Isco 2105 Interface Module

The 2105 Interface Module is a powerful solution for environmental monitoring professionals to interface different monitoring and recording instruments.

The 2105 will monitor the recorded data and take intelligent actions, such as sampler enabling, pacing, and/or alarm generation, based on user-specified conditions.

Its unique flexibility allows connection to several devices at the same time. Isco 2100 Series Flow Modules, Isco's pulse Doppler Flow Meters, 6712 Samplers, 4200 Series Flow Meters, and Isco Rain Gauges are directly compatible. It can also be used with non-Isco instruments that have SDI-12 or Modbus output. Additional input options are possible using readily-available aftermarket converters (4-20 mA, etc.).

An optional built-in cell phone modem allows remote access to data that has been stored within the 2105, or has been fed to a central server — or the Internet.

Isco's modular design allows the 2105 to be stacked with other 2100 Series flow, communication, interface, or display Modules.

Applications

▶ Capacity assessments

▶ I&I, cMOM, SSO and other collection system monitoring

▶ Permit compliance and enforcement

▶ Stormwater runoff monitoring

▶ Non-point source monitoring
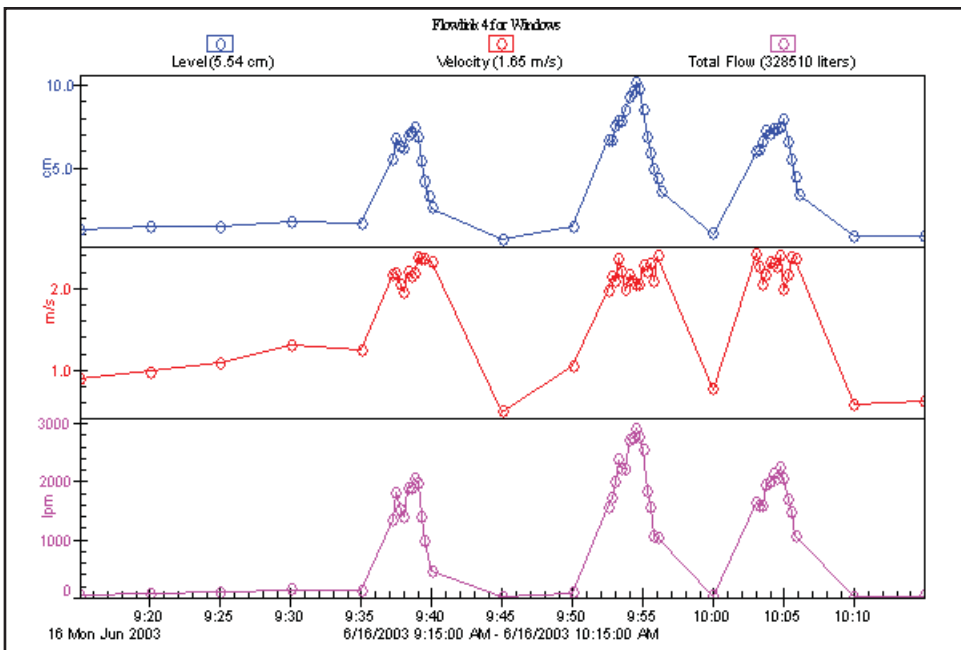
▶ River and stream gauging

Standard Features

▶ Rugged, submersible enclosure meets NEMA 4X, 6P and IP68 requirements.

▶ May be stacked together with up to three other Isco 2100 Modules

▶ A variety of factory-available cables allows literally dozens of multiple instrument configuration possibilities.

