Dwyer Instruments, Inc. | dwyer-inst.com

SERIES 2000

MAGNEHELIC® DIFFERENTIAL PRESSURE GAGES

Indicate Positive, Negative or Differential, Accurate within 1%

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 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
- Indicate Positive, Negative or Differential, Accurate within 1%

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, -125PA, -10MM 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 (21.1°C).

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).

Over Protection Note: See page 21 (Series 2000)

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.

ACCESSORIES

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-432</td>
<td>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</td>
</tr>
<tr>
<td>A-605</td>
<td>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</td>
</tr>
<tr>
<td>A-605B</td>
<td>Air filter gage accessory kit; air filter kit with two plastic open/close valves, two 4” steel static tips, plastic tubing and mounting flange</td>
</tr>
<tr>
<td>A-605C</td>
<td>Air filter gage accessory kit; air filter kit with two plastic open/close valves, two plastic static tips, plastic tubing and mounting flange</td>
</tr>
</tbody>
</table>
Differential Pressure Gages

**A-310A**

Example: 0.5 in w.c. = 16,000 CFM.

- **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 read.
- **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 unsealing 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 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 18 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.

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**Samarium Cobalt magnet** mounted at one end of range spring rotates helix without mechanical linkages.
HIGH ACCURACY MAGNEHELIC® DIFFERENTIAL PRESSURE GAGE

- Twice as accurate as the standard Magnehelic® gage
- Mirrored scale overlay eliminates parallax error
- IP67 weatherproof housing
- Optional brushed SS bezel

OPTIONS - HIGH ACCURACY MAGNEHELIC® GAGE

<table>
<thead>
<tr>
<th>To order add suffix</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-HA</td>
<td>High accuracy Magnehelic® gage. Accuracy within 1% and weatherproof. Also includes mirrored scale overlay and a six point calibration certificate.</td>
</tr>
<tr>
<td>-SS</td>
<td>Corrosion resistant brushed 304 stainless steel bezel</td>
</tr>
</tbody>
</table>

Accuracy Specifications: See page 20 (Series 2000)

ADDITIONAL GAGE OPTIONS

OPTIONS - LED SET POINT INDICATOR

-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

-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

-G
Red (to highlight and emphasize critical pressures)

-R
Yellow (to highlight and emphasize critical pressures)

-Y

OPTIONS - MIRRORED SCALE OVERLAY

-M
A mirrored scale overlay is also available to assist in reducing parallax error.

OPTIONS - INTEGRATED MOUNTING PLATE

-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 - OTHER OPTIONAL BEZELS

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

OPTIONS - FOR HIGH STATE PRESSURE APPLICATIONS

<table>
<thead>
<tr>
<th>To order add suffix</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-HP</td>
<td>High pressure option: for pressures to 80 psig</td>
</tr>
<tr>
<td>-MP</td>
<td>Medium pressure option: for pressures to 35 psig</td>
</tr>
</tbody>
</table>

OPTIONS

<table>
<thead>
<tr>
<th>To order add suffix</th>
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</tr>
</thead>
<tbody>
<tr>
<td>-FC</td>
<td>Factory calibration certificate</td>
</tr>
<tr>
<td>-LT</td>
<td>Low temperatures to -20°F (-28°C)</td>
</tr>
<tr>
<td>-NIST</td>
<td>NIST traceable calibration certificate</td>
</tr>
</tbody>
</table>
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.

### 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.

### MODEL CHART

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-320-BC</td>
<td>2000 Magnehelic® gage</td>
</tr>
</tbody>
</table>

### 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 (1.05 kg); A-320-B-SS: 3.0 lb (1.35 kg).

### ACCESSORIES

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