

M5100 Heavy Industrial Pressure Transducer



- CE Compliance
- Wide Temperature Range
- Compact
- Variety of Pressure Ports and Electrical Configurations

DESCRIPTION

The M5100 series pressure transducers from the Microfused™ line of MEAS, set a new price performance standard for demanding commercial and heavy 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. The M5100 exceeds the latest heavy industrial CE requirements including surge protection, and is over voltage protected to 16Vdc in both positive and reverse polarity.

This product is geared to the OEM customer who uses 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

- Heavy Industrial CE Approval
- 100 V/m EMI Protection
- Reverse Polarity Protection
- Extended Temperature Range
- 1% Total Error Band
- Compact Outline
- -40°C to +125°C Operating Temperature Range

APPLICATIONS

- Advanced HVAC Systems
- Refrigeration Systems
- Automotive Test Stands
- Industrial Process Control
- Pumps and Compressors
- Hydraulic/Pneumatic Systems
- Agriculture Equipment
- Energy Generation and Management

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STANDARD RANGES

| Range | psig | Range | Barg |
|----------|------|----------|------|
| 0 to 50 | • | 0 to 3.5 | • |
| 0 to 100 | • | 0 to 7 | • |
| 0 to 200 | • | 0 to 14 | • |
| 0 to 300 | • | 0 to 20 | • |
| 0 to 500 | • | 0 to 35 | • |
| 0 to 1k | • | 0 to 70 | • |
| 0 to 3k | • | 0 to 200 | • |
| 0 to 5k | • | 0 to 350 | • |
| 0 to 10k | • | 0 to 700 | • |

| DIN Range | Barg |
|-----------|------|
| 0 to 4 | • |
| 0 to 6 | • |
| 0 to 10 | • |
| 0 to 16 | • |
| 0 to 25 | • |
| 0 to 40 | • |
| 0 to 60 | • |
| 0 to 100 | • |
| 0 to 160 | • |
| 0 to 250 | • |
| 0 to 400 | • |
| 0 to 600 | • |
| 0 to 1000 | • |

*Intermediate ranges available upon request.

| CONNECTION/ PRESSURE RANGE/ PRESSURE REF | | | | |
|--|---|-------|-----------------|---------------|
| | | | PRESSURE RANGE | |
| | | | PG/BG PRESS REF | |
| | | | <500 PSI | >500 PSI |
| CODE | CONNECTION | | <040BAR | > 040BAR |
| 1 | CABLE 2 FEET ALPHA#3243,18AWG | DIM A | 1.71 [43.5] | 1.92 [48.6] |
| | | DIM B | 2.17 [55.2] | 2.38 [60.5] |
| 4 | PACKARD CONNECTOR SUPPLY ON PIN A | DIM A | 1.71 [43.4] | 1.92 [48.6] |
| | | DIM B | 2.53 [64.3] | 2.72 [69.1] |
| 5 | BENDIX PTIH-10-6P CONNECTOR | DIM A | 1.74 [44.2] | 1.93 [49.0] |
| | | DIM B | 2.17 [55.0] | 2.36 [59.8] |
| 6 | HIRSCHMANN CONNECTOR DIN 43650 FORM C | DIM A | 1.67 [42.3] | 1.86 [47.1] |
| | | DIM B | 2.12 [53.8] | 2.31 [58.6] |
| 7 | HIRSCHMANN CONNECTOR DIN 43650 FORM A | DIM A | 2.12 [53.8] | 2.12 [53.8] |
| | | DIM B | 2.64 [67.1] | 2.64 [67.1] |
| 9 | PACKARD CONNECTOR SUPPLY ON PIN B | DIM A | 1.71 [43.5] | 1.92 [48.8] |
| | | DIM B | 2.53 [64.3] | 2.72 [69.1] |
| D | M12 CONNECTOR | DIM A | 1.69 [42.9] | 1.90 [48.3] |
| | | DIM B | 2.21 [56.1] | 2.41 [61.2] |
| M | CABLE 1 METER MANHATTAN#M39114,22AWG | DIM A | 1.71 [43.5] | 1.92 [48.6] |
| | | DIM B | 2.17 [55.2] | 2.38 [60.5] |
| P | CABLE 5 METER MANHATTAN#M39114,22AWG | DIM A | 1.71 [43.5] | 1.92 [48.6] |
| | | DIM B | 2.17 [55.2] | 2.38 [60.5] |
| R | CABLE 10 METER MANHATTAN#M39114,22AWG | DIM A | 1.71 [43.5] | 1.92 [48.6] |
| | | DIM B | 2.17 [55.2] | 2.38 [60.5] |

