

Greenspec rain sensor  
 ORG version RG-11  
 Art. nr. 3164.1  
**Revised data sheet!**  
**Counter and digital input described.**

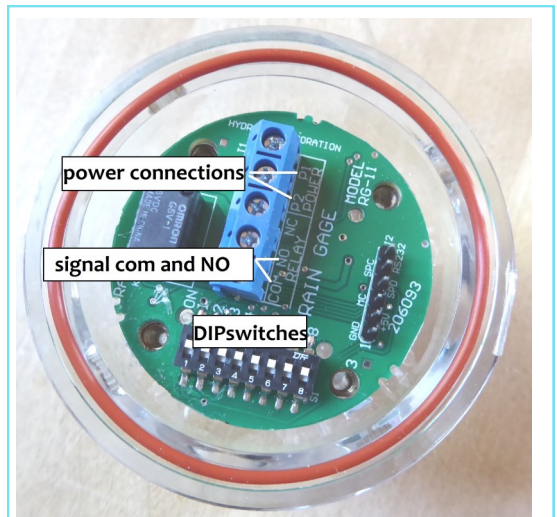
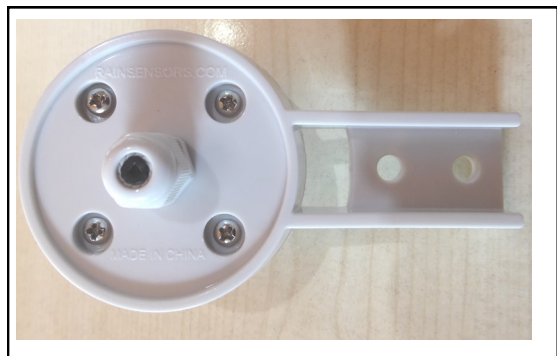
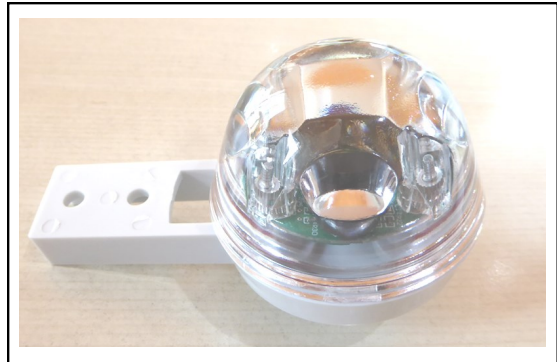
Data sheet of Greenspec product with instruction on connection to the Greenspec AFP20/20, AFP63 or AFP light. The ORG rain sensor and counter is a new type of rain detecting device. In a small dome infrared light is reflected on the outside and measured by receptors. A drop of water on the outside of the dome will change the reflection path. And so the system will detect a rain drop.

The difference to other sensors is: no moving parts, no flat surfaces that get dirty and can give corrosion. The sensitive device can be used for many purposes: rain on/off detection, rain volume counting are the main applications. The rain volume counting is less precise as the traditional tipping bucket. Described is installation for **rain detection** on a digital input and for **rain volume** on a counter input. The counter input can also be set to detect rain, useful if you have no digital inputs free.

The sensitivity can be set in 4 levels, we preset it to second level. The detector must be installed flat, preferably with a constant sun exposure, although it also works in the shade. It must not be installed under trees, as quick light changes due to moving leaves can disturb the measurement.

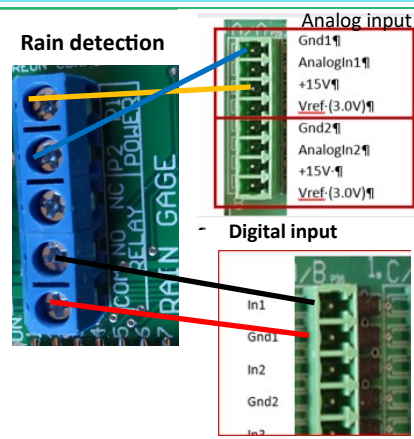
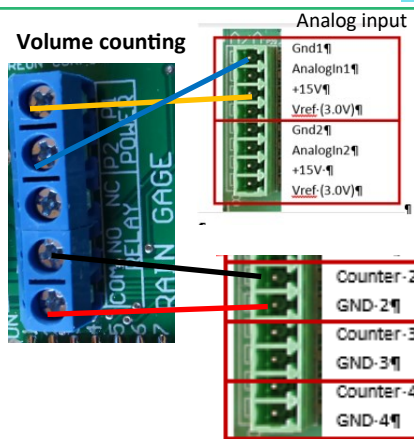
Only open it to connect the wires in dry conditions. You must connect 4 wires: 12 or 15 V, ground and counter output and ground. If you have a 12 V supply in your greenhouse, use that. Else use the 15V from one of the analog inputs. Connect it to a digital or a counter input.

