

FLEXIM - Flexible Industrial Measurement

PRODUCT CATALOG

Clamp-on ultrasonic flow measurement
and process analytics

Non-intrusive flow measurement with FLUXUS®

- Liquids
- Gases
- Thermal energy / BTU

Non-intrusive process analytics with PIOX® S

- Concentration
- Density
- Mass flow rate

PIOX® R process refractometer

- Concentration
- Density
- ° Brix etc.



IECEX certified





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Measurement technology made in Berlin – used worldwide

FLEXIM develops, manufactures, and sells advanced process measuring devices for industrial applications. For more than 20 years, non-intrusive ultrasonic flow measurement has been synonymous with FLUXUS®. The name PLOX® stands for process analytics – non-intrusive with the PLOX® S ultrasonic analyzer, wetted with the PLOX® R transmitted light refractometer.

If it flows, FLUXUS® will measure it.

FLEXIM's FLUXUS® ultrasonic flowmeters are used wherever something flows. Non-intrusive clamp-on ultrasonic technology opens up an unrivalled wide range of applications. FLUXUS® reliably measures on very small tubes (e.g. 0.25 inch tubing in paint finishing systems) and very large pipes (e.g. > 20 ft diameter penstocks in hydropower plants).

The field of application is not only limited to liquids. FLEXIM is also particularly proud of its pioneering work carried out in transferring ultrasonic technology to the non-intrusive flow measurement of gases. Clamp-on measuring technology also covers an extraordinary range of applications in this area – from the recording of quantities drawn off by individual pneumatic consumers in a compressed air network, to the non-intrusive measurement of gas quantities conveyed in a gas transmission pipeline.

Progressive process analytics with PLOX®

Clamp-on ultrasonic technology can also be used for process analytics through non-intrusive determination of the acoustic velocity of the medium. PLOX® S ultrasonic systems really stand out in applications where wetted measuring equipment is subject to considerable wear and tear, for example during concentration and mass flow measurements of acids.

Measurement of light refraction is a proven method for determining concentrations. Laboratory Calibrated accuracy is ensured in the process with the patented PLOX® R transmitted light refractometer.

If both measuring methods are combined, multi-component mixtures can also be analyzed accurately and reliably.

FLUXUS®

Non-intrusive flow measurement with clamp-on ultrasonic technology

FLUXUS® measures flow rates non-intrusively with ultrasound. Clamp-on ultrasonic transducers are simply mounted on the outside of the pipe. The practical advantages 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.

FLUXUS® measures the difference

FLUXUS® clamp-on ultrasonic systems determine the volume flow according to the transit-time difference method: since the ultrasonic signal that is injected into the pipe is carried by the medium flowing inside, a time delay occurs between the acoustic transit time both with and against the flow direction. This time delay can be measured very accurately. The measuring transmitter calculates the volume flow rate based on the parameters input for the pipe geometry and the physical properties of the medium stored in its internal database.

FLUXUS® clamp-on ultrasonic systems allow for the flow measurement of almost all liquid and gaseous media – even those with significant amounts of solids and gas (<10% of volume content) or even wet gas (LVF <5%).

Versatile clamp-on solution

The non-intrusive acoustic measuring method is inertia-free and is characterized by very high measuring dynamics in both flow directions. When combined with density measurement, the transit-time difference measurement is suitable for determining the volume flow rate and mass flow rate of liquids. When combined with pressure measurement, it is suitable for determining the standard volume flow of gases. A particularly practical use for the non-intrusive measuring technique is the fact that the energy delivered by liquid-based thermal consumers, e.g. heating or cooling systems, can be easily recorded.

As a technology leader in clamp-on ultrasonic systems, FLEXIM has developed two sensor technologies for non-intrusive flow measurement: shear wave transducers for the flow measurement of liquids and Lamb wave transducers for the flow measurement of gases. By means of these two technologies and the internal, automatic compensation of varying ambient temperatures, FLEXIM ensures maximum measuring accuracy and reliability, even under difficult conditions.

Fundamentally flexible

Non-intrusive clamp-on technology offers maximum flexibility and the sophisticated electronics of FLUXUS® ensure the highest degree of reliability. The measuring system, which consists of a transmitter and ultrasonic transducer system, can be adapted optimally to specific requirements.

The product range of the FLUXUS® series covers a wide spectrum of various measuring transmitters and transducers, from basic devices for standard applications to measuring systems for usage offshore. The transmitters and transducers are available to use in hazardous areas.

Proven accuracy

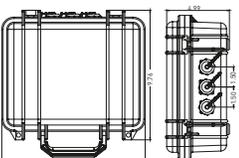
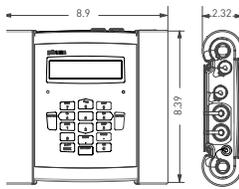
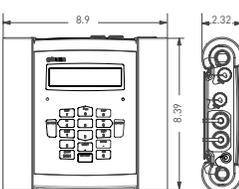
The reliability and accuracy of measuring systems depend on the quality of their manufacturing and calibration. Consistent quality management according to DIN ISO 9001 is absolutely essential for FLEXIM. From the moment the goods arrive at the warehouse to when the finished measuring system is shipped, operational checks are carried out at every single production stage and everything is documented. Paired transducers ensure high measuring accuracy of the measuring systems.

Calibration is carried out on individual calibration equipment according to national standards. FLEXIM calibrates pairs of transducers and measuring transmitters independently of one another so that the narrowly defined measurement uncertainties are always observed, regardless of how transducers and transmitters are combined in the field.

Portable Flow Meters FLUXUS® F401 and F601

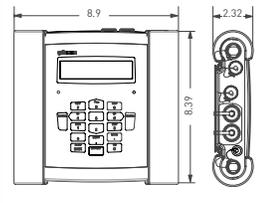
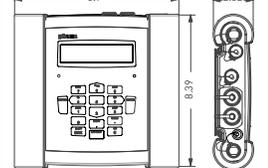
Liquids & Thermal Energy



	<p>FLUXUS® F401</p>	<p>The portable FLUXUS® F401 is a single channel meter for the flow measurement of water and wastewater streams (<6% of solid / gas content by volume). It is equipped with IP68 / NEMA 6P transducers and housed in a IP67 / NEMA 6 enclosure for long-term remote outdoor measurements.</p>
	<p>Calibrated accuracy: ± 2.0 % of reading ± 0.03 ft/s</p> <p>Operating temp.: 14 °F ... +140 °F (Transmitter)</p> <p>Pipe wall temp.: -40 °F ... +210 °F</p> <p>Pipe size (ID): 1 inch ... 122 inches</p> <p>Inputs: --</p> <p>Outputs: 2x Current, 2x Binary</p> <p>Battery life: >24 hrs battery supplied measurement, with add. battery suitcase >1 week</p> <p>Flow velocity: 0.03 ft/s ... 80 ft/s</p> <p>Degree of protection: IP67 / NEMA 6 (Transmitter), IP68 / NEMA 6P (Transducers)</p>	
	<p>FLUXUS® F601</p>	<p>The portable FLUXUS® F601 is the ideal metering solution for flexible operation during temporary control and service tasks on all liquid filled pipes independent of the flowing medium.</p>
	<p>Accuracy: ±1.0 % of reading ±0.03 ft/s ±0.5 % of reading ±0.03 ft/s (field calibration)</p> <p>Operating temp.: 14 °F ... +140 °F (Transmitter)</p> <p>Pipe wall temp.: -40 °F ... +390 °F (-310 °F ... +1100 °F with WaveInjector®)</p> <p>Pipe size (ID): 1/4 inch 250 inches</p> <p>Inputs: -</p> <p>Outputs: 2x Current, 2x Binary</p> <p>Battery life: >17 hrs battery supplied measurement</p> <p>Flow velocity: 0.03 ft/s ... 80 ft/s</p> <p>Degree of protection: Transmitter: IP65 / NEMA 4; Transducers: up to IP68 / NEMA 6P</p>	
	<p>FLUXUS® F601 Energy</p>	<p>The portable FLUXUS® F601 Energy is the ideal solution for flexible operation during thermal energy measurements and audits as well as the ideal solution for temporary liquid flow metering and associated service tasks.</p>
	<p>Product variant: Energy Double Energy Multifunctional</p> <p>Accuracy: ±1.0 % of reading ±0.03 ft/s ±0.5 % of reading ±0.03 ft/s (field calibration)</p> <p>Operating temp.: 14 °F ... +140 °F (Transmitter)</p> <p>Pipe wall temp.: -40 °F ... +390 °F (-310 °F ... +1100 °F with WaveInjector®)</p> <p>Pipe size (ID): 1/4 inch ... 250 inches</p> <p>Inputs: 2x Temperature 4x Temperature 2x Temperature, 2x Current</p> <p>Outputs: 2x Current, 2x Binary 2x Current, 2x Binary 4x Current, 2x Binary</p> <p>Battery life: >17 hrs battery supplied measurement</p> <p>Flow velocity: 0.03 ft/s ... 80 ft/s</p> <p>Degree of protection: Transmitter: IP65 / NEMA 4; Transducers: up to IP68 / NEMA 6P</p>	

