

## MSP-400 EMI/RFI Protected Stainless Steel Isolated Pressure Transducer

**ISO  
9002**

- **Low Cost OEM**
- **100% Leak Proof**

### Features

One-piece Stainless Steel Construction  
Ranges up to 10,000 PSI or 700 BAR  
Amplified Outputs  
Excellent Accuracy  
Wide Operating Temperature Range

### Applications

Pumps and Compressors  
Hydraulic/Pneumatic Systems  
Off Road  
Energy and Water Management  
Pressure Instrumentation  
Refrigeration Equipment  
Agriculture Equipment  
Train Braking Systems

### Description

The MSP series pressure transducers set a new price-performance standard for low cost, high volume, commercial and industrial applications. This series is suitable for measurement of liquid or gas pressure, even for difficult media such as contaminated water, steam, and mildly corrosive fluids or gases.

The transducer pressure cavity is machined from a solid piece of 17-4 PH stainless steel. The standard version includes a 1/4 NPT pipe thread allowing a leak-proof, all metal sealed system. There are no o-rings, welds 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 semi-custom design where the volume and application warrants.



- **No Leaks**
- **No Welds**
- **No "O" Rings**
- **No Silicone Oil**

## SPECIFICATIONS

### Performance at 77°F (25°C):

|   |  |  |
|---|--|--|
| Pressure range  | 0 to 100, 250, 500, 1000, 2500, 5000, 10000 PSI (consult factory for compound ranges)<br>(0 to 7, 17, 35, 70, 175, 350, 700 BAR) |  |
| Accuracy (combined linearity, hysteresis and repeatability) | ± .5% of FS Span (for higher accuracy consult factory)   |  |
| Media compatibility   | 17-4 PH stainless steel (for other material consult factory)   |  |
| Pressure ports  | 1/4" NPT (for other ports consult factory)   |  |
| Pressure cycles   | >10 <sup>8</sup> full pressure cycles  |  |
| Pressure overload   | 2X rated pressure  |  |
| Burst pressure  | 5X or 20000PSI whichever is less   |  |
| Long term stability (1 year)                                | ± 0.25% FS Span (typical)  |  |

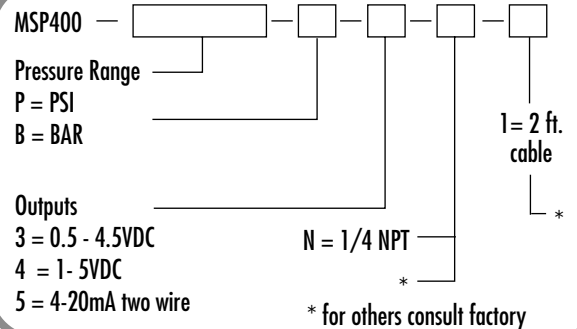
### Electrical:

|                  |  |  |
|------------------|--|--|
| Supply voltage   | 5VDC   | 10-30VDC                                 |
| Supply current   | <10mA  | <15mA                                    |
| Outputs          | 0.5 - 4.5VDC, ratiometric to supply (3)  | 1-5VDC, fixed (4)<br>4-20mA two wire (5) |
| Interface        | 2 ft PVC jacketed cable (for other options consult factory)                      |  |
| Zero offset      | ± 2% of FS Span (for tighter tolerances consult factory)                         |  |
| Span tolerance   | ± 2% of FS Span (for tighter tolerances consult factory)                         |  |
| Output load      | 5K Ohm (min) for high level voltage<br>0 Ohms @ 10V (1100 Ohms @ 32V) for 4-20mA |  |
| Noise            | < 2mVRMS   |  |
| Bandwidth (-3dB) | DC to 1KHz (Typical)   |  |

## ENVIRONMENTAL

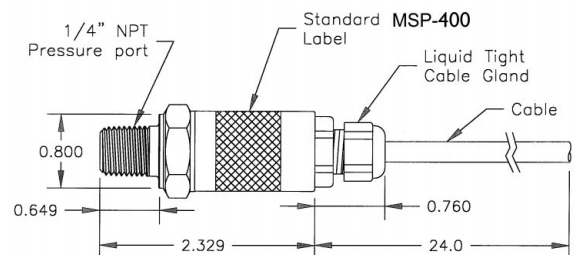
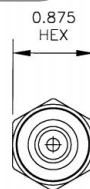
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|-------------------------------|---|
| Operating temperature range   | -40° to 185°F (-40 to 85°C), (For other temperature ranges consult factory)       |
| Compensated temperature range | 30 to 158°F (0 to 70°C)   |
| Zero thermal error            | < ± 1.5% of FS Span   |
| Span thermal error            | < ± 1.5% of FS Span   |
| Storage temperature range     | -40 to 212°F (-40 to 100°C)   |
| Shock                         | 50g, 11msec half sine shock per MIL standard 202F, method 213B, condition A       |
| Vibration                     | ±20g MIL-STD-810C, Procedure 514.2, Figure 514.2-2, curve L                       |
| EMI/RFI Immunity              | EN 50081-2<br>EN 50082-2 (10V/M, 26-1000MHz)<br>EN 61326 (Effective July 1, 2001) |

## ORDERING



### Electrical Connections:

|                 |            |       |          |
|-----------------|------------|-------|----------|
| <b>Outputs:</b> | <b>3/4</b> |       | <b>5</b> |
| Red             | +Supply    | Red   | +Supply  |
| Black           | Ground     | Black | Output   |
| White           | Output     |       |          |



DIMENSIONS IN INCHES AND ARE REFERENCE ONLY.

**M**  
MEASUREMENT  
SPECIALTIES