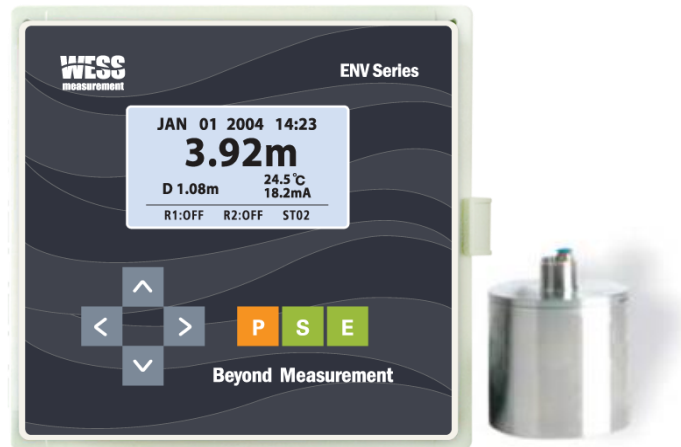


# Ultrasonic Sludge Blanket Monitoring System



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.

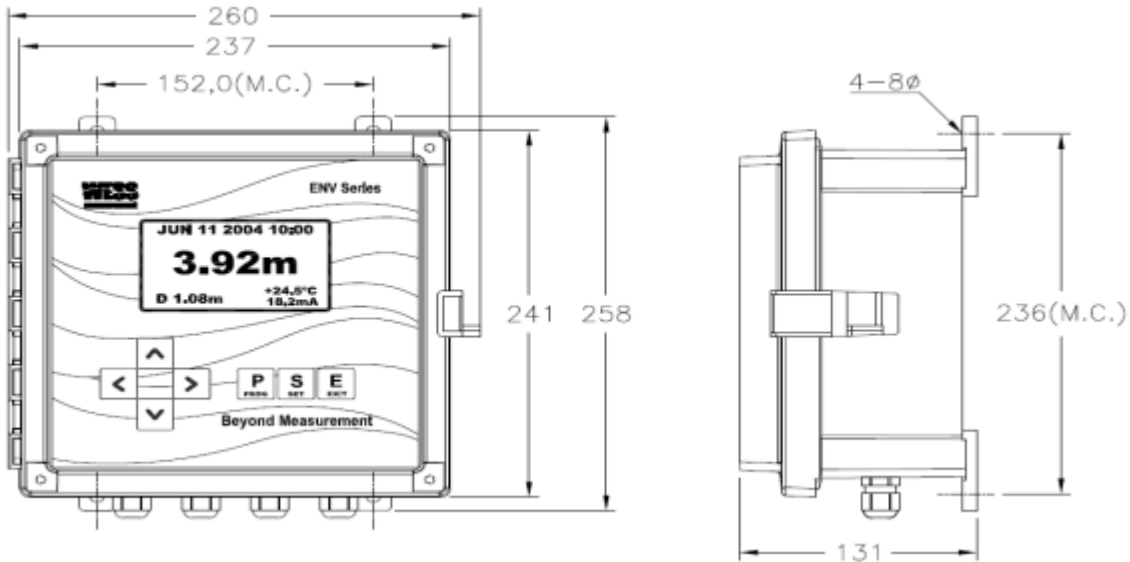
## Product Features

- 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

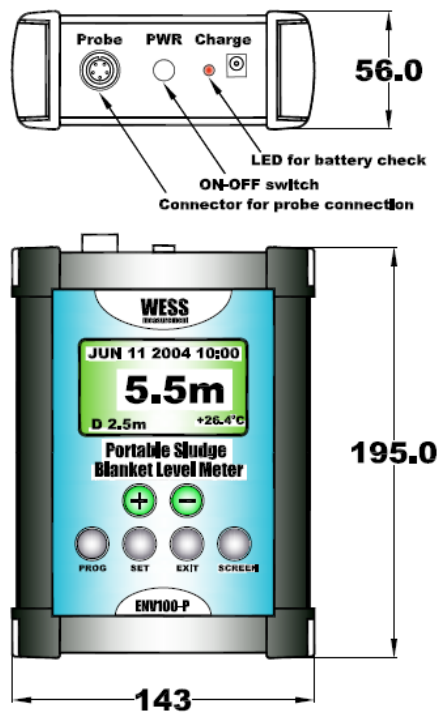
**Product Dimensions**

**Controllers**

**C1S**

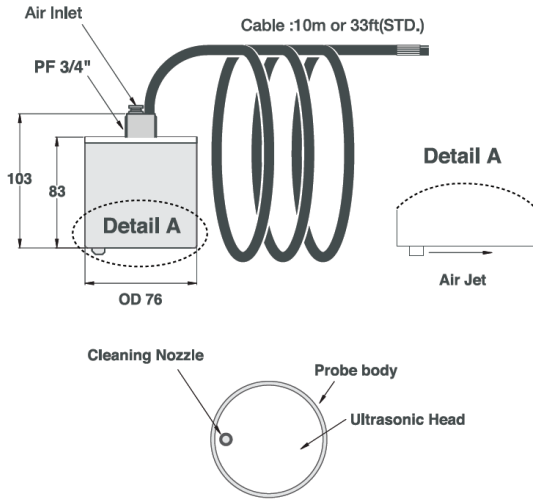


**C1P(Portable)**

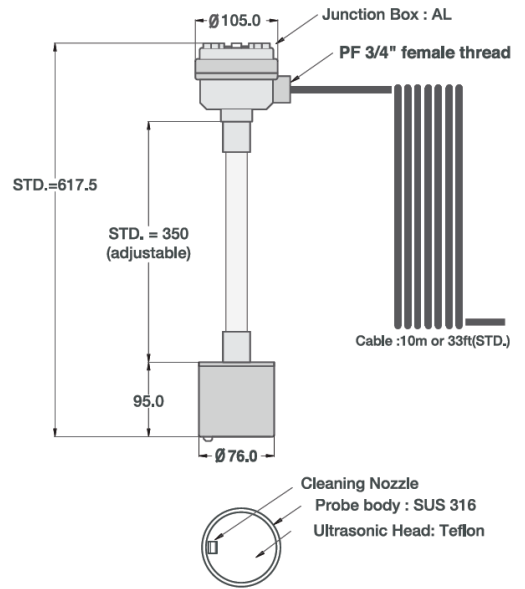


**Sensors**

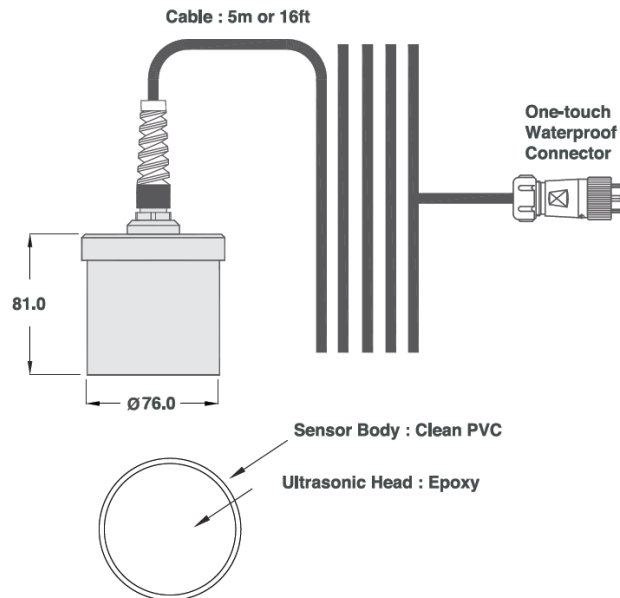
**S1G/T**



**S1H(High Temp. Type)**



**S1P(Portable Type)**



**Product Specifications****Controllers****C1S**

|                                |  |
|--------------------------------|--|
| <b>Measuring Principle</b>     | Ultrasonic Echo Flight Time  |
| <b>Measuring Range</b>         | 0.35 ~ 10m(1~33ft)   |
| <b>Resolution</b>              | 1cm(metric units), 0.1ft(UK units)   |
| <b>Accuracy</b>                | +/- 1% of measured range or 1 inch, whichever is greater   |
| <b>Measuring Pulse</b>         | 5~25times/sec  |
