

Ultrasonic Sludge Blanket Monitoring System



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.

Additional features such as ASF (Abnormal Signal Filter), allows elimination of irregular field noise which can result from moving structures intermittently obscuring the signal. 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 kits are also available.

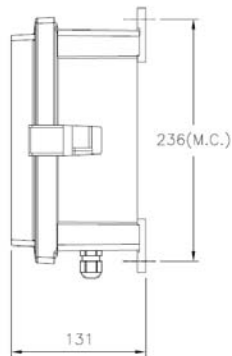
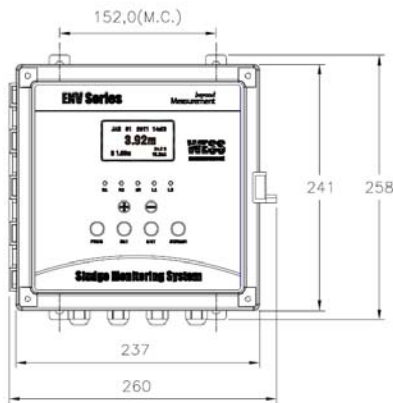
Product Features

- Continuous and real-time measurement
- 4 sensors measurement with one controller enables economic operation
- Maximum 400 days data logging and monitoring
- Wireless option avoids cabling cost
- Automatic sensor cleaning guarantee maintenance-free measurement
- Built-in unique algorithm eliminates stationary and moving structures
- Free WESSWARE software enables field data analysis and menu setup

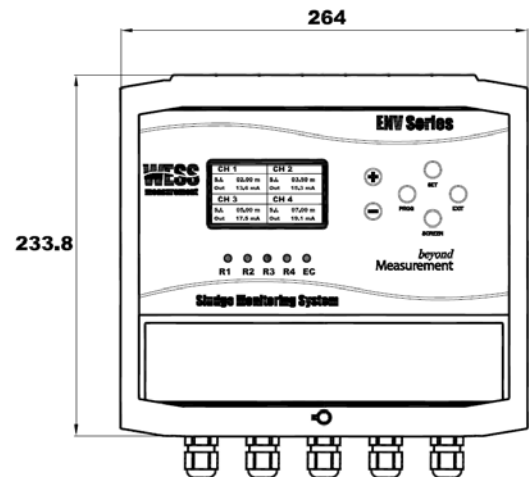
Product Dimensions

Controllers

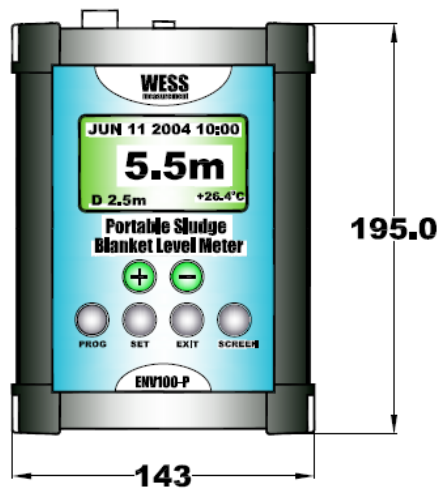
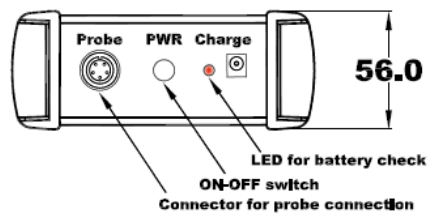
C1-S



