SPECIFICATIONS

INTERFACE

Output: Serial data ASCII format. Plus, either Voltage 0–1 V OR Frequency +5 V pulse, 2–10 Hz

Power Requirements:

Power Supply:
6–12 V from DataBus

Cable:

Length: sensor is hardwired to the Smart Interface; the Interface is supplied with 5 m of cable

Connector: 3-pin female connects directly to the DataBus Con-X-All plug

DRAIN GAUGE

Resolution: 1 mm depth of drainage water

Operating temperature: 0–50°C

Reservoir sampling tube length: 3 m

Wick: 60 cm inert fiberglass

Construction Material: Steel

Warranty: One year

Dimensions:

Overall length: 147 cm including Divergence Control Tube

DCT length: 66 cm

DCT OD: 20.3 cm

Weight: 10 kg boxed

RELATED PRODUCTS

SL5: Smart Logger

MP406: Soil Moisture Probe

G-Blocks: Soil Moisture Sensor

G-Block Interface

ICT International Pty Ltd
PO Box 503
Armidale NSW 2350
AUSTRALIA
Ph: [61] 2-6772-6770
Fax: [61] 2-6772-7616
sales@ictinternational.com.au
www.ictinternational.com.au

DocRef: Ver1.0

Drain Gauge Interface

GEE Passive Capillary Lysimeter

The Drain Gauge is designed with a flush volume of 31 cm^3 ±10%. If the sampling area is taken as the surface area of the opening in the DCT (divergence control tube) which equates to 310 cm^2, each flush event corresponds to 1 mm of drainage depth over the area of the DCT.

The lysimeter interface has been set to a maximum flow rate capability of 0.1 mm/minute or 144 mm/day. This is more than adequate for normal conditions.

If the device is not being used as a normal lysimeter, but is instead being used to measure run-off, the Smart Interface software can be rewritten to handle the much faster flow rates. If this has not been done, errors will occur. Errors will start to occur if the flow rate exceeds 0.3 mm/minute and once the flow rates exceed 0.5 mm/minute the results will be virtually meaningless.

Under normal lysimter usage, the lysimeter will count the total flow up to 4999.9 mm. At this point, the next 0.1 mm will cause the count to reset to 0.0 mm. Therefore the total flow will always be:

total flow = N × 5000 + the current reading in mm

where N is the number of resets. Reset events are not recorded in the device but they are evident from the logged results. 5000 mm is a massive amount and therefore reset events will be very rare. It may take years for a reset event to occur.

Testing the device

The device can only be tested by simulating 0.1 mm/minute (3.1 cm^3) or less. This means for example just one small drip every 10 seconds. The device can then be logged over many hours to check the operation. The drip stream should be captured for a known time period and weighed to calculate the flow rate taking into account the Drain Gauge aperture. Pouring a quantity of water into the device will give a completely false result.

The interface checks the water level as mV output from the water depth sensor in the siphon tube every 1 minute. Then a 3.1 cm^3 volume of water added to the clear calibration tube will show as an accumulation of 0.1 mm drainage on the datalogger.

Addition of water faster than 31 cm^3 every 10 minutes will cause an error. Water will not be counted. Water should be added slowly and evenly at a rate of less than 31 cm^3 per 10 minutes and if the datalogger is set to log every 60 seconds the accumulation of 0.1 mm or less of drainage depth, will be recorded by the datalogger each minute and 1 mm or less each 10 minutes.

For example, if the datalogger has an accumulation of 173.4 mm addition of 3.1 cm^3 will result in 173.5 mm. If the datalogger has an accumulation of 173.9 and then 3 × 3.1 cm^3 are added over each minute for 3 minutes, then the datalogger will show an accumulation of 174.2. The Drain Gauge will have syphoned after the first 3.1 cm^3 and the additional 2 × 3.1 cm^3 will record as 174.2.