

Dwyer

SERIES 2000

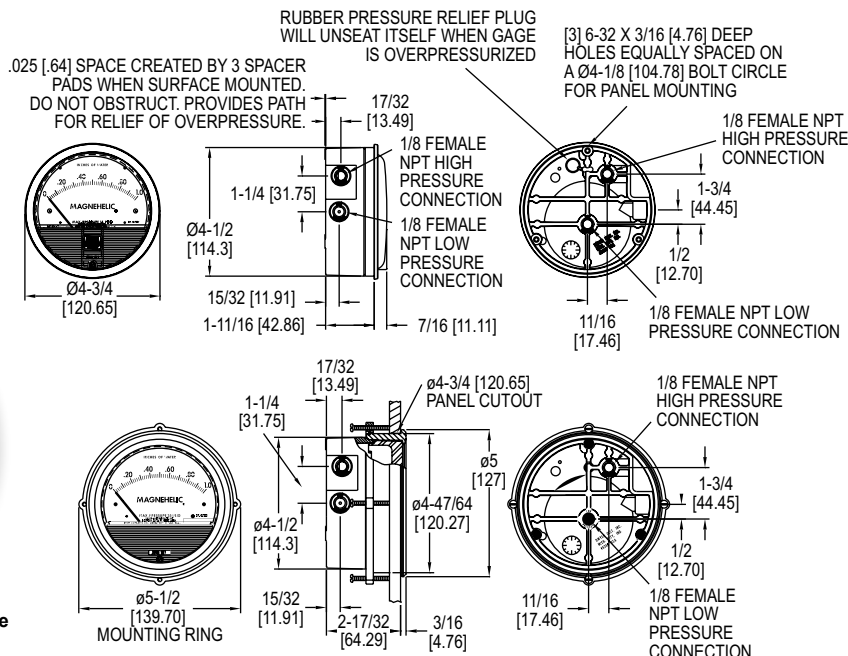
MAGNEHELIC® DIFFERENTIAL PRESSURE GAGES

Indicate Positive, Negative or Differential, Accurate within 1%

CALIBRATION SERVICES AVAILABLE



Standard Magnehelic® gage

High Accuracy Magnehelic® gage
Shown with optional -SS bezel

Select the **Series 2000 Magnehelic® Differential Pressure Gages** for a versatile low differential pressure gage with a wide choice of 81 models and 27 options to choose from. Using Dwyer's simple, frictionless Magnehelic® gage movement, it quickly indicates air or non-corrosive gas pressures—either positive, negative (vacuum) or differential. The design resists shock, vibration, over-pressures and is weatherproof to IP67.

Select the -HA High Accuracy Magnehelic® gage option for an accuracy within 1% of full-scale. Also included with the -HA option at no extra cost are a mirrored scale overlay and a 6 point calibration certificate.

BENEFITS/FEATURES

- Easy to read gage through undistorted plastic face permits viewing from far away
- Patented design provides quick response to pressure changes means no delay in assessing critical situations
- Durable and rugged housing and high-quality components combine to provide long-service life and minimized down-time
- High accuracy option is twice as accurate as the standard Magnehelic® gage

APPLICATIONS

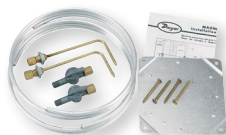
- Filter monitoring
- Air velocity with Dwyer® pitot tube
- Blower vacuum monitoring
- Fan pressure indication
- Duct, room or building pressures
- Clean room positive pressure indication

ACCESSORIES

Model	Description
A-432	Portable kit; combine carrying case with any Magnehelic® gage of standard range, except high pressure connection. Includes 9 ft (2.7 m) of 3/16" ID rubber tubing, standhang bracket and terminal tube with holder
A-605	Air filter gage accessory kit; adapts any standard Magnehelic® gage 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 taps and two molded plastic vent valves, integral compression fittings on both taps and valves
A-605B	Air filter gage accessory kit; air filter kit with two plastic open/close valves, two 4" steel static tips, plastic tubing and mounting flange
A-605C	Air filter gage accessory kit; air filter kit with two plastic open/close valves, two plastic static tips, plastic tubing and mounting flange



A-432



A-605

SPECIFICATIONS

Service: Air and non-combustible, compatible gases (natural gas option available).

