



TELEDYNE ISCO
Everywhere you look™



Avensys

SAMPLER SOURCE BOOK

AUTOMATED WATER SAMPLING

ISCO

Teledyne ISCO Samplers

Teledyne ISCO Samplers set the stage for being first in many categories. Our advances include the first non-contacting liquid detector, first outdoor refrigerated sampler, and first sampler with interchangeable modules for measuring flow and parameters. Through listening to our customers, innovation, continuous improvement, emphasis on quality and reliability, Teledyne ISCO continues to lead the way with samplers for every application:

- Industrial pretreatment compliance monitoring
- Storm water runoff monitoring
- CSO (combined sewer overflow) monitoring
- Regulatory compliance monitoring
- Water quality research
- Specialized applications such as monitoring for radio nuclides
- Surveillance for WBE/PFAs/Opioid



Integrated Manufacturing

Our in-house design, manufacturing, and assembly team assure consistent quality and superior performance. You can depend on Teledyne ISCO products.

Worldwide Sales and Service

Friendly, knowledgeable help is available in more than forty countries. Contact us today to arrange a consultation or product demonstration.

Rental

The ideal way to avoid large capital outlays for short-term projects. Whether you need one sampler or fifty, Rental offers competitive rates and fast delivery.

Sampler Selection Guide

Sampler Model												
Applications	Portable						Refrigerated				Portable Refrigerated	
	GLS	3700	3710	3700C	6712	6712C	5800	6712FR	Platinum™	Optima	Avalanche®	Glacier®
WWTP	X	X	X	X	X	X	X	X	X	X		
Collection Systems	X	X	X	X	X	X					X	X
Water Quality Monitoring												
Stormwater					X	X		X			X	
TMDL					X	X		X			X	
Watershed					X	X		X			X	
Resource Water					X	X		X			X	
River Monitoring					X	X		X			X	
Sampler Accessories												
Flow-Through Chamber	X	X	X	X	X	X	X	X	X	X	X	X
674 Rain Gauge					X	X		X			X	
700 Modules					X	X		X			X	
Pressurized Line Sampling					X	X		X			X	
1640 Liquid Level Actuator	X	X	X	X	X	X	X	X			X	X
Locking Harness		X	X	X	X	X					X	X
Suction Line & Strainer	X	X	X	X	X	X	X	X	X	X	X	X
Street Level Tools												
Suspension Harness	X	X	X	X	X	X						
ProHanger™	X	X	X	X	X	X						
Street Level Installation Tool					X	X		X			X	
Data Handling												
Flowlink® Software					X	X		X			X	
6712Ci Cellular					X	X		X			X	
581 RTD					X	X		X			X	
Land Line Modem					X	X		X			X	
2105 Interface Module	X	X	X	X	X	X	X	X			X	X
Power Products												
Batteries	X	X	X	X	X	X						
Solar Chargers	X	X	X	X	X	X					X	X

5800 SAMPLER

Stationary Refrigerated Sampler

The 5800 Refrigerated Sampler is Teledyne ISCO's answer to the rigorous demands of water monitoring. With user-friendly controls and workplace-savvy features, the 5800 is the only choice for stationary sampling in both municipal and industrial wastewater applications.

All Weather and Corrosion Protection

The 5800's UV protection ensures product longevity and reliability, while the tough double-wall LLDPE construction is designed to withstand the harshest outdoor environments without requiring a protective enclosure.

The insulated refrigerator with high efficiency 1/6 HP compressor keeps samples cool in hot, humid conditions and the interior heaters keeps samples from freezing in cold conditions.

Modular Design for Easy Servicing

- Control Panel
- Pump Assembly
- Distributor Assembly
- Refrigeration Assembly
- Power Supply Assembly

Standard Features

- Composite and sequential sampling
- -20 ° to 120 °F operating temperature range
- Four digital alarm outputs
- 4–20 mA flow meter input



- Weight: (dry) 184 lbs. (83.5 kg)
- Dimensions: (H x W x D) 52 x 28 x 33 in (132 x 72 x 84 cm)
- Operating Temperature: 32 ° to 120 °F (0 ° to 49 °C)
- Controller Rating: NEMA 4X, 6 IP67

PLATINUM™ / OPTIMA

Stationary Refrigerated Sampler

The Platinum and Optima vacuum samplers from Teledyne ISCO are a heavy duty, all season refrigerated composite/sequential wastewater sampler. With a fiberglass base and body, the all season units are suitable for corrosive environments and severe outdoor/indoor conditions.

