



LEVEL MEASUREMENT 'THROUGH THE WALL'

Level measurement using ultrasonic 'through-the-air' principles has been widely used in the process industries for many years, but it has its limitations with regard to the application. Pressurised vessels, varying gas densities and surface foam can all cause loss of the echo signal!

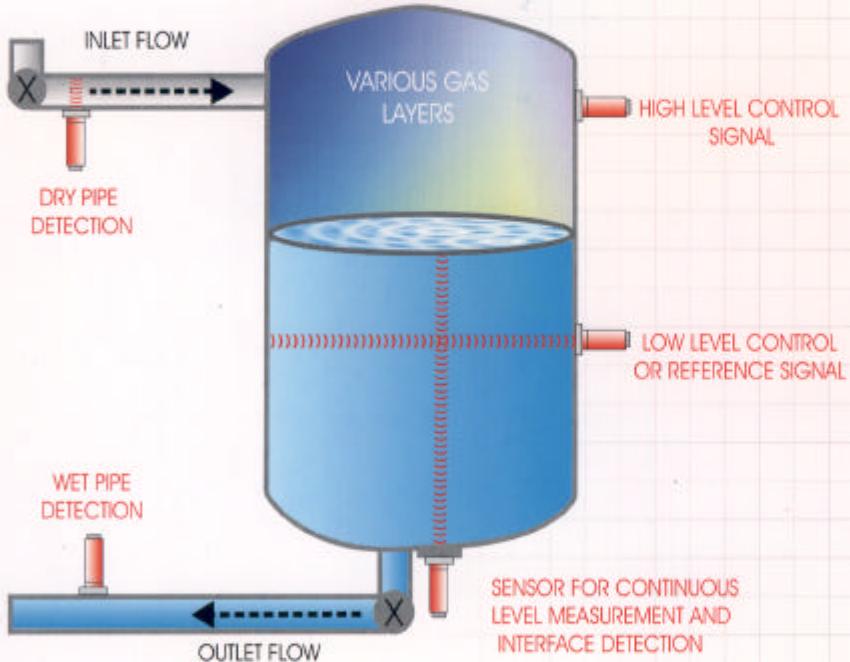
Hycontrol's new non-contact ultrasonic instruments are capable of monitoring levels with novel 'through the wall' techniques which overcome these fundamental problems.

This enables level measurement in totally enclosed vessels without the need to enter or cut into the tank or silo. These systems can provide a wide range of control options, from single point level switching to continuous level measurement and can be installed on a wide range of applications including hazardous and aggressive media.



PRESSURE VESSEL

PRESSURISED VESSEL



DRY PIPE DETECTION

THE ADVANTAGES

- Easy to install as the sensors are fastened to the outside of the vessel or pipe and there is no interruption of the manufacturing process.
- Simple to install on existing plant.
- Ideal for aggressive, toxic, pressurised and sterile applications as there is no contact with the product,
- Measurement is possible even with foam on liquid surface.
- Suitable for all hygienic applications .
- Hazardous area certified for zones 1 & 2 [code EExmIIT6].
- Will not interfere with cleaning processes.
- fixed installation and portable units available



LEVEL SWITCH

THE PRINCIPLE

The instrument transmits a pulse of high frequency sound from the transducer attached to the outside of the tank or vessel. This pulse passes through the tank wall and through the fluid until it reaches the fluid surface. It is then reflected back to the transducer and is received as a transit echo. The micro controller times this reflection and with the aid of patented window technology, calculates the distance accurately and reliably.



TRANSDUCER VARIATIONS

CONTAINER AND PIPE MATERIALS

- ♦ Steel ,stainless steel and other metals.
- ♦ All types of plastic including PVC and compound materials.
- ♦ Enamelled containers.
- ♦ Glass and glass lined vessels

APPLICATION EXAMPLES

- ♦ Level measurement of liquids and liquified gases.
- ♦ Wet and dry pipe detection.
- ♦ Pump protection from dry running or air lock.
- ♦ Distance measurement in pressure vessels.
- ♦ Ice level detection
- ♦ Detection of air and gas bubbles in pipes and flexible tubes
- ♦ Leakage detection of double lined tanks .
- ♦ Cylinder position sensing.
- ♦ Interface detection between different liquids e.g, oil and water.
- ♦ Overflow protection.
- ♦ Emptying and filling process controls .



