

Series  
2000

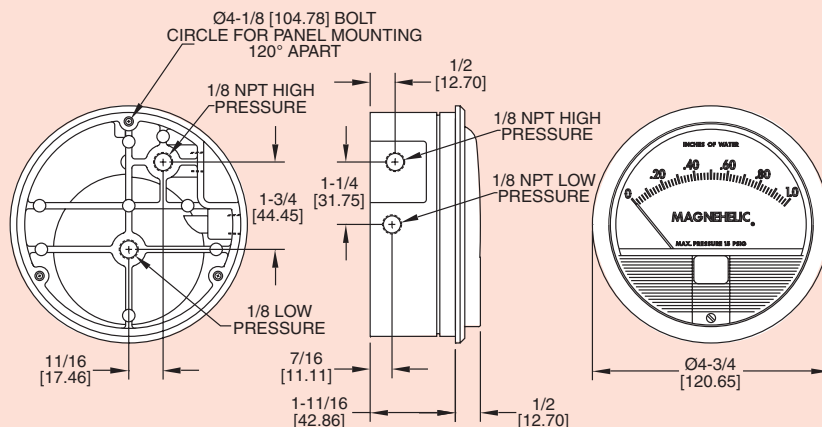
# Magnehelic® Differential Pressure Gages

Indicate Positive, Negative or Differential, Accurate within 2%



Patent Nos. 4,030,365  
5,012,678

Standard Magnehelic® Pressure Gage has a large, easy-to-read 4" dial.



Dimensions, Standard Series 2000 Magnehelic® Pressure Gages. (Slightly different on medium and high pressure models)

Select the Dwyer Magnehelic® gage for high accuracy – guaranteed within 2% of full scale – and for the wide choice of 81 models available to suit your needs precisely. Using Dwyer's simple, frictionless Magnehelic® movement, it quickly indicates low air or non-corrosive gas pressures – either positive, negative (vacuum) or differential. The design resists shock, vibration and over-pressures. No manometer fluid to evaporate, freeze or cause toxic or leveling problems. It's inexpensive, too.

The Magnehelic® is the industry standard to measure fan and blower pressures, filter resistance, air velocity, furnace draft, pressure drop across orifice plates, liquid levels with bubbler systems and pressures in fluid amplifier or fluidic systems. It also checks gas-air ratio controls and automatic valves, and monitors blood and respiratory pressures in medical care equipment.

**Note:** May be used with Hydrogen where pressures are less than 35 psi.

**MOUNTING.** A single case size is used for most models of Magnehelic® gages. They can be flush or surface mounted with standard hardware supplied. With the optional A-610



Flush ...Surface...or Pipe Mounted

Pipe Mounting Kit they may be conveniently installed on horizontal or vertical 1 1/4" - 2" pipe. Although calibrated for vertical position, many ranges above 1" may be used at any angle by simply re-zeroing. However, for maximum accuracy, they must be calibrated in the same position in which they are used. These characteristics make Magnehelic® gages ideal for both stationary and portable applications. A 4 9/16" hole is required for flush panel mounting. Complete mounting and connection fittings plus instructions are furnished with each instrument.

## VENT VALVES

In applications where pressure is continuous and the Magnehelic® gage is connected by metal or plastic tubing which cannot be easily removed, we suggest using Dwyer A-310A vent valves to connect gage. Pressure can then be removed to check or re-zero the gage.



## HIGH AND MEDIUM PRESSURE MODELS

Installation is similar to standard gages except that a 4 9/16" hole is needed for flush mounting. The medium pressure construction is rated for internal pressures up to 35 psig and the high pressure up to 80 psig. Available for all models. Because of larger case, the medium pressure and high pressure models will not fit in a portable case size. Installation of the A-321 safety relief valve on standard Magnehelic® gages often provides adequate protection against infrequent overpressure.

## SPECIFICATIONS

**Service:** Air and non-combustible, compatible gases. (Natural Gas option available.)

**Wetted Materials:** Consult factory.

**Housing:** Die cast aluminum case and bezel, with acrylic cover. Exterior finish is coated gray to withstand 168 hour salt spray corrosion test.

**Accuracy:** ±2% of full scale (±3% on -0, -100 Pa, -125 Pa, 10MM and ±4% on -00, -60 Pa, -6MM ranges), throughout range at 70°F (21.1°C).

**Pressure Limits:** -20" Hg. to 15 psig. † (-0.677 bar to 1.034 bar); MP option: 35 psig (2.41 bar), HP option: 80 psig (5.52 bar).

