

Ares Series

PCB Mounted Pressure Transducers for Volume OEM Applications

The Ares Series is a small, low cost pressure transducer, which is able to measure pressures as low as 0 to 5, 0 to 10, 0 to 15 inches of water, and 0 to 1 psig. The ranges combined with the small physical size make the device ideally suited for applications such as HVAC, medical equipment and flow monitoring .

The plastic housing design for the Ares Series makes the device very user friendly. The housing is designed to be printed circuit board mountable, requiring no additional hardware. Built into the housing are self locking pins which insure a secure fit between the housing and the PCB. The pressure ports are 3/16" barbed ports which mate with industry standard 1/8" or 3/16" ID tubing. These ports are mounted 90° to the printed circuit board to allow other boards to be located above the sensor.

Providing both error correction and signal amplification, the electronic module's ASIC uses digital compensation while maintaining an analog signal path, a unique design among piezoresistive sensor products. The technique provides the high level of error correction found in microprocessor-based circuits but with a typical bandwidth of >1 kHz generally found only in analog circuits. The result is a pressure sensor that offers the ultimate in low-cost and high accuracy, while preserving the fast response and smooth output inherent to silicon sensors.

The ASIC is a mixed signal CMOS sensor interface that uses differential switched capacitor architecture, and was specifically designed to compensate for the errors associated with piezoresistive silicon sensors.

The heart of the Ares pressure transducer is its custom ASIC. This ASIC, an enhanced version of the ASIC used on the TITAN Series pressure transducer, drastically reduces the external parts requirement for calibration. This development allows the overall PCB size to be reduced, while still allowing the Ares to achieve outstanding performance characteristics. Due to its small size, barbed pressure ports, and solder re-flow capability, the Ares pressure transducer is ideally suited for a wide range of applications.



Features

- Very Low Pressure Ranges**
- Small Size**
- PCB Mountable**
- Solder Reflow Capability**
- Barbed Pressure Ports**
- Dry/Dry Differential Transducer**

Typical Applications

- HVAC**
- Medical Equipment**
- Environmental Controls**
- Portable Monitors**

Common Specifications (all specifications are at 77°F [25°C] unless otherwise noted)

Supply Voltage	5V
Maximum Proof Pressure to any Port	5 psi
Burst Pressure	10 psig all ranges
Maximum Common Mode Pressure	10 psi all ranges
Media	Non-Ionic, Non-Corrosive media (clean, dry gases)
Humidity	95% non-condensing
Shock	50 g, 11 msec, 1/2 sine per Mil Std 202F, Method 213B, Condition A
Vibration	10 g sinusoidal peak to peak per Mil Std 810C
Long Term Drift	±0.5%FSO/year
Reflow Temperature	240°C (5 sec max)
Temperature Range	
Compensated	0° to 60°C
Operating	-25° to 80°C
Storage	-25° to 80°C

Specifications by Model

	GA100 Series	GA200 Series
Offset¹ (V)	0.5 ±0.050	0.25 ±0.050
Span^{1,3} (V)	4.0 ±0.025	3.75 ±0.025
Input Voltage³ (V)	5.0 ±0.25	
Output Impedance (Ω Max)	5	
Temperature Error (Over the Compensated Range)		
Span Error (%FSO)	1.5%	
Zero Error (%FSO)	1.5%	

¹ At 5.00 VDC input voltage.

² Output is ratiometric to input voltage variation.

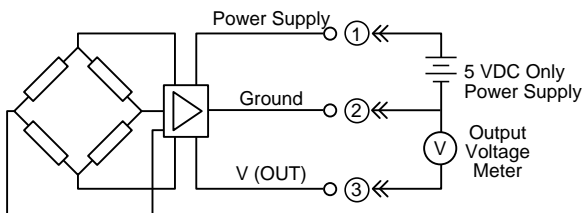
³ The span is defined as the algebraic difference between the electrical output at full scale pressure voltage and the electrical output at zero pressure.

Standard Pressure Ranges

Ares Model Number	Operating Pressure	Accuracy %FSO ⁴
GA100-005WD	0 to 5" H ₂ O	0.25%
GA100-010WD	0 to 10" H ₂ O	0.5%
GA100-015WD	0 to 15" H ₂ O	0.5%
GA100-001PD	0 to 1 PSI	0.75%
GA200-005WD	0 to 5" H ₂ O	0.25%
GA200-010WD	0 to 10" H ₂ O	0.5%
GA200-015WD	0 to 15" H ₂ O	0.5%
GA200-001PD	0 to 1 PSI	0.75%

⁴ Includes effects of non-linearity, hysteresis and repeatability

Output Connection Diagram



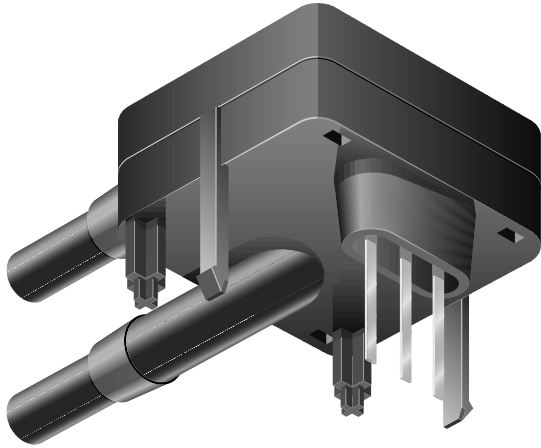
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How to Order

Specify the Ares model with the appropriate output configuration and pressure range.

Ares Series Pressure Transducer Model Number Code:



GA -

Output Configuration

100 (0.5 to 4.5 V)
200 (0.250 to 4 V)

Pressure Range

005WD (5" H₂O)
010WD (10" H₂O)
015WD (15" H₂O)
001PD (1 psi)

