

FLUXUS® WD, TE, CA and ST-LT Series

Utilities and Energy Flow in Manufacturing Industries

Non-invasive ultrasonic measurement of process water, thermal energy, compressed air and steam

Applications:

Steam

Compressed Air and
Technical Gases

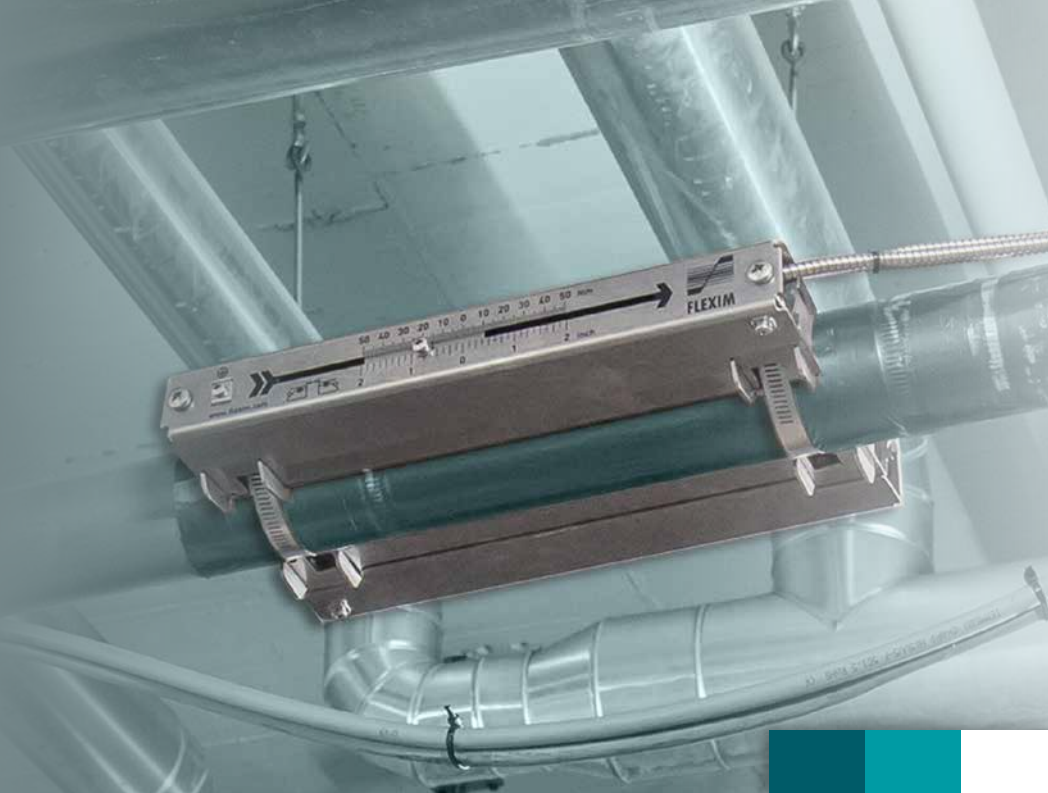
Thermal Energy

Gaseous Refrigerants

Thermal Oil

Process Water





All energy flows and utilities at a glance

Industrial processes consume energy and media in many forms, from steam and compressed air, to thermal energy as heat or cold. Whether for energy management and efficiency enhancements, process monitoring and optimisation, or balancing and cost allocation, the demand for monitoring media flows is constantly increasing.

With the FLUXUS® WD, TE, CA and ST-LT product portfolio, FLEXIM offers the user-friendly, accurate and cost-effective solutions for exactly these measurement tasks.

