

PORTABLE WATER QUALITY MONITORS

Dear friends,

In this issue of ECM Bulletin we would like to bring to your attention to monitoring and control instrumentation for the waste water treatment industry from the company Royce Technologies.

Measurement technologies provided by Royce can be divided into the following categories:

1. Dissolved oxygen monitoring and control

Portable or fixed optical dissolved oxygen systems using patented fluorescence sensor technology that requires no membrane or electrolyte.

Single and multi-channel analyzers using standard rugged self-cleaning cartridge electro-chemical sensors allow to cover virtually all types of applications.

Maintenance free sensor bouy system is designed for large pond or lagoon aeration systems where dissolved oxygen monitoring and control is required but the sensor cannot be readily reached for maintenance.

Part per billion continuous state-of-the art, microprocessor based dissolved oxygen monitors making use of specific galvanic sensors allow for detection of ultra-low DO concentrations in liquid media.



2. Total suspended solids monitoring and control

Unique small battery operated portable analyzers designed for the rigors and remote sampling, providing for reliable operation in WWTPs, rivers, lakes and other aqueous systems. The meter reads in either grams per liter when in the suspended solids mode or relative density percentage while in the interface level mode of operation, thus having two analyzers in one.

Single or multi-channel TSS analyzers using:

- in-situ or flow-through low range clean water sensors.

- submersible sensors designed for mixed liquor suspended solids (MLSS) typically found in aeration basins. The sensor uses phased array color compensation to correlate light absorption with suspended solids.
- sensors designed for open channels having higher concentration of solids, such as return activated sludge that flows in open channels rather than in pipes.
- high density pipe insertion sensors used in waste activated sludge and return activated sludge applications, offering automatic water jet cleaning of the sensor optics by house supplied water.



3. DO and TSS multi parameter monitors and controllers

Combined multi-channel water process analyzers utilizing up to 4 different dissolved oxygen and mixed liquor total suspended solid sensors in the same biological reactor at one time.



4. Interface level and point level analyzers

Analyzers to reliably monitor and control the solid/liquid interfaces in settling tanks and clarifiers, regardless of the size of the plant.

Royce series of interface level analyzers use an ultrasonic ranging technique to measure the depth of interfaces within the tank for standard, high temperature, chemical or explosion proof applications.

Analyzers can be with our without speed of sound correction, can allow individual economical monitoring and control on every primary, secondary and thickening clarifier in the plant.

Systems allow not only identifying every interface in a liquid tank, but allow the user to see all the interfaces, as well as control or alarm on the interface of his choice.

Single channel detectors serve for single point optical interface detection where control setpoints allow the user to keep the interface in a single location, while dual channel detectors allow for the user to control the interface between two levels in the clarifier.



5. pH/ORP and CO₂ monitoring and control

Portable pH/ORP analyzers using temperature compensated electrodes and self-diagnostic functions.

Submersible or in-line electrode pH/ORP only or pH/ORP + CO₂ fixed mounted monitors with optional jet self-cleaning system.



6. Control systems

Solid retention time and sludge control systems for accurate and reliable control of the wasting process in activated sludge WWTPs using in-situ solids density analyzers for continuous monitoring of concentration of solids in the aeration train, concentration of activated sludge and waste sludge flow. System stabilizes operation of the biological nutrient removal process. The user can expect 10 to 15 % reduction in MLSS concentrations without a negative impact on ammonia removal.

