Ultrasonic level transmitter

Committed to process automation solutions

Datasheet

SUP-ZP

The ultrasonic level transmitter is a low-cost, non-contact and easy-to-install measurement device. It is able to meet the every-day needs of commercial production, as well serving a more specialized role in the technologically advanced aerospace industry, thus placing it firmly in the category of high-level measurement technology. Unlike other level indicators with limited uses, the easy-to-install ultrasonic level indicator is a highly accurate device with enough specialized uses to ensure that the needs of the customer are met.

Features

- Wide voltage range
- Backup and restore settings function
- Measure a variety of parameters
- Analog output can be adjusted arbitrarily
- Support custom serial data format
- With arbitrary setting of the start point and end point of the output range
- With value-added/difference ranging options, both distance and level can be measured
- With multi-level emission pulse intensity, which can be set according to working conditions
- OLED display (with backlight)

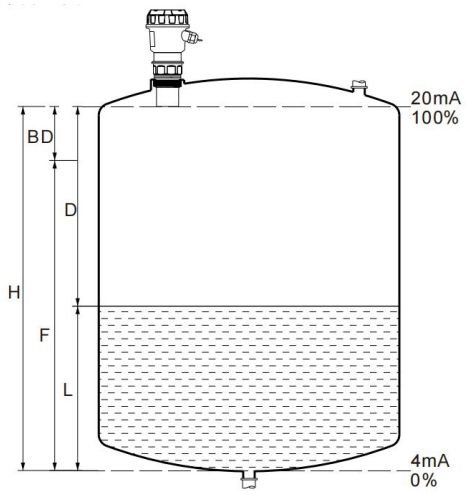
Main Function

1. Level measurement
2. Distance measurement
3. Volume measurement.
4. Pump control

Principle

The principle of operation of the ultrasonic sensor system is to use the ultrasonic pulses which are transmitted by the transducer to the surface to be monitored and are reflected back to the transducer, the time period between transmission and reception of the sound pulses is directly proportional to the distance between the transducer and surface

The latest microcomputer technology and the proven processing software select the level echo from among any number of false echoes and calculate the exact distance to the product surface.



B = Blanking distance

D =Distance from transducer to material surface

L = Height in silo

The distance D is determined from the velocity of sound and the time period t by the formula:

$$D = V*T /2$$

Example:
With the velocity of sound = 334.1 M/s, a time period of 60m/s corresponds to a transmission path of 20.046M and thus to a distance of 10.023M.

An integrated temperature sensor detects the temperature in the vessel and compensates the influence of temperature on the signal running time.

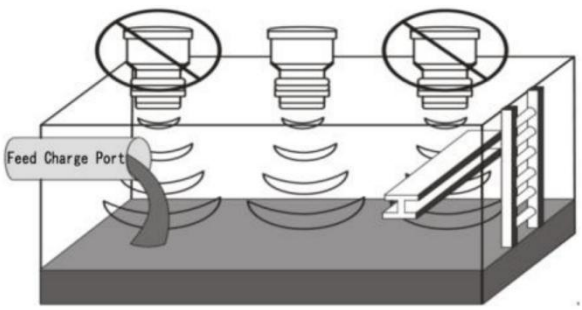
Application field

- Sewage/waste water/tapwater treatment equipment. Such as silos, open tanks , dams and wells.
- Liquids such as edible-oils, sauces and beverages.
- Chemical material such as solvent, paints, carbonic acid, water lime slurry and wax.
- Granular materials such as flour, wheat and corn.
- Chemical fibers, petrochemical materials such as plastic powders, plastic granules and plastic chips.

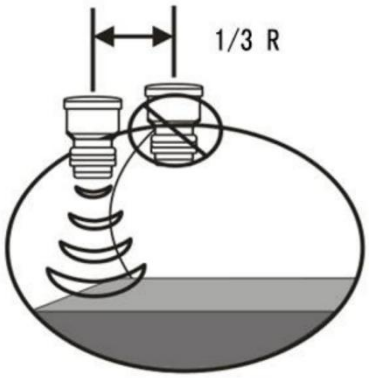
Parameter

Measure Range：	5m、10m、15m
Blind zone：	0.4m、0.5m 、0.6m
Accuracy:	0.3%F.S
Display：	OLED
Display resolution:	1mm
Power:	18~28VDC(2 wire)、12~24VDC、220VAC
Power consumption：	<1.5W
Output (optional)：	4～20mA RL>600Ω（standard） RS485 3 NPN 2 relays (AC: 5A 250V DC: 10A 24V)
Working temperature	-20~60℃
Material：	ABS
Installation	Thread / Flange
Temperature compensation	Automatic
Measure type	Level / Distance
Ingress Protection：	IP65 (IP68 optional)

