Trigas DM
Durchflussmesser-Manufaktur

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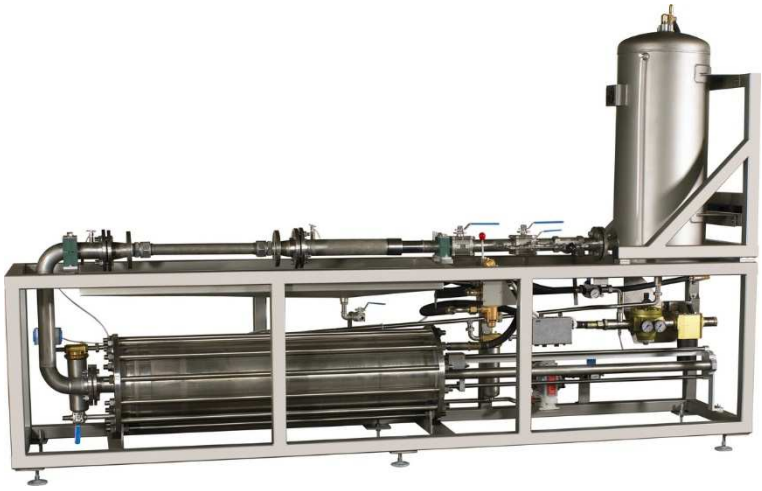


OT 1500

High Flow
Liquid Calibrator System

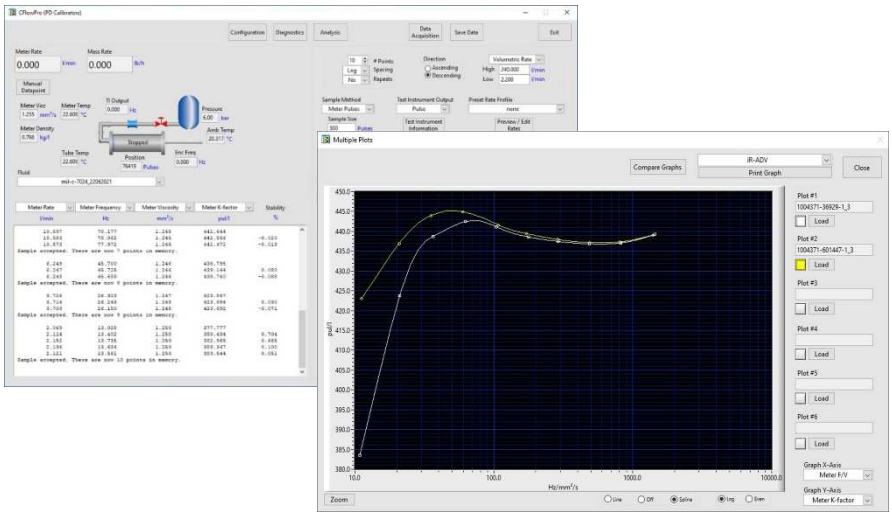
2021-11-26 V01-EN

The OT 1500 Primary Liquid Flowmeter Calibration System is an ideal solution for applications where accurate flow measurement is required. It offers a blend of high performance, efficiency and convenience. Pneumatically operated and based on the positive displacement piston principle, it quickly and accurately calibrates virtually any type of flowmeter. State of the art data acquisition hardware features digital and analog (16 bit) inputs and serial communication with the PC based control console.

This calibrator truly offers unsurpassed accuracy and convenience of use. The popular CFlowPro LabVIEW based data acquisition and control software ensures optimal man-machine interface and ease of operation. Report and graph generation features are accessible at the touch of a button. Traceability to National and International Standards (PTB, BNM, NIST, etc.) is achieved and maintained through the use of appropriately certified mass and temperature standards. Calibration fluid is changed quickly and easily. Small calibration fluid volume minimizes fluid inventory.

Sophisticated Data Acquisition, Data Analysis and Reporting

The popular CFlowPro LabVIEW based data acquisition and control software ensures optimal man-machine interface and ease of operation. It is specifically designed for flow calibration activities. CFlowPro is currently used by hundreds of flow laboratories worldwide including several National Metrology Institutes. It is the culmination of years of effort and extensive testing to ensure the accuracy of the flow calculation algorithms which operate seamlessly in the background.



