AA07B and AA08B

Micro-Baratron® Pressure Transducers

Today's process tools and equipment require reliable transducer and display performance in small geometrics with multiple fitting options. MKS addresses these issues with a building block design approach, allowing for custom configuration to meet your exact needs.

For more than three decades, MKS Baratron® capacitance manometer technology yields the most stable, accurate, and reliable sensors available today. Sensor construction is intrinsically durable with well-matched materials to provide extremely low thermal coefficient for wide temperature range performance.

This highly accurate and stable sensor technology is combined with sophisticated electronics to further optimize performance in an EMI/RFI insensitive high-level output. Enhanced accuracy, long-term stability, and low temperature coefficients produce the repeatability critical to today's gas measurement applications. As a result, the AA07B and AA08B pressure transducers offer higher accuracy, superior value, and reliable performance.

Accuracy is specified as a percent of Reading, not Full Scale, as seen in some of the lower performance devices. Percent of Reading accuracy provides you with an even more accurate output signal in the lower scale of the pressure range — where it is needed most. (Figure 1).

The AA07B/AA08B transducers are ideally suited for use in delivery systems that feed ultrapure gases to critical process systems. Their wetted surfaces exposed to the gas stream have a finish of better than 10µin Ra. These transducers exhibit superior dry-down characteristics, and contribute no particles above background. After manufacture and assembly, they are purged with ultraclean nitrogen prior to double bagging in a class 100 environment.

Product Features

- Proven capacitance technology at a competitive price
- Incoloy® wetted surface provides superior corrosive gas and liquid compatibility
- Available models include 4 to 20mA output
- Highest overpressure ratio tolerances on the market assure no degradation in zero repeatability or performance
- Accuracy specified in % of Reading for superior results in lower pressure ranges
- Optional integrated display gives local reading of line pressure (1000 Torr, 100 and 250 psia ranges)
- Replaceable electronics



Key Benefits

- Higher Accuracy
- Reliable Performance
- Superior Value

The all-Incoloy® construction of the sensors in the AA07B/AA08B allows for high overpressure tolerances that reduce errors due to line pressure spikes. High burst pressure ratings contribute to overall system safety. On existing gas cabinets and process systems, field replacement of common dial gauges or lower performance transducers is made easy due to the small size, industry standard end-to-end lengths, and electrical interface choices of these transducers.

A variety of fittings are available in different styles and sizes. A selection of power supply inputs (+12 to +32 VDC), output signals (0-5 or 0-10 VDC, or 4-20 mA two-wire), and connectors (9-pin or 15-pin Type “D”, Bendix®, or flying leads) enable the equipment or manufacturing engineer to easily interface the AA07B/AA08B pressure transducers with virtually any control system.

The optional local integrated display provides a digital readout of the line pressure at the transducer. The display, which is available on the 1000 Torr, 100 and 250 psia ranges with the 0-10 VDC output signal, provides a highly-visible red LED display of the pressure and the units of measurement. The display can also be switched to show any of four different units (psia, Torr, bar, and kPa) without requiring recalibration or re-ranging of the transducer itself. It takes its power from the incoming transducer voltage, so no additional cables are required.

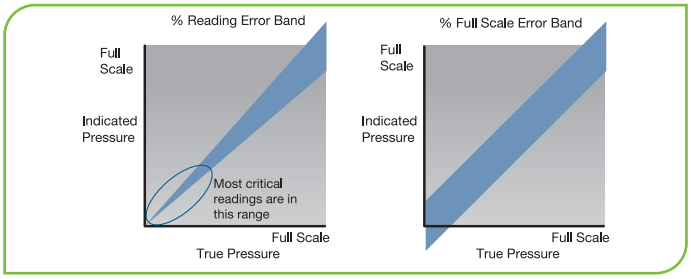


Figure 1 - Comparison of MKS repeatability expressed as percent of Reading transducer versus other percent of Full Scale transducers.

