

# MSP 800

## New High Accuracy, Digitally Compensated Stainless Steel Isolated Pressure Transducer

### High Accuracy; Low Cost OEM; In-Flow Temperature Measurement

The MSP 800 series pressure transducers from the Microfused™ line of MEAS, measures pressure and temperature inline through a probe in the pressure port. This design immerses the temperature sensor directly in the flow of the media, (as shown in the picture), which is much more reliable than measuring the temperature of the sensor chamber or even the diaphragm. It also enables real-time feedback with no time delay.

The transducer pressure cavity is machined from an all metal sealed system. There are no o-ring or organics exposed to the pressure media. The durability is excellent.

Measurement Specialties' proprietary Microfused™ technology, derived from demanding aerospace applications, employs micromachined silicon piezoresistive strain gages, fused with high temperature glass to a stainless steel diaphragm.

This approach achieves media compatibility simply and elegantly providing an exceptionally stable sensor without the p-n junctions of conventional micromachined sensors.

This product is geared to the OEM customer using medium to high volumes. The standard version is suitable for many applications, but the dedicated design team at our Transducer Engineering Center stands ready to provide a custom design where the application warrants.



### FEATURES

- ◆ Digitally compensated for high accuracy
- ◆ Temperature probe immerses in media  
Through pressure port
- ◆ Rugged design for mobile use and  
exposure to the elements
- ◆ Glass fused metal diaphragm

### APPLICATIONS

- ◆ Advanced HVAC systems
- ◆ Pumps and compressors
- ◆ Hydraulic/pneumatic systems
- ◆ Off Road/mobile equipment
- ◆ Energy and water management
- ◆ Pressure instrumentation
- ◆ Smart refrigeration equipment
- ◆ Agriculture equipment

### environmental performance

Operating temperature range	-40 to 85°C (125°C available, consult factory)
Compensated temperature range	-20 to 85°C (125°C available, consult factory)
Temperature Output	10K ohms @ 25°C (NTC) 100K ohms @ 25°C (NTC) (Consult factory for other options)
Total Error Band (over comp.temp. range)	±2.5% of FS
Storage temperature range	-45 to 100°C
Shock	50g, 11msec half sine shock per MIL standard 202F, method 213 B, condition A
Vibration	±20g MIL-STD-810C, Procedure 514.2, Figure 514.2-2, curve L
Humidity	95% RH, Condensing



## performance specifications

### Performance at 77° F (25° C)

Pressure range	0-50, 75, 150, 250, 500 PSI (0-3, 6, 7, 17, 35 BAR)
Accuracy, % of FS Span (combined linearity, hysteresis and repeatability)	±0.25% BSL, max (per ISA S37.2)
Media compatibility	17-4 PH stainless steel (optional 316L stainless)
Pressure cycles	10 million, minimum
Pressure overload	2 times rated pressure
Burst pressure	5 times rated pressure
Long term stability (1 year)	±0.25% Span, (Typical)
<b>Electrical (consult factory for additional options):</b>	<b>Ratiometric</b>
Supply voltage	4.75 to 5.25VDC
Supply current	<10mA
Outputs	0.5 to 4.5V, at 5V
Load impedance	>100kohms for quoted performance
Bandwith	DC to 1kHz (Typical)
Standard connector options	Cable - 24" length (Additional connectors available upon request)

## ordering information

Model	Pressure Output	Connection	Temperature	Options	Pressure Port	Pressure Range/Units	Pressure Reference
M8	3=0.5 to 4.5 V (1)	1 = 2 ft cable	A=10 kohms B= 100 kohms	- 00000	5=1/4-18 NPT 6= 1/8-27 NPT S=M12 x 1.5	50P= 50 psi 3.5B 3.5 bar 75P= 75 psi 005B 5 bar 100P= 100 psi 007B 7 bar 150P= 150 psi 010B 10 bar 250P= 250 psi 017B 17 bar 500P= 500 psi 035B 35 bar	G = Gauge
	X=Special Output	X=Special connection	X=Special probe	1nnnn = custom drawing number	X=Special Port		

Fill options alphabetically from left

**Consult Factory for special options or non-standard part numbers**

Example:

M831A-000005-150PG

0.5 to 4.5 Vout (ratiometric) with 2 feet of cable. The temperature probe has a 10 kohm thermistor and there are no options. The unit has 1/4 NPT pressure port and is rated 150 psig.

M8X1B-123456-500PG

Special output, to drawing number 12345 - consult factory. This unit has 2 feet cable and a 100 kohm probe. It also has a 1/8 NPT port and is rated 500 psig.

## mechanical dimensions

