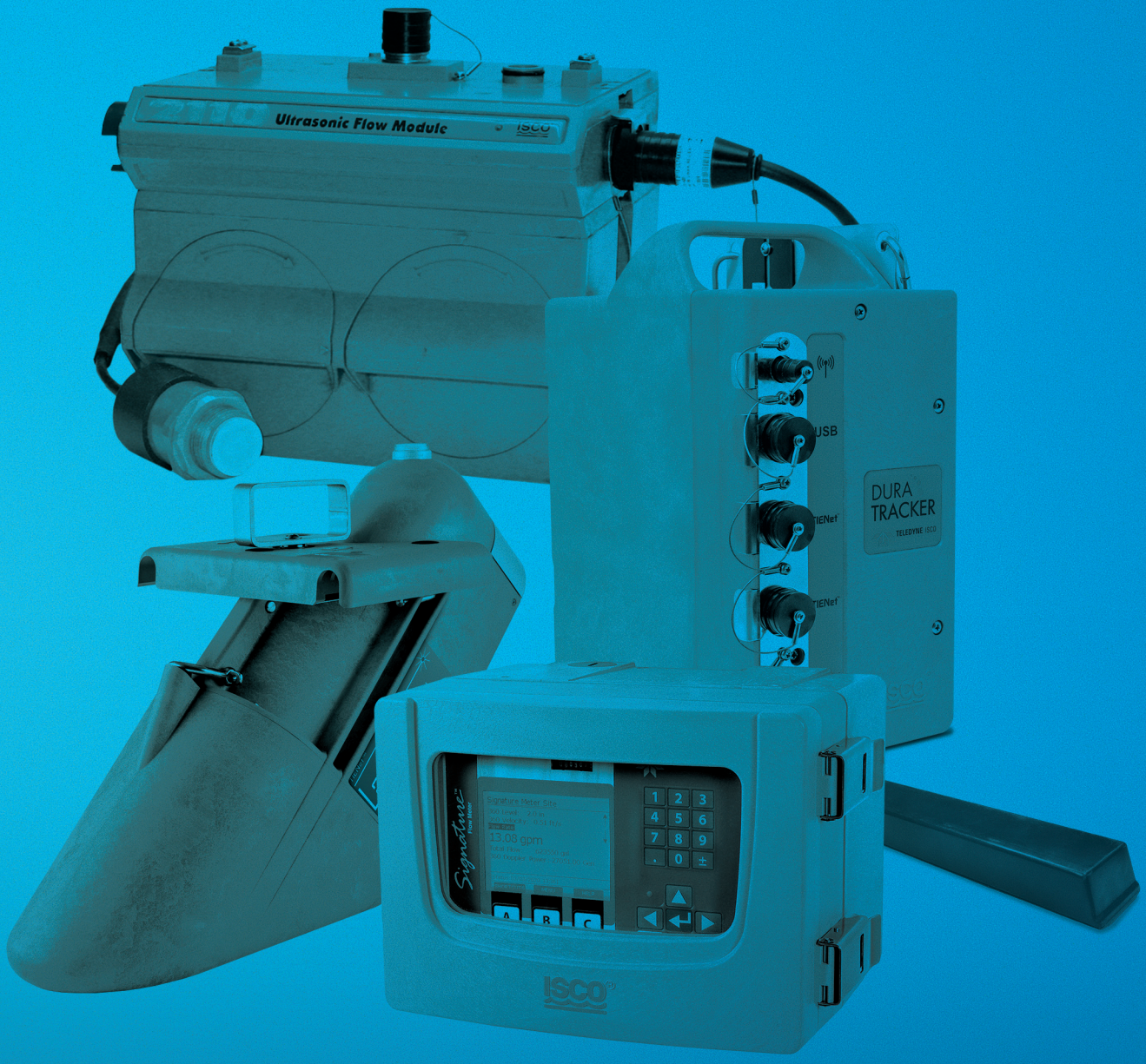
TELEDYNE ISCO
Everywhereyoulook™

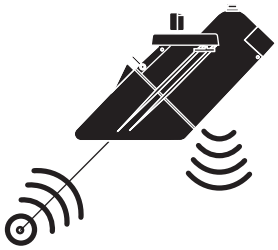


FLOW MEASURING PRODUCT GUIDE

ISCO

Flow Measurement Technologies

No matter how challenging the application or site conditions, Teledyne ISCO offers a proven technology for your needs.