Portable Flow Meters FLUXUS® G601

Gases, Compressed Air & Thermal Energy

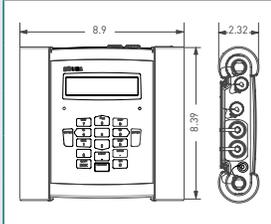
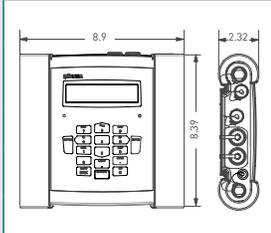
	FLUXUS® G601	The portable FLUXUS® G601 is the ideal metering solution for flexible operation during temporary control and service tasks on gas filled pipes. It also allows the measurement of liquid filled pipes. (Technical data below for gas flow measurements).
	Product variant: Accuracy: Operating temp.: Pipe wall temp.: Pipe size (ID):	(Extended) Standard Multifunctional $\pm 1 \dots 3 \%$ of reading ± 0.03 ft/s (application dependent) $\pm 0.5 \%$ of reading ± 0.03 ft/s (field calibration) 14 °F ... +140 °F (Transmitter) -40 °F... +390 °F 0.4 inch 83 inches
	Inputs: Outputs: Battery life: Flow velocity: Degree of protection:	{2x Current} 1x Temp., 2x Current, 1x Voltage 2x Current, (1) 2x Binary, 1x Frequency 2x Current, 2x Binary, 1x Frequency >17 hrs battery supplied measurement 0.03 ft/s ... 115 ft/s Transmitter: IP65 / NEMA 4; Transducers: up to IP68 / NEMA 6P
	FLUXUS® G601 CA Energy	The portable FLUXUS® G601 CA Energy is the ideal metering solution for flexible operation during temporary control and service tasks. It allows the measurement of liquids, gases (incl. compressed air) and thermal energy quantities combined in one device.
	Accuracy: Liquids: Gases: Operating temp.: Pipe wall temp.: Pipe size (ID):	$\pm 1.0 \%$ of reading ± 0.03 ft/s; $\pm 0.5 \%$ of reading ± 0.03 ft/s (field calibration) $\pm 1 \dots 3 \%$ of reading ± 0.03 ft/s (appl. dependent); $\pm 0.5 \%$ of reading ± 0.03 ft/s (process calibr.) 14 °F... +140 °F (Transmitter) -40 °F ... +390 °F (-310 °F ... +1100 °F with WaveInjector®) for liquids -40 °F ... +390 °F for gases, 1/4 inch ... 250 inches for liquids; 0.4 inch 83 inches for gases
	Inputs: Outputs: Battery life: Flow velocity: Degree of protection:	2x Temp., 2x Current 2x Current, 2x Binary >17 hrs battery supplied measurement 0.03 ft/s ... 80 ft/s (for liquids); 0.03 ft/s ... 115 ft/s (for gases) Transmitter: IP65 / NEMA 4; Transducers: up to IP68 / NEMA 6P

Portable Flow Meter FLUXUS® F608

Liquids & Thermal Energy

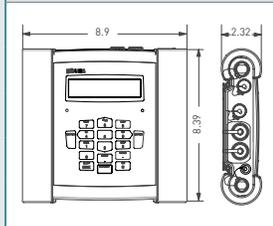
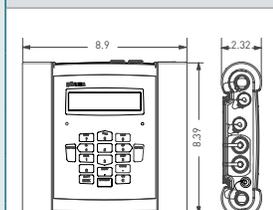
FM Class I, Div. 2 and ATEX (IECEX) Zone 2 certified

(Transducers certified for FM Class I, Div. 2 and ATEX (IECEX) Zones 1 and 2)

	FLUXUS® F608	<p>The portable FLUXUS® F608 is the ideal metering solution for flow measurements on liquid filled pipes located in hazardous areas being FM Class I, Div. 2 and ATEX (IECEX) Zone 2 certified.</p>
	Accuracy:	± 1.0 % of reading ± 0.03 ft/s ± 0.5 % of reading ± 0.03 ft/s (field calibration)
	Operating temp.:	14 °F... +140 °F (Transmitter)
	Pipe wall temp.:	-40 °F ... +390 °F (-310 °F ... +1100 °F with WaveInjector®)
	Pipe size (ID):	1/4 inch 250 inches
	Inputs:	-
	Outputs:	2x Current, 2x Binary (only available for ATEX / IECEx Zone 2 approved version)
	Battery life:	>17 hrs battery supplied measurement
	Flow velocity:	0.03 ft/s ... 80 ft/s
	Degree of protection:	IP65 / NEMA 4, FM Class I, Div. 2, ATEX (IECEX) Zone 2 (Transmitter)
	FLUXUS® F608 Energy	<p>The portable FLUXUS® F608 Energy is the ideal metering solution for thermal energy consumption and efficiency monitoring in hazardous areas (FM Class I, Div. 2 and ATEX (IECEX) Zone 2 certified). It also allows standard liquid flow measurement.</p>
	Product variant:	Energy Double Energy
	Accuracy:	± 1.0 % of reading ± 0.03 ft/s ± 0.5 % of reading ± 0.03 ft/s (field calibration)
	Operating temp.:	14 °F... +140 °F (Transmitter)
	Pipe wall temp.:	-40 °F ... +390 °F (-310 °F ... +1100 °F with WaveInjector®)
	Pipe size (ID):	1/4 inch ... 250 inches
	Inputs:	2x Temperature 4x Temperature
	Outputs:	2x Current, 2x Binary (only available for ATEX / IECEx Zone 2 approved version)
	Battery life:	>17 hrs battery supplied measurement
	Flow velocity:	0.03 ft/s ... 80 ft/s
	Degree of protection:	IP65 / NEMA 4, FM Class I, Div. 2, ATEX (IECEX) Zone 2 (Transmitter)

Portable Flow Meters FLUXUS® G608

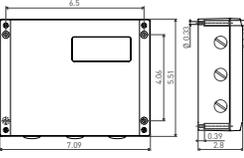
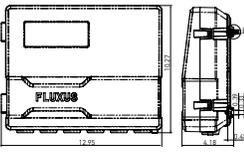
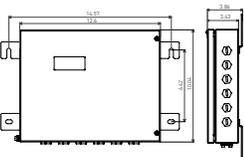
Gases, Compressed Air & Thermal Energy
 FM Class I, Div. 2 and ATEX / IECEx Zone 2 certified
 (Transducers certified for FM Class I, Div. 2 and ATEX / IECEx Zones 1 and 2)

