

English

## Operating manual

Ventilation and heating unit  
**HD9906.51**



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[www.deltaohm.com](http://www.deltaohm.com)

**Keep for future reference.**

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# 1 INTRODUCTION

The **HD9906.51** ventilation and heating unit allows increasing the accuracy of solar radiation measurements maintaining the operating temperature of the sensor uniform. Ventilation reduces the type "A" offset (present in pyranometers and pyrgeometers) due to cooling of the dome with respect to the sensor body.

The unit can be used outdoor in any weather condition and avoids the formation of dew and frost on the optical part of the sensor.

The heating function of the unit can also be used in extreme environmental conditions, to avoid the formation of snow and ice on the sensor dome. Since the heating could increase the type "A" offset, it is recommended to use it only for the time necessary to remove snow or ice.

The built-in levelling device allows for accurate horizontal installation.

The unit is supplied as standard with a 5 m connection cable (other lengths on request) already connected to the unit terminal block and can be used with:

- **LPPYRA02...** and **LPPYRA10...** pyranometers
- **LPPIRG01...** pyrgeometers
- **LPPHOT02...** photometers
- **LPUVA02...** and **LPUVB02** radiometers

Available in version for sensors with mV output (lower) or for sensors with amplified analog or digital output (higher).

## WARNINGS

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**THE UNIT CONTAINS PARTS THAT COULD BE AT HIGH TEMPERATURE (HEATER) AND MOVING MECHANICAL PARTS (FAN).**

**BEFORE PERFORMING INSTALLATION AND MAINTENANCE OPERATIONS, DISCONNECT THE POWER SUPPLY AND WAIT FOR THE HEATER TO COOL DOWN.**

- The unit is not intended for use with sensors other than those indicated.
- Respect the power supply values indicated in the technical specifications and pay attention to the indicated polarities.
- Do not use extension cables. In case of replacing the supplied cable with longer cables, respect the characteristics of the supplied cable and use low resistance cables.

## SYMBOLS

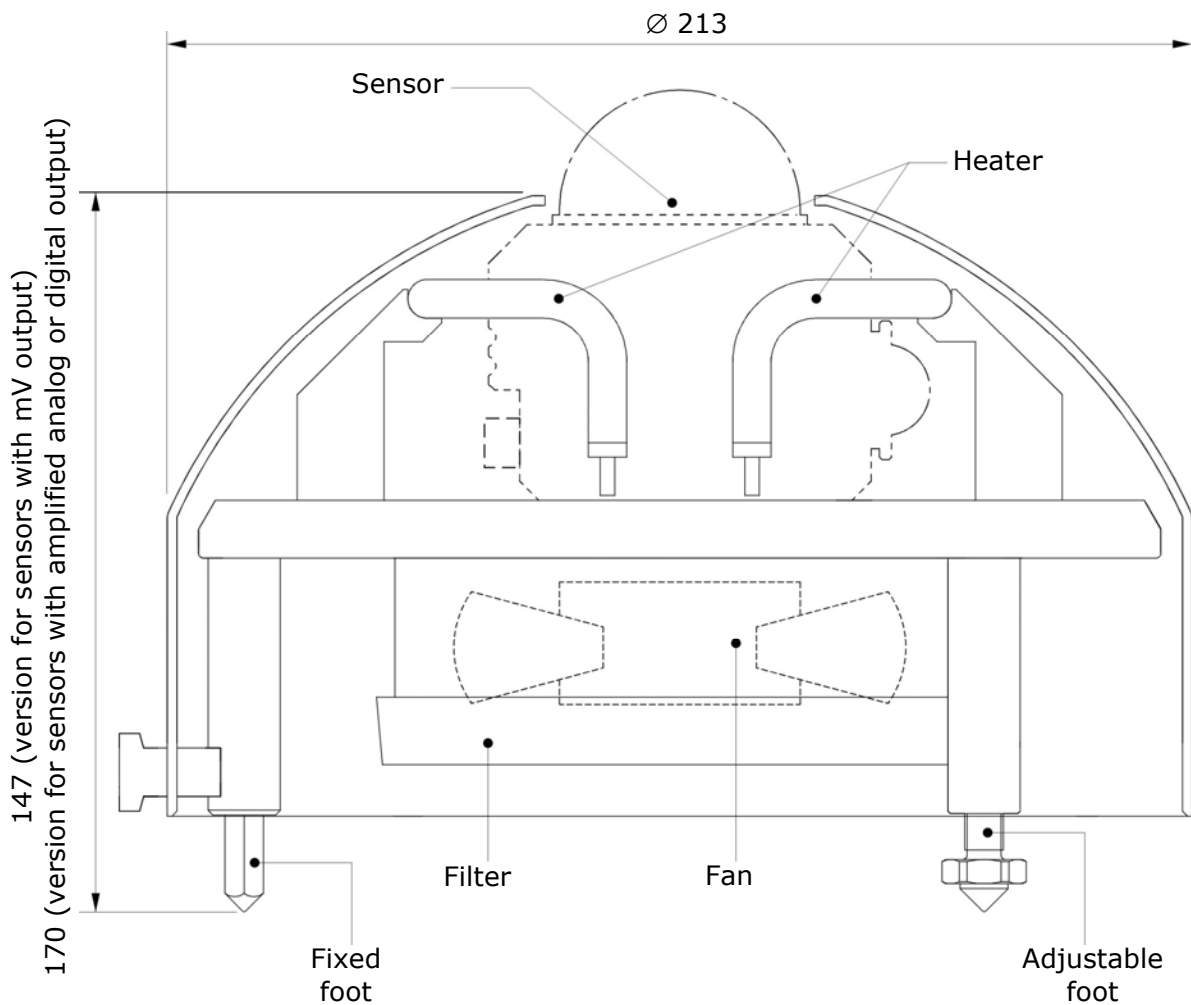
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**WARNING – HOT SURFACE**

