

SSI Technologies MediaSensor™

P51 Pressure Transducers

Product Description

SSI's line of bulk micro-machined, absolute and gage pressure transducers and transmitters for both harsh and benign media with the superior **accuracy of $\leq \pm 0.5\%$** represents a significant cost savings over currently available pressure transducers. These compact, robust transducers measure pressures from 15 Psi to 3,000 Psi and are well suited for a variety of automotive, industrial and commercial applications. SSI, a leading OEM supplier of automotive sensors...having delivered more than 100 million sensors to its customers, offers the **MediaSensor™**, targeted at industrial and commercial applications where cost, size, and performance are critical.

Typical Applications

- Refrigeration
- Fuel Cells
- Pumps
- Hydraulics
- Process Control
- Spraying Systems
- Pneumatics
- Compressors
- Flow
- Robotics
- Agriculture
- Hydrogen Storage

Standard Full Scale Pressure Ranges

- 15, 50, 75, 100, 200 and 300 Psig
- 500, 750, 1000, 1500, 2000 and 3000 Psis
- 15, 50, 75, 100, 200, 300, 500, 750, 1000, 1500, 2000 and 3000 Psia

- ✓ **Improved Accuracy**
- ✓ **Lower Pressure Ranges**
- ✓ **M12 & Mini DIN Connectors**
- ✓ **Custom Designs Available**



MediaSensor™ with integrated signal conditioning

Special Features

- **Superb Accuracy** – $\leq \pm 0.5\%$
- **Robust Package** – All laser-welded stainless steel design for optimal media isolation
- **Maximum Flexibility** – Custom ASIC provides signal conditioning for calibration and temperature compensation
- **Standard and custom options available**
- **Compact size, excellent price/performance ratio**
- **5 Volt input with 0.5 – 4.5 Volt output**
- **8 – 30 Volt input with 4 – 20 mA & 1 – 5 Volt output**

Performance Specifications (all values at 22°C unless noted otherwise)

Output Type		0.5 to 4.5 Volts	4 – 20 mA	1 – 5 Volts
Accuracy ¹	75-3000 PSI	< 0.50% FS	< 0.50% FS	< 0.50% FS
	15-50 PSI	< 1.00% FS	< 1.00% FS	< 1.00% FS
Thermal Error <i>(-40°C to 105°C)</i>	75-3000 PSI	< 0.50%FS	< 0.50%FS	< 0.50%FS
	15-50 PSI	< 1.00% FS	< 1.00% FS	< 1.00% FS
Total Error	75-3000 PSI	< 1.0% FS	< 1.0% FS	< 1.0% FS
	15-50 PSI	< 2.0% FS	< 2.0% FS	< 2.0% FS
Stability (Typical)		< 0.25%FS/Year	< 0.25%FS/Year	< 0.25%FS/Year
Zero Pressure Offset ²		0.50 V	4.0 mA	1.0 V
Full Scale Output ³		4.5 V	20 mA	5.0 V
Operating Temperature		-40 to 105°C	-40 to 105°C	-40 to 105°C
Storage Temperature		-40 to 105°C	-40 to 105°C	-40 to 105°C
Proof Pressure		3 x FS	3 x FS	3 x FS
Burst Pressure <i>Absolute Pressure Transducers</i>		10 x FS or 15,000 Psia (whichever is less)	10 x FS or 15,000 Psia (whichever is less)	10 x FS or 15,000 Psia (whichever is less)
Burst Pressure <i>Gage Pressure Transducers</i>		5 x FS	5 x FS	5 x FS

Electrical Specifications

Output Type		0.5 to 4.5 Volts	4 – 20 mA	1 – 5 Volts
Supply Voltage		5 +/- 0.5	8 to 30 Volts	8 to 30 Volts
Supply Current		< 5 mA	Not Applicable	< 5 mA
Output Current		0.45 mA Max (Sink or Source)	Not Applicable	0.45 mA Max (Sink or Source)
Response Time		< 1 ms	< 1 ms	< 1 ms
Reverse Polarity Protection		N/A	Yes	Yes

Reliability And Environmental Performance

	Test Conditions	Value	Units
Wetted Materials	304L & 316L Stainless Steel	–	–
Pressure/Temperature Cycles ⁴	0 to FS @ 8Hz; and -40°C to 105°C	>1.8x10 ⁶	Cycles
Thermal Shock	105°C to -40°C, 0.5 hr soaks at Temp. (2s Transfer)	250	Cycles
Vibration	10 to 2050 Hz, 20 Sinusoidal, 3 Axes	144	Hours
EMC Compatibility	80 MHz - 1 GHz	100	V/M
Humidity	85°C and 90% to 95% R. H.	250	Hours
Weight	Model 51 with M12 x 1.5 6g 304L Stainless Port	≤85	Grams