	<p>FLUXUS® G608</p>	<p>The portable FLUXUS® G608 is the ideal metering solution for flow measurements on gas pipes (natural gas, process gases, etc.) located in hazardous areas being FM Class I, Div. 2 and ATEX (IECEX) Zone 2 certified.</p>
	<p>Accuracy:</p>	<p>±1 ... 3 % of reading ±0.03 ft/s (application dependent) ±0.5 % of reading ±0.03 ft/s (process calibrated)</p>
	<p>Operating temp.:</p>	<p>14 °F... +140 °F (Transmitter)</p>
	<p>Pipe wall temp.:</p>	<p>-40 °F ... +390 °F</p>
	<p>Pipe size (ID):</p>	<p>0.4 inch ... 83 inches</p>
	<p>Inputs:</p>	<p>-</p>
	<p>Outputs:</p>	<p>2x Current, 2x Binary (only available for ATEX / IECEx Zone 2 approved version)</p>
	<p>Battery life:</p>	<p>>17 hrs battery supplied measurement</p>
	<p>Flow velocity:</p>	<p>0.03 ft/s ... 115 ft/s</p>
	<p>Degree of protection:</p>	<p>IP65 / NEMA 4, FM Class I, Div. 2, ATEX (IECEX) Zone 2 (Transmitter)</p>
	<p>FLUXUS® G608 CA Energy</p>	<p>The portable FLUXUS® G608 CA Energy is a meter that can measure flow rates of virtually any liquid and gas (incl. compressed air) flow rates as well as quantify thermal energy flows. It is specifically designed for use in hazardous areas and thus FM Class I, Div. 2 and ATEX (IECEX) Zone 2 certified.</p>
	<p>Accuracy Liquids:</p>	<p>±1.0 % of reading ±0.03 ft/s; ±0.5 % of reading ±0.03 ft/s (field calibration)</p>
	<p>Gases:</p>	<p>±1 ... 3 % of reading ±0.03 ft/s (appl. dependent); ± 0.5 % of reading ± 0.03 ft/s (field calibr.)</p>
	<p>Operating temp.:</p>	<p>14 °F... +140 °F (Transmitter)</p>
	<p>Pipe wall temp.:</p>	<p>-40 °F ... +390 °F (-310 °F ... +1100 °F with Wavelnjector®) for liquids -40 °F ... +390 °F for gases</p>
	<p>Pipe size (ID):</p>	<p>1/4 inch ... 250 inches for liquids; 0.4 inch ... 83 inches for gases</p>
	<p>Inputs:</p>	<p>4x Temperature</p>
	<p>Outputs:</p>	<p>2x Current, 2x Binary (Outputs only available for ATEX / IECEx Zone 2 approved version)</p>
	<p>Battery life:</p>	<p>>17 hrs battery supplied measurement</p>
	<p>Flow velocity:</p>	<p>0.03 ft/s ... 80 ft/s (for liquids); 0.03 ft/s ... 115 ft/s (for gases)</p>
	<p>Degree of protection:</p>	<p>IP65 / NEMA 4, FM Class I, Div. 2, ATEX (IECEX) Zone 2 (Transmitter)</p>

Permanent Transmitters

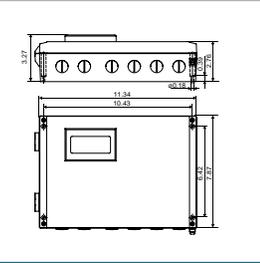
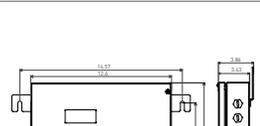
Liquids (F)

Non-ex and FM Class I, Div. 2; ATEX (IECEX) Zone 2 certified

	<p>FLUXUS® F501</p> <p>The FLUXUS® F501 is a dedicated clamp-on meter for water and water / glycol measurements at water supply and HVAC lines. As a special variant, the F501 Semiconductor serves for measuring at flexible tubes, frequently found in cleanroom environments (here: wider range of application liquids).</p>	<p>Product variant: F501 F501 Semiconductor (for liquids in tubes)</p>
	<p>Accuracy: ±1.0 ... 2.0 % of reading ±0.03 ft/s</p> <p>Operating temp.: 14 °F ... +140 °F</p> <p>Pipe wall temp.: -40 °F ... +210 °F</p> <p>Pipe size (ID): 1 inch ... 95 inches</p> <p>Inputs: -</p> <p>Outputs: 1x Current, 2x Binary</p> <p>Power supply: 100 V ... 240V / 50 ... 60 Hz or 20 ... 32 V DC</p> <p>Communication: RS485 or Modbus RTU or BACnet MS/TP or M-Bus</p> <p>Flow velocity: 0.03 ft/s ... 80 ft/s</p> <p>Degree of protection: ITranmitter: IP 66 / NEMA 4X, Transducers: IP67/68 / NEMA 6/6P</p>	<p>±2 % of reading ± 0.03 ft/s</p> <p>OD: 3/8", 1/2", 3/4", 1", 1,25"</p> <p>2x Current, 2x Binary</p>
	<p>FLUXUS® F721</p> <p>The non-invasive FLUXUS® F721 ultrasonic liquid flow meter is setting standards in terms of measurement performance, accuracy and reliability. It measures any liquid on any pipe - independent of the application conditions.</p>	<p>Accuracy: ±0.3% of reading ±0.2 inch/s (system accuracy) ±1.0 % of reading ±0.2 inch/s (at measuring point), ±0.5 % of reading ±0.2 inch/s (field calibr.)</p> <p>Operating temp.: -40 °F ... +140 °F</p> <p>Pipe wall temp.: -40 °F ... +390 °F (-310 °F ... +1100 °F)*</p> <p>Pipe size (ID): 1/4 inch ... 21 foot (and more)</p> <p>Inputs: maximum 4, possible are: Temp. (Pt 100/1000 4-Loop), Current, Voltage, Binary</p> <p>Outputs: maximum 7, possible are: Current, Voltage, Frequency, Binary</p> <p>Power supply: 100 ... 240 V / 50 ... 60 Hz or 20 ... 32 V DC</p> <p>Communication: HART, Modbus, BACnet, Foundation Fieldbus, Profibus PA, RS485, M-Bus Device set-up via USB and Ethernet possible</p> <p>Flow velocity: 0.02 ft/sec to 80 ft/s</p> <p>Degree of protection: IP66 / NEMA 4P, FM Class I, Div. 2, ATEX / IECEx Zone 2 with Stainless Steel housing(**)</p>
	<p>FLUXUS® F706</p> <p>The non-invasive 4-channel ultrasonic liquid flow meter FLUXUS® F706 offers highest precision and is used for control and redundancy measurements of custody transfer applications or for usage in protective systems for leak detection.</p>	<p>Accuracy: better than ±1.0 % of reading ±0.03 ft/s (ex works, at measuring point) better than ±0.5 % of reading ±0.03 ft/s (with field calibration)</p> <p>Operating temp.: -40 °F ... +140 °F</p> <p>Pipe wall temp.: -40 °F ... +390 °F</p> <p>Pipe size (ID): 1/4 inch ... 250 inches</p> <p>Inputs: maximum 4, possible are: Temp. (Pt 100/1000 4-Loop), Current, Voltage</p> <p>Outputs: maximum 4, possible are: Current, Voltage, Frequency, Binary</p> <p>Power supply: 100 ... 240 V / 50 ... 60 Hz or 20 ... 32 V DC</p> <p>Communication: HART, Modbus RTU, RS485</p> <p>Flow velocity: 0.03 ft/s ... 80 ft/s</p> <p>Degree of protection: IP66 / NEMA 4X, opt. FM Class I, Div. 2; ATEX (IECEX) Zone 2</p>
	<p>Accuracy: better than ±1.0 % of reading ±0.03 ft/s (ex works, at measuring point) better than ±0.5 % of reading ±0.03 ft/s (with field calibration)</p> <p>Operating temp.: -40 °F ... +140 °F</p> <p>Pipe wall temp.: -40 °F ... +390 °F</p> <p>Pipe size (ID): 1/4 inch ... 250 inches</p> <p>Inputs: maximum 4, possible are: Temp. (Pt 100/1000 4-Loop), Current, Voltage</p> <p>Outputs: maximum 4, possible are: Current, Voltage, Frequency, Binary</p> <p>Power supply: 100 ... 240 V / 50 ... 60 Hz or 20 ... 32 V DC</p> <p>Communication: HART, Modbus RTU, RS485</p> <p>Flow velocity: 0.03 ft/s ... 80 ft/s</p> <p>Degree of protection: IP66 / NEMA 4X, opt. FM Class I, Div. 2; ATEX (IECEX) Zone 2</p>	
		

