

Processing – Storage – Allocation – Distribution

FLUXUS® H721

Clamp-on Ultrasonic Standard Volume Flow Measurement
and API Determination of Hydrocarbons

Internal flow computer

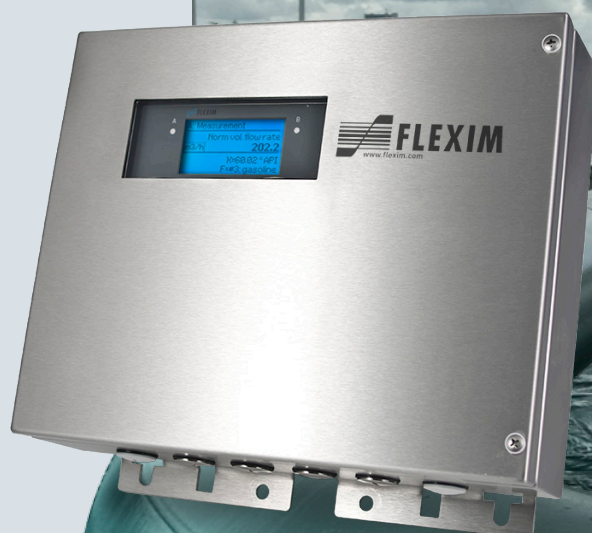
Flexible and
simple parameterization

Pipe integrity

Tank farms

Product quality

Check metering



FLUXUS® H721

Standard Volume Flow Measurement and API Determination from the Safe Side

Key measurement and calculation features

Non-invasive ultrasonic flow meter measures: volume flow, sound speed, temperature and pressure as needed.

Internal HPI flow computer calculates: API gravity, operational (actual flowing) density, density at base conditions and kinematic viscosity.

Volume correction factor for temperature and pressure compensation for liquid hydrocarbons in accordance with industry standard algorithms such as ASTM1250, GPA TP25 and D4311.

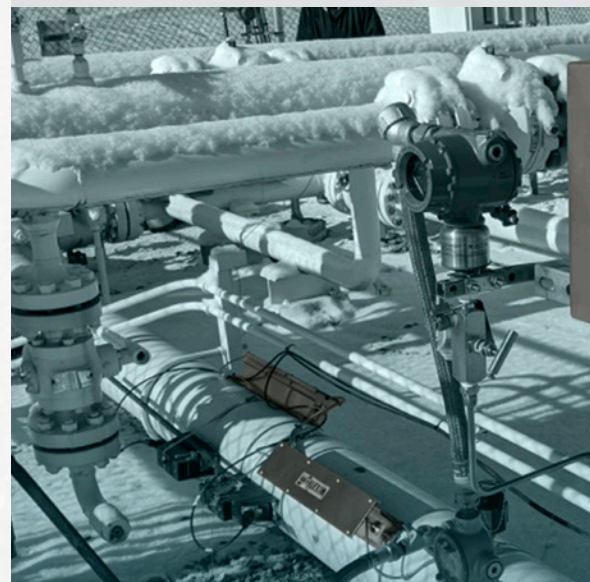
Flexible and simple configuration and setup