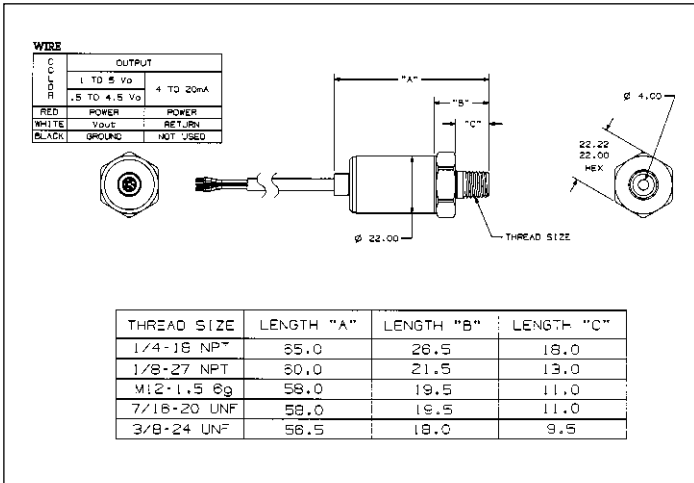
¹ Includes hysteresis, repeatability and non-linearity (BFSL)

² Transducer output @ 0 Psia, 0 Psig, or 0 Psis (consult factory for other options)

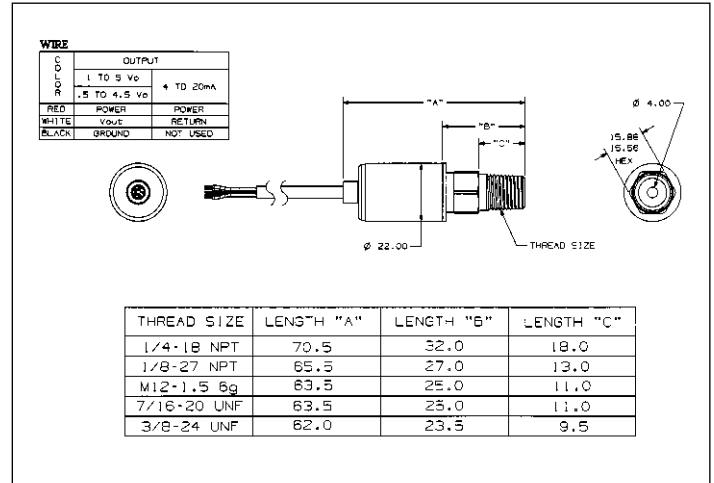
³ Transducer output @ Pressure Range +14.5 Psia

