HORIBA
Automotive Test Systems

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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.

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HORIBA (Austria) GmbH — **Austria**
Kaplanstrasse 5, 3430 Tulln, Austria
Phone: +43 2272 65225 Fax: +43 2272 65225 45

HORIBA, Ltd. — **Japan**
2 Miyanohigashi, Kisshoin, Minami-ku, Kyoto, Japan
Phone: +81 75 313 8121 Fax: +81 75 321 8312

HORIBA UK Limited — **United Kingdom**
Kyoto Close, Moulton Park, Northampton NN3 6FL, UK
Phone: +44 1604 542 500 Fax: +44 1064 542 699

HORIBA France SAS — **France**
16-18 rue du Canal, 91165 Longjumeau, France
Phone: +33 1 69 74 72 00 Fax: +33 1 69 09 07 21

HORIBA Europe GmbH (Sweden Branch) — **Sweden**
Grimboåsen 10 A, 41749 Gothenburg, Sweden
Phone: +46 31 644 268 Fax: +46 31 644 269

HORIBA Instruments Incorporated — **United States**
5900 Hines Drive, 48108 Ann Arbor, Michigan, USA
Phone: +1 734 213 6555 Fax: +1 734 213 6525

HORIBA Europe GmbH — **Germany**
Darmstadt Office
Landwehrstrasse 55, 64293 Darmstadt, Germany
Phone: +49 6151 5000 0 Fax: +49 6151 5000 3865

Oberursel Office
Hans-Mess-Str 6, 61440 Oberursel, Germany
Phone: +49 6172 1396 0 Fax: +49 6172 1373 85

HORIBA
Automotive Test Systems

DUAL PITOT TUBE FLOW METER
PTFM-ONE

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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.

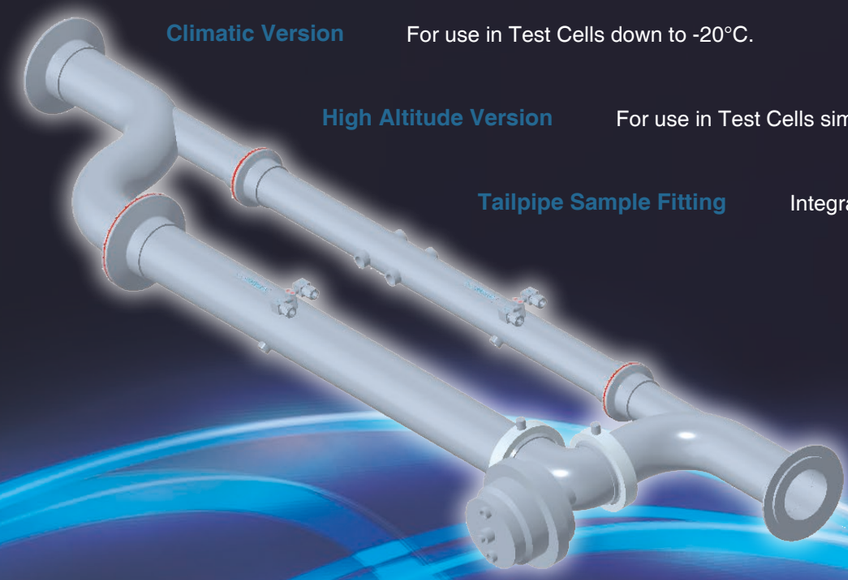
The PTFM-ONE DT takes all the best features of the PTFM-1000 such as 1kHz data capture and the highest exhaust temperature testing capability on the market.

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^3/min up to 14.5m^3/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

900°C Exhaust Gas Limit	Allows the freedom to test engines under extreme conditions without worrying if the flow meter can handle those temperatures
-1.25kPa to +7.5kPa Sensor Range	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.
Dual Tube System	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 m3/min and both tubes if flows peak above the smaller tubes flow limit up to 14.5m3/min.
1Khz High Speed Transducers	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.
Temperature Compensation	The PTFM-ONE automatically compensates to 20°C when testing so there is no need to warm up.
Multiple Communication Options	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)
2 Options of Absolute Pressure Sensors	The PTFM-ONE can be purchased in 2 absolute pressure ranges supporting testing from sea level to a) 2100m or b) 4500m.

Optional Features



Climatic Version	For use in Test Cells down to -20°C.
High Altitude Version	For use in Test Cells simulating up to 4500m.
Tailpipe Sample Fitting	Integrated sampling point.

Specifications

System Configuration *(Standard unit)*	■ Dual Pitot Tube Setup (1 for low end & 1 for high end) ■ System Controller
Tube Diameter & Measuring Range	The System comes with a B & C Tube in parallel with each other and a valve in between. ■ **B-type:** f42.7 / f39.7 mm (0.15 m^3/min to 4.5 m^3/min) ■ **C-type**: f60.5 / f56.5 mm (0.3 m^3/min to 10 m^3/min) Both B and C Tubes work in parallel with each other, providing a Max Flow of 14.5 m^3/min.
Linearity	Either of the following: (a) Within ±2.0 % of full scale (b) Intercept: $\|a0\| \leq 1.0$ % of full scale Slope: $0.98 \leq a1 \leq 1.02$ Standard estimated error: SEE ≤ 2.0% of full scale Coefficient of determination: $r^2 \geq 0.990$
Flow Rate Accuracy	Within ±1 % of full scale or within ±1.5 % of readings (whichever larger) (at flow rate of 20 % of full scale)
Exhaust Pressure Sensor Range	-1.25 – 7.5 kPa
Atmospheric Pressure Sensor Range	■ **Standard configuration:** 80 to 110 kPa ■ **Optional configuration:** 60 to 110 kPa
Environment for use	■ **Temperature:** -20ºC to +40ºC ■ **Humidity:** Under 80% as relative humidity ■ **Altitude:** 0m to 2100m above sea level *option for up-to 4500m
Approved Standards	CE, FCC, RoHS compliant
Dimensions	H x W x D (mm) - 923 x 480 x 1204
Mass	115KG Approx.