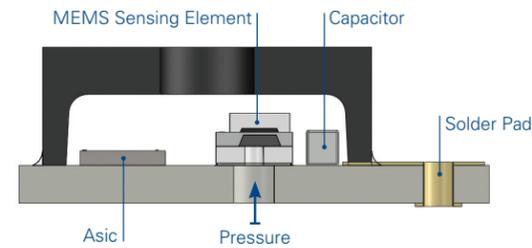
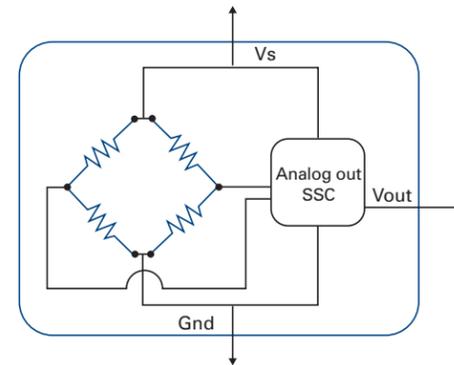


**CROSS SECTION**

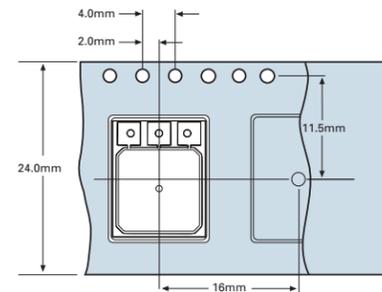


**ELECTRICAL**

Note: Power supply decoupling and output filtering included



**PACKAGING AND SHIPPING**



Merit Sensor is based in Salt Lake City, Utah



**Fully Compensated TR Series**

The TR Series pressure transducer is a rugged, direct-media pressure monitoring solution designed for today's toughest pressure sensing environments.

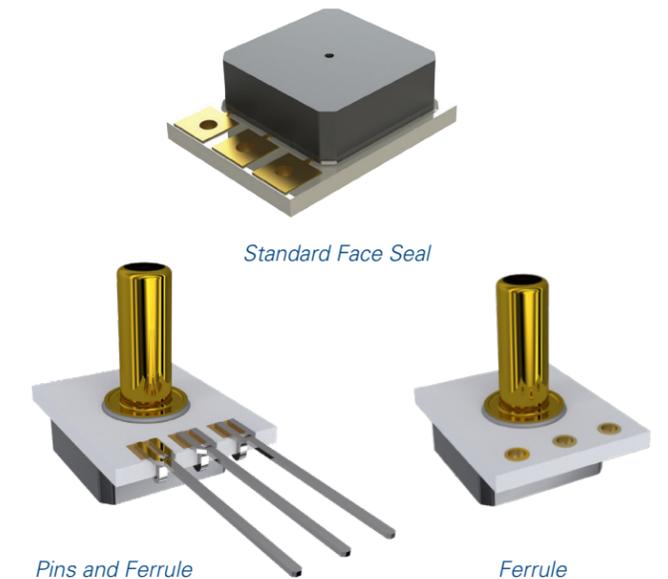
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The TR Series is designed for air, liquid and gas harsh media compatibility over a broad temperature range from -40°C (-40°F) to 150°C (302°F) with a total error band of less than 2.5%. The design includes a 4.7kohm pull-up resistor, operates on a single 5.0VDC supply, and requires no external components for proper operation. Both gage and absolute pressure reference designs up to 500 psi (34.5 bar) operating range are available.

**TYPICAL APPLICATIONS**

- Industrial
  - HVAC system monitoring
  - Industrial automation
  - Process monitoring
  - Air-conditioning (refrigerant systems)
  - Portable measurement and analysis instrumentation
  - Water level and pressure monitoring
- Automotive
  - Transmission fluid pressure
  - Fuel system pressure
  - Oil system pressure
  - EGR system pressure
  - DEF system
  - Manifold absolute pressure
  - Fuel Rail system pressure
- Medical
  - Diagnostics and analysis equipment



**TR Series Part Number Configurator**

TR1-XXXX-XXX

<p><b>Full-Scale Pressure</b></p> <p>0015 = 15 psi                  0030 = 30 psi                  0100 = 100 psi                  0300 = 300 psi                  0500 = 500 psi</p>	<p><b>Calibration</b></p> <p>1 = Standard 2.5% Cal.                  2 = 1% Accuracy Cal.</p>
<p><b>Pressure Type</b></p> <p>A = Absolute                  G = Gage</p>	<p><b>Port</b></p> <p>0 = Standard Face Seal                  1 = Ferrule</p>

