**Hybrid Multi Delta**

Hybrid Multi Delta is an ultra-wide range (1:900) flowmeter that can measure small flow rate equivalent to leakage from piping to flow rate at normal operation by "one unit" when installed on the compressed air piping at factory. With this …

- Compressed air usage can be reduced = Reduction of power consumption & energy saving
- Advantages: usage management, leakage detection, load increase/decrease, and more

Wide-range flow measurement made possible by incorporating two flowmeters

- Measurement of leak amount to large flow rate possible with one unit
- Can be installed based on line size even with uncertain flow rate
- Sensor configuration unsusceptible to mist

**Vortex flowmeter**

- Principle: Flow rate is measured by vortex shedding frequency
- Advantage: Suitable for measurement of large flow rate
- Disadvantage: Cannot measure small flow rate that does not generate vortex easily
- Volume flowrate is measured in principle

**Thermal mass flowmeter**

- Principle: Controls the temperature so that the temperature difference between heater and fluid temperature remains constant and mass flow rate is measured from the amount of power applied to the heater
- Advantage: Good at measurement of small flowrate, Capable of measuring mass flowrate
- Disadvantage: Sensitivity drops in large flowrate

We add value to the flow
### GENERAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model</th>
<th>TV1025</th>
<th>TV1040</th>
<th>TV1050</th>
<th>TV1065</th>
<th>TV1080</th>
<th>TV1100</th>
<th>TV1150</th>
<th>TV2150</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal size</td>
<td>25mm</td>
<td>40mm</td>
<td>50mm</td>
<td>65mm</td>
<td>80mm</td>
<td>100mm</td>
<td>150mm</td>
<td>150mm</td>
</tr>
<tr>
<td>Process connection</td>
<td>Rc 1 (Female)</td>
<td>Rc 1-1/2 (Female)</td>
<td>Rc 2 (Female)</td>
<td>JIS 10K RF Flanged</td>
<td>JIS 10K RF Flanged</td>
<td>JIS 10K RF Flanged</td>
<td>JIS 10K RF Flanged</td>
<td>50A JIS 10K RF Flanged</td>
</tr>
<tr>
<td>Fluid temperature</td>
<td>0 to 50°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>0 to 50°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure range</td>
<td>0 to 0.78MPa (Option 0 to 0.98MPa)</td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Accuracy (Indicative of linearity and pressure influence)</td>
<td>±5% of reading</td>
<td>±0.5% of max. flowrate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeatability</td>
<td>±2% of reading</td>
<td>±0.5% of max. flowrate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature characteristics</td>
<td>±0.2% / °C of reading</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

### FLOW RANGE

<table>
<thead>
<tr>
<th>Nominal size</th>
<th>25mm</th>
<th>40mm</th>
<th>50mm</th>
<th>65mm</th>
<th>80mm</th>
<th>100mm</th>
<th>150mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3MPa</td>
<td>0.6 to 240</td>
<td>1.2 to 570</td>
<td>1.8 to 960</td>
<td>3 to 1440</td>
<td>4.2 to 1920</td>
<td>7.2 to 3360</td>
<td>16 to 7680</td>
</tr>
<tr>
<td>0.4MPa</td>
<td>0.6 to 300</td>
<td>1.2 to 720</td>
<td>1.8 to 1200</td>
<td>3 to 1800</td>
<td>4.2 to 2400</td>
<td>7.2 to 4200</td>
<td>16 to 9600</td>
</tr>
<tr>
<td>0.5MPa</td>
<td>0.6 to 360</td>
<td>1.2 to 864</td>
<td>1.8 to 1440</td>
<td>3 to 2160</td>
<td>4.2 to 2880</td>
<td>7.2 to 5040</td>
<td>16 to 11520</td>
</tr>
<tr>
<td>0.6MPa</td>
<td>0.6 to 420</td>
<td>1.2 to 1008</td>
<td>1.8 to 1680</td>
<td>3 to 2520</td>
<td>4.2 to 3360</td>
<td>7.2 to 5880</td>
<td>16 to 13440</td>
</tr>
<tr>
<td>0.7MPa</td>
<td>0.6 to 480</td>
<td>1.2 to 1150</td>
<td>1.8 to 1920</td>
<td>3 to 2880</td>
<td>4.2 to 3840</td>
<td>7.2 to 6720</td>
<td>16 to 15360</td>
</tr>
</tbody>
</table>

### METER ERROR TEST DATA (TYPICAL EXAMPLE)

- Nominal size 65mm (at 0.6MPa pressure)

#### Display
- 7-segment 8-digit LCD (backlit with measurement units)
- Display is rotatable in 90° steps.

### OUTPUT

- Flow pulse: Open collector output, Pulse width: 1 ms default (1 to 240 ms adjustable)
- Flow analog: 4 to 20mADC, Temperature output and pressure output are optional
- Flow alarms: 2 points, open collector outputs
- Any two output points are selectable. (See "output" of product code for combination.)

### FACTORED PULSE UNIT

- 0.001m³/P (normal)
- 0.01m³/P (normal)
- 0.1m³/P (normal)

### PRESSURE LOSS

- 10kPa max.

### POWER

- 24VDC±10% Max. 150mA (4 to 20mA required for analog output is excluded.)

### CABLE

- 4-conductor shielded cable (3-meter furnished)

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