

FLUXUS® TE, CA and ST Series

## Industrial Energy Efficiency Solutions

Non-invasive ultrasonic measurement of thermal energy, compressed air and steam flow rates – Permanent Installation and Portable

### Efficiency determination of:

Heat Exchangers

Boilers

Heat Transfer

Heater / Chiller Plants

Process cold networks

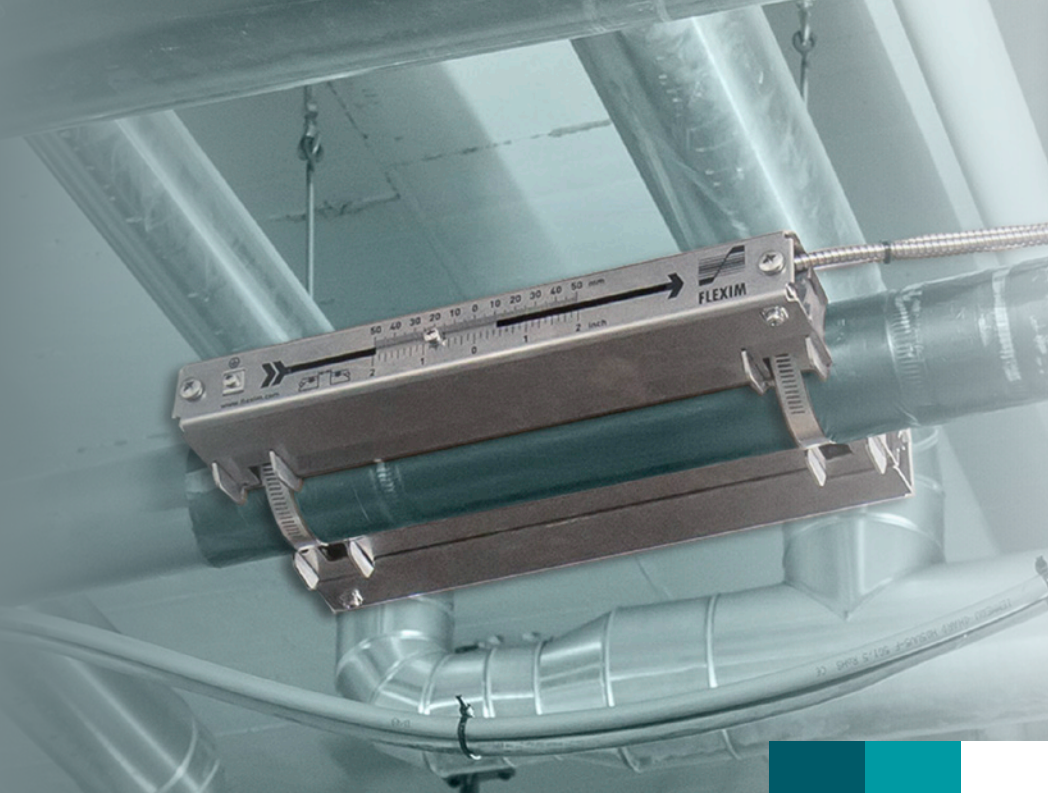
Compressed air networks

Steam generation

**FLEXIM**

*when measuring matters*





## Keeping track of energy consumption

Within industrial environments energy efficiency is a key competitive factor. Efficiency determination and optimization is an ongoing task – not only to meet underlying governmental regulations and standards such as ISO 50001 – but to stay cost effective.

Industrial production processes consume energy in many forms – steam, compressed air and thermal energy such as heating and cooling.

Unlocking optimization potentials begins with measuring these streams, as a basis for determination of consumption levels of individual suppliers and consumers or complete production units.

Accurately and reliably measuring heat and cold flow rates, compressed air and steam within complex production environments can cause headaches in terms of plant availability and maintenance, as well as inventory management.

## What if there were a hassle-free metering solution for any kind of application?

FLEXIM is the answer! Based on the ultrasonic transit time measuring principle, FLUXUS not only measures virtually any liquid medium, but also gases – including compressed air as well as steam.