Features	Min.	Typ.	Max.	Unit	Notes
<b>Electrical</b>					
Supply Voltage (Vs)	4.5	5	5.5	Volts	
Supply Current			10	mA	
Output Current			2.5	mA	
Short Circuit Current	-25		25	mA	
Reverse Polarity Protection	-33			Volts	Device will cease operation during supply voltage fault.
Overvoltage Protection			33	Volts	Device will cease operation during supply voltage fault.
ESD	>4			kV	Human body model 1.5kOhm/100pF.
<b>Performance</b>					
Output Range (Vout)	10		90	%Vs	
Output Clipping Limit (Vout)	5		95	%Vs	
Resolution			0.02	%FS	>12 bit DAC
Accuracy				%FS	Accuracy includes all error for hysteresis and linearity over the entire operating temperature range. It does not include lifetime drift. -40°C to 150°C.
Standard	-2.5	0	2.5	%FS	
High Performance	-1.0	0	1.0	%FS	
Startup Time		3.5		msec	
Analog Update Time		2		msec	
Static Proof Pressure		2X FS		PSIA	
Burst Pressure		3X FS		PSIA	
Lifetime Drift	-0.5		0.5	%FS	1000 HRS. @ 150°C
<b>Environmental</b>					
Operating Temperature	-40		150	°C	
Storage Temperature	-55		150	°C	
Weight		1.08		Grams	Face Seal
		1.306		Grams	Ferrule
		1.179		Grams	Face Seal w/pins
		1.397		Grams	Ferrule w/pins

**Transfer Function Formula**

$$P_{psi} = (P_{max} - P_{min}) \cdot \left( \frac{V_{out} - V_{min}}{V_{max} - V_{min}} \right) + P_{min}$$

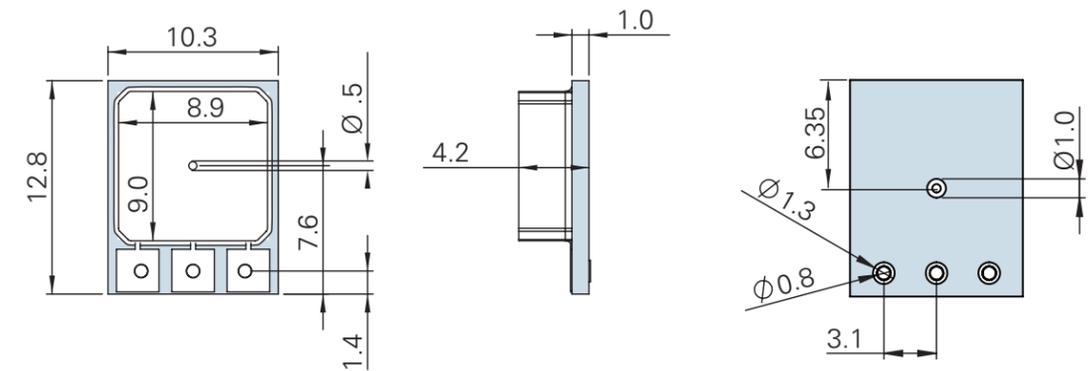
**Where**

- $P_{psi}$  = Measured Pressure in PSI
- $P_{Max}$  = Maximum Pressure
- $P_{Min}$  = Minimum Pressure
- $V_{min}$  = Minimum Volatage (Usually 0.5V)
- $V_{max}$  = Maximum Volatage (Usually 4.5V)
- $V_{out}$  = Output voltage

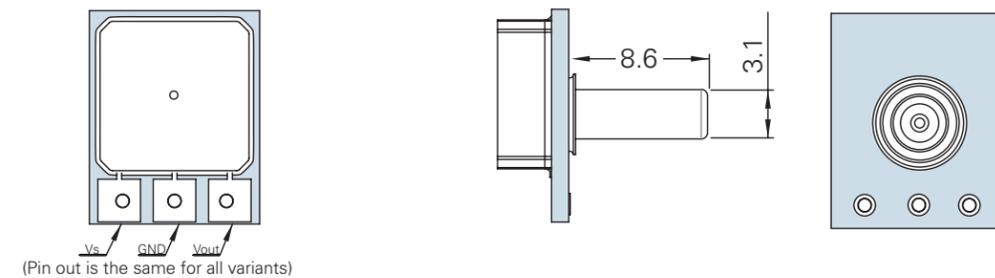
## DIMENSIONS FOR STANDARD OPTIONS (in millimeters)

Dimensions for reference only.  
Engineering drawings (with tolerance) available upon order.