| <b>Measuring Density</b>       | User programmable density(Light/Heavy)   |
| <b>Display</b>                 | Graphic LCD<br>(Interface level, Distance, Echo Amp, Time, Current output, Trend, Temperature)   |
| <b>IP Rating</b>               | IP66~IP67  |
| <b>Data Saving</b>             | Maximum 400 days Data logging & Trend  |
| <b>Screen</b>                  | Numeric, Echo Profile, Data Trend  |
| <b>Operational Temperature</b> | -20 ~ 70°C   |
| <b>Sensor Control</b>          | 1 Channel  |
| <b>Sensor Cleaning</b>         | Automatic air-jet  |
| <b>Outputs</b>                 | Current : 4~20mA, nom. Load 250Ω (load range : 100 ~ 750Ω)<br>Relay : 3 SPDT(5A, 250VAC) – “ER” “R1” “R2”<br>Digital : RS232C(Standard), RS485(Option) |
| <b>Power Supply</b>            | Standard : 100 ~ 240V AC, 50~60Hz, ≤6W<br>Option : 10~14V DC, 22~26V DC  |
| <b>Enclosure Material</b>      | Polycarbonate  |
| <b>Dimension</b>               | 237(W) x 241(H) x 131(D)mm   |
| <b>Weight</b>                  | 2.2 kg   |
| <b>Certificate</b>             | CE   |