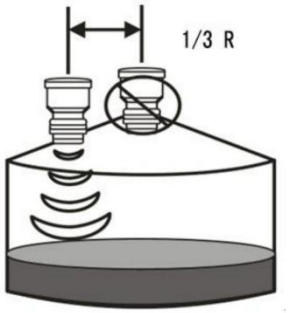
Installation



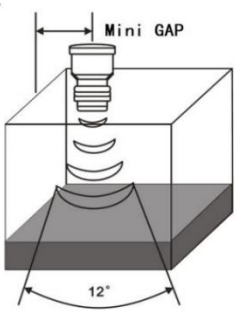
Figures 1

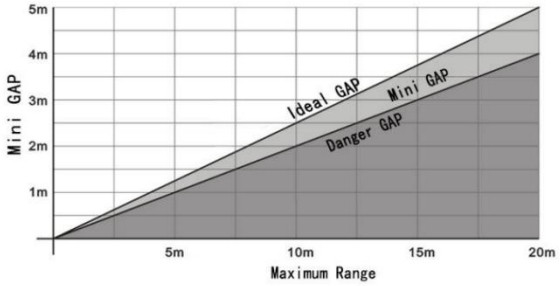


Figures 2



Figures 3





Figures 5

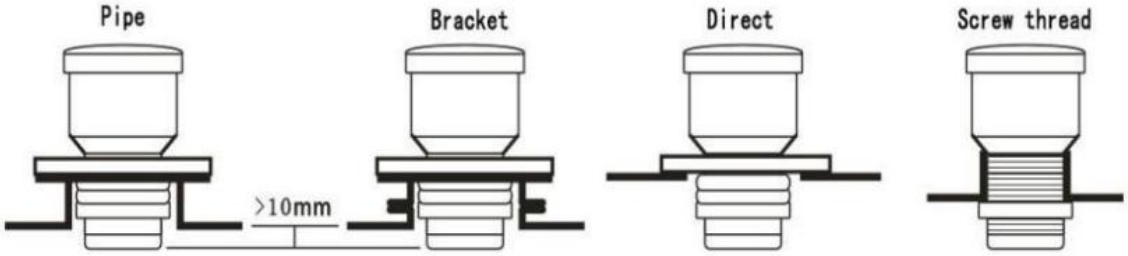
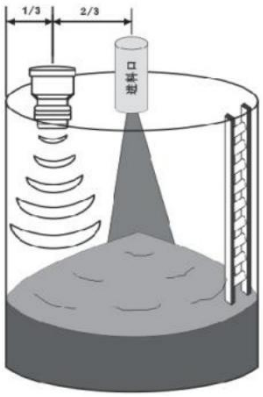
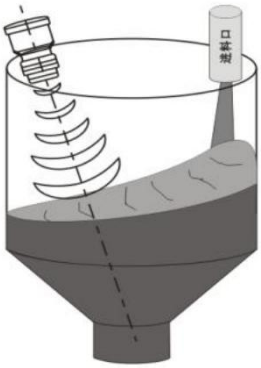


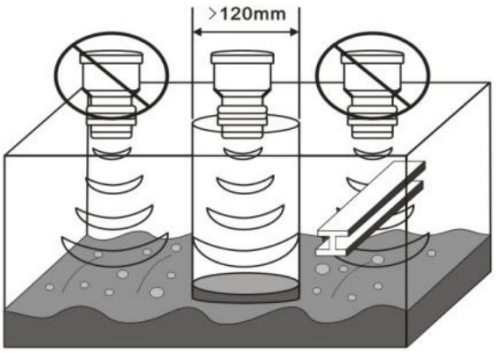
Figure 4



Figures 6



Figures 7



Figures 8

Ultrasonic level transmitter								
Model								Description
	-	-	-	-	-	-		-
Type	ZP							
Range		RT1						0 - 2 meter
		RT2						0 - 5 meter
		RT3						0 - 8 meter
		RT4						0 - 10 meter
		RT5						0 - 12 meter
		RT6						0 - 15 meter
		RT7						0 - 20 meter
		RT8						0 - 25 meter
		RT9						0 - 30 meter
		RTZ						Other range
Accuracy			J1					0.3 class
output type				O1				Two-wire4 - 20mA output
				O2				Three-wire4 - 20mA output
				O3				Four-wire4 - 20mA output
				O4				0 - 20mA output
				O5				0 - 5V output
				O6				0 - 10V output
Communication					D0			None
					D2			RS485
Relay output						A0		No alarm output
						A2		2 alarm outputs
Power supply						V1		DC24V
						V2		AC220V

Remark:
1. The 2-wire system power supply is DC18-28V, the 3-wire/4-wire system power supply is DC12-24V, and the 485 output power supply is DC9-28V.

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