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We can also assist in laboratory operation by providing technical information, additional training courses, servicing and maintenance support.

Contractual preventative maintenance programs are available upon request. Contact your nearest HORIBA office or authorised representative for details.

## HORIBA Global Support Network



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## Dual Pitot Tube Flow Meter

# PTFM-ONE

### Background

The new Dual Pitot Tube Flow Meter (PTFM-ONE DT) is a patented product design that joins our best in class PTFM-1000 V2 product in our PTFM line up.

The PTFM-ONE DT takes all the best features of the PTFM-1000 such as 1kHz data capture and the highest exhaust temperature testing capability on the market.

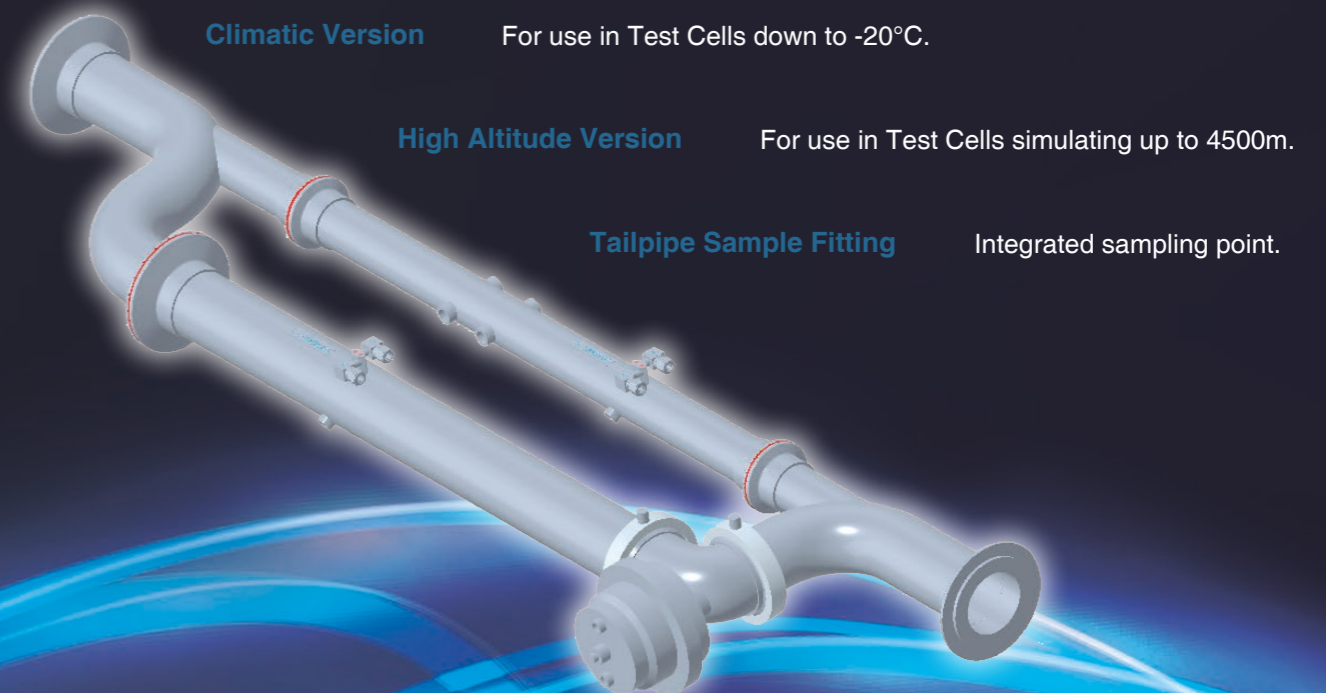
The PTFM-ONE DT now offers a larger dynamic range allowing you to test more engine or vehicle ranges without the need to change your test cell pipework. This "dynamic range" means the PTFM-ONE DT can handle flow rates from 0.3m<sup>3</sup>/min up to 14.5m<sup>3</sup>/min @ 20°C due to the innovative way HORIBA has designed the pipework, switching seamlessly from the lower flow testing pitot tube to the extended range setup running 2 Pitot simultaneously.