These vacuum pumps exceed EPA transport velocity requirements and generate a stronger purge. The Platinum and Optima samplers collect specified volumes of water at programmed times or flow intervals and deposits them into refrigerated composite or sequential sample containers.

Their piston vacuum pumps provide long-term consistent sampling with vertical lifts of up to 28 feet (8.5 m), with no need to frequently replace the internal tubes. With a powerful pump, the sampler can draw a sample from a longer distance.

Vacuum Pump Technology

- 110/220 Vac
- In-door/out-door use
- Volumetric (CVE) and Gravimetric (QLS) sample volume control
- Composite and sequential sampling
- -20 ° to 120 °F operating temperature range
- Flow inputs: pulses, 4–20 mA, 0–10 Vdc, 0–5 Vdc

Platinum

- Composite and sequential sampling—wide choice for bottle configurations

Optima

- Composite and sequential sampling with 24 bottles



- Weight: (dry) 190 lbs. (86.2 kg)
- Dimensions: (H x W x D) 49 x 25.5 x 25.5 in (124 x 65 x 65 cm)
- Operating Temperature: -20 ° to 122 °F (-29 ° to 50 °C)
- Controller Rating: NEMA 4X, 6 IP66

3700 AND GLS SERIES SAMPLERS

Portable Sampler



3700 Full Size Sequential/Composite Sampler

Our full-featured 3700 Sampler collects sequential or composite samples based on time or flow. The full-size 3700 sampler is ideal for general purpose sampling and offers features for most applications.

This sampler is also offered with a jumbo base to allow for larger single bottle sampling volumes.



- Weight: (dry) 37 lbs. (16.8 kg)
- Dimensions: (H x D) 25.25 x 19.88 in (64.1 x 50.5 cm)
- Operating Temperature: 32° to 120 °F (0° to 49 °C)
- Controller Rating NEMA 4X, 6 IP67



3700C Compact Sequential/Composite Sampler

The 3700C is ideal for moving from one site to another. Its small size and weight allows for easy installation into 18- inch (0.46 meter) diameter manholes without disassembly or awkward maneuvering.

Our unique bottle carrier for sequential sampling makes bottle changing quick and easy.



- Weight: (dry) 25 lbs. (11.3 kg)
- Dimensions: (H x D) 27.75 x 17.75 in (70.5 x 45 cm)
- Operating Temperature: 32° to 120 °F (0° to 49 °C)
- Controller Rating: NEMA 4X, 6 IP67



3710 Full Size Composite-only Sampler

Economical 3710 Samplers provide composite sampling only, delivering savings where sequential sampling isn't needed.



- Weight: (dry) 32 lbs. (16.8 kg)
- Dimensions: (H x D) 28.75 x 19.25 in (73.3 x 48.9 cm)
- Operating Temperature: 32° to 120 °F (0° to 49 °C)
- Controller Rating NEMA 4X, 6 IP67



GLS Composite

Teledyne ISCO's smallest sampler, the GLS composite sampler delivers full-size sampling capability and goes where standard samplers won't. Its tapered design slips easily in and out of small or offset manholes.



- Weight: (dry) 24.5 lbs. (11.1 kg)
- Dimensions: (H x D) 26.5 x 16.5 in (67.3 x 41.9 cm)
- Operating Temperature: 32 ° to 120 °F (0° to 49 °C)
- Controller Rating: NEMA 4X, 6 IP67

**Patent 5,125,801*



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6712 SERIES SAMPLERS



Since their introduction, Teledyne ISCO's 6700 Series Samplers have set the industry standard for performance, reliability, advanced features, and ease of use.

6712 Samplers offer "plug and play" sampling and data logging, compatible with a variety of equipment and allowing you to get the most from your sampling budget.

Superior Sample Delivery With Our High-performance Peristaltic Pump

The 6712 pump delivers samples at U.S. EPA-recommended 2.0 f/s (0.61 m/s), even at head heights of 25 ft (7.6 m). At a 3 ft. head, line velocity is 3.1 f/s (0.94 m/s).

