

MODEL 872 ULTRASONIC LEVEL TRANSMITTER TWO-WIRE, LOOP POWERED

TS872

Versatile - Measures Acid, Oil, Water, Slurries, Solids
Simple - Automatic Pushbutton Calibration
User Friendly - Large Easy To Read LCD Display Screen

FEATURES

- 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
- Intrinsically Safe Electronics Design Improves Safety And Lowers Cost Of Installation And Operation
- Temperature Corrected For Changes In Speed Of Sound; Digital Tank Condition Algorithm
- Large 16 Character Alpha-Numeric LCD Readout For Setup, Calibration, And Level Display
- NPT, Flanged, Sanitary, Or Stem Mounting
- Sealed Electronics Survives Harsh Environments
- Built-In Voltage Spike And Spark Protection

APPLICATIONS

The Model 872 Ultrasonic Level Transmitter is used to measure and transmit 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 materials.

It 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 pharmaceutical reactors. 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, however the maximum range is reduced.

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 or gaseous medium 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 mA DC level signal equal to the material height (or outage) in the container.



CALIBRATION

Calibration is simple and easy. The Model 872 can be calibrated using any two levels in the tank. The tank does not have to be full or empty; simply change the material level enough to get a second known elevation and then push the "Calibrate" button.

BASIC SPECIFICATIONS

Measurement Range: 6 inches to 50 feet in 4 ranges
Beam Angle: $\pm 6^\circ$ at the 3 dB down boundary
Output: 4-20 mA DC, 2 wire, loop powered, directly or inversely proportional to level; isolated
Damping: Software Selectable
Echo Signal: Action is displayed on screen
Loss of Echo Indication: Yes
Built-in Temperature Compensation: Yes
Accuracy: Better than 0.25% of max target range (in air)
Loop Supply Voltage Range: 12-30 VDC
Maximum Loop Loading: 900 ohms @ 30 VDC
Process Operating Temperature: -40°F to +275°F (135°C)
Ambient Operating Temperature: -40°F to +160°F (70°C)
Cable: 10 feet of 2 wire, robust rubber jacketed
Wetted Materials: PVC or Kynar® (PVDF)
Mounting Connection: NPT, Stem, ANSI or Sanitary Flange
Working Process Pressure: Up to 50 PSIG (3.5 bar)

OPTIONS

Intrinsically Safe: Class I, Division 1 & 2, for Hazardous Areas ABCD; and 4X Hoseproof
Modifications: As required to suit the user's application