| PRESSURE PORT | | |
|---------------|---|---------------------|
| CODE | PORT | DIM C |
| 2 | 1/4-19 BSPP | 0.47 [11.94] |
| 4 | 7/16-20UNF MALE SAE J514 STRAIGHT THREAD BOSSE O-RING BUNA-N 70SH -904 ID8.92mm X W1.83mm | 0.45 MAX [11.43] |
| 5 | 1/4-18 NPT | 0.65 MAX [16.51] |
| F | 1/4-19 BSPP FEMALE | 0.70 [17.78] |
| P | 7/16-20UNF FEMALE SAE J514 STRAIGHT THREAD BOSS WITH INTEGRAL VALVE DEPRESSOR | 0.43 [10.92] |
| Q | M10 X 1.0 mm | 0.42 [10.67] |
| S | M12 X 1.5 mm | 0.53 [13.46] |
| U | G1/4 DIN 3852 FORM E GASKET DIN3869-14 NBR | 0.47 [12.00] |

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PERFORMANCE SPECIFICATIONS

Ambient Temperature: 25°C (unless otherwise specified)

| PARAMETERS | MIN | TYP | MAX | UNITS | NOTES |
|--|--|-----|------|------------|-------|
| Accuracy (combined non linearity, hysteresis, and repeatability) | -0.25 | | 0.25 | %F.S. | 1 |
| Isolation, Body to any Lead | 1 | | | MΩ @ 25Vdc | |
| Pressure Cycles (Zero to Full Scale) | 1.00E+7 | | | FS Cycles | |
| Proof Pressure | 2X | | | Rated | |
| Burst Pressure | 5X | | | Rated | |
| Long Term Stability (1 year) | -0.25 | | 0.25 | %Span | |
| Total Error Band | -1.0 | | 1.0 | %F.S. | 2 |
| Compensated Temperature | -20 | | +85 | °C | |
| Operating Temperature | -40 | | +125 | °C | 3 |
| Storage Temperature | -40 | | +125 | °C | 3 |
| Load Resistance (R _L) | R _L > 100k | | | | 4 |
| Bandwidth | DC to 1KHz (Typical) | | | | |
| Shock | 50g, 11msec Half Sine Shock per MIL-STD-202G, Method 213B, Condition A | | | | |
| Vibration | ±20g, MIL-STD-810C, Procedure 514.2, Fig 514.2-2, Curve L | | | | |

For custom configurations, consult factory.

Notes

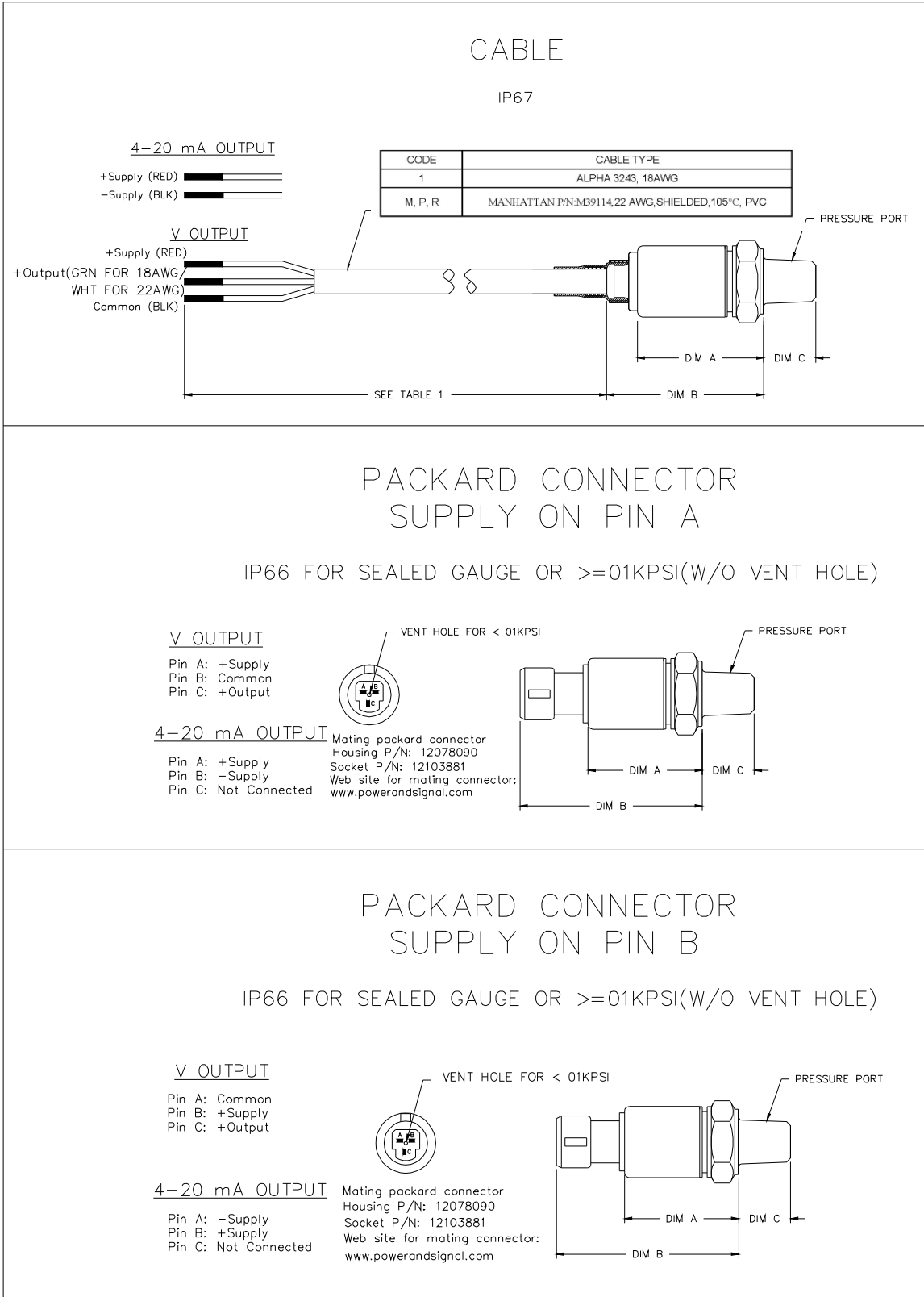
1. Best fit straight line at 25°C.
2. TEB includes all accuracy errors, thermal errors, span and zero tolerances.
3. Cable 105°C max.
4. Voltage output.

