

144S...-PCB Series

Signal conditioned precision pressure transducers

FEATURES

- 0...70 mbar to 0...10 bar absolute, gage or differential pressure
- Barometric pressure range
- 0...5 V output
- Internal supply regulation
- Precision temperature compensated and calibrated
- Special calibrations for small volumes on request



SERVICE

Non-corrosive, non-ionic working fluids, such as dry air and dry gases.

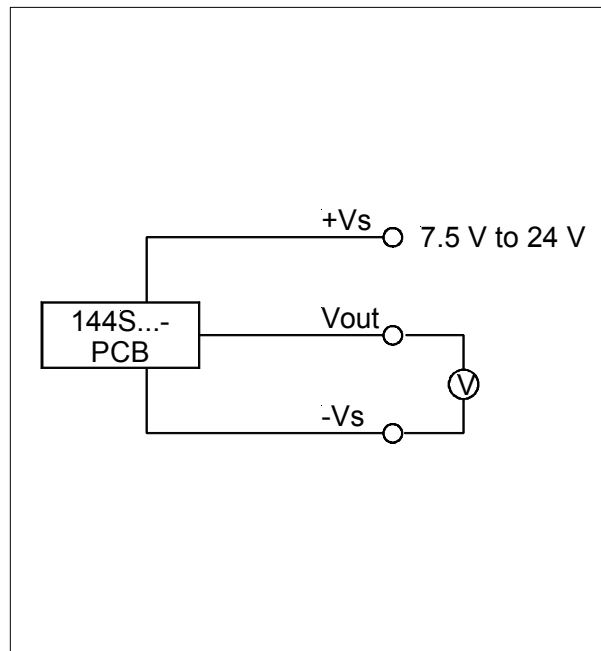
Scale: 1 cm
1 inch

SPECIFICATIONS

Maximum ratings

Supply voltage	7.5 ... 24 V
Maximum load current	
Source	20 mA
Sink	10 mA
Temperature limits	
Storage	-55°C to 100°C
Operating	-40°C to 85°C
Compensated	
144SB..., 144SM...	0 - 70°C
144SC...BARO	-10 to 60°C
Lead temperature (10 sec soldering)	300°C
Humidity limits pressure inlets only	0 - 100 %RH
Proof pressure ¹	
144SM...	1.4 bar
144SB001...	2 bar
144SB002...	4 bar
144SB005...	10 bar
144SB010...	16 bar
144SC...BARO	2 bar

ELECTRICAL CONNECTION



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PERFORMANCE CHARACTERISTICS

STANDARD DEVICES (unless otherwise noted $V_s = 8\text{ V}$, $R_L > 100\text{ k}\Omega$, $t_{amb} = 25^\circ\text{C}$)

Characteristics		Min.	Typ.	Max.	Unit	
Operating pressure	(differential devices) ²	144SM070D-PCB	0		70	mbar
		144SM350D-PCB	0		350	
	(absolute devices) ³	144SB001D-PCB	0		1	bar
		144SB002D-PCB	0		2	
		144SB005D-PCB	0		5	
		144SB010D-PCB	0		10	
		144SB001A-PCB	0		1	
		144SB002A-PCB	0		2	
144SB005A-PCB	0		5			
Zero pressure offset		-0.05	0	0.05	V	
Full scale span ⁴		4.9	5.0	5.1		
Full scale output		4.9	5.0	5.1		
Non-linearity and hysteresis (BSL) ⁵			0.1	0.5	%FSO	
Thermal effects (0°C to 70°C) ⁶	Offset	144SM070D-PCB		0.6		3.0
		144SM350D-PCB		0.2		1.0
	all others		0.15	0.6		
	Span		0.2	1.0		
Long term stability ⁷			0.1			
Response time (10 % to 90 %)			1		ms	
Power consumption (no load)			70		mW	
Power supply rejection	Offset		0.05		%FSO/V	
	Span		0.03			

BAROMETRIC DEVICES (unless otherwise noted $V_s = 8\text{ V}$, $R_L > 100\text{ k}\Omega$, $t_{amb} = 25^\circ\text{C}$)⁸

Characteristics		Min.	Typ.	Max.	Unit
Operating pressure ranges ³	144SC1216BARO	12		16	psia
	144SC0811BARO	800		1100	mbar
Offset calibration at lowest specified pressure		-0.05	0	0.05	V
Full scale output		4.95	5.0	5.05	
Non-linearity and hysteresis ⁵			0.005	0.1	%FSO
Long term stability ⁷			0.1		
Temperature effects (-10°C to 60°C) ⁶			0.05	0.3	%FSO/10°C
Response time (10 % to 90 %)			1		ms
Power consumption (no load)			70		mW
Power supply rejection	Offset		0.05		%FSO/V
	Span		0.03		

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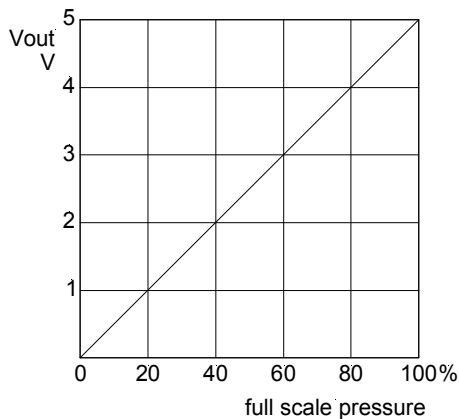
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Specification notes:

