

Ultrasonic Sludge Blanket Level Meter

ENV120 SERIES



The ENV120 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 ENV120 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.

[Click for the ENV100 Series Introduction Movie](#)



Features and Applications

Features

- Continuous and real-time measurement
- High temp. & chemical resistive sensors
- Implementation superior signal control and tracking algorithms
- Light and heavy layer level measurement with dual frequencies
- Apply abnormal signal filtering algorithm
- Maximum 400 days data logging and monitoring
- Automatic sensor cleaning guarantee maintenance free measurement
- Wireless option avoids cabling cost
- Free WESSWARE software enables field data analysis and menu setup
- Provide portable ultrasonic sludge level meter

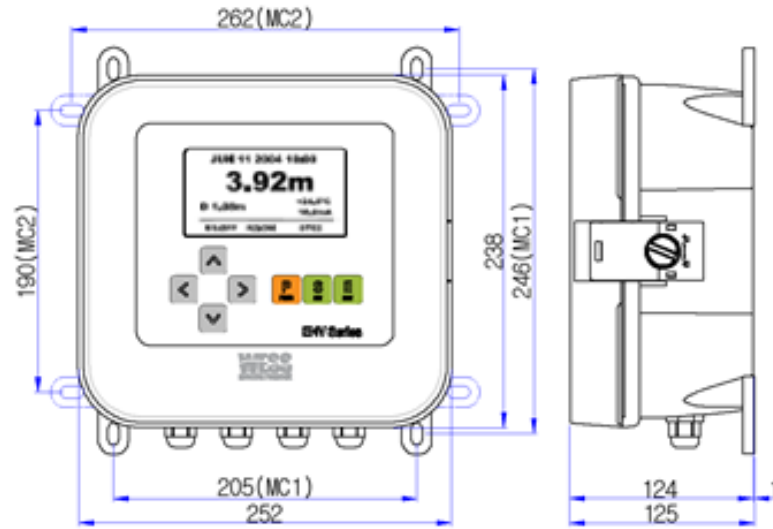
Applications

- WWTP primary clarifier / secondary clarifier / thickener
- Sewage treatment settling basin / thickener
- Industry water treatment
 - Power plants
 - Refining processes
 - Ethanol oil manufacturing processes
 - Mining Industries



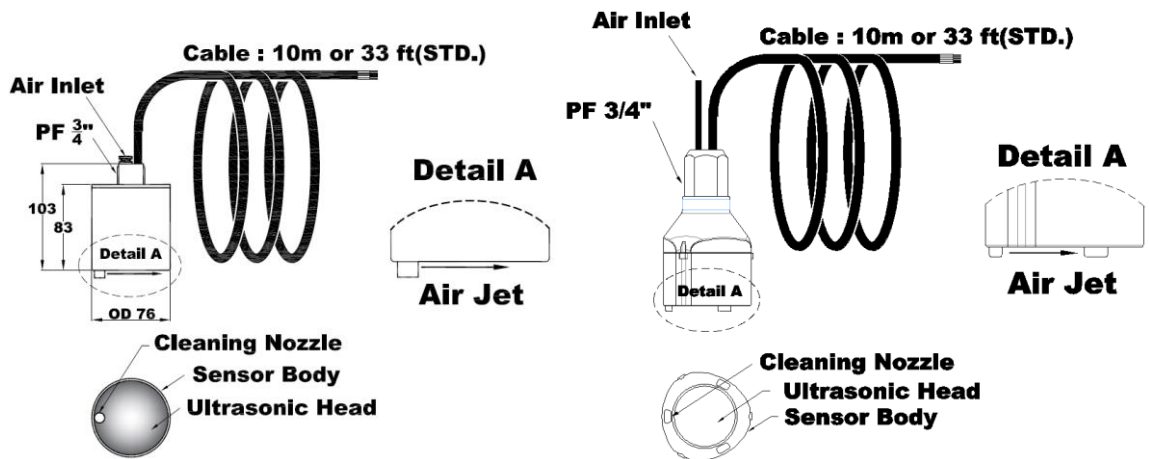
Dimensions (mm)

Controller



C1S2

Sensor



S1G

S1T / S1H

Technical Data

The Controller

The controller analyzes the transmitted/received ultrasonic signals to calculate the distance, and controls pump and actuator. The screen of control consists of numeric, echo profile, data trend and parameter screen. The controller model is divided into C1S which controls one sensor, and C1P which is applied to the portable sludge level meter.