NON-CONTACT

LASERFLOW® VELOCITY SENSOR

The LaserFlow and LaserFlow Ex* sensors use a laser to read the average velocity of water. LaserFlow is mounted above the flow stream and determines depth using an ultrasonic sensor. The sensor directs the laser to the proper depth, where it takes 5,000 velocity readings, below the surface of the flow, over a two second period. The resulting Doppler shift produced by bubbles and solids flowing in the water determines the velocity of the flow.

NON-CONTACT

ULTRASONIC

With the TIENet® 310 Ex* ultrasonic level sensor mounted above the flow steam, transmitted sound pulses are reflected off the liquid surface. The elapsed time between transmitted and returned signals determines liquid level. Flow rate is then calculated using one of the meter's built-in flow conversions, or a user-defined level-to-flow relationship.

CONTINUOUS-WAVE DOPPLER

The TIENet 350 Ex* area velocity sensor continuously transmits an ultrasonic signal into the flow stream. The signals are reflected off bubbles and solids and return to the sensor with a frequency shift (Doppler effect), which is translated into velocity. A differential pressure transducer in the sensor measures liquid depth in order to determine the wetted area. Flow rate is then calculated by multiplying the wetted area of the flow stream by its average velocity.

BUBBLER MODULE

Teledyne ISCO's TIENet 330 bubbler module technology is ideal in flow streams affected by harsh weather, debris or corrosive chemicals. Since the depth of flow is determined by measuring the pressure needed to force bubbles out of the line, the rate of flow is easily determined using one of the meter's built-in flow conversions or a user defined level-to-flow relationship.

**Certified for hazardous areas classified as Class I, Div 1, Zone 0 and ATEX category 1G.*

RECOMMENDED APPLICATIONS	DuraTracker Area Velocity	DuraTracker Non-contact Ultrasonic	DuraTracker LaserFlow Non-contact Sub-surface	2150 Area Velocity Flow Module* Continuous-wave Doppler	2110 Ultrasonic Flow Module Non-contact Ultrasonic	2160 LaserFlow Non-contact Sub-surface	Signature** Bubbler	Signature** Area Velocity	Signature** Non-contact Ultrasonic	Signature LaserFlow** Non-contact Sub-surface
Channels/Pipes (<36″)***	X	X	X	X	X	X	X	X	X	X
Large Channels/Pipes (>36″)***	X	X	X	X		X	X	X	X	X
Large Pipes (Low Depth <3″)***	X	X	X	X	X	X	X	X	X	X
Concrete-lined Open Channels	X	X	X	X	X	X	X	X	X	X
Primary Devices (Weirs & Flumes)		X	X				X		X	X
Intrinsic Safe Applications		X	X		X	X		X	X	X
Compound Pipes (Surcharge)	X	X	X	X					X	X

** CSA- and Baseefa- approved versions available for intrinsically safe use.* *** Certified to MCERTS* ****Nominal level*

FLOWLINK® DATA MANAGEMENT SOFTWARE

The industry's premier data handling software provides a wide variety of advanced capabilities to efficiently manage and analyze data—as well as your entire water monitoring program.

- Analyze data and create reports with a few clicks
- Make more-informed decisions
- Verify sewer rehab activities

Flowlink lets you generate informative graphs and tables for detail analysis. It allows you to create computed data sets for weather related changes. Detail reports can be generated with a single mouse-click.

Embed Flowlink graphs and tables into Microsoft Word®, Excel®, and PowerPoint®. Import and incorporate data from other sources, and export to an CSV spreadsheet file for analysis with programs such as Microsoft Excel.

Flowlink Cipher

Flowlink Cipher represents the latest advancement in Teledyne ISCO's Flowlink series of data management solutions. Now an advanced cloud-based solution, Flowlink Cipher allows site managers to view and manage all data at multiple sites through an easy-to-use and powerful browser-based user interface. Centralized, secure, cloudbased access to device status, site status, and flow data occurs through desktops, laptops and tablet mobile devices with no need for client software or mobile app. With AWS hosting security, there is no better protection from service interruptions or data loss. Advanced user administration provides five levels of access with user profiles including View Only, Editor, Analyst, Site Manager, and Administrator.