⁴ Pressure cycling performed at rated full scale pressure

Standard Packaging Options

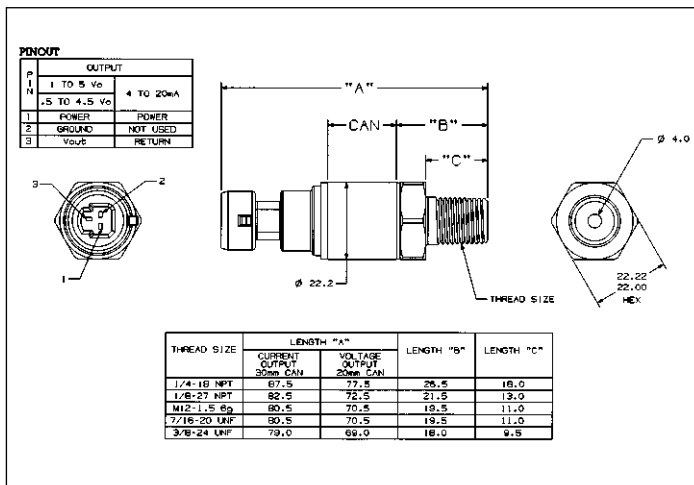


Integral Harness with 22mm Hex

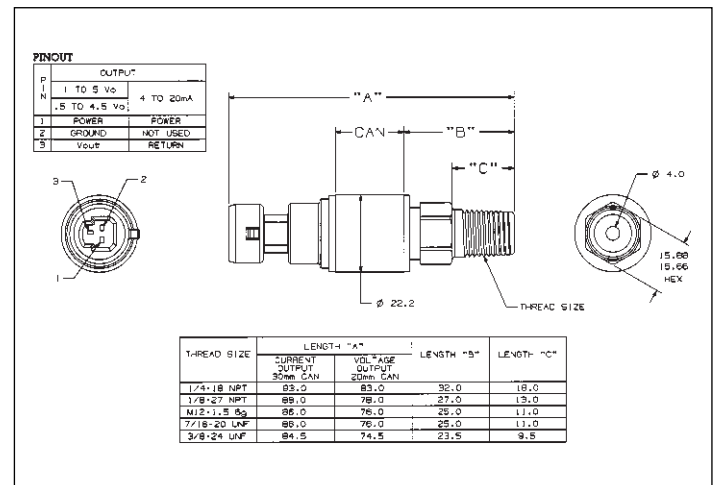


Integral Harness with 5/8" Hex

Harness Construction: PVC Jacketed 24 AWG Wire



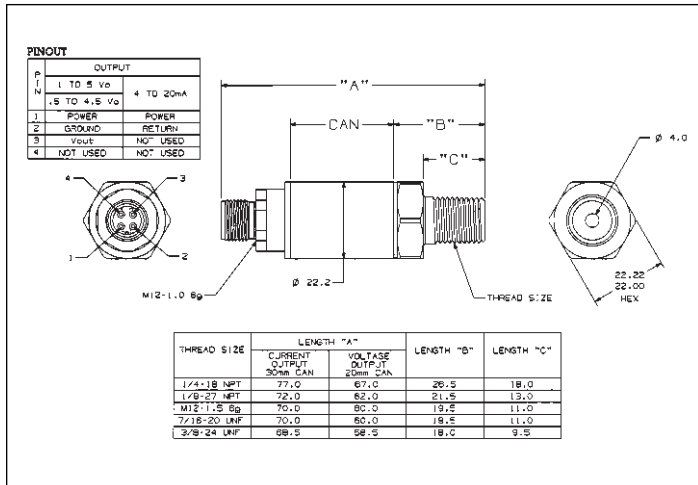
Packard Connector with 22mm Hex
8 - 30 Vdc Input : 1 - 5 Vdc Output



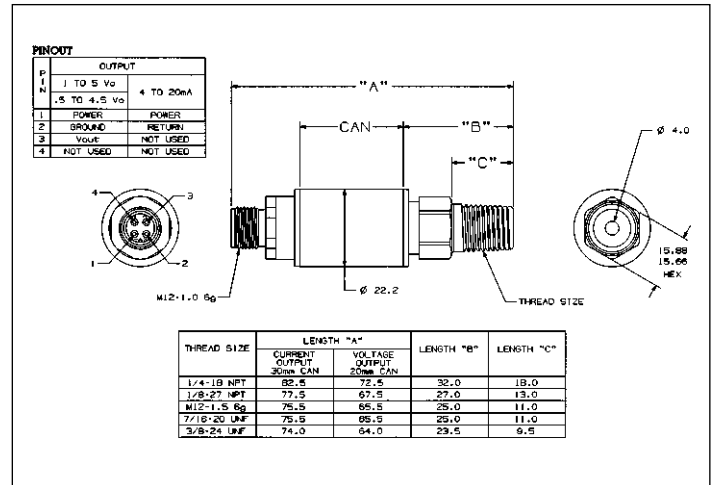
Packard Connector with 5/8" Hex
8 - 30 Vdc Input : 1 - 5 Vdc Output

Mating Packard Connector P/N 12065287 and Mating Packard Terminal P/N 12103881

Standard Packaging Options (Continued)