Fixed type – C1S2

Measuring Principle	: Ultrasonic Echo Flight Time
Measuring Range	: 0.35 ~ 10m
Resolution	: 1cm
Measuring Pulse	: 5~25times/sec.
Measuring Density	: User programmable density (Heavy or Light)
Display	: Graphic LCD (Interface level, Distance, Echo amp., Time, Current output, Trend, Temperature)
Accuracy	: +/- 0.5% of Full scales
Operating Temp.	: -20 ~ +70°C
Sensor Control	: 1 Channel
Sensor Cleaning	: Built-in automatic air-jet
Outputs	: Current : 4~20mA, nom. Load 250Ω (load range : 100 ~ 750Ω) Relay : 3 SPDT(5A, 250VAC) Digital: RS232(STD.), RS485, MODBUS(Option)
Power Supply	: 100 ~ 240V AC, 50~60Hz, ≤15W(STD.), 24V DC(Option)
Enclosure Material	: Polycarbonate
Dimension	: 252(W) x 238(H) x 124(D)mm
Mounting	: Hole center 152(W) x 236(H) mm (∅8 x 4ea)
Weight	: 2.2 kg
IP Rating	: IP67
Data Saving	: Max. 400 days data logging and trend
Screen	: Numeric, Echo profile, Data trend, Parameter
Certificate	: CE

Technical Data

Portable type – C1P

ENV100P is the only portable blanket level meter in the world that allows to input and manage up to 4 different field information. So it can be useful in many sedimentation sites.

Measuring Principle	: Ultrasonic Echo Flight Time
Measuring Range	: 0.35 ~ 10m
Resolution	: 1cm
Measuring Pulse	: 5~25times/sec.
Measuring Density	: User programmable density (Heavy or Light)
Display	: Graphic LCD (Interface level, Distance, Echo amp., Time, Current output, Trend, Temperature)
Accuracy	: +/- 1% of F.S.
Operating Temp.	: -10 ~ +60°C
Sensor Control	: 1 Channel
Sensor Cleaning	: Built-in automatic air-jet
Output	: Digital: RS232
Power Supply	: 3EA X AA Lithium ion rechargeable battery
Enclosure Material	: Aluminum
Dimension	: 143(W) x 195(H) x 56(D)mm
Weight	: 3 kg
IP Rating	: IP65
Data Saving	: Programmable Memory
Screens	: Numeric, Echo profile
Certificate	: CE, KC

Technical Data

Sensor

A sensor is mounted at the bottom of the tank and transmits a signal.

General Type – S1T

Sensor Structure	: Ultrasonic sensor with built-in air cleaning nozzle
Frequency	: 160/380 kHz
Beam Angle	: 3 degree
Operating Temp.	: -10 ~ +60°C
Cable Length	: 10m (Standard.), Max. 100m extensible on request
IP Rating	: IP68
Material	: Body & Head : PP
Dimension	: 1.2kg (Included 10m cable)
Mounting Thread	: 3/4" PF Female Thread
Cleaning	: Air jet (Built-in cleaning nozzle)

High Temperature Type – S1H

Sensor Structure	: Ultrasonic sensor with built-in air cleaning nozzle
Frequency	: 160/380 kHz
Beam Angle	: 3 degree
Operating Temp.	: -10 ~ +90°C