Note: May be used with hydrogen. Order a Buna-N diaphragm. Pressures must be less than 35 psi.

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: $\pm 2\%$ (-HA model $\pm 1\%$) of FS ($\pm 3\%$ (-HA $\pm 1.5\%$) on -0, -100PA, -125PA, -10MM and $\pm 4\%$ (-HA $\pm 2\%$) on -00, -60PA, -6MM ranges), throughout range at 70°F (21.1°C).

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

Enclosure Rating: IP67.

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). -20°F (-28°C) with low temperature option.

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 adaptor, and three flush mounting adapters with screws. (Mounting and snap ring retainer substituted for three adapters in MP & HP gage accessories.)

Compliance: Meets the technical requirements of EU Directive 2011/65/EU (RoHS II). **Note:** -SP models not RoHS approved.

*Low temperature models available as special options.

Note: For applications with high cycle rate within gage total pressure rating, next higher rating is recommended. See Medium and High pressure options.

USA: California Proposition 65

WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

ⓘ Over Protection Note: See page 21 (Series 2000)

MAGNEHELIC® DIFFERENTIAL PRESSURE GAGES

Indicate Positive, Negative or Differential, Accurate within 1%

CALIBRATION SERVICES AVAILABLE

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.

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.

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

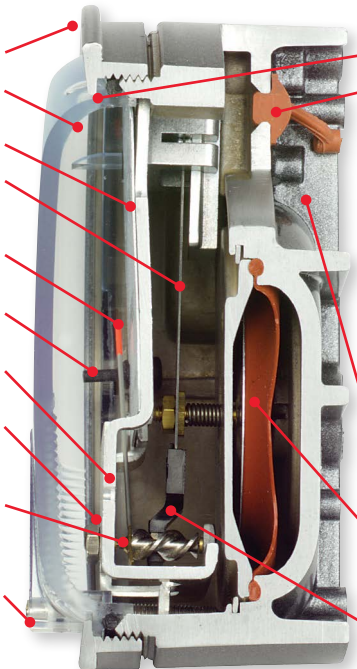
Pointer stops of molded rubber prevent pointer over-travel without damage.

“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.

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.

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



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

OVERPRESSURE PROTECTION

Blowout plug is comprised of a rubber plug on the rear which functions as a relief valve by unseating and venting the gas interior when over pressure reaches approximately 25 psig (1.7 bar). To provide a free path for pressure relief, there are four spacer pads which maintain 0.023" clearance when gage is surface mounted. Do not obstruct the gap created by these pads.

The blowout plug is not used on models above 180" of water pressure, medium or high pressure models, or on gages which require an elastomer other than silicone for the diaphragm.

The blowout plug should not be used as a system overpressure control. High supply pressures may still cause the gage to fail due to over pressurization, resulting in property damage or serious injury. Good engineering practices should be utilized to prevent your system from exceeding the ratings of any component.

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.

