

Signature® Flow Meter: Transmitting Data by Radio

Application Note

Expertise in Flow

Signature® Flow Meter



Standard Features:

- Multiple parameter data logging
- Program & summary reports
- Data integrity verification
- Triggering, sampler enabling
- Compatibility with Flowlink® software
- Multiple simultaneous flow technologies
- pH and temperature input
- SDI-12 input
- RS-485 input
- RS-485 output
- Analog outputs
- Remote communication via cell phone or Ethernet

6712FR Automatic Refrigerated Sampler



Applications:

- Wastewater effluent
- Storm water monitoring
- CSO Monitoring
- Permit compliance
- Pretreatment compliance

"The Future of Flow!"™

An Industrial manufacturing facility in the Midwest requested help from Teledyne Isco's Environmental Product Support (EPS) team to address a difficult temperature monitoring issue. This facility is required by Federal Law to measure the temperature of its "non-contact cooling water" being discharged into a nearby river, as well as the temperature of the river, and report the data to the local governing authority. The challenge of the monitoring application was the distance between the data collection device and the outfall monitoring locations.

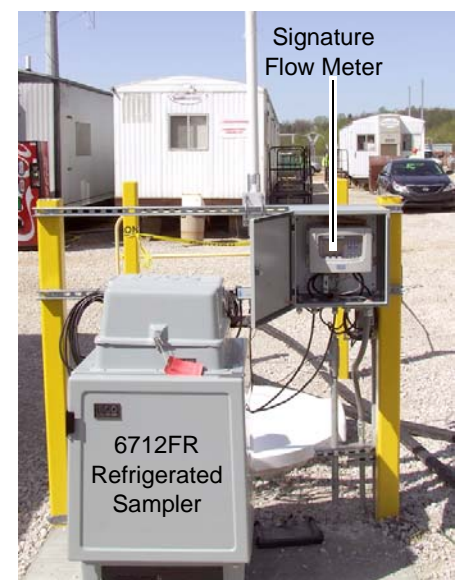


An Aerial View of the Measurement and Signature Locations

A Challenge of Distance in Data Transmission

Using a Teledyne Isco Signature Flow Meter to pace a Teledyne Isco 6712FR Refrigerated Sampler based on discharge flow, the facility incorporated the temperature logging requirement.

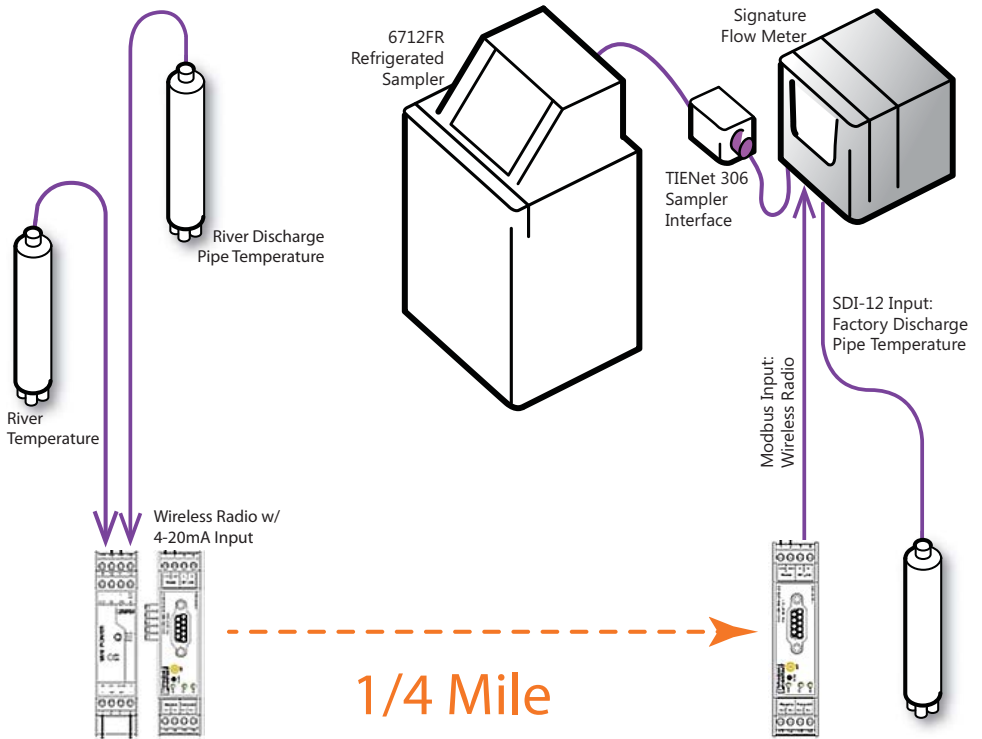
The manufacturing facility chose a Teledyne Isco Signature Flow Meter to monitor the flow rate and temperature of the discharge water from a manhole located just outside the production area, and used the collected data to gather flow weighted samples using a Teledyne Isco 6712FR Automatic Refrigerated Wastewater Sampler. The group then set out to devise a way to use this same monitoring equipment to record data from the river discharge site, which was over 400 yards away. The considerable distance between the permanent Signature Flow Meter installation site, and the discharge pipe and river measurement points, required a solution for reliable remote data transmission.



Factory discharge measurement and sampling point



Measuring the temperature at the discharge pipe



Measurement and Data Transmission Configuration

Custom Solution Combines Radio Transmission with Signature Modbus RTU

Teledyne Isco was able to develop a solution to this unique monitoring application by utilizing a pair of wireless radio devices (available through Teledyne Isco's Special Applications Department) to bridge the distance. Two customer supplied temperature sensors were connected to the 4-20mA input channels on the radio transmission device, and then sent to the receiving device that was interfaced, via a Modbus RTU connection, with the Signature meter. The remote devices were powered by a self-sustaining DC Battery and a 40-watt solar panel.

The Signature Flow Meter can interface with a variety of measurement devices and other system components, depending on the site requirements. Measurement devices for flow and water quality can be connected to the same Signature meter and run simultaneously with TIENet connectivity (up to 9 TIENet devices). As demonstrated here, the Signature is also capable of receiving data from devices using Modbus ASCII or Modbus RTU Protocol.

The Signature is also an excellent data collection device. Data integrity is ensured by logging event data types that can be verified, thereby producing confidence with verifiable data. This data can be collected using a USB Flash Drive that will retrieve Diagnostic, Program, History and Summary Reports. In applications requiring an interface between the flow meter and an existing SCADA data collection system, the Signature can be equipped with an Ethernet connection for data transmission.

With the Teledyne Isco Signature Flow Meter at the heart of the integrated system, it is easy to overcome challenging user needs. The meter's wide variety of input and output options creates flexibility where unique data collection techniques are required.

Teledyne Isco

P.O. Box 82531, Lincoln, Nebraska, 68501 USA
 USA & Canada: (800) 228-4373 • Phone: (402) 464-0231 • Fax: (402) 465-3091
 Web site: www.isco.com • E-mail: IscoInfo@teledyne.com

Teledyne Isco is continually improving its products and reserves the right to change specifications without notice.
 ©20xx Teledyne Isco L-0204-AN06 11/12

