# Control Electronics, Inc.

## ERS-560 Ultrasonic Level Monitor

*Technology For A Demanding Future*

## Features

* 200 Day  Daily Summary Log
* Time Stamped EVENT List
* 5 Programmable Relay Outputs
* 2 Independent 4-20 mA. Outputs
* Quick, Easy Setup
* Non-Contacting



Control Electronics ERS-560 Series Ultrasonic Level Monitor is a non-contacting, highly accurate, short range liquid level measuring system.  The meter is microprocessor controlled and will monitor liquid level in most tank configurations. Applications range from monitoring levels in sewage works to industrial tank levels.

## CONTROLLER   *Reliable, Accurate, Smart*

Precise liquid depth measurements are continuously made under processor control.  Ultrasonic sound pulses are transmitted from the sensor and elapsed time of echo return is accurately calculated. This information is converted to a depth measurement and is applied to the respective equation for the tank configuration selected.  The built-in equations produce a total gallons stored .

Proportional analog  level signals (4-20 mA.),  relay contact closures and RS-232 outputs are available for remote indicating, recording and process control such as pump control in a wet well.  Data logging of liquid level and a **6 month summary of Min, Max, Avg level and end of day total gallons** are available for downloading and analysis.

All circuits are protected in a NEMA 4X (IP65) fiberglass enclosure with a clear polycarbonate hinged cover for easy viewing of all data and level indications.



Sensor
US70TC

Application In Wet Well For Pump control

## PROGRAMMABLE   *Flexible, Cost Effective*

Programming of the Level Monitor is accomplished by four pressure sensitive buttons on the front panel.  All parameters and level information are indicated on the menu-driven alpha numeric display.  Level indication in PERCENT, INCHES, FEET, GALLONS along with sensor temperature and data logging are all selectable from the front panel.

Programming options in the ERS-560 allow the meter to be extremely flexible in application.   Two (2) scalable and independent 4-20 mA. outputs with five (5) control relays with independent ON/OFF settings for operating pumps, valves etc. are standard. Relay 1 and 2 may be set for LEAD/LAG pump alternation.

All programmed data and data logging are password protected and saved in nonvolatile memory in the event of a power failure.

## SENSOR   *Non-Hazardous,  Non-Intrusive*

The Sensor is a non-contacting, non-contaminating Ultrasonic type probe with temperature compensation.   Unlike some systems that apply a high voltage (as much as 400 to 1500 volts) to their sensor cable, the ERS-560 sensor (US70TC) requires a pulse of only 60 volts maximum.  This means the sensor is non-hazardous, eliminating potential arcing of a faulty cable which could be a threat to personnel or the environment.  Installation is fast and easy **using only an inexpensive twisted pair shielded cable.** The rugged sensor  is housed in solid PVC, requires no maintenance and is considered  explosion-proof, corrosion resistant and submersible.
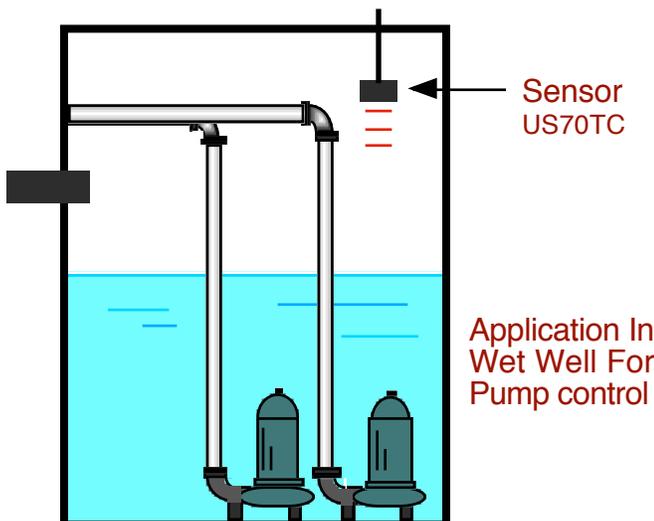
## DATA LOGGING

The ERS-560 automatically logs daily levels for the past 6 months with auto wrap around. It records the date, daily average level, min/max levels with time they occurred and total end of day gallons stored. The system also logs and time stamps the average level between samples taken. The logging sample rate is programmable from 0-99 minutes in 1 minute increments.