Our pump revolution counter assures consistent sample volumes, even when battery power is low, and is used to notify you when pump tubing should be replaced. An exclusive safety interlock automatically disables the pump when you change tubing.

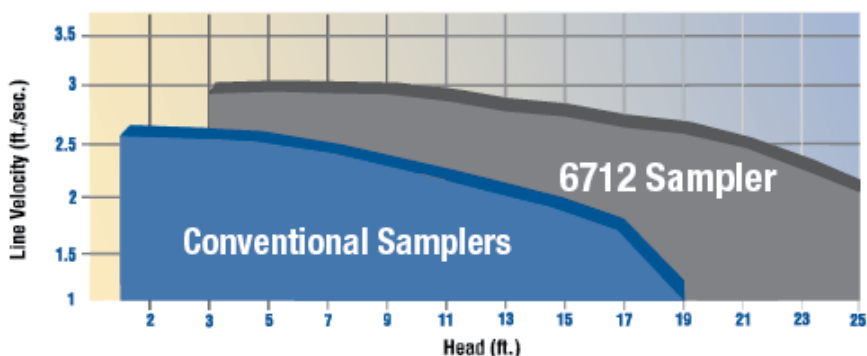
LD-90 Liquid Detector

This patented* non-contacting detector ensures that sample volumes are precise and repeatable—regardless of head height variation. Upon liquid detection, sample volume is metered by our pump revolution counter.

*Patent # 5,125,801

- Expand your monitoring capabilities with plug-in modules for flow, pH, and other parameters.
- Get accurate, repeatable samples with exclusive delivery system.
- Benefit from multi-parameter capabilities and data logging.

Pump Performance Comparison



The 6712 pump is not as affected by varying head heights as other samplers. From one sample to the next, the 6712 pump eliminates variability in sample content due to inconsistent sample velocities.

Get the advantages of "Smart Monitoring" with these 6712 capabilities.

Versatile Programming

Teledyne ISCO 6712 Standard and Extended program modes allow efficient setup for virtually any application:

- Stormwater monitoring
- CSO and SSO monitoring
- Regulatory compliance
- Enforcement monitoring
- Data logging

And with the 6712, on-line programming help is just a keystroke away.

Standard Program Mode

Quickly select the desired parameters and sampling sequence from the simple step-by-step menu.

Choose:

- When to start
- Sample distribution
- Volume to collect
- Time- or flow-pacing

In continuous sampling mode, just replace filled bottles with empty ones.

Extended Program Mode

Easily enter complex programs for unique applications. Actuate via plug-in modules, rain gauges, or multi-parameter sondes. Store up to 5 different sampling programs.

Available routines include:

- Pause and resume for intermittent discharge flow monitoring
- Sampler pacing by time, non-uniform time, flow, or external event
- Flow-weighted sample collection
- Two-part programming to enable and sample in two different modes



Integrated Water Monitoring

Teledyne ISCO 6712 Samplers feature "Plug-and-Play" connection for and other SDI-12 sensors. Use inputs from up to ten separate sensors for flexibility in logging data and triggering sample collection.

Data Logging

The 6712 functions as a data logger while connected to various Teledyne ISCO measurement devices, SDI-12 sensors, or thru the 780 smart module. Data can be retrieved using Flowlink software for data analysis.

Get integrated measurement and reporting capabilities for:

- TMDL monitoring
- Stormwater runoff
- Rivers, lakes, and estuaries
- Non-point source pollution
- Combined sewer overflow
- Wastewater influent/effluent
- Industrial enforcement monitoring

6712 SERIES SAMPLERS

Continued

6712FR Stationary Refrigerated Sampler

You get proven protection from exposure to hostile environments—indoors or out. The exterior is custom molded from polyester resin fiberglass. UV-resistant gel coat provides a smooth finish for easy cleaning and protection from the sun.

An automatically controlled, built-in heater, prevents sample freezing down to -24 °F (-31 °C) and provides frost-free operation. A solid-state thermostat and three temperature sensors monitor interior and ambient air as well as the evaporator plate for absolute temperature control. Optional temperature logging displays real-time temperature and stores periodic readings for later retrieval. Thick, foamed-in-place insulation guarantees properly preserved samples. The rugged stainless steel framework and refrigeration components are protected by polyester tubing, phenolic paint, or polyester powder coating. An optional controller heater can be added to insure uninterrupted operation down to -20 °F (-29 °C).



