

# Weighing Rain Gauge

## HD2016

### ○ WATER, SNOW OR ICE...WE MEASURE IT ALL

Versions with heating to measure  
all kind of precipitation

### ○ ACCURATE AND RELIABLE SYSTEM

Individual **calibration**  
Internal **leveling** device for perfect horizontal  
positioning

### ○ SMART DESIGN - LONG STABILITY PERFORMANCE

Corrosion resistance materials  
Rugged design

### ○ DATA WHERE YOU NEED THEM

Direct **cloud visualization** when combined with  
our loggers. Or with **local database** if preferred.

### ○ WIDE VARIETY OF OUTPUTS - GREAT FLEXIBILITY

RS485 with MODBUS-RTU or ASCII protocol / SDI-12 /  
voltage-free pulse contact outputs

**Delta OHM**

Member of GHM GROUP



### Main Applications

Meteorology  
Early warning systems  
Research  
Hydrology

## 400 cm<sup>2</sup> weighing rain gauge: reliability, accuracy and durability.

That is the basic thought behind the design of the HD2016. The corrosion resistant materials used and the absence of moving parts guarantee a reduced maintenance and a long operating life. HD2016 rain gauge is built to **withstand even extreme conditions**: a version with heating which is automatically activated below +4 °C has been developed so that snow deposits and ice formations are prevented.

The sensor of the HD2016 is a **load cell** located at the base of the rainfall collecting reservoir. The signal of the load cell is processed by the internal electronic board of the rain gauge in order to output the information on the rainfall. Thanks to the multiplicity of outputs available, many acquisition systems / data loggers can be connected to the rain gauge. The rain gauge is able to provide the **total rainfall**, the **partial rainfall** (from the last reset command or from the last reading command), the **average rainfall rate** in the last minute and in the last hour. The measured rainfall is regularly saved into a non-volatile memory, which retains the information even in case of power failure.

The automatic discharge of the rainfall collected allows using a compact and lightweight structure for the installation of the rain gauge. If the discharge of the water collected takes place during a rainfall, a retention valve, located at the top of rain gauge, temporarily holds the current rainfall, so to avoid losing the amount of rainfall that falls while discharging. The rain gauge is equipped with sophisticated features that allow reducing the effects of wind, ensuring a better accuracy and stability of the measurement. An NTC temperature sensor allows keeping under control the internal temperature of the instrument.

The rain gauge is factory calibrated and ready for use. A **self-diagnostic system** periodically checks the correct operation of the instrument and reports any anomalies. **Easy to install**, adjustable feet (in standard default version) and leveling device integrated. Bird spikes and accessories for raised mounting available.

## Technical Specification

Principle	Load cell
Type of precipitation	Liquid, mixed*, solid*
Collector area	400 cm <sup>2</sup>
Contact output	Isolated NO (Normally Open) contact ( $R_{ON} \approx 1$ k $\Omega$ , $T_{ON} \approx 60$ ms)
Digital outputs	RS485 with Modbus-RTU or ASCII proprietary protocol SDI-12
Power supply	Measuring circuit: 10...15 Vdc Heater: 12 Vdc $\pm$ 10%*
Consumption	Measuring circuit: $\approx 20$ mA (1.5 A while discharging, typically for less than 1 min. with 300 cc and maximum 5 min. with full reservoir) Heater: 90 W*
Resolution	Rainfall: 0.001 mm Weight: 1 mg Rate: 0.001 mm/h or 0.001 mm/min Temperature: 0.1 $^{\circ}$ C
Accuracy	Rainfall **: $\pm 0.2$ mm (wind speed < 30 m/s) Temperature: $\pm 1$ $^{\circ}$ C
Maximum rainfall rate	1000 mm/h (0.5 res. version)
Operating temperature range	0 $^{\circ}$ C...+70 $^{\circ}$ C -20 $^{\circ}$ C...+70 $^{\circ}$ C*
Heating intervention temperature*	+4 $^{\circ}$ C
Protection Degree	IP64
Minimum section of the wires of the connecting cable	Measuring circuit: 0.7 mm <sup>2</sup> (AWG 19) Heater: 2.5 mm <sup>2</sup> (AWG 13)*