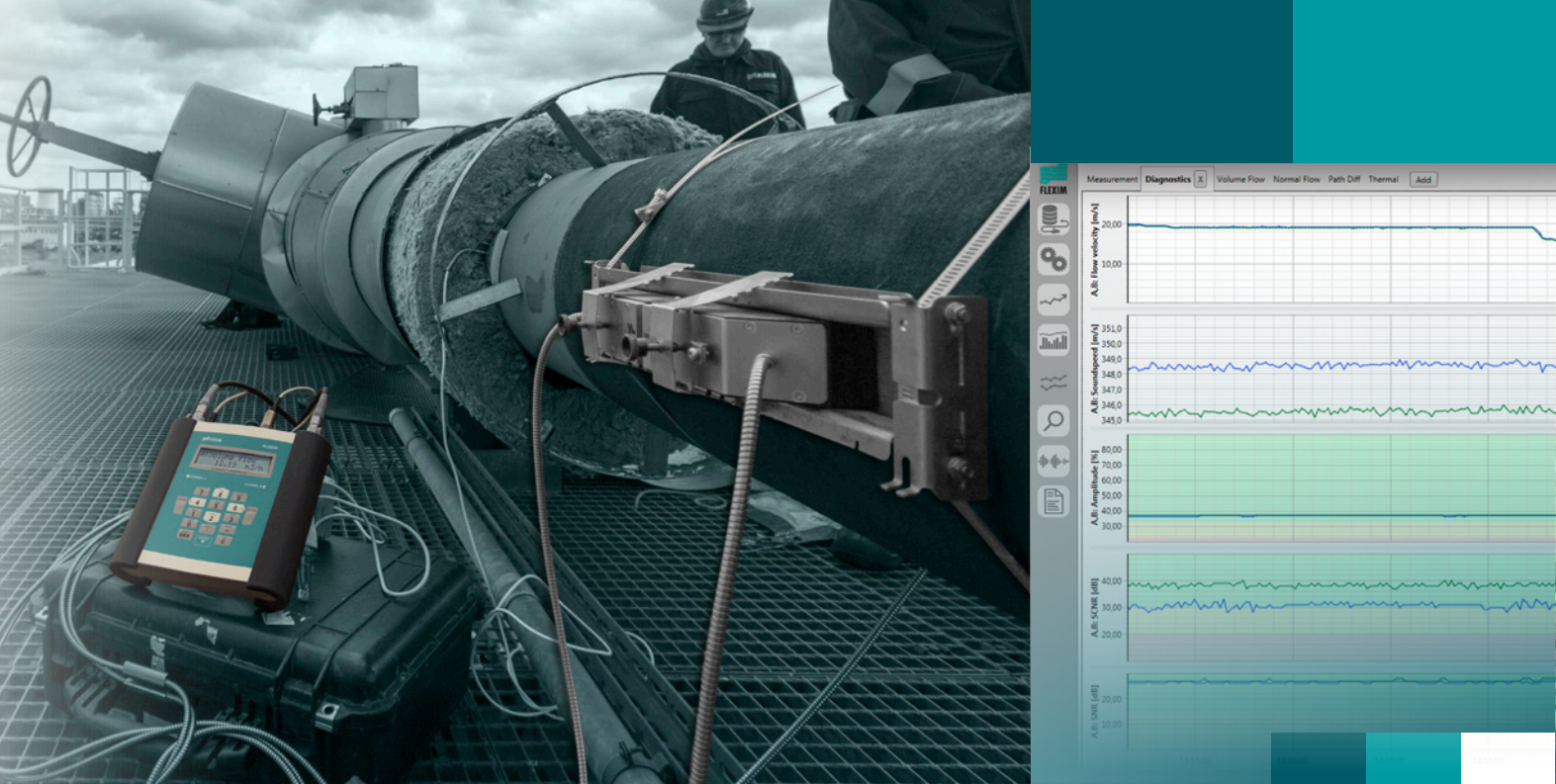
Whether it's for temporary spot metering or permanent monitoring, FLEXIM's non-invasive ultrasonic metering solutions are the perfect fit within industrial energy management.