- Weight: (dry) 160 lbs. (73 kg)
- Dimensions: (H x W x D)
49.3 x 26 x 26 in
(125 x 66 x 66 cm)
- Operating Temperature:
32° to 120 °F (0° to 49 °C)
- Controller Rating:
NEMA 4X, 6 IP67





6712 Full Size—Portable Sampler

The 6712 Sampler offers the most versatility for many sampling applications. Twelve bottle configurations facilitate all types of monitoring.

The 6712 holds up to 30 pounds (13.5 kg) of ice in its fully insulated base.

Note: Also available with jumbo base for use with 5- and 5.5-gallon bottles.



- Weight: (without bottles, battery or ice) 32 lbs. (15 kg)
- Dimensions: (H x D) 27.0 x 19.96 in (68.6 x 50.7 cm)
- Operating Temperature: 32° to 120 °F (0° to 49 °C)
- Controller Rating: NEMA 4X, 6 IP67



6712C Compact—Portable Sampler

The 6712C is ideal when you require advanced capabilities in a smaller sampler. Its tapered design allows it to easily maneuver through small or offset manholes.

This compact sampler also uses our convenient bottle carrier system—which provides faster and easier bottle exchange. Simply remove the carrier from the base, and replace it with another. It is also a safe and convenient way to transport your samples to the lab.



Optional Bottle Carrier



- Weight: (without bottles, bottle carrier, battery, or ice) 31 lbs. (14 kg)
- Dimensions: (H x D) 27.6 x 17.75 in (70.1 x 45.1 cm)
- Operating Temperature: 32° to 120 °F (0° to 49 °C)
- Controller Rating: NEMA 4X, 6 IP67

PORTABLE REFRIGERATED SAMPLERS



Glacier® Composite Sampler

The compact size, light weight, and mobility of a portable without the need for ice.

Its power-saving cooling system is set to standby until the first sample is drawn. Glacier will wait patiently for days—or weeks—to collect event-triggered samples, then preserve them until a convenient pick-up time.

You can expect 48 hours or more of refrigeration time from a 12 Volt deep-cycle battery.



Glacier shown with mobility cart option.

- Weight: (dry, less battery) 60 lbs. (28 kg)
- Dimensions: (H x W x L) 25 x 15 x 24 in (63 x 38 x 60 cm)
- Operating Temperature: 32° to 120 °F (0° to 49 °C)
- Controller Rating: NEMA 4X, 6 IP67



Avalanche® Multi-bottle Sampler

The Avalanche is based on industry-leading 6712 controller, so in addition to its power-saving standby feature, you can set and run a variety of sampling programs.

Samples are accurately preserved at 4 °C, even under the most difficult conditions.

The cooling compartment accepts configurations ranging from a single 5- or 2.5 gallon bottle to four 1-gallon, or fourteen 950 mL containers.



Avalanche shown with mobility cart option.

- Weight: (dry, less battery) 76 lbs. (35 kg)
- Dimensions: (H x W x L) 30.5 x 14 x 24 in (78 x 36 x 60 cm)
- Operating Temperature: 32° to 120 °F (0° to 49 °C)
- Controller Rating: NEMA 4X, 6 IP67



700 SERIES

Plug-in Modules



701 pH and Temperature Module

Accurate pH and temperature monitoring in a single module. Activate your 6712 Sampler at user-selected pH or temperature ranges and save by collecting and analyzing only samples outside normal parameters.



720 Submerged Probe Flow Module

A differential pressure transducer provides accurate measurement where wind, steam, foam, turbulence, or air temperature fluctuations exist—even if the probe gets covered with silt or sand.



730 Bubbler Flow Module

Unaffected by changing stream conditions, the 730 delivers accurate level measurement despite temperature fluctuations and exposure to harsh chemicals.



Choose standard or low-profile

750 Area Velocity Flow Module

Get accurate measurement where weirs and flumes aren't practical—or where submerged, full-pipe, surcharged, and reverse flow conditions may occur. No need to estimate channel slope or roughness. Sensor uses patented* Doppler technology to directly measure average flow velocity.