COMMUNICATION OPTIONS

Teledyne ISCO instruments include a variety of communication methods to facilitate flow monitoring, deliver off-site data and provide alarm.

Cellular LTE Options

An internal LTE cellular modem enables long-distance, remote programming, data retrieval, and alarms. Data can be automatically sent to server at set time intervals.

Interface Module

Integrates multiple field instruments and provides a common platform for logging and communications. Optional versions include built-in LTE capability and remote or online data access.

Bluetooth

Bluetooth capabilities make the programming, sensor calibration, and data retrieval job easy through wireless devices.

TIENet®

Teledyne ISCO Environmental Network—TIENet—devices provide seemless integration of a variety of sensors to the flowmeter of your choice.

- TIENet input and output devices use a common, proprietary interface protocol.
- Low system-integration cost with multiple measurement technologies, input/outputs, protocols and communication options.
- Configurable and upgradable without hardware or firmware changes.
- Quick set-up with an identifiable, unique address for each device.
- Easy trouble-shooting with built-in device diagnostics.

SUITABILITY GUIDE

With more than five decades of industry leadership, Teledyne ISCO continues to advance automated water and wastewater flow measurement technology by developing durable and innovative products.

We offer a wide range of flowmeters to meet your specific application needs. For in-depth information on Teledyne ISCO flowmeter products, contact your authorized representative, or visit us on the web at **teledyneisco.com.**

Collection Systems

- Flow measurement choices with unique benefits for capacity assessment, inflow and infiltration, and sanitary sewer evaluation
- Energy efficient battery-powered flow loggers for portable installation
- Remote telemetry options for flow loggers in permanent installations

SSOs and CSOs

- Flow monitoring systems with unique technologies for low and high water level applications
- Event notification and remote telemetry options
- NEMA 6P and IP68 protection

Wastewater Treatment Plants

- Cost-effective alternatives to primary devices at plant inlet, eliminating downstream excavation and construction costs
- Choice of flow technologies to measure flow in chlorine contact or effluent discharge
- SCADA connectivity

Stormwater Runoff

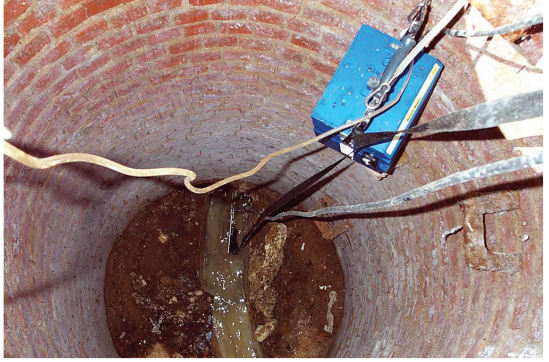
- Dry and wet weather flow studies in conjunction with rainfall
- Parameter, rain gauge, automatic sampler interface with flowmeter
- Remote telemetry system

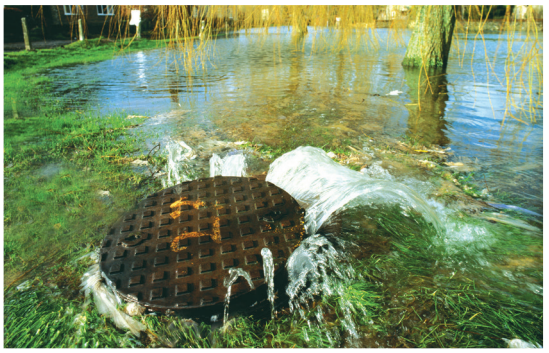
Lift Stations

- Accurate flow measurement during varying inflow conditions
- Accurate full-pipe flow measurement without lengthy straight runs or bypass
- Remote telemetry system

Billing/Custody Transfer

- Highly accurate flow measurement with and without primary devices
- Accurate flow measurement for turbulent flow, and zero or near-zero velocities





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Teledyne ISCO is continually improving its products and reserves the right to change specifications without notice.

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