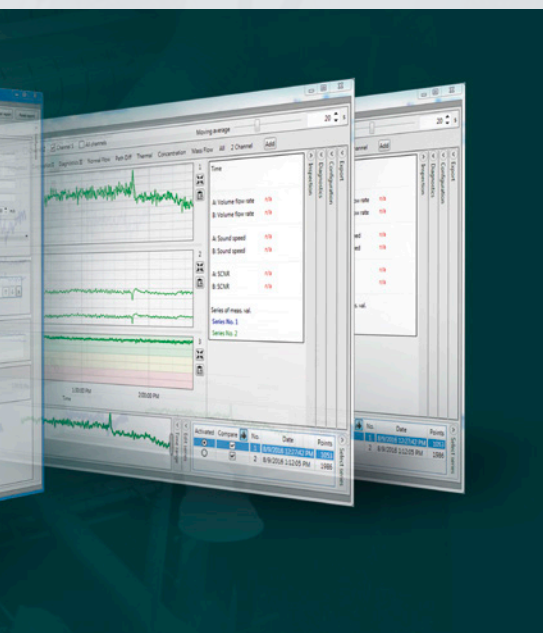
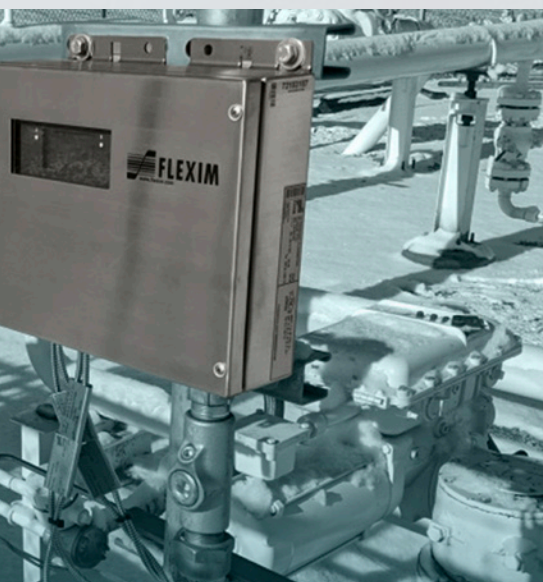
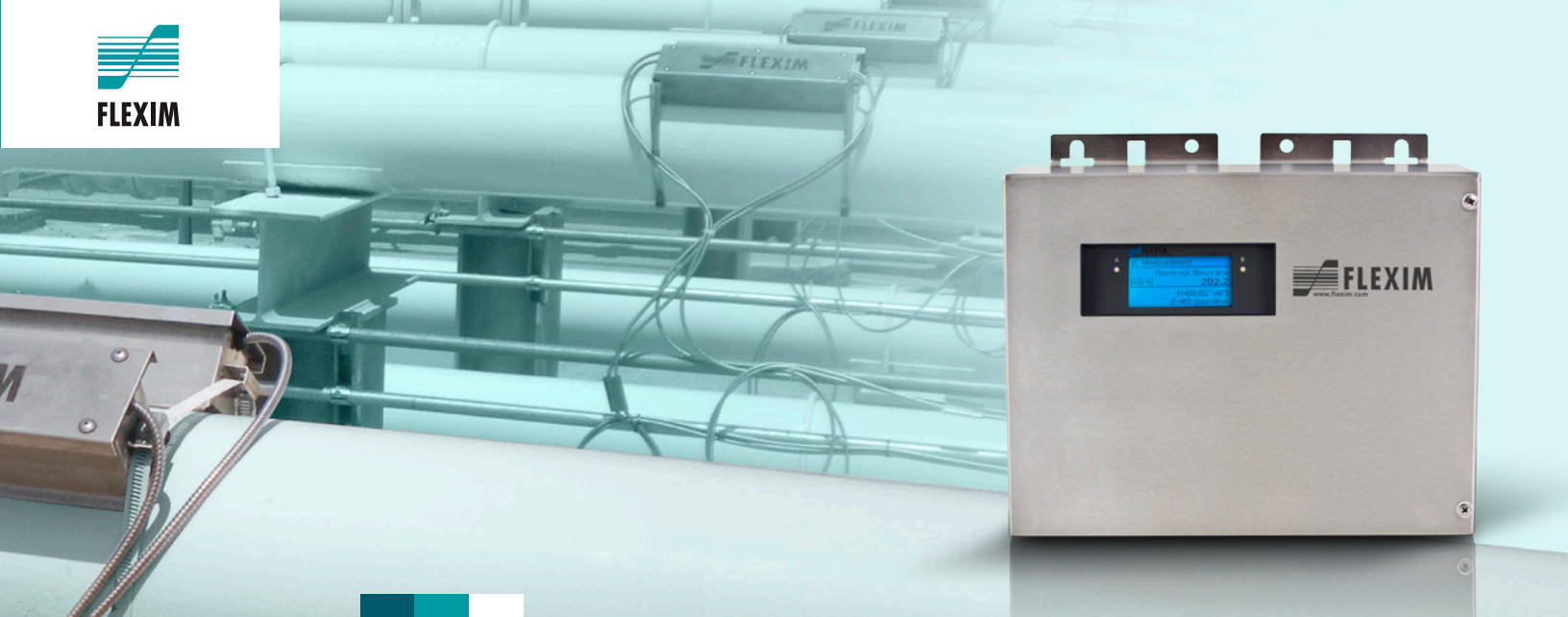
FLUXUS® H721 is equipped with databases for a wide range of applications from light hydrocarbons (LPG, NGL, TP25 liquids) to crude oils/refined products (ASTM1250 liquids) to heavy hydrocarbons (asphalts D4311), see table below.

Application-specific configuration is handled via an editable table in the transmitter with liquid names and specific properties (density, API).

