 inches)

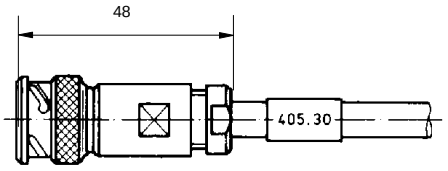
Version with fixed cable



Version with connector



Cable socket HK6S



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:

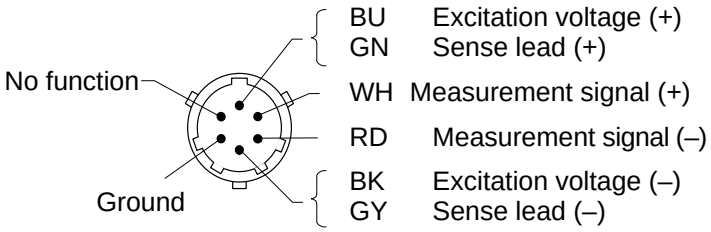
Measuring range, 0 bar...	Pressure type		Ordering details	
	Gage pressure	Absolute pressure	Cable connection 3 m cable, unterminated	HS6P (plug connection)
1 bar		♦	1–P3MB/A1BAR	1–P3MBP/A1BAR
1 bar	♦		1–P3MB/R1BAR	1–P3MBP/R1BAR
5 bar		♦	1–P3MB/A5BAR	1–P3MBP/A5BAR
5 bar	♦		1–P3MB/R5BAR	1–P3MBP/R5BAR
10 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

– BK (black) + BU (blue)	}	Excitation voltage U_B
– GY (grey) + GN (green)	}	Sense leads
+ WH (white) – RD (red)	}	Measurement signal U_A
		Cable shielding (ground)

Connector



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 limitat 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^3	350				2000					800			900
Control volume	mm^3	–				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)	V	0.5...12				0.5...12								
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:

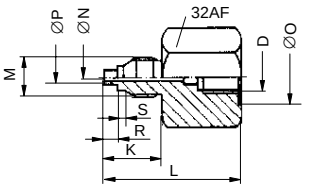
List of components supplied:

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*)**
M	**with cable, 3 m, MS–connector**
D	**with cable, 3 m, D15 connector**
N	**with cable, ≤20 m, MS–connector*)**
F	**with cable, ≤20 m, D15 connector*)**
E	**with cable, 3 m, unterminated Ex-i, for ≥10 bar**
X	**with cable, ≤20 m, unterminated Ex-i, ≥10 bar*)**
Q	**with connector HS6P Ex-i, for ≥10 bar**
*) Please specify required length of cable	

Ordering details K-P3MB – ☐☐☐☐ – ☐
Example order K-P3MB – 0 1 0 B – D

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