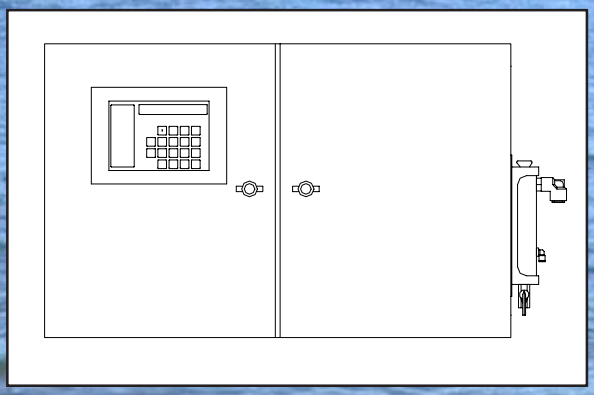
SEVERN TRENT SERVICES

CAPITAL CONTROLS

AZTEC® Color/Turbidity Monitor Series CT100



The Capital Controls AZTEC® Color/Turbidity Monitor, Model CT100 is a reliable, continuous on-line process instrument. The microprocessor-based technology makes the operation easy and user-friendly.

The measurements are based on recognized and approved 400 nm Hazen standardized absorbance and nephelometric formazin standardized methods. Adaptations of these methods are also described in the U.K. Department of Environments “Blue Book Procedures”.

Accuracy and reproducibility are obtained through a programmable automatic calibration feature. This two-point calibration, based on deionized water and a platinum-cobalt standard solution, represents the only tuning needed for continuous operation.

The sample head combines a precision-engineered pump with the optical measuring cell. The optical cell is self-cleaning further ensuring an accurate and reproducible system.

Sample flow and standards are monitored by level detectors and the monitor is designed to operate for a minimum of 20 days before reagent replacement.

The CT100 is designed to NEMA 4 standards and uses corrosion-resistant materials.

The microprocessor provides between one and six weeks of data logging. Standard outputs include RS232, 4-20 mAdc, parallel printer port, and alarm relays.

- **Continuous on-line monitoring**
- **Parallel measurement of color and turbidity**
- **Two-point auto-calibration**
- **Self-diagnostics**
- **Self-cleaning optics**
- **Multiple sample streams**
- **Microprocessor controlled**
- **Data logging**
- **Rugged industrial design**
- **Programmable sample frequency**

Applications

Surface Water: Monitor for coagulation control

Clarification: Feed forward or feed back measurements for clarifier optimization

Filtration: Feed forward control based upon residual floc/organic levels post-coagulation

Filtered Water: Early warning of breakthrough from filter media

Industrial and Municipal Wastewater: Monitor for color removal before discharge into waterways

Design Features

Automatic Calibration: A two-point calibration using deionized water and a color standard ensures highly accurate and reproducible results

Communications: Serial (RS232) and parallel (centronics printer port) and 4-20 mAdc outputs are standard

Self-diagnostics: The monitor will indicate system faults and shut down in the event of a power or sample flow failure. The unit will automatically restart once these are restored.

Microprocessor controlled: Installation and operation is user-friendly with control variables such as date, time, alarm limits, calibration interval and print mode that can be entered via the keypad

Multi-stream: In addition to the standard single stream unit, an optional triple stream unit is available

Data logging: The microprocessor has a data logging capability with storage in excess of one week of data

Sample frequency: The number of samples per hour is fully programmable. This reduces maintenance frequency and reagent consumption.

Principle of Operation

The method is based upon the absorption of an induced light beam in a 40 mm cell at 400 nm. Turbidity is measured by light scattered at 90° from the incident source.

A discrete sample of water is collected by the pump at user-programmable intervals. A deionized blank is measured to compensate for any minor optical drift. The sample is then drawn into the combined pump/optical cell and the transmission of light is measured using two photo-diode detectors. One detector is positioned at 180° to the light source to measure absorbance after first being filtered to 400 nm. The second is positioned at 90° to measure turbidity.

The output from the detector is converted by a microprocessor into degrees Hazen, based upon a pre-programmed, two-point automatic calibration that ensures the accuracy of this analyzer. The piston pump provides accurate reproducible and a continually cleaned sample cell. (Figure 1)

Technical Data

Measuring Ranges: 0.002 to 0.3 optical density, or 2 to 250° Hazen (Pt-Co units). 0.1 to 40 FTU

Accuracy: ±2% or 1° Hazen, whichever is greater. 0.01 to 0.2 FTU through range.

Repeatability: ±2% of reading

Sample Flow: 200 to 500 ml/min.

Sample Temperature Range: 1-35°C (33-100°F)

Operating Temperature Range: 0-35°C (32-100°F)

Power: 110 Vac, ±6%, 60 Hz, 120/240 Vac, ±6%, 50/60 Hz. Supply to be stable and generally free of voltage dips/surges, excessive switching spikes and transient noise. 5 Amp fuse.

Power Consumption: 240 watts

Outputs: RS232, parallel (centronics), isolated 4-20 mAdc into 1000 ohms maximum. Each value is held until the reading is updated

Alarms:

Single Stream: 4 dry contacts rated 10 amps @240 Vac maximum

Multi-Stream: 8 dry contacts rated 10 amps @240 Vac maximum

Chemical Reagents:

Acidified water

Alkaline rinse

Standard solution -

50° Hazen/Pt-Co units

Sample Frequency: 1 to 20 measurements per hour

Cabinet: NEMA 4 Three-section industrial, wall cabinet, mild steel construction with phosphate etch prime and epoxy powder texture finish.