**Overpressure:** Relief plug opens at approximately 25 psig (1.72 bar), standard gages only.

**Temperature Limits:** 20 to 140°F\* (-6.67 to 60°C).

**Size:** 4" (101.6 mm) Diameter dial face.

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

**Process Connections:** 1/8" female NPT duplicate high and low pressure taps - one pair side and one pair back.

**Weight:** 1 lb 2 oz (510 g), MP & HP 2 lb 2 oz (963 g).

**Standard Accessories:** Two 1/8" NPT plugs for duplicate pressure taps, two 1/8" pipe thread to rubber tubing adapter and three flush mounting adapters with screws. (Mounting and snap ring retainer substituted for 3 adapters in MP & HP gage accessories.)

\*Low temperature models available as special option.

†For applications with high cycle rate within gage total pressure rating, next higher rating is recommended. See Medium and High pressure options at lower left.

## OPTIONS AND ACCESSORIES

### Transparent Overlays

Furnished in red and green to highlight and emphasize critical pressures.



### Adjustable Signal Flag

Integral with plastic gage cover. Available for most models except those with medium or high pressure construction. Can be ordered with gage or separate.



### LED Setpoint Indicator

Bright red LED on right of scale shows when setpoint is reached. Field adjustable from gage face, unit operates on 12-24 VDC. Requires MP or HP style cover and bezel.



### Portable Units

Combine carrying case with any Magnehelic® gage of standard range, except high pressure connection. Includes 9 ft. (2.7 m) of 3/16" I.D. rubber tubing, standhang bracket and terminal tube with holder.



### Air Filter Gage Accessory Package

Adapts any standard Magnehelic® for use as an air filter gage. Includes aluminum surface mounting bracket with screws, two 5 ft. (1.5 m) lengths of 1/4" aluminum tubing two static pressure tips and two molded plastic vent valves, integral compression fittings on both tips and valves.

# Quality design and construction features

**Bezel** provides flange for flush mounting in panel.

**Clear plastic face** is highly resistant to breakage. Provides undistorted viewing of pointer and scale.

**Precision litho-printed scale** is accurate and easy to read.

**Red tipped pointer** of heat treated aluminum tubing is easy to see. It is rigidly mounted on the helix shaft.

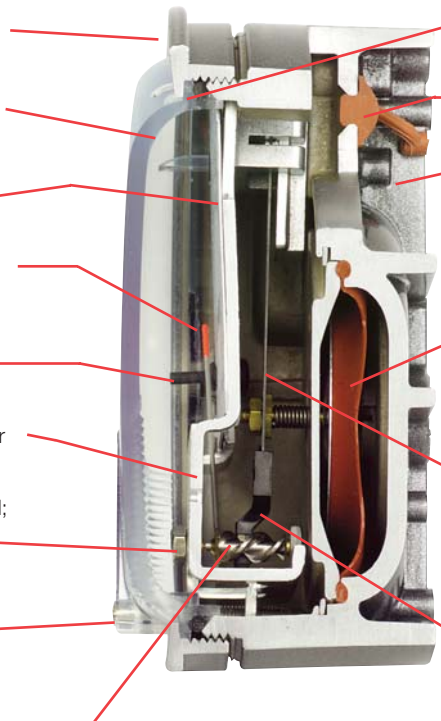
**Pointer stops** of molded rubber prevent pointer over-travel without damage.

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

**Jeweled bearings** are shock-resistant mounted; provide virtually friction-free motion for helix. Motion damped with high viscosity silicone fluid.

**Zero adjustment screw** is conveniently located in the plastic cover, and is accessible without removing cover. O-ring seal provides pressure tightness.

**Helix** is precision made from an alloy of high magnetic permeability. Mounted in jeweled bearings, it turns freely, following the magnetic field to move the pointer across the scale.



**O-ring seal** for cover assures pressure integrity of case.

**Blowout plug** of silicone rubber protects against overpressure on 15 psig rated models. Opens at approximately 25 psig.

**Die cast aluminum case** is precision made and iridite-dipped to withstand 168 hour salt spray corrosion test. Exterior finished in baked dark gray hammerloid. One case size is used for all standard pressure options, and for both surface and flush mounting.

**Silicone rubber diaphragm** with integrally molded O-ring is supported by front and rear plates. It is locked and sealed in position with a sealing plate and retaining ring. Diaphragm motion is restricted to prevent damage due to overpressures.

**Calibrated range** spring is flat spring steel. Small amplitude of motion assures consistency and long life. It reacts to pressure on diaphragm. Live length adjustable for calibration.