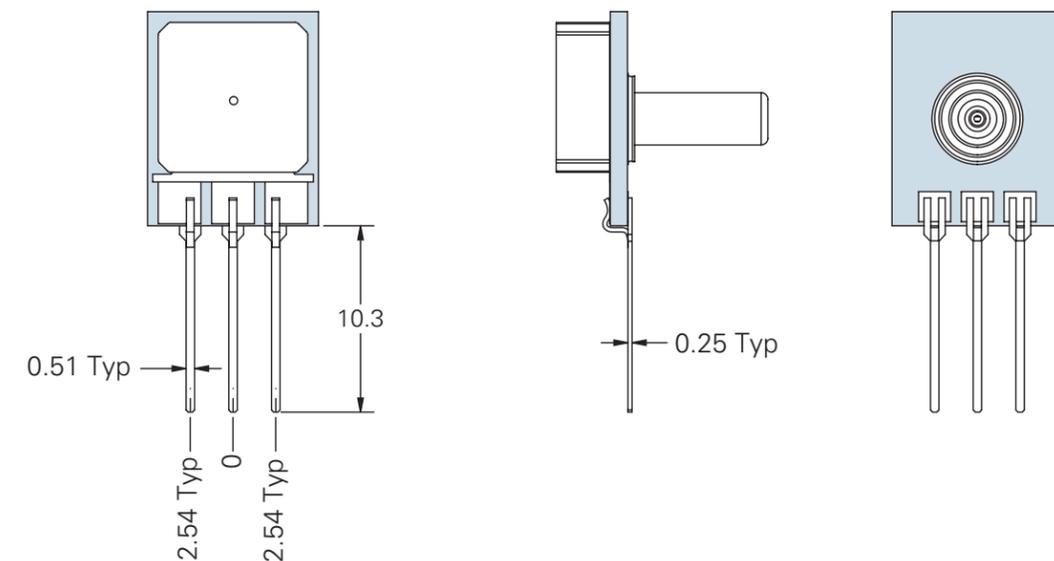
### Standard Face Seal



### Ferrule



### Pins and Ferrule



Features	Min.	Typ.	Max.	Unit	Notes
<b>Electrical</b>					
Supply Voltage (Vs)	4.5	5	5.5	Volts	
Supply Current			10	mA	
Output Current			2.5	mA	
Short Circuit Current	-25		25	mA	
Reverse Polarity Protection	-33			Volts	Device will cease operation during supply voltage fault.
Overvoltage Protection			33	Volts	Device will cease operation during supply voltage fault.
ESD	>4			kV	Human body model 1.5kOhm/100pF.
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Output Range (Vout)	10		90	%Vs	
Output Clipping Limit (Vout)	5		95	%Vs	
Resolution			0.02	%FS	>12 bit DAC
Accuracy				%FS	Accuracy includes all error for hysteresis and linearity over the entire operating temperature range. It does not include lifetime drift. -40°C to 150°C.
Standard	-2.5	0	2.5	%FS	
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Static Proof Pressure		2X FS		PSIA	
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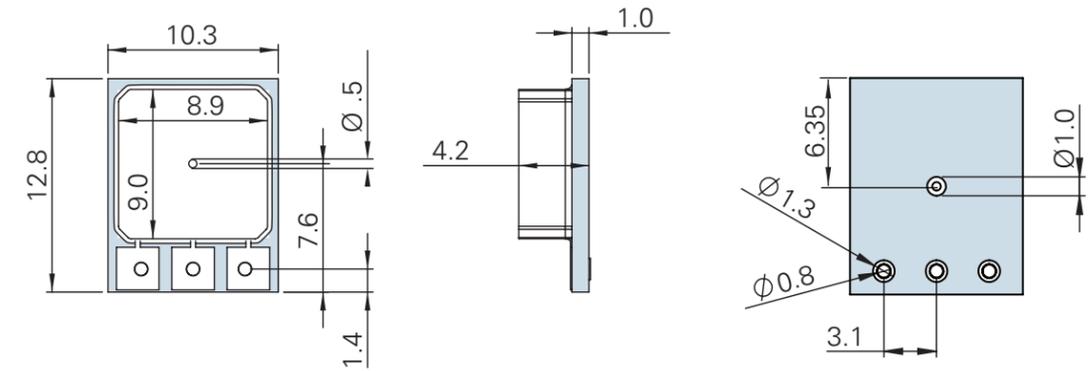
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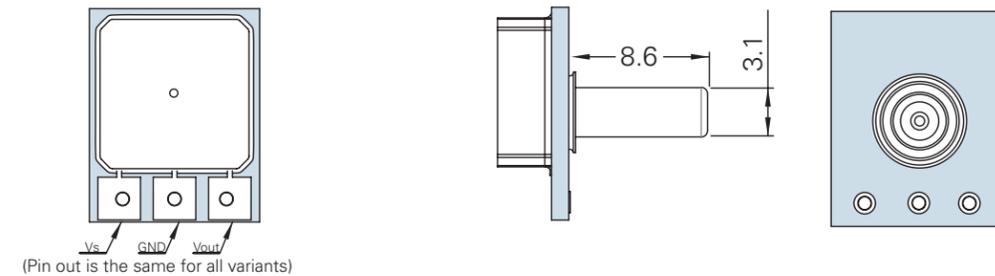
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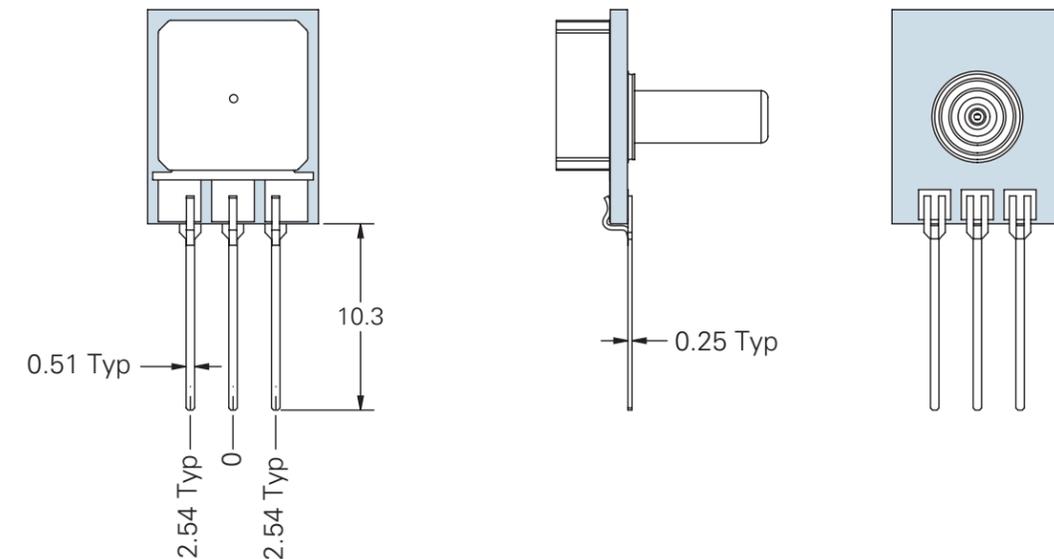
#### Standard Face Seal



