

P51 Pressure Sensor



Product Overview

The MediaSensor™ (P51) family of bulk micromachined, absolute, sealed and gauge pressure sensors are for both harsh and benign media with superior accuracy over operating temperature. These compact, robust sensors are well suited for a variety of automotive, industrial and commercial applications.

Typical Applications

- Refrigeration
- HVAC
- Fuel Cells
- Process Controls
- Pumps
- Agriculture
- Hydraulics
- Pneumatics
- Compressors
- Spray Systems
- Flow
- Robotics

Technical Specifications

Maximum Pressure

7,500 PSI

Accuracy

< ± 1.00% FS

Maximum Operating Temp.

125 °C

Output Type	0.5 - 4.5 V	1 - 5 V	4 - 20 mA
Accuracy 15-50 or 751-5,000 PSI (at 22 °C)	< ± 1.00% FS	< ± 1.00% FS	< ± 1.00% FS
Accuracy 51-750 PSI (at 22 °C)	< ± 0.50% FS	< ± 0.50% FS	< ± 0.50% FS
Temp Error 15-50 or 751-5,000 PSI (-40 °C to 105 °C)	< ± 1.00% FS	< ± 1.00% FS	< ± 1.00% FS
Temp Error 51-750 PSI (-40 °C to 105 °C)	< ± 0.50% FS	< ± 0.50% FS	< ± 0.50% FS
Zero Pressure Offset	0.50 V	1.0 V	4.0 mA
Full Scale Output (at Pressure FS)	4.50 V	5.0 V	20.0 mA
Operating Temperature	-40 °C to 125 °C	-40 °C to 125 °C	-40 °C to 125 °C
Storage Temperature	-40 °C to 125 °C	-40 °C to 125 °C	-40 °C to 125 °C
Operating Temp. (Harnessed Sensor)	-40 °C to 105 °C	-40 °C to 105 °C	-40 °C to 105 °C
Storage Temp. (Harnessed Sensor)	-40 °C to 105 °C	-40 °C to 105 °C	-40 °C to 105 °C
Proof Pressure	2X FS	2X FS	3X FS
Burst Pressure - ABS/Sealed Gauge (lesser of two)	10X FS or 15,000 PSI	10X FS or 15,000 PSI	10X FS or 15,000 PSI
Burst Pressure - Gauge	3X FS	3X FS	3X FS
Reverse Voltage (± 16 V over 5 min.)	Available	Available	Available
Overvoltage (± 16 V over 5 min.)	Available	Not Available	Not Available

Output Type	0.5 - 4.5 V	1 - 5 V	4 - 20 mA
Supply Voltage	5 ± 0.5 Volts	8 to 30 Volts	8 to 30 Volts
Current Draw	< 6 mA	< 3 mA	Not Applicable
Output Type	0.45 mA max (sink or source)	0.45 mA max (sink or source)	4 - 20 mA
Response Time (Pressure/Output)	< 1 ms	< 1 ms	< 1 ms

Parameter	Value	Units
Pressure/Temperature Cycles	> 1.8 x 10	Cycles
Thermal Shock	250	Cycles
Vibration	144	Hours
EMC Compatibility	150	V/m
Humidity	250	Hours
Weight	≤ 85	Grams

Chemical Compatibilities

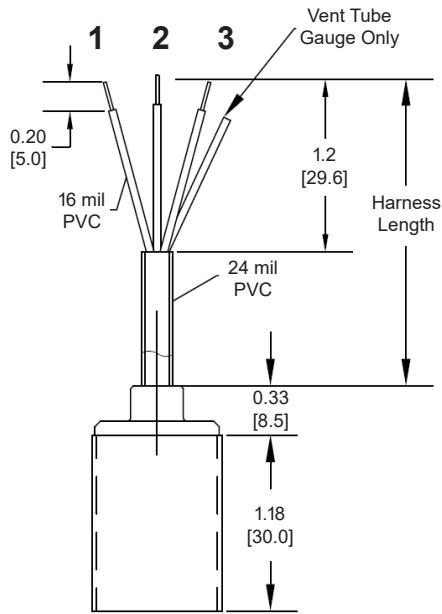
Any gas or liquid compatible with 304L and 316L stainless steel. (Including but not limited to motor oil, diesel, hydraulic fluid, brake fluid, water, wastewater, hydrogen, nitrogen, and air.) Designed to be used in media isolated mediums.

