

## Series Q46CT Conductivity Monitor

Conductivity Monitors shall be supplied for continuous monitoring of conductivity in \_\_ (Specify Application and Location) \_\_. The conductivity monitoring system shall consist of an electronic monitor housed in a NEMA 4X enclosure suitable for wall, pipe, or panel mounting, a toroidal style conductivity sensor, and accessories listed below. The Conductivity Monitoring System shall be ATI Series Q46CT as described below.

The conductivity sensor shall be a toroidal design. The sensor jacket material shall be Noryl. The body shall have a 3/4" MNPT thread on the cable end for mounting to submersion-mount hardware. The sensor cable shall be fixed to the sensor and encapsulated in the sensor body. The sensor shall include a Pt1000 RTD for high accuracy temperature measurements.

An optional 2" tee fitting shall be available. The tee fitting material shall be CPVC. The tee fitting shall be keyed to the sensor to ensure proper sensor alignment.

Monitors shall be powered by either 90-260 VAC single-phase line power, or 12-24 VDC. Either version of the monitor shall provide two isolated 4-20 mA outputs as standard, with an option for a third 4-20 mA output. Outputs shall be configurable for conductivity, temperature, or PID control. Analog outputs shall be both ground isolated and isolated from each other.

For alarm purposes, monitors shall contain three SPDT relays. Relay functions shall be programmable for control, alarm, or fail functions, and may be designed for either normal or failsafe operation. For monitors supplied with only 2 analog outputs, monitors shall have the option of an additional 3 low-power relays to allow for additional external alarm functions.

The conductivity monitor electronic assembly shall provide a variety of functions as follows.

1. Provide user selectable display of Conductivity, Concentration, TDS, process temperature, or PID % output on the main display. Main display variable shall be indicated with a minimum character height of 0.75" to allow easy readability up to 20 feet away.
  2. Provide the ability to use the 4-20 mA output for PID control. Proportional, Integral, and Derivative functions shall be user adjustable, and also provide for output hold when needed.
  3. Provide two isolated 4-20 mA outputs, with output spans programmable by the user for any segment of a display range. An optional third analog output is available, providing separate outputs for conductivity and temperature.
  4. Provide output hold and output simulate functions to allow for testing or remote receiving devices or to allow maintenance without disturbing control systems.
  5. The monitor shall contain calibration functions for 1-point calibration for conductivity or % concentration. An air-zero calibration routine shall be provided for calibrating the sensor zero point at initial installation. Calibration stability monitors shall be provided to hold calibration status until stable calibration conditions have occurred. In addition, the transmitter shall allow a sensor cell constant value to be entered directly for calibration without solutions.
  6. The transmitter shall be configurable as a concentration monitor, which include functions for displaying concentration values from built-in tables. A user configurable table shall be available for entering data points for a custom concentration curve.
- 
-

7. Provide three 6 amp SPDT relay outputs in standard unit. Software settings for relay control include setpoint, deadband, phase, delay, and failsafe. Provide an optional 3-relay card, for 0-30 V signals, to bring the total to 6 relays. Relays shall be programmable for either control or alarm function, or relays may be assigned to diagnostic functions for use in indicating trouble conditions at a remote location.
8. Provide option for digital communications. These options shall include Profibus-DP, Modbus-RTU, or Ethernet-IP.
9. Diagnostic functions shall be incorporated into the transmitter. The 4-20 mA output shall be capable of being assigned to safely rise to 20 mA, fall to 4 mA, or be left alone, during diagnostic failures. Diagnostic error messages shall be displayed in clear language; no confusing error codes shall be displayed.

The complete Conductivity Monitor shall be Series Q46CT as manufactured by Analytical Technology, Inc. or approved equal.

---

---