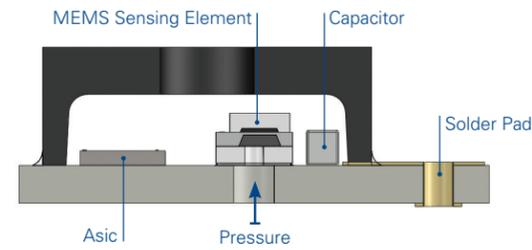
#### Ferrule



#### Pins and Ferrule

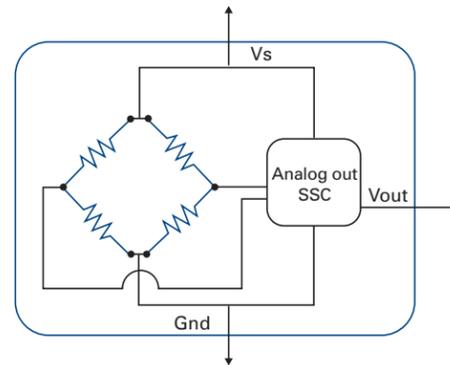


**CROSS SECTION**

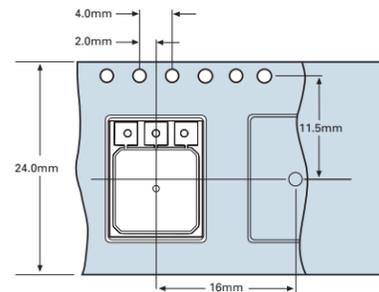


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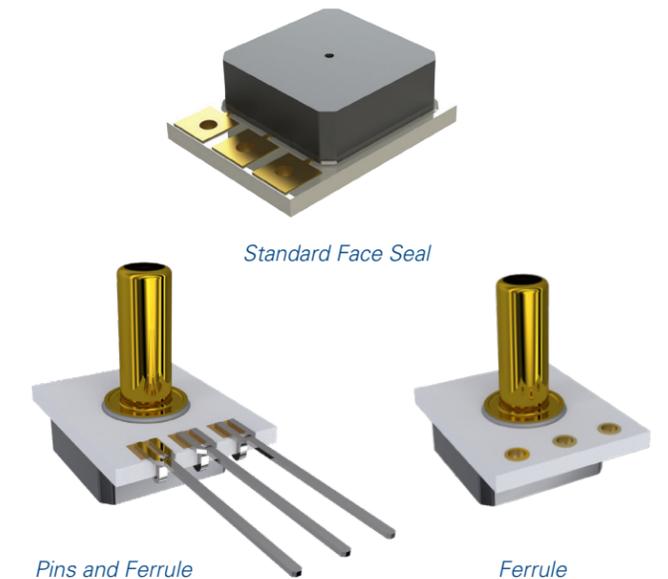
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