***Other specification is the same as S1T**

Old model/ Domestic Type – S1G

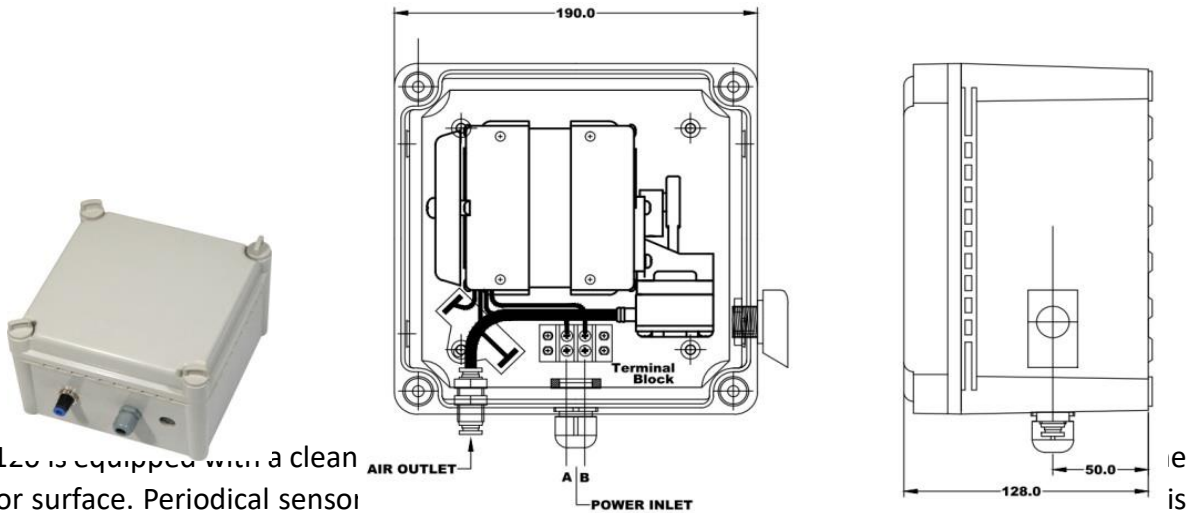
Sensor Structure	: Ultrasonic sensor with built-in air cleaning nozzle
Frequency	: 160/380 kHz
Beam Angle	: 3 degree
Operating Temp.	: -10 ~ +60°C
Cable Length	: 10m (Standard.), Max. 100m extensible on request
IP Rating	: IP68
Material	: Body: SUS304 , Head: Epoxy
Dimension	: 2.2kg (Included 10m cable)
Mounting Thread	: 3/4" PF Female Thread
Cleaning	: Air-jet (Built-in cleaning nozzle)

Portable Type – S1P

Operating Temp.	: -10 ~ +60°C
Cable Length	: 5m
IP Rating	: IP68
Material	: Body: Clean PVC, Face: Epoxy
Weight	: 1kg (Included 5m cable)
Mounting	: Self-Floating

Optional Items

Sensor cleaning device – CD1 (110V AC) / CD2 (220V AC)/CD3 (24V DC)



ENV120 is equipped with a clean sensor surface. Periodical sensor and biological material is in contact with the ultrasonic sensor. When using the air-line on site, a sensor cleaning device equipped with a solenoid valve is supplied.

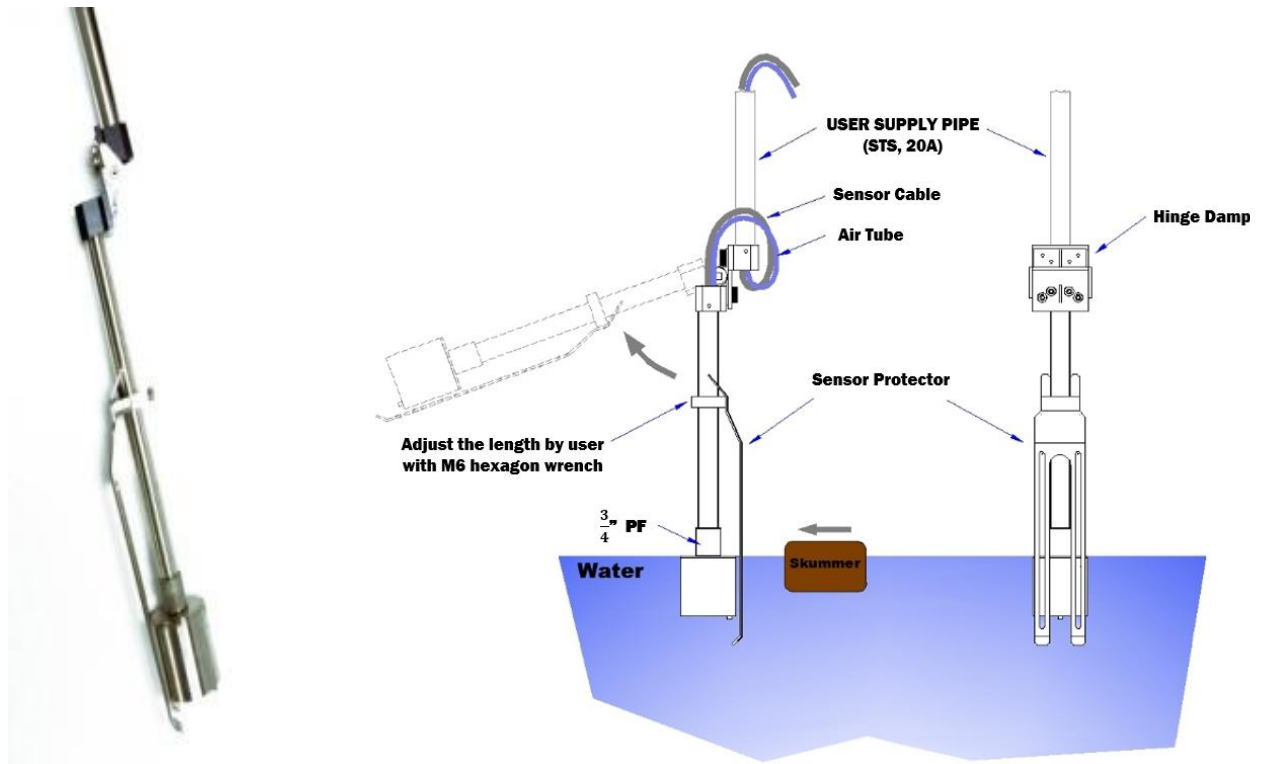
Free Flow Rate	: 25L/min
Max Pressure/Vacuum	: 4.5bar
Operating Temp.	: -10 ~ 60°C
Power supply	: Standard : 220V AC ±10% , 50~60Hz, ≤50W Option: 110V AC ±10% , 50~60Hz
Enclosure Material	: ABS
Dimension	: 190(W) x 190(H) x 130(D)mm
Mounting	: Center hole 155(W) x 100(H) (M5 x 4ea)

