GENERAL

SMARTMEASUREMENT’s ALDPT-MV measures three separate process variables simultaneously and provides dynamic calculation of fully compensated mass flow rate for steam and liquids respectively and standard volume flow for gases. It measures differential pressure and absolute pressure from a single sensor and process temperature from a standard PT 100 Resistance Temperature Detector (RTD). Flow calculations include compensation of pressure and/or temperature as well as more complex variables such as discharge coefficient, thermal expansion, Reynolds number and compressibility factor. The ALDPT-MV includes flow equations for steam, gases and liquids so that one model is all you need in your system. It can also measure static pressure with both integral or remote electronics and HART protocol. Many plants calculate mass flow in a host computer using a simplified mass flow equation. The ALPDT-MV provides full compensation of over 25 different parameters to achieve a 5x improvement in flow performance compared to uncompensated DP flow. The ALDPT-MV is ideally suited to work with SMC’s ACONE primary flow elements.

FEATURES

• Multi-functional: a single transmitter for up to three measured values
• Used for level and flow measurement of gas, liquid and steam
• Modular: Interexchangeable electronics with self-reconfiguration
• Advanced diagnostics capabilities
• Process value and alarms
• Convenient: configurable via local operating keypad
• Linearization for primary elements
• Analog 4–20 mA \( \text{DC} \) two wire linear output
• HART protocol
• Mass and standard volume flow in accordance with AGA 3 or DIN EN ISO 5167
• Dynamic flow correction with continuous calculation of Reynolds’s number and flow

SPECIFICATIONS

• Measuring Range:
  - Differential: 200Pa ~ 2000 kPa up to 40 MPa
  - Absolute: Liquid, Gas and Steam
  - Temperature: \(-4°F ~ 752°F (-20°C ~ 400°C)\)
  - Accuracy: 0.075%, 0.2%, 0.5%
  - Turn-down: 100:1
  - Drift (Micro): 0.1%FS/3 years
  - Relative humidity: 0 ~ 100% RH
  - O ring material: Perbunan, Viton, Teflon
  - Filled fluid: Silicon oil or inert oil
  - Start time: <15 seconds after power up
  - Storage temperature: \(-4°F ~ 150°F (-20°C ~ 400°C)\)

• Bolt: Stainless Steel
• Shell: Low Copper Aluminum Alloy Shell
• Approvals: Isolated explosion ExdIIBT5 or ExdIICT6 Intrinsic safety ExiaIICT6 or ExibIICT6
• Output signal: 4 ~ 20 mA \( \text{DC} \)
• Power supply: 24 V \( \text{DC} \) supply, \( R_s(Us-12V)/I_{max} \leq 23 \text{ mA} \)
• Voltage up to 42V \( \text{DC} \), Min to 12 V \( \text{DC} \)
• 15V \( \text{DC} \) (with display)
• Protection: IP67/NEMA 6
• Weight: 8 lb (does not include options)
Battery Powered Electromagnetic Flowmeter

Model ALMAG
ALMAG-BAT

DIMENSIONS

Terminal Configuration

Note: Quick interface functionally equivalent to the signal terminal

Display

[Images of DP display, Flow display, Menu, Save data]

Save Changes?

Y    N

/ OA=16.00mA 75%
OTHER ACCESSORIES

Battery Powered Electromagnetic Flowmeter Model ALMAG ALMAG-BAT

Horizontal Impulse Piping Type (side face)
- 8.00" (203 mm)
- 5.49" (138 mm)

Horizontal Impulse Piping Type (front side)
- 4.88" (124 mm)
- 4.00" (101 mm)

Horizontal Impulse Wall mounting Type
- 7.63" (199 mm)
- 7.28" (185 mm)

Vertical Impulse Piping Type
- 6.93" (176 mm)
- 2.13" (54 mm)

Valve manifold (options)

ALDPT-MV Multivariable Different Pressure Transmitter
# Multivariable Different Pressure Transmitter

