

# Pushing Data From Remote Locations

## Application Note

## Expertise in Flow

### Isco 2105G Interface Module



- Inputs: Modbus, 4-20mA, SDI-12, Rain Gauge
- Outputs: Digital Pulse, Modbus, 4-20mA, SMS
- GSM technology allows remote data collection via Flowlink 5.1 & remote system control.
- GPRS communication enables data to be pushed to secure central server via Flowlink Pro client software.

### Remote Monitoring Station with Solar Panel:



*The 2105G Interface Module allows the user to collect flow and water quality data from a variety of measurement devices located at a remote field site and transfer that data to a secure server database.*

### Water Monitoring at Remote Site

This example of water monitoring at a remote site took place in a South American country. A solution was needed for monitoring the water quality in two rivers that supplied water to a large metropolitan area. Data from a variety of measuring devices needed to be integrated and then transmitted long distances under high security to a centralized server.



### Site Challenges

The specifications for this particular project were so complex that only one company, using equipment from Teledyne Isco, participated in the public bidding process. The main challenge was integrating data from various sources, such as water quality measuring devices and weather monitors, and enabling a water sampler paced upon their readings.

Once data was collected from this remote site, it needed to be pushed via an exclusive VPN connection from a cellular phone to a centralized server, under high security provisions, for evaluation by multiple people.

### Site Solutions

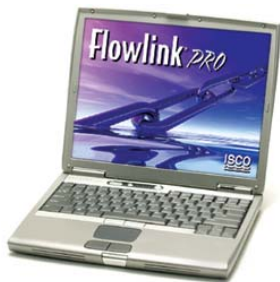
Several pieces of equipment were used to provide a solution. Weather data was logged using a MetOne weather station. A Teledyne Isco Avalanche sampler was enabled using a TROLL9500 sonde. These units were connected to a Teledyne Isco 2105G Interface Module, which collected the data and pushed it to a remote server.

## Isco Avalanche Sampler

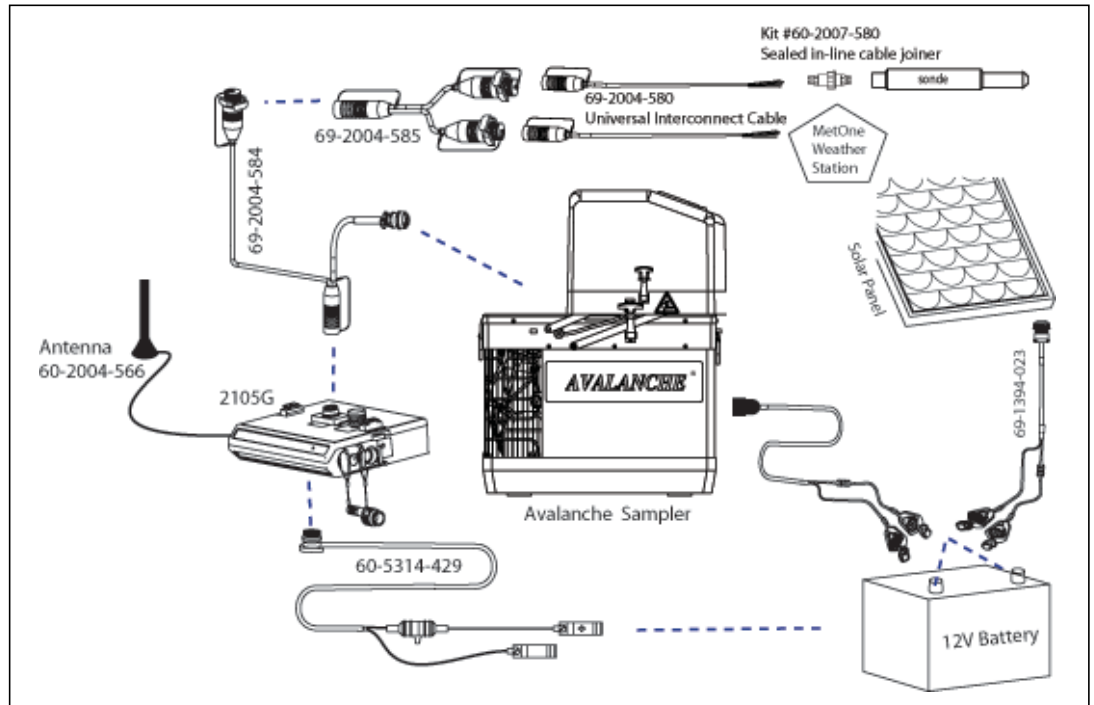


- Standard/Extended programming
- NEMA 4x, 6 (IP67) controller enclosure
- SDI-12 multi-parameter plug-and-play
- 512K memory

## Flowlink Pro Software



- Large database, multiple users
- Pushed data
- Fast transfers, lower costs
- Web access
- Automated tasks
- Graphical and tabular reports of flow monitoring data
- Data editing



For sonde placement, a sturdy, cable-suspended platform was built over the river so the sonde could always be at the same level. Equipment was housed in a secure monitoring station, with power from a solar panel on the roof. To get a cell signal, the antenna for the 2105G was also mounted on the roof.

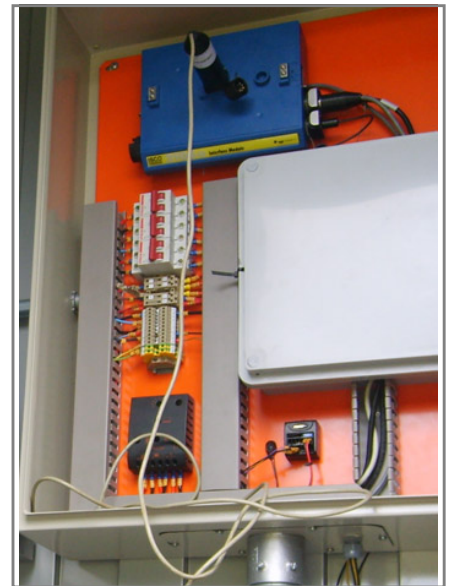
## Isco 2105G Interface Module for Data Storage and Transfer

All of the parameter data from the monitoring equipment at the site was sent to the 2105G for data storage and control. The 2105G pushed the data to a remote server via a VPN connection programmed into the modem's sim card, providing the level of security needed for this project.

On the centralized server, the data was stored on a common database. Multiple users could then view and analyze the data throughout the day, using Teledyne Isco's Flowlink Pro® server/client software or Web User Interface (WebUI). Threshold limits were set for different parameters, so if those limits were reached, SMS alarms could be sent to a response team for action.

Data from the MetOne weather station came in through the 2105G's ADFM ASCII port, where it was internally converted to a Modbus input. This data included wind speed and direction, relative humidity, solar radiation, barometric pressure, and air temperature.

Sonde data was brought into the 2105G via SDI-12 input. The data included level, pH, dissolved oxygen, conductivity, redox potential, and water temperature. Based on those readings, the 2105G enabled the Teledyne Isco Avalanche sampler.



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