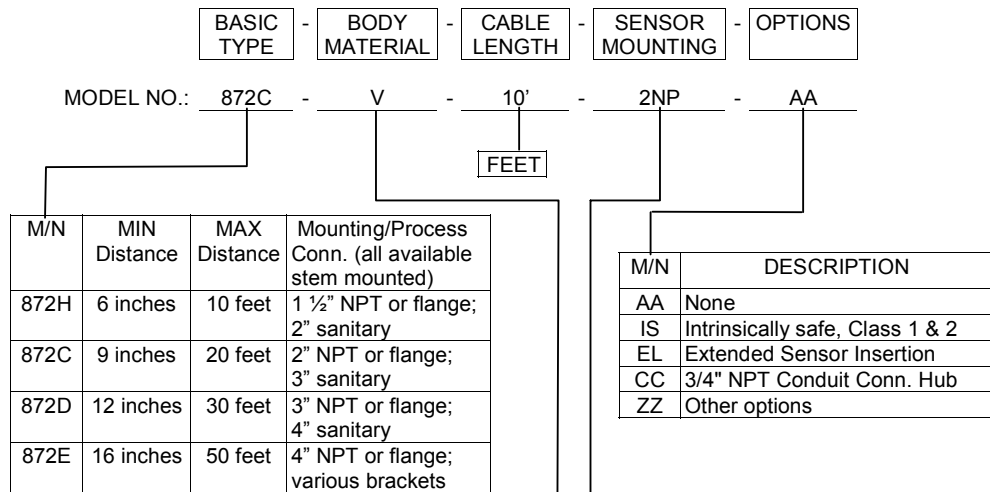
THIRD PARTY APPROVALS

CSA (Canada) NRTL/C (USA) Intrinsically Safe Environment Proof

3A Sanitary, Worldwide
ISO-9001 Quality System

DELTA CONTROLS CORP

MODEL NUMBERING SYSTEM



Minimum Span = 10% of Maximum Distance
Housing Material: PVC

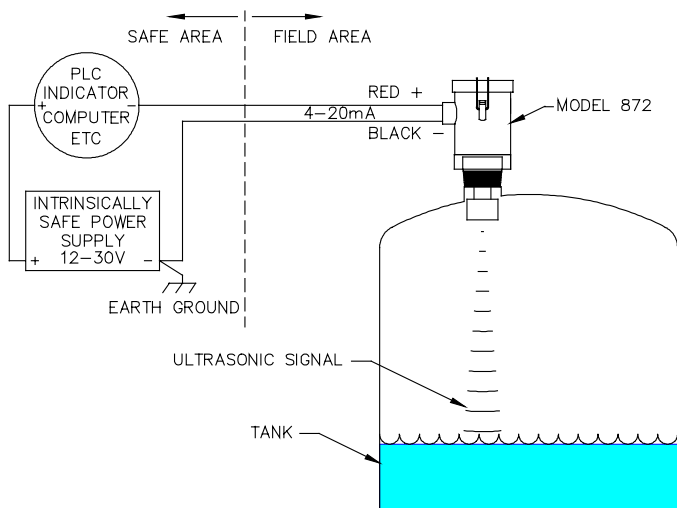
M/N	BODY MATERIAL	Maximum °F @ PSIG		
		5	25	50
V	PVC	150	145	140
K*	KYNAR	160	160	160
H*	KYNAR	275	250	220

* Minimum is -3 psig and -20 °F (-20 kPa, -5°C)

M/N	DESCRIPTION
*NP	NPT pipe thread
*FF	150# Flat Face Flange
*TC	Tubing Size Sanitary Tri-Clamp
SM	Stem Mounting Bracket, Attaches to Vertical Wall or Horizontal Ledge
ZZ	Other connection types and sizes

Replace * with required size.

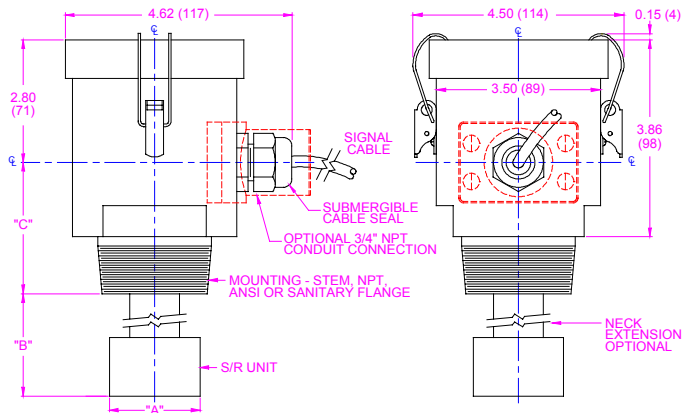
TYPICAL LOOP WIRING



BASIC (NON-IS) POWER SUPPLY MAY BE SUBSTITUTED IF FIELD AREA DOES NOT CONTAIN AN EXPLOSION HAZARD

Manufactured in the USA
by Delta Controls

DIMENSIONS



MODEL NO.	SIZE AND TYPE MOUNTING CONN.	DIMENSIONS - INCHES		
		"A"	"B"	"C"
872H	1-1/2" NPT	1.12 (28)	2.00 (51)	2.50 (64)
872C	STEM	1.90 (48)	5.10 (130)	1.30 (33)
	2" NPT	"	2.50 (64)	2.30 (58)
	2" 150# FF	"	2.10 (53)	2.90 (74)
872D	3" NPT	2.83 (72)	2.80 (21)	3.30 (84)
	3" SANITARY	"	3.40 (86)	2.20 (56)
872E	4" 150# FF	3.81 (97)	1.90 (48)	3.70 (94)

DELTA CONTROLS CORP

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