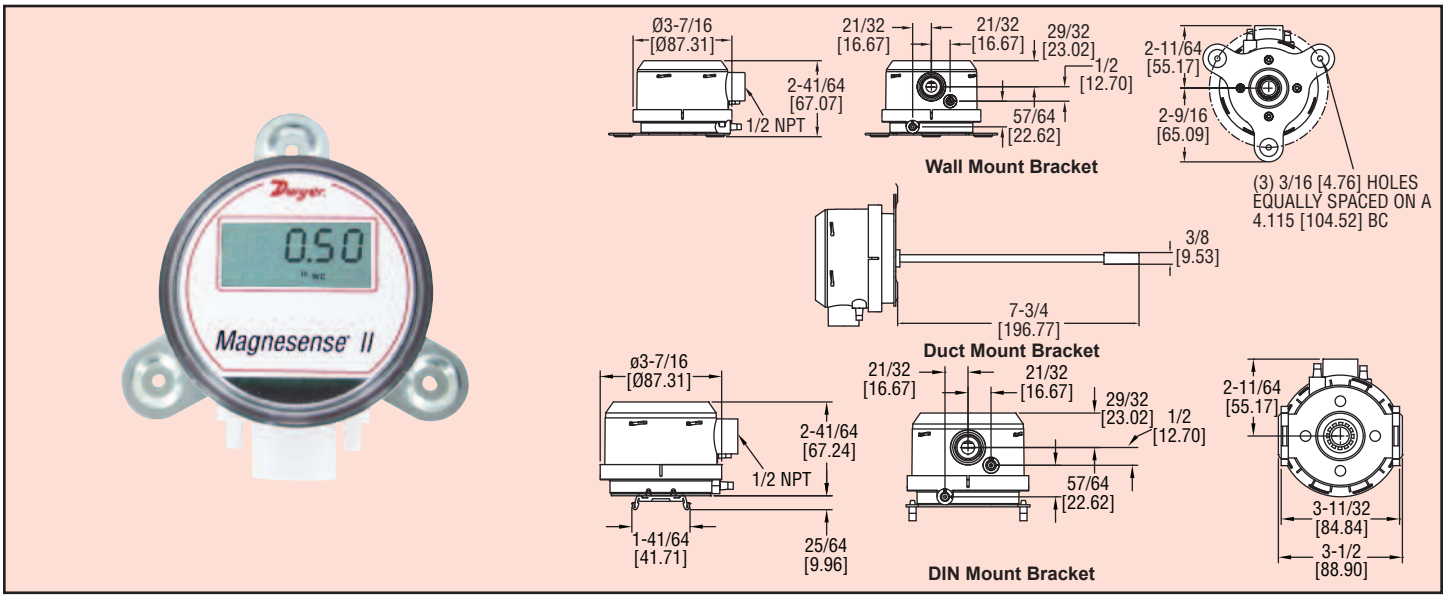
Series MS2

Magnesense® II Differential Pressure Transmitter

Monitors Pressure, Air Velocity & Air Flow, BACnet/Modbus® Communications



The Series MS2 Magnesense® II Differential Pressure Transmitter combines the proven stable Hall Effect sensing technology of our original Series MS with additional features to reduce installation time and simplify ordering. In this second generation transmitter, we have added additional field selectable pressure ranges so that each model can have four selectable ranges along with four additional bidirectional ranges. When using the pluggable integral display or the portable remote display tool, both Metric and English engineering units can be selected via on board dip switches. Dual current and voltage outputs allow users to simultaneously take either a current or voltage output to their building controller and have a local test circuit for verification of the output reading. The voltage output can be selected to be either 0 to 5 VDC or 0 to 10 VDC, while the current is always 4 to 20 mA. Both the current and voltage output can also be inverted. The MS2 can also be ordered with either a BACnet® or MODBUS® Communications protocol output that will allow the transmitters to be daisy-chained together.

Like the original Series MS, the second generation transmitter can be used as a linear pressure output or a linear velocity output with the square root extraction done in the transmitter. Additional parameters have been included to expand the square root capability to include flow measurements.

Model	in w.c.	Pa	mm w.c.	kPa
MS2-W101	0.10, 0.15, 0.25, 0.50	25, 40 50, 125	2.5, 4, 6, 10	0.025, 0.04, 0.05, 0.125
MS2-W111	±0.10, ±0.15, ±0.25, ±0.5	±25, ±40, ±50, ±125	±2.5, ±4, ±6, ±10	±0.025, ±0.04, ±0.05, ±0.125
MS2-W102	1, 2, 3, 5	250, 500, 750, 1250	25, 50, 75, 125	0.25, 0.5, 0.75, 1.25
MS2-W103*	10, 15, 25, 28	2500, 3500, 5000, 6975	250, 350, 500, 697.5	2.5, 3.5, 5.0, 6.975

*Models can be changed in the field to have zero centered ranges at reduced accuracy.