C1-M

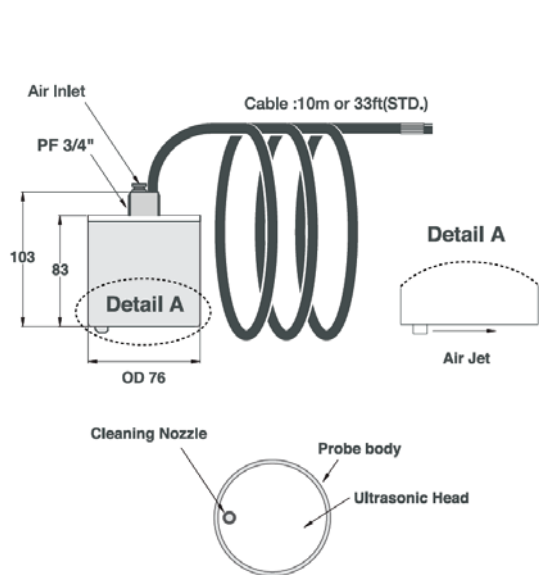


C1-P(Portable)

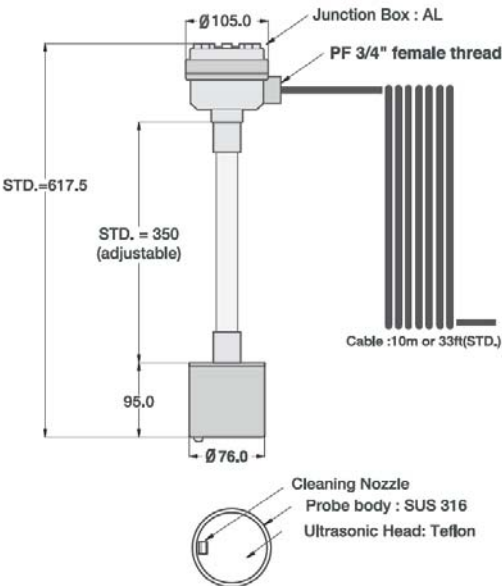


Sensors

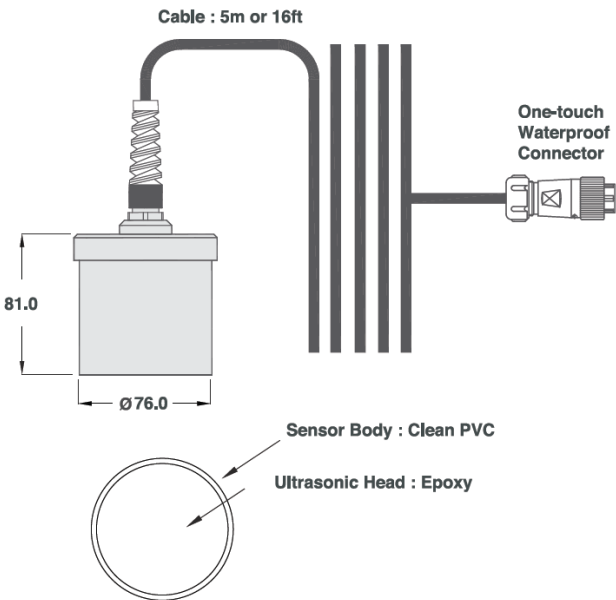
S1-G/T



S1-H(High Temp. Type)



S1-P(Portable Type)



Product Specifications**Controllers****C1-S**

Measuring Principle	Ultrasonic Echo Flight Time
Measuring Range	0.35 ~ 10m(1~33ft)
Resolution	1cm(metric units), 0.1ft(UK units)
Accuracy	+/- 1% of measured range or 1 inch, whichever is greater
Measuring Pulse	5~25times/sec
Measuring Density	User programmable density(Light/Heavy)
Display	Graphic LCD (Interface level, Distance, Echo Amp, Time, Current output, Trend, Temperature)
IP Rating	IP67
Data Saving	Maximum 400 days Data logging & Trend
Screen	Numeric, Echo Profile, Data Trend
Operational Temperature	-20 ~ 70°C(-4~158°F)
Sensor Control	1 Channel
Sensor Cleaning	Automatic air-jet
Outputs	Current : 4~20mA, nom. Load 250Ω (load range : 100 ~ 750Ω) Relay : 3 SPDT(5A, 250VAC) – “ER” “R1” “R2” Digital : RS232C(Standard), RS485(Option)
Power Supply	Standard : 100 ~ 240V AC, 50~60Hz, ≤6W Option : 20~30V DC
Enclosure Material	Polycarbonate
Dimension	260(W) x 258(H) x 131(D)mm
Weight	3 kg
Certificate	CE