Maintenance is rarely needed, but do check from time to time for bird droppings. Clean with water and a soft towel. To check if the sensor works spray a little water on it, that should give a response the green LED lights up. The sensor is heated to melt snow. Take care to close completely and do keep the red o-ring in place.



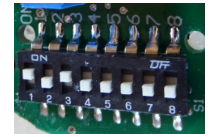
### Installation hardware

Open the unit. You need 10 to 15V AC, either use a 12V separate power supply or use the ground and 15V of an analog input. Do not use 24V. For **volume counting**: connect to a counter input. For **rain detection**: connect to a digital input. For both the ground to common (com) The normally open (NO) to IN or counter



### Dipswitches:

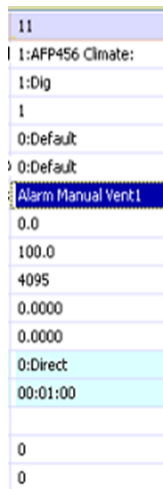
Adjusting the rain sensor: it is preset at the factory for counting total volume. But it can be set in a different way. With dipswitch 1 in "on" it clicks at 0,01 mm rain, sensitivity 2 on a scale of 4. Dipswitch 3 gives a delay time of 15 min at end of rain instead of 90s. Dipswitch 5 sets the rain detect function. So for counter inputs 5 must be off, for digital rain detect it must be on.



### Rain detect by using digital input

Set the digital input number in the list: min value 0, max value 100.

Save and test by wetting the surface: value should go to 100. Dry off, value should stay on for 90s.



### Rain detect by counter input:

Select type Counter, select the correct input number, give the name Rain counter.

Set the values as indicated in the left diagram.

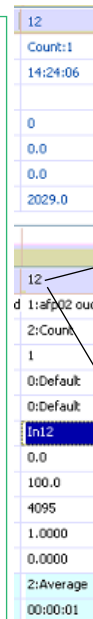
Then go to Meteo / Rain Counter: give the input number and make an event for the rain counter.

Use the counter as rain detector and set a minimum level for rain detection. Save and test by wetting the surface: value should go to 100. Dry off, value should stay on for 90s.

### Rain intensity and volume:

The device can also be used to count rain intensity, that feature is still under development.

So any values are indicative!!



### Technical specifications

Mechanical construction

Materials

Input parameters

Output parameters

Electrical connection

Process conditions

Ambient conditions

ORG RG-11 Hydreon

Dimensions (L x B x H) version IND50: total unit 120 x 70 x 55 mm, weight approx. 0.1 kg,

Sensor lens Polycarbonate, base ABS both UV stabilised. Inside printed circuit board

Measuring range: bucket size 0,2 mm, so a counter point for every 0,2 mm rain. Suitable both as rain sensor on/off (and under development: or as total rain sensor)

Counting input, pulse time 50 mS. Measuring error 20% of current output range, so exact volumes are not counted.

Power supply 10-15 VDC Power consumption 15 mA

Operating temperature range -40 - +60 °C

Do not install near to overshadowing trees, as frequent change in and out of sunlight may give false reading. Install upright.

Internal low power heater (0,25 W) will reduce condensation and melt snow. With ice rain the capacity most likely is not enough.

Storage temperature -10 ... +70 °C Ingress protection IP 68

Install when dry, else trapped water may damage unit.

Electromagnetic compatibility acc. to EN 61326:1997 / A1:1998 Subject to modification.



Horticulture automation

Groningen, The Netherlands

www.greenspec.nl / info@greenspec.nl