The 2105 system shown above interfaces a rain gauge, flow meters, automatic sampling, and a multi-parameter sonde.
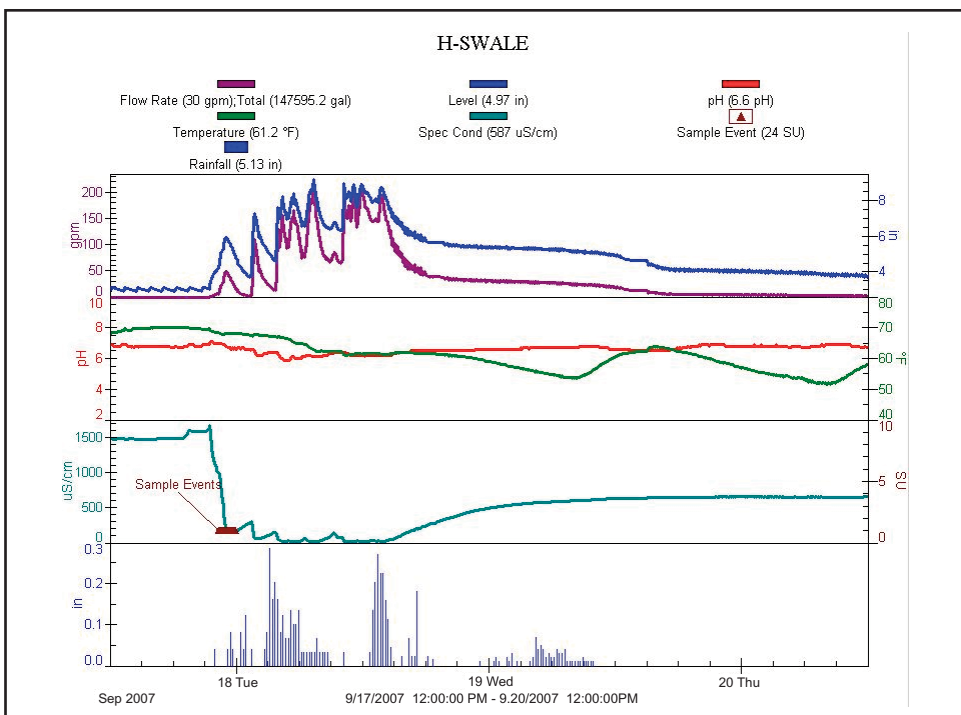
Software Features

▶ Secure data storage. All data are continuously stored in flash memory to protect against loss in case of power failure.

▶ Easy to upgrade. New operating software can be downloaded into non-volatile flash memory, without affecting stored program and data.

▶ Records and stores input voltage and temperature data.

▶ Variable rate data storage lets you change the data storage interval when programmed conditions occur. This feature assures maximum information about an exceptional event - such as an overflow - while conserving power and data capacity during normal conditions.

▶ 38,400 bps communication provides speedy setup and data retrieval.

Variable rate data storage

The 2105 module has the ability to automatically switch data storage rates based on varying conditions.

