



MSP100

Pressure Transducer

SPECIFICATIONS

- ◆ Analog and 14-Bit Digital Output
- ◆ Small Size
- ◆ Low Cost
- ◆ 316L Stainless Steel or 17-4PH

The MSP100 pressure transducer provides stainless steel media compatibility in a low cost, small profile solution. This sensor has no silicone gel or polymeric media isolation methods to fail in contact with water or other harsh chemicals. Pressure connections are provided via an O-ring seal. The device is available in both analog and 14-bit digital output with a port material of either 316L SS or 17-4PH. Additional custom port options available to meet your application needs. The small size vs. performance and media compatibility are provided through solid-state technology.

FEATURES

- ◆ Single Piece Construction; No Welds, No Oil
- ◆ 100% Stainless Steel Isolation for Harsh Chemical Measurement
- ◆ Low Cost
- ◆ 14-Bit Digital Output or Analog

APPLICATIONS

- ◆ Beverage Dispensing Systems
- ◆ Water Pressure or Flow Monitor
- ◆ Medical Equipment
- ◆ Industrial Equipment/Hydraulics
- ◆ Tank Level Measurement
- ◆ Manifold Pressure

STANDARD RANGES

| Range | psig |
|----------|------|
| 0 to 100 | + |
| 0 to 150 | + |
| 0 to 250 | + |
| 0 to 500 | + |

PERFORMANCE SPECIFICATIONS (ANALOG, OUTPUT SIGNAL “2”)

Ambient Temperature: 25°C (unless otherwise specified)

| PARAMETERS | MIN | TYP | MAX | UNITS | NOTES |
|--|--|------|------|-----------------|---|
| Supply Voltage | 4.75 | 5.00 | 5.25 | V _{DC} | |
| Zero Offset | -2 | | 2 | mV | Ratiometric |
| Span | 98 | 100 | 102 | mV | Ratiometric |
| Current Consumption | | | 2 | mA | |
| Proof Pressure | 1.5X | | | Rated | |
| Burst Pressure | 3X | | | Rated | |
| Endurance | 1E+6 | | | 0~FS Cycles | |
| Accuracy | -0.5 | ±0.2 | 0.5 | %Span | RSS of BFSL: Linearity, Hysteresis, Repeatability |
| Long Term Stability | | 0.25 | | %Span | |
| Minimum Resistance between Transducer and Body | 50 | | | MΩ | @25V _{DC} |
| Thermal Zero Shift | -2.0 | | 2.0 | %Span | Reference to 25°C over Compensated Temperature |
| Thermal Span Shift | -2.0 | | 2.0 | %Span | Reference to 25°C over Compensated Temperature |
| Compensation Temperature | 0 | | 45 | °C | |
| Operating Temperature | 0 | | 55 | °C | |
| Response Time (10% to 90%) | | 0.1 | | ms | |
| Vibration | ±20g MIL-STD-810C, Procedure 514.2, Figure 514.2-2, Curve L | | | | |
| Shock | 50g, 11 msec half sine shock per mil standard 202F. Method 213B, Condition A | | | | |

PERFORMANCE SPECIFICATIONS (DIGITAL, OUTPUT SIGNAL “J” OR “S”)

Ambient Temperature: 25°C (unless otherwise specified)