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

MODEL CHART

Model Chart		Range, Inches of Water	Model	Range, PSI	Model	Range, MM of Water	Model	Range, kPa	Dual Scale Air Velocity Units For use with pitot tube	
Model									Model	Range, in w.c./Velocity F.P.M.
2000-00N†**	0.05-0.2	2201	0-1	2000-6MM†**	0-6	2000-0.5KPA	0-0.5	2000-00AV†** 2000-0AV†* 2001AV 2002AV 2005AV 2010AV	0-25/300-2000 0-50/500-2800 0-1.0/500-4000 0-2.0/1000-5600 0-5.0/2000-8800 0-10/2000-12500	
2000-00†**	0-25	2202	0-2	2000-10MM†*	0-10	2000-1KPA	0-1			
2000-0†*	0-50	2203	0-3	2000-15MM	0-15	2000-1.5KPA	0-1.5			
2001	0-1.0	2204	0-4	2000-25MM	0-25	2000-2KPA	0-2			
2002	0-2.0	2205	0-5	2000-30MM	0-30	2000-2.5KPA	0-2.5			
2003	0-3.0	2210*	0-10	2000-50MM	0-50	2000-3KPA	0-3			
2004	0-4.0	2215*	0-15	2000-80MM	0-80	2000-4KPA	0-4			
2005	0-5.0	2220*	0-20	2000-100MM	0-100	2000-5KPA	0-5			
2006	0-6.0	2230**	0-30	2000-125MM	0-125	2000-8KPA	0-8			
2008	0-8.0			2000-150MM	0-150	2000-10KPA	0-10			
2010	0-10			2000-200MM	0-200	2000-15KPA	0-15			
2012	0-12			2000-250MM	0-250	2000-20KPA	0-20			
2015	0-15			2000-300MM	0-300	2000-25KPA	0-25			
2020	0-20					2000-30KPA	0-30			
2025	0-25									
2030	0-30									
2040	0-40									
2050	0-50									
2060	0-60									
2080	0-80									
2100	0-100									
2120	0-120									
2150	0-150									
2160	0-160									
2180*	0-180									
2250*	0-250									
Zero Center Ranges										
2300-00†**	0.125-0-0.125									
2300-0†*	.25-0-.25									
2301	.5-0-.5									
2302	1-0-1									
2304	2-0-2									
2310	5-0-5									
2320	10-0-10									
2330	15-0-15									
Zero Center Ranges										
2300-00†**	0.125-0-0.125									
2300-0†*	.25-0-.25									
2301	.5-0-.5									
2302	1-0-1									
2304	2-0-2									
2310	5-0-5									
2320	10-0-10									
2330	15-0-15									
Zero Center Ranges										
2300-00†**	0.125-0-0.125									
2300-0†*	.25-0-.25									
2301	.5-0-.5									
2302	1-0-1									

†These ranges calibrated for vertical scale position. • Accuracy $\pm 3\%$. •• Accuracy $\pm 4\%$. *MP option standard. **HP option standard.

ACCESSORIES

Model	Description
A-135	Rubber gasket for panel mounting
A-310A	3-way 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
A-321	Safety relief valve
A-401	Plastic carry case
A-448	3-piece magnet kit for mounting Magnehelic® gage directly to magnetic surface



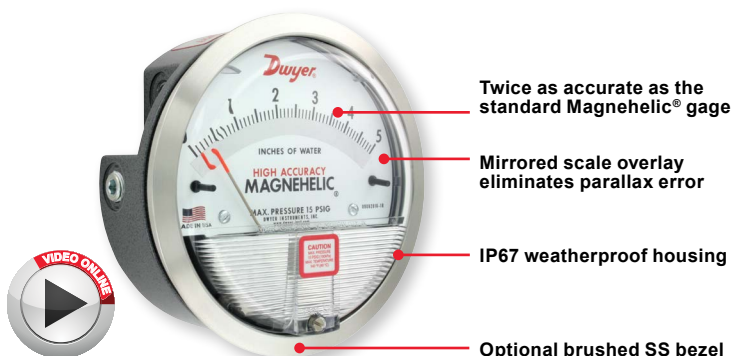
A-310A

USA: California Proposition 65

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HIGH ACCURACY MAGNEHELIC® DIFFERENTIAL PRESSURE GAGE

CALIBRATION SERVICES AVAILABLE



6-point calibration certificate included

OPTIONS - HIGH ACCURACY MAGNEHELIC® GAGE

To order add suffix:	Description
-HA	High accuracy Magnehelic® gage. Accuracy within 1% and weatherproof. Also includes mirrored scale overlay and a six point calibration certificate
-SS	Corrosion resistant brushed 304 stainless steel bezel

Accuracy Specifications: See page 20 (Series 2000)