780 Analog Input Module

Add intelligent interpretation of any 4–20 mA signal. Characterize analog signals as flow rate or percentage of full scale. Pace or trigger your 6712 Sampler, and store data for retrieval and analysis.



Plug-in Modules

700 Series Modules let you add flow measurement, pH, or intelligent analog input to your 6712 Sampler.

6712 Sampler logs the data for later retrieval or view parameter data on the display. Data includes summaries, flow rate, level, pH, and temperature, along with sampling status. Parameters can be used to trigger sampling programs or sample pacing.

*Patent # 5,371,686

DATA MANAGEMENT

Data Retrieval and Reporting

The 6712's large memory allows you to capture a large amount of sampling and parameter data that can be retrieved by various methods. You can retrieve your program settings for spot checking and chain-of-custody documentation.

Telephone Modem

This modem lets you initiate sampling routines or change programs, have the sampler call you for user-programmable alarm conditions, and retrieve data (using Flowlink software).

6712Ci Cellular Modem Capability

Teledyne ISCO offers cellular communication for 6712 and Avalanche Samplers located in remote or difficult-to-access areas. This 6712Ci cellular modem allows samplers to transmit text message alarms to a text-enabled phone or pager, and to communicate with an internet-enabled PC for remote data retrieval and control.

Specific contact times can be programmed allowing energy saving features to power down the system during the "off" times, without affecting alarm notification ability.



581 Rapid Transfer Device

A durable alternative to exposing vulnerable laptops in the field is our pocket-sized RTD. Simply plug it into the port on a 6712 Sampler—or other instruments—and level, rainfall, water quality, and sampling data are quickly transferred to the device.

Its flexible memory has storage for over 900,000 bytes of data—typically enough to retrieve data from 2 samplers.

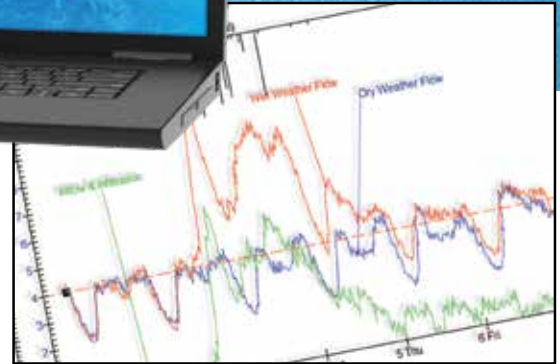


2105 Interface Module

The 2105 Interface Module records data from Rain Gauges, and other SDI-12 devices, Flow Meters, and devices with Modbus and analog outputs. The 2105 can also take ASCII inputs from 6712 automatic samplers.

The 2105 monitors recorded data and takes intelligent actions, such as sampler enabling and pacing, as well as alarm generation based on user-specified conditions. Recorded data can be output via Modbus and/or 4–20 mA.

The 2105 offers remote communication for CDMA, and GSM cell phones (other communication devices require an additional module.) It provides a powerful, yet easy, solution for environmental studies that require interfacing of multiple instruments and common communication platforms.



Flowlink® Data Management Software

The industry's premier data handling software provides a wide variety of advanced capabilities that add convenience and value to the 6712 and Avalanche Samplers—as well as your entire water monitoring program.