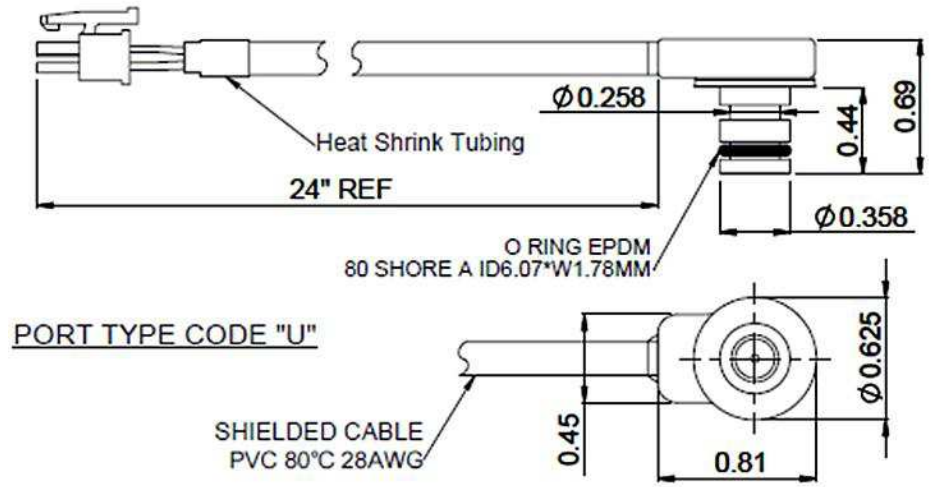
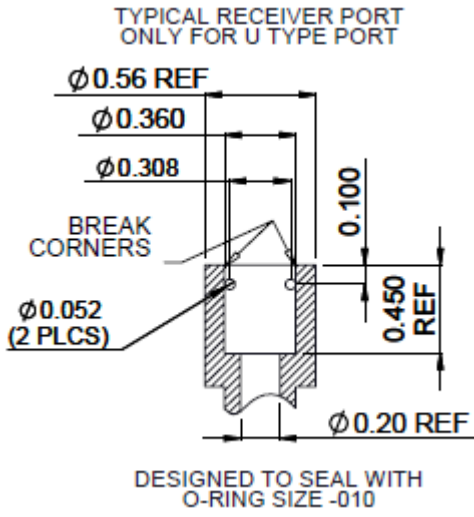
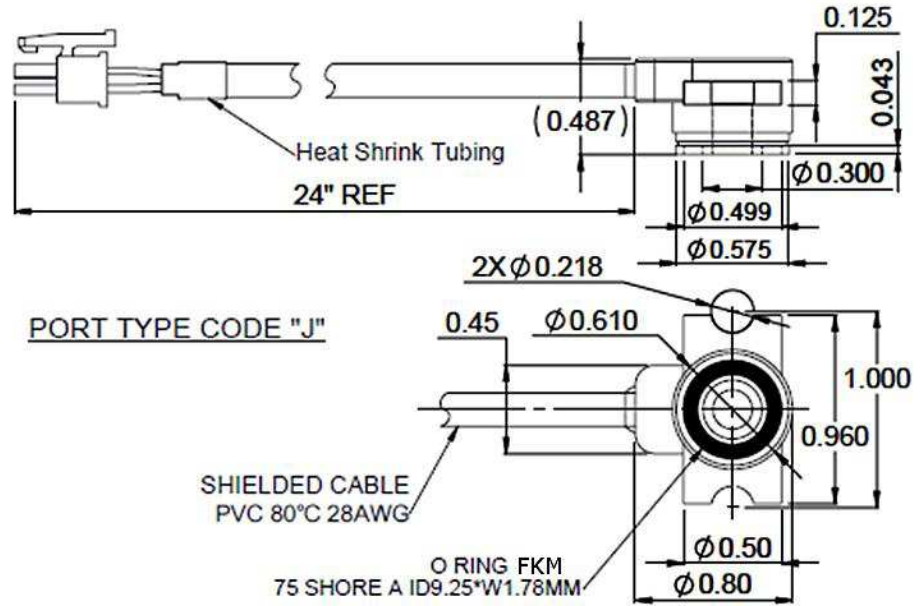
| PARAMETERS | MIN | TYP | MAX | UNITS | NOTES |
|----------------------------|--|--------|--------|-----------------|---|
| Supply Voltage | 2.7 | 3.0 | 5.0 | V _{DC} | |
| Output at Zero Pressure | 720 | 1000 | 1280 | Count | |
| Output at FS Pressure | 14,720 | 15,000 | 15,280 | Count | |
| Current Consumption | | | 3 | mA | |
| Proof Pressure | 1.5X | | | Rated | |
| Burst Pressure | 3X | | | Rated | |
| Endurance | 1E+6 | | | 0~FS Cycles | |
| Accuracy | -0.5 | | 0.5 | %Span | RSS of BFSL: Linearity, Hysteresis, Repeatability |
| A/D Resolution | | 14 | | Bit | |
| Operating Temperature | 0 | | 55 | °C | |
| Temperature Accuracy | -3 | | 3 | °C | 1* |
| Thermal Zero Shift | -2.0 | | 2.0 | %F.S. | Reference to 25°C over Compensated Temperature |
| Thermal Span Shift | -2.0 | | 2.0 | %F.S. | Reference to 25°C over Compensated Temperature |
| Compensated Temperature | 0 | | 45 | °C | |
| Response Time (10% to 90%) | | | 3 | ms @ 4MHz | Without Sleep Mode |
| Response Time (10% to 90%) | | | 8.4 | ms @ 4MHz | With Sleep Mode |
| Vibration | ±20g MIL-STD-810C, Procedure 514.2, Figure 514.2-2, Curve L | | | | |
| Shock | 50g, 11 msec half sine shock per mil standard 202F. Method 213B, Condition A | | | | |