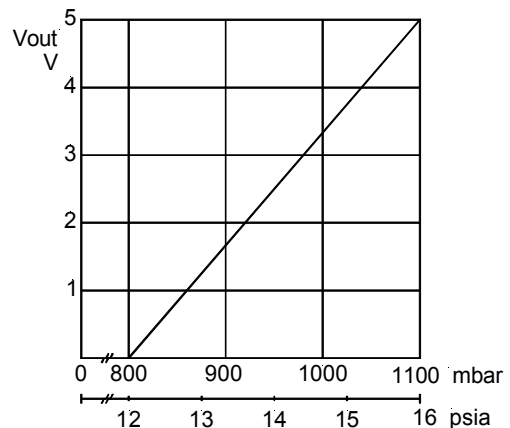
1. Proof pressure is the maximum pressure which may be applied without causing damage to the sensing element.
2. The output signal of all 144SB...D-PCB and 144SM...D-PCB devices is proportional to the pressure applied to port B, relative to port A, e.g. the output signal increases when vacuum is applied to port A relative to port B.
3. The output signal of all 144SB...A-PCB and 144SC...BARO devices is proportional to the pressure applied to port A.
4. Full scale span is the algebraic difference between the positive full scale output and the zero pressure offset.
5. Non-linearity refers to the Best Straight Line fit measured for offset pressure, full scale pressure and 1/2 full scale pressure.
6. Thermal effects tested and guaranteed from 0 - 70°C relative to 25°C. All specifications shown are relative to 25°C.
7. Change in output after one year or 1 million pressure cycles.
8. These devices are factory calibrated at sea level. When used at other altitudes the output signal differs from the reading expected when comparing to the pressure given from your local weather station. The weather station always reports the pressure compared to sea level. On that the output signal of the transducer will change 65mV/0.052 psi per 100 feet e.g. 19.7mV/1.18 mbar per 10 m change in altitude. The output signal can be adjusted to sea level reading by turning the offset trimmer.
9. Temperature shift refers to the combined effects of offset and sensitivity shifts, this is true at 60°C relative to 25°C.

OUTPUT CHARACTERISTICS

Standard versions



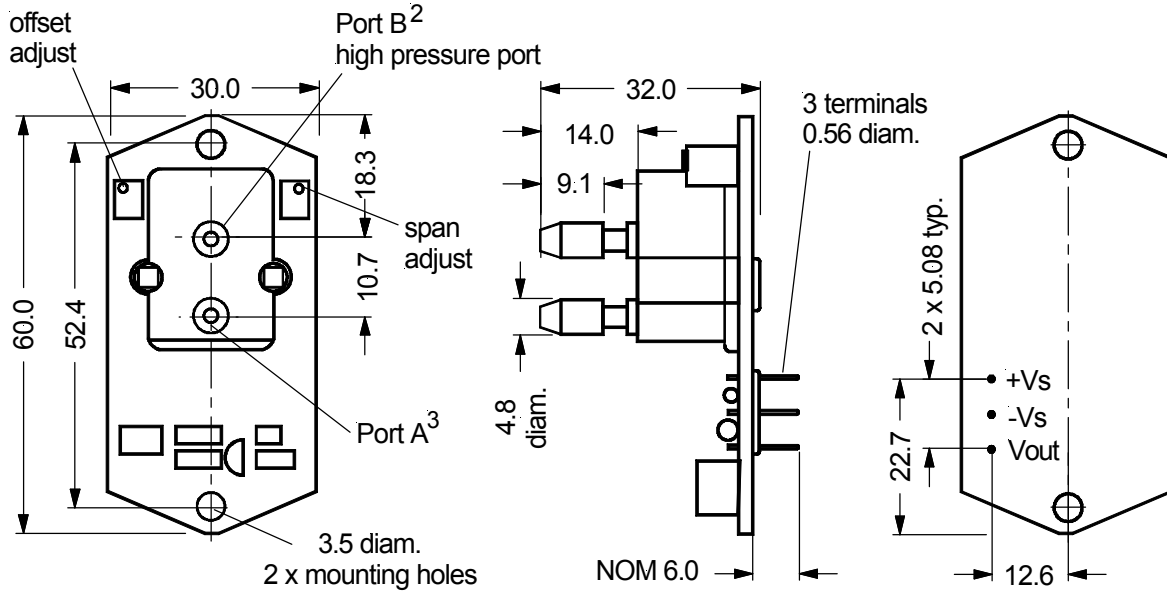
Barometric versions



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OUTLINE DRAWING



mass: 20 g

dimensions mm

ORDERING INFORMATION

Operating Pressure		Part Number
differential/gage devices	0 to 70 mbar	144SM070D-PCB
	0 to 350 mbar	144SM350D-PCB
	0 to 1 bar	144SB001D-PCB
	0 to 2 bar	144SB002D-PCB
	0 to 5 bar	144SB005D-PCB
	0 to 10 bar	144SB010D-PCB
absolute devices	0 to 1 bar	144SB001A-PCB
	0 to 2 bar	144SB002A-PCB
	0 to 5 bar	144SB005A-PCB
barometric devices	12 to 16 psia	144SC1216BARO
	800 to 1100 mbar	144SC0811BARO

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