C1-M

Measuring Principle	Ultrasonic Echo Flight Time
Measuring Range	0.35 ~ 10m(1~33ft)
Resolution	1cm(metric units), 0.1ft(UK units)
Measuring Pulse	5~25times/sec
Measuring Density	User programmable density(Light/Heavy)
Accuracy	+/- 1% of measured range or 1 inch, whichever is greater
Operational Temperature	-20 ~ 70°C(-4~158°F)
Sensor Control	Multiple channel (Max. 4 channel)
Display	Graphic LCD (Interface level, Distance, Echo amp, Time, Current output, Trend, Temperature)
IP Rating	IP67
Data Saving	Maximum 400 days Data logging & Trend
Screens	Numeric, Echo Profile, Data Trend
Outputs	Current:4EA X4~20mA,nom. Load 250Ω (load range : 100 ~ 750Ω) Relay : 3 SPDT(5A, 250VAC) – “ER” “R1” “R2” Digital : RS232C(Standard), RS485(Option)
Power Supply	Standard : 100 ~ 240V AC, 50~60Hz, ≤6W Option : 20~30V DC
Enclosure Material	Body : ABS Window : Polycarbonate
Dimension	264(W) x 233.8(H) x 144(D)mm
Weight	3.2 kg
Certificate	CE

C1-P(Portable)

Measuring Principle	Ultrasonic Echo Flight Time
Measuring Ranges	0.35 ~ 10m(1~33ft)
Resolution	1cm(metric units), 0.1ft(UK units)
Measuring Pulse	5~25times/sec
Accuracy	+/- 0.1% of measured range or 1 inch, whichever is greater
Operational Temperature	-20 ~ 70°C(-4~158°F)
Display	Graphic LCD (Interface level, Distance, Echo Amp, Time, Current Output, Trend, Temperature)
Data Saving	Programmable Memory
Screens	Numeric, Echo Profile
Sensor Control	1 Point
Outputs	Digital : RS232C(Standard), RS485(option)
Power Supply	3EA X AA Lithium ion rechargeable battery
Enclosure Material	Aluminum
Dimension	143(W) x 195(H) x 56(D)mm
Weight	1.5 kg
IP Rating	IP65
Certificate	CE

Sensors

S1-G/T

Sensor Structure	Ultrasonic sensor with built-in air cleaning nozzle
Material	S1-G Body : S.S. 316, Head : Epoxy S1-T Body : S.S. 316, Head : Teflon
Mounting Thread	3/4" PF female thread
Cable Length	10m(33ft)Standard, Max.300m extensible on request
Operational Temp.	-10 ~ 60°C(14 ~ 140°F)
Beam Angle	4 degree
Frequency	160/380 kHz
Weight	3kg(Incl. 10m Cable)
IP Rating	IP68
Cleaning	Air-jet (built-in cleaning nozzle)

S1-H(High Temperature)

Sensor Structure	Ultrasonic sensor with built-in cleaning nozzle
Material	S1-H Body : S.S. 316, Head : Teflon Junction Box: Aluminum die-casting
Cable Length	10m(33ft)Standard, Max.300m extensible on request
Operational Temperature	-10 ~ 100°C(14 ~ 212°F)
Beam Angle	4 degree
Frequency	160/380 kHz
Weight	3kg(Incl. Cable)
IP Rating	IP68
Cleaning Method	Air-jet (built-in cleaning nozzle)
Pipe Length Between	350mm Standard, extensible on request

S1-P(Portable)

