EUROMET

Testing Equipments

Water Meter Verification and Calibration Test Benches

EUROTEST Industrial Series (DN50 – DN300)

Safe and Stable Infrastructure for Large Meters

Engineered for the rigorous testing conditions of flanged industrial and agricultural meters from DN50 to DN300. Safety and flow stability are prioritized for handling large water volumes.

Technical Features & Safety Systems

- Soft Start/Stop Technology: Rapid flow changes in large pipes (DN50+) cause dangerous "water hammer." The Industrial Series avoids standard bypass switching for high flows; instead, it uses a Soft Start-Stop method where the pump frequency is gradually ramped up and down by the inverter.
- PID Flow Stabilization: Maintaining a constant flow rate at high volumes is critical. The system utilizes a PID feedback loop to automatically adjust the pump frequency, ensuring the flow rate remains stable at the setpoint (FSP) throughout the test.

Hybrid Reference System

Master Meter Method: Uses high-precision electromagnetic flowmeters as the reference for faster testing cycles (±0,3 - ±%0,5 accuracy).

Gravimetric (Weighing) Method: For the highest level of accuracy, large-capacity weighing tanks can be used as the primary reference.

Safety Protocols

The system is equipped with emergency stop circuits and safety level switches in the weighing tank to prevent overfilling.

Applications

Industrial meter manufacturers, calibration laboratories, large-scale water distribution networks.

- Stend M128: Fully automated control, SQL database logging, customizable test times, and reporting.
- Control: Pneumatic actuator valves and computer-controlled frequency inverters.
- Temperature & Pressure: Digital temperature sensors at the test line inlet and outlet for real-time density correction and pressure monitoring.
- Vacuum Ejector (Optional): Automatically evacuates air from meters before testing to eliminate measurement errors.
- Calibration: Automatic corrections for gravitational acceleration and water buoyancy for the weighing system.

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Water Meter Verification and Calibration Test Benches

EUROTEST Domestic Series (DN15 – DN40)

High-Speed Serial Verification Solution

Designed for the rapid testing of high volumes of domestic water meters ranging from DN15 to DN40 (optionally up to DN50). This series is ideal for municipalities and manufacturers requiring efficiency.

Key Features & Operating Principle

- Multi-Meter Testing Capacity: The system allows for the serial connection of multiple meters (e.g., 8 or more) simultaneously, maximizing the number of meters verified per hour.
- High Precision "Flying Start-Stop" Method: Utilizing a diverter system, the flow is switched into the weighing tank without stopping the flow. This eliminates start/stop uncertainty, achieving accuracies up to ± 0.10% (gravimetric method).
- Bypass System: Flow stabilization is performed via the bypass line before the test begins. In this size range, the bypass ensures smooth transitions without the risk of water hammer.

Advanced Sensor Compatibility

- Optical (Laser) Sensors: For automatic reading of mechanical registers using the "Flying Start-Stop" method.
- Hall Effect Sensors: For rapid adjustment of meters with magnetic pointers during production or repair.

Applications

Municipal water authorities, repair workshops, high-volume production lines.

- Stend M128: Fully automated control, SQL database logging, customizable test times, and reporting.
- Control: Pneumatic actuator valves and computer-controlled frequency inverters.
- Temperature & Pressure: Digital temperature sensors at the test line inlet and outlet for real-time density correction and pressure monitoring.
- Vacuum Ejector (Optional): Automatically evacuates air from meters before testing to eliminate measurement errors.
- Calibration: Automatic corrections for gravitational acceleration and water buoyancy for the weighing system.

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EUROTEST - 40DM

Water Meters Errors of Indication Testing Equipment

The EUROTEST - 40DM is a specialized testing unit designed to determine the intrinsic errors of indication in water meters. Manufactured in Turkey, this equipment is engineered to verify meter accuracy across a nominal diameter range of DN15 to DN40.

Compliance & Standards:

The system is designed to operate within the scope of ISO 4064-1:2014 and OIML R49-1:2013 (Clause 7.2.3) standards.

Technical Specifications:

- Measurement Range: 5 l/h ~ 20 m^3/h
- Nominal Diameter: DN15 - DN40
- Measurement Uncertainty: k = 2 $\delta \leq 0.2\%$
- Operating Air Temperature: 20 ± 5°C
- Relative Humidity: 45 ~ 75% RH
- Origin: Turkey

Testing Capabilities: The EUROTEST - 50WM is capable of performing precise metrological verification:

- Flow Intervals: The equipment verifies that water meters operate accurately within allowed error margins across seven distinct flow intervals as described in the standards.
- Error Determination: The structural index error of the meters is determined by comparing the reading with the real volume.

