FLUXUS® F/G721

Setting Standards in Non-intrusive Liquid and Gas Flow Measurement
The FLUXUS® F/G721 is a technological breakthrough in the ultrasonic clamp-on flow measurement of liquids and gases. With its new hardware design and improved, powerful digital signal processing, it surpasses any other non-intrusive ultrasonic flowmeter in accuracy, reliability and versatility.

Highly sophisticated signal filters, faster than ever processing capacities and substantially improved measurement algorithms make the FLUXUS® F/G721 a state-of-the-art measuring solution for even the most challenging applications. The meter adapts itself automatically to measurement conditions and compensates for perturbations such as beam dispersal and structure-borne noise, allowing for precise and reliable measurements. Extreme fast measurement cycles allow for precise real time monitoring of highly dynamic processes.

Pushing the Boundaries

FLUXUS® F/G721 offers non-intrusive flow measurement of virtually any kind of liquid or gas, from the smallest tubing to the largest penstock, independent of the pressure inside the pipe and over a very large temperature range. Due to its advanced technology, the measurement is unaffected by solid or gaseous entrainments or gas wetness and distinguishes itself by its unrivalled turndown ratio: even low flows down to only a few liters per hour can be recorded accurately.

As the flowmeter of choice for a very wide range of applications in virtually any industrial sector, the FLUXUS® F/G721 is available with two different enclosure types: aluminium for standard applications and stainless steel housing can be used in explosion hazard areas (ATEX, IECEX Zone 2, FM Class I/Div2).

Ready for Industry 4.0

The FLUXUS® F/G721 comes with all common communication protocols. HART, Modbus, Foundation Fieldbus, Profibus PA, BACnet and M-Bus allow bidirectional field communication and online diagnostics.

The FLUXUS® F/G721 is also one step ahead in terms of user guidance and diagnostics. It can be easily set up and configured via USB. Its ethernet connectivity provides additional bidirectional communication capabilities.
Unrivalled advantages of non-intrusive flow measurement with the FLUXUS® F/G721:

- Necessity for simultaneous measurement with high accuracy even at high flow speeds.
- Certified for operation within hazardous areas (FM Class I, Div 2).
- Fast measuring dynamics also capture highly pulsating flows.
- Reliable measurements even of starters, liquids with coarse entrainment as well as gas and liquid mixtures.
- High operational safety with no risk of leaks.
- Independent of gas material, diameter, and thickness of internal pressure and temperature measurement lines.
- Accurate and repeatable measurement readings, even at extreme sensitivity (high turn-down ratio).
- High cost efficiency in comparison to normal instrumentation.

Temperature range (pipe wall):
- -40 °F to +392 °F / WI: -328 °F to +1112 °F

Pipe size range (inner diameter):
- 0.24 inch to 255.9 inch

Explosion protection:
- ATEX/IECEx Zone 1/Zone 2, FM Class I / Div 2 available.

Power supply:
- 100 ... 230 V AC, 24 V DC, 12 V DC

Technical facts

- FLUXUS® F/G721: 4 % of reading ±0.02 %
- FLUXUS® G721: 4 % of reading ±0.02 %

Unique features of the FLUXUS® F/G721:

- Highly accurate and reliable velocity and mass flow measurement with no maintenance required due to measurement outside the pipe wall.
- Every transmitter system is pre-calibrated in a closed loop to ensure standardization and delivered with a calibration certificate.
- Mated transducers, integrated temperature compensation (according to ANSI/ASME MFC-5-2011 regulated) and digital signal processing guarantee excellent zero point and flow measurement stability.
- Permanent calibration with unique coupling pads. Flexible rings around measuring probes are equipped with durable contact pressure using oil-free sliding rings.
- Bidirectional communication as well as remote setup and diagnostics capabilities.

FLUXUS® is an active leader in many areas of process instrumentation. As a worldwide pioneer in the non-intrusive flow measurement of liquids and gases, FLUXUS has been leading the way in ultrasonic clamp-on flow metering for more than 25 years. In addition to non-intrusive flow measurement, FLUXUS specializes in innovative online process analysis using ultrasonic technology and refractometry. Year after year, the Berlin-based company continues its substantial investment in research and development in order to maintain and further improve its position as the industry leader. In keeping with its core principles, FLUXUS takes customer feedback very seriously. Every generation of FLUXUS products is directly driven by customer and industry needs.