Notes:

1* Reflect pressure port diaphragm temperature over the compensated temperature range

2* Response time is from power on to reading measurement data.

DIMENSIONS

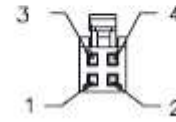


WIRING

Analog mV Output Wiring

| Connection | PIN 1 | PIN 2 | PIN 3 | PIN 4 |
|-----------------------------------|---------|---------|---------|---------|
| Molex 4pin Connector PCB Mount | +SUPPLY | +OUTPUT | -OUTPUT | -SUPPLY |

4 PINS MOLEX CONNECTOR
HOUSING:MOLEX 430-25-040
PIN:MOLEX 430-30-004



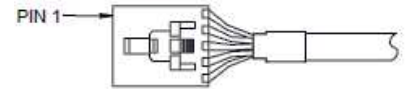
Digital I²C Output Wiring

| Connection | PIN 1 | PIN 2 | PIN 3 | PIN 4 |
|-----------------------------------|-------|-------|-------|-------|
| Molex 4pin Connector PCB Mount | VDD | GND | SDA | SCL |

Digital SPI Output Wiring

| Connection | PIN 1 | PIN 2 | PIN 3 | PIN 4 | PIN5 |
|-----------------------------------|-------|-------|-------|-------|------|
| Molex 5pin Connector PCB Mount | VDD | GND | MISO | SCLK | SS |

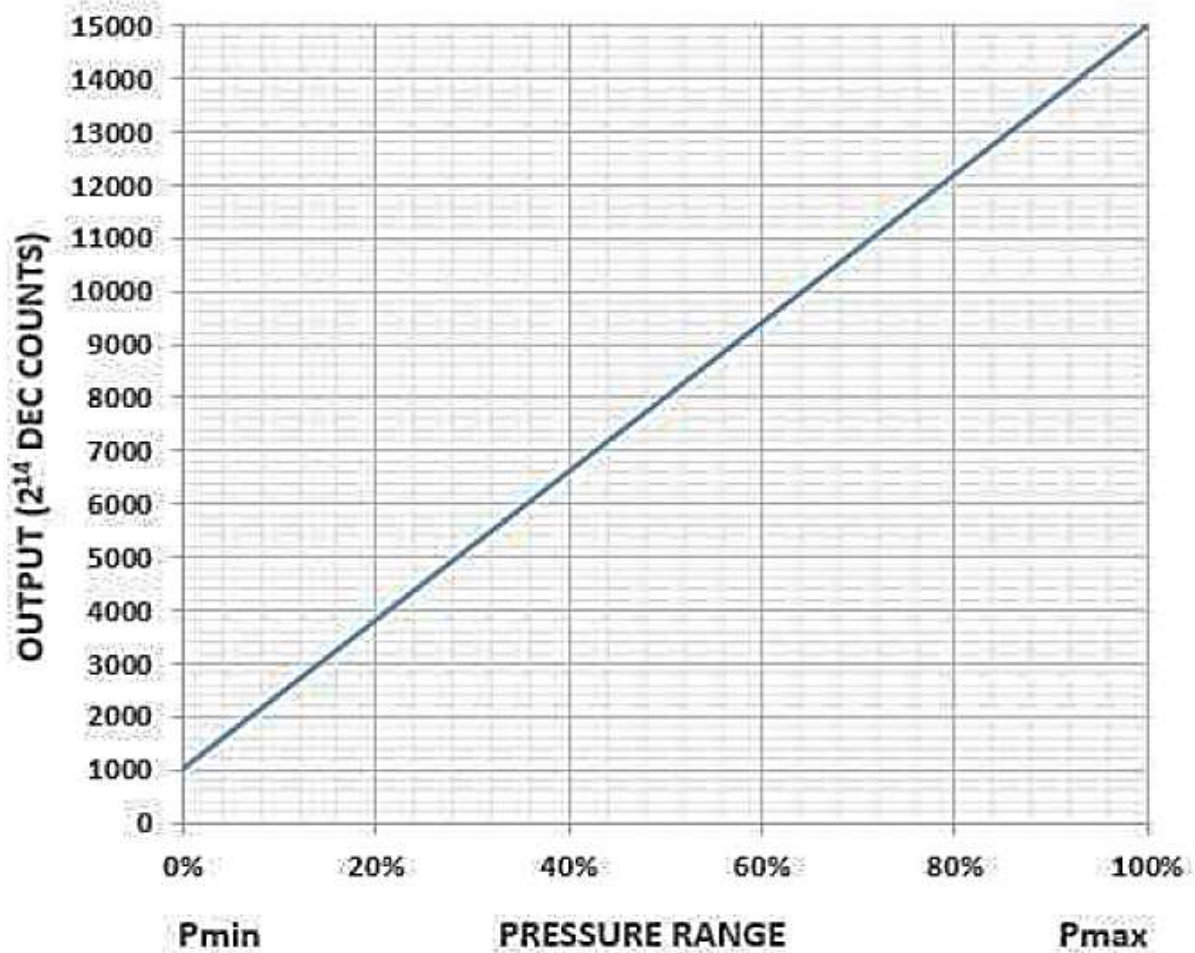
5 PINS MOLEX CONNECTOR
HOUSING:MOLEX 50-57-9405
PIN:MOLEX 16-02-0082