Permanent Transmitters

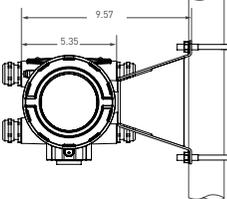
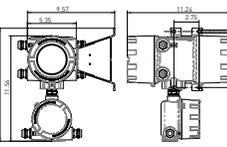
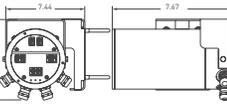
Thermal Energy (TE) and Gases (G & CA)
Non-ex and FM Class I, Div. 2; ATEX (IECEX) Zone 2 certified

	<p>FLUXUS® F502 TE FLUXUS® F704 TE</p>	<p>The F50TE is a dedicated thermal energy meter for HVAC measuring points within commercial and residential buildings. The F704TE serves as a thermal energy meter for any liquid and environment - even in harsh industrial environments.</p>
	<p>Product variant: F502 TE - Thermal Energy (Water only) FLUXUS® F704 TE - Thermal Energy</p>	<p>Accuracy: ±1.0 ... 2.0 % of reading ±0.03 ft/s ±1.0 % of reading ±0.03 ft/s ±0.5 % of reading ±0.03 ft/s (field calibrated)</p>
<p>Operating temp.: 14 °F ... +140 °F</p>	<p>Pipe wall temp.: -40 °F ... +210 °F</p>	<p>Operating temp.: -40 °F ... +140 °F</p>
<p>Pipe size (ID): 0.5 inch ... 10 inches</p>	<p>Inputs: 2x Temperature</p>	<p>Pipe size (ID): 0.25 inch ... 40 inches</p>
<p>Outputs: 2x Current, 2x Binary</p>	<p>Power supply: 100 V ... 240V / 50 ... 60 Hz or 20 ... 32 V DC, 100 ... 240 V / 50 ... 60 Hz or 20 ... 32 V DC</p>	<p>Outputs: maximum 4, possible are: Temperature, Current, Voltage, Binary</p>
<p>Communication: RS485 or Foundation Fieldbus or Modbus RTU or BACnet MS/TP or Modbus/TCP or BACnet/IP</p>	<p>Flow velocity: 0.03 ft/s ... 80 ft/s</p>	<p>Communication: Maximum 7, possible are: Current, Voltage, Frequency, Binary</p>
<p>Degree of protection: IP 66 / NEMA 4X</p>	<p>Degree of protection: IP 66 / NEMA 4X</p>	<p>Degree of protection: IP66 /NEMA 4X, FM Class I, Div. 2 opt. (**)</p>
	<p>FLUXUS® G721 FLUXUS® G704 CA</p>	<p>The non-invasive FLUXUS® G721 ultrasonic liquid flow meter is setting standards in terms of measurement performance, accuracy and reliability. It measures virtually any gas on any pipe - independent of the application conditions.</p>
	<p>Accuracy: ±0.3% of reading ±0.03 ft/s (system accuracy) ±1 ... 3 % of reading ±0.03 ft/s (application dependent), ±0.5 % of reading ±0.2 ft/s (field calibr.)</p>	<p>Accuracy: FLUXUS G721 FLUXUS G704 CA - Compressed Air</p>
<p>Operating temp.: -40 °F ... +140 °F</p>	<p>Pipe wall temp.: -40 °F ... +390 °F</p>	<p>Operating temp.: -40 °F ... +140 °F</p>
<p>Pipe size (ID): 0.3 inch ... 83 inches</p>	<p>Inputs: maximum 4, possible are: Temp. (Pt 100/1000 4-Loop), Current, Voltage, Binary</p>	<p>Pipe size (ID): 0.3 inch ... 10 inches (comp. air lines)</p>
<p>Outputs: maximum 7, possible are: Current, Voltage, Frequency, Binary</p>	<p>Power supply: 100 ... 240 V / 50 ... 60 Hz or 20 ... 32 V DC</p>	<p>Outputs: maximum 7, possible are: Current, Voltage, Frequency, Binary</p>
<p>Communication: HART, Modbus, BACnet, Foundation Fieldbus, Profibus PA, RS485, M-Bus Device set-up via USB and Ethernet possible</p>	<p>Flow velocity: 0.02 ft/sec to 115 ft/s</p>	<p>Communication: HART, Modbus, BACnet, Foundation Fieldbus, Profibus PA, RS485, M-Bus Device set-up via USB and Ethernet possible</p>
<p>Degree of protection: IP66 / NEMA 4P, FM Class I, Div. 2, ATEX / IECEX Zone 2 with Stainless Steel housing(**)</p>	<p>Degree of protection: IP66 / NEMA 4P, FM Class I, Div. 2, ATEX / IECEX Zone 2 with Stainless Steel housing(**)</p>	<p>Degree of protection: IP66 / NEMA 4P, FM Class I, Div. 2, ATEX / IECEX Zone 2 with Stainless Steel housing(**)</p>
	<p>FLUXUS® G706</p>	<p>The non-invasive 4-Channel ultrasonic gas flow meter FLUXUS® G706 offers highest precision and is used for control and redundancy measurements of custody transfer meters or for usage in protective systems for leak detection.</p>
	<p>Accuracy: ±1 % ... 3% of reading ±0.03 ft/s (application dependent) better than ± 0.5 % of reading ±0.03 ft/s (field calibration)</p>	<p>Accuracy: ±1 % ... 3% of reading ±0.03 ft/s (application dependent) better than ± 0.5 % of reading ±0.03 ft/s (field calibration)</p>
<p>Operating temp.: -40 °F ... +140 °F</p>	<p>Pipe wall temp.: -40 °F ... +390 °F</p>	<p>Operating temp.: -40 °F ... +140 °F</p>
<p>Pipe size (ID): 0.3 inch ... 83 inches</p>	<p>Inputs: maximum 4, possible are: Temp. (Pt 100/1000), Current, Voltage</p>	<p>Pipe size (ID): 0.3 inch ... 83 inches</p>
<p>Outputs: maximum 4, possible are: (active/passive) Current, Voltage, Frequency, Binary</p>	<p>Power supply: 100 ... 240 V / 50 ... 60 Hz or 20 ... 32 V DC</p>	<p>Outputs: maximum 4, possible are: (active/passive) Current, Voltage, Frequency, Binary</p>
<p>Communication: HART, Modbus RTU, RS485</p>	<p>Flow velocity: 0.03 ft/s ... 115 ft/s</p>	<p>Communication: HART, Modbus RTU, RS485</p>
<p>Degree of protection: IP66 / NEMA 4X, opt. FM Class I, Div. 2; ATEX (IECEX) Zone 2</p>	<p>Degree of protection: IP66 / NEMA 4X, opt. FM Class I, Div. 2; ATEX (IECEX) Zone 2</p>	<p>Degree of protection: IP66 / NEMA 4X, opt. FM Class I, Div. 2; ATEX (IECEX) Zone 2</p>