Material	S1-P Body : Clean PVC, Head : Epoxy
Cable Length	5m(17ft)
Operational Temperature	-10 ~ 60°C(14 ~ 140°F)
Beam Angle	5 degree
Frequency	160/380 kHz
Weight	1.5kg
IP Rating	IP68

**S-G/T****S1-H**

Optional Devices

Sensor Cleaning Device

Periodical sensor cleaning is recommended as a precaution since floating debris and biological material is in contact with the ultrasonic sensor

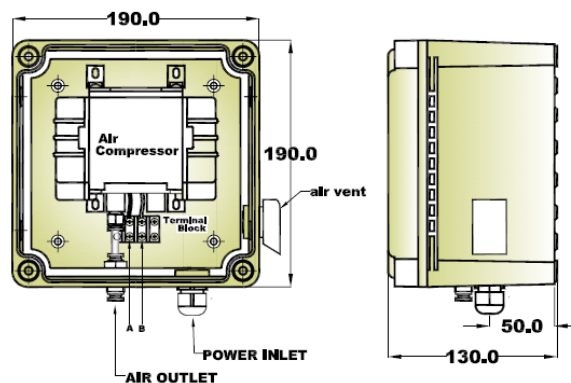
Free Flow Rate	40L/min
Max Pressure/Vacuum	0.3bar/250mmHg
Oper. Temp.	-20 ~ 60°C (28~ 140°F)

Power supply

Standard : 220V AC $\pm 10\%$, 50~60Hz, $\leq 40W$

Option: 110V AC $\pm 10\%$, 50~60Hz

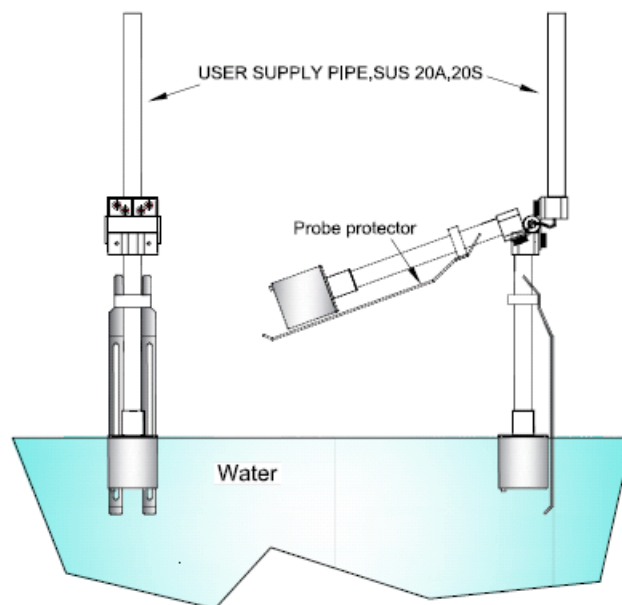
Enclosure Material	ABS
Dimension	190(W) x 190(H) x 130(D)mm
Mounting	Center hole 155(W) x 100(H) (M5 x 4ea)
Weight	2 kg
IP Rating	IP65