By measuring from outside the pipe wall and never in direct contact with the media, there is no need for pipe modifications and thus ensuring full plant availability even during installation. Alongside comes increased operational safety – no cutting, welding or risk of leakage.

FLEXIM's technology is most importantly flexible – all liquid or gaseous media, wide measuring ranges and wide range of covered pipe diameters means less headache in finding the optimum meter.

Knowing industrial demands, our metering solutions are engineered in rugged stainless steel housings withstanding even the harshest industrial environments, guaranteeing long-term stability and durability with no measurement drift and zero maintenance requirements.





## Measurement Data you can trust

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FLEXIM takes reliability and accuracy seriously - With 30 years of field experience we are setting the standard for today's measuring technology

- High end digital signal processing for best measuring performance and dynamics
- Separately calibrated transmitters and transducer pairs based on patented and PTB traceable aperture calibration for highest possible accuracy of the measuring system
- Matched and paired flow and temperature transducers ensuring zero offset and superior low flow performance
- Integrated transducer temperature compensation (acc. to ANSI/ASME MFC-5.1-2011 regulations), for stable measurements independent of changing ambient temperatures
- Measuring principle unaffected by the medium - drift free measurement even with wet or oil-laden compressed air

## Data evaluation made easy

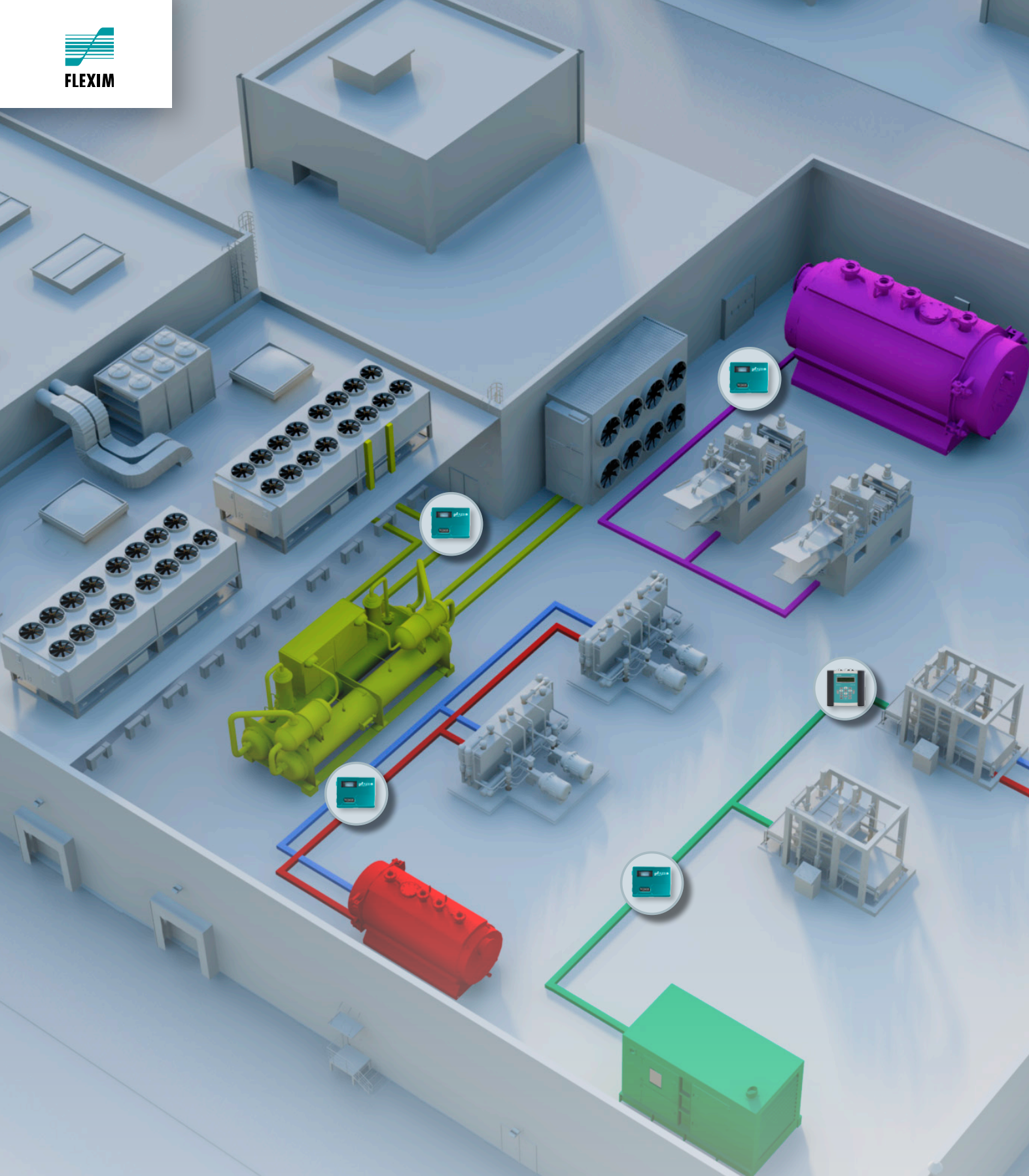
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The reason for measuring is the need for conclusive data that can be used in Energy Management Systems or to report plant conditions.