Agency Approvals & Certifications

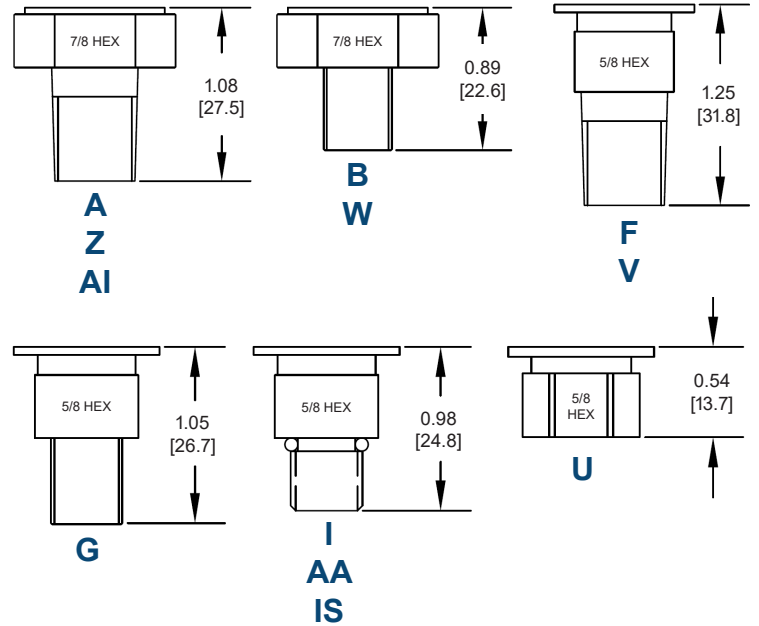


Dimensional Drawings

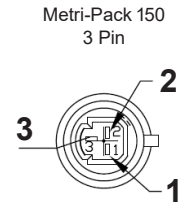
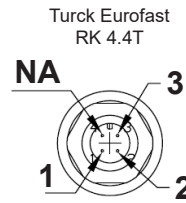
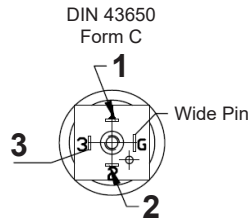
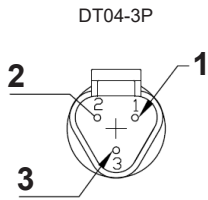
Harness



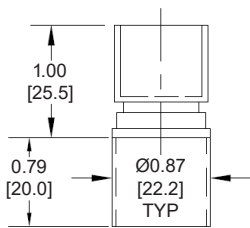
Ports



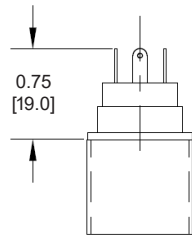
Connectors



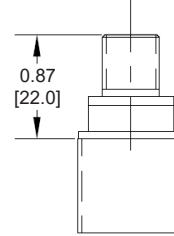
Deutsch



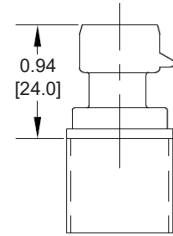
DIN 43650



M12



Packard



Pin	Color	1-5 V	0.5-4.5 V	20 mA
1	Red	V_{in} (8-30)	V_{in} (5+/-0.1)	V_{in} (8-30)
2	Black	GND	GND	NA
3	White	V_{out}	V_{out}	GND
	Tube	Gauge	Gauge	Gauge

Measurement Units		
0.00	=	Inches
[00.0]	=	Millimeters

P51 MediaSensor™ Ordering System

P51 - 50 - A - A - I6 - 4.5 V - 000 - 000

Family —————

Full Scale —————
Pressure (15 - 7,500 PSI)

Pressure Type —————
A = Absolute (15 - 7,500 PSI)
G = Gauge (25 - 300 PSI)
S = Sealed Gauge (15 - 7,500 PSI)

Port Configuration —————

<u>304L</u>	<u>316L</u>	<u>Hex</u>	<u>Port</u>
A, AI	Z	7/8"	1/4 NPT
B	W	7/8"	1/8 NPT
F, V		5/8"	1/4 NPT
G		5/8"	1/8 NPT
I	AA	5/8"	7/16 - 20
U		5/8"	7/16 - 20 (Female)
IS		5/8"	7/16 - 20 (Snubber)

Connector / Harness —————

D = Deutsch

P = Packard

MD = DIN 43650 micro-mini connector with 90° mating connector

M12 = 4 pin micro connector

24 Gauge Harness (Inner PVC: 16 mil)

- **I6** = 6"
- **I12** = 12"
- **I18** = 18"
- **I24** = 24"
- **I36** = 36"
- **I72** = 72"

18 Gauge Harness (Inner PVC: 9 mil)

- **X6** = 6"
- **X12** = 12"
- **X18** = 18"

Output Options —————

4.5 V = 0.5 - 4.5 V (5 V input only)

4.5 OVP = 0.5 - 4.5 V (5 V input only) Includes over voltage protection

5 V = 1 - 5 V (8 to 30 V input only)

20 mA = 4 - 20 mA (8 to 30 V input only)

MOV = Option for 5 V and 20 mA for voltage spike protection

Placeholder

*Other port configurations may be available. Consult factory. MOQ's apply.

*Other harness lengths available - contact factory. MOQ's will apply.

Harness Information

- Stranded Copper: Tinned
- Outer Jacket PVC: 24 mil
- Vent Tube: 1.57 mil Diameter (Gauge Only)

Contact

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SSI Technologies, LLC is an Amphenol Advanced Sensors company.



Warranty

LIMITED WARRANTY: All SSI products are warranted against defective materials and workmanship for a period of one (1) year from the date of delivery to the original purchaser. Any product that is found to be defective within the one year period will be replaced at the discretion of SSI. **THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, PERFORMANCE, OR OTHERWISE.** SSI is not an expert in the customer's technical field and therefore does not warrant the suitability of its products for the applications selected by the customer. SSI accepts no responsibility for misuse, misapplication or unauthorized modification of its products.

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Note: Specs are subject to change without notice.