The FLUXUS Commitment to Customer Service

FLUXUS considers itself not only a manufacturer of measuring instruments, but also a provider of technical and consulting services. These services include on-site measurements, laboratory analysis, project handling, training, commissioning, instrument rentals and consulting services. The company’s focus and dedication is directed towards providing the highest quality equipment with the best support and service possible. Our aim is to set standards in all that we do.

In partnership

FLUXUS® F/G721

Setting Standards in Non-intrusive Liquid and Gas Flow Measurement

For more detailed information please download the Technical Specifications here: www.flexim.com.

FLEXIM considers itself not only a manufacturer of measuring instruments, but also a provider of technical and consulting services. These services include on-site measurements, laboratory analysis, project handling, training, commissioning, instrument rentals and consulting services. The company’s focus and dedication is directed towards providing the highest quality equipment with the best support and service possible. Our aim is to set standards in all that we do.
Versatile Applications

Oil & Gas

From wellhead to the gas station - everything is flowing. For the safe and efficient operation of the multitude of processes in hydrocarbon production, treatment and transport, all these flow rates need to be monitored. Harsh environments, challenging process conditions and highly explosive media place the highest demands on measuring equipment.

FLUXUS® F/G721 excels where others fail. Flow measurement from outside the pipe is independent of the pressure inside and not subject to wear and tear. In conjunction with the patented Waveljector® mounting fixture, liquid flows can be measured in an unrivalled temperature range from -310 °F [for LNG] up to +1200 °F [e.g. for refinery applications]. Due to its sophisticated signal processing, the FLUXUS® F/G721 provides reliable measurements even in the most demanding applications such as the measurement of pulsating flows with solid/gaseous contents or on lines carrying heavily moisturized gas. As the FLUXUS® F/G721 can also be used for non-intrusive media identification, it is the ideal allocation meter for tank terminals.

Chemical Industries

Modern, integrated chemical plants form highly complex networks of mass and energy flows. Safety takes top priority. Continuous monitoring of all relevant process parameters is essential for fault-free operations.

FLUXUS® F/G721 measures from the safe side - the outside of the pipe. The practical advantages of non-intrusive flow measurement are obvious: no wear and tear by the medium flowing inside the pipe, no risk of liquid leakage or fugitive gas emissions, no pressure loss and, above all, unlimited plant availability.

Water & Wastewater

Withdrawal of water usually begins at wells, reservoirs and large water tanks. Pipes with large nominal diameters also mean high costs for wetted instrumentation and for installation work - this is not the case with FLUXUS®. Moreover, the F/G721 offers exceptionally precise bidirectional flow measurement over a wide turndown ratio, which is especially important when capturing low flow velocities at off-peak times for leak control.

FLUXUS® F/G721 measures independently of the pipe dimension and material. Its advanced technology allows for non-intrusive flow measurement even on pre-stressed concrete cylinder pipes (PCCP) which may be several meters in diameter. Due to its built-in Hybrid Trek mode, wastewater slurries with high solid / gaseous contents can also be precisely monitored.
Energy Efficiency

Energy counts. In every respect. Energy is a key factor for human life, work and economy. Saving energy pays off. The FLUXUS® F721 Energy is the ideal solution to tap energy efficiency potentials non-intrusively, in HVAC applications as well as in industrial processes. Whether it is used for thermal power measurement in district heating networks or for monitoring the efficiency of an industrial heat exchanger, non-intrusive measurement never affects the safe supply in any way. With its excellent sensitivity for low flows and with highly accurate and paired temperature sensors, the FLUXUS® F721 Energy is particularly suited to accurate measurement of energy consumption in air conditioning systems.

With regard to gases, the FLUXUS® G721 is the perfect tool to measure the consumption of costly compressed air - non-intrusively without any potential for possible leaks.

Power

Safe operation and security of supply are essential in power generation. Therefore it is clear: It’s better not to touch the pipe! This is even more evident, if you want to measure flow rates in the penstock of a hydro power plant or even in the primary circuit of a nuclear power plant.

FLUXUS® F/G721 stands for absolutely reliable flow measurement without any interruption to supply. In conjunction with the WaveInjector®, FLUXUS® also measures the flow of molten salts which are used as heat transfer fluids in concentrated solar power plants. Another typical application is the flow measurement of hot boiler feedwater and the identification of water / steam cuts in water drain lines of combined cycle power plants.

