

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.

### FEATURES/BENEFITS

- · 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 longservice 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 <sup>®</sup> gage of standard range, except high pressure connection. Includes 9 ft (2.7 m) of 3/16 <sup>°</sup> ID rubber tubing, standhang bracket and terminal tube with holder			
A-605	Air filter gage accessory kit; adapts any standard Magnehelic <sup>®</sup> 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 tips and two molded plastic vent valves, integral compression fittings on both tips 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			

#### 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: ±2% (-HA model ±1) of FS (±3% (-HA ±1.5%) on -0, -100PA, -125PA, -10MM and ±4% (-HA ±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 adapter, and three flush mounting adapters with screws. (Mounting and snap ring retainer substituted for three adapters in MP & HP gage accessories.)

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

Note: For applications with high cycle rate within gage total pressure rating, next higher rating is recommended. See Medium and High pressure options. \*Low temperature models available as special options





A-605 Over Protection Note: See page 21 (Series 2000)

RESSURE

DISTRIBUTOR IN VIETNAM: BACH KHOA EQUIPMENT INTERNATIONAL JSC. Tel: +84 988 380 368 www.bkic.vn

# Dwyer SERIES 2000 **MAGNEHELIC® DIFFERENTIAL PRESSURE GAGES** Indicate Positive, Negative or Differential, Accurate within 1%

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

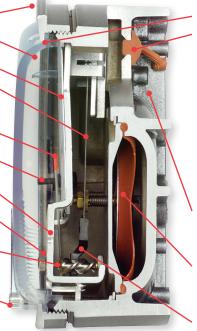
"Wishbone" assembly provides mounting for helix, helix bearings and pointer shaft.

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.

MODEL OUL



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 gage 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 dispersion 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 overaging the retires of any component 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										
	Range,		Range,		Range, MM		Range,		Dual Scale Air	r Velocity Units
Model	Inches of Water	Model	PSI	Model	of Water	Model	kPa		For use with pi	tot tube
2000-00N+••	.05-02	2201	0-1	2000-6MM+••	0-6	2000-0.5KPA	0-0.5			
2000-00+••	025	2202	0-2	2000-10MM+•	0-10	2000-1KPA	0-1			
	050	2203	0-3	2000-15MM	0-15	2000-1.5KPA	0-1.5			Range, in w.c./
	0-1.0		0-4	2000-25MM	0-25	2000-2KPA	0-2		Model	Velocity F.P.M.
2002	0-2.0	2205	0-5	2000-30MM	0-30	2000-2.5KPA	0-2.5			025/
	0-3.0		0-10	2000-50MM	0-50	2000-3KPA	0-3		2000-00441	300-2000
2004	0-4.0		0-15	2000-80MM	0-80	2000-4KPA	0-4		2000-0AV+•	050/
	0-5.0		0-20		0-100	2000-5KPA	0-5		2000-0441-	500-2800
	0-6.0		0-30	2000-125MM	0-125	2000-8KPA	0-8		2001AV	0-1.0/
2008	0-8.0			2000-150MM	0-150	2000-10KPA	0-10		200170	500-4000
	0-10		Range, CM	2000-200MM	0-200	2000-15KPA	0-15		2002AV	0-2.0/
	0-12		of Water		0-250	2000-20KPA	0-20		200204	1000-5600
	0-15				0-300	2000-25KPA	0-25		2005AV	0-5.0/
	0-20	2000-15CM	0-15	Zero Center Ra		2000-30KPA	0-30		2003AV	2000-8800
	0-25	2000-20CM	0-20	2300-6MM†••	3-0-3				2010AV	0-10/
	0-30		0-25		5-0-5	Zero Center F			201040	2000-12500
	0-40		0-50		10-0-10	2300-1KPA	.5-05			2000 12000
2050	0-50	2000-80CM	0-80	Model	Range, Pa	2300-2KPA	1-0-1			
2060	0-60	2000-100CM	0-100			2300-2.5KPA				
2080	0-80	2000-150CM	0-150	2000-60NPA†••			1.5-0-1.5			
2100	0-100	2000-200CM		2000-60PA†••	0-60	Dual Scale Er				
2120	0-120	2000-250CM	0-250		0-100		Range,	Range	,	
	0-150	2000-300CM	0-300		0-125	Model	in w.c.	Pa or k	Pa	
		Zero Center I	Ranges		0-250	2000-00D+••	025	0-62 Pa	а	
2180*	0-180		2-0-2		0-300	2000-0D+•	0-0.5	0-125 F	Pa	
	0-250		5-0-5		0-500	2001D	0-1.0	0-250 F	Pa	
			15-0-15		0-750	2002D		0-500 F	Pa	
Zero Center					0-1000	2003D	0-3.0	0-750 F	Pa	
	0.125-0-0.125			Zero Center Ra		2004D	0-4.0	0-1.0 k	Pa	
2300-0†•	.25-025			Model		2005D	0-5.0	0-1.25	kPa	
2301	.5-05			2300-60PA+••	30-0-30	2006D	0-6.0	0-1.5 k		
	1-0-1				50-0-50	2008D		0-2.0 k		
	2-0-2				60-0-60	2010D		0-2.5 k		
	5-0-5				100-0-100	2015D	0-15	0-3.7 k		
	10-0-10			2300-250PA	125-0-125	2020D		0-5 kPa		
2330	15-0-15			2300-300PA	150-0-150	2025D		0-6.2 k		
					250-0-250	2050D	0-50	0-12.4		
					500-0-500	2060D		0-15 kF		
+These range	es calibrated for ve	tical scale pos	sition • Accu		ccuracy ±4%				otion standard	
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VELOCITY AND VOLUMETRIC FLOW UNITS Scales are available on the Magnehelic<sup>®</sup> gage that read in velocity units (FPM, m/s) or volumetric flow units (SCFM, m<sup>3</sup>/s, m<sup>3</sup>/h). Stocked velocity units with dual range scales above. For other ranges contact the factory. When ordering volumetric flow scales please specify the maximum flow rate and its corresponding pressure. Example: 0.5 in w.c. = 16,000 CFM.