OPTIONS

Add -LCD to end of model numbers for units with display
Example: MS2-W101-LCD
Add -BC to end of model numbers for BACnet Communications
Example: MS2-W101-BC
Add -MC to end of model numbers for Modbus® Communications
Example: MS2-W101-MC
Add -NIST to end of model numbers for NIST Traceable Certificate
Example: MS2-W101-NIST
Add -FC to end of model numbers for Factory Calibration Certificate
Example: MS2-W101-FC
Change W to D for Duct Mount Static Probe
Example: MS2-D101
Change W to N for DIN Rail Mounting
Example: MS2-N101

SPECIFICATIONS

Service: Air and non-combustible, compatible gases.
Wetted Materials: Consult factory.
Typical Accuracy: ±1% FS for 0.25″ (50 Pa), 0.5″ (100 Pa), 2″ (500 Pa), 5″ (1250 Pa), 10″ (2 kPa), 15″ (3 kPa), 25″ (5 kPa); ±2% FS for 0.1″ (25 Pa), 1″ (250 Pa), and all bi-directional ranges.
Stability: ±1% / year FSO.
Temperature Limits: 0 to 150°F (-18 to 66°C).
Pressure Limits: 1 psi max., operation; 10 psi burst.
Power Requirements: 10 to 35 VDC (2-wire), 17 to 36 VDC or isolated 21.6 to 33 VAC (3-wire).
Output Signals: 4 to 20 mA (2-wire), 0 to 5 VDC, 0 to 10 VDC (3-wire).
Response Time: Adjustable: 0.5 to 15 sec. time constant. Provides a 95% response time of 1.5 to 45 seconds.
Zero & Span Adjustments: Digital push buttons.
Loop Resistance:
Current Output: 0 to 1250 Ω max;
Voltage Output: Min. load resistance 1 kΩ.
Current Consumption: 40 mA max.
Display (Optional): 5 digit LCD.
Electrical Connections:
3-wire removable European style terminal block for 16 to 22 AWG.
Electrical Entry: 1/2″ NPS thread.
Process Connection: 3/16″ ID tubing (5 mm ID); Max. OD 9 mm.
Enclosure Rating: IP66.
Mounting Orientation: Diaphragm in vertical position.
Weight: 8.0 oz (230 g).
Agency Approvals: BTL, CE.

ACCESSORIES

A-151, Cable gland for 5 to 10 mm diameter cable
A-435-A, Remote Display Tool
A-480, Plastic Static Pressure Tip
A-481, Installer kit. Includes 2 plastic static pressure tips and 7 ft (2.1 m) of PVC tubing
A-489, 4″ 303 SS Straight Static Pressure Tip with Flange
A-302F-A, 4″ 303 SS Static Pressure Tip with mounting flange. For 3/16″ ID rubber or plastic tubing
SCD-PS, 100 to 240 VAC/VDC to 24 VDC Power Supply

One Unit for all your Building Pressure Applications

The Industry Standard for Building Automation

- **Field Upgradable LCD**. No need to order two separate transmitters. Simply stock a transmitter and display and you can satisfy any customer's requests. Simply remove cover and snap the LCD onto the board.
- **Large Integral LCD**. Second generation Magnesense® has a larger LCD that includes the engineering units. Display also has 5 digits allowing measurements up to 99,999 to be displayed directly.
- **Remote Display Tool** reduces instrument cost by eliminating need for each transmitter to have its own display. The buttons on the display tool also provide a means to zero and span the units without reaching into the transmitter.
- **Digital Push Button Zero and Span.** Reduces calibration time significantly over other transmitters that utilize potentiometers. Lowers maintenance time and costs.
- **Field Selectable Ranges** in metric or English. Lowers stock and inventory requirements. You'll always have the right transmitter for every job.
- **Field Selectable Air Velocity and Flow Modes** for fan and blower applications. Unit provides square root output that accurately tracks fpm or m/s for velocity measurements. Now area can be programmed to directly display cfm or m^3/hr for volumetric flow measurements. No need for a smart programmable indicator or PLC to convert pressure to air flow. Reduces components and installation time lowering overall costs.
- **Removeable Terminal Block** ease installation by allowing for the wiring to be done outside of the housing where the installer has more room.
- **Simultaneous Current/Voltage Output** reduces inventory by combining 0 to 10 V, 0 to 5 V and 4 to 20 mA models into one model. Both outputs are always present allowing field selection of which signal to use and the other signal can be used for local diagnostic without interrupting system.