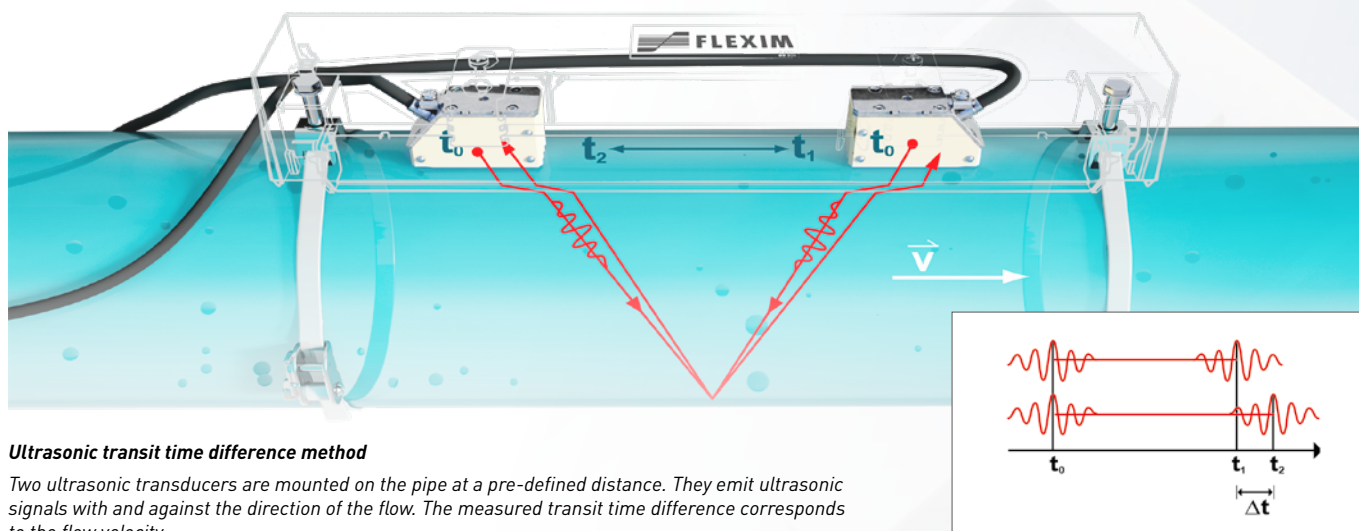
One measuring principle for all applications

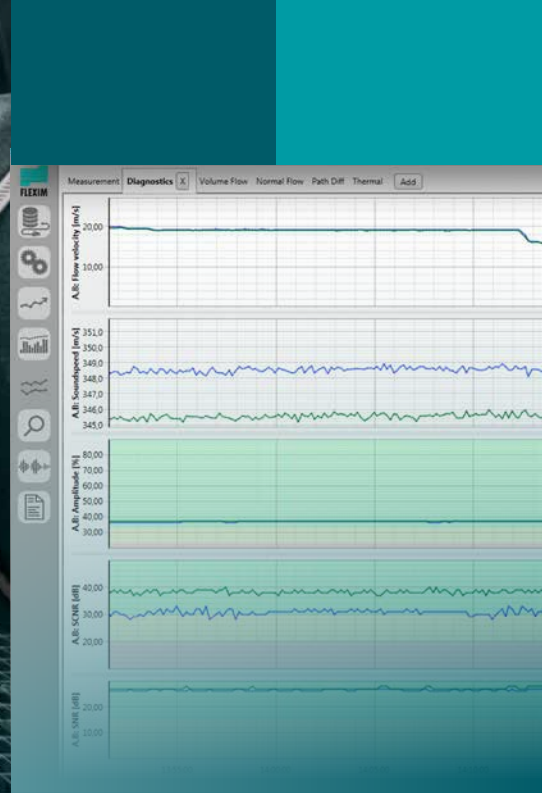
With a commitment to research, FLEXIM has continuously developed the non-invasive transit-time difference principle over three decades, enabling new fields of application to be explored.

Whether liquids, gases or even steam, all fluids can be measured with the innovative, ultrasonic-based technology.

This comes as an enormous relief for the user, because there is no need for the complexity of different measuring methods, very high flexibility in the field of application, and everything comes from one manufacturer.

Of course, the essential advantages of the non-invasive measuring method also come into play. There is absolutely no downtime during installation or maintenance, as well as a low total cost of ownership for each measuring point operation over potentially many years.





Highly dynamic. Bidirectional. Stable in the long-term

The non-invasive measurement itself is not the main advantage for the user. Rather, it is the advantages that come from the measuring method. Flows are recorded from as little as 0.01 m/s, so balancing compressed air leakage is easy, steam measurements do not require pipe reduction, and velocities of up to 60 m/s can be realised.