## 2 TECHNICAL SPECIFICATIONS

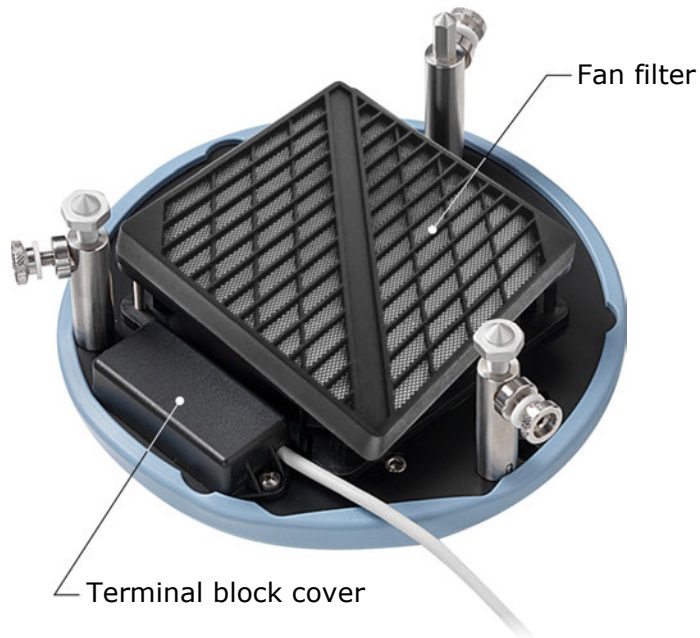
<b>Ventilation power supply</b>	12 Vdc $\pm$ 10% / 5 W
<b>Heating power supply</b>	12 Vdc $\pm$ 10% / 10 W
<b>Operating conditions</b>	-30...+70 °C / 0...100 %RH Max. altitude 3000 m
<b>Cable length</b>	5 m standard (other lengths on request) Ending with free wires