So FLEXIM brings FLUXDiag into play, a sophisticated Software program for managing measured data from portable or fixed installed meters.

Easy read-out, data evaluation and interpretation by graphic visualization is one feature. But more importantly is the convenience of the one-click to MS Excel export function – creating a comprehensive report including all relevant information like measuring site, operator and local conditions. Measurement quality and expected accuracy is also shown along with all detailed measuring values.

Reporting measuring data has never been easier or faster.



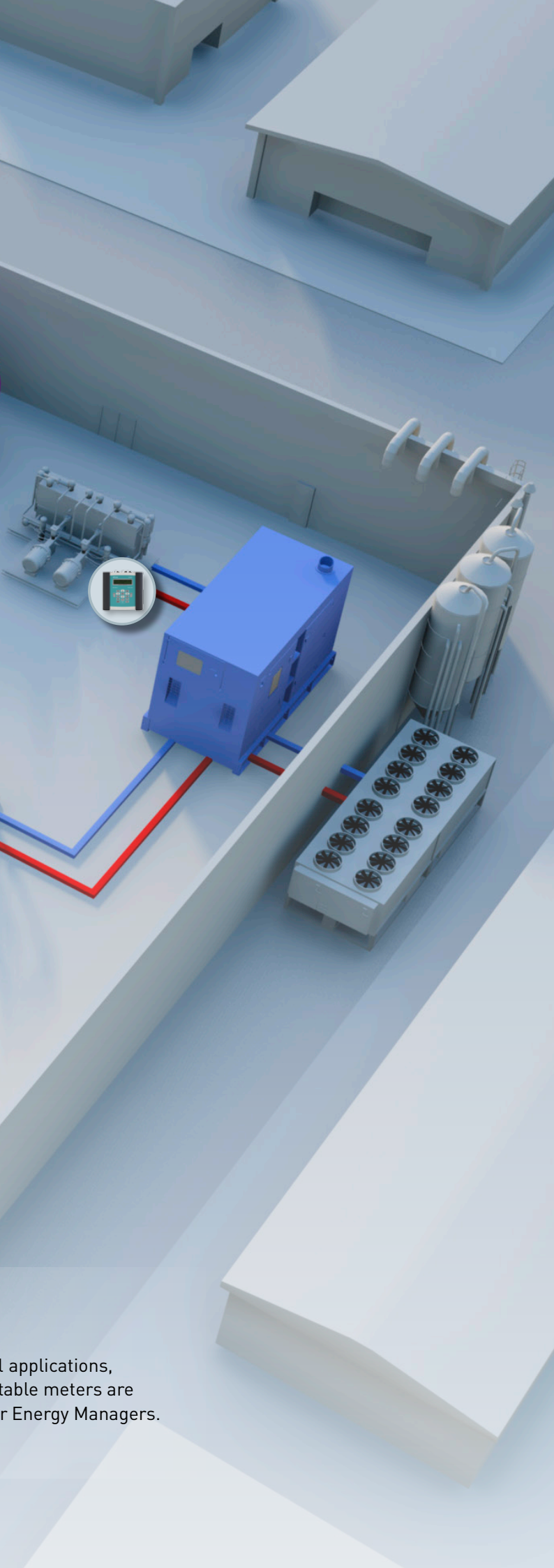
## Flexible Energy Management

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, whether liquids, gas or steam. Our portable meters are multi-functional and the perfect tool for





### **Saturated Steam**

Flow measurement of saturated steam up to 180 °C

- Reliable volume and mass flow measurement even at low flows
- No pipe reductions, no pressure loss
- Portable and fixed installed measurement

### **Heating and Cooling**

Measuring thermal energy flow rates for line balancing and efficiency determination

- Non-invasive flow and temperature measurement in one integrated thermal energy measuring system
- Independent of medium, line pressurization and temperature

### **Compressed Air**

Monitoring, Balancing and Leakage control of compressed air networks

- Measurement unaffected by moisture, oil or dirt particles
- Completely drift-free with low to zero maintenance requirements
- Fully bidirectional measuring system for monitoring forward and backward flows

### **High Temperature Media**

Flow rate monitoring of any heat transfer medium up to +400 °C and beyond

- Non-invasive measurement at extreme media temperatures
- Monitoring and balancing of energy transfer within thermal oil systems