**Samarium Cobalt magnet** mounted at one end of range spring rotates helix without mechanical linkages.

## MODELS

Dual Scale English/Metric Models		
Model Number	Range, In. W.C.	Range, Pa or kPa
2000-0D	0-0.5	0-125 Pa
2001D	0-1.0	0-250 Pa
2002D	0-2.0	0-500 Pa
2003D	0-3.0	0-750 Pa
2004D	0-4.0	0-1.0 kPa
2006D	0-6.0	0-1.5 kPa
2008D	0-8.0	0-2.0 kPa
2010D	0-10	0-2.5 kPa

## SERIES 2000 MAGNEHELIC® — MODELS AND RANGES

The models below will fulfill most requirements. Page 11 also shows examples of special models built for OEM customers. For special scales furnished in ounces per square inch, inches of mercury, metric units, etc., contact the factory.

Model Number	Range Inches of Water	Model Number	Range Zero Center Inches of Water	Dual Scale Air Velocity Units		Model Number	Range, CM of Water	Model Number	Range, Pascals
				Model Number	Range in W.C. Velocity, F.P.M.				
2000-00† • •	0-.25	2300-0† •	.25-0-.25	2000-00AV† • •	0-.25/300-2000	2000-15CM	0-15	2000-60PA† • •	0-60
2000-0† • •	0-.50	2301	.5-0-.5	2000-0AV† • •	0-.50/500-2800	2000-20CM	0-20	2000-100PA† • •	0-100
2001	0-1.0	2302	1-0-1	2001AV	0-1.0/500-4000	2000-25CM	0-25	2000-125PA† • •	0-125
2002	0-2.0	2304	2-0-2	2002AV	0-2.0/1000-5600	2000-50CM	0-50	2000-250PA	0-250
2003	0-3.0	2310	5-0-5	2010AV	0-10/2000-12500	2000-80CM	0-80	2000-300PA	0-300
2004	0-4.0	2320	10-0-10	For use with pitot tube.		2000-100CM	0-100	2000-500PA	0-500
2005	0-5.0	2330	15-0-15	Model Number	Range MM of Water	2000-150CM	0-150	2000-750PA	0-750
2006	0-6.0			2000-6MM† • •	0-6	2000-200CM	0-200	Zero Center Ranges	
2008	0-8.0			2000-10MM† • •	0-10	2000-250CM	0-250	2300-250PA	125-0-125
2010	0-10			2000-25MM	0-25	2000-300CM	0-300	2300-500PA	250-0-250
2015	0-15	2201	0-1	2000-50MM	0-50	Zero Center Ranges		Model Number	Range, Kilopascals
2020	0-20	2202	0-2	2000-80MM	0-80	2300-4CM	2-0-2	2000-1KPA	0-1
2025	0-25	2203	0-3	2000-100MM	0-100	2300-10CM	5-0-5	2000-1.5KPA	0-1.5
2030	0-30	2204	0-4	Zero Center Ranges		2300-30CM	15-0-15	2000-2KPA	0-2
2040	0-40	2205	0-5	2300-20MM†	10-0-10			2000-3KPA	0-3
2050	0-50	2210*	0-10					2000-4KPA	0-4
2060	0-60	2215*	0-15					2000-5KPA	0-5
2080	0-80	2220*	0-20					2000-8KPA	0-8
2100	0-100	2230**	0-30					2000-10KPA	0-10
2150	0-150							2000-15KPA	0-15
								2000-20KPA	0-20
								2000-25KPA	0-25
								2000-30KPA	0-30
								Zero Center Ranges	
								2300-1KPA	.5-0-.5
								2300-3KPA	1.5-0-1.5

### Accessories

- A-299, Surface Mounting Bracket
- A-300, Flat Flush Mounting Bracket.....
- A-310A, 3-Way Vent Valve.....
- A-321, Safety Relief Valve.....
- A-432, Portable Kit.....
- A-605, Air Filter Kit.....
- A-610, Pipe Mount Kit.....

- Options** — To order, add suffix: I.E. 2001-ASF  
 ASF (Adjustable Signal Flag)  
 HP (High Pressure Option)  
 LT (Low Temperatures to -20°F)  
 MP (Med. Pressure Option)  
 SP (Setpoint Indicator)

Scale Overlays — Red, Green, Mirrored or Combination, Specify Locations

### Special Purpose Ranges

- Scale No. 2401
- Square Root
- Specify Range
- Scale No. 2402
- Blank Scale
- Specify Range
- Model 2000-00N. range -.05 to +.20" W.C. For room pressure monitoring

†These ranges calibrated for vertical scale position.  
 • Accuracy +/-3%. •• Accuracy +/-4%