

# MSP 300

## Stainless Steel Isolated Pressure Transducer



### Low Cost OEM; 100% Leak Proof No "O" Rings, No Silicon Oil, No Welds

**The MSP 300** series pressure transducers from the Microfused™ line of MEAS, 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.

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.

MEAS 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 while

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.



### FEATURES

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

### APPLICATIONS

- ◆ Pumps and Compressors
- ◆ Hydraulic/Pneumatic Systems
- ◆ Automotive Test Systems
- ◆ Energy and Water Management
- ◆ Pressure Instrumentation
- ◆ Refrigeration - Freon and Ammonia Based
- ◆ Agriculture - Sprayers and Dusters

### environmental performance

|                               |  |
|-------------------------------|--|
| Operating temperature range   | -4 to 185°F (-20 to 85°C), (For other temperature ranges consult factory)    |
| Compensated temperature range | 30 to 130°F (0 to 55°C)  |
| Zero thermal error            | <±2% of FS   |
| Span thermal error            | <±2% of FS   |
| Storage temperature range     | -40 to 185°F (-40 to 85°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                  |



## mechanical specifications

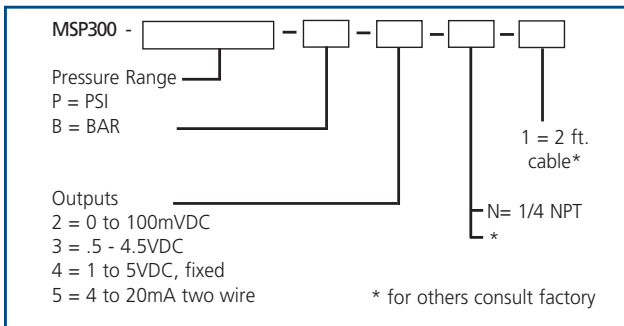
### Performance at 77° F (25° C)

|   |   |  |
|---|---|--|
| Pressure range  | 0 to 100, 250, 500, 1000, 2500, 5000, 10000 PSI (0 to 7, 17, 35, 70, 175, 350, 700 BAR) (For additional ranges consult factory) |  |
| Accuracy (combined linearity, hysteresis and repeatability) | <1% of FS (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 20000 PSI whichever is less   |  |
| Long term stability (1 year)                                | ±0.25% FS (Typical)   |  |

### Electrical:

|                  |  |          |
|------------------|--|----------|
| Supply voltage   | 5VDC   | 10-30VDC |
| Supply current   | <10mA  | <15mA    |
| Outputs          | 0-100mVDC, ratiometric to supply (2) 1-5VDC, fixed (4)<br>0.5-4.5VDC, ratiometric to supply (3) 4-20mA, two wire (5) |          |
| Interface        | 2 ft. of PVC jacketed cable (for other options consult factory)  |          |
| Zero offset      | ±3% of FS for 0-100mV/±2% for amplified (for tighter tolerances consult factory)                                     |          |
| Span tolerance   | ±2% of FS (for tighter tolerances consult factory)   |          |
| Output load      | 1M Ohm for millivolt output/ 5K Ohm min for high level voltage   |          |
|                  | 0 Ohms @ 10V (1000 ohms @ 30V) for 4-20mA  |          |
| Noise            | <2mVRMS - for amplified  |          |
| Bandwidth (-3dB) | DC to 1KHz - for amplified   |          |

## ordering information



### Electrical Connections:

|               |              |              |
|---------------|--------------|--------------|
| Outputs: 2    | 3/4          | 5            |
| Red +Supply   | Red +Supply  | Red +Supply  |
| Black -Supply | Black Ground | Black Return |
| White -Output | White Output |              |
| Green +Output |              |              |

## mechanical dimensions

