



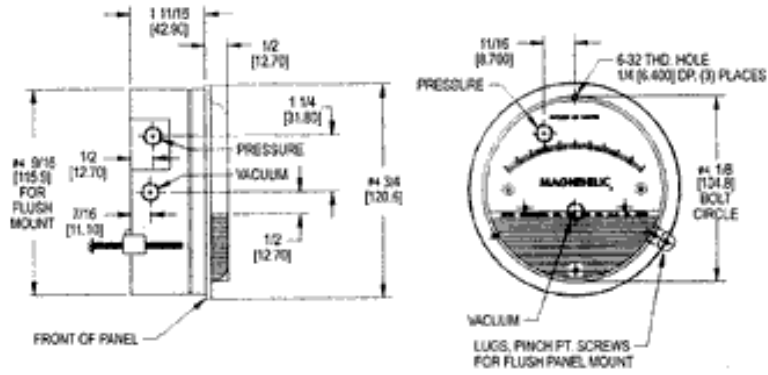
Series
2000

Magnehelic® Differential Pressure Gages

Indicate positive, negative, or differential. Accurate within 2%



[Service Manual](#)



[Dimensional Enlargement](#)

Select the Dwyer Magnehelic gage for high accuracy - guaranteed within 2% of full scale - and for the wide choice of 81 ranges 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.

Widely used 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.

MOUNTING. A single case size is used for most ranges of Magnehelic gages. They can be flush or surface mounted with standard hardware supplied. With the optional A-610 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 inch 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 13/16" 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 in all ranges. Because of larger case, will not fit in portable case. Weight 1 lb., 10 oz. (Installation of the A-321 safety relief valve on standard Magnehelic gages often provides adequate protection against infrequent overpressure; see Bulletin S-101).

PHYSICAL DATA

Ambient temperature range: 20° to 140°F.* (-7° to 140°C)

Rated total pressure: -20" Hg. to 15 psig.+ (-68 kPa to 103 kPa)

Overpressure: Relief plug opens at approximately 25 psig (172 kPa)

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

Housing: Die cast aluminum. Case and aluminum parts Iridite-dipped to withstand 168 hour salt spray test. Exterior finish is baked dark gray hammerloid.

Accuracy: Plus or minus 2% of full scale (3% on - 0 and 4% on - 00 ranges), throughout range at 70°F. (21°C)

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.)

Weight: 1 lb. 2 oz. (460 g)

* 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 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; has external reset screw. Available for most ranges except those with medium or high pressure construction. Can be ordered with gage or separately.

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

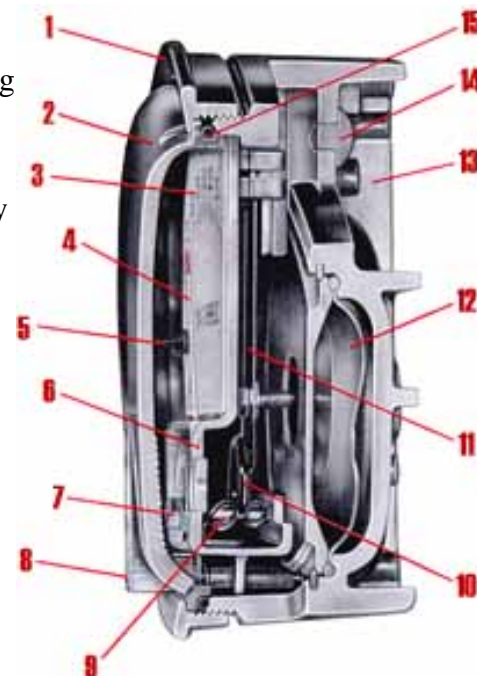
Combine carrying case with any Magnehelic gage of standard range (not high pressure) includes 9 ft. (2.7 m) of 3/16" I.D. rubber tubing, stand-hang bracket, and terminal tube with holder.

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

1. **Bezel** provides flange for flush mounting in panel.
2. **Clear plastic face** is highly resistant to breakage. Provides undistorted viewing of pointer and scale.
3. **Precision litho-printed scale** is accurate and easy to read.
4. **Red tipped pointer** of heat treated aluminum tubing is easy to see. It is rigidly mounted on helix shaft.
5. **Pointer stops** of molded rubber prevent pointer over-travel without damage.
6. **"Wishbone" assembly** provides mounting for helix, helix bearings and pointer shaft.
7. **Jeweled bearings** are shock-resistant mounted; provide virtually friction-free motion for helix. Motion damped with high viscosity silicone fluid.
8. **Zero adjustment screw** is conveniently located in plastic cover, accessible



without removing cover. O-ring seal provides pressure tightness.

9. **Helix** is precision milled from an alloy of high magnetic permeability. Mounted in jeweled bearings, it turns freely to align with magnetic field of magnet to transmit pressure indication.
10. **Samarium Cobalt magnet** mounted at one end of range spring rotates helix without mechanical linkages.
11. **Calibrated range spring** is flat spring steel in temperature compensated design. Small amplitude of motion assures consistency and long life. It reacts to pressure on diaphragm. Live length adjustable for calibration.
12. **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.
13. **Die cast aluminum case** is precision made. Iridite-dipped to withstand 168 hour salt spray test. Exterior finished in baked dark gray hammerloid. One case size used for all standard pressure ranges, and for both surface and flush mounting.
14. **Blowout plug** of silicone rubber protects against overpressure on 15 PSIG rated models. Opens at approximately 25 PSIG.
15. **"O" ring seal** for cover assures pressure integrity of case.

