

*Flow-Teknikk as*

**System**  
**1010 Family**  
of Non-Intrusive  
Ultrasonic Flowmeters



Welcome to the world of Controlotron Non-Intrusive Clamp-On Transit-Time Ultrasonic Flowmeters, (plus a few special ones that need to be intrusive). Since being non-intrusive is the key to universal applicability, it should not surprise you that our products are found in essentially every industry, and in most of their applications.

This short brochure is just a taste of our broad product line, consisting of well over 100 individual models in 6 major product families. This wide choice assures you that there is a model which is more perfect for you than essentially any other flowmeter technology. You will find that they will give you...

- Very high accuracy
- Very high reliability
- Excellent cost effectivity
- Direct interchangeability with conventional intrusive flowmeters...

and, they will provide performance not available from any other flowmeter, even competitive Ultrasonic Flowmeters.

The 1010 Clamp-On products share many common technological advances:  
All use Controlotron's exclusive Wide Beam Transducers, which.....

- Insure accurate flow measurement regardless of the liquid type or temperature.
- Enable operation with up to 50% Aeration, and indicate its presence.
- Are resistant to Aberrated Flow Profile and Crossflow errors.
- Provide continuous Automatic Zero Adjustment to prevent Zero Drift.
- Are fully maintainable without need to open pipeline or stop flow.
- Sonic identification of Product Type and Quality.
- Provide all conventional digital and analog data outputs.

Since this short brochure cannot hope to provide all the information that you may desire, simply use it to locate your class of applications, and the Families of products that we offer for each. Then feel free to call on us or our local representatives for much more information that is available when you contact us...

## The Hydrocarbon Industry Products Family, for Production Fields, Pipelines and Refineries

Among the products listed below are the most accurate and application friendly flowmeters available to the Hydrocarbon Processing industry. These products truly are cost effective, and provide valuable functions and features not available from any other type of meter.



### The 1010DV Field Proved Clamp-On Custody Transfer and Check-Metering Mass Flowmeters

1010DV meters are extensively used on many Crude Oil and Refined Product pipelines to provide Custody Transfer (with Field Prover) and Check-Metering service in both onshore and offshore applications.

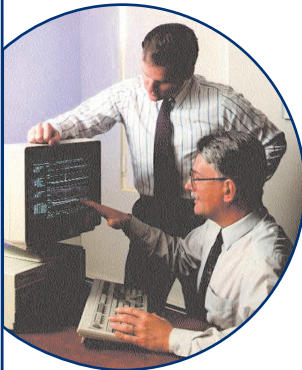
### The 1010GC Portable and Dedicated Clamp-On Natural Gas Check-Metering Flowmeters

A major Controlotron innovation is the adaptation of our High Precision Clamp-On Liquid flowmeters to previously unachievable Clamp-On Natural and Process Gas metering. Available as either 1010GC Portable or Dedicated Installation models, Controlotron's Wide Beam Gas Transducers can measure flow rate of gas without stopping flow or cutting pipe. They are ideal for Check-Metering or simply to determine how your process is operating.



### The 1010LD Turnkey Pipeline Leak Detection and Leak Location Systems

Over 30 Major international installations testify to the high performance and reliability of Controlotron's 1010LD Leak Detection and Pipeline Management systems. This complete Software and Hardware solution assures that Controlotron can take full responsibility for all aspects of operation and performance, as compared to hybrid systems. Optimized trend performance to better than 0.25 % in One Minute. Separate 1010LL Leak Location system triangulates leak location to within 10 meters in most applications.



### The 1010G Pre-Calibrated Natural Gas Custody Transfer and Check-Metering Spool Flowmeters

Controlotron's 1010G Natural and Process Gas flowmeters operate at pressures from less than one atmosphere to over 3000psi, in pipes from 2 inches to 48 inches. Provided as a pre-calibrated Spool, 1010G is available in affordable High Precision models, as well as Ultra Precision 8 Path systems for certified AGA-9 Custody Transfer applications.



### The 1010S Pre-Calibrated Liquid Clamp-On Spool Custody Transfer and Check-Metering Flowmeters

Controlotron's Clamp-On technology, delivered as a fully installed, operational and Calibrated system provide the reliability of 1010 Clamp-On systems with the Certified pre-calibrated accuracy well known to those who have used these systems for many years. Ideal for Crude Oil and Refined products with proved batch accuracy of better than 0.1%.



### The 1010GCS Pre-Calibrated Gas Clamp-On Spool Natural and Process Gas Custody Transfer Flowmeters

Providing 1010GC Clamp-On Gas flowmeters already installed on a Spool, and pre-calibrated, provides a Custody Transfer certified flowmeter in full accordance with AGA-9. Simply install as you would with other Intrusive gas flowmeters, and never be concerned with need to stop operations to service transducers, or deal with cumbersome Retrieval tools. Clamp-On transducers do not require the cavities needed by intrusive gas flowmeters, which are a source of failure due to build-up of deposits.



**The 1010P Portable Flow Survey Family**

Battery operated portable Compact and Weatherproof Single and Dual-Channel Clamp-On Transit-Time flowmeters for accurately checking calibration of installed flowmeters of all types, for all locations which do not require continuous monitoring.



**The 1010N and 1010X Dedicated General Purpose Family**

Easily installed without cutting pipe or stopping flow, these meters provide extremely accurate Wide Beam Transit-Time ultrasonic flowmetering. Suitable for essentially any liquid, and capable of operating even under high aeration conditions that usually require less accurate Doppler flowmeters.



**The 1010E Portable and Dedicated Thermal Energy Family for the HVAC Industry**

Just like the 1010P and 1010N families, except specially adapted to the needs of the HVAC industry for measurement and billing for the value of delivered thermal energy. Portable models are used to check the efficiency of chillers and heat exchangers to insure optimum efficiency and cost savings.



**The 1010FT Pre-Calibrated Clamp-On FlowTubes for High Accuracy Process Control Flowmetering**

Unique among ultrasonic flowmeters is the ability to provide high accuracy non-intrusive Clamp-On flowmetering on pipes from 1/4 inch to 4 inches in diameter. Among the primary features of the 1010FT are exceedingly Low Pressure Drop, choice of either Volumetric or Mass Flowrate, calibrated accuracy to better than 0.1%, bi-directional flowrate over a range of true Zero to over 40 ft/second.



**The 1010A Aerospace Hydraulic System Test and Aircraft Engine Fuel Flowmeters**

Adapting the 1010FT's ability to provide accurate flowmetering on small pipes, the 1010A provides airlines with an instrument that enables FAA Hydraulic System test requirements to be met in only hours, instead of days. Test of the system is enabled by simply "Snapping On" the 1010A transducers to the hydraulic lines. Fuel Flow instruments are available to replace low reliability mechanical turbine type flowmeters with an increase in accuracy of 10:1, and no need for periodic maintenance or re-calibration.

**Flow-teknikk as**