

# Eletta Steam

## Measuring Steam Flow Rates in Industry



Measuring steam flow rates in industry offers several crucial benefits for process optimization, safety, and energy management. Here are some key points:

- 1. Energy Efficiency:** Steam is often used as a heat transfer fluid for heating, electricity generation, or other industrial processes. Accurately measuring flow rates ensures that steam is used efficiently, which can lead to significant energy savings.
- 2. Process Optimization:** In many industries, steam is essential for equipment operation. Measuring flow rates helps optimize production processes by adjusting operating conditions, which improves product quality and reduces costs.
- 3. Monitoring and Control:** By measuring steam flow rates, it is possible to monitor steam production systems in real time. This allows for the quick identification of anomalies or malfunctions, reducing unexpected downtimes and improving the reliability of installations.
- 4. Cost Management:** Steam is an expensive resource, and measuring flow rates allows for precise quantification of steam consumption per process or equipment. This helps allocate costs accurately and properly bill internal or external users.
- 5. Safety:** High-pressure steam can pose a significant hazard. Rigorous monitoring of flow rates helps prevent overpressure or other dangerous situations, thereby reducing the risk of accidents.
- 6. Regulatory Compliance:** In some sectors, measuring steam flow rates is required to comply with environmental or industrial standards. This can include limiting gas emissions or optimizing resource usage.

To summarize, measuring steam flow rates is essential for maximizing process efficiency, reducing costs, ensuring plant safety, and meeting regulatory requirements. However, implementing steam flow measurement solutions can be challenging, which is why Eletta, with its Eletta Steam flow meter, has decided to launch a turnkey solution where the user simply needs to insert the measurement device on the pipeline and the Human-Machine Interface (HMI) to obtain a pressure/temperature compensated, and thus mass, flow measurement of their saturated steam flow.

ELETTA STEAM is based off of the proven and reliable principle of differential pressure flow measurement, using orifice plates as the main flow element. The flow meter, in a wafer version, requires only 18 mm for installation, allowing easy integration into your existing piping.

ELETTA STEAM consists of three parts: a primary flow measurement element, a control unit assembly, and a user interface HMI. The flow measurement element for Eletta Steam is a stainless steel orifice plate, available for pipe sizes ranging from DN15 to DN500 (0.5" to 20"). Each orifice plate is sized in our factory based on the flow range requested by the customer and their process operating conditions. The control unit assembly includes a mounting plate, two steam condensate pots, and a measurement unit. The primary flow measurement element is connected to the control unit assembly via stainless steel tubing.

This design offers numerous advantages. Having a primary flow measurement element with no moving parts ensures minimal or no maintenance for many years. The primary flow measurement element also contains no electronic components, making it suitable for very high temperatures. The remote-mounted control unit assembly allows easy access to the condensate pots, and the electronic measurement unit for ease of maintenance and wiring.

The orifice plate is modular, allowing users to estimate a flow rate, refine it, and select a new orifice plate, thus adjusting the flow measurement range without replacing the entire flowmeter. The flowmeter requires only 18 mm between flanges for installation, making it easy to integrate into your existing pipelines.

The ELETTA STEAM flowmeter is a turnkey product, pre-configured, and capable of measuring your saturated steam flow with pressure/temperature compensation, providing mass flow measurements. Simply insert the primary flow element into your pipeline and power it. Measuring saturated steam flow has never been easier to implement.