Permanent Transmitters

Liquids (F)

FM Class I, Div. 1 / 2 and ATEX (IECEX) Zone 1 certified

	<p>FLUXUS® F808</p>	<p>The FLUXUS® F808 is a FM Class I, Div. 1 / 2 and ATEX (IECEX) Zone 1 approved single channel liquid flow meter. As special product variant „FLUXUS® XLF“ (also available for the F721 meters) it is engineered for measuring extremely low flow rates.</p> <table border="1" data-bbox="643 457 1507 495"> <thead> <tr> <th>FLUXUS® F808</th> <th>FLUXUS® XLF</th> </tr> </thead> <tbody> <tr> <td>Accuracy:</td> <td>±1.0 % of reading ±0.03 ft/s ±0.5 % of reading ±0.03 ft/s (field calibr.)</td> </tr> <tr> <td>Operating temp.:</td> <td>-20 °F ... (+120 °F) +140 °F</td> </tr> <tr> <td>Pipe wall temp.:</td> <td>-40 °F ... +390 °F</td> </tr> <tr> <td>Pipe size (ID):</td> <td>1/4 inch ... 250 inches</td> </tr> <tr> <td>Inputs:</td> <td>-</td> </tr> <tr> <td>Outputs:</td> <td>2 (various combinations between Current and Binary outputs available)</td> </tr> <tr> <td>Power supply:</td> <td>100 ... 240 V / 50 ... 60 Hz or 20 ... 32 V DC</td> </tr> <tr> <td>Communication:</td> <td>HART, Modbus</td> </tr> <tr> <td>Flow velocity:</td> <td>0.03 ft/s ... 80 ft/s</td> </tr> <tr> <td>Degree of protection:</td> <td>IP66 / NEMA 4X, FM Class I, Div. 1 / 2, ATEX (IECEX) Zone 1 (SIL2 with ADM8027)</td> </tr> </tbody> </table>	FLUXUS® F808	FLUXUS® XLF	Accuracy:	±1.0 % of reading ±0.03 ft/s ±0.5 % of reading ±0.03 ft/s (field calibr.)	Operating temp.:	-20 °F ... (+120 °F) +140 °F	Pipe wall temp.:	-40 °F ... +390 °F	Pipe size (ID):	1/4 inch ... 250 inches	Inputs:	-	Outputs:	2 (various combinations between Current and Binary outputs available)	Power supply:	100 ... 240 V / 50 ... 60 Hz or 20 ... 32 V DC	Communication:	HART, Modbus	Flow velocity:	0.03 ft/s ... 80 ft/s	Degree of protection:	IP66 / NEMA 4X, FM Class I, Div. 1 / 2, ATEX (IECEX) Zone 1 (SIL2 with ADM8027)
FLUXUS® F808	FLUXUS® XLF																							
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Degree of protection:	IP66 / NEMA 4X, FM Class I, Div. 1 / 2, ATEX (IECEX) Zone 1 (SIL2 with ADM8027)																							
																								
	<p>FLUXUS® F809</p>	<p>The FLUXUS® F809 is a FM Class I, Div. 1 and ATEX (IECEX) Zone1 approved dual channel liquid flow meter for any industrial environment. It even measures at extreme pipe wall temperatures ranging from -310 °F up to +1100°F.</p>																						
																								
	<p>FLUXUS® F801</p>	<p>The clamp-on ultrasonic liquid flow meter FLUXUS®F801 is, with its highly corrosion resistant stainless steel enclosure, the ideal meter for usage offshore (ATEX / IECEX Zone 1 certified).</p>																						
																								

Clamp-On Ultrasonic Transducers

For the flow measurement of liquids

FLEXIM has developed two sensor technologies in order to ensure the highest possible measuring accuracy even in challenging environments: shear wave transducers with a focused signal insertion for measuring liquids and Lamb-wave transducers with a wide signal insertion in the medium for measuring the flow of gases.

In order to guarantee measurements with long-term stability in harsh industrial environments, the transducers and cable connections are made of stainless steel and are available in hazardous area approved designs.

Shear wave Transducers



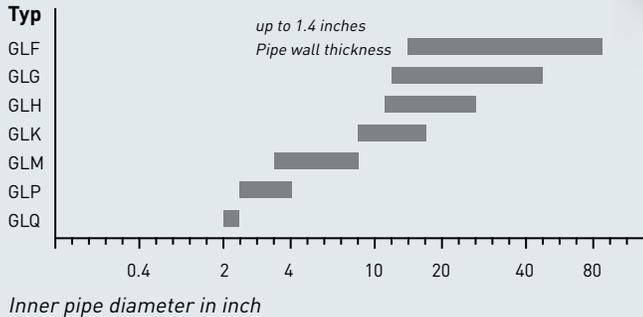
Inner pipe diameter in inch
(No limitations by pipe wall thickness or pipe wall material)

Shear wave transducers for liquids:	FSS	FSQ (also available as metal free product variant)	FSP / FSM	FSK	FSG
Techn. drawing:					
Dimensions of standard transducers in inch (l x w x h):	0.98 x 0.51 x 0.67	0.67 x 0.87 x 1.0	2.46 x 1.26 x 1.59	4.98 x 2.00 x 2.66	5.09 x 2.00 x 2.63
Operating temp.: [ext. temp. area]:	-30 °F ... +130 °F	-40 °F ... +265 °F (-20 °F ... +390 °F)	-40 °F ... +265 °F (-20 °F ... +390 °F)	-40 °F ... +265 °F	-40 °F ... +265 °F
Protection degree:	IP65 / NEMA 4	IP65 / NEMA 4. IP67 / NEMA 6 optional	IP65 / NEMA 4 IP68 / NEMA 6P optional	IP65 / NEMA 4 IP68 / NEMA 6P optional	IP65 / NEMA 4 IP68 / NEMA 6P optional
Hazardous area approval:	FM Class I, Div. 2	FM Class I, Div. 1 / 2 ATEX (IECEX) Zone 1 and 2	FM Class I, Div. 1 / 2 ATEX (IECEX) Zone 1 and 2	FM Class I, Div. 1 / 2 ATEX (IECEX) Zone 1 and 2	FM Class I, Div. 1 / 2 ATEX (IECEX) Zone 1 and 2

