**MAGNEHELIC® DIFFERENTIAL PRESSURE GAGES** Indicate Positive, Negative or Differential, Accurate within 1% CALIBRATION SERVICES AVAILABLE RUBBER PRESSURE RELIEF PLUG [3] 6-32 X 3/16 [4.76] DEEP HOLES EQUALLY SPACED ON A Ø4-1/8 [104.78] BOLT CIRCLE WILL UNSEAT ITSELF WHEN GAGE IS OVERPRESSURIZED .025 [.64] SPACE CREATED BY 3 SPACER PADS WHEN SURFACE MOUNTED. DO NOT OBSTRUCT. PROVIDES PATH FOR PANEL MOUNTING 17/32 [13.49] FOR RELIEF OF OVERPRESSURE. 1/8 FEMALE NPT HIGH PRESSURE 1-1/4 [31.75] AGNEHELIC CONNECTION Ŧ 1/8 FEMALE Ø4-1/2 NPT LOW PRESSURE [114.3] CONNECTION Ø4-3/4 15/32 [11.91] [120.65] 1-11/16 [42.86] 7/16 [11.11] 17/32 Standard Magnehelic<sup>®</sup> gage ø4-3/4 [120.65] [13.49] PANEL CUTOUT 1-1/4 [31.75] MAGNEHELIC 3 Ó ø5 [127] 17/6/ ø4-1/2<sup>†</sup> [120.27] [114.3] 15/32 ø5-1/2 11/16 High Accuracy Magnehelic<sup>®</sup> gage Shown with optional -SS bezel 139 70 [11.91] 2-17/32 [17.46] 3/16 MOUNTING RING [64.29] [4.76] Select the Series 2000 Magnehelic<sup>®</sup> Differential Pressure Gages for a versatile low SPECIFICATIONS

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<sup>®</sup> 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**

Differential Pressure Gages

- 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<sup>®</sup> pitot tube
- Blower vacuum monitoring
- Fan pressure indication
  Duct, room or building pressures
  Clean room positive pressure indication

### ACCESSORIES

Model Description Description 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 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 tips and two molded plastic vent valves, integral compression fittings on both tips and valves Air filter gage accessory kit; air filter kit with two plastic open/close valves, two 4" steel static tips, plastic tubing and mounting flange 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 A-605B A-605C



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.

1/8 FEMALE NPT HIGH PRESSURE CONNECTION

1-3/4

[44,45]

1/8 FEMALE NPT LOW

1/8 FEMALE NPT

HIGH PRESSURE

1-3/4 1 [44.45]

1/2[12.70] 1/8 FEMALE

NPT LOW

PRESSURE CONNECTION

PRESSURE CONNECTION

Ŧ ł

1/2 [12.70]

Ó

11/16

[17.46]

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

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

Process connections, no instruct in a capital and a second second

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 Califormia 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)

Dwyer

**SERIES 2000** 

## MAGNEHELIC<sup>®</sup> DIFFERENTIAL PRESSURE GAGES Indicate Positive, Negative or Differential, Accurate within 1%



PRESSURE

#### 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.

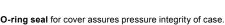
Pointer stops of molded rubber prevent pointer over-travel without damage.

"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.