### Key Benefits

<b>900°C Exhaust Gas Limit</b>	Allows the freedom to test engines under extreme conditions without worrying if the flow meter can handle those temperatures
<b>-1.25kPa to +7.5kPa Sensor Range</b>	Shows both positive flow & negative flow in the tailpipe. Also, HORIBA capped the positive pressure at +7.5kPa to ensure we cause as little backpressure on your engine as possible.
<b>Dual Tube System</b>	This is a patented design using 2 Pitot Tubes that incorporates a valve to switch automatically, ensuring the system maintains the highest possible accuracy. It uses the smaller tube for flows below 4.5 m <sup>3</sup> /min and both tubes if flows peak above the smaller tubes flow limit up to 14.5m <sup>3</sup> /min.
<b>1Khz High Speed Transducers</b>	Having fast sampling of the pressure changes in the tailpipe allows for a rapid visual representation of both positive and negative spikes that occur within a combustion engine. Lower speed sampling would miss these spikes giving you an inaccurate representation of what is actually happening inside the tailpipe.
<b>Temperature Compensation</b>	The PTFM-ONE automatically compensates to 20°C when testing so there is no need to warm up.
<b>Multiple Communication Options</b>	The PTFM-ONE has 2 connection options. LAN for AK connections to Automation systems or the PTFM Host programme & Analogue out (0-10V with 4 configurable channels available)
<b>2 Options of Absolute Pressure Sensors</b>	The PTFM-ONE can be purchased in 2 absolute pressure ranges supporting testing from sea level to a) 2100m or b) 4500m.

### Optional Features



### Specifications

<b>System Configuration</b> <i>(Standard unit)</i>	<ul style="list-style-type: none"> <li>■ Dual Pitot Tube Setup (1 for low end &amp; 1 for high end)</li> <li>■ System Controller</li> </ul>
<b>Tube Diameter &amp; Measuring Range</b>	<p>The System comes with a B &amp; C Tube in parallel with each other and a valve in between.</p> <ul style="list-style-type: none"> <li>■ <b>B-type:</b> f42.7 / f39.7 mm (0.15 m<sup>3</sup>/min to 4.5 m<sup>3</sup>/min)</li> <li>■ <b>C-type:</b> f60.5 / f56.5 mm (0.3 m<sup>3</sup>/min to 10 m<sup>3</sup>/min)</li> </ul> <p>Both B and C Tubes work in parallel with each other, providing a Max Flow of 14.5 m<sup>3</sup>/min.</p>
<b>Linearity</b>	<p>Either of the following:</p> <p>(a) Within ±2.0 % of full scale                  (b) Intercept:  a0  ≤ 1.0 % of full scale                  Slope: 0.98 ≤ a1 ≤ 1.02                  Standard estimated error: SEE ≤ 2.0% of full scale                  Coefficient of determination: r<sup>2</sup> ≥ 0.990</p>
<b>Flow Rate Accuracy</b>	Within ±1 % of full scale or within ±1.5 % of readings (whichever larger) (at flow rate of 20 % of full scale)
<b>Exhaust Pressure Sensor Range</b>	-1.25 – 7.5 kPa
<b>Atmospheric Pressure Sensor Range</b>	<ul style="list-style-type: none"> <li>■ <b>Standard configuration:</b> 80 to 110 kPa</li> <li>■ <b>Optional configuration:</b> 60 to 110 kPa</li> </ul>
<b>Environment for use</b>	<ul style="list-style-type: none"> <li>■ <b>Temperature:</b> -20°C to +40°C</li> <li>■ <b>Humidity:</b> Under 80% as relative humidity</li> <li>■ <b>Altitude:</b> 0m to 2100m above sea level *option for up-to 4500m</li> </ul>
<b>Approved Standards</b>	CE, FCC, RoHS compliant
<b>Dimensions</b>	H x W x D (mm) - 923 x 480 x 1204
<b>Mass</b>	115KG Approx.