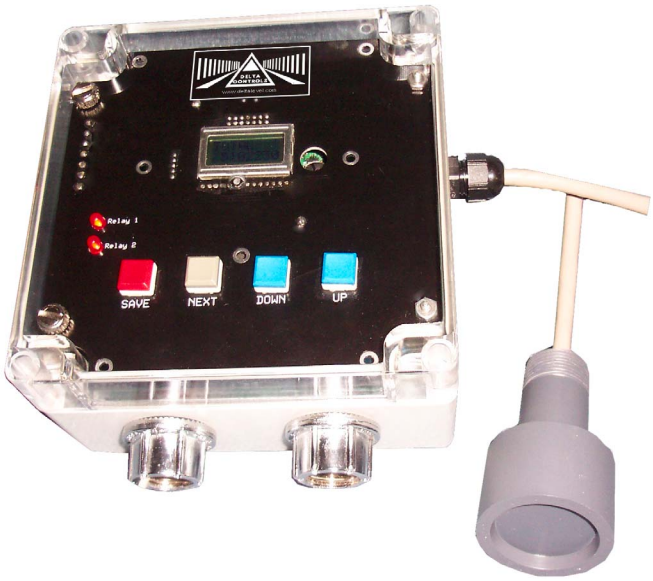
MODEL 873 ULTRASONIC LEVEL CONTROLLER

Pump Controller and Level Transmitter/Alarm
Simple - Pushbutton Calibration
User Friendly - Large Easy To Read LCD Display Screen

FEATURES

- Automatic Pump Rotation, Time Delay
- 10-AMP Relays for alarm or pump control
- Field Proven Ultrasonic Measuring Circuitry
- Fuzzy Logic Algorithms Enhance Speed and Reliability
- Simple Calibration; It Is Not Necessary To Drain (Or Fill) The Tank: Any Two Level Points Can Be Used
- Can Be Reverse Calibrated At Will (20 mA = Empty)
- Design Is Accurate, Simple, And Very Reliable
- Process Temperature Range From -40°F To+275°F
- Speed Of Sound Corrected For Changes in Temperature
- 16 Character Alpha-Numeric LCD Readout For Setup, Calibration, And Level Display
- Built-In Voltage Spike And Spark Protection



APPLICATIONS

The Model 873 Ultrasonic Level Transmitter is used to measure transmit, and control the level of liquids, slurries, and granular solids. The sensor is not in contact with the measured material. This feature avoids the usual problems and high maintenance costs commonly associated with the measurement of sticky, gummy, dirty, and corrosive process materials.

The 873 will accurately measure almost any kind of liquid, including water, oil, gasoline, acid, caustic, soup, milk, gear lube, and antifreeze. It is particularly advantageous when used on fuel oil tanks, cooling tower basins, fruit juice day tanks, chlorine storage tanks, irrigation channels, and wastewater tanks. It can easily measure slurries such as vegetable soup and pulp stock. It works well when measuring granular solids such as pecans, potatoes, corn, concrete chunks, paper stacks, and lump coal. The maximum range is reduced when used on solids.

OPERATION

A burst of sound waves is directed at the surface of the material to be measured. It strikes the surface and is reflected back. The time necessary for the waves to propagate through the air to the material and back to the sender/receiver is proportional to the distance separating them. That time is used to produce a 4-20 mADC level signal equal to the material height (or outage) in the container.

Two or four relays are provided for use as alarms and for controlling pumps. VAC supply power is required for the 873.

CALIBRATION

Calibration is simple and easy. The Model 873 can be calibrated using any two levels in the tank. The tank does not have to be full or empty.

BASIC SPECIFICATIONS

Measurement Range: 6 inches to 50 feet in 4 Increments
Beam Angle: ±6° at the 3 dB down boundary
Output: 4-20 mADC, 2 wire, loop powered, directly or inversely proportional to level; isolated, with adjustable dampening
Relays: Two 10 Amp SPDT@ 240 VAC
Pump Rotation: Selectable or alarm action
Pump Starting Time Delay: Adjustable
Supply Power: 120 or 240 VAC
Housing:: 4x hose proof; 6 submergible, polycarbonate
Setup: Prompt driven on screen
Calibration: 2 point, pushbutton
Echo Signal: Action is displayed on screen
Built-in Temperature Compensation: Yes
Accuracy: Better than 0.25% of maximum target range (in air)
Maximum Loop Loading: 600 ohms
Process Operating Temperature: -40°F to +275°F (135°C)
Working Process Pressure: Up to 50 PSIG (3.5 bar)
Ambient Operating Temperature: -40°F to +160°F (70°C)
Cable: up to 50 feet between S/R and Electronics Housing
Wetted Materials: PVC Kynar® (PVDF)
Mounting Connection: Stem, NPT, ANSI, or Sanitary Flange