#### 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

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 O	MODEL CHART									
	Range, Inches of		Range,		Range, MM of		Range,		r Velocity Units	
Model	Water	Model	PSI	Model	Water	Model	kPa ¯	For use with pi	tot tube	
2000-00N		2201	0-1	2000-6MM†••	0-6	2000-0.5KPA			Range, in w.c./	
2000-00+		2202	0-2	2000-10MM+•	0-10	2000-1KPA	0-1	Model	Velocity F.P.M.	
2000-0+•	050	2203	0-3	2000-15MM	0-15	2000-1.5KPA		2000-00AV+••	025/300-2000	
2001	0-1.0	2204	0-4	2000-25MM	0-25	2000-2KPA	0-2	2000-0AV+•	050/500-2800	
2002	0-2.0	2205	0-5	2000-30MM	0-30	2000-2.5KPA		2001AV	0-1.0/500-4000	
2003	0-3.0	2210*	0-10	2000-50MM	0-50	2000-3KPA	0-3	2002AV	0-2.0/1000-5600	
2004	0-4.0	2215*	0-15	2000-80MM	0-80	2000-4KPA	0-4	2005AV	0-5.0/2000-8800	
2005	0-5.0	2220*	0-20	2000-100MM	0-100	2000-5KPA	0-5	2010AV	0-10/2000-12500	
2006	0-6.0	2230**	0-30	2000-125MM	0-125	2000-8KPA	0-8	1 · ·		
2008	0-8.0		Range,	2000-150MM	0-150	2000-10KPA	0-10			
2010	0-10		CM of	2000-200MM	0-200	2000-15KPA	0-15			
2012	0-12	Model	Water	2000-250MM	0-250	2000-20KPA	0-20			
2015	0-15	2000-15CM	0-15	2000-300MM	0-300	2000-25KPA	0-25			
2020	0-20	2000-20CM	0-20			2000-30KPA	0-30			
2025	0-25	2000-25CM	0-25							
2030	0-30	2000-50CM	0-50							
2040	0-40		0-80	Zero Center Ra	andes	Zero Center	Ranges			
2050	0-50	2000-100CM		2300-6MM†••	3-0-3	2300-1KPA	.5-05	1		
2060	0-60	2000-150CM		2300-6MMT+	5-0-5	2300-1KPA 2300-2KPA	1-0-1			
2080	0-80	2000-200CM				2300-2.5KPA				
2100	0-100	2000-250CM		2300-20MM+•	10-0-10					
2120	0-120	2000-300CM		Model	Range, Pa	2300-3KPA	1.5-0-1.5			
2150	0-150	2000-30001	10-300				L			
2160	0-160	7	<b>D</b>	2000-60NPA†••		Durl Oralis E				
2180*	0-180	Zero Center			0-30	Dual Scale E	ngiisn/wetri	<u>c models</u>		
2250*	0-250	2300-4CM	2-0-2	2000-60PA†••	0-60		Range,	Range,		
2230	0-230	2300-10CM	5-0-5	2000-100PA+•	0-100	Model	in w.c.	Pa or kPa		VELOCITY AND
		2300-30CM	15-0-15	2000-125PA+•	0-125					VOLUMETRIC FLOW UNITS
	ter Ranges			2000-250PA	0-250	2000-00D+••	025 0-0.5	0-62 Pa		Scales are available on the
2300-00+				2000-300PA	0-300	2000-0D+•	0-0.5	0-125 Pa		Magnehelic <sup>®</sup> gage that read
2300-0+•	.25-025			2000-500PA	0-500	2001D 2002D	0-1.0	0-250 Pa		in velocity units (FPM, m/s) or
2301	.5-05			2000-750PA	0-750		0-2.0	0-500 Pa		volumetric flow units (SCFM,
2302	1-0-1			2000-1000PA	0-1000	2003D	0-3.0	0-750 Pa		m <sup>3</sup> /s, m <sup>3</sup> /h).
2304	2-0-2			Zero Center Ra	inges	2004D	0-4.0	0-1.0 kPa		Stocked velocity units with dual
2310	5-0-5			Model	Range, Pa	2005D	0-5.0	0-1.25 kPa		range scales in inches w.c.
2320	10-0-10			2300-60PA+	30-0-30	2006D	0-6.0	0-1.5 kPa		and feet per minute are shown
2330	15-0-15			2300-100PA+•	50-0-50	2008D	0-8.0	0-2.0 kPa		above. For other ranges contact
				2300-120PA	60-0-60	2010D	0-10	0-2.5 kPa		the factory.
				2300-200PA	100-0-100	2015D	0-15	0-3.7 kPa		When ordering volumetric
				2300-250PA	125-0-125	2020D	0-20	0-5 kPa		flow scales please specify
				2300-300PA	150-0-150	2025D	0-25	0-6.2 kPa		the maximum flow rate and its
				2300-500PA	250-0-250	2050D	0-50	0-12.4 kPa		corresponding pressure.
				2300-1000PA	500-0-500	2060D	0-60	0-15 kPa		<b>Example:</b> $0.5$ in w.c. = 16,000
+These ra	inges calibrated fo	r vertical scale	e position			cv ±4%. *MP o	ption standar	d. **HP option	standard.	CFM.
ACCESS	0			···· · · · · · · · · · · · · · · · · ·						
	Description									
A-135	Rubber gasket for	panel mountin	Ig .							
A-310A	A 3-way vent valves. In applications where pressure is continuous and the Magnehelic® gage is A-310A									
	connected by metal or plastic tubing which cannot be easily removed, we suggest using Dwyer									
A	A-310A vent valves to connect gage Pressure can then be removed to check or re-zero the gage USA: California Proposition 65									
	Safety relief valves									
A-401	Plastic carry case									birth defects or other reproductive harm.
	For more information go to www.roswannings.ca.gov.									