ISO 4064-1:2014

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EUROTEST - 40ET

Endurance / Abrasion Testing Equipment

The EUROTEST - 40ET is a specialized test bench designed to simulate rigorous service conditions for water meters, focusing on endurance and abrasion resistance. Manufactured in Turkey, this system evaluates the long-term performance of meters ranging from DN15 to DN40.

Compliance & Standards:

The equipment performs durability tests in strict accordance with ISO 4064-1:2014 and OIML R 49-1:2013 (Clause 7.2.6) standards.

Technical Specifications:

- Measurement Range: 10 l/h ~ 20m³/h.
- Nominal Diameter: DN15 - DN40.
- Operating Air Temperature: 20±5 °C.
- Relative Humidity: 45~75% RH.
- Origin: Turkey.

Testing Capabilities (for $Q_3 \leq 16$ m³/h):

The system executes specific test profiles for Temperature Classes T30 and T50:

1. Discontinuous Test (at Q_3):
   - Flow Rate: Tested at permanent flowrate Q_3.
   - Cycles: 100,000 interrupts.
   - Timing: 15 seconds run time, followed by a 15-second pause.
   - Start-up/Rundown Duration: 0.15 [Q_3] (minimum 1 second).
   - Temperature: 20°C ±5 °C.
2. Continuous Test (at Q_4):
   - Flow Rate: Tested at overload flowrate Q_4.
   - Duration: 100 hours of continuous operation.
   - Temperature: 20±5 °C.

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EUROTEST - 40LP

Water Meters; Loss of Pressure Testing Equipment

The EUROTEST - 40LP is a specialized testing unit designed to measure pressure loss in water meters. Manufactured in Turkey, this equipment ensures precise verification of meter performance across nominal diameters from DN15 to DN40.

Compliance & Standards:

The equipment performs tests in accordance with ISO 4064-1:2014 and OIML R 49-1:2013 (Clause 6.5) standards.

Technical Specifications:

- Maximum Pressure Loss (ΔP 63): 0.63 bar
- Nominal Diameter: DN15 - DN40
- Operating Air Temperature: 20±5 °C
- Relative Humidity: 45~75% RH
- Origin: Turkey

Testing Methodology:

The system is designed to handle various pressure loss scenarios:

Standard Testing: Where it is established that the meter's pressure loss follows the square law, the pressure loss is tested at Q_3 only.

Advanced Analysis: If a pressure loss peak is suspected below Q_3, the system determines pressure loss between Q_1 and Q_3.

- The test starts at Q_1 and increases the flow rate by a maximum of 0.1 x times Q_3 steps.
- Once Q_3 is reached, the flow rate is decreased by a maximum of 0.1 x times Q_3 steps.

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EUROTEST - 50WM

Woltman Water Meter Testing Equipment

The EUROTEST - 50WM is a high-capacity testing unit specifically engineered for Woltman-type water meters. Manufactured in Turkey, this system is designed to handle large-scale metering requirements with nominal diameters ranging from DN50 to DN300.

Compliance & Standards:

This equipment ensures that water meters operate accurately within allowed error margins, strictly adhering to OIML R 49 and EN ISO 4064-1:2014 standards.

Technical Specifications:

- Measurement Range: 50 l/h ~ 500 m^3/h
- Measurement Uncertainty: k = 2 δ ≤ 0.2%
- Operating Air Temperature: 20 ± 5°C
- Relative Humidity: 45~75% RH
- Origin: Turkey

Testing Capabilities: The EUROTEST - 50WM is capable of performing precise metrological verification:

- Flow Intervals: It verifies that meters operate truly across seven distinct flow intervals as described in the relevant standards.
- Error Determination: The system determines the structural index error of the meters by comparing the readout against the real volume.

ISO 4064-1:2014

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EUROTEST - 40HM

Heat Meter Testing Equipment

The EUROTEST - 40HM is a precision testing unit designed specifically for heat meters. Manufactured in Turkey, this equipment is engineered to verify meter accuracy and performance across a nominal diameter range of DN15 to DN40.

Compliance & Standards:

The system is designed to operate within the scope of OIML R 75 and EN 1434 standards. It also references ISO 4064-1:2014.

Technical Specifications:

- Measurement Range: 5 l/h ~ 20 m^3/h
- Nominal Diameter: DN15 - DN40
- Measurement Uncertainty: k = 2 δ ≤ 0.2%
- Operating Air Temperature: 20 ± 5°C
- Relative Humidity: 45 ~ 75% RH
- Origin: Turkey

Testing Capabilities:

- Flow Intervals: The equipment verifies that heat meters operate truly within allowed error margins across seven distinct flow intervals as described in OIML R 75 and EN 1434 standards.
- Error Determination: The structural index error of the meters is determined by comparing the reading with the real volume.

ISO 4064-1:2014

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