CAMPBELL SCIENTIFIC®
WHEN MEASUREMENTS MATTER

Irrigation and Canal Control

Automated Canal Monitoring and Control

Campbell Scientific offers cost-effective systems for unattended, automated monitoring and control of diversions, canals, and laterals. Our systems help you manage water distribution by measuring water level or flow, and controlling gates, pumps, and other devices based on time of day, conditions, or measured parameters. In addition to two-way wireless communication, Campbell systems can initiate alarms and report changing conditions via cellphones or pagers. Each system can be customized for your particular requirements.

MAJOR SYSTEMS

	Measurements	Datalogger	Power	Communications	Description
CanalMaster120 Canal Monitoring System 	water level, flow, temperature, pressure	CR200X	12 Vdc rechargeable battery and solar panel	typically PC	Low-cost water-level gaging station allows the user to accurately monitor canals. It can be used in remote locations with no access to ac power.
CanalMaster185 Canal Monitoring Systems 	water level, flow, temperature, pressure	CR200X	12 Vdc rechargeable battery and solar panel	cellular	Low-cost water-level gaging station allows the user to accurately monitor canals. It can be used in remote locations with no access to ac power.

Custom Systems

Most of the systems we sell are customized. Tell us what you need and we'll help you configure a system that meets your exact needs.

Dataloggers for Canal Control

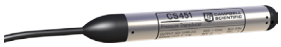
We build dataloggers that have wide operating temperature ranges and directly interface to a large variety of sensors. Our loggers feature low power consumption and can operate using batteries that are recharged with solar panels or ac power. They can even operate directly from alkaline D-cell batteries.

Diversions can be automated to adjust as conditions change. Because human intervention is not necessarily required, personnel availability is increased. Gates can be moved based on water level, flow rate, or

downstream conditions. Alarm conditions can be set to allow adequate response time for personnel once the datalogger has alerted them to a problem, such as loss of ac power, rapid water level rise, or non-responsive gates. Water delivery and reservoir level can be optimized to benefit both agricultural and recreational users.

Sensors

Thanks to their ability to measure multiple channel types, our dataloggers can read nearly every commercially available sensor, allowing systems to be customized for each installation. We offer a variety of water level and



flow sensors that feature low drift and high reliability. In addition, nearly all available water quality and meteorological sensors can be measured, generally without external signal conditioning. We helped create the original SDI-12 standard, so you can be sure our systems are SDI-12 compatible.

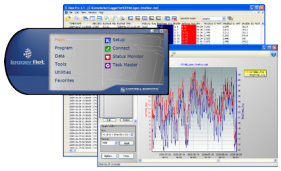
Communications/SCADA

You can view what's happening at your gaging stations or diversions from one screen at your home or office computer, or call the station(s) from your vehicle. We offer multiple telecommunication options to transmit data. Our standard options include satellite (DCP), RF, telephone, cellphone, and voice-synthesized phone. Protocols supported include SCADA, DNP3, and Modbus.

Communication devices can be used together, such as phone-RF combinations, or RF sites being used as repeaters for stations farther away from your base station. We can help you determine what will work best for your application.

Software

We provide software to simplify the entire monitoring and control process, from programming to data retrieval, data display, and data analysis. Our software automates data collection from one or many monitoring stations. Real-time or historical data can be viewed easily, or exported as ASCII files for further processing by spreadsheets, databases, or analysis programs. Robust error-checking ensures your data arrives uncorrupted. We can even help you post your data to the Internet for all interested parties to view.



Measuring Water Level

Because not every site is the same, our dataloggers can measure multiple types of sensors. Whether measuring water level in a stilling well with a shaft encoder or on a river with a bubbler, we can help you match accuracy and reliability requirements to your budget. Multiple channel types enable our dataloggers to read nearly every commercially available sensor, allow stations to be customized for each installation, and let you take advantage of sensors that you may already own. For new installations, we offer a variety of water level sensors that feature low drift and high reliability.

Irrigation and Canal Control Case Studies

Our irrigation and canal control systems have helped a variety of organizations reach their goals. The following are just a few of these:

Campbell dataloggers monitor sensors and automatically control gates to maintain a constant upstream water level throughout a canal system in Newell, South Dakota.
www.campbellsci.com/south-dakota-irrigation

Horseshoe Irrigation, an irrigation company in central Utah, uses our LoggerNet for Linux software to collect data from several stations. The data is then processed and displayed using the ExacTraq system.
www.campbellsci.com/utah-rural-irrigation

Nearly 60 monitoring stations containing Campbell equipment record water level and water quality at reservoirs, canals, pipelines, and springs in Emery County, Utah.
www.campbellsci.com/emery-county-utah

Campbell's dataloggers allow the South Dakota canal system to efficiently deliver water to farmer turnouts and lateral head gates.

CAMPBELL SCIENTIFIC
815 W 1800 N | Logan, UT 84321-1784 | 435.227.9120 | www.campbellsci.com
USA | AUSTRALIA | BRAZIL | CANADA | CHINA | COSTA RICA | FRANCE | GERMANY | SE ASIA | SOUTH AFRICA | SPAIN | UK