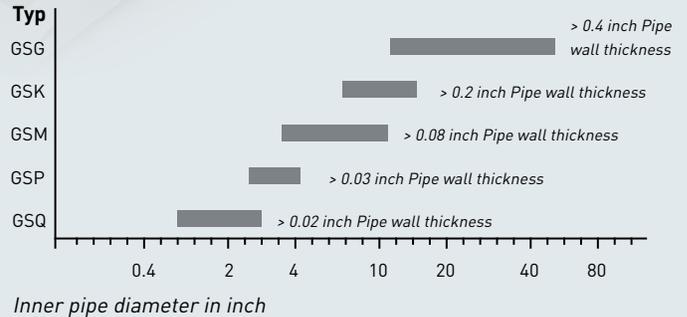
Clamp-On Ultrasonic Transducers

For the flow measurement of gases

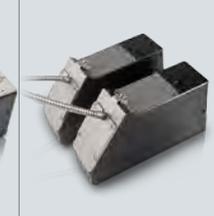
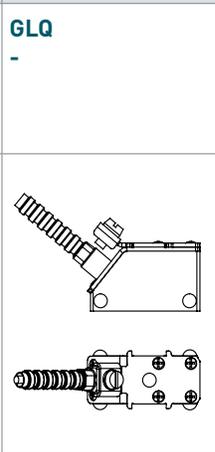
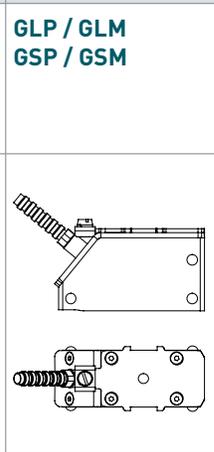
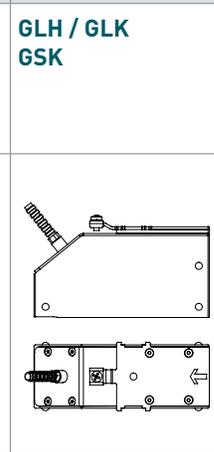
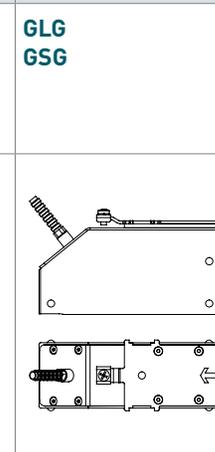
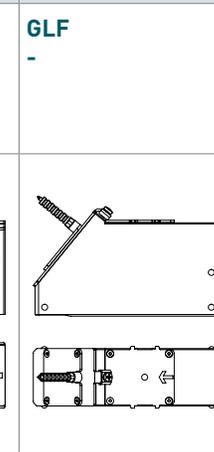
Lamb wave Transducers



Shear wave Transducers*



*Applications with pipe wall thicknesses that are not within the range of Lamb wave transducers

					
Lamb wave transd.: Shear wave transd.*: (for gases)	GLQ -	GLP / GLM GSP / GSM	GLH / GLK GSK	GLG GSG	GLF -
Techn. drawing:					
Dimensions of standard transducers in inch (l x w x h):	1.65 x 0.87 x 1.00	2.91 x 1.26 x 1.59	5.06 x 2.01 x 2.66	5.06 x 2.01 x 2.66	6.41 x 2.12 x 3.59
Operating temp.:	-40 °F ... +390 °F	-40 °F ... +390 °F	-40 °F ... +390 °F	-40 °F ... +390 °F	-40 °F ... +390 °F
Protection degree:	IP65 / NEMA 4 IP68 / NEMA 6P optional	IP65 / NEMA 4 IP68 / NEMA 6P optional	IP65 / NEMA 4 IP68 / NEMA 6P optional	IP65 / NEMA 4 IP68 / NEMA 6P optional	IP65 / NEMA 4
Hazardous area approval:	FM Class I, Div. 1 / 2 ATEX (IECEX) Zone 1 and 2	FM Class I, Div. 1 / 2 ATEX (IECEX) Zone 1 and 2	FM Class I, Div. 1 / 2 ATEX (IECEX) Zone 1 and 2	FM Class I, Div. 1 / 2 ATEX (IECEX) Zone 1 and 2	FM Class I, Div. 1 / 2 ATEX (IECEX) Zone 1 and 2

* Shear Wave Transducers have similar dimensions to the Lamb wave versions shown here

Transducer Mounting Fixtures

Whether for quick installations during temporary measurement or for permanent installations, whether for large pipes or small tubes: FLEXIM offers the right transducer mounting fixture for every application.

PermaRail and PermaLok transducer systems offer the best stability: the sturdy mounting devices permanently ensure the ultrasonic transducers are positioned precisely. Sophisticated construction details guarantee constantly high contact pressure even with high fluctuations in temperature thereby ensuring long-term stable high signal quality.

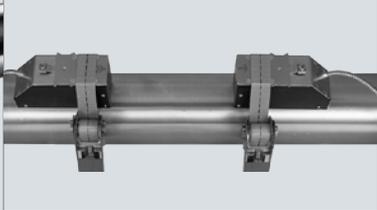
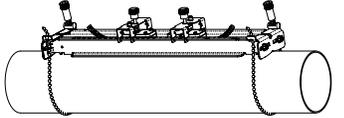
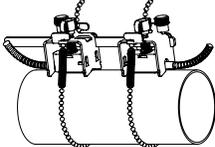
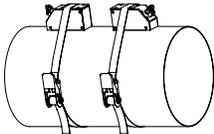
PermaRail is the standard transducer mounting fixture for permanent installation. PermaLok provides optimum protection even under the harshest conditions: below the stainless steel cover, the measuring point is permanently protected from external influences, from weather as well as from mechanical damage.

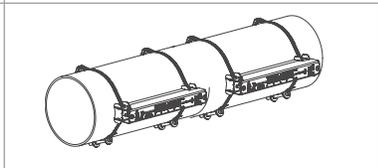
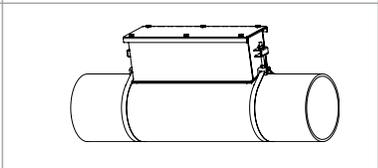
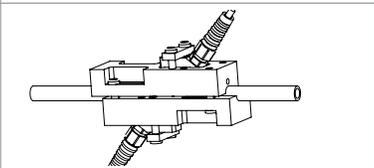
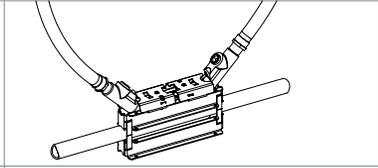
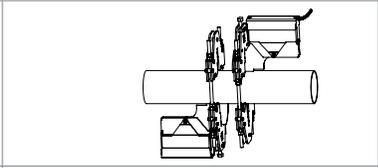
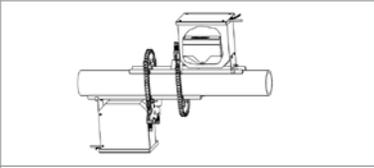
When the going gets tough

FLEXIM invented the Wavelnjector® for extreme temperatures. The patented device separates the ultrasonic transducers thermally from the pipe thereby extending the application range of non-intrusive clamp-on-ultrasonic technology to temperatures from -310 °F up to 1100 °F.

The Wavelnjector® is a transducer mounting device and enough heat is radiated or absorbed via its metallic coupling plates that the temperature of the transducer clamping fixture remains within the working range of the ultrasonic transducers.

The Wavelnjector® is also mounted on the outside of the pipe without having to open the pipeline. Since it is a purely mechanical arrangement, the Wavelnjector® can also be used in hazardous areas.

For temporary measurements			
Portable Mounting Fixtures:	Portable VARIOFIX (Chains / Magnets)	Fastening Shoes (FS) (Chains / Magnets)	Tension Belts
Description:	The portable VARIOFIX is the standard mounting fixture for temporary measurements with M and K transducers	The fastening shoes (FS) are used for temporary measurements with S, Q and M transducers.	The tension belts are used for temporary measurements with K transducers on large pipe sizes
Techn. Drawing:			
Material:	Stainless Steel: 304 (1.4301), 301 (1.4310), 303 (1.4305)	Stainless Steel: 304 (1.4301), 301 (1.4310), 303 (1.4305)	Steel, powder coated and textile tension belt
Dimensions in inch (l x w x h):	16.3 x 3.7 x 1.57 [chain length: 6 ft, for bigger pipes magnetic clamps are used]	8.27 x 1.26 x 1.73 for S transducers 16.54 x 1.69 x 2.28 for Q and M transducers (chain length: 1/3/6 ft)	Length: 16/22 ft (on request also longer belts are available)

