

TELEDYNE **ANALYTICAL INSTRUMENTS**

On-Line Color Transmitter

Teledyne supplies a photometric transmitter for monitoring the amount of color in process solutions. The system incorporates state-of-the-art electronics and an external flow cell or insitu probe that senses on-line color changes of your product. The transmitter can then send a signal to a controller that automatically controls the parameters that affect the presence or absence of color in your stream. Additionally, the transmitter is supplied with a means of independent calibration via a NIST traceable filter and a means of determining if the optical windows are fouling via our window fouling circuit.

Defining the Problem

The absence or presence of color bodies in a product can greatly affect the quality and or appearance of the product. With enough color change, the process can be forced to take an unwanted, and sometimes unexpected, shutdown, thus affecting production yield and or quality. Typically, in a process stream, color measurements are made with transmission probes or flow cells, however when a sample stream is highly opaque or difficult to transmit energy across a reflectance method can be employed to measure the amount of reflected light from the sample.

The Teledyne Solution

The Teledyne reflectance or transmission probe is designed for insitu measurements of process streams that need to monitor color changes.

The reflectance or transmittance probe coupled with the Color Transmitter is an effective tool to manage process color changes. The signal from the Transmitter generates a 4-20mA output that is proportional to your process color (presence or absence). This signal can be used to control the final appearance of the process stream.

To develop an immediate response to a process color change, a probe is employed to monitor the conditions directly within the process. The in situ probes have been designed to withstand high temperatures and pressures and can be optionally supplied with an automatic retraction device for cleaning or calibration.

Benefits of the Teledyne Color Transmitter

- Continuously monitors the Color in your process stream and produces output signals proportional to concentration
- Fiber optic; source, reference, and measure
- 4-20mA range output
- Transmitter electronics separated from Process via fiber optic cables
- Unit is supplied with automatic insertion calibration filter and window fouling circuit

Photometric Transmitter

Teledyne offers a low cost Photometric Transmitter that optically measures, (via a remote fiber optic probe) the amount of visible color in a process stream and sends a proportional 4-20mA signal to the control room.

Transmission and Reflectance Probes *

The transmission or reflectance probe is a fiber optic probe that senses a color change in the process stream. In addition to monitoring the optical absorbance or reflectance through the probe, they can be supplied with optional internal temperature measurements.



Model 55T color transmitter



Model 3501 & 3502
Transmission & Reflectance
Probe, 12" and 24" versions

* patent pending



On-Line Color Transmitter

PRODUCT SPECIFICATIONS

55T Series Color Photometric Transmitter

Transmitter

Measured parameter:	Color, presence / absence
Resolution:	0.01AU
Temperature range:	-40 to +300° C
Response time:	< 1 sec
Maximum Zero shift:	0.005AU (over +20 to +40° C)
Long term output drift:	< 2% signal loss/year
Repeatability:	1% of range
Light source:	LED (guaranteed 9 year minimum life) or Tungsten Halogen (one year life)

User Display & Control

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

Electrical

Power requirement:	24 VDC (9-32 VDC) If 110 / 220 VAC is available, will supply an AC / DC power supply
Power consumption:	0.48 Watts
Analog outputs:	4-20mA isolated
Analog loop resistance:	500 Ohms, maximum @ 24V
Alarms:	Optional
Certification:	Available upon request

Mechanical

Transmitter weight:	1 lbs
Enclosure:	Extruded aluminum, NEMA 4X optional 8" H x 3-7/8" W x 1.5" D

Front Surface Fluorescence Probe

Materials:	316 SS or Hastelloy C
Temperature rating:	315.5° C (600° F)
Pressure rating:	10,000 psig

Probe Options

- 6, 12, or 24" length
- Automatic retractor for cleaning

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Warranty

Instrument is warranted for 1 year against defects in material or workmanship. NOTE: Specifications and features will vary with application. The above are established and validated during design, but are not to be construed as test criteria for every product. All specifications and features are subject to change without notice.