FLEXIM measurements are always bidirectional and detect both flow directions separately. This is invaluable, especially in compressed air networks in a ring system. With up to 1000 measurement signals per second, every change is recorded immediately, which guarantees the accurate monitoring of highly dynamic processes.

No contact with the medium also means no contamination from dirt particles for example, that can influence measurement. There are no pressure lines that can clog, and no electrodes that can lead to measured value drift due to deposits.

Stationary and portable

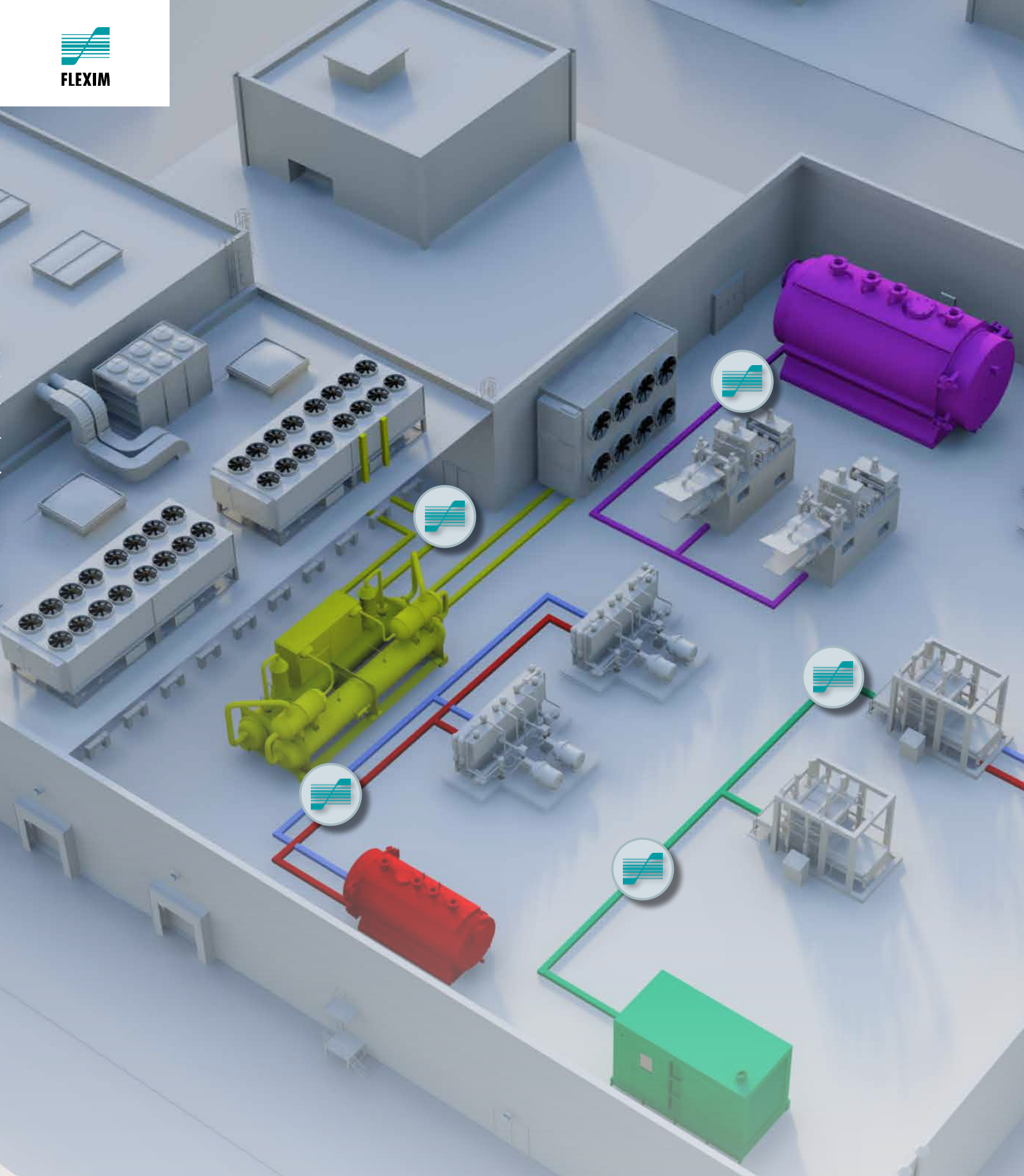
With the ability to be installed quickly, battery-operated and with an internal data logger, the portable FLUXUS® F/G 601 series allows all applications to be measured temporarily and at any time.