<p>For permanent measurements</p>			
<p>Mounting Fixture</p>	<p>PermaRail</p>	<p>PermaLok</p>	<p>Block fastener</p>
<p>Description:</p>	<p>The PermaRail is FLEXIM's standard transducer mounting fixture and provides highest mechanical protection within all industrial environments.</p>	<p>The PermaLok is FLEXIM's mounting fixture for especially harsh and corrosive environments, e.g. offshore</p>	<p>The block mounting fixture is completely metal free and designed for applications on flexible tubing, e.g. to be used in clean room environments</p>
<p>Techn. Drawing:</p>			
<p>Material Standard:</p>	<p>Stainless Steel: 304 (1.4301), 301 (1.4310)</p>	<p>Stainless Steel: 304 (1.4301)</p>	<p>Polypropylene (PP)</p>
<p>Option Offshore:</p>	<p>Stainless Steel: 316 (1.4571), 316L (1.4404), 17-7PH (1.4568)</p>	<p>Stainless Steel: 316 (1.4571)</p>	
<p>Dimensions in inch (l x w x h):</p>	<p>VLK: 16.65 x 3.54 x 3.66 VLK opt. IP68: 17.44 x 3.7 x 4.13 VLM: 12.17 x 2.24 x 2.48 VLQ: 9.72 x 1.69 x 1.85</p>	<p>PLK-RL: 18.87 x 3.83 x 4.00 PLK-DS: 12.87 x 3.83 x 4.00 PLM-RL: 24.87 x 3.08 x 3.26 PLM-RS: 12.87 x 3.08 x 3.26 PLQ-DS: 13.75 x 2.68 x 2.38</p>	<p>For outer pipe diameters: 3/8", 1/2", 3/4", 1", 1 1/4" (others on request)</p>
			
<p>Mounting Fixture</p>	<p>Perma Fix</p>	<p>WavelInjector®</p>	<p>WavelInjector® Cryo</p>
<p>Description:</p>	<p>The PermaFix mounting fixture is designed for mounting of FM Class I, Div. 1 transducers and associated conduits.</p>	<p>The WavelInjector® is FLEXIM's mounting fixture for extreme pipe wall temperatures from as low as -310 °F and up to +1100 °F.</p>	<p>The WavelInjector® Cryo (FLUXUS Cryo) is FLEXIM's mounting fixture for pipe temperatures below -40 °F down to -310 °F</p>
<p>Techn. Drawing:</p>			
<p>Material:</p>	<p>Stainless Steel: 304 (1.4301)</p>	<p>Stainless Steel: 304 (1.4301)</p>	<p>Stainless Steel: 304 (1.4301)</p>
<p>Option Offshore:</p>	<p>Stainless Steel: 316 (1.4571)</p>		
<p>Pipe size:</p>	<p>-</p>	<p>1.6 inches ... 40 inches</p>	<p>2.8 inches ... 40 inches</p>
<p>Dimensions in inch (l x w x h):</p>	<p>PFK: 410 x 90 x 73 PFM: 310 x 68 x 44</p>	<p>WI-400K: l = 9.57 inch, h = 7.01 inch WI-400M, WI-400Q, WI-4001, WI-4004: l = 10.98 inch, h = 6.7 inch</p>	<p>$l = 2 \times l + l_{cp}$ ($l = 10.75$ inch) w = outer pipe diameter + 1.26 inch h = outer pipe diameter + 22.44 inch</p>



Process Analytics by means of Ultrasound and Refractometry



Product characteristics like concentration and density can be detected continuously online using PIOX® process analyzers: non-intrusively with PIOX® S clamp-on ultrasonic systems and wetted with the PIOX® R process refractometer.

PIOX® brings analytics into the process

Both the acoustic measuring method and optical transmitted light measurement basically involve velocities: PIOX® S ultrasonic systems measure the propagation velocity of sound in the medium – also non-intrusively and with the same clamp-on ultrasonic transducers as FLEXIM's FLUXUS® flowmeter.

Due to the fact that density and volume flow are measured simultaneously, PIOX® S ultrasonic systems are particularly suitable for non-intrusively detecting mass flow rates – especially where any leakage risk must absolutely be excluded.

Process insight through transmitted light

Refractometry – measurement of the refraction of light – is a long-established method for detecting the concentration, density or purity of liquid media. Refraction results from the change in the propagation velocity of light as it passes from the medium to the measuring prism.

Unlike conventionally used lab instruments, the PIOX® R process refractometer does not detect the refractive index indirectly via the critical angle of the total reflection but directly measures the angle of refraction of two monochromatic beams of light as they pass through the sample stream. The patented differential measurement in the transmitted light method is resistant to the formation of deposits and therefore particularly reliable and drift-free.

PIOX® S

Mass flow, density and concentration measurement without media contact

Always on the safe side

PIOX® S transfers the practical advantages of clamp-on ultrasonic technology to process analytical applications: since the transducers are simply mounted safely on the outside of the pipe, they are not subject to any wear and tear by the medium flowing inside. As there is no need to open the pipeline for installation, mounting and initial operation can usually be done without a process shut-down. Non-intrusive process analytics with PIOX® S proves to be just as versatile and flexible as non-intrusive flow measurement with FLUXUS®:

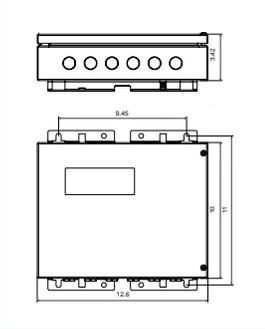
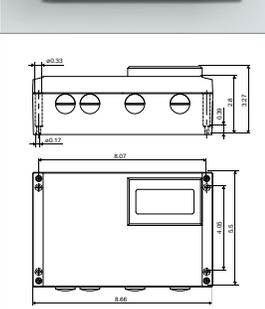
- For almost all pipe sizes and materials – whether it's steel, plastic, glass or special materials with inline or outer coatings, in a nominal size range of 1/4 to 250 inches.
- For temperatures up to +1100 °F
- For hazardous areas – transducers and transmitters are available in FM, ATEX and IECEx certified designs.

Non-intrusive online analytics with PIOX® S is the method of choice when materials and processes demand the highest levels of safety and reliability, e.g. in the case of corrosive media like acids or alkalis or even toxic compounds.



PIOX® S and FLUXUS® HPI

Mass Flow, density and concentration measurement - PIOX® S Media Identification (API) and mass flow measurement - FLUXUS® HPI