SENSOR OUTPUT

SENSOR OUTPUT AT SIGNIFICANT PERCENTAGES

| % OUTPUT | DIGITAL COUNTS (DECIMAL) | DIGITAL COUNTS (HEX) |
|----------|--------------------------|----------------------|
| 0% | 1000 | 0 × 3E8 |
| 5% | 1700 | 0 × 6A4 |
| 10% | 2400 | 0 × 960 |
| 50% | 8000 | 0 × 1F40 |
| 90% | 13600 | 0 × 3520 |
| 95% | 14300 | 0 × 37DC |
| 100% | 15000 | 0 × 3A98 |

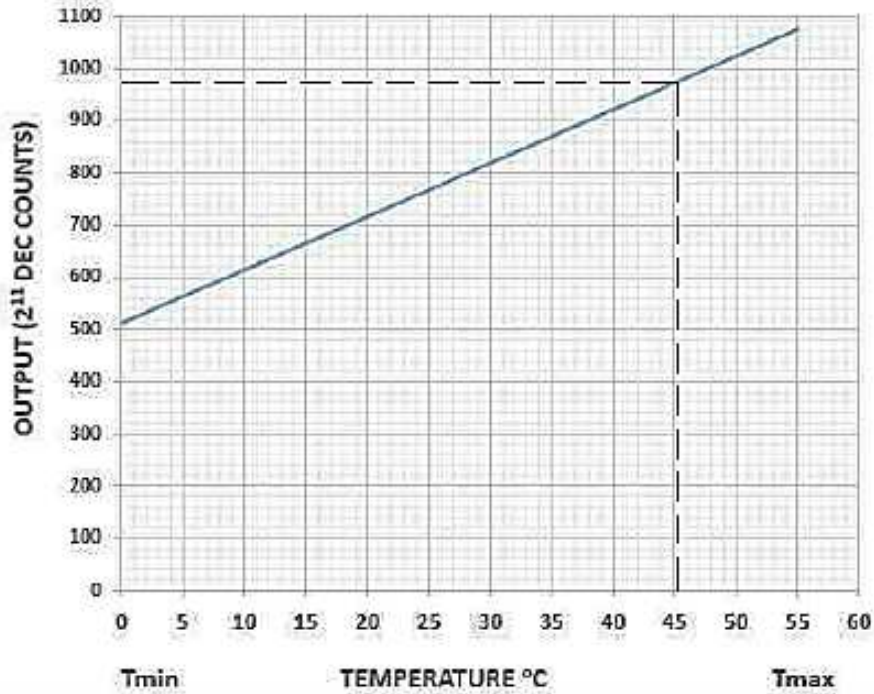


$$\text{OUTPUT (DECIMAL COUNTS)} = \frac{15000-1000}{P_{\text{max}} - P_{\text{min}}} \times (P_{\text{applied}} - P_{\text{min}}) + 1000$$