Essential for energy management and maintenance, measurement data can be obtained rapidly, compressed air leakage can be determined, pump performance can be checked and existing measurements can be easily verified.

Wear and maintenance-free

The cost of regular maintenance, calibration and repair accounts for a significant proportion of the total cost of ownership for flowmeters. Thanks to non-invasive metering, these costs are significantly reduced, as the equipment is not subject to the wear and tear of traditional in-line meters, and any maintenance can be carried out during operation without disruption.

And with the enhanced benefit of AMV – Advanced Meter Verification, the user also receives a regular predictive maintenance report, meaning that FLEXIM measurements are always safely in view.



Flexible Energy Management

A combination of portable and fixed installed meters is the economic approach for energy data acquisition. Permanent monitoring of the most important energy flows, and temporary measurement to cover the blind spots.

One for all

FLEXIM's transit time principle suits all applications, whether liquids, gas or steam. Our portable meters are multi-functional and the perfect tool for Energy Managers.



Process Water

Consumption and balancing of process water

- For all water qualities
- Large range of pipe diameters and temperatures

Steam

Measurement of saturated steam up to 180 °C

- Non-invasive mass flow measurement
- Highly dynamic flow range, no pipe diameter reduction
- No pressure loss, no energy loss

Heating and Cooling

Thermal energy measurement

- Integrated energy flow rate calculation
- For water and water-glycol mixtures
- For heating and cooling applications

Compressed Air and Technical Gases

Monitoring, balancing and leakage control

- Flow range from 0.01 m/s
- Bidirectional, detects reverse flow
- No influence by air quality, no value drift over time

Heat Transfer Fluids

Volume and energy flow rate of thermal oils

- Non-invasive measurement up to 630 °C
- Monitoring and balancing of energy flow by integrated energy calculation

Industrial Refrigeration

Measurement of gaseous refrigerants

- Non-invasive measurement of e.g. ammonia at the compressor
- Energy calculation also with phase transition gas-liquid



Technical Specifications

FLUXUS® F/G 532 Series – Measurement of energy and utilities				
	FLUXUS® F532 WD	FLUXUS® F532 TE	FLUXUS® G532 CA	FLUXUS® G532 ST-LT
Application	Flow rate of water	Thermal flow rate of water / water-glycol	Flow rate of compressed air and techn./med. gases	Flow rate of saturated steam up to 180 °C
Measurement quantities	Volume flow	Thermal energy	Standard volume flow	Mass flow
Media	Water Waste water	Water Water-glycol	Compressed Air, Nitrogen, Oxygen, inert gases	Steam
Temperature range	-40 °C...+130 °C	-40 °C ... +130 °C	-40 °C ... +130 °C	+100 °C ... +180 °C
Pipe diameters	25 mm ... 2000 mm	25 mm ... 2000 mm	10 mm ... 300 mm	23 mm ... 400 mm*
Measurement uncertainty (flow)	1% of reading	1% of reading	1 ... 2% of reading	1 ... 3% of reading
Calibration	In-house calibration, traceable to PTB standards			

* Please have the feasibility of your specific steam application checked by a test
For further information, please refer to the technical specifications of the respective device variants.

Solutions for further applications in the field of energy management and utilities can be found in the documentation for the following devices:

- **FLUXUS® F/G 601** – portable flow and thermal energy measurement for liquids, gases and steam
- **FLUXUS® F/G 721** – solutions for extended applications, e.g. measurement of refrigerants, thermal oils up to 630 °C, applications in hazardous areas

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