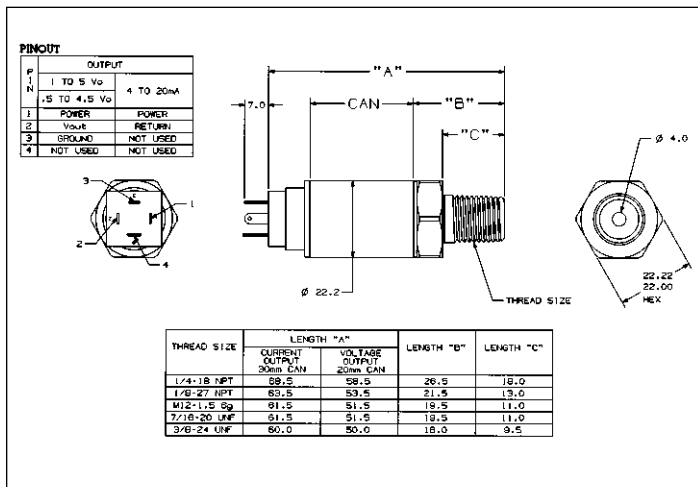


M12 4 Pin Micro Connector with 22mm Hex

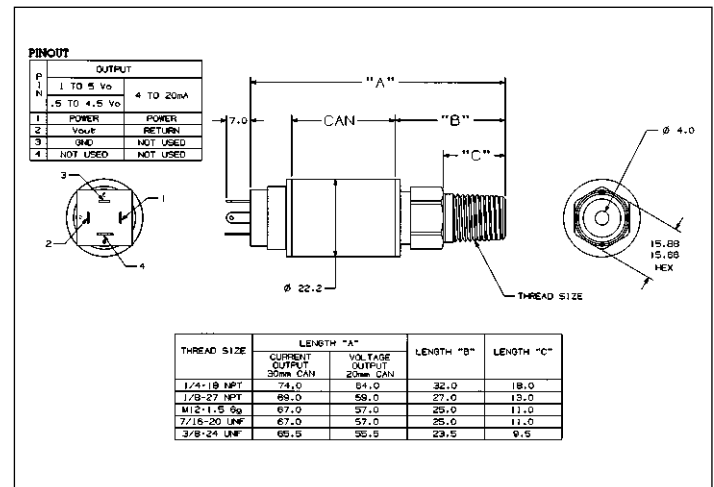


M12 4 Pin Micro Connector with 5/8" Hex

For MediaSensor™ with M12 4 Pin Micro Connectors use the 30mm CAN designation above



DIN 43650 Micro-mini Connector with 22mm Hex

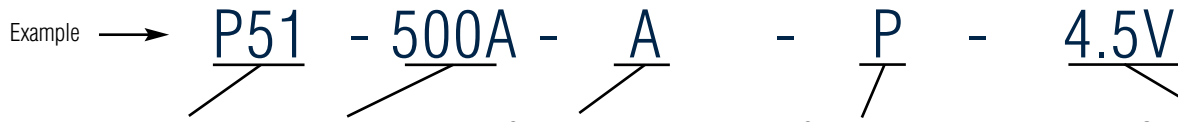


DIN 43650 Micro-mini Connector with 5/8" Hex

For MediaSensor™ with 43650 Micro-mini Connectors use the 30mm CAN designation above

Pressure Transducer Ordering System

The following explains SSI's pressure transducer order number sequence.



<u>Product Family</u>	<u>Pressure Ranges</u>	<u>Port Configuration</u>	
		Hex	Port
P51- Media Sensor	15 (G)		
Custom Call Factory	50 (A or G)	A	22mm 1/4 – 18 NPT
	75 (A or G)	B	22mm 1/8 – 27 NPT
	100 (A or G)	C	22mm M12 – 1.5 6g
	200 (A or G)	D	22mm 7/16 – 20 UNF
	300 (A or G)	E	22mm 3/8 – 24 UNF
	500 (A or S)	F	5/8" 1/4 – 18 NPT
	750 (A or S)	G	5/8" 1/8 – 27 NPT
	1000 (A or S)	H	5/8" M12 – 1.5 6g
	1500 (A or S)	I	5/8" 7/16 – 20 UNF
	2000 (A or S)	J	5/8" 3/8 – 24 UNF
	3000 (A or S)		

<u>Connector</u>	<u>Output Options</u>
P – Packard	4.5V – 0.5 to 4.5V (5V input only)
MD – DIN 43650 Micro-mini Connector	
M12 – M12 4 Pin Micro Connector	
I 6 – 6" Integral Harness	(8 to 30V input only)
I12 – 12" Integral Harness	20mA – 4 to 20mA
I18 – 18" Integral Harness	(8 to 30V input only)
I24 – 24" Integral Harness	
I36 – 36" Integral Harness	
I72 – 72" Integral Harness	

Notes:

1. A, G, or S designates Absolute, Gage or Sealed Gage Pressure
2. Calibration of the transducer is as follows:
 - a. Absolute Transducers are calibrated to have 0.5 Vdc, 1 Vdc, or 4 mA respectively at 0 Psia
 - b. Gage Transducers are calibrated to have 0.5 Vdc, 1 Vdc, or 4 mA respectively at 0 Psig
 - c. Sealed Gage Transducers are calibrated to have 0.5 Vdc, 1 Vdc, or 4 mA respectively at 0 Psig
3. Sealed Gage Sensors are not vented to atmosphere, but are calibrated to resemble a gage sensor output per the above note.