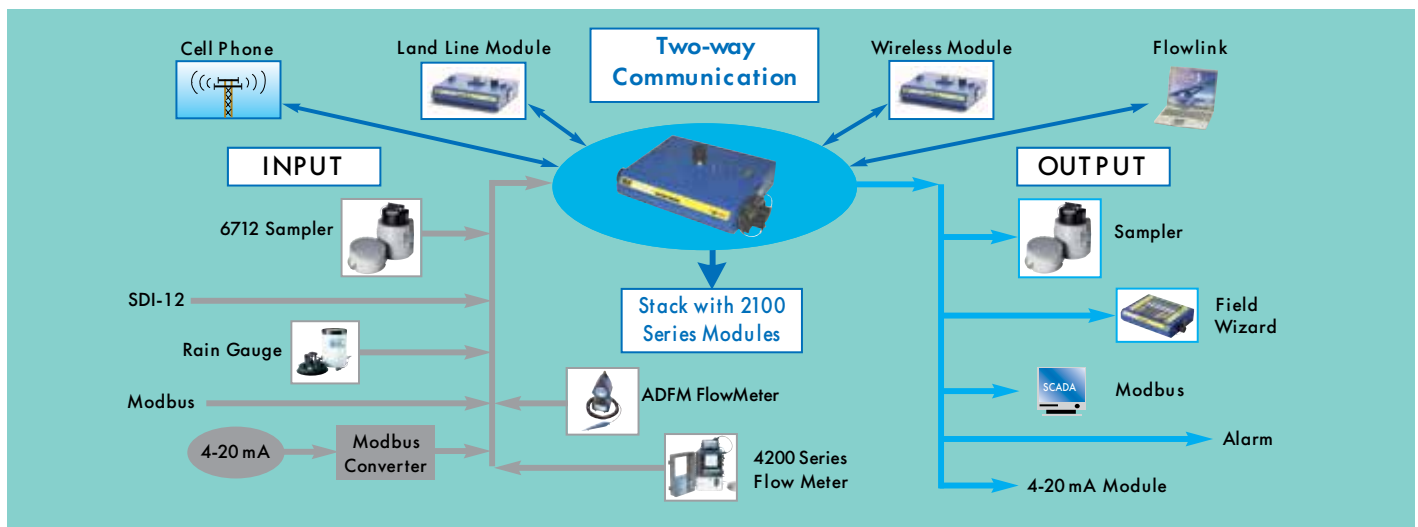
- Make better use of work crews
- Develop more informed budgets
- Verify sewer rehab activities

Flowlink lets you generate informative graphs and tables that can be displayed with a single mouse-click. Any graph can quickly be converted to a table—or vice-versa.

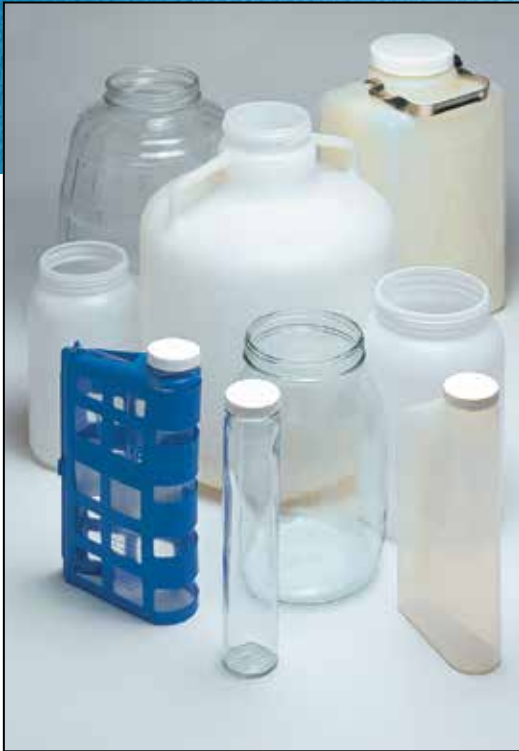
Embed Flowlink graphs and tables into Microsoft Word®, Excel®, and PowerPoint®. Import and incorporate data from other sources, and export to an ASCII spreadsheet file for analysis with programs such as Microsoft Excel.

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, cloud-based 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 apps. 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.



SAMPLE CONTAINERS



Plastic containers with Cap

- 1 liter wedge-shaped, 1 liter round
- 500 mL wedge-shaped
- 2 liter wedge-shaped
- 1 gallon/3.8- liter round
- 2 gallon/7.5- liter rectangular
- 2.5 gallon/9.5- liter round
- 4 gallon/15- liter round
- 5.5 gallon/20- liter round

Glass containers with Cap

- 350 mL round
- 950 mL round
- 1.8 liter round
- 2.5 gallon/9.5- liter round
- 5 gallon/19- liter round

ProPak® Single-use Disposable Sample Bags

These convenient bags bring a new dimension of productivity to water and wastewater sampling. The patented* ProPak Sample Bag reduces sampling costs by eliminating the expense of washing and storing conventional bottles, while at the same time eliminating worries about contamination from previous samples.

The 1000 mL ProPak bags install quickly inside lightweight, reusable holders. Our 2 gallon (7.5 L) ProPak bags, for composite sampling, fit inside a durable 2.5 gallon (9.5 L) vented bottle. An O-ring holds the bag in place until the screw-on cap is installed.