# ACCESSORIES

Model Description

A-321 A-448

Safety relief valve 3-piece magnet kit for mounting Magnehelic® gage directly to magnetic surface Rubber gasket for panel mounting A-135

A-401 Plastic carry case

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 A-310A 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-310A





Twice as accurate as the standard Magnehelic® gage

Mirrored scale overlay eliminates parallax error

IP67 weatherproof housing

**Optional brushed SS bezel** 

	<b>OPTIONS - HIGH ACCURACY MAGNEHELIC® GAGE</b>				
CENTIFICATE OF CALEBATION	To order				
NECESCUSTORIA NECESCUSTORIA NECESCUSTORIA NECESCUSTORIA SUBJECT LINES NECESCUSTORIA SUBJECT SUBJEC	add suffix:	Description			
M219 PME CAL-311921 Desc (7 <sup>4</sup> April 1975) Mass Fundamental Cal-1990 Entry Mass Fundamental Cal-1990 Entry Mass Mass Cal-1990 Entry Mass Cal-1990 Entry Mass Cal-1990 Entry Mass Cal-1990 Entry Mass	-HA	High Accuracy Magnehelic® Gage. Accuracy			
Image		within 1% and weatherproof. Also includes mirrored scale overlay and a six point calibration certificate			
albalas Valles for grand fails	-SS	Corrosion resistant brushed 304 stainless steel bezel			

certificate included

Accuracy Specifications: See page 20 (Series 2000)

# **ADDITIONAL GAGE OPTIONS**









Adjustable signal flag

LED set point indicator



Transparent overlay

Mirrored scale overlay



Integrated mounting plate



<b>OPTIONS - OTHER</b>	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			

<b>OPTIONS - LED SET</b>	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				
OPTIONS - ADJUSTA				
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 -R -Y	Green (to highlight and emphasize critical pressures) Red (to highlight and emphasize critical pressures) 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 -AHU2	Furnished with attached surface mounting plate Furnished with attached surface mounting plate and including A-481 installer kit (2 plastic static pressure tips and 7'of PVC tubing)			

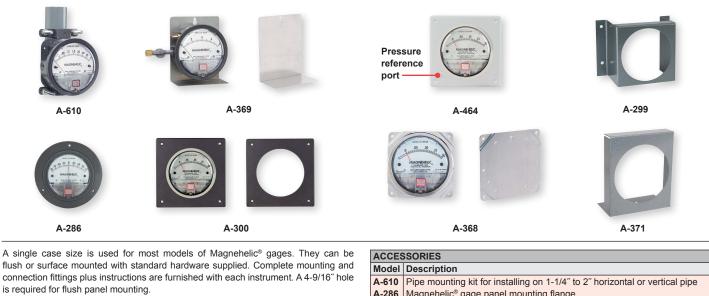
OPTIONS - FOR HIGH STATE PRESSURE APPLICATIONS				
To order add suffix:	Description			
-HP	High pressure option: for pressures to 80 psig			
-MP	Medium pressure option: for pressures to 35 psig			

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

PRESSURE



# MAGNEHELIC<sup>®</sup> GAGE MOUNTING ACCESSORIES



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<sup>®</sup> gage. The A-300 is ideal for mounting the Magnehelic<sup>®</sup> gage on control panel doors.

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

The A-369 allows the Magnehelic<sup> $\circ$ </sup> 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-610	Pipe mounting kit for installing on 1-1/4" to 2" horizontal or vertical pipe			
A-286	Magnehelic <sup>®</sup> gage panel mounting flange			
A-369	Stand-hang bracket, aluminum, for Magnehelic® gage			
A-300	Flush mounting bracket			
A-464	Flush mount kit for Magnehelic <sup>®</sup> gage			
A-368	Surface mounting plate, aluminum, for Magnehelic <sup>®</sup> gage			
A-299	Mounting bracket, flush mount for Magnehelic <sup>®</sup> gage, bracket is then			
	surface mounted, steel with gray hammerloid epoxy finish			
A 274	Surface mounting brocket use with medium pressure (MD) or high			

A-371 Surface mounting bracket, use with medium pressure (-MP) or high pressure (-HP) models only

# SERIES A-320



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.

MODEL CHA	MODEL CHART			
Model	Description			
A-320-A1*	2000 Magnehelic <sup>®</sup> gage, DM-2000 differential pressure transmitter			
A-320-B1**	3000MR/MRS Photohelic <sup>®</sup> switch/gage, Series 605 Magnehelic <sup>®</sup>			
	differential pressure transmitter, DH3 Digihelic® pressure controller,			
	2000 Magnehelic <sup>®</sup> gage with medium and high pressure options			
A-320-BC	2000 Magnehelic <sup>®</sup> gage, DM-1000 DigiMag <sup>®</sup> digital differential			
	pressure gage, DM-2000 differential pressure transmitter, instruments			
	with backwards compatible bezel option			
A-320-A-SS	2000 Magnehelic <sup>®</sup> gage			
A-320-B-SS	2000 Magnehelic <sup>®</sup> gage, DM-2000 differential pressure transmitter			
*DM-2000 must be mounted horizontally in A-320-A1 enclosure.				
**For DH3 to	**For DH3 to fit on A-320-B1 the casing on the electrical plug must be removed.			

### 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).

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

PRESSURE

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