



# Corrosion Monitoring System

Rohrback Cosasco Systems®

## Specialty Products



### DCMS™ Downhole Corrosion Monitoring System

The Rohrback Cosasco Systems (RCS) Model DCMS™ Downhole Corrosion Monitoring System is the only tool available, which provides real time corrosion and temperature data for the hostile conditions of downhole operation. The sensitivity of the system enables the film persistence of inhibitors to be evaluated in actual operating conditions, something that was not possible prior to the development of the DCMS™.

The DCMS™ tool may be attached to a variety of wireline approved running tools for insertion into the production well at the start of testing and retrieval from the well at the end of the testing period. Selection of the appropriate wireline tools allow the DCMS™ tool to be set at any required depth -- wherever the most critical corrosion regions are

located. In additions, several DCMS™ tools may be run simultaneously in a well in order to obtain corrosion data for different depths while under the same operating conditions.

After retrieval from the well, the memory module is removed, and the data is transferred via a CORRDATA® Mate instrument to a PC running CORRDATA® Basic or CORRDATA® Plus Software. On the PC, the corrosion and temperature data is presented on a graph for easy analysis of the real-time corrosion characteristics.



### CorrDATS™ Corrosion & Deposit Monitoring System

The Rohrback Cosasco Systems (RCS) CorrDATS™ integrated corrosion and deposit monitoring systems was developed in collaboration with Bridger Scientific to provide an integrated datalogging system that monitors the main parameters required for control of a water treatment program. The CorrDATS™ system may be interrogated with a portable or desktop PC.

In the actual field environment of water treatment, it is necessary to maintain the proper balance between low pH, which increases corrosion, and high pH, which increases scaling tendency. To achieve this balance, the operator must control pH, conductivity, corrosion, scaling, and deposition. The CorrDATS™ unit was developed specifically to blend comprehensive, sophisticated, yet field-proven

technologies into an economical package.

The heat exchanger flow tube of the system is matched to the alloy of the plant heat exchanger to be monitored in the field. The flow through the tube is programmed and controlled to represent the most critical plant condition, usually the lowest flow velocity. The heated surfaces are programmed and controlled to represent the most critical heat transfer conditions, normally the highest heat flux, and connected to the highest water temperature from the plant heat exchanger outlet. This sets up the CorrDATS™ system for scale and deposit monitoring.

In many systems, the heat exchanger tubing is a copper-based alloy and the rest of the system is carbon steel. Separate elements of the corrosion inhibition must be simultaneously regulated to prevent corrosion of both of these alloys. In addition, the corrosion rate on the heated exchanger tube material can change with temperature.

The CorrDATS™ system is unique because:

It provides CORRATER® measurements from electrodes which are made from the same material as the heat exchanger, and the electrodes are under the same heat flux conditions as the deposit monitoring section of the system.

The new AquaCorr™ corrosion monitoring electronics are used in the CorrDATS™ system for increased flexibility. The AquaCorr™ unit monitors multiple parameters, including corrosion rate and pitting tendency, pH, and conductivity. In the datalogging version of the unit, any four of the measured parameters from the AquaCorr™ unit are logged, with up to 124 records at 0.05- to 99-hour intervals. Software is included with the system for uploading the data to a computer. An analog unit is also available with 11 outputs and 2 inputs.

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### Hydrogen Probes

Hydrogen probes are useful in measuring the flow rate of atomic hydrogen generated from corrosion which passes through steel, and gives rise to hydrogen induced corrosion (HIC) problems and hydrogen blistering. Areas susceptible to this damage are carbon steel pressure vessels and piping containing process fluid with H<sub>2</sub>S, cyanide or arsenic.

Rohrback Casasco offers four types of hydrogen probes

1. a hydrogen probe insert (model 6400) which adapts to the COSASCO® access fitting assemblies
2. a hydrogen patch probe (model 6401), which is sealed to the outside of the pipes to be monitored
3. a fixed NPT hydrogen probe insert (model 6402) with a ¾ inch or 1 inch NPT fixed mounting
4. a retractable hydrogen probe insert (model 6403) which adapts to the COSCSCO® Model 60 retractable access system.

*Picture*

1. Model 6400
2. Model 6401

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