A time stamped EVENT list is also included to record actions the meter has made such as relay ON/OFF, when programmed, signal or power loss etc. All data logged information is preformatted and may be downloaded to a PC through the RS-232 output using any standard communication software package such as HYPER-TERMINAL.
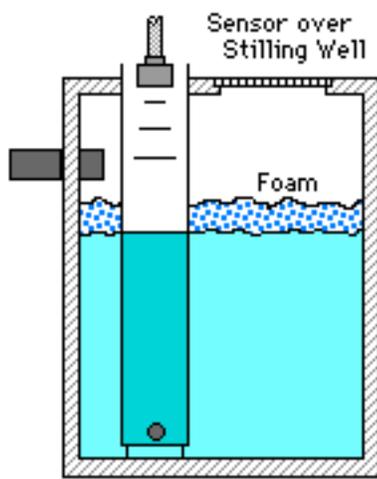
## Dimensions



**Typical Installation**
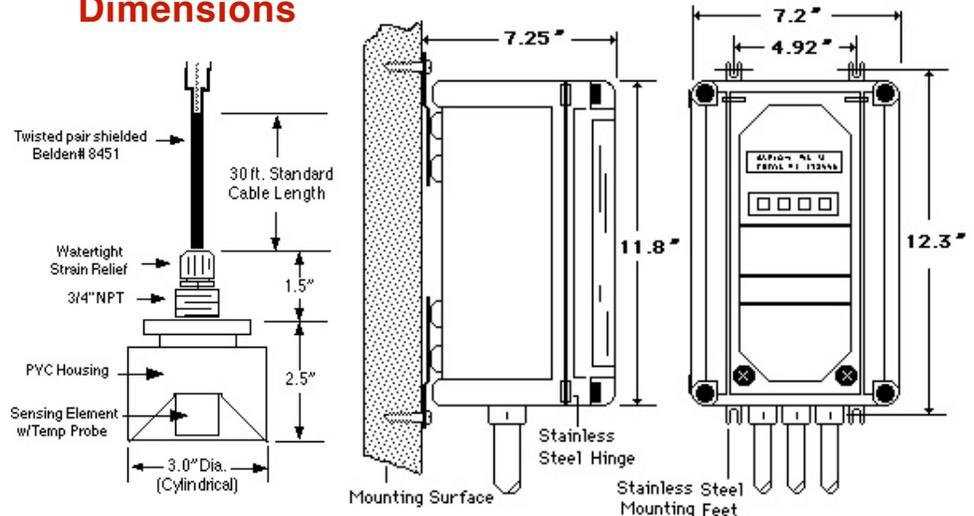
**US70TC Sensor w/Temp Probe**

**Enclosure**

# ERS-560 Specifications

Specifications and design subject to change without notice.
Made in USA.    Bulletin # 97 - 560 -13 -11

## Electronics

| | |
|---|---|
| Power Requirements: | 120/220 VAC, ±15%, 50/60 Hz |
| | 12-24 VDC @ 15W max. |
| Temperature: | 30°F to 120°F  (-5°F with opt. heater) |
| Display: | 2 line x 20 character, Alphanumeric, LCD with LED backlighting |
| Outputs: | Two (2) independent 4-20 mA isolated into 1000 ohm each, RS-232 terminal, RJ11 modular jack, 5 relays with programmable ON/OFF settings , SPDT 5A/250 VAC contacts |
| Span Range: | 0-1.00" to 0-200.00" full scale |
| Dead Band (blanking): | 12.0" to 36.0" adjustable |
| Display Resolution: | 0.01inch |
| Accuracy*: | ±0.8% of range or better, calculated error less than ±0.04% |
| Memory: | Flash and nonvolatile RAM |
| Tank Equations: | Cylindrical, Horizontal, Spherical, Rectangular, Square, None |
| Data Log: | **200 day 24 hour summary:** min, max, avg level, total gallons. **Time Stamped avg LEVEL** with programmable log rate of 00-99 minutes in 1 minute increments **EVENT List:** time stamped |
| Download: | To serial printer, PC or MODEM. Data is preformatted. |

*Field conditions, such as turbulance, foam , vapors etc. may affect the apparent accuracy or performance

## Sensor   *w/temp probe (US70TC)*

| | |
|---|---|
| Material: | PVC Housing, Epoxy (opt. Teflon) |
| Temperature: | -40°F to 160°F exposure |
| Cable: | 30 foot corrosion resistant, 1000 feet max. Twisted Pair Shielded, Belden# 8451 or equal. |
| Beam/Freq.: | 5° Conical, 40 kHz. Pulsed, 60Vp-p max |
| Mounting: | 3/4" NPT male |
| Dimensions: | 3.0" dia. x 4.0" Len. |

Sensor is considered explosion proof, immersible, suitable for Class 1, Div. 1, Grps. C, D.. Class II, Div. 1, Grps. E,F,G environments.

## Enclosure

| | |
|---|---|
| Material: | Fiberglass, clear hinged Polycarbonate cover |
| Rating: | NEMA 4X, IP65, Dust-Tight, watertight, Corrosion Resistant, CSA, UL listed |
| Dimensions: | 7.2"x11.8"x6.8" |
| Mounting: | 4.92"x12.3" , Stainless Steel mounting feet |

## Options

Heater/Thermostat, Sensor Cable, PVC Sensor Mounting Bracket ....

**ERS-560DX** ... same as ERS-560 w/o relays or data logging
**Warranty**: the ERS-560 system is pre tested and inspected before shipping. Warranty is against defects in parts and workmanship for a period of one (1) year from ship date.

# Control Electronics, Inc.

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Designing/Manufacturing Since 1980

**Represented  By:**