

Features

- Accuracy of ± 0.3 F.S.
- Ranges from 0-5m to 0-10m
- Dead zone (blind zone) 0.4m to 0.5m
- Output types: 4-20mA, 1-5V, 1-10V, RS485
- 2 wire loop powered or 3 wire voltage
- Transducer Frequency: 20-350kHz
- Power Supply: 12-24VDC, <1.5W, For DC power supply, battery or solar supply.
- Built in simple digital LED display.
- Key pad programmable, with simple setup parameters.
- Automatic temperature compensation.
- Process Temp range from -10 to 50°C.
- Process connection: M60 OR 2" BSP (enquire for other options).
- IP65, ABS plastic Housing.
- Over current and overvoltage protection.
- CE Certification



Applications

- Liquid Level measurement
- Non-contact level or distance measurement
- Water or oil
- Tank level monitoring
- Pond or dam level monitoring
- Agricultural and Irrigation systems
- Water and Wastewater treatment

Description

The DAYTECH SONIC-1000 Series Intelligent Ultrasonic Level Transmitter is designed for low power, reliable, simple and economic performance. The ultrasonic sensors are suitable for liquid level measurement applications. The series can be used in pond, dam, well or tank level measurement for wastewater treatment, potable water treatment, pumping stations, irrigation, process and environmental applications with proven performance.

The low power requirements make the device an ideal choice for battery or solar powered applications. Standard features include simple LED display, automatic temperature compensation, over current and over voltage protection, signal error correction, level or distance measurement.

These ultrasonic level sensors have advanced features, however they are simple to setup.

Display and Set Up Introduction



- Simple set up by programming using push buttons.
- Tuning parameters are intuitive and easy to use, including analogue output scaling, distance or level measurement, signal error filter, pulse intensity.
- Digital display shows the Level or Distance.
- Display shows the status of the sonic signal.
- Can be password protected for locking the configuration.

Menu Operation and Parameter Settings

Keys function (refer to image above for keys):

- (A) (1.1) normal working mode / menu : enter password.
(1.2) menu interface : page down or back, Long press back to normal working mode.
(1.3) input / confirm : Confirm input data and exit this menu.
- (B) (2.1) menu interface : Enter or input.
(2.2) input / shift : Shift cursor to right.
- (C) (3.1) menu interface: page up.
(3.2) input interface / add : from 0~9 , minus, decimal.

Password:

Under normal working mode (measuring interface), press A to display password input, default password is 0000. When in password input or menu mode, press B to shift right, press C to choose number or symbol then press A to confirm. After entering the correct data, press A to confirm. After entering the correct password and pressing A, you will enter the menu interface.

Instruction Menu (Parameter Menu, Code and Meaning):

BD.11 : Ins. Ht, measures liquid level, it's the distance from sensor to tank bottom. Measures air space level, the default value is 0.

ST.15 : Filter, filter times in averaging (damping) time, 0-100. A larger value equates to a more stable and slow reading; A smaller value equates to a quicker response.

PL.25 : PUL, transmitted intensity.

PA.36 : Password, default password for menu: 0000.

F0.44 : F0, start point of output: 4mA.

FS.45 : FS, end point of output: 20mA.

DR.49 : Add. Serial port address: 0-255.

BP.50 : Bdr. serial port baud rate: 600-38400.

1L.54 : No.1 D, No.1 switch output D.

1H.55 : No.1 H, No.1 switch output H.

2L.56 : No. 2 D, No.2 switch output D.

2H.57 : No.2 H, No.2 switch output H.

3L.58 : No.3 D, No.3 switch output D.

3H.59 : No.3 H, No.3 switch output H.

Installation Instructions

The Sonic-1000 Sensor should be placed where there are no obstacles between the sensor emission surface and measured liquid, it also should be far away from feeding points, refer **chart I**.

The tank shape should be considered. Some types of containers will present a second echo (false echo), especially conical and spherical tanks. A good installation location, at 1/3 of the tank diameter from the side, will solve this problem, refer **chart II**.

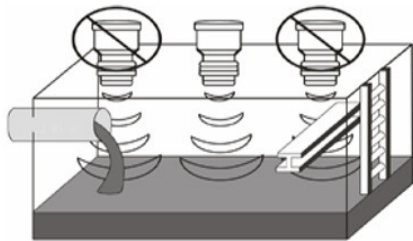


chart I

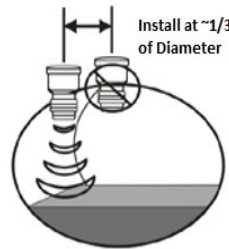
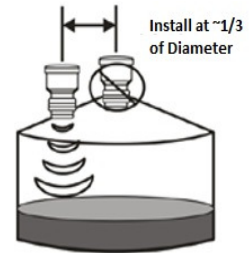