***C1P(Portable)***

|                                |  |
|--------------------------------|--|
| <b>Measuring Principle</b>     | Ultrasonic Echo Flight Time  |
| <b>Measuring Ranges</b>        | 0.35 ~ 10m(1~33ft)   |
| <b>Resolution</b>              | 1cm(metric units), 0.1ft(UK units)   |
| <b>Measuring Pulse</b>         | 5~25times/sec  |
| <b>Accuracy</b>                | +/- 0.1% of measured range or 1 inch, whichever is greater   |
| <b>Operational Temperature</b> | -10 ~ 60°C   |
| <b>Display</b>                 | Graphic LCD<br><br>(Interface level, Distance, Echo Amp, Time, Current Output, Trend, Temperature) |
| <b>Data Saving</b>             | Programmable Memory  |
| <b>Screens</b>                 | Numeric, Echo Profile  |
| <b>Sensor Control</b>          | 1 Point  |
| <b>Outputs</b>                 | Digital : RS232C(Standard), RS485(option)  |
| <b>Power Supply</b>            | 3EA X AA Lithium ion rechargeable battery  |
| <b>Enclosure Material</b>      | Aluminum   |
| <b>Dimension</b>               | 143(W) x 195(H) x 56(D)mm  |
| <b>Weight</b>                  | 3 kg   |
| <b>IP Rating</b>               | IP65   |
| <b>Certificate</b>             | CE   |

## Sensors

### *S1G/T*

|                          |   |
|--------------------------|---|
| <b>Sensor Structure</b>  | Ultrasonic sensor with built-in air cleaning nozzle                       |
| <b>Material</b>          | S1-G Body : S.S. 304, Head : Epoxy<br>S1-T Body : S.S. 316, Head : Teflon |
| <b>Mounting Thread</b>   | 3/4" PF female thread   |
| <b>Cable Length</b>      | 10m(33ft)Standard, Max.100m extensible on request                         |
| <b>Operational Temp.</b> | -10 ~ 60°C  |
| <b>Beam Angle</b>        | 3 degree  |
| <b>Frequency</b>         | 160/380 kHz   |
| <b>Weight</b>            | 2.2kg(Incl. 10m Cable)  |
| <b>IP Rating</b>         | IP68  |
| <b>Cleaning</b>          | Air-jet (built-in cleaning nozzle)  |

### *S1H(High Temperature)*

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

### *S1P(Portable)*

|                                |                                     |
|--------------------------------|-------------------------------------|
| <b>Material</b>                | S1-P Body : Clean PVC, Head : Epoxy |
| <b>Cable Length</b>            | 5m(17ft)                            |
| <b>Operational Temperature</b> | -10 ~ 70°C                          |
| <b>Beam Angle</b>              | 3 degree                            |
| <b>Frequency</b>               | 160/380 kHz                         |
| <b>Weight</b>                  | 1kg                                 |
| <b>IP Rating</b>               | IP68                                |