Optional Devices

Swing Bracket

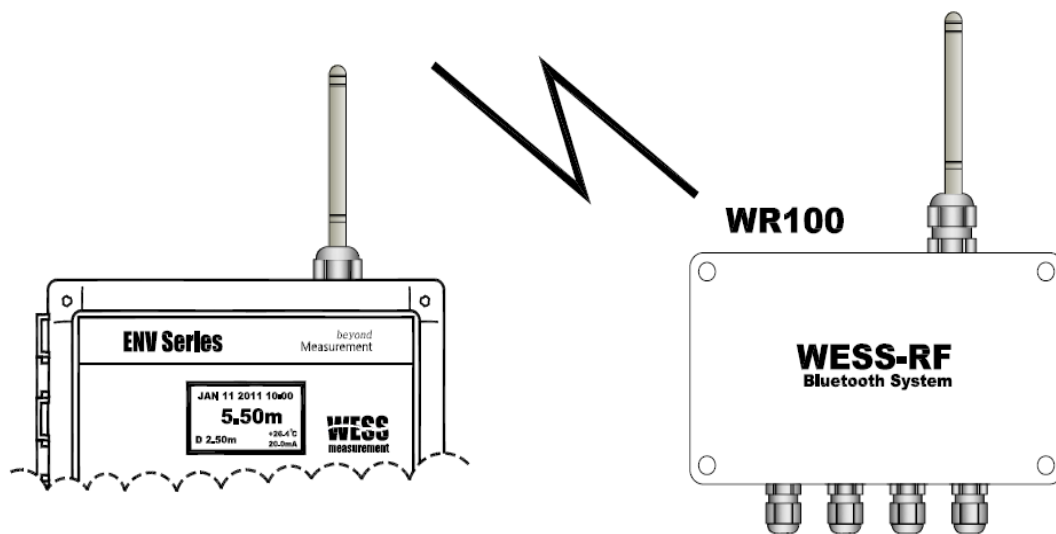
The swing bracket is to secure skimmer passage at clarifiers. Once it has passed, the bracket is free to fall, re-immersing the sensor into the clarifier water



Wireless Bluetooth Module(WESS-RF)

WESS-RF is a Bluetooth based wireless data communication system consisting of WR-100 and antennas. 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 communication distance between WR100 and transmitting antenna is from 200m to 1km.

This RF system is normally used to reduce cabling cost and to install where measurement places move continuously. The WESS-RF offers not only mA output but also RS232 output. Since pairing work between a transceiver and a receiver is done by us, user only needs to supply power after installation.



Product Features

- Use internationally approved RF band, 2.402 ~ 2.408GHz
- No need any pairing work
- mA output and RS232 output
- Communication distance up to 1km
- External enclosure is not needed for transceiver

Ordering Code

ENV100 Ultrasonic Sludge Blanket Level Meter

ENV100 Series	Code	Description
Controller	C1-S	ENV100-S Controller - AC100~240V (Standard)
	C1-SD	ENV100-S Controller - DC20~30V
	C1-M	ENV100-M Controller - AC 100~240V (Standard)
	C1-MD	ENV100-M Controller - DC20~30V
Sensor	S1-G	ENV100 Series General type sensor (Epoxy facing, stainless steel body)
	S1-T	ENV100 Series Teflon sensor (Teflon facing, stainless steel body)
	S1-H	ENV100 Series High temperature sensor (Teflon facing, stainless steel body)
Option	CD-1	Sensor cleaning device - AC110V
	CD-2	Sensor cleaning device - AC220V
	SV-1	Solenoid valve - AC110V
	SV-2	Solenoid valve - AC220V
	SV-D	Solenoid valve - DC20~30V
	CMK-S	ENV100-S Controller mounting kit - Hand-rail
	CMK-M	ENV100-M Controller mounting kit - Hand-rail
	SMK	Sensor mounting kit
	CDMK	Sensor cleaning device mounting kit - Hand-rail
	C_XXm	Additional cable extension in meters (standard - 10m)
	SB	Swing bracket (Skimmer free device)
	RS-4	RS-485 (RS-232 is provided as standard)
	RS-C	Data Download cable
	WM	Wireless Module (Dipole antenna)
	WR-1	Master(Receiver) module (Dipole antenna)
NOTE*	Ex) C1S + S1G + CD2 + SMK One channel type controller, standard 10m cable general sensor, cleaning device(220V) and sensor mounting kit.	

ENV100 Portable Ultrasonic Sludge Blanket Level Meter

ENV100 Series	Code	Description
Controller	C1-PD	ENV-100-P controller for distributor
	C1-PC	ENV-100-P Controller for customer
Sensor	S1-P	ENV100-P sensor