Other Industries

The application range of FLUXUS® is broad. The non-intrusive measurement principle also plays out its full potential in hygienic applications, such as in the pharmaceutical, food & beverage or even the semiconductor industries. By measuring from outside the pipe wall, direct media contact and potential media contamination can be ruled out. Other application fields include the mining sector and adjacent steel plants. Typical applications include the measurement of mineral slurries or acid-loaded streams - measurement points where non-invasive technology is always preferred in comparison to wetted flowmeter technologies.
Unrivalled advantages of non-intrusive flow measurement with the FLUXUS® F/G721:

- Non-intrusive, time-tested and reliable measurement with a proven track record
- Certified for operation within hazardous areas (FM Class I / Div 2)
- Fast measuring dynamics also capture highly pulsating flows
- Reliable measurements even of start-ups, liquids with gas entrainment as well as gas flow at low L/V values
- High operational safety with no maintenance required due to measurement outside the pipe wall
- Independent of gas material, diameter, and thickness and internal pressure and temperature conditions
- Accurate and repeatable measurement readings - even at highly pulsating flows (high turndown ratio)
- High cost-efficient in comparison to sealed instrumentation

Unique features of the FLUXUS® F/G721:

- High-accurate and reliable solution and mass flow measurement of liquids and gases as well as thermal energy
- Accurate and reliable measurement - due to its built-in high-turndown ratio inside even of partially filled or gas entrained liquids
- Virtually free of wear and tear with no maintenance required due to measurement outside the pipe wall
- Every measurement system is pre-calibrated in-house and delivered with a calibration certificate
- Matched transducers, integrated temperature compensation according to MFC-5.1-2011 regulations and digital signal processing guarantee excellent zero point and flow measurement capability
- Permanent coupling with unique couplant pads, featuring reusable and metering-hazard-free contact pressure as well as flow measurement stability
- Bidirectional communication as well as remote setup and diagnostic capability

FLUXUS is an active leader in many areas of process instrumentation. As a worldwide pioneer in the non-intrusive flow measurement of liquids and gases, FLUXUS has been leading the way in ultrasonic clamp-on flow metering for more than 25 years. In addition to non-intrusive flow measurement, FLUXUS offers innovative online process analysis using ultrasonic technology and refractometry. Year after year, the Berlin-based company continues its substantial investment in research and development in order to maintain and further improve its position as the industry leader. In keeping with its core principles, FLUXUS takes customer feedback very seriously. Every generation of FLUXUS products is directly driven by customer and industry needs.

The FLUXUS Commitment to Customer Service

FLUXUS considers itself not only a manufacturer of measuring instruments, but also a provider of technical and consulting services. These services include on-site measurements, laboratory analysis, project handling, training, commissioning, instrument rentals and consulting services. The company’s focus and dedication is directed towards providing the highest quality equipment with the best support and service possible. Our aim is to set standards in all that we do.

FLEXIM considers itself not only a manufacturer of measuring instruments, but also a provider of technical and consulting services. These services include on-site measurements, laboratory analysis, project handling, training, commissioning, instrument rentals and consulting services. The company’s focus and dedication is directed towards providing the highest quality equipment with the best support and service possible. Our aim is to set standards in all that we do.

FLUXUS® F/G721

Setting Standards in Non-intrusive Liquid and Gas Flow Measurement

Unrivalled advantages of non-intrusive flow measurement with the FLUXUS® F/G721:

- Non-intrusive, time-tested and reliable measurement with a proven track record
- Certified for operation within hazardous areas (FM Class I / Div 2)
- Fast measuring dynamics also capture highly pulsating flows
- Reliable measurements even of start-ups, liquids with gas entrainment as well as gas flow at low L/V values
- High operational safety with no maintenance required due to measurement outside the pipe wall
- Independent of gas material, diameter, and thickness and internal pressure and temperature conditions
- Accurate and repeatable measurement readings - even at highly pulsating flows (high turndown ratio)
- High cost-efficient in comparison to sealed instrumentation

Unique features of the FLUXUS® F/G721:

- High-accurate and reliable solution and mass flow measurement of liquids and gases as well as thermal energy
- Accurate and reliable measurement - due to its built-in high-turndown ratio inside even of partially filled or gas entrained liquids
- Virtually free of wear and tear with no maintenance required due to measurement outside the pipe wall
- Every measurement system is pre-calibrated in-house and delivered with a calibration certificate
- Matched transducers, integrated temperature compensation according to MFC-5.1-2011 regulations and digital signal processing guarantee excellent zero point and flow measurement capability
- Permanent coupling with unique couplant pads, featuring reusable and metering-hazard-free contact pressure as well as flow measurement stability
- Bidirectional communication as well as remote setup and diagnostic capability