TEMPERATURE OUTPUT

TEMPERATURE OUTPUT

| OUTPUT °C | DIGITAL COUNTS (DECIMAL) | DIGITAL COUNTS (HEX) |
|-----------|--------------------------|----------------------|
| 0 | 512 | 0 × 200 |
| 10 | 614 | 0 × 266 |
| 25 | 767 | 0 × 2FF |
| 40 | 921 | 0 × 399 |
| 55 | 1075 | 0 × 433 |



$$\text{OUTPUT (DECIMAL COUNTS)} = \frac{(\text{OUTPUT}^\circ\text{C} + 50^\circ\text{C}) \times 2048}{150^\circ\text{C} - (-50^\circ\text{C})}$$

OUTPUT SIGNAL

| Code | Output Signal | Supply Voltage (V) |
|------|------------------|--------------------|
| 2 | 0 – 100mV | 5 ± 0.25 |
| J | I ² C | 2.7 – 5.0 |
| S | SPI | 2.7 – 5.0 |

MSP100

Pressure Transducer

ORDERING INFORMATION

MS1 S 1 - 1 0 0 0 0 J- 100P G

| Output | | |
|--------|------------------|----------------|
| Code | Type | Supply Voltage |
| 2 | 0 - 100mV | 5±0.25V |
| J* | I ² C | 2.7 - 5.0V |
| S* | SPI | 2.7 - 5.0V |

*Digital Output

| Cable/Connector | |
|-----------------|------------------------------------|
| Code | Connection Type |
| 1 | Cable, 2 feet with Molex Connector |

| Port Material | |
|---------------|------------------------|
| Code | Material |
| 0 | 316L Stainless Steel |
| 1 | 17-4PH Stainless Steel |

| Cleaning | |
|----------|-----------------------------|
| Code | Cleaning Method |
| 0 | No Selection |
| 1 | Oxygen Clean B40.1 Level IV |

| Sleep (Digital Only) | |
|----------------------|----------------|
| Code | Mode |
| 0 | Non-Sleep Mode |
| 1 | Sleep mode |

| Pressure Type | |
|---------------|-------|
| Code | Type |
| G | Gauge |

| Pressure Ranges | |
|-----------------|-----|
| Code | psi |
| 100P | 100 |
| 150P | 150 |
| 250P | 250 |
| 500P | 500 |

| Port Type Selection | |
|---------------------|--------------------|
| Code | Port Type |
| J | O-ring Face Seal |
| U | O-ring Radial Seal |

| I ² C Address (Digital Only) | |
|---|---------|
| Code | Address |
| 0 | 0x28H |
| 1 | 0x36H |
| 2 | 0x46H |
| 3 | 0x48H |
| 4 | 0x51H |

SPI Default Code "0"

NORTH AMERICA

Measurement Specialties, Inc.,
a TE Connectivity Company
Phone: 800-522-6752
Email: customercare.frmr@te.com

EUROPE

Measurement Specialties (Europe), Ltd.,
a TE Connectivity Company
Phone: +31-73-624-6999
Email: customercare.lcsb@te.com

ASIA

Measurement Specialties (China), Ltd.,
a TE Connectivity Company
Phone: 0400-820-6015
Email: customercare.shzn@te.com

TE.com/sensorsolutions

Measurement Specialties, Inc., a TE Connectivity company.

Measurement Specialties, TE Connectivity, TE Connectivity (logo) and EVERY CONNECTION COUNTS are trademarks. All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

© 2015 TE Connectivity Ltd. family of companies All Rights Reserved.

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «**JONHON**», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «**FORSTAR**».



JONHON

«**JONHON**» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«**FORSTAR**» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: ocean@oceanchips.ru

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А