Features include:

- Data Acquisition User Interface where all crucial information is readily viewable on a single screen
- Extensive Calibration Report Generation Library
- Calibration files are stored in MS Excel compatible format for easy customization and importation into other software programs
- Temperature and pressure corrections to compensate for the effects of outside influences
- Density and compressibility correction for mass flow applications
- Cubic spline curve-fitting to compensate for the non-linearity of P/T transducers
- Extensive built-in diagnostics using a graphical interface to make process fault identification quick and easy
- Advanced graphical presentations of all calibration variables can easily be generated
- Simultaneous graphing of historical data allows easy evaluation of process changes

2021-11-26 V01-EN

Advanced Hardware Features

The TriFlow Calibrator IO hardware has been designed to be accurate and robust with a standard Notebook or Desktop PC serving as control console. Features include:

- Digital and analog (24 bit) signal processing is performed within the hardware interface unit which communicates with the PC via serial link
- Double Chronometry and Quadrature methods are employed to eliminate timing errors and improve overall accuracy
- Temperature inputs (Ambient, Calibrator and Meter Under Test) are used for flow rate correction
- Pressure inputs (Calibrator and Meter Under Test) are used for flow rate correction
- Automation options offer capability to fully program the calibration process and place it under computer control

Specifications

Flow Range:	0.75 up to 1,500 l/min
Accuracy:	+/- 0.03 % of reading
Repeatability:	+/- 0.02% of reading, depending on the type of flow meter being tested and the application conditions
Pressure Range:	Up to 12 bar (higher pressures available)
Temp. Range:	10-50 °C
Viscosity Range:	Up to 10,000 Centistokes
Dimensions:	Approx. 330 x 60 x 190 cm, weight approx. 800 kg
Flow Meter Inputs:	Practically any type of Volumetric or Mass Flowmeter or Totalizer can be calibrated:

- Frequency generating flowmeters: Turbines, Coriolis, Gear / Oval Gear Meters, Vortex etc.
- Analog generating flowmeters (0-20/4-20 mA, 0-5/0-10 VDC): Magnetic, Ultrasonic, Venturi
- Visual output flowmeters: Variable Area Meters, Totalizers etc.

2021-11-26 V01-EN

OT 1500 Series Advantages over Gravimetric Calibrators

Size, Space Requirements

- OT 1500: Its size is primarily determined by the length of the required test section.
- Gravimetric Flow calibrators, also known as Catch-and-Weigh systems, require large tanks, diverter piping, weight scales, etc., which makes them much larger than Volumetric Displacer and Piston Calibrators and Provers of the same flow range capability.

Cost — Manufacturing & Maintenance

- OT 1500: Their minimalistic design and relative ease of manufacture of the critical components result in low costs for both production and maintenance.
- Gravimetric calibrators: Much more costly to buy, implement and maintain because of their complexity and bulk, yet comparable capability to the OT 1500.

Fluid Requirements

- OT 1500: Inherently requires moderate quantities of fluid to operate. This results in significant cost advantages and makes fluid change fast and efficient.
- Gravimetric equipment: Requires much larger volume of fluid for calibration. As a result, changing fluids can take several hours or even days.

Time required for Data Acquisition

- OT 1500: Can take data as fast as the operating features of the flowmeter under test will allow. Data point speed of acquisition is only limited by the ability of the Meter Under Test to achieve and maintain stable output. Reliable flowmeters with fast response characteristics literally require only a few seconds to obtain calibration points.
- Gravimetric calibrators: Very time consuming because the complete sample mass must always be collected for each data point. At low flowrates, catching-and-weighing the complete sample may take several minutes or hours.

Accuracy of Flow Measurement

- OT 1500: Capable of practically instantaneous readings of flowmeters under test. The short duration of data points minimizes the risk that unstable flow conditions will affect the calibration readings.
- Gravimetric calibrators: Calculate an average flowrate over the entire sampling period which at low flowrates may be very long (see above), consequently requiring constant flowrate over the same period of time in order to ensure measurement reliability and accuracy.

ISO 9001:2008 CERTIFIED
For Flow Measurement
And Calibration

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About us

Durchflussmesser-Manufaktur

As a specialist with 35 years of experience in flow measurement technology, TrigasDM offers high-quality measuring instruments, electronics and calibrators for liquids and gases.

Made in Germany

The development and production of our products takes place exclusively in the community of Neufahrn, 20km north of Munich and 5 minutes from the airport.

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2021-11-26 V01-EN