[Click to watch for sensor cleaning video](#)



Optional Items

Swing bracket – SB



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.

[Click to watch for Swing Bracket video](#)



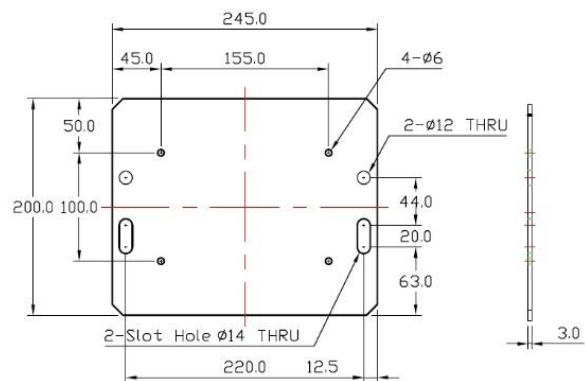
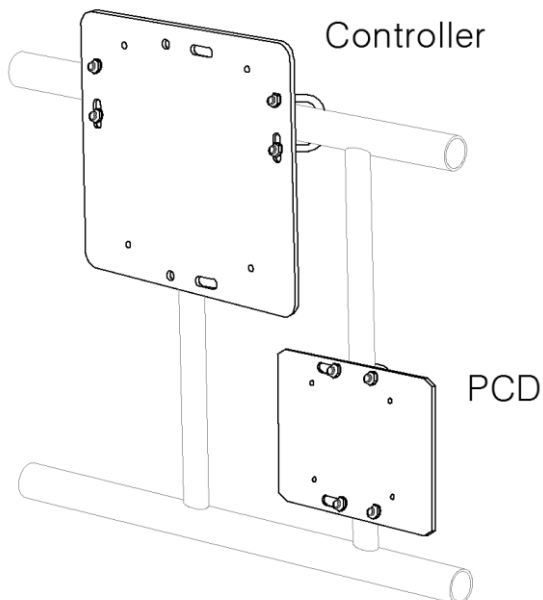
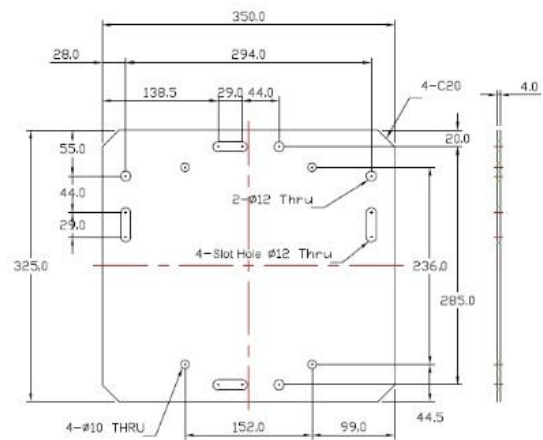
Optional Devices

Cable extension – C_XXm

Standard sensor cable length is 10m and can be extended up to 100m to optimize installation and the measuring according to the site.

