01. Ultrasonic Sludge Blanket Level Meter

The ENV100 Ultrasonic Sludge Blanket Level Meter, manufactured by WESS, utilizes enhanced ultrasonic technology to measure the sludge interface level in various types of clarifiers, settling tanks and thickeners with superior accuracy and reliability.
The instrument continuously provides the user with important information which includes numeric&graphic screens representing the distance to the blanket, an echo profile image to ensure correct configuration during commissioning and saved data analysis.
The ENV100 technology additionally incorporates a compressed air cleaning system to maintain the sensor in optimum condition and guarantee maintenance-free measurement. Specially designed mounting hardware is also available.

Product Features

1. Various Screens

The instrument continuously provides the user with important information which includes numeric & graphic screens representing sludge level, current output, temperature, and an echo profile image to ensure correct configuration

2. High Temperature Sensor & Chemical Resistance Sensor

3. Light Sludge Level Measurement

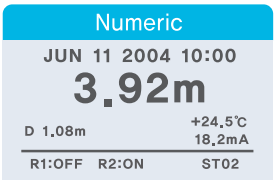
The ENV100 is designed to measure not only heavy sludge (above 2,000mg/l) but light sludge at a drinking water sedimentation tank by selecting type of sludge from a menu section.

4. Data Analysis Software

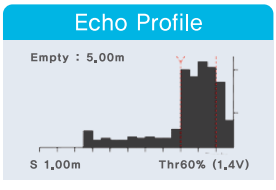
WESS offers free WESSWARE that can analyze the logged data and download the set parameters.

5. Wireless Bluetooth Module(WESS-RF)

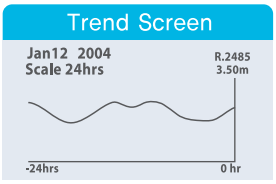
WESS-RF is a Bluetooth based wireless data communication system consisting of a master and a transmitter module. This system can be applied along with a controlling part of our measuring instruments such as ultrasonic sludge blanket level meter, density meter, level meter, etc.
The WESS-RF system is normally used to reduce cabling cost and to apply where the bridge (walkway) moves.
The WESS-RF offers not only mA output but also RS232 output.



• NUMERIC SCREEN
Level, Temperature, Current output, Time, etc.



• ECHO SCREEN
Slurry settlement profie



• DATA TREND SCREEN
Logged data trend

Specifications

The ENV100 Series consist of two parts : controller and sensor

C1S

The control device has one type.

C1S (1 channel)

Model	C1S
Measuring Principle	Ultrasonic echo flight time
Measuring Range	0.35 ~ 10 m
Resolution	1cm
Measuring Pulse	5~25 times/sec
Measuring Density	Heavy/ Light
Accuracy	+/- 1% of measuring range
Operational Temperature	-20 ~ 70°C
Sensor Control	1 channel
Data Logging	Max. 400 days
Screen	Numeric, Echo Profile, Data Trend, Parameter
Display	Level, Distance, Temperature, Time, Current, Echo profile, measuring status
Outputs	• Current: 4~20mA, nom. Load 250Ω (load range : 100 ~ 750Ω) • Relay : 3 SPDT (5A, 250VAC) • Digital: RS232C(Standard) or RS485(Option)
Power Supply	• Standard : 100 ~ 240V AC, 50~60Hz, ≤6W • Option : 10~14V DC, 22 ~ 26V DC
Enclosure Material	• Body/Cover : Polycarbonate
Weight	2.2 kg
IP Rating	IP67
Certificate	CE

Sensors

ENV100 has 3 types of sensors to accommodate most field demands.
S1G is one of the most widely used sensor model.
S1T is used to corrosive chemicals and S1H is used to high temperature liquid.

S1G/T

S1H

Model	S1G/T	S1H
Material	[S1G] • Body : S.S. 304 • Head : Epoxy [S1T] • Body : S.S.316 • Head : Teflon	• Sensor Body : Teflon • Head : Teflon
Cleaning	Air-jet (built-in cleaning nozzle)	Air-jet (built-in cleaning nozzle)
Mounting Thread	3/4" PF female thread	Optional
Cable Length	10m	10m
Operational Temp.	-10 ~ 60℃	-10 ~ 100°C
Beam Angle	3 degree	3 degree
Frequency	160/380 kHz	160/380 kHz
Weight	2.2kg (Incl. 10m Cable)	4.0kg (Incl. Junction Box)
IP Rating	IP68	IP68

Option

Swing Bracket

The swing bracket is to secure skimmer passage at clarifiers. Once it has passed, the bracket is free to fall, re-immersing the sensor into the clarifier water by a damper. The swing bracket is needed when the rotating skimmer hits a sensor. It has limited guarantee period since it's mechanical device.

Cleaning Unit

Periodical sensor cleaning is recommended as a precaution since floating debris and biological material are in contact with the ultrasonic sensor. The cleaning unit consists of a 10-meter length Ø6 air hose and an air compressor with terminal connection. The AC power source is given by a controller. For DC operation, additional power source or solenoid valve may be required for independent usage.

Cable Length

The standard cable length of sensor is 10m(33ft). To accept field requirements, the cable can be extended to 100m(330ft).

Wireless Module

The blue-tooth based wireless module is needed where additional cabling costs is much higher than wireless network. The communication range is maximum 200m at an open field. Since transceiver module is mounted inside of a controller, no additional enclosure is required for outdoor installation. The WESS-RF offers not only analog output but also RS232 output

Mounting Kits

WESS offers several types of mounting kits, such as sensor mounting kit, controller mounting kit, and cleaning unit mounting kit.

Digital Communication

ENV100 provides RS232C digital communication as standard. RS485 and Profibus-DP are available as an option.