\* Specifications refer to the version with heating system HD2016R

\*\* Very light rainfalls (less than about 10 g, corresponding to approx. 0.2 mm) are not detected because the water stagnates in the valves and filters, and does not reach the collecting reservoir

## Ordering Codes

### HD2016

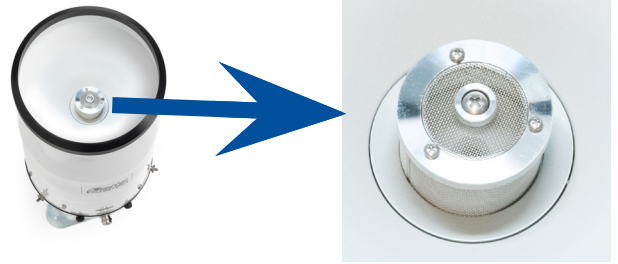
#### Mast ( $\varnothing 40$ mm) / bird spikes kit:

- Blank** = ground installation with feet, without bird spikes (default)
- H0** = with support for mast installation, without bird spikes
- H1** = 1 m mast installation kit, without bird spikes
- H5** = 500 mm mast installation kit, without bird spikes
- K** = ground installation with feet, with bird spikes
- K0** = with support for mast installation, with bird spikes
- K1** = 1 m mast installation kit, with bird spikes
- K5** = 500 mm mast installation kit, with bird spikes

#### Heating

- Blank** = not heated (default)
- R** = heated – power voltage 24 Vdc

The wire mesh filter prevent obstruction of water flow by leaves or branches. Therefore, there is no need for math algorithms to compensate for the weight due to leaves, branches or other solid objects. The upper filter cleanliness should be verified periodically.



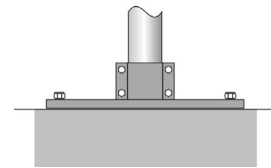
## Installation modes

The rain gauge can be installed on the ground or raised 500 mm or 1 m above the ground (see ordering codes scheme).

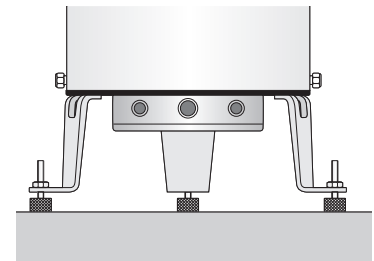
Flat base for floor fixing

Raised above ground

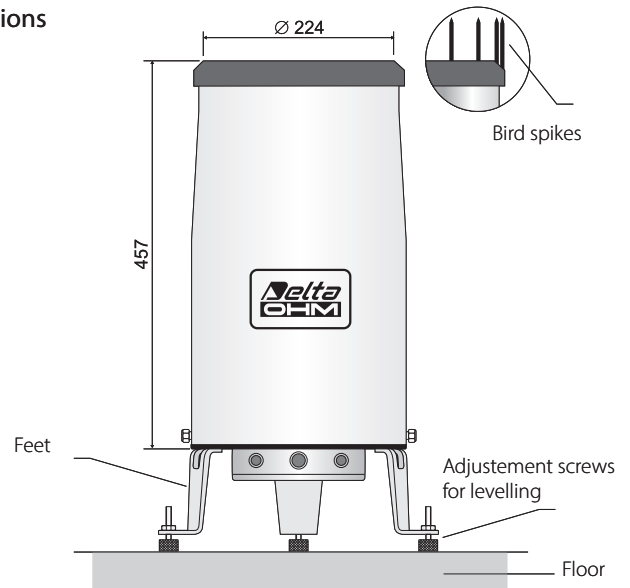
HD2003.78



Ground installation



Dimensions



**Delta OHM**

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In order to ensure the quality of our instruments, we may have to develop our products. We may make changes or corrections at any time. Check on our website to make sure your documentation is up to date.

We look forward to your enquiry:

Phone +39 049 89 77 150

Email: sales@deltaohm.com

Delta OHM S.r.l.

Single Member Company subject to direction and coordination of GHM MESSTECHNIK GmbH

Via Marconi 5 | 35030 Caselle di Selvazzano (PD) | ITALY

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