Specifications

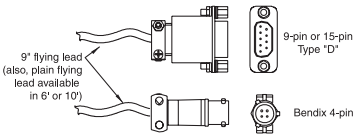
Configuration	**AA07B** **AA08B**	• Ultraclean, single-ended • Ultraclean, flow-through
Full Scale Ranges	**AA07B** **AA08B**	• 1000 Torr to 3000 psia • 1000 Torr to 3000 psia
Accuracy (including non-linearity, hysteresis, and non-repeatability)		1.0% of Reading (NIST traceable calibration sheet provided from 10% to 100% of Full Scale)
Temperature Coefficient	**Zero** **Span**	• 0.02% of Full Scale/°C, 50 psia to 3000 psia; 0.04% of Full Scale/°C, 1000 Torr • 0.04% of Reading/°C, 50 psia to 3000 psia; 0.08% of Reading/°C, 1000 Torr
Ambient Operating Temperature		0° to 50°C (32° to 122°F)
Overpressure Limit[1]		• 1.5× Full Scale for ranges from 1000 Torr to 500 psi • 1.2× Full Scale for ranges from 501 to 3000 psi
Burst Pressure		• 10× Full Scale for ranges from 1000 Torr to 500 psi • 5x Full Scale for ranges from 501 to 3000 psi
Materials Exposed to Process Gases		Incoloy
Wetted Surfaces		< 10µin Ra max.
Input Power Required	**0 to 10 Volt output** **0 to 5 Volt output** **2-wire 4-20 mA output**	• +13 VDC to +32 VDC @ 10 mA max. • +12 VDC to +32 VDC (regulated if below 13 VDC) @ 10 mA max. • +13 to +32 VDC excitation
Output Signal	**0 to 10 VDC** **0 to 5 VDC** **2-wire 4-20 mA output**	• Into > 10K Ω load • Into > 10K Ω load • Into 0 to 900 Ω load (depending on excitation) along with +13 to +32 VDC at transducer terminals
Electrical Connectors		Male 9-pin at end of 9'' flying lead, male 15-pin high density D type connector at end of 9'' flying lead, Bendix® at end of 9'' flying lead, or 6' or 10' flying leads
Fittings	**AA07B (single-ended)** **AA08B (flow-through)**	• ½'' weld stub, ¼'' weld stub, ¼'' buttweld ''T'', 4 VCR® male, 4 VCR® female • ¼'' weld stub, 4 VCR® male, 4 VCR® female, surface mount
Non-Incendive Approval		Non-incendive Electrical Equipment for Class I, Division 2, Groups B, C, and D, evaluated to FM 3600:2022 and FM 3611:2021. (4-20mA output signal with 9-pin D connector only)
Compliance[2]		CE, FCC, KC, UKCA, NRTL (TUVR), CAN ICES-3(A)/NMB-3(A)

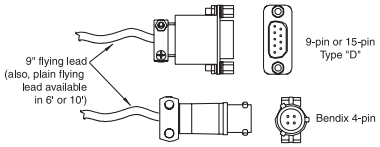
[1] The pressure at which the transducer can be subjected without degradation of performance when returned to a normal operation pressure range.
[2] For CE compliance, the mating connection must be properly grounded.