PETROCHEMICAL SITE

INDUSTRIES SUPPLIED

- ♦ Chemical
- ♦ Pharmaceutical
- ♦ Food
- ♦ Biotechnology and Medicine
- ♦ Power Generation Industries
- ♦ Automobile
- ♦ Water and Waste



PORTABLE UNIT

PRODUCT	SONOMETER 5	SONOMETER 10	SONOMETER 11	SONOMETER 30	SONOCONTROL 11	SONOCONTROL 20
DESCRIPTION	LEVEL CONTROLLER WALL MOUNT	LEVEL CONTROLLER WALL MOUNT	LEVEL CONTROLLER PORTABLE	1 OR 2 CHANNEL LEVEL CONTROLLER	LEVEL SWITCH WALL MOUNT	1 OR 2 CHANNEL LEVEL SWITCH
INDICATION	NONE	4 DIGIT LCD	4 DIGIT LCD	4 DIGIT LCD	NONE	NONE
APPLICATION	LEVEL MONITORING & INTERFACE	LEVEL MONITORING & INTERFACE	LEVEL MONITORING & INTERFACE	LEVEL MONITORING & INTERFACE	LEVEL SWITCH DRY / WET PIPE	LEVEL SWITCH DRY / WET PIPE
MIN RANGE (DEPENDS ON WALL MATERIAL AND THICKNESS)	0.3 METERS	0.3 METERS	0.3 METERS	0.3 METERS	0.3 METERS	0.3 METERS
MAX RANGE	3 METERS (1 MHz) 15 METERS (0.5MHz)	3 METERS (1 MHz) 15 METERS (0.5MHz)	3 METERS (1 MHz) 15 METERS (0.5MHz)	3 METERS (1 MHz) 15 METERS (0.5MHz)	3 METERS (1 MHz) 15 METERS (0.5MHz)	3 METERS (1 MHz) 15 METERS (0.5MHz)
ACCURACY	0.1% MEASURED DISTANCE MIN 1.0mm	0.1% MEASURED DISTANCE MIN 1.0mm	0.1% MEASURED DISTANCE MIN 1.0mm	0.1% MEASURED DISTANCE MIN 1.0mm	0.1% MEASURED DISTANCE MIN 1.0mm	0.1% MEASURED DISTANCE MIN 1.0mm
TEMPERATURE PROBES	STD -20 TO + 80 °C HIGH -20 TO +135°C	STD -20 TO + 80 °C HIGH -20 TO +135°C	STD -20 TO + 80 °C HIGH -20 TO +135°C	STD -20 TO + 80 °C HIGH -20 TO +135°C	STD -20 TO + 80 °C HIGH -20 TO +135°C	STD -20 TO + 80 °C HIGH -20 TO +135°C
TEMPERATURE ELECTRONICS	0 TO 60°C	0 TO 50°C	0 TO 50°C	-20 TO 70°C	-20 TO 60°C	-20 TO 70°C
SUPPLY VOLTAGE	18-30 VDC	BATTERY OR 24VDC	19-30 V AC / DC	18-30 VDC	18-30 V AC / DC	19-30 V AC / DC
PROGRAMMING	PUSH BUTTON & INTEGRAL DISPLAY	PUSH BUTTON & INTEGRAL DISPLAY	PUSH BUTTON & INTEGRAL DISPLAY	PUSH BUTTON & INTEGRAL DISPLAY	PUSH BUTTON & INTEGRAL DISPLAY	PUSH BUTTON & INTEGRAL DISPLAY
OUTPUTS	0-20 / 4-20 mA 1 RELAY 50V 0.5 A	0-20 / 4-20 mA 3 RELAYS +1 FAULT 50V 100mA & RS232	0-20 / 4-20 mA 3 RELAYS +1 FAULT 50V 100mA & RS232	2 X 0-20 / 4-20 mA 2 RELAYS+ 1 FAULT 50V 100mA & RS232	1 RELAY 50 V 0.5A	2 X 0-20 / 4-20 mA 1 RELAY PER CHNL 1 FAULT RELAY 50/250V 0.5A / RS485
ENCL RATINGS SIZE : WxLxH	IP65 160 x 120 x 80	IP65 195 x 180 x 105	IP65	IP20 100 x 75 x 110	IP65 160 x 120 x 80	IP20 100 x 75 x 110
SENSOR RATING	IP65	IP65	IP65	IP65	IP65	IP65
HAZARDOUS AREA	YES	YES	NO	NO	YES	NO