### **Process Cold**

Controlling ammonia compressors and lines

- Measurement of thermal energy flow rates of ammonia without media contact and pipe intrusion for highest operational safety
- Measurement directly at the compressor outlet for improving energy efficiency and exact process control
- Measurement at individual lines for balancing and heat quantity consumption analysis

Applications,  
table meters are  
Energy Managers.



## Technical Specifications

### Portable & fixed gas, liquid, steam and energy flow meters

	FLUXUS® F721 TE / FLUXUS® F601 Energy	FLUXUS® G721 CA / FLUXUS® G601 CA Energy	FLUXUS® G721 ST / FLUXUS® G601 ST
<b>Application</b>	Flow and Thermal Energy Flow Measurement of liquids	Flow Measurement of compressed air and technical gases	Flow Measurement of saturated Steam up to 180 °C
<b>Measurement Quantities</b>	Volume Flow Energy Flow Flow Velocity	Standard Volume Flow Volume Flow Flow Velocity	Mass Flow Volume Flow Flow Velocity
<b>Media</b>	Water Water Glycol Various liquid energy related media like Ammonia and thermal oils	Compressed Air Nitrogen Oxygen Inert Gases <i>FLUXUS® G601 CA Energy includes all liquid Media</i>	Dry saturated and overheated Steam <i>FLUXUS® G601 ST includes all liquid and gas Media</i>
<b>Temperature</b>	-40 °C ... +240 °C up to 400 °C with WaveInjector®	-30 °C ... +130 °C for Gases	+100 °C ... 180 °C for Steam
<b>Pipe Diameters</b>	6 mm ... 6000 mm for Liquids	50 mm ... 250 mm for CA Applications	45 mm ... 1000 mm * for Steam Applications
<b>Measurement uncertainty</b>	1.0% of reading	1 ... 2% of reading for Gas Applications	1 ... 3% of reading for Steam Applications
<b>Calibration</b>	In-House calibration traceable to PTB Standards		

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

Selected products and applications shown, for more information see:  
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