ADDITIONAL GAGE OPTIONS



OPTIONS - OTHER OPTIONAL BEZELS

To order add suffix:	Description
-CB	Chrome bezel option: A chrome plated aluminum bezel for an aesthetically pleasing finish when mounting on metal surfaces such as control panels.
-SB	Stainless steel bezel option: 304 stainless steel electro polished Ra 16 finished bezel.
-SS	Corrosion resistant brushed 304 stainless steel bezel



LED set point indicator



Adjustable signal flag



Transparent overlay



Mirrored scale overlay



Integrated mounting plate

OPTIONS - LED SET POINT INDICATOR

To order add suffix:	Description
-SP	Bright red LED on right scale shows when set point is reached. Field adjustable from gage face, unit operates on 12-24 VDC. Set point indicator option comes with medium pressure (MP) bezel.

Note: 4-13/16" hole for flush mounting.

OPTIONS - ADJUSTABLE SIGNAL FLAG

To order add suffix:	Description
-ASF	Integral with plastic gage cover. Available for most models except those with medium or high pressure construction. Can be ordered with gage or separate.

OPTIONS - TRANSPARENT OVERLAYS

To order add suffix:	Description
-G	Green (to highlight and emphasize critical pressures)
-R	Red (to highlight and emphasize critical pressures)
-Y	Yellow (to highlight and emphasize critical pressures)

OPTIONS - MIRRORED SCALE OVERLAY

To order add suffix:	Description
-M	A mirrored scale overlay is also available to assist in reducing parallax error.

OPTIONS - INTEGRATED MOUNTING PLATE

To order add suffix:	Description
-AHU1	Furnished with attached surface mounting plate
-AHU2	Furnished with attached surface mounting plate and including A-481 installer kit (2 plastic static pressure tips and 7' of PVC tubing)

OPTIONS - FOR HIGH STATE PRESSURE APPLICATIONS

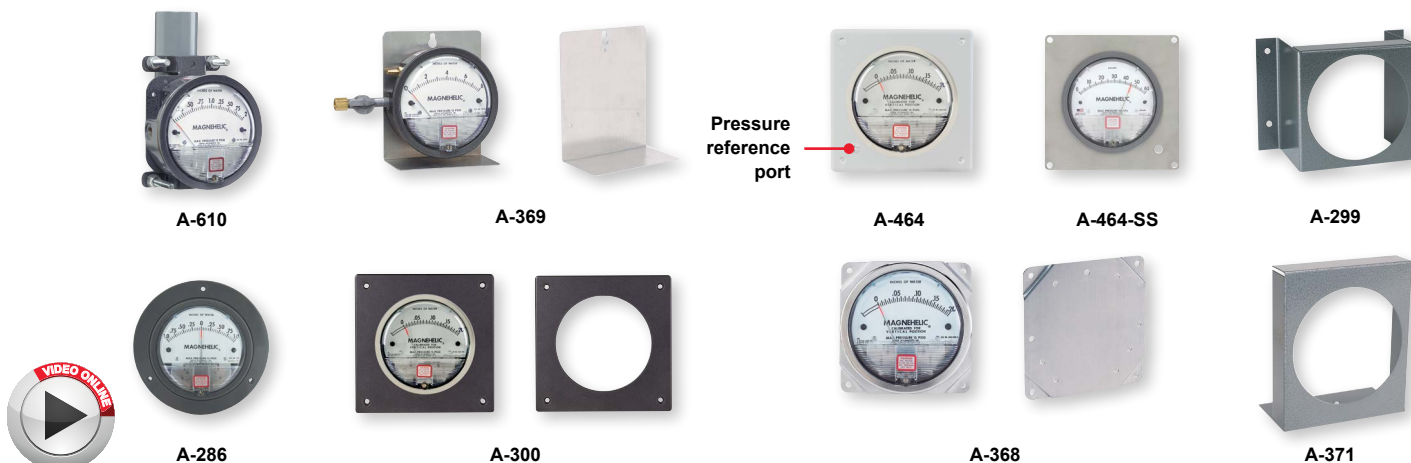
To order add suffix:	Description
-HP	High pressure option: for pressures to 80 psig
-MP	Medium pressure option: for pressures to 35 psig

