

Series  
2-5000

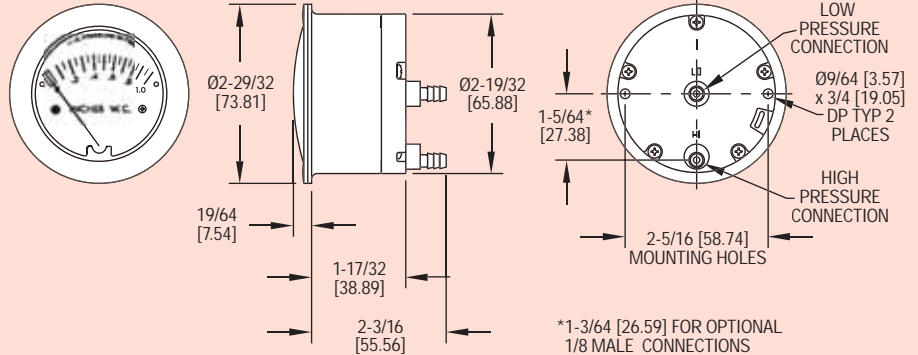
# Minihelic® II Differential Pressure Gages

Combining High Accuracy, Compactness, Dependability, and Low Cost



Patent No. 4,347,744

The Series 2-5000 Minihelic® II low differential pressure gage provides excellent readability in a compact size.



Dimensions, Series 2-5000 Minihelic® II Gage.

Combining clean design, small size and low cost with enough accuracy for all but the most demanding applications our Minihelic® II gage offers the latest in design features for a dial type differential pressure gage. It is our most compact gage but is easy to read and can safely operate at total pressures up to 30 psig. The Minihelic® II is designed for panel mounting in a single  $2\frac{1}{8}$ " diameter hole. Standard pressure connections are barbed fittings for  $\frac{3}{16}$ " I.D. tubing; optional  $\frac{1}{8}$ " male NPT connections are also available. Over-pressure protection is built into the Minihelic® II gage by means of a blow-out membrane molded in conjunction with the diaphragm. Accidental over-ranging up to the rated total pressure will not damage the gage. With removable lens and rear housing, the gage may be easily serviced at minimum cost.

With the housing molded from mineral and glass filled nylon and the lens molded from acrylic, the gage will withstand rough use and exposure as well as high total pressure. The 5% accuracy and low cost of the Minihelic® II gage make it well-suited for a wide variety of OEM and user applications. OEM applications include cabinet air purging, medical respiratory therapy equipment, air samplers, laminar flow hoods, and electronic air cooling systems. As an air filter gage, the Minihelic® II gage finds many end use applications on large stationary engines, compressors, ventilators, and air handling units. The Minihelic® II gage

is suitable for many of the same applications as the Magnehelic® gage where the greater accuracy, sensitivity, and higher and lower differential pressure ranges of the Magnehelic® gage are not required.

## SPECIFICATIONS

**Service:** Air and compatible gases.

**Wetted Materials:** Consult factory.

**Housing:** Glass filled nylon; acrylic lens.

**Accuracy:**  $\pm 5\%$  of full scale at  $70^\circ\text{F}$  ( $21.1^\circ\text{C}$ ).

**Pressure Limits:** 30 psig (2.067 bar) continuous to either pressure connection.

**Temperature Limits:** 20 to  $120^\circ\text{F}$  ( $-6.67$  to  $48.9^\circ\text{C}$ ).

**Size:**  $2\text{-}1/16$ " (52.39 mm) diameter dial face.

**Mounting Orientation:** Diaphragm in vertical position. Consult factory for other position orientations.

**Process Connections:** Barbed, for  $3/16$ " I.D. tubing (standard);  $1/8$ " male NPT (optional).

**Weight:** 6 oz (170.1g).

## CAUTION: FOR USE ONLY WITH AIR OR COMPATIBLE GASES.

The standard Minihelic® II gage is supplied with two barbed pressure taps

## PRESSURE CONNECTIONS



**A** molded into the rear housing of the gage. These connections allow easy, fast connection to the gage using  $\frac{3}{16}$ " I.D. rubber or plastic tubing.

For applications in systems having higher total operating pressures, optional male  $\frac{1}{8}$ " NPT pressure connections can be supplied.