**ALDPT-MV**

**TYPE OF FLUID**
Please provide the name of your fluid, including operating density and viscosity

<table>
<thead>
<tr>
<th>ALDPT-MV-</th>
<th>Measuring Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 MPa</td>
<td>2</td>
</tr>
<tr>
<td>10 MPa</td>
<td>3</td>
</tr>
<tr>
<td>40 MPa</td>
<td>4</td>
</tr>
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</table>

**PRESSURE & TEMPERATURE**
Please provide the working temperature and pressure measure range

**TYPE OF ELECTRONICS**
Please provide the required output and connections

**PIPE MATERIAL**
Please provide the name of your pipe material

**EXAMPLE: ALDPT-MV-B-2-22-M1-NN-N-N-S-N-N-N**

<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td>Static Pressure Sensor</td>
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</tr>
<tr>
<td>Materials</td>
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</tr>
<tr>
<td>Display</td>
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</tr>
<tr>
<td>Install</td>
<td>Install</td>
</tr>
<tr>
<td>Connection</td>
<td>Connection</td>
</tr>
<tr>
<td>Drain/Vent Valve</td>
<td>Drain/Vent Valve</td>
</tr>
<tr>
<td>Process Connector Gasket</td>
<td>Process Connector Gasket</td>
</tr>
<tr>
<td>Approvals</td>
<td>Approvals</td>
</tr>
<tr>
<td>Accuracy</td>
<td>Accuracy</td>
</tr>
<tr>
<td>Mounting Bracket</td>
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</tr>
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**TYPE OF FLUID**
Please provide the name of your fluid, including operating density and viscosity

**PRESSURE & TEMPERATURE**
Please provide the working temperature and pressure measure range

**TYPE OF ELECTRONICS**
Please provide the required output and connections

**PIPE MATERIAL**
Please provide the name of your pipe material

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**ALDPT**

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Diaphragm | Fluid | Description |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>SST #316</td>
<td>Silicone oil</td>
<td>22</td>
</tr>
<tr>
<td>SST #316</td>
<td>Fluorinated oil</td>
<td>23</td>
</tr>
<tr>
<td>Hastelloy C</td>
<td>Silicone oil</td>
<td>32</td>
</tr>
<tr>
<td>Hastelloy C</td>
<td>Fluorinated oil</td>
<td>33</td>
</tr>
</tbody>
</table>

No Display | M1 |
LCD Display | M7 |
Backlight LCD Display | M8 |

½ NPT Female Thread | NM |
½ NPT Male Thread | NM |
M20 x 1.5 Male Thread | MM |
G½" Male Thread | GM |

Vacuum Coupling Radius Seal DIN 28403 KF16/ISO 2861 up to 2.5 bar | VC |
½ NPT Male Thread | C12 |

¾-20 UNF and ¾-18 NPT female thread, no relief valve | N |
¾-20 UNF and ¾-18 NPT female thread, Relief valves at end of flanges | B |
¾-20 UNF and ¾-18 NPT female thread, Relief valves at upper part of the flange | U |
¾-20 UNF and ¾-18 NPT female thread, Relief valves at lower part of the flange | D |

Perbunan (NBR) | N |
Viton (FKM) | F |
Teflon (PTFE) | P |
Standard (without explosion proof) | S |
ATEX Isolated Explosion Ex ia | AI |
ATEX Explosion Ex id | AD |

0.1% | 1 |
0.075% | 7 |

None | N |
Stainless steel # 304 | 1 |
Carbon steel galvanized | 2 |

None | N |
Stainless steel oval-shaped flange with ½ NPT female thread | 1 |
Stainless steel D-shaped connector with M20x1.5 male thread | 2 |
2 ways SS #304 Valve Manifold - ½ NPT thread | 2V |
3 ways SS #304 Valve Manifold - ½ NPT thread | 3V |
5 ways SS #304 Valve Manifold - ½ NPT thread | 5V |
2 ways SS #316 Valve Manifold - ½ NPT thread | 2VA |
3 ways SS #316 Valve Manifold - ½ NPT thread | 3VA |
5 ways SS #316 Valve Manifold - ½ NPT thread | 5VA |