IN-LINE FLOW SENSORS
Use with the Dwyer® Differential Pressure Gages or Transmitters

The SERIES DS In-Line Flow Sensors are two Series of averaging Pitot tubes for compatible gases and liquids that provide accurate and convenient flow rate sensing, for schedule 40 pipe, when purchased with suitable differential pressure gage with appropriate range.

The Series DS-300 Averaging Flow Sensors are designed to be inserted in the pipeline through a compression fitting and available for pipe sizes from 1 to 10˝ (2.5 to 25.4 cm). Accessories include adapters with 1/4˝ SAE 45° flared ends compatible with hoses supplied with the Model A-471 Portable Capsuhelic® Gage Kit.

The Series DS-400 Averaging Flow Sensors are designed for insertion lengths up to 24˝ (61 cm) and include a pair of 1/8˝ NPT x 1/4˝ SAE 45° flared adapters which are compatible with hoses used in the Model A-471 Portable Capsuhelic® Gage Kit.

The supplied solid brass mounting adapter has a 3/4˝ dia. compression fitting to lock in required insertion length and a 3/4˝ male NPT thread for mounting in a threaded branch connection (not included).

FEATURES/BENEFITS
• Multiple sensing point measurement and built-in averaging capability eliminates the need for "traversing" the flowing stream with single point velocity pressure measurement saving time
• Extremely reliable, proven technology, Pitot tubes, have been used in flow measurement for years
• All models include convenient and quick-acting quarter-turn ball valves to isolate the sensor for zeroing with 1/8˝ female NPT valve assembly process connections.
• Furnished with instrument shut-off valves on both pressure connections with 1/8˝ female NPT connections rated at 200 psig (13.7 bar) and 200°F (93.3°C)
• Where valves are not required, they can be omitted at reduced cost
• The Series DS-400 Averaging Flow Sensors are quality constructed from extra strong 3/4˝ dia. stainless steel to resist increased forces encountered at higher flow rates with both air and water
• Economical flow indication when used with appropriate differential pressure gage
• Rugged construction yields, non-clogging, stable design

APPLICATIONS
• Remediation
• Natural, flare, flue, stack gas
• Boiler feedwater
• Cooling water
• Superheated, saturated, or geothermal steam
• Combustion or compressed air
• Oil flow monitoring

USA: California Proposition 65
WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov
FLOW

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HOW TO ORDER
Merely determine the pipe size into which the flow sensor will be mounted and designate the size as a suffix to Model DS-300. For example, a flow sensor to be mounted in a 2" pipe would be a Model No. DS-300-2".

For non-critical water and air flow monitoring applications, the chart below can be utilized for ordering a stock Capsuhelic® differential pressure gage for use with the DS-300 flow sensor. Simply locate the maximum flow rate for the media being measured under the appropriate pipe size and read the Capsuhelic® flow sensor differential pressure output. With this bulletin and after making a few simple instructions, Bulletin F-50 to obtain complete data on converting flow rates of various media to the Capsuhelic® flow units are available on special order for more critical applications. Customer wish to order the adjustable signal flag option for the Capsuhelic® deviation from that flow in quantitative measure can be easily determined. You may utilize for ordering a stock Capsuhelic® mounted in a 2˝ pipe would be a Model No. DS-300-2˝.

FIGURE CHART
Gage Range (in w.c.) Media @ 70°F Full Range Flows by Pipe Size (Approximate) 1” 1-1/4” 1-1/2” 2” 2-1/2” 3” 4” 6” 8” 10”
2 Water (GPM) 4.8 8.3 11.5 20.5 30 49 86 205 350 560
2 Air @ 14.7 PSIA (SCFM) 19.0 33.0 42.0 65.0 113 183 330 760 1340 2130
2 Air @ 100 PSIG (SCFM) 50.0 90.5 120.0 210.0 325 510 920 2050 3600 6000
5 Water (GPM) 7.7 14.0 18.0 34.0 47 78 138 320 560 890
5 Air @ 14.7 PSIA (SCFM) 30.0 51.0 66.0 118.0 178 289 510 1200 2150 3400
5 Air @ 100 PSIG (SCFM) 83.0 142.0 190.0 340.0 610 820 1600 3300 5700 10000
10 Water (GPM) 11.0 19.0 25.5 45.5 67 110 195 450 800 1260
10 Air @ 14.7 PSIA (SCFM) 41.0 72.0 93.0 163.0 250 410 725 1680 3040 4860
10 Air @ 100 PSIG (SCFM) 120.0 205.0 275.0 470.0 740 1100 2000 4600 8100 15000
25 Water (GPM) 18.0 32.0 40.5 72.0 108 173 310 720 1250 2000
25 Air @ 14.7 PSIA (SCFM) 83.0 112.0 155.0 255.0 390 640 1130 2630 4860 7700
25 Air @ 100 PSIG (SCFM) 185.0 325.0 430.0 760.0 1200 1800 3300 7200 13000 22000
50 Water (GPM) 25.0 44.0 57.5 100.0 152 247 435 1000 1800
50 Air @ 14.7 PSIA (SCFM) 90.0 161.0 205.0 360.0 560 900 1600 3700 6400
50 Air @ 100 PSIG (SCFM) 260.0 460.0 620.0 1050.0 1700 2600 4600 10000 18500
100 Water (GPM) 36.5 62.0 82.0 142.0 220 350 620 1200 2290 5000
100 Air @ 14.7 PSIA (SCFM) 135.0 230.0 300.0 505.0 800 1290 2290 5000
100 Air @ 100 PSIG (SCFM) 370.0 660.0 870.0 1500.0 2300 3600 6500 15000

ACCESSORIES

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
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<tbody>
<tr>
<td>A-160</td>
<td>Threaded branch connection, 3/8&quot; NPT, forged steel, 3000 psi</td>
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<tr>
<td>A-161</td>
<td>Brass bushing, 1/4&quot; x 3/8&quot;</td>
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<tr>
<td>A-471</td>
<td>Portable Kit. For portable operation, the A-471 Capsuhelic® Portable Gage Kit is available complete with tough polypropylene carrying case, mounting bracket, 3-way manifold valve, two 10&quot; high pressure hoses, and all necessary fittings.</td>
</tr>
<tr>
<td>631B</td>
<td>Capsuhelic® Wet&amp;Wet Differential Pressure Transmitter. Low pressure transmitter for use with DS-300/400 flow sensors. Use Series 631B Capsuhelic® Wet&amp;Wet Differential Pressure Transmitter.</td>
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See page 31 (Series 4000)
See page 78 (Series 631B)