

# M2 –Series User Manual Supplement

Reference M2 Manual Dwg. No. 9R000045-A  
M200 Smart Manometer & M201 Roots Meter Tester

The purpose of this Supplement is to provide corrections, clarifications or additions to the user information contained in the M2 – Series User Manual (controlled drawing number 9R000045-A). These corrections, clarifications or additions relate to the user interface or available sensor ranges or styles only.

## Changes as of June 06, 2007

1. Page 4; Backlight Key – delete Red backlight from “...green, red and off.” description. The “red” position has been eliminated.
2. Page 8; Flow Unit Select – add information on calculating the Flow constant (equation and example).

Calculate the Flow constant from the following equation:

$$F_c = Q \div DP^{1/2}$$

where:  $F_c$  = Flow constant

$Q$  = Flow rate from (flow element calculation sheet)

$DP$  = Differential pressure corresponding to  $Q$

Example: If the DP is 25 units when the flow rate is 10,000 units, the Flow constant is 2,000.

3. Page 11; Add clarification note to bottom of “Auto Shut-Off” page to clarify operation when Data Logging or Leak Test features are used.

The “Auto Shut-Off” timer is suspended during Data Logging and Leak Test sessions to prevent accidental loss of information. Auto Shut-Off is re-instated after completion of Data-Logging or Leak Test sessions.

4. Page 15; Add clarification note to “Data Logging” page for Auto Shut-Off timer operation.

The “Auto Shut-Off” timer is disabled for Data Logging sessions. Be sure to end the session to re-enable the Auto Shut-Off timer.

5. Page 16; Add clarification note to “Leak Test” page for Auto Shut-Off timer operation.

The “Auto Shut-Off” timer is disabled for Leak Test sessions. Be sure to end the session to re-enable the Auto Shut-Off timer.

6. Page 23; replace the Specifications Table with the following one (added 30 and 300 psig ranges, deleted 900 mmHg range, converted 2000 mmHg range to 38 psia, added  $\pm 0.1\%$  FS accuracy for 28 inH<sub>2</sub>O range, deleted information for “Wet/Wet,” “DI” and “O-RING Material...”):

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<p>Type and Range and Display Resolution:</p> <p><b>Differential Non-Isolated Types:</b> 28 inH2O (1 psid) – XX.YYY 200 inH2O (7.21 psid) – XXX.YY 2000 inH2O (72.1 psid) – XXXX.Y</p> <p><b>Gauge Isolated Types:</b> 15 psig – XX.YYY 30 psig – XX.YYY 200 psig – XXX.YY 300 psig – XXX.YY 2000 psig – XXXX.Y</p> <p><b>Absolute Isolated Types:</b> <del>900 mmHg (17 psia) – XXX.YY</del> 38 psia (2000 mmHg) – XX.XXY</p> <p><b>Wet/Wet Types:</b> <del>1 and 5 psid – X.YYYY</del> <del>15, 30 and 50 psid – XX.YYY</del> <del>100, 300 and 500 psid – XXX.YY</del></p>
<p>Accuracy:</p> <p>±0.025% of Full Scale or ±0.05% of Full Scale (±0.1% of Full Scale for 28 inH2O Differential range)</p> <p>Includes the combined effects of temperature, linearity, repeatability, hysteresis and resolution.</p> <p>Warm up time = 5 minutes.</p> <p>Unit should be zeroed at working ambient temperature before use.</p>
<p>Temperature:</p> <p>Storage = -40°C to +60°C (-40°F to +140°F) Operating = -5°C to +50°C (23°F to +122°F)</p>
<p>Media Compatibility:</p> <p><b>PORTS:</b> DN: Differential pressure non-isolated sensors for use with clean, dry, non-corrosive gases only.</p> <p><del>DI, GI, AI: Differential, Gauge, or Absolute pressure sensors for use with gases and liquids compatible with 316L SS and O-ring material (DI wet/wet differential sensors only)</del></p> <p><del>O-RING Material (for DI sensors only):</del> <del>Viton (standard)</del> <del>Buna-N, Neoprene or Ethylene-Propylene (available options)</del></p>
<p>Pressure Limits:</p> <p>2 × range on DN units when pressurized on high side only. 150 PSI (10.5 Kg/cm<sup>2</sup>) static when applied to both sides of sensor simultaneously</p>
<p>Connection:</p> <p>1/8" female NPT, 316L SS. P1 is the high pressure connection and P2 is the low pressure connection. Differential port shown below.</p> <div data-bbox="329 1528 610 1703" data-label="Image"></div> <p>User must use a wrench on the pressure manifold when installing user's 1/8" NPT fitting. Do not tighten the fitting without using a wrench on the pressure manifold. Failure to use a wrench on the manifold will damage the plastic enclosure and void warranty. No torque should be applied to the manifold with respect to plastic enclosure.</p>

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Battery Type: 4 each AA alkaline batteries.  <b>IMPORTANT!!! ATEX certified models require the use of approved batteries only to maintain the ATEX certification. Refer to Dwg. No. 9R000056 “M2 Intrinsically Safe Control Document” for a list of batteries approved for hazardous atmospheres. A copy of this drawing accompanies each unit shipped.</b>  <b>Remove and / or replace batteries in non-hazardous areas only.</b>
Battery Operation: >100 hours continuous use, 1 year shelf life, auto power off programmable at Disabled, 10, 20, 30, 60 or 90 minutes
Enclosure: (6.9" × 3.8" × 2.3") Polycarbonate, Permanently Static Dissipative, ESD Protection Enclosure with Boot: (7.2" × 4.2" × 2.5")

7. Page 28; Disregard graphics for “DI,” “DI w/ FP” and the “Notes: FP...” information. These are not yet available.

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