SERIES 2000 MAGNEHELIC® - MODELS AND RANGES

The models listed below will fulfill most requirements. Custom models can be provided for OEM customers. For special units with scales reading in ounces per square inch, inches of mercury, other metric units, etc., contact the factory.

STOCKED MODELS in bold

Model Number	Range, Inches of Water	Minor Div.	Dual Scale Velocity Units			Model Number	Range Pascals	Minor Div.	
			Model Number	Range in W.C.I Velocity, F.P.M.	Minor Div.				
2000-00 +	0-.25	.005	2000-00AV 2000-0AV 2001AV 2002AV 2010AV	0-.25/300-2000	-	2000-60 Pa +	0-60	2.0	
2000-0 +	0-.50	.01		0-.50/500-2800	-	2000-125 Pa +	0-125	5.0	
2001	0-1.0	.02		0-1.0/500-4000	-	2000-250 Pa	0-250	5.0	
2002	0-2.0	.05		0-2.0/1000-5600	-	2000-500 Pa	0-500	10.0	
2003	0-3.0	.10		0-10/2000-12500	-	2000-750 Pa	0-750	25.0	
2004	0-4.0	.10		For use with pilot tube.			Zero Center Range		
2005	0-5.0	.10		Model Number	Range MM of Water	Minor Div.	2300-250 Pa	125-0-125	5.0
2006	0-6.0	.20		2000-6MM +	0-6	.20	2300-500 Pa	250-0-250	10.0
2008	0-8.0	.20		2000-10MM	0-10	.20	Model Number	Range Kilopascals	Minor Div.
2010	0-10	.20		2000-25MM	0-25	.50			
2015	0-15	.50		2000-50MM	0-50	1.0			
2020	0-20	.50		2000-80MM	0-80	2.0			
2025	0-25	.50		2000-100MM	0-100	2.0			
2030	0-30	1.0							
2040	0-40	1.0							
2050	0-50	1.0							
2060	0-60	2.0							
2080	0-80	2.0							
2100	0-100	2.0							
2150	0-150	5.0							

Model Number	Range, Zero Center Inches of Water	Minor Div.
2300-0 +	.25-0-.25	.01
2301	.5-0-.5	.02
2302	1-0-1	.05
2304	2-0-2	.10
2310	5-0-5	.20
2320	10-0-10	.50
2330	15-0-15	1.0
Model Number	Range PSI	Minor Div.
2201	0-1	.02
2202	0-2	.05
2203	0-3	.10
2204	0-4	.10
2205	0-5	.10
2210*	0-10	.20
2215*	0-15	.50
2220*	0-20	.50
2230**	0-30	1.0

*MP option standard
**HP option standard

Zero Center Range		
Model Number	Range CM of Water	Minor Div.
2300-20MM +	10-0-10	.50
2000-15CM	0-15	.50
2000-20CM	0-20	.50
2000-25CM	0-25	.50
2000-50CM	0-50	1.0
2000-80CM	0-80	2.0
2000-100CM	0-100	2.0
2000-150CM	0-150	5.0
2000-200CM	0-200	5.0
2000-250CM	0-250	5.0
2000-300CM	0-300	10.0
Zero Center Range		
Model Number	Range	Minor Div.
2300-4CM	2-0-2	.10
2300-10CM	5-0-5	.20
2300-30CM	15-0-15	1.0

2000-1 kPa	0-1	.02
2000-1.5 kPa	0-1.5	.05
2000-2 kPa	0-2	.05
2000-3 kPa	0-3	.10
2000-4 kPa	0-4	.10
2000-5 kPa	0-5	.10
2000-8 kPa	0-8	.20
2000-10 kPa	0-10	.20
2000-15 kPa	0-15	.50
2000-20 kPa	0-20	.50
2000-25 kPa	0-25	.50
2000-30 kPa	0-30	1.0
Zero Center Range		
2300-1 kPa	.5-0-.5	.02
2300-3 kPa	1.5-0-1.5	.10
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	0-250 Pa
2002D	0-2	0-500 Pa
2003D	0-3	0-700 Pa
2004D	0-4	0-1.0 kPa
2006D	0-6	0-1.5 kPa
2008D	0-8	0-2.0 kPa
2010D	0-10	0-2.5 kPa

+ These ranges calibrated for vertical scale position.

Accessories	Options	Special Purpose Ranges		
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	ASF (Adjustable Signal Flag) HP (High Pressure Option) LT (Low Temperatures to -20°F) MP (Med. Pressure Option) SP (Setpoint Indicator)	Scale No. 2401 Square Root Scale Specify Range	Scale No. 2402 Blank Scale Specify Range	Model 2000-00N Range: -.05 to +.20" W.C. For room pressure monitoring

Suggested Specifications

A differential pressure gage for measuring (state purpose) shall be installed. Gage shall be the diaphragm-actuated dial type 4¾" O.D., with white dial, black figures and graduations and pointer zero adjustment. Gage shall be Dwyer Instruments, Inc., Magnehelic, Catalog No. 2__ reading to __ water column, in. divisions.

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