Shipping Weight: 125 lb. (60 kgs)

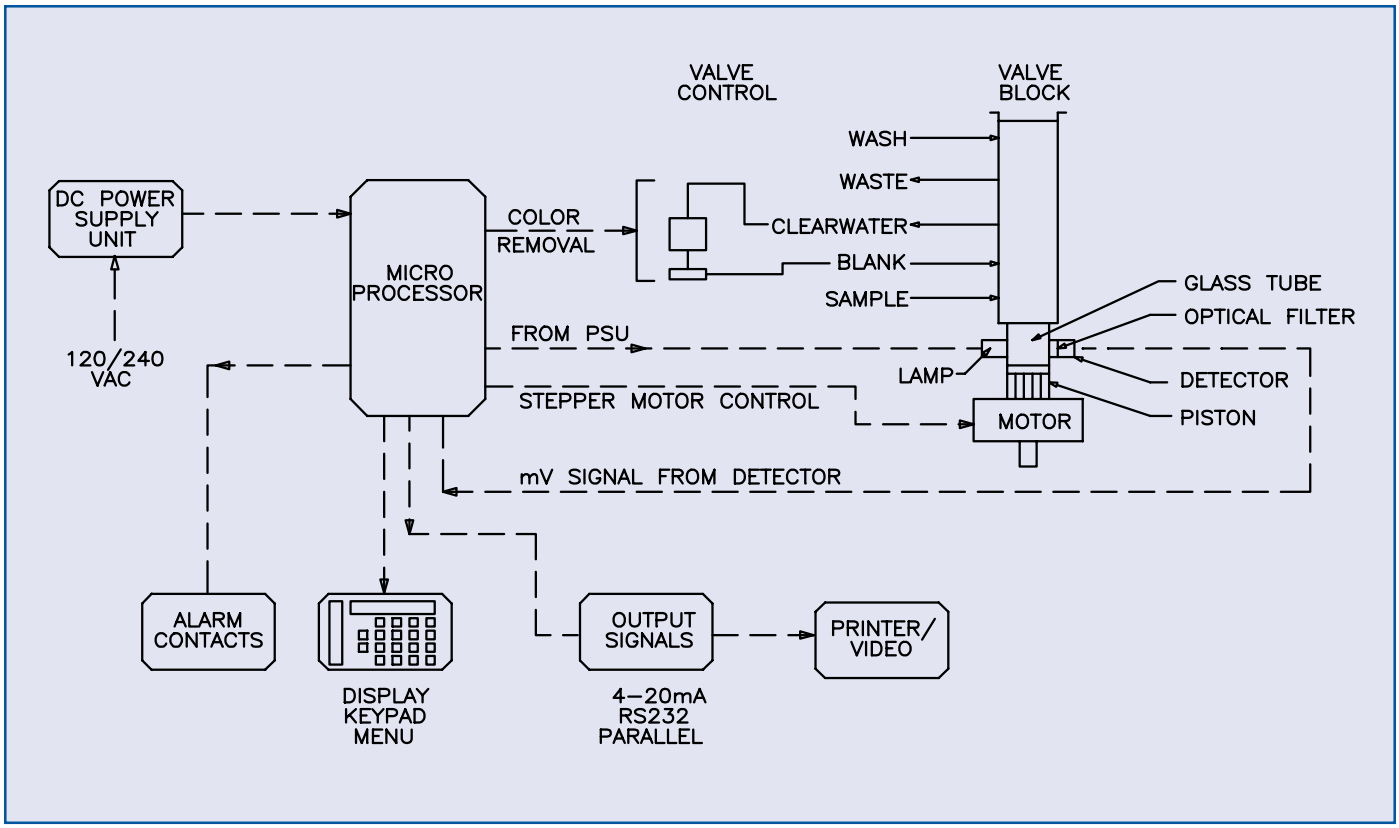


Figure 1

Warranty and Capability

Capital Controls offers a one (1) year limited warranty on all color monitors.

Capital Controls is 9001 certified to provide quality and precision materials, and specializes in disinfection technologies, water quality monitors and instrumentation for water and wastewater. Over 35 years of industrial and municipal application experience in the water and wastewater industries is incorporated into the equipment design to provide the highest quality comprehensive solutions for the global market.

Model Information Code

Model CT 1 0 0 __ __

Voltage

1 - 120 Vac, 50/60 Hz, single phase

2 - 240 Vac, 50/60 Hz, single phase

Sample Stream

0 - Triple sample stream

1 - Single sample stream

Brief Specification

The Color/Turbidity Monitor shall provide on-line, continuous batch analysis of a water sample using nephelometry for turbidity in a 40 mm cell and a 400 nm filter for color. The method shall incorporate a blank measurement on the untreated sample. The range of the monitor shall be 2 to 250° Hazen. The optical surfaces shall be cleaned prior to all measurements.

The cabinet shall be constructed of mild steel and be suitably rugged for long term plant operation, water-resistant to NEMA 4 standard. The sensor and electronics shall be mounted within separate compartments to ensure a safe working environment.

Sampling frequencies shall be programmable between 1 and 20 times per hour. Automatic two-point calibrations shall be provided. The unit shall be configurable to a 3-stream unit within the standard enclosure.

The unit shall feature a programmable isolated 4-20 mAdc output, RS232C port, parallel printer port and alarm relay contacts.

The unit shall operate on standard clean power supply within 6% of specification.

Design improvements may be made without notice.

Represented by:

SEVERN TRENT SERVICES

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