FLUXUS is an active leader in many areas of process instrumentation. As a worldwide pioneer in the non-intrusive flow measurement of liquids and gases, FLUXUS has been leading the way in ultrasonic clamp-on flow metering for more than 25 years. In addition to non-intrusive flow measurement, FLUXUS offers innovative online process analysis using ultrasonic technology and refractometry. Year after year, the Berlin-based company continues its substantial investment in research and development in order to maintain and further improve its position as the industry leader. In keeping with its core principles, FLUXUS takes customer feedback very seriously. Every generation of FLUXUS products is directly driven by customer and industry needs.

The FLUXUS Commitment to Customer Service

FLUXUS considers itself not only a manufacturer of measuring instruments, but also a provider of technical and consulting services. These services include on-site measurements, laboratory analysis, project handling, training, commissioning, instrument rentals and consulting services. The company’s focus and dedication is directed towards providing the highest quality equipment with the best support and service possible. Our aim is to set standards in all that we do.

FLEXIM considers itself not only a manufacturer of measuring instruments, but also a provider of technical and consulting services. These services include on-site measurements, laboratory analysis, project handling, training, commissioning, instrument rentals and consulting services. The company’s focus and dedication is directed towards providing the highest quality equipment with the best support and service possible. Our aim is to set standards in all that we do.

FLUXUS® F/G721

Setting Standards in Non-intrusive Liquid and Gas Flow Measurement

Unrivalled advantages of non-intrusive flow measurement with the FLUXUS® F/G721:

- Non-intrusive, time-tested and reliable measurement with a proven track record
- Certified for operation within hazardous areas (FM Class I / Div 2)
- Fast measuring dynamics also capture highly pulsating flows
- Reliable measurements even of start-ups, liquids with gas entrainment as well as gas flow at low L/V values
- High operational safety with no maintenance required due to measurement outside the pipe wall
- Independent of gas material, diameter, and thickness and internal pressure and temperature conditions
- Accurate and repeatable measurement readings - even at highly pulsating flows (high turndown ratio)
- High cost-efficient in comparison to sealed instrumentation

Unique features of the FLUXUS® F/G721:

- High-accurate and reliable solution and mass flow measurement of liquids and gases as well as thermal energy
- Accurate and reliable measurement - due to its built-in high-turndown ratio inside even of partially filled or gas entrained liquids
- Virtually free of wear and tear with no maintenance required due to measurement outside the pipe wall
- Every measurement system is pre-calibrated in-house and delivered with a calibration certificate
- Matched transducers, integrated temperature compensation according to MFC-5.1-2011 regulations and digital signal processing guarantee excellent zero point and flow measurement capability
- Permanent coupling with unique couplant pads, featuring reusable and metering-hazard-free contact pressure as well as flow measurement stability
- Bidirectional communication as well as remote setup and diagnostic capability

FLUXUS is an active leader in many areas of process instrumentation. As a worldwide pioneer in the non-intrusive flow measurement of liquids and gases, FLUXUS has been leading the way in ultrasonic clamp-on flow metering for more than 25 years. In addition to non-intrusive flow measurement, FLUXUS offers innovative online process analysis using ultrasonic technology and refractometry. Year after year, the Berlin-based company continues its substantial investment in research and development in order to maintain and further improve its position as the industry leader. In keeping with its core principles, FLUXUS takes customer feedback very seriously. Every generation of FLUXUS products is directly driven by customer and industry needs.

The FLUXUS Commitment to Customer Service

FLUXUS considers itself not only a manufacturer of measuring instruments, but also a provider of technical and consulting services. These services include on-site measurements, laboratory analysis, project handling, training, commissioning, instrument rentals and consulting services. The company’s focus and dedication is directed towards providing the highest quality equipment with the best support and service possible. Our aim is to set standards in all that we do.

FLEXIM considers itself not only a manufacturer of measuring instruments, but also a provider of technical and consulting services. These services include on-site measurements, laboratory analysis, project handling, training, commissioning, instrument rentals and consulting services. The company’s focus and dedication is directed towards providing the highest quality equipment with the best support and service possible. Our aim is to set standards in all that we do.