In the example at left, the 5-minute data storage rate automatically changed to 30 seconds when the flow rose above a programmed level.
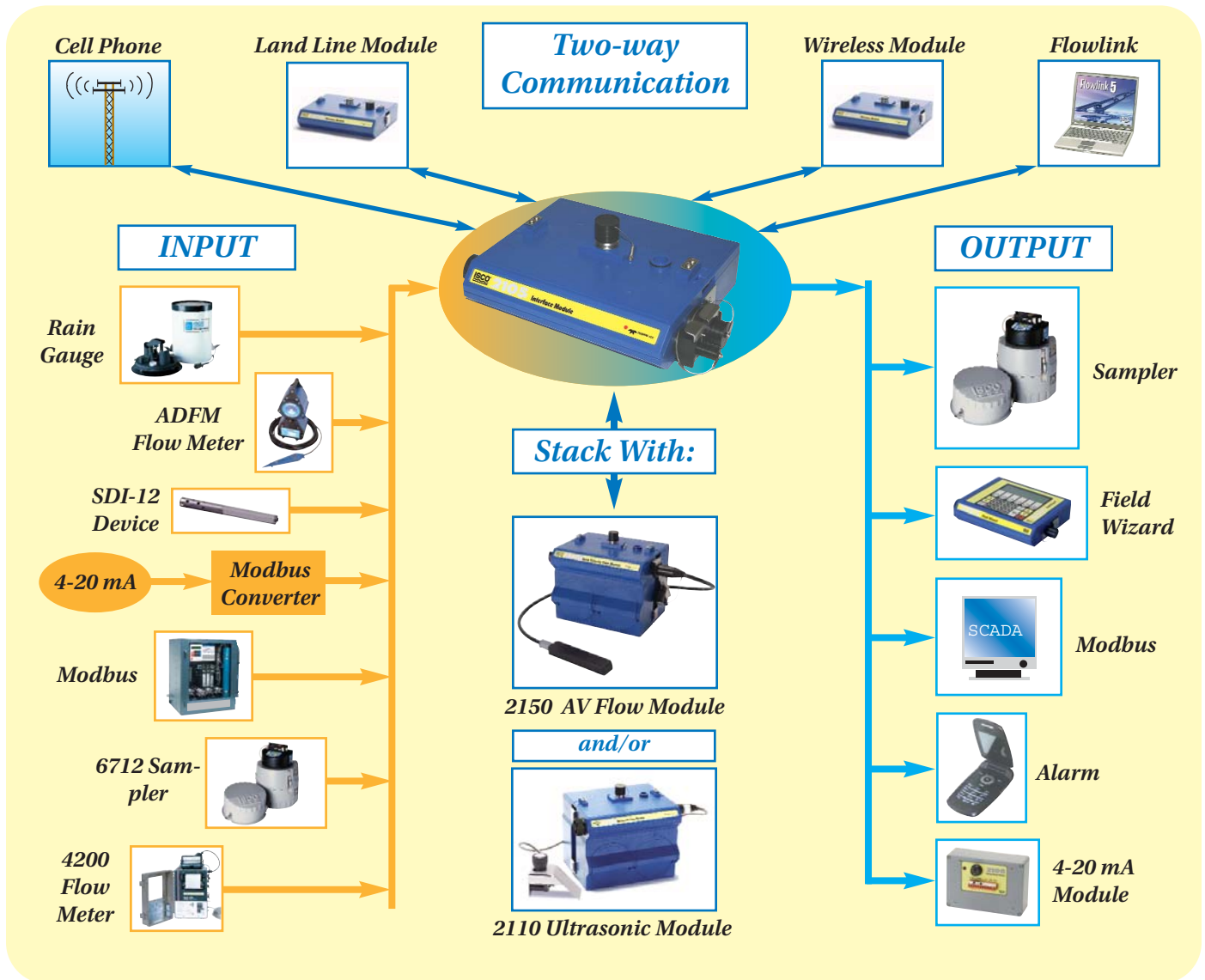

Typical stormwater channel

In the example at left, the single 2105 is recording multiple parameters.

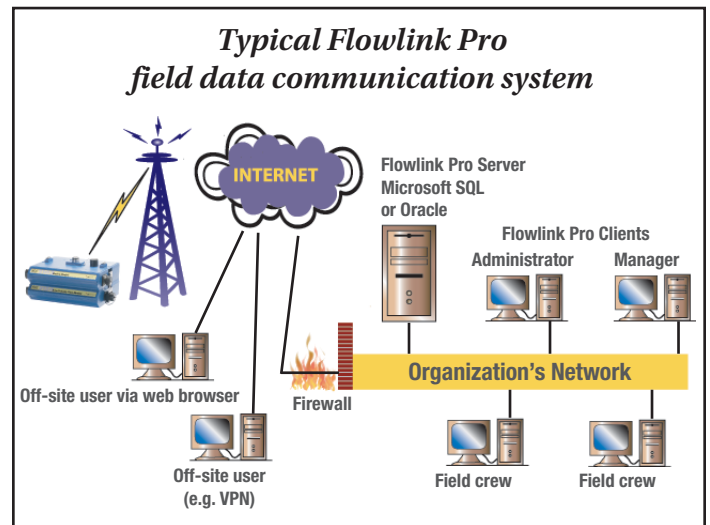It also triggered the sample at user-defined conditions.

2105 Interface Options

Potential variations for interfacing different hardware and software to make up the comprehensive data system you desire are virtually unlimited with the 2105. Input/output choices are shown below - and may be enhanced by using available aftermarket converters.

Cell Phone | **Land Line Module** | **Two-way Communication** | **Wireless Module** | **Flowlink**

INPUT

- Rain Gauge
- ADFM Flow Meter
- SDI-12 Device
- 4-20 mA → Modbus Converter
- Modbus
- 6712 Sampler
- 4200 Flow Meter

Stack With:

2150 AV Flow Module

and/or

2110 Ultrasonic Module

OUTPUT

- Sampler
- Field Wizard
- Modbus
- Alarm
- 4-20 mA Module

Flowlink® Data Analysis

Isco Flowlink® Software is a powerful tool for analyzing flow and water quality data. It provides site setup, data retrieval, and comprehensive data analysis, as well as advanced reporting and graphing. See separate data sheets for details on Flowlink and Flowlink Pro software.