**SG/T**



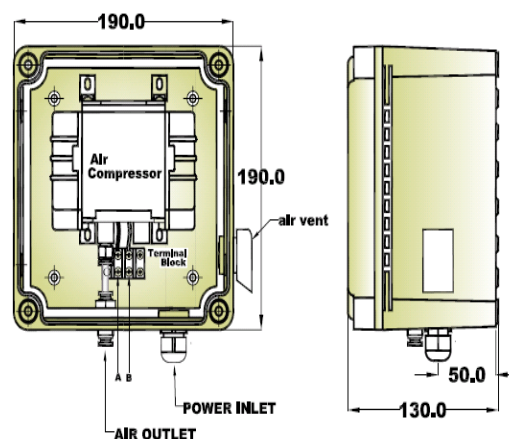
**S1H**

**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

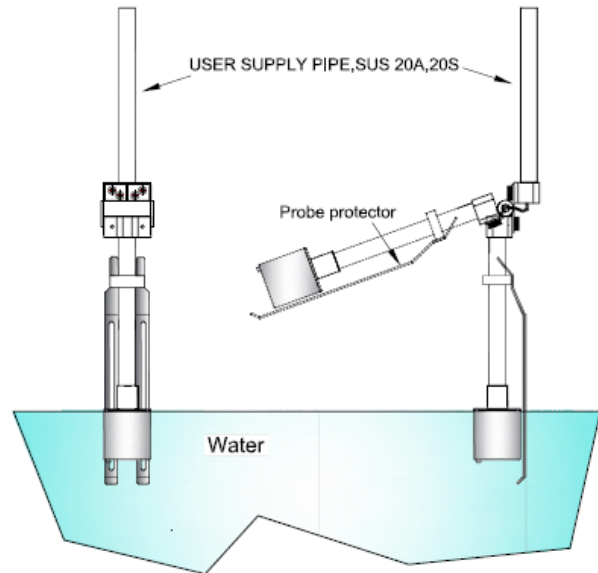
|                            |  |
|----------------------------|--|
| <b>Free Flow Rate</b>      | 40L/min  |
| <b>Max Pressure/Vacuum</b> | 0.3bar/250mmHg   |
| <b>Oper. Temp.</b>         | -20 ~ 60°C (28~ 140°F)   |
| <b>Power supply</b>        | Standard : 220V AC ±10% ,<br>50~60Hz, ≤40W<br>Option: 110V AC ±10% , 50~60Hz |
| <b>Enclosure Material</b>  | ABS  |
| <b>Dimension</b>           | 190(W) x 190(H) x 130(D)mm   |
| <b>Mounting</b>            | Center hole 155(W) x 100(H)<br>(M5 x 4ea)                                    |
| <b>Weight</b>              | 2 kg   |
| <b>IP Rating</b>           | 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



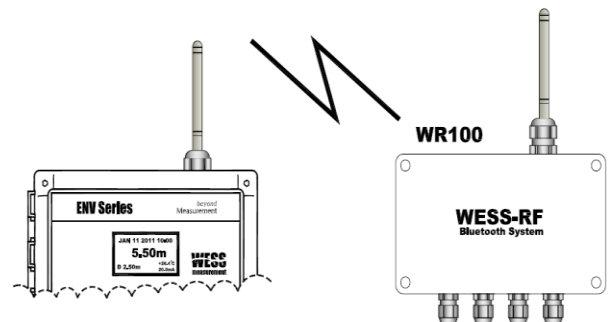
### **Wireless Bluetooth Module(WESS-RF)**

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



**WESS**  
measurement



## Ordering Code

### ENV100S Ultrasonic Sludge Blanket Level Meter

| ENV100S    |   | CODE   | Description  |
|------------|---|--|--|
| Controller |   | C1S  | ENV100 Single Controller - AC 100~240V (Standard)                    |
| Sensor     |   | S1G  | ENV100 Series General type sensor (Body: STS304, Window: Epoxy)      |
|            |   | S1T  | ENV100 Series Teflon type sensor (Body: STS304, Window: Teflon)      |
|            |   | S1H  | ENV100 Series High temperature sensor (Body: Teflon, Window: Teflon) |
| Option     | Controller                                      | DC1  | DC12V  |
|            |   | DC2  | DC20~30V   |
|            |   | RS4  | RS485 (Standard: RS232)  |
|            |   | MOD  | Modbus communication   |
|            | Sensor  | C_XXm  | Total sensor cable length (Unit: m), (Standard : 10m)                |
|            | Cleaning device                                 | CD1  | Sensor cleaning device - AC110V                                      |
|            |   | CD2  | Sensor cleaning device - AC220V                                      |
|            |   | CD3  | Sensor cleaning device - NCP011(220V)                                |
|            |   | RL   | Regulator  |
|            |   | SV1  | Solenoid valve - AC110V  |
|            |   | SV2  | Solenoid valve - AC220V  |
|            | Etc.  | SV3  | Solenoid valve - DC20~30V  |
|            |   | SB1  | Swing bracket: SUS pipe length - 300mm                               |
|            |   | SB2  | Swing bracket: SUS pipe length - 500mm                               |
|            |   | CMK  | Controller mounting kit (Hand-rail)                                  |
|            |   | CDMK   | Clening device mounting kit (Hand-rail)                              |
|            |   | SMK  | Sensor mouting kit (Hand-rail)                                       |
|            |   | SCS  | SUS Socket (PF 3/4", SUS304)   |
|            |   | WMM  | Wireless Module Master (Dipole antenna)                              |
|            | WMS   | Wireless Module Slave (Dipole antenna)   |  |
| H_XXm      | Clening hose length (Unit: m), (Standard : 10m) |  |  |
| Note       |   | Ex) C1S-S1G-C_XX(10m)-CD2-SMK<br>-Controller, General sensor, 10m sensor cable, Cleaning device(220V), Sensor mounting kit |  |

### ENV100P Portable Ultrasonic Sludge Blanket Level meter

| ENV100P    |  | CODE | Description                               |
|------------|--|------|---|
| Controller |  | C1P  | ENV100P Controller                        |
| Sensor     |  | S1P  | ENV100P Sensor (Body: PVC, Window: Epoxy) |