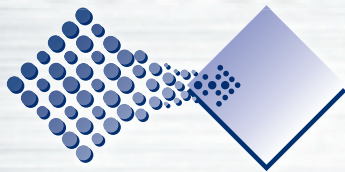


Corrosion Probe and Transmitter



Model 58TL Series Corrosion Photometric Transmitter

Corrosion affects many different industrial sectors of our economy and has been reported to cost in upwards of \$276 BILLION a year. Effective management of corrosion could save approximately 25-30% of this cost or \$70-80 BILLION a year. Custom Sensors & Technology offers a unique (patent pending) optical corrosion monitor that utilizes insitu fiber optic probes, replaceable metalized windows, and remote read out device that can monitor the loss of metal on an optical substrate and correlate this loss to corrosion due to gas or liquid exposures.

Current Technology

Current technology for monitoring corrosion is either via a preweighed coupon or an electrical based measurement. Coupons are time consuming to install and do not provide real time measurements. Electrical based sensors operate in conductive streams only and are temperature and pressure limited.

The CST Solution

The corrosion monitoring system operates on the concept of reflectance of radiation from a reflective surface. Light from a stable light source impinges a thin metal coating on an optical substrate and the reflected light from the metal coating is collected and monitored. As thickness of the metal coating changes due to corrosion, the reflectance from the back surface changes. The change is dependent on the thinly applied metal surface and the environment in which the probes metalized window is exposed to. With over 300 metals that can be deposited on the probes window this system has proven to be an effective tool in monitoring and controlling the effects of corrosion in industrial plants.

Product Applications

Conductive, nonconductive, liquids, gases, in the following industries;

- Water Quality
- Chemical plants
- Refineries
- Bio-Tech/Pharmaceutical
- Utilities
- Pipeline integrity
- Liquid transport
- Pulp & Paper

Optical Transmitter

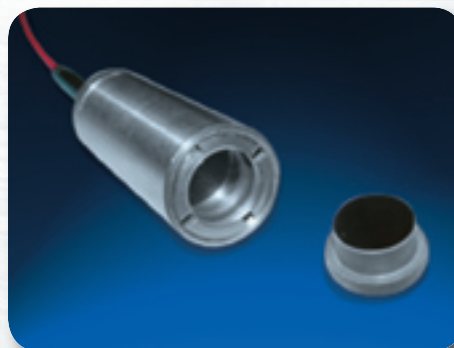
Custom Sensors & Technology manufactures a low cost fiber optic based Photometric transmitter that produces a 4-20mA signal proportional to the amount of Reflectivity from the corrosion probe. The transmitter is also supplied with an automatic/manual means of verifying the response of the transmitter by introducing a filter with a known optical density.



Model 58TL Corrosion Transmitter

Fiber Optic Reflectance Probe

The CST corrosion probe incorporates a replaceable metalized window, a body, and internal optics that measure the specular reflectance from the metalized window. The probe body can be supplied in 316SS, Hastelloy, Titanium, Monel, and a variety of materials. The metalized windows can be pure materials or alloys. All windows are provided with traceable material certifications along with initial thickness measurements.



Probes have been tested to withstand pressures up to 10,000psig and temperatures up to 300C.

* Patent pending Probe body with metalized window

Custom Sensors & Technology is a manufacturer of process photometric and electrochemical based process transmitters

Product Specifications

Transmitter

Measured parameter	% Reflectivity
Resolution	0.01%
Lamp	NIR LED, minimum 10 year life
Temperature Range	-10°C to + 55°C
Response time	< 1 sec
Maximum Zero shift	0.05%R(over -5° to +40°C)
Long term output drift	<1% signal loss/year
Repeatability	1% of range
Range	Based on application 0-1MPY up to 5MPY, 0-100%
Span Calibration Filter	Manual or remote triggered, NIST traceable (optional)

User Display & control

Type of display	LED
Display numerical format	3-1/2 digits in user defined engineering units

Electrical

Power requirement	24VDC (9-32VDC) Std. or 110/220 VAC, 50/60Hz with power supply
Power consumption	350mA @ 24VDC
Analog outputs	4-20mA isolated
Analog loop resistance	500 Ohms, maximum @ 24V
Alarms	Optional
Certification	CE

Mechanical

Analyzer weight	1.5 lbs
Enclosure construction	Extruded Aluminum, (Nema 4X, Optional) 8" x 3-7/8" x 1-1/2" (HWD")

Probes

Materials	316SS or others please specify
Temperature rating	315.5C (600F)
Pressure rating	10,000 psig
Probe window material	Please consult factory
Probe diameter	1/2"
Probe length	3" standard with 3/4" conduit hub connection

Probe options

1. 6, 12, or 24" in length
2. Automatic retractor

Custom Sensors & Technology is a full service provider. We also supply photometric transmitters, fiber optic probes & flow cells, O₂ transmitters, sample handling systems, and services including: application engineering, commissioning & start-ups, product validation, factory acceptance testing, process stream GAP Analysis, and in-house repair.