CE Compliance

- IEC 55022 Emissions Class A & B
- IEC 61000-4-2 Electrostatic Discharge Immunity (6kV contact/8kV air)
- IEC 61000-4-3 Electromagnetic Field Immunity (30V/m)
- IEC 61000-4-4 Electrical Fast Transient Immunity (1kV)
- IEC 61000-4-5 Surge Immunity (1kV)
- IEC 61000-4-6 Conducted RF Immunity (10V)
- IEC 61000-4-9 Magnetic Field Immunity (100A/m)

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DIMENSIONS



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BENDIX PTIH-10-6P CONNECTOR

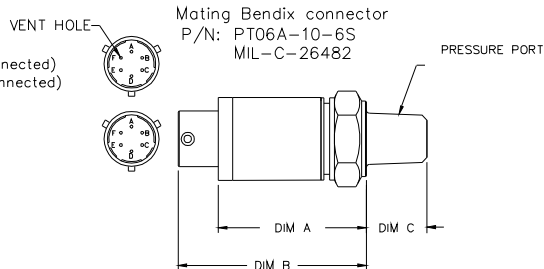
IP66 FOR SEALED GAUGE OR ≥ 01 KPSI(W/O VENT HOLE)

4-20 mA OUTPUT

Positive supply Pin A and B (internally connected)
Negative supply Pin C and D (internally connected)
Pin E: Not Connected
Pin F: Vent (Pulled out for < 01 KPSI)

V OUTPUT

Pin A: +Supply
Pin B: +Output
Pin C: Common
Pin D: Common
Pin E: Not Connected
Pin F: Vent (Pulled out for < 01 KPSI)



HIRSCHMANN CONNECTOR DIN 43650 FORM C

IP65 FOR SEALED GAUGE OR ≥ 01 KPSI(W/O VENT HOLE)

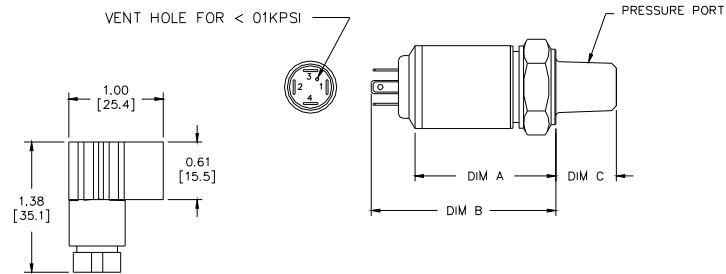
P/N 933-114-100

V OUTPUT

Pin 1: +Supply
Pin 2: +Output
Pin 3: Common
Pin 4: Case Ground

4-20 mA OUTPUT

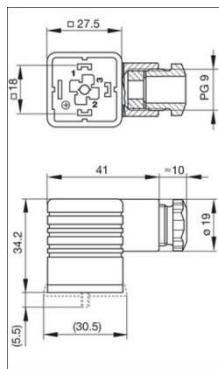
Pin 1: +Supply
Pin 2: -Supply
Pin 3: Not Connected
Pin 4: Case Ground