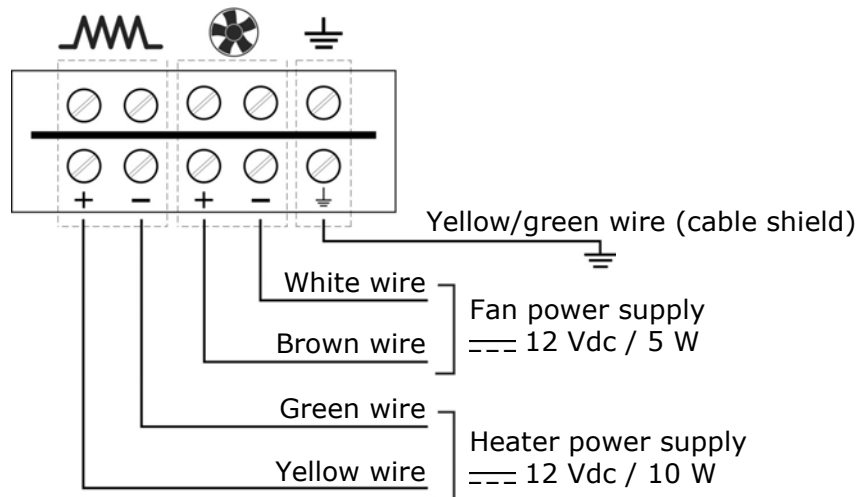
### 3 INSTALLATION

#### Connections

The unit is supplied with the cable already connected. In case it is necessary to access the terminal block, unscrew the screws that secure the protective cover of the terminal block under the base of the unit.



**Fig. 3.1: bottom view of the unit**



**Fig. 3.2: connections**

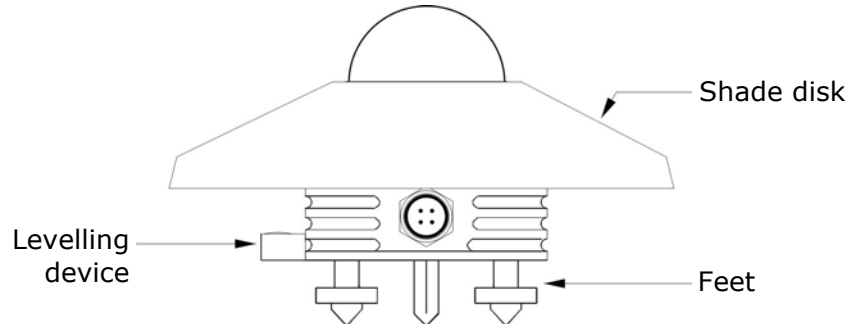
Pay attention to respect the polarity of the fan, otherwise the air flow will be in the opposite direction to that expected (bottom up).

## Fixing the sensor

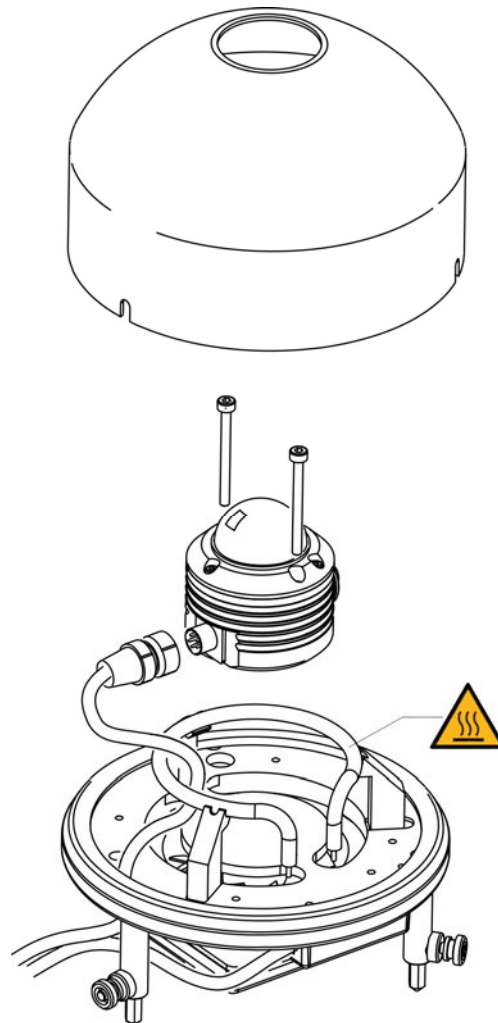
If ordered together with the unit, the sensor is already installed inside the unit.

If the unit has been ordered separately, to install the sensor:

- if present, remove the sensor shade disk, feet and levelling device;



- remove the external housing by unscrewing the three knobs;
- fