

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.

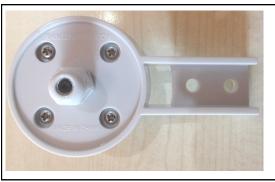
The difference to other sensors is: no moving parts, no flat surfaces that get dirty and can give corrosion. The sensitive device can be used for many purposes: rain on/off detection, rain volume counting are the main applications. The rain volume counting is less precise as the traditional tipping bucket. 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.

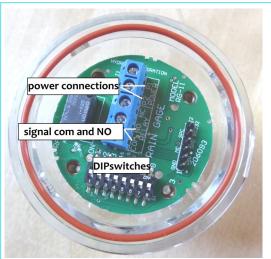
The sensitivity can be set in 4 levels, we preset it to second level. The detector must be installed flat, preferably with a constant sun exposure, although it also works in the shade. It must not be installed under trees, as quick light changes due to moving leaves can disturb the measurement.

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.

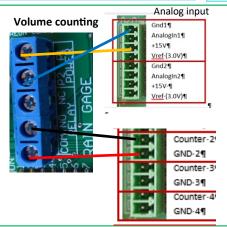


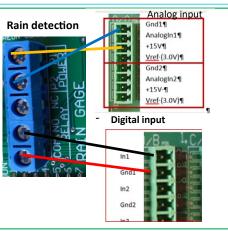




Installation hardware

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		Rain detect by counter input:	12	12 Meteo-			
		Ram delect by counter input:	Count:1	6	ompart Equip	Set Nr	
Cattle distal		Select type Counter, select the correct	14:24:06		Y	Meteo-	
Set the digital	11	input number, give the name Rain coun-				Iompart Equip	See IV
input number in	1:AFP456 Climate:	ter.	0	Ī Ī	🚯 Info 🧐 Config		
the list: min value	1:Dig	Set the values as indicated in the left	0.0		a mol & could I		
	1		0.0			🚯 Info 😤 Config 🗟 WSC11	💱 Rain Counter~ 🦉 AdminCfg
0, max value 100.	0:Default	diagram.	2029.0		Input Rain Counter	2 <u>2</u> <u>2</u>	
	0:Default	Then go to Meteo / Rain Counter: give			Event Name RainCount	Weather Station Nr	1
Save and test by	0	the input number and make an event for			Event Num RainCount	Weather Station Name	Meteo
wetting the surfa-	Alarm Manual Vent1	the rain counter.				Temperature Humidity (%)	0.0
-	0.0		12		Rain Qty Thies~	Deficit (g/m3)	4.6
ce: value should	100.0	Use the counter as rain detector and set	d 1:afp02 oud	d .	Event Name Thies mm/da	C02	0.0
go to 100. Dry off,	4095	a minimum level for rain detection. Save	2:Count		Event Number Thies mm/	Backeter (1916-1)	0.0
	0.0000	and test by wetting the surface: value	1	、		Radiation (W/m²) Radiation Sum~	-1166.7
value should stay			0:Default		Evt Name Rain Count by	Pyrgeometer~	0.0
on for 90s.	0.0000	should go to 100. Dry off, value should	0:Default		Evt Numb Rain Count by		
	0:Direct	stay on for 90s. Rain intensity and volume: The device can also be used to count rain intensity, that feature is still under deve- lopement.	In12		Factor Calc Rain Intensit	Wind Speed (m/s) Wind Speed Average	0.0
	00:01:00		0.0		Nb Interv for Average R	WindDirection	0.0
			100.0		Event Name Rain Intensi	Wind Direction	0.0:N:77.0/N/NE:0.0/N/E:0.0/NE/E:(
	0		4095		Event Numb Rain Intensi	Rain Detection	100
	-		1.0000		Use Rain Counter for Rai	Rain Sum mm/day~	12.000
	0		0.0000		Level set Rain Detect~	Rain Qty Level-	0:No rain~
			2:Average			Rain mm/min~	
		So any values are indicative!!	00:00:01			Rain Sum mm/day~ Rain by Hour~	0.0 [14h: 2000.000, 13h: , 12h: , 11h: ,
			10:00:01			Rain Intensity Table~	0.0,
						Rain Intensity Meas~	0.0

Technical specifications	ORG RG-11 Hydreon
Mechanical constructi- on	Dimensions (L x B x H) version IND50: total unit 120 x x 70 x55 mm, weight ap- prox. 0.1 kg,
Materials	Sensor lens Polycarbonate , base ABS both UV stabilised. Inside printed circuit board
Input parameters	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)
Output parameters	Counting input, pulse time 50 mS. Measuring error 20% of current output range, so exact volumes are not counted.
Electrical connection	Power supply 10-15 VDC Power consumption 15 mA
Process conditions	Operating temperature range –40 - +60 °C Do not install near to overshading 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.
Ambient conditions	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.





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