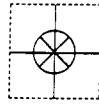
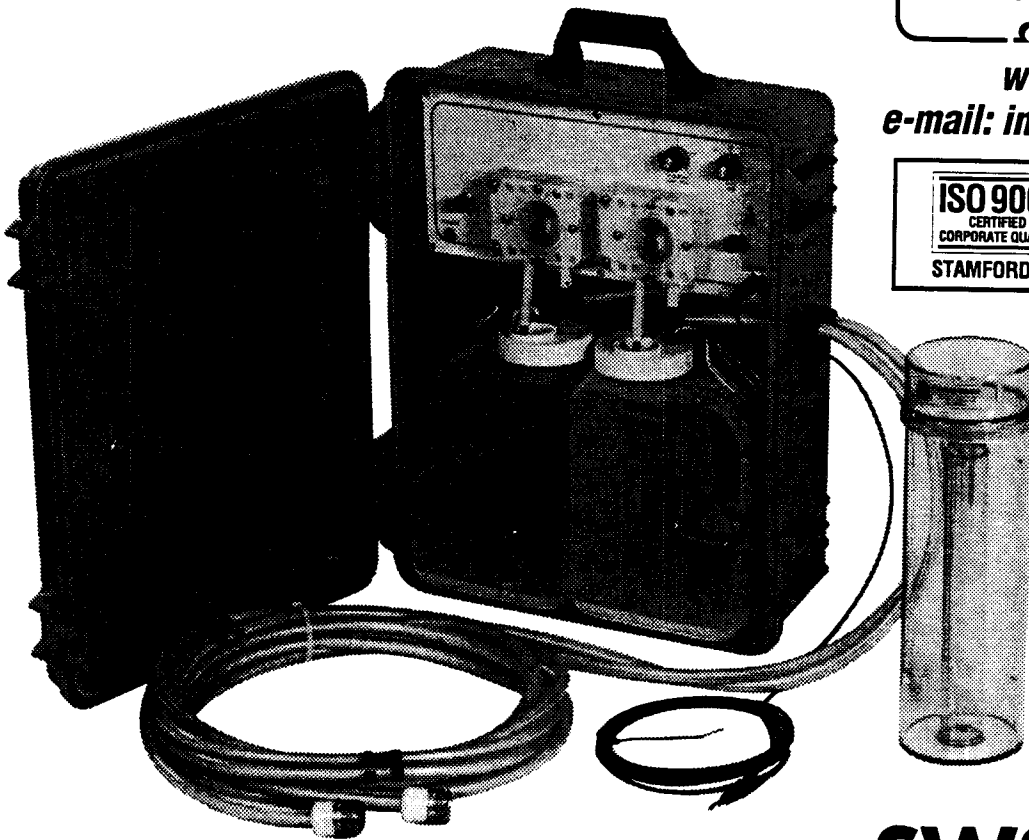


.1 YEAR
WARRANTY



User's Guide



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SWS-201 **Stormwater Sampler**



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WARNING: These products are not designed for use in, and should not be used for, patient-connected applications.

Stormwater Sampler

2

Description

The Omega Stormwater Sampler is designed specifically to meet the sampling requirements of the Stormwater program. The Omega Sampler takes a "first flush" sample in one bottle and a "time weighted" composite sample in the second bottle, to meet the guidelines. It is actually two samplers in one: it consists of two intake tubes, two sampling pumps and two bottles, which eliminates any possibility of cross contamination between the first flush and the composite sample. The Omega Stormwater Sampler is easily set up and installed in any stormwater channel to take and store physical water samples throughout the storm event.

The Omega Stormwater Sampler consists of a rugged, rainproof lockable carrying enclosure. Inside the enclosure are two 4000 ml polyethylene sample bottles for first flush and composite samples, two peristaltic sampling pumps, the logic timer/controller, the water sensor, and a rechargeable gel cell battery. Also provided is the rain gauge, two sample pickup hoses and a battery charger. Everything you need is provided for a successful sampling program.

Low Power: The internal rechargeable battery will power the sampler for several months and/or for several storm events.

Overflow Protection: Each sample bottle is equipped with a float switch which automatically turns off the sampler pump if the bottle becomes full. Be sure the electrical leads from the bottle caps are plugged into the jacks on the bottom of the controller housing.

Environmental: The Sampler is not damaged by water or moisture or severe environmental conditions. All parts may be washed with soap and water.

Operating Temperature: 0 to 70 degrees C

Specifications

Sample Size:

First Flush: 4000 ml

Composite: 200 ml at 10 minute intervals, or set by user. 4000 ml composite sample maximum.

Size: 9" L X 17" W X 22" H

Weight: 22 # (Shipping Weight 24#)

Materials:

Enclosure: Expanded UV protected PVC

Bottles: 4000 ml polyethylene

Sample Tubing: Polyethylene

Sample Pumps:

Flow Rate: 1000 ml per minute at 4 ft. head

Type: Peristaltic

Maximum Lift: 22'

Logic Timer/Controller: CMOS Solid State (fully potted in epoxy).

Water Level Sensor: Solid State with a 15' cable.

Sample Hoses: Two 15' nylon reinforced 1/4" ID polyethylene flexible tubing sections with intake strainers. Hoses may be extended, as required, using standard 1/4" tubing and fittings.

Battery: Rechargeable 2 AH Gel Cell

Battery Life: The battery will power the sampler for a minimum of four months including five 24-hr. storm events before recharging is required.