*Patent #5,996,427

POWER PRODUCTS

Batteries and Solar Charges



Lead-acid Batteries

Our economical lead-acid batteries are maintenance-free, and designed to hold a charge for extended periods.

Nickel/Cadmium Batteries

Your best choice for continuous use applications. Unlike lead-acid batteries, nickel cadmium batteries withstand the abuse of over-charging and can be left totally discharged without being damaged.

High-capacity Power Packs

Convert nominal 120 or 240 Vac to 12 Vdc. A built-in battery charger quickly and efficiently charges the battery while powering your equipment.

Battery-backed Power Packs

Whenever AC power is interrupted, these power packs supply power from a built-in nickel cadmium battery.

Solar Chargers

Ideal for use in remote applications. Teledyne ISCO offers several sizes, and can provide mounting and connecting hardware for most any installation.

Model 948

45-Amp/hour battery (includes carrying case and connect cable)



Model 946

sealed battery (6.5 Amp/hour)



Model 913

(shown) 120 Vac, 50/60 Hz input. Model 923 is identical, except 240Vac



Model 934

(4.0 Amp/hour)



Model 924

Battery-backed Power Pack (shown). 240 Vac, 50/60 Hz input. Model 914 is identical, except 120 Vac



ACCESSORIES



Flow-through Sample Chamber

This patented device allows you to do your sampling right in your lab. By installing transfer lines from monitoring points within your plant, you can collect all your samples in a central, sheltered location.

- Use with any sampler and bottle configuration
- High flow rate—up to 150 GPM
- Attachable parameter probe ports

Suction Lines

Three types of suction line materials are available.

- Clear vinyl, 3/8- and 1/4- inch
- Black vinyl, 3/8- inch only
- PTFE-lined polyethylene, 3/8- inch only



674 Rain Gauge

When connected to a Teledyne ISCO 6712 or Avalanche Sampler, rainfall information can be logged into memory for later retrieval and/or used to trigger sampling. A must-have for storm water monitoring and CSO or I&I studies.

Strainers

Three styles of strainers are available.



Polypropylene—for general purpose sampling, 3/8- inch ID only.



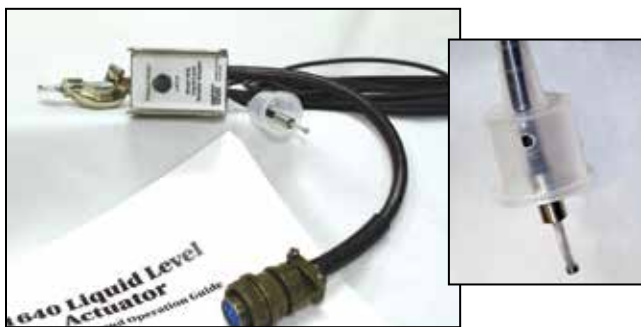
Non-metallic—for sampling in corrosive flows, 3/8- inch ID only.



Stainless Steel—for low-flow applications, 1/4- and 3/8- inch ID tubing.

1640 Liquid Level Actuator

This device initiates a sampling routine when liquid reaches a predetermined height. Two modes, toggle and latched, allow the sampler to disable when the liquid level drops or continue the routine despite the liquid level.



Street Level Installation Tool

Eliminate the risks associated with manhole entry. Ideal for quick, safe, and economical installation of the sensors used with our 700 modules.

The set includes mounting rings and a multi-section pole, allowing sensor installation in 6-, 8-, 10-, 12-, and 15 inch diameter pipe into manholes up to 15 feet deep. Spring tension holds the mounting ring (with sensor attached) to the pipe wall. For removal, simply pull the strap and the mounting ring collapses.



Picture above shows Suspension Harness and ProHanger.

Suspension Harness

Stainless steel cables attach to the sampler and has a connection ring on top for suspension in manholes.

ProHanger™

Use this sturdy tool to safely suspend a sampler or other instruments inside a manhole. It fits openings from 17- to 24-inch in diameter.

Adjustment is simple and quick. Construction is 100% stainless steel for maximum resistance to harsh environments.

Locking Harness

Secure your sampler to discourage vandalism or theft. Available for portable samplers. Set includes locking cables and padlock.



ISCO