 	<p>PIOX® S721 PIOX® S721 - SA</p> <p>FLUXUS® HPI</p>	<p>The PIOX® S721 can be used to determine the mass flow rate, density and concentration of many chemical media in real-time by measurement of the medium's acoustic velocity and internal offsetting of its temperature. The product variant PIOX® S721 - SA is a derivative of the PIOX® S721 and is engineered for concentration, density and mass flow measurement of Sulphuric Acid (conc. range 80% to 100%) solely.</p> <p>With the product variant FLUXUS® HPI, it is possible to measure substance-specific data of various hydrocarbons such as the specific gravity or the API-gravity as well as volume and mass flow rates. The meter also allows for direct recognition or differentiation of hydrocarbons which are successively transported through a pipeline.</p>
	<p>Calibrated accuracy Mass flow:</p> <p>Concentration:</p> <p>Density:</p>	<p>±0.3% of reading ±0.2 inch/s (system accuracy) ±1.0% of reading ± 0.03 ft/s (at measuring point); ±0.5 % of reading ±0.03 ft/s (field calibration)</p> <p>up to 0.1 % of reading* up to 0.1 % of reading* *(dependent of medium, temperature and concentration)</p>
	<p>Operating temp. of Transmitter:</p> <p>Pipe wall temp.:</p>	<p>-40 °F ... +140°F Transmitter PIOX® S721 / PIOX® S721 SA (Aluminium or Stainless Steel enclosure available)</p> <p>-40 °F ... +390 °F (-310°F ... +750 °F with WaveInjector®)</p>
	<p>Inputs:</p> <p>Outputs:</p>	<p>maximum 4, possible are: Temp. (Pt 100/1000 4-Loop), Current, Voltage</p> <p>Many combinations available, possible types: Current (0/4 mA ... 20 mA), Voltage, Frequency, Impulse, Alarm</p>
	<p>Communication protocols:</p> <p>Degree of protection Transducers:</p> <p>Degree of protection Transmitters:</p>	<p>HART, Modbus, BACnet, Foundation Fieldbus, Profibus PA, RS485, M-Bus Device set-up via USB and Ethernet possible</p> <p>IP65 to IP68 / NEMA 4 to NEMA 6P, optionally FM Class I, Div. 2 or ATEX, IECEx Zone 1 and 2 approved</p> <p>PIOX® S721 / PIOX® S721 SA: up to IP66 / NEMA 4X, ATEX (IECEx) Zone 2 and FM Class I, Div. 2 optional</p>
	<p>PIOX® ID</p> <p>Media Pairs:</p> <p>Pipe diameter:</p> <p>Pipe material:</p> <p>Operating temp.:</p> <p>Pipe wall temp.:</p> <p>Inputs:</p> <p>Outputs:</p> <p>Degree of protection</p>	<p>PIOX® ID is a permanent ultrasonic measuring system for the non-invasive detection of a fluid from 2 fluids (standard version) or one fluid from 5 fluids (extended version) during tank filling or transfer. On the basis of reliable fluid detection by means of the PIOX® ID, misfuelling and thereby a hazardous mix-up of fluids can be prevented.</p> <p>Available media pairs: NaClO/HCl, NaClO/HNO₃, NaClO/H₂SO₄, NaOH/HCl, NaOH/HNO₃, NaOH/H₂SO₄, H₂SO₄/HCl (others on request) With the following concentrations: NaClO (Sodium Hypochlorite) 12...16% NaOH (Sodium Hydroxide) 30...50% H₂SO₄ (Sulphuric Acid) 93...100% HCl (Hydrochloric Acid) 15...37% HNO₃ (Nitric Acid) 50...65%</p> <p>1 inch to 2.5 inches, DN25, DN 32, DN40, DN50, DN65</p> <p>SS, PVC, PE (others on request)</p> <p>14°F ... +140°F</p> <p>30 °F ... +105 °F</p> <p>1 x Temperature</p> <p>1 x Current, 1 x Binary</p> <p>IP66 / NEMA 4X</p>

Process analytics with the transmitted light refractometer

Laboratory accuracy in the process

Using PIOX® R400, the time-tested transmitted light measurement as a laboratory practice is now reliably available in the industrial process environment. Measurement via the patented transmitted light method ensures maximum reliability. Extremely high measuring accuracy is achieved by measuring the refraction of two monochromatic light beams and evaluating the difference.

The PIOX® R400 comes in two versions, tailored to the requirements of various industries: the PIOX® R400 - H for applications where hygiene is particularly important, e.g. in the pharmaceutical, food and drinks industries as well as the PIOX® R400 - C for applications in the chemical industry. Both versions are available in various designs, materials and with a variety of flange styles which cover a wide range of applications.

Our application engineers are eager to assist you.

PIOX® R400 - H

Process refractometer for hygienic applications

PIOX® R400 - H was developed especially for applications which require the highest level of purity and hygiene. The sensor unit is characterized by its cavity-free design which effectively prevents impurities from accumulating.

PIOX® R400 - C

Process refractometer for chemical applications

PIOX® R400 - C was developed especially for applications in the chemical industry. The sophisticated design and high-quality materials ensure operational safety even under challenging conditions, e.g. when measuring highly aggressive media as well as in potentially explosive areas.

Process Refractometer for Chemical and Hygienic Applications



PIOX® R400 Hygienic design:	The hygienic design of the PIOX® R400 is the ideal process refractometer for applications in the pharmaceutical and food industry. The PIOX® R400 offers maximum process reliability, the highest level of precision and is resistant to deposit formation.	
Measurement range:	nD: 1.3 ... 1.7, °Brix: 0...100	
Accuracy:	nD: 0.0002 (corresponds to 0.1°Brix, typically 0.1 M%)	
Temperature range:	-4 °F ... +300 °F	
Pressure range:	PN10, PN 16, upon request PN 40 (dependent of the process connection)	
Materials wetted sensor:	Stainless Steel 316L (1.4404), Optic: Sapphire	
Enclosure:	Stainless Steel 304 (1.4301)	
Process connection:	Varivent or Tri-clamp compatible process connections	
Degree of protection:	Sensor: IP67 / NEMA 6, ATEX (IECEX) Zone 0/1, 1, 2; Transmitter: PIOX® R704: IP65 / NEMA 4, ATEX (IECEX) Zone 2 optional PIOX® R705: IP66 /NEMA 4X, 316L, ATEX (IECEX) Zone 2	
Model MH, Varivent-Flange N	Model MH, Tri-clamp-Flange 3"	



PIOX® R400 Chemical design	The chemical design of the PIOX® R is the ideal process refractometer for applications in the chemical industry. Due to the special seal design and the fact that the measuring head is separated from the transducer equipment, the PIOX® R ensures maximum process reliability even in the presence of corrosive and toxic media.	
Measurement range:	nD: 1.3...1.7, °Brix: 0...100	
Accuracy:	nD: 0.0002 (typically 0.1 M%)	
Temperature range:	-4 °F ... (+265 °F) +300 °F	
Pressure range:	PN10, PN 16, upon request PN 40 (dependent on the process connection)	
Materials wetted sensor:	Stainless Steel Version: 316Ti (1.4571), Optic: Sapphire PTFE Version: Completely carbon fibre reinforced PTFE, Optic: Sapphire	
Enclosure:	Stainless Steel Version: 304 (1.4301)	
Process connection:	PTFE Version: Epoxy resin coated Stainless Steel 304 (1.4301) DIN/ANSI compatible flange, FLEXIM flow chamber, Richter gauge-glass	
Degree of protection:	Sensor: IP67 / NEMA 6, ATEX (IECEX) Zone 0/1, 1, 2; Transmitter: PIOX® R704: IP65 / NEMA 4, ATEX / IECEX Zone 2 optional PIOX® R705: IP66 / NEMA 4X, 316L, ATEX (IECEX) Zone 2, FM Class I, Div. 2 optional	
Model MC, FLEXIM-Flange	Model LC, DIN / ANSI-Flange	



In partnership

For over two decades, FLEXIM has been leading the way nationally and internationally for process instrumentation in many areas of industry. As a technology leader and pioneer in the field of non-intrusive clamp-on ultrasonic flow measurement of liquids and gases, FLEXIM has repeatedly set standards. In addition to non-intrusive flow measurement, innovative process analytical methods using ultrasound or refractometry are another focal point of our program.

Permanently forward-looking

We're not resting on our laurels. Every year, we invest generously in research and development to further strengthen our position as a technological leader.

In addition to that, we maintain close contact with our customers. Innovative and reliable products that meet the requirements of end users are the result.

FLEXIM AMERICAS is dedicated to the service needs of our customers

FLEXIM's focus and dedication is directed towards providing the highest quality equipment with the best support and service possible.

Our goal is to provide our customers with the level of technical support required to get the maximum benefit from our line of measurement instruments including on-site measurements, flow surveys, flow meter calibration, laboratory analysis, project handling, training, commissioning and consulting.

FLEXIM also offers a wide variety of purchasing options, making the equipment you need affordable on any budget. Whether you are looking to buy, rent, or lease equipment, FLEXIM has a financial plan that will meet your needs.

Individual Service Contracts are available to meet your requirements for preventive maintenance, general maintenance and calibration services. Contact the FLEXIM Service Department for additional information.

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1-888-852-PIPE