chart II



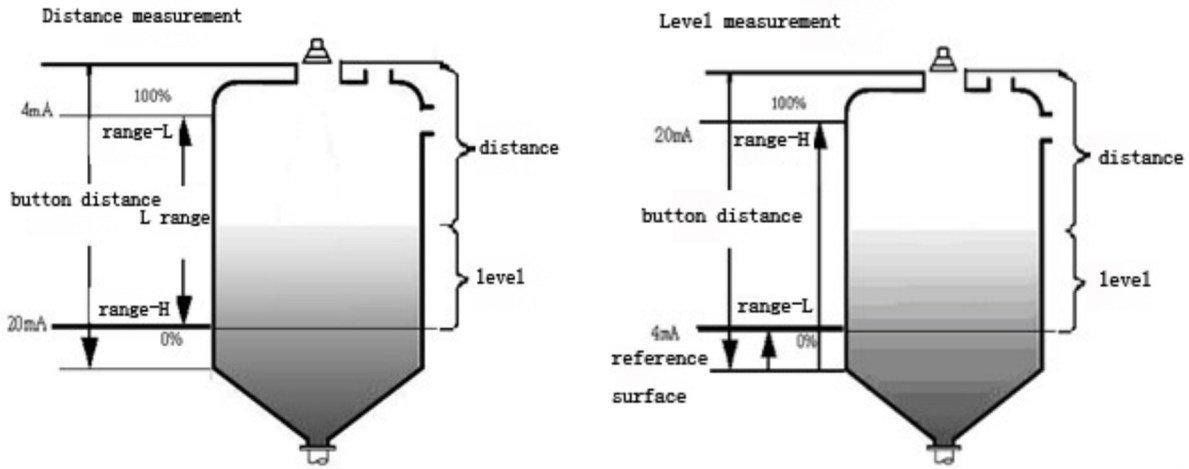
The sensor can be installed by a flange or $\text{Ø} 61$ diameter hole. Ensure the sensor's emission surface (transducer face) has the bottom face installed beyond the installation hole or flange, refer **chart III**.



chart III

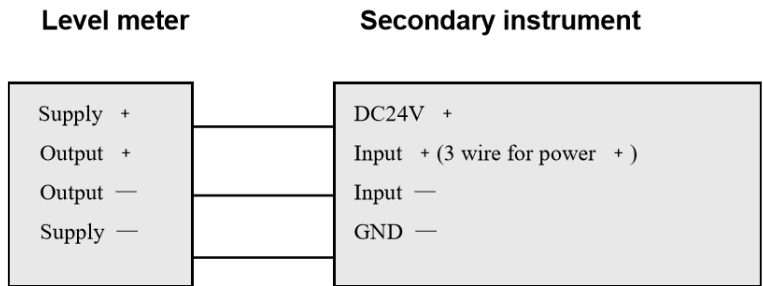
If the liquid to be measured is sewage, with floating impurities or foam, we recommend using a waveguide and the diameter of the waveguide should be over 120mm.

Distance or Level Measurement Example

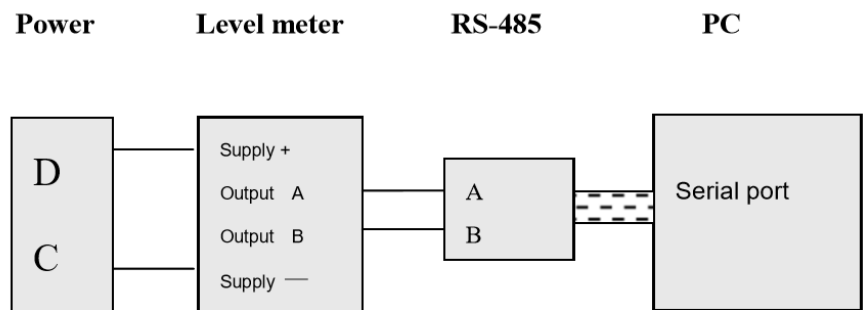


Wiring Diagram

Current / Voltage type:



Serial output type:



Technical Specifications

Parameter	Value			Notes
Measurement Range	0-5m, 0-10m			
Operating Pressure	Process: ~1.5 Bar Display Unit: atmospheric pressure			
Blind Zone	0.4m to 0.5m			
Accuracy	±0.3%F.S			
Resolution	Electronic resolution of 1mm.			
Ambient Conditions	Temperature: -10°C~50°C Humidity: ≤90%RH			
Process Temperature	- 10°C~50°C			
IP Rating	IP65			
Media Compatibility	Medium compatible with ABS plastic, refer chemical compatibility chart.			
Wires	Two-wire	Three -wire		
Output Signal	4-20mA	1-5Vdc	1-10Vdc	
12VDC to 24VDC	12VDC to 24VDC	12VDC to 24VDC	12VDC to 24VDC	
Load resistance	600Ω			
Load power	<1.5W			
Electrical Connection	2 x M20 IP66 glands for cable connection			
Process Connection	M60 OR 2" BSP (enquire for other options)			
Compliance Certification	CE			
IP Rating	IP66			
Communication	HART or RS485 Communications (optional)			

Selection Guide

Please contact our sales and engineering team for application assistance.