AA07B Single-ended

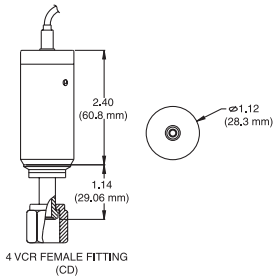
AA08B Flow-through

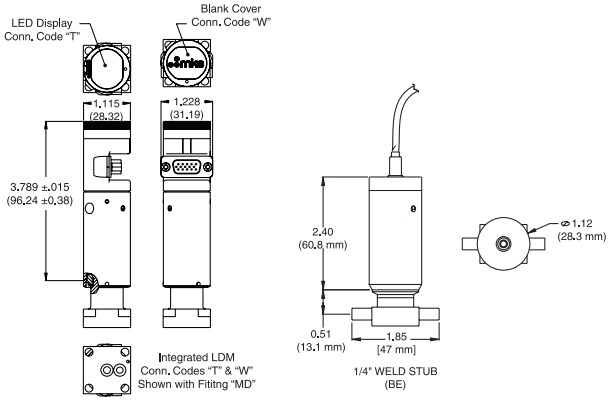
Connectors



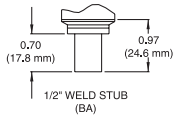


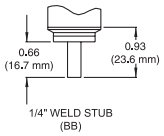
Transducers

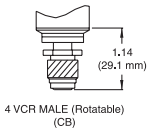


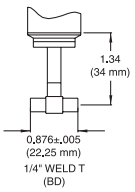


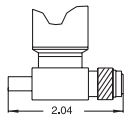
Fittings

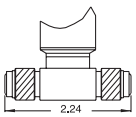


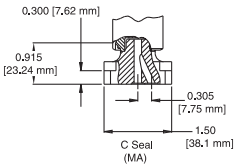


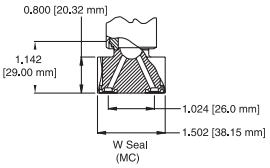


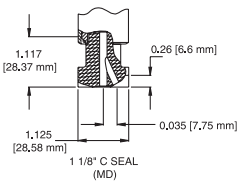


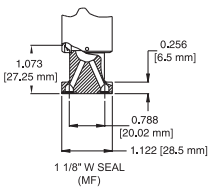


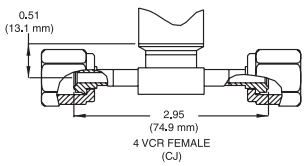












Dimensional Drawings

Note: Unless otherwise specified, dimensions are nominal values in inches (mm referenced).

Ordering Code Example: AA07B33PCB2GA1	Code	Configuration
Model		
AA07B Single-ended AA08B Flow-through	AA07B AA08B	AA07B
Pressure Range Full Scale		
1000 Torr 100 psia 250 psia 1000 psia 3000 psia	13T 12P RDP 13P 33P	33P
Fittings		
AA07B only: ½'' weld stub ¼'' weld stub ¼'' buttweld ''T'' 4 VCR male, rotatable 4 VCR female **AA08B only:** ¼'' weld stub (1.85'' face-to-face) 4 VCR male, nonrotatable (2.78'' face-to-face) 4 VCR male, nonrotatable (2.24'' face-to-face) 4 VCR female (2.95'' face-to-face) 4 VCR male, nonrotatable / ¼'' weld stub 4 VCR female (3.045'' face-to-face) 1.5'' C-seal surface mount 1.5'' W-seal surface mount 1 1/8'' C-seal surface mount 1 1/8'' W-seal surface mount	BA BB BD CB CD BE CA CH CJ CL CM MA MC MD MF	CB
Input/Output		
+13 to +32 VDC/0-10 VDC +12 to +32 VDC/0-5 VDC 4-20 mA with +13 to +32 VDC at terminals	2 3 4	2
Accuracy (Q)		
1% of Reading	G	G
Connectors		
9-pin type D at end of 9'' flying lead 15-pin high density type D at end of 9'' flying lead Bendix 4-pin at end of 9'' flying lead 6' flying leads 10' flying leads Bendix 4-pin 4-20 mA on pins A&B LDM-C (Red LED), 0-5 VDC and 0-10 VDC with high density D connector LDM-C (with Blank Cover), 0-5 VDC and 0-10 VDC with high density D connector	A C D F L H T W	A
Environmental		
Standard enclosure (indoor use) Optional NEMA 4 enclosure for water, ice and dust (not available with connector codes A, C, T or W)	1 4	1

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