Dwyer

#### PRESSURE HIGH ACCURACY MAGNEHELIC® DIFFERENTIAL PRESSURE GAGE CALIBRATION SERVICES AVAILABLE OPTIONS - HIGH ACCURACY MAGNEHELIC® GAGE CONVERTICATION OF Twice as accurate as the CONTINUES OFFICE PERMIT standard Magnehelic<sup>®</sup> gage To order aluuluul add suffix: Description High accuracy Magnehelic® gage. Accuracy within 1% and weatherproof. Also includes mirrored scale overlay and -HA Mirrored scale overlay Arm Alia Tail Tail Arm 1.00 7.00 1.00 Arm 1.00 7.00 1.00 Arm 1.00 1.00 1.00 Arm 1.00 1.00 1.00 Arm 0.00 1.00 1.00 Arm 0.00 1.00 1.00 Arm 0.00 0.00 1.00 MAGNEHELIC eliminates parallax error a six point calibration certificate -SS Corrosion resistant brushed 304 stainless steel bezel IP67 weatherproof housing 6-point calibration certificate included **Optional brushed SS 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. Stainless steel bezel option: 304 stainless steel electro polished Ra 16 finished bezel. Corrosion resistant brushed 304 stainless steel bezel -SB -SS **OPTIONS - LED SET POINT INDICATOR** To order add suffix: Description 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 -SP pressure (MP) bezel. Note: 4-13/16" hole for flush mounting **OPTIONS - ADJUSTABLE SIGNAL FLAG** Differential Pressure Gages To order add suffix: Description LED set point indicator 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. -ASF **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 Mirrored scale overlay -M Transparent overlay A mirrored scale overlay is also available to assist in reducing parallax error. **OPTIONS - INTEGRATED MOUNTING PLATE** To order add suffix: Description 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) -AHU1 -AHU2 Integrated mounting plate **OPTIONS - FOR HIGH STATE PRESSURE APPLICATIONS** To order add suffix: Description High pressure option: for pressures to 80 psig Medium pressure option: for pressures to 35 psig -HP -MP

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

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.



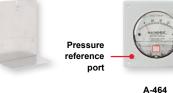
A-610

A-286

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

A-369

A-300



ACCESSORIES

Description

Flush mounting bracket

pressure (-HP) models only

Flush mount kit for Magnehelic® gage

Model

A-286

A-299

A-300

A-368

A-369

A-371

A-464

A-610

A-320-BC

A-464-SS



A-368

Magnehelic<sup>®</sup> gage panel mounting flange



A-464-SS

Mounting bracket, flush mount for Magnehelic® gage, bracket is then

Surface mounting bracket, use with medium pressure (-MP) or high

Pipe mounting kit for installing on 1-1/4" to 2" horizontal or vertical pipe

surface mounted, steel with gray hammerloid epoxy finish

Surface mounting plate, aluminum, for Magnehelic® gage

Stand-hang bracket, aluminum, for Magnehelic® gage

Stainless steel flush mount kit for Magnehelic® gage





A-371

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 guickly surface mounting the Magnehelic<sup>®</sup> 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

SERIES A-320

**INSTRUMENT ENCLOSURES Protects Various Instruments** 

A-320-B1

A-320-A-SS



A-320-B-SS

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.

A-320-A1

MODEL CHART						
Model	Description					
A-320-A1	2000 Magnehelic <sup>®</sup> gage					
A-320-B1*	3000MR/MRS Photohelic <sup>®</sup> switch/gage, Series 605 Magnehelic <sup>®</sup> differential pressure transmitter, DH3 Digihelic <sup>®</sup> 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					
*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 Differential Pressure Gages