OPTIONS

To order add suffix:	Description
-FC	Factory calibration certificate
-LT	Low temperatures to -20°F (-28°C)
-NIST	NIST traceable calibration certificate

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MAGNEHELIC® GAGE MOUNTING ACCESSORIES



A single case size is used for most models of Magnehelic® gages. They can be flush or surface mounted with standard hardware supplied. Complete mounting and connection fittings plus instructions are furnished with each instrument. A 4-9/16" hole is required for flush panel mounting.

Flush mounting is easily accomplished with the new A-300 Flush Mounting bracket. This bracket provides a solution to quickly and conveniently flush mount the Magnehelic® gage. The A-300 is ideal for mounting the Magnehelic® gage on control panel doors.

The A-368 is a simple bracket for quickly surface mounting the Magnehelic® gage. After securing the Magnehelic® gage to the A-368 bracket, mount the bracket on any flat surface.

The A-369 allows the Magnehelic® gage to be easily carried to locations where pressure readings need to be taken. The A-369 can stand on its own or hang on a nail or hook.

ACCESSORIES	
Model	Description
A-286	Magnehelic® gage panel mounting flange
A-299	Mounting bracket, flush mount for Magnehelic® gage, bracket is then surface mounted, steel with gray hammerloid epoxy finish
A-300	Flush mounting bracket
A-368	Surface mounting plate, aluminum, for Magnehelic® gage
A-369	Stand-hang bracket, aluminum, for Magnehelic® gage
A-371	Surface mounting bracket, use with medium pressure (-MP) or high pressure (-HP) models only
A-464-SS	Stainless steel flush mount kit for Magnehelic® gage
A-464	Flush mount kit for Magnehelic® gage
A-610	Pipe mounting kit for installing on 1-1/4" to 2" horizontal or vertical pipe

SERIES A-320

INSTRUMENT ENCLOSURES

Protects Various Instruments



The **Series A-320 Instrument Enclosures** protect instruments in all applications. The enclosures, available in plastic and stainless steel, fit a variety of gages including the Series 605 transmitter, DM-2000, 3000MR/MRS and DH3. All models include silicone tubing, Banjo fittings, and threaded pressure connections pre-installed. The threaded pressure connections allow the user to easily change the connection type through the use of fittings or adapters. This modification can be implemented to allow connection to a wide variety of plastic or metal tubing.

SPECIFICATIONS	
Housing Material:	ABS plastic or 304 SS.
Process Connection:	1/8" female NPT (-SS models: 1/8" BSPT).
Enclosure Rating:	Plastic models: IP66.
Weight:	A-320-A1: 1.1 lb (0.5 kg); A-320-B1: 1.4 lb (0.65 kg); A-320-BC: 1.4 lb (0.65 kg); A-320-A-SS: 2.3 lb (1.05kg); A-320-B-SS: 3.0 lb (1.35 kg).

MODEL CHART	
Model	Description
A-320-A1	2000 Magnehelic® gage
A-320-B1*	3000MR/MRS Photohelic® switch/gage, Series 605 Magnehelic® differential pressure transmitter, DH3 DigiHelic® pressure controller, 2000 Magnehelic® gage with medium and high pressure options
A-320-BC	2000 Magnehelic® gage, DM-1000 DigiMag® digital differential pressure gage, DM-2000 differential pressure transmitter, instruments with backwards compatible bezel option
A-320-A-SS	2000 Magnehelic® gage
A-320-B-SS	2000 Magnehelic® gage, DM-2000 differential pressure transmitter

*For DH3 to fit on A-320-B1 the casing on the electrical plug must be removed.

ACCESSORIES	
Model	Description
A-339-SS	1/8" male BSPT to 3/16" hose barb