Note the oblong over-pressure vent hole on the back of the gage at the right of the connections. This vent is sealed by a membrane molded in conjunction with the diaphragm and will blow out at approximately 75 psi.

# Simplicity of Design Ensures Reliable Operation

**Housing** is molded from strong mineral and glass filled nylon.

**Pointer stops** of molded rubber prevent pointer over-travel without damage.

**Full view lens** is removable and molded of acrylic.

**Aluminum scale** litho-printed black on white, enhances readability.

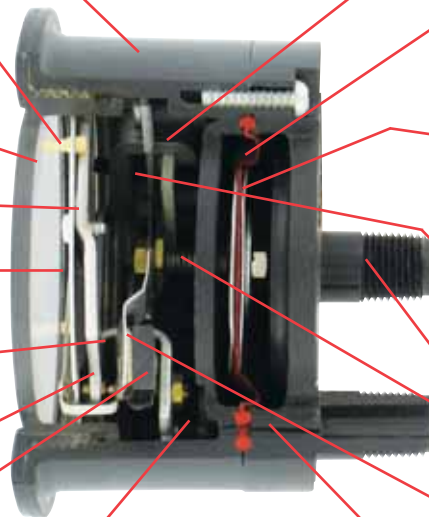
**Red tipped aluminum pointer**, rigidly mounted to helix is easy to see.

**Wishbone assembly** provides mounting for helix, helix bearings, and pointer shaft.

**Jewel bearings** provide virtually friction-free helix motion.

**Helix** is free to rotate in jewel bearings. It aligns with magnetic field of magnet to transmit pressure indications to pointer.

**Zero adjustment screw**, located behind the removable lens, eliminates tampering.



**Range spring calibration clamp** fixes live length of spring for proper gage calibration and is factory set and sealed.

**Silicone rubber diaphragm** allows accurate response to a broad range of temperatures and at extremely low pressure. Incorporates blow out area for overpressure protection.

**Diaphragm support plates** of lightweight aluminum on each side of the diaphragm minimize position or attitude sensitivity and help define pressure area.

**Flat leaf range spring** reacts to pressure on the diaphragm. Live length is adjustable for calibration. Small amplitude of motion minimizes inaccuracies and assures long life.

**Low pressure tap** connects to rear chamber.

**Coil spring link** provides a resilient connection between the diaphragm and the range spring.

**Ceramic magnet** mounted on a molded bracket at the end of the range spring rotates the helix without direct mechanical linkage.

**High pressure tap** connects with the front chamber through passageway in the plastic case and a sealing ring molded into the edge of the diaphragm.

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## PANEL MOUNTING



Mounting hardware is supplied with the Minihelic® II gage for panel mounting through a single hole, 2-5/8" (67 mm) in diameter. Panel thickness up to 1/2" (13 mm) can be accommodated with the hardware supplied. If necessary, surface mounting of the gage can be accomplished by means of two 4-40 screws into the tapped mounting bracket stud holes in the rear of the gage. Surface mounting requires clearance holes in the panel for the two pressure taps.

Model Number	Range, Inches of Water	Model Number	Range, PSI	Model Number	Range, MM of Water
2-5000-0	0-0.5	2-5205 2-5210 2-5215 *2-5230	0-5 0-10 0-15 0-30	2-5000-25MM	0-25
2-5001	0-1.0			2-5000-50MM	0-50
2-5002	0-2.0			2-5000-100MM	0-100
2-5003	0-3.0			Model Number	Range, Pascals
2-5005	0-5.0			2-5000-125PA	0-125
2-5010	0-10			2-5000-250PA	0-250
2-5020	0-20			2-5000-500PA	0-500
2-5040	0-40			Model Number	Range, kPa
2-5060	0-60			2-5000-1 KPA	0-1
2-5100	0-100			2-5000-3 KPA	0-3
<b>Accessories</b> A-434 Portable Kit A-497 Surface Mtg. Brkt. A-609 Air Filter Kit		*THIS RANGE EMPLOYS SPIRALLY WOUND BERYLLIUM COPPER BOURDON TUBE POINTER DRIVE MECHANISM. NOTE: CONSULT FACTORY REGARDING AVAILABILITY OF ADDITIONAL RANGES.			

For optional 1/8" male NPT connections, add suffix -NPT to model numbers listed above.  
Example: 2-5001-NPT. No extra charge.