Table of typical hydrocarbon products

Name	API gravity	Density at 60°F [lb/ft³]	Sound Speed at 60°F [ft/s]
LPG	100 ... 150	31.3 ... 38.1	2519 ... 3274
Butane	111	36.3	3120
Pentane	93	39.3	3448
Naphtha	70 ... 85	40.8 ... 43.8	3779 ... 3976
Gasoline	47 ... 68	44.2 ... 49.4	4006 ... 4350
Kerosene	37 ... 50	48.6 ... 52.4	4295 ... 4544
Crude Oil	29 ... 45	50.0 ... 55.0	4386 ... 4721
Heating Oil	22 ... 37	52.4 ... 57.5	4544 ... 4892
Fuel Oil	17 ... 22	57.5 ... 59.4	4892 ... 5026
Marine Fuel	11 ... 17	59.4 ... 61.9	5026 ... 5272
Bitumen/Asphalts	5 ... 10	62.3 ... 64.7	5305 ... 5466





Pipeline integrity

Calculation of standard volumes allows the mass balancing of different measuring points when monitoring the integrity of pipeline systems. The pipeline systems can be single or multiple products. By using FLEXIM's Modbus interface, measuring points can be compared across the entire pipeline system. The H721 meter can be used as a stand alone leak detection system or used in conjunction with a leak detection system.

Tank farms

Liquids are identified when their measured properties match the characteristics in a meter-resident fluid table. This table can be edited by the user in the field device and adapted to the specific HPI application. A slope parameter is provided to output time-dynamic process variables for batch/interface detection.

Product quality

In hydrocarbon transport processes, typical quality characteristics can be monitored. For this purpose, the operating (actual flowing) density, the standard density and the API gravity are output as process parameters in user-selectable units.

Check metering

FLUXUS® H721 can be used to verify other types of custody transfer meters or vital metering locations. The particularly advantageous non-invasive installation allows a check of various third party flow meters.

Selection of operating (actual) volume flow, standard volume flow or mass flow in all common units is easily achievable with FLEXIM's intuitive user menu.

FLEXIM

In partnership
with you

FLEXIM is an active leader in many areas of process instrumentation. As a world-wide pioneer in non-intrusive flow measurement of liquids and gases, FLEXIM has been leading the way in ultrasonic clamp-on flow metering for more than 25 years. In addition to non-intrusive flow measurement, FLEXIM specializes in innovative online process analyzers using ultrasonic technology and refractometry.

Our Berlin-based company has sustained a substantial investment in research and development to maintain and improve its position as a technology leader. In keeping with its core principles, FLEXIM takes customer feedback very seriously. Every generation of FLEXIM's products is directly driven by customer and industry needs.

The FLEXIM commitment to customer service

FLEXIM considers itself not only a manufacturer of measuring instruments, but also a provider of technical and consulting services. These services include instrument rentals, on-site measurement, laboratory analysis, project handling, training, commissioning and consulting services.

The company's focus and dedication are directed toward providing customers with the highest quality equipment along with the best support and service possible.

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Please have a look for your local representative at:

www.flexim.com

or call us at:

1-888-852-PIPE

Technical facts

FLUXUS® H721	
Clamp-on ultrasonic measuring system for non-invasive standard volume flow measurement and API determination of hydrocarbons	
Measuring quantities	flow: operating (actual) volumetric flow rate, standard volumetric flow rate as per ASTM 1250/TP25/4311, flow velocity, mass flow rate → HPI: API gravity, density, normalized density → interface detection: slope of the HPI physical quantities → fluid identification: according to specific application fluid table
Measurement uncertainty	
Volumetric flow rate	±1% of reading ±0.02 ft/s
Transit time (HPI functions)	
Repeatability	$1/(50 \cdot f_n) \pm 10^{-4} \cdot t$
Transmitter	
Hazardous Area Rating	ATEX/IECEx Zone 2, FM Class I, Div. 2
Power supply	100 ... 230 V AC / 50 ... 60 Hz, 12 / 24 V DC
Outputs	4 - 20 mA active / passive, 4- 20 mA HART active / passive, pulse / frequency / binary
Inputs	Pt100 / Pt1000, 4 - 20 mA active /passive, binary
Digital communication	Modbus RTU/TCP, HART, Profibus PA, Foundation Fieldbus, BACnet
Available Transducers	
Hazardous Area Rating	ATEX/IECEx Zone 2, FM Class I, Div. 2
Pipe size range (inner diameter)	0.25 ... 250 inches
Temperature range (pipe wall)	-40 °F ... +450 °F



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