



The World's Only Clamp-On Steam Meter

## FLUXUS® ST

Non-Invasive – High Turndown – Accurate

Process Control

Energy Balancing

Consumption Metering

**FLEXIM Sets Standards**  
*when measuring matters*



# FLUXUS® ST

## The smart solution for steam measurement

### Innovation on demand

Because of its obvious advantages, clamp-on ultrasonic measurement has become a standard technology in all branches of industry and innumerable applications, be it for the flow measurement of liquids or gases. No wonder that many customers asked: „What about steam?“ However, gaseous water seemed to remain the ultimate challenge. Up until now.

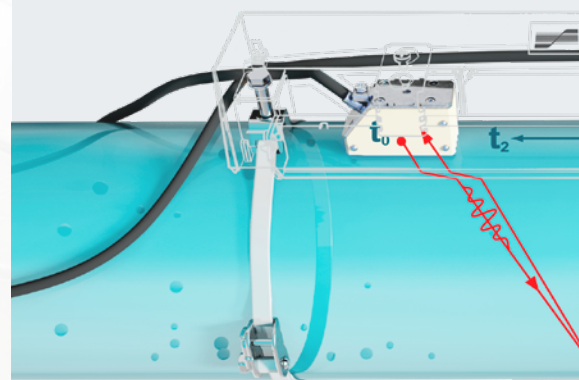
With FLUXUS® ST, clamp-on steam measurement is now available for the very first time – as FLEXIM continues to push the boundaries and to set the standards.

### Non-invasive and efficient

FLUXUS® ST measures steam flow non-invasively from the outside of the pipe. Non-invasive steam flow measurement means measuring without any interruption of operation and supply. Since clamp-on ultrasonic transducers are simply mounted on the outside of the pipe, it requires just minimal installation effort and no opening of the pipeline.

The acoustic measuring method proves to be impressive with its exceptionally high measuring dynamics, is highly sensitive even at very low flow velocities and functions independently of the flow direction. Due to this large flow range (flow velocities from 0.01 m/s up to 60 m/s), there is no need to reduce pipe diameter to fit an inline meter's requirement of minimum flow velocity. Moreover, the non-invasive measurement does not cause any pressure loss. The transducer mountings can be completely insulated to reduce any heat loss to the environment.

With FLEXIM's FLUXUS® ST, for the first time ever, it is possible to capture all steam usage from very low to very high flow rates with one meter size.

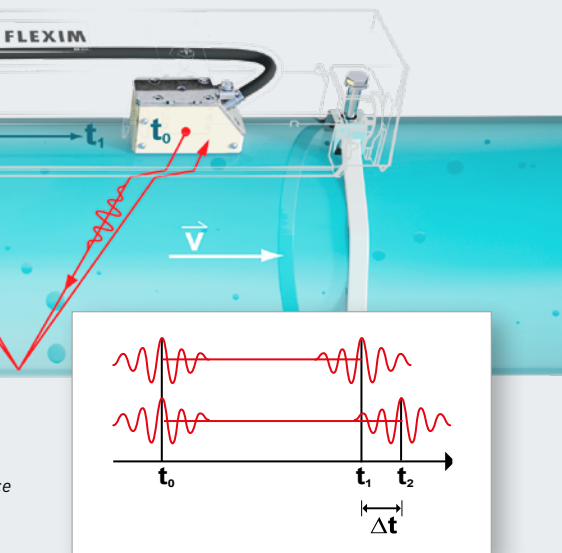


#### Ultrasonic Transit-Time Principle

Two ultrasonic transducers are mounted with a defined distance onto the pipe. By sending sound signals alternating with and against the flow, a transit time difference can be measured. This corresponds to the flow velocity.



The FLUXUS® ST series is available for fixed installation and for portable use.



## Completely maintenance-free

Non-invasive steam flow measurement also means measuring without direct contact with the medium flowing in the pipe. FLUXUS® ST has no moving parts. Its ultrasonic transducers are fixed to the pipe with broad stainless steel straps and secured in robust stainless steel housings. They are connected to the pipe with permanent coupling pads, instead of coupling gel that can deteriorate or be washed away. Therefore, FLUXUS® ST is not subjected to wear and tear and does not require any maintenance.

## Fixed and flexible

FLUXUS® ST measures volume and mass flow of saturated and superheated steam at temperatures up to 180 °C. The clamp-on ultrasound system is available as both a stationary and a portable meter:

FLUXUS® G721 ST is the stationary flow meter for steam and offers a variety of digital communication interfaces such as Profibus, Modbus RTU, TCP and others.

With the new portable FLUXUS® G601 ST, FLEXIM offers a veritable multi-tool for maintenance and energy managers: in addition to steam, the measuring system can also measure liquids, gases, compressed air and heat.

For use in hazardous areas, the FLUXUS® G721 ST, as well as the FLUXUS® G608 ST are available as ATEX / IECEx Zone 2 certified transmitters. Corresponding transducers can even be used up to Zone 1.



# FLEXIM

More than 30 years of experience in  
non-invasive ultrasonic flow measurement



FLUXUS® G721 ST  
FLUXUS® G721 ST A2

FLUXUS® G601 ST  
FLUXUS® G608 ST

## Technical Specifications

<b>FLUXUS® ST</b>	<b>Portable or stationary clamp-on ultrasonic steam flow measurement system</b>
<b>Media</b>	dry saturated and overheated steam
<b>Measurement quantities</b>	Volume flow, mass flow, flow velocity
<b>Temperature</b>	max. 180 °C non-Ex max. 165 °C Zone 2 max. 155 °C Zone 1
<b>Pressure</b>	minimum 3 bar abs
<b>Pipe sizes</b>	45 – 1000 mm *
<b>Flow velocities</b>	0.01 m/s to 60 m/s **
<b>Measurement uncertainty (Volumetric flow rate)</b>	±1 ... 3% of reading ±0.005 m/s, depending on application
<b>Calibration</b>	In-house calibration traceable to PTB Standards
<b>Hazardous area protection</b>	G608 ST product variant: ATEX, IECEx Zone 2 transducers up to ATEX, IECEx Zone 1

\* Please have your specific application tested for feasibility.  
This is especially recommended for pipe diameters smaller 100 mm.

\*\* depending on transducer frequency and pipe diameter, see technical specification for details

For more detailed Information please download the Technical Specifications here: [www.flexim.com](http://www.flexim.com).

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