OPTIONS

- **Four 10 Amp SPDT relays**
- **Modifications:** As required to suit the user's application

MODEL NUMBERING SYSTEM

BASIC TYPE	–	SUPPLY POWER RELAY QUANITY	–	SENSOR MATERIAL	–	*CABLE LENGTH	–	SENSOR MOUNT	–	OPTIONS
M/N EXAMPLE 873C	–	1/2	–	V	–	10P	–	SMT	–	AA

M/N	MIN Distance	MAX Distance	MINIMUM PROCESS CONN. SIZE
873H	7.5 inches	10 feet	1½" NPT or flange; 2" sanitary
873C	11 inches	20 feet	2" NPT or flange; 3" sanitary
873D	14 inches	30 feet	3" NPT or flange; 4" sanitary
873E	19 inches	50 feet	4" NPT or flange; various brackets

Minimum Span = 10% of Maximum Distance
Housing: 4X ; Polycarbonate Material

M/N	DESCRIPTION
1/2	120 VAC; 2 RELAYS
1/4	120 VAC; 4 RELAYS
2/2	240 VAC; 2 RELAYS
2/4	240 VAC; 4 RELAYS

M/N	BODY MATERIAL	MAXIMUM °F @ PSIG		
		5	25	50
V	PVC	150	145	140
K*	KYNAR	160	160	160
H*	KYNAR	275	250	220

* Minimum is - 3 psia and –20 °F (-20 kPa. –5 °C)

M/N	DESCRIPTION
10 P	10 FOOT
* P	OTHER LENGTHS

REPLACE * WITH REQUIRED LENGTH IN FEET

M/N	DESCRIPTION
AA	NONE
*EL	EXTENDED SENSOR, PVC OR KYNAR MATERIAL
WMD	WALL OR SHELF SENSOR MOUNTING BRACKET STEEL
ZZ	CUSTOM CONFIGURATION AND MODIFICATIONS

REPLACE * WITH INCHES ADDED

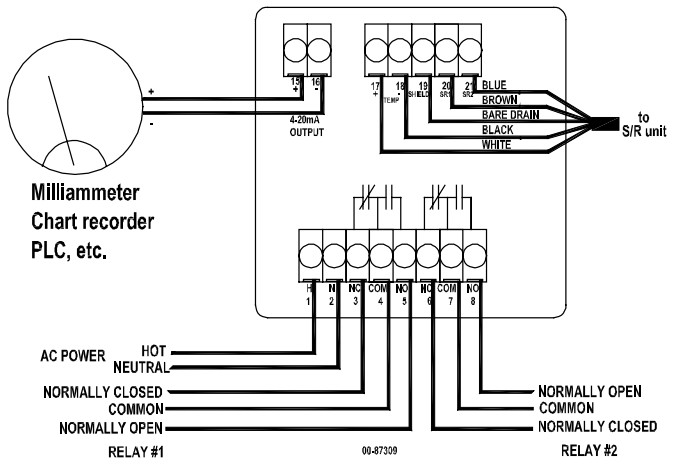
M/N	DESCRIPTION
WMB	WALL OR SURFACE SENSOR MTG BKT; STEEL
STM	¾" STEM MOUNTED SENSOR
LTC	SANITARY CLAMP TYPE FLANGE

M/N	DESCRIPTION / MATERIAL
2" 150F	150# CLASS, FLAT FACE, NON METALIC PROCESS CONNECTION
3" 150F	
4" 150F	

M/N	DESCRIPTION
1 ½ NP	1 ½" NPT
2 NP	2" NPT
3 NP	3" NPT

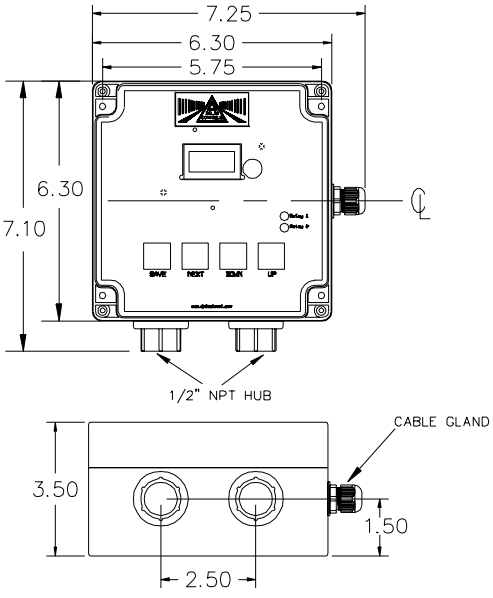
Manufactured in the USA by Delta Controls

TYPICAL LOOP WIRING



Wiring With AC Power and 2 Relays

DIMENSIONS



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