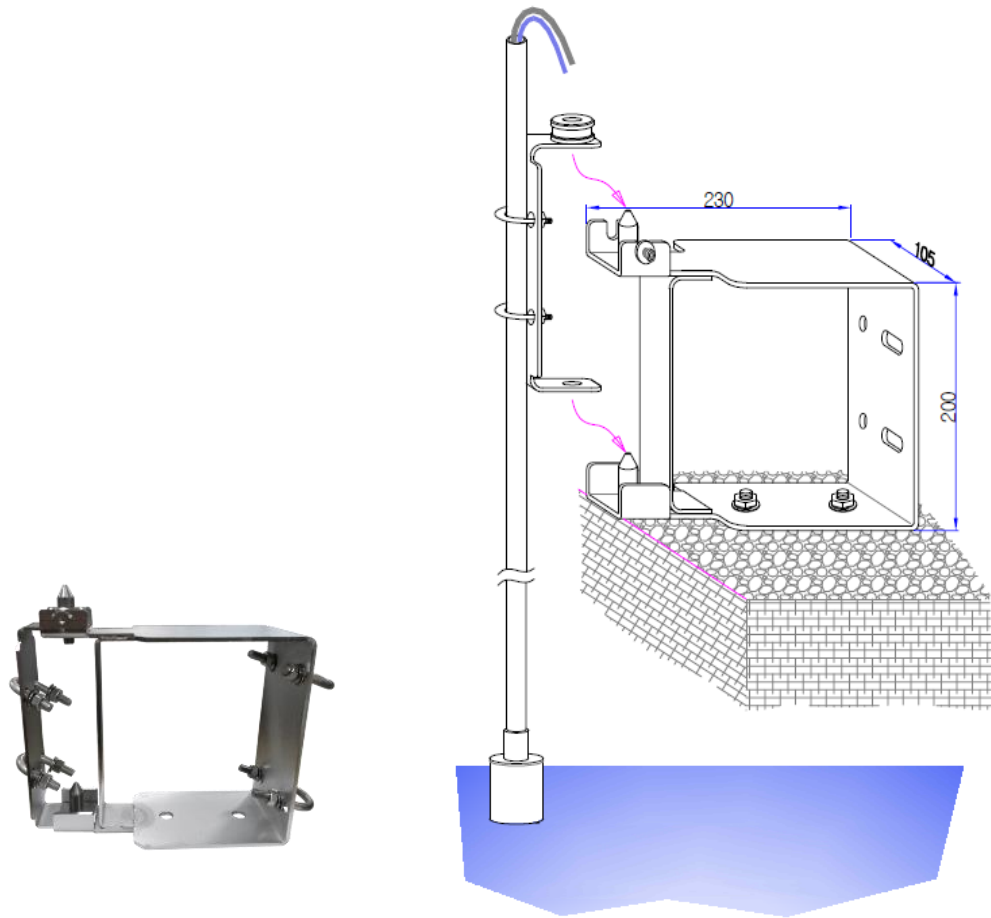
Installation mounting kits – CMK / CDMK

Hand rail type of controller and cleaning device mounting kit is provided to make installation and maintenance easier.



Optional Devices

Sensor mounting kit – SMK



Sensor mounting kit is used for the secure fixing and installation of sensor to their place of operation.

Ordering Code

Stationary Type

ENV120 SERIES		CODE	DESCRIPTION
Controller		C1S2	ENV120 single controller
Sensor		S1T	PP type sensor (Body and Face: PP)
		S1H	High temperature sensor (Body and Face: PP)
		S1G	Domestic model sensor (Body: STS304, Face: Epoxy)
Optional items	Others	DC24	DC24V
		RS4	RS485 (STD. RS23)
		MOD	Modbus communication
	Sensor	C_XXm	Total sensor cable length (Unit: m), (STD. 10m)
	Cleaning Device	CD1	Sensor cleaning device - AC110V, 4.5bar
		CD2	Sensor cleaning device - AC220V, 4.5bar
		CD3	Sensor cleaning device - DC24V, 4.5bar
	Etc.	SB1	Swing bracket : SUS pipe length - 300mm
		SB2	Swing bracket : SUS pipe length - 500mm
		CMK	Controller mounting kit (Hand-rail)
		CDMK	Cleaning device mounting kit (Hand-rail)
		SMK	Sensor mounting kit (Hand-rail)
		WMM	Wireless Module Master (4 CH)
	WMS	Wireless Module Slave (Dipole antenna, 500m)	
Note		Ex) C1S-S1G-C_20-CD2-SMK Controller, General sensor, Total sensor cable length 20m, Cleaning device(220V), Sensor mounting kit	

Portable Type

ENV100P	CODE	DESCRIPTION
Controller	C1P	ENV100P Controller
Sensor	S1P	ENV100P Sensor (Body: PVC, Face: Epoxy)

Click for our ENV100 series