

## CST400 Electric Resistance Corrosion Meter

### Overview

CST400 Electric Resistance Corrosion Meter is an automatic on-site corrosion monitoring instrument that entirely controlled with personal computer. The corrosion meter, being equipped with high sensible resistance probe, can be applied for continuous monitor not only in gas phase, liquid phase corrosion, but also the complexity multiphase of oil, water and gas.

The instrument uses Silicon C8051F high-speed and low-power MCU unit, AC excitation source technology and high-precision AV bridge principle to obtain a very high resolution (up to 1/4000 of the probe's service life) and low temperature effect. High-performance industrial grade components and explosion-proof, moisture-proof (EXII level) chassis, make it possible to use in flammable and explosive environments.



If combined with CST910 wireless data transceiver, the instrument can be remote monitored and controlled. The corrosion measurement data can be analyzed with software and be used for real-time online monitoring of corrosion state in remote monitoring center. The built-in high-precision real-time clock and calendar provides datum-point marks. The low-power consumption design ensures a continuous power supply for about 180 days by two high-capacity lithium batteries.

### Software Index

32 bit multi-tasks mode supports for windows 2000/XP/7/8 operating system;

Corrosion database management for corrosion trend forecast;

Graphical display of corrosion weight loss and corrosion rate, the output data is compatible with .txt format.

### Applications

Corrosometer probes determine metal loss from corrosion or erosion by using the electrical resistance method. They may be used in virtually any environment including conductive and non-conductive liquids, gases, and single or multiphase flows.

CST400 Electric Resistance Corrosion Meter has been serviced in Changqing Oilfield of China National Petroleum Corporation for more than three years. The measurement accuracy and stability of the instrument is better than similar products all around the world. A double directions compensation technology has been applied for a patent of invention of China.

Natural gas remote monitoring system delivers corrosion data by SMS text messages. To ensure the safety of the gas gathering station, a RS485 intrinsically safe cable networks is constructed. A

CST910 workstation is used to send and receive data, and is responsible for six CST400 meters' testing results at regular intervals, and sent the data to the monitoring center.

### **Corrosion resistance probe**

Corrosion resistance probe is a sensor unit of monitoring system. Different probes can be provided depending on the industrial field environments such as temperature, pressure, disassembly conditions. Our main probes are GYM-06P flush probe and GYM-06z tube probe.

The GYM-06z tube probe is made from thin-walled tube on site, and is high sensitivity and precision under 15MPa applications.



The GYM-06z tube probe

#### **Features:**

Body Material: 316L S.S

Element Sealing Material: high strength sealing material

Fill Material: Ceramic

Temperature Range: 260/-20°C

Pressure Range: 15MPa (2000 PSI)

Mounting: Two-inch System Access Fitting Assemblies

The GYM-06P flush probes can be mounted in the top, middle and bottom of the corrosion interface. This high pressure probe, with element thickness up to 20 mils, can be equipped on CST400 corrosion monitoring instrument. It can be used at operating pressure to 6000 PSI (40 MPa) and temperature to 500° F (260°C).



The GYM-06P flush probe

#### **Features:**

Body Material: 316L S.S

Element Sealing Material: high strength sealing material

Fill Material: Ceramic

Temperature Range: 260/-20°C

Pressure Range: 40MPa (6000 PSI)

Mounting: Two-inch System Access Fitting Assemblies

## Specifications of CST400

AD converter: double-channel 16bit $\Sigma$ - $\Delta$ converter	Microresistivity Measurement Resolution: $1 \mu \Omega$
Metal Loss Resolution: $> 0.05 \mu m$	Clock error: $\pm 1$ min/Month
Sample interval: 1~24 hours	Date storage: 8,000
Battery: 14Ah ER34615 lithium Battery	Battery life: ~400 days
Communications Port: RS485/RS232	Baud rate: 9600bps
Dimensions (cm) :22(H)x14 (W) x7.6(D), Weight: 2.0Kg	
Temperature: - 20° C~50° C	

## Shipment list

- 1) CST400 instrument x 1
- 2) Electric Resistance Probe x 1
- 3) ERTools software x 1
- 4) \* CST920 Data Logger (optional)
- 5) \* CST910 Wireless Transceiver (optional)