Typical Flowlink Pro field data communication system

INTERNET

Flowlink Pro Server
Microsoft SQL
or Oracle

Flowlink Pro Clients
Administrator   Manager

Off-site user via web browser

Firewall

Organization's Network

Off-site user (e.g. VPN)

Field crew   Field crew

With package switched communication option, data can be made available in the remotely located server or on the Internet.

Specifications

2105 Interface Module

Size (H x W x D)	2.9 x 11.3 x 7.5 in (74 x 287 x 191 mm)
Weight:	2.0 lb (0.9 kg)
Material:	High-impact molded polystyrene, stainless steel
Enclosure:	NEMA 4X, 6P IP68
Temp. Range:	-40° to 140° F (-40° to 60° C) operating and storage
Power Required:	12 VDC nominal (7.0 to 26.0 VDC), 100 mA typical, 1 mA standby 3 Amp maximum operating current
Power Source:	Typically an Isco 2191 Battery Module, containing 2 alkaline or 2 rechargeable lead-acid batteries. (Other power options are available; ask for details.)
Typical battery life:	Using 15-minute data storage interval Energizer® Model 529 alkaline - 15 months; Isco rechargeable lead-acid - 2.5 months
Program Memory:	Non-volatile, programmable flash; can be updated using PC without opening enclosure; retains user program after updating

Data Handling and Communications

Data Storage:	Non-volatile flash; Retains stored data during program updates. Capacity 798,000 bytes (up to 158,000 readings, equal to over 270 days of rainfall, temperature, conductivity, and pH readings at 15-minute intervals, plus input voltage readings stored at 12 hour intervals)
Data Types:	Flow rate, level, rainfall, conductivity, dissolved oxygen, temperature, pH, percent, velocity, volume, total dissolved solids, salinity, phosphate, ammonia, nitrate, TOC, COD, total suspended solids, sludge index, sludge volume, SAC, turbidity, load, input voltage, wireless signal, rainfall intensity, specific conductance, chloride, chlorophyll, O.R.P., ammonium
Storage Mode:	Rollover; 5 bytes per reading
Storage Interval:	15 or 30 seconds; 1, 2, 5, 15, or 30 minutes; or 1, 2, 4, 12, or 24 hours. Storage rate variable based on level, velocity, flow rate, total flow, or input voltage
Data Retrieval:	Serial connection to PC or optional 2101 Field Wizard module; optional modules for spread spectrum radio; land-line or cellular modem. Modbus and 4-20 mA analog available.
Software:	Isco Flowlink for setup, data retrieval, editing, analysis, and reporting
Multi-module: Networking	Up to four 2100 Series Flow Modules, stacked and/or remotely connected. Max distance between modules 3300 ft (1000 m).
Serial Communication Speed:	Up to 38,400 bps

2191 Battery Module

Size (H x W x D):	6.0 x 9.6 x 7.6 in (152 x 244 x 193 mm)
Weight (without batteries):	3.2 lb (1.4 kg)
Materials of construction:	High-impact polystyrene, stainless steel
Enclosure (self certified):	NEMA 4X, 6P, (IP68)
Batteries:	Two 6-volt Energizer Model 529* alkaline (26 Ahrs capacity) or Isco Rechargeable Lead-acid (5 Ahrs capacity) recommende *Note - Energizer EN 529 does not give specified life.

Ordering Information

2105 Interface Module w/2191 Battery Module	68-2000-048
2105 Interface Module (only)	60-2004-560
2105c Interface Module w/built-in CDMA cell phone device and 2191 Battery Module	68-2000-049
2105g Interface Module w/built-in GSM or GPRS cell phone device and 2191 Battery Module	68-2000-050
Flowlink® 5.1Software	68-2540-200
Eveready Energizer® Model 529 6V alkaline battery (two required)	340-2006-02
Isco Rechargeable Lead-acid Battery (2 required)	60-2004-041
Charger Adaptor for Lead-acid Batteries (holds 2 batteries)	60-2004-040