Sampler Operation

The Omega Stormwater Sampler is shipped fully assembled and tested. Remove everything from the box and straighten out the hoses.

1. Set the Sampler in an upright position. (It will not work if it is on its side.)
2. Be sure the water sensor is plugged into its jack on the lower right side of the control panel.
2. Check to be sure the two float switches in the bottle cap are properly connected. Plug the lead from the bottle cap into the socket on the bottom of the controller housing.

The Omega Stormwater Sampler is controlled by the water sensor. Plug the sensor into the jack on the lower right side of the control panel. The water sensor can be used to trigger the sampler based on rainfall *or* raise in water level in the storm drain. For rainfall triggering, position the water sensor in the inner tube of the rain gauge. Adjust the height of the two sensor electrodes to the amount of rainfall you want before samples are taken. (For example, if you want 0.1" rain before samples are taken, adjust the sensor so the bottom to the electrodes is opposite the 0.1" marking on the inner cylinder.) See separate instruction sheet for rain gauge installation and operation. For triggering based on water level, position and secure the water sensor in the channel at a point of depth where you want the sampler to start operation.

After the water sensor touches the water (in either the rain gauge or storm drain) the sampler pump is activated. The first flush will run until the bottle is full and then the float switch in the bottle cap will turn off the Sampler. Normally, the composite sampler side is set (by the user—it is not set in the factory) to take a 200 ml sample every 10 minutes until the composite sample bottle is full. The sample size and sampler interval are fully adjustable by using the knobs on the upper right side of the control panel.

Open the Sampler enclosure and remove the battery charger. The battery is installed in the controller enclosure. On the right side of the controller enclosure, find the on-off toggle switch.

Push the switch up, for ON. This turns on the battery power to the Sampler. Press the push button on the right side to activate the right side sampler pump. Press the left side button to activate the left side pump. Use these buttons to verify system operation, to take manual samples, and to remove sample water from the hoses after a storm event.

If the pumps grind slowly, this is an indication that it is time to recharge the battery. Also, before any extended use, it is a good idea to recharge the battery. Plug the charger into the charger socket, on the left side. Then plug the charger into the wall socket. Charge for 12 hours for a full recharge.

The sample size is approximate and varies with vertical distance between the water and the Sampler. For precise sample size, you may want to verify sample size and adjust for your specific installation.

After the storm, remove the sample bottles and take the samples to your lab for analysis. Run the sampler pump to remove old water from the lines and then install a clean empty bottle. Be sure to plug the lead from the bottle cap into the socket on the bottom of the controller housing. The battery is good for several storms between recharging.

Maintenance

The Omega Stormwater Sampler should require no maintenance for several years except routine cleaning with soap and water, and battery recharging.

Rain Gauge Installation and Operation

The Rain Gauge is a precision weather instrument. With minimal care it should provide years of satisfactory service. Guard against extremely rough usage. Wash periodically with mild soap or detergent and warm water, using a household bottle brush. Do not use solvents or abrasives to clean the gauge and do not wash the gauge in your dishwasher. Do not allow accumulated water to freeze in the gauge.



top funnel

sensor installed to desired depth

cylinder

measuring tube

Installation:

Mount the gauge on a post that you walk past each day so you will be reminded to read and empty the gauge daily. Ideally the post should be a 4" x 4," or use 2-2 x 4" nailed together. Where possible do not mount near buildings or trees that would prevent rainfall from reaching the gauge. The gauge should be mounted so the top of the gauge is level and is about 6" higher than the top of the post.

Operation:

The top funnel catches the rain and delivers it to the measuring tube. The measuring tube has a capacity of 1.00 inch. Rainfalls of less than one inch can be read directly from the measuring tube. Stand the measuring tube on a level surface. Read the amount to the nearest 100th of an inch. Record the rainfall in your log and discard the rain water.

If rainfall exceeds 1 inch, the excess flows into the outer cylinder. To measure, empty the measuring tube containing the first 1.00 inch. Place in the funnel into the measuring tube, then carefully pour the excess rainwater until the outer cylinder is empty. Then record the amount measured in your log. Be sure to count the first inch of rain water that was in the measuring tube. In fact it's a good idea to measure precipitation from heavy rains twice to insure accuracy. Just use an empty can or pan to receive the measured rain water and measure again.

In colder weather use only the outer cylinder to catch hail, sleet, or snow. Melt the snow indoors. Then, using the measuring tube, measure the moisture content of the snow. You may also use the outer cylinder to get a measure of moisture of accumulated snow by pressing the cylinder into a level area of snow then melting the captured snow. Also, you may add a known amount of hot water to speed up the melting process. Then measure the resultant water and subtract the amount of water you added.

Daily Log:

Whenever possible, take your readings at the same time each day. Record your readings on the daily log. Use the date on which you take the reading even though much or all of the rain may have fallen the preceding day, after you had already taken your daily reading. Enter your reading in hundredths of an inch (.01, .31, 1.01, 3.01). If the rainfall is less than 0.1 enter "T" for trace in your daily precipitation log.

Stormwater Sampler Rain Gauge Daily Log

1. Try to record precipitation each day at the same time.
2. Record precipitation to the nearest 1/100 of an inch. (.01, .31, 1.31, etc.)
3. If precipitation is less than .01, record "T" for Trace.
4. Use the remarks column to list any unusual weather.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Remarks
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
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26													
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28													
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31													
Total													

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear are not warranted, including but not limited to contact points, fuses, and triacs.

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The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

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