

BioProTT™ Flow Measurement System

The non-invasive solution for reliable and economical liquid flow measurement for improved bioprocess management



CLAMP ON AND GET STARTED...

OUR FLOW MEASUREMENT SYSTEM AT A GLANCE

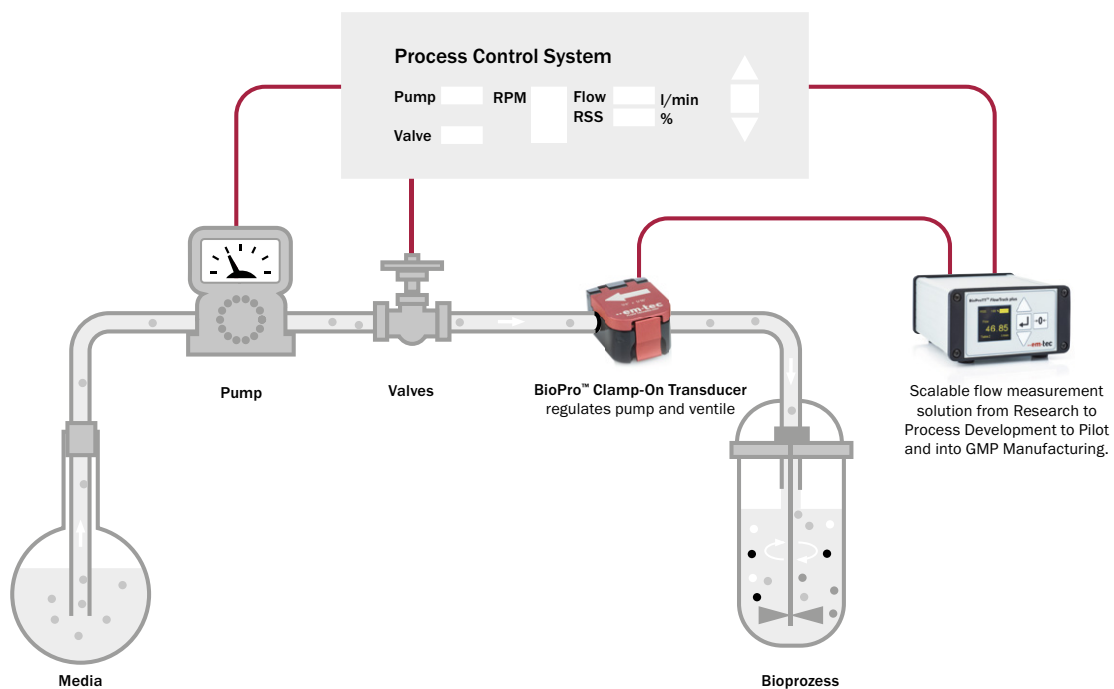
- Non-invasive, real time flow measurement
- Excellent accuracy, repeatability and stability
- Economical and reusable
- 4-20 mA or digital RS-232 output signals
- Remote zero input (BioProTT™ FlowTrack DINrail)
- Customer specific calibration for tubing, temperature and media
- User adjustable calibration enables field changes
- Clamp on and get started installation





Liquid based processes play an important role in biotechnology, pharmaceutical and food producing industries. The monitoring and control of flow of varying media, the detection of the applied volumes or of tubes which are no longer filled are required for many applications. For this purpose, the use of a correspondingly suitable ultrasonic-based flow measuring system makes sense. This allows the user or an automated system to permanently ensure the correct fluid management so that defined volumes can be applied over a certain period, pump flows can be controlled or occlusions can be detected. Based on the volumetric flow rate, a consistent monitoring process for the increasing requirements of laboratory applications as well as in automated manufacturing processes can be ensured, which ultimately leads to increased process stability and quality.

The **BioProTT™** flow measurement system is em-tec's precise non-invasive solution for reliable and economical liquid flow measurement for improved process management. We measure an actual volume flow rate in real time, allowing you to adjust pump speed, to deliver accurate fluid volumes and thereby mitigating the risk imposed by poor pump performance.



CLAMP ON AND GET STARTED INSTALLATION

The **BioProTT™ flow measurement system** consists of a flow sensor, the Clamp-On Transducer, and an electronic evaluation system, the flow meter. Our system is available in different variants with standard interfaces (4-20 mA / RS-232), which allow an optimal integration into automated environments.

BioProTT™ Clamp-On Transducers attach easily to the outside of flexible tubing, thereby eliminating the need for splicing the lines or interrupting the process. They neither make contact with the fluid, nor induce shear stress on cells, nor do they cause a pressure drop in the system. Transducers can be removed easily at the end of the process with minimal cleaning and disinfection required. There is no calibration needed prior to each use. Our economical flow measurement system can be used for years without the operating costs associated with disposables - whether you use single-use components or reusable systems.

Applications of the BioProTT™ Flow Measurement System:

- Single use systems
- Automated processes
- Processes utilizing flexible tubing
- Processes sensitive to shearing effects
- Processes requiring sterility in the lines

Advantages of Real Time Flow Measurement:

- Improved process performance by maintaining accurate and reliable media delivery rates
- Reduced process risks from poor pump performance by helping to deliver accurate volumes to feeder tanks and reactors
- Reduced equipment footprint by replacing (large) weighing scales with flow meters
- Automated bioprocesses with continued real time flow monitoring and recording





Innovative design coupled with integrated electronics for monitoring volumetric flow in real-time enables a truly compact space saving solution. There are different standard flow meter variants to suit your process ideally.

BioProTT™ Flow Meters

The **BioProTT™ FlowTrack** without display is ideal for monitoring the associated process parameters on an own bioprocess management system.



BioProTT™ FlowTrack

The **BioProTT™ FlowTrack plus** includes a display with features such as totalization, user adjustable calibration factor and multiple calibration tables for the transducers, which can be managed at the device. It is also available as variant for panel mounting:

BioProTT™ FlowTrack plus (Panel Mount).

The **BioProTT™ FlowTrack DINrail** enables an integration of the system into standard industry racks based on the BioProTT™ FlowTrack fit and function. In addition, a remote zero input interface is provided.



BioProTT™ FlowTrack plus



BioProTT™ FlowTrack plus
(Panel Mount)



BioProTT™ FlowTrack DINrail

AT HOME IN BOTH WORLDS MEDICAL AND LIFE SCIENCES

German-based em-tec GmbH has been developing and manufacturing products at its location in Finning for the medical industry for nearly thirty years. One of the company's core competencies lies in the field of non-invasive flow measurement using the ultrasound transit time principle. Based on this technology, em-tec offers products and components for medical and non-medical applications, such as for cardiac or vascular surgery, for use in laboratories and bioprocesses and in other industrial applications in which flexible tubing is used.

Don't hesitate to contact us, also for integrating flow measurement into your existing system with em-tec's OEM services: sales@em-tec.de

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