

Discrete Water Quality Probes Improve Understanding of Surface Water Conditions While Saving Time and Money

Optical RDO® PRO Probe and Campbell Scientific CR1000 Datalogger used at remote sites

Discrete Probes and Dataloggers Used to Automate Water Quality Monitoring

As an environmental engineering and consulting firm, you need to provide clients with quality data, when they want it and at a price they can afford. One way to save time and money when monitoring water quality and quantity is to deploy continuous remote sensing systems. Automated water monitoring networks collect more data than can be collected manually, which helps clients understand site conditions in less time and with less hassle. This is particularly true for parameters such as dissolved oxygen (DO), which exhibits significant diurnal variation in many water bodies and thus discrete samples are often not representative of actual conditions.

Larry Walker Associates (LWA) is an environmental engineering and consulting firm that provides innovative water quality solutions to its California clients. Client projects range from ambient, discharge, and special study water quality monitoring, to stormwater management, to regulatory assistance.

RDO PRO Probe Offers Advantages Over Multiparameter Sonde

"I'm a huge fan of the RDO® PRO Probe for many reasons," says Jeff Walker, PhD (EE) at LWA. "It's the only competitive, discrete DO probe available that uses optical technology. The cost-effective RDO PRO Probe offers low power consumption, is easy to use with SDI-12, and performs well in surface water without a wiper.

"By using discrete water quality probes, I can buy the best sensors on the market and integrate them into our Campbell Scientific Dataloggers," explains Walker. "I also eliminate the extra costs and redundancies of buying



A remote site being monitoring by an RDO PRO Probe connected to a Campbell Scientific CR1000 Datalogger. Real-time data is transmitted to Walker's office using a cellular modem. This system offers reliable, long-term monitoring and minimizes field maintenance.

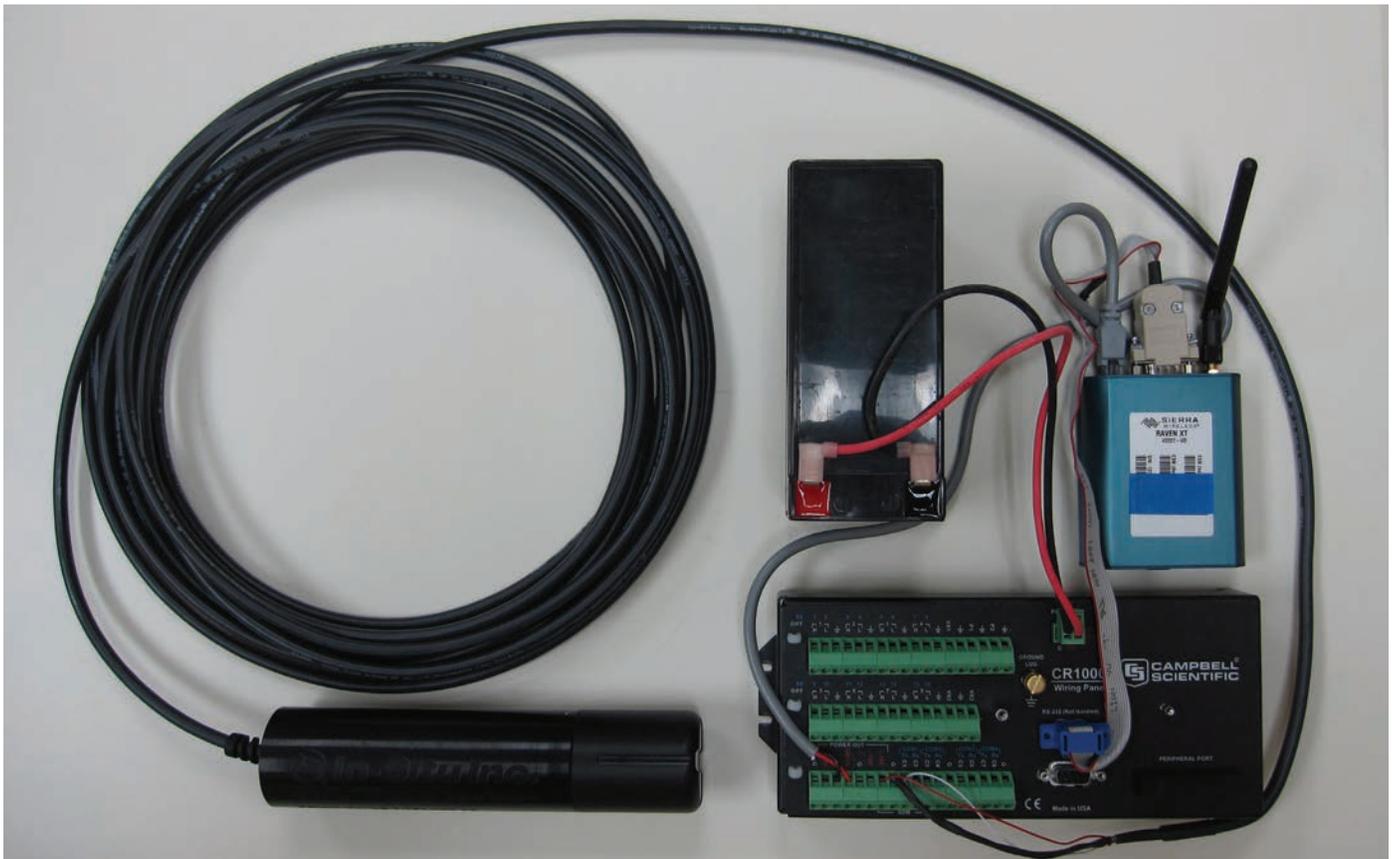
multiparameter sondes that include a power-hungry sonde body and electronics with logging capabilities that I don't need.

"These optical DO probes offer significantly better performance than Clark cells; they don't drift," says Walker. "I leave probes unattended for up to six months, and when I check the calibration, it's within one percent of the specification.

"The low power RDO PRO Probe is beneficial when using a battery-powered datalogger. By using battery power instead of solar, sites are less likely to be vandalized. Plus, In-Situ Inc. offers excellent customer service," states Walker.



Photos left:
These photos
show the types
of sites being
monitored by
LWA's compact
DO monitoring
systems.



LWA engineers assemble a system before deployment. The photo shows an optical RDO PRO Probe (left), a Campbell Scientific CR1000 Datalogger (bottom right), a Sierra Wireless Raven XT cellular modem (above datalogger on right), and a 12-V, 8-Ahr lead-acid battery (above datalogger on left). This complete set of equipment sends real-time, accurate DO readings from a remote location directly to Walker's office. The system operates for three months using one lead-acid battery (deployments typically include two batteries for six months of operation). To save power, 5-minute DO data is only transmitted to the office every few hours. The total cost of the parts shown is approximately \$3,500 U.S., which is much less than the cost of a deployable logging-only (no telemetry) optical DO probe from other manufacturers.



For more information, contact In-Situ Inc.
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Rev 0.0, Dec. 2012

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