MATING CONNECTOR (Mating Connector Supplied)
P/N: 933 024-100

GASKET SUPPLIED WITH TRANSDUCER

HIRSCHMANN MATING
CONNECTOR DIN 43650 FORM C



HIRSCHMANN CONNECTOR DIN 43650 FORM A

P/N: 933 376-100

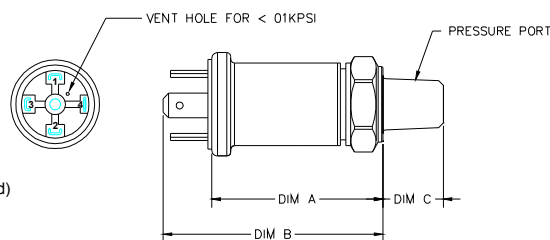
IP65 FOR SEALED GAUGE OR ≥ 01 KPSI(W/O VENT HOLE)

V OUTPUT

Pin 1: +Supply
Pin 2: Common
Pin 3: +Output
Pin 4: Case Ground

4-20 mA OUTPUT

Pin 1: +Supply
Pin 2: -Supply
Pin 3: Not Connected
Pin 4: Case Ground



MATING CONNECTOR (Mating Connector Not Supplied)
Dim Unit: MM
P/N: 931 969-100
Gasket(NBR) P/N: 730 801-002
Knurled Screw P/N: 732 574-001
HIRSCHMANN MATING
CONNECTOR DIN 43650 FORM A

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M12 CONNECTOR

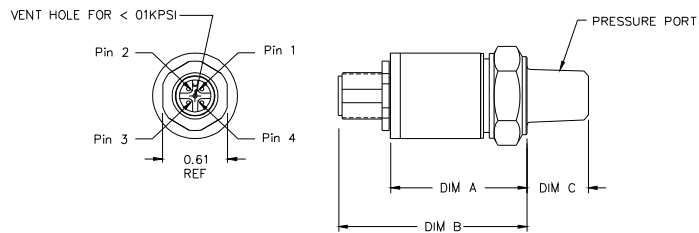
IP67 FOR SEALED GAUGE OR $\geq 01\text{KPSI}$ (W/O VENT HOLE)

V OUTPUT

Pin 1: +Supply
Pin 2: +Output
Pin 3: Common
Pin 4: Not Connected

4-20 mA OUTPUT

Pin 1: +Supply
Pin 2: Not Connected
Pin 3: -Supply
Pin 4: Not Connected



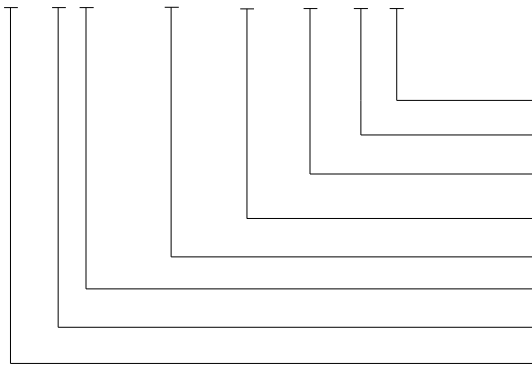
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OUTPUT OPTIONS

| Code | Output | Supply (V) |
|------|--------------------------|----------------------|
| 3 | 0.5 – 4.5V (ratiometric) | 5 ± 0.25 Ratiometric |
| 4 | 1 – 5V | 8 – 30 |
| 5 | 4 – 20mA | 9 – 30 |
| 6 | 0 – 5V | 8 – 30 |
| 7 | 0 – 10V | 15 – 30 |
| 8 | 1 – 6V | 8 – 30 |

ORDERING INFORMATION

M5131-000005-300PG



Type (G = Gage)
 Units (P = psi, B = Bar)
 Pressure Range (See Pressure Range Table)
 Pressure Port (See Pressure Port Options Table)
 Specials (nnnnn = Custom Drawing)
 Connection (See Electrical Connections Table)
 Output (See Output Options Table)
 Model

NORTH AMERICA

Measurement Specialties
 45738 Northport Loop West
 Fremont, CA 94538
 Tel: 1-800-767-1888
 Fax: 1-510-498-1578
 Sales: pfg.cs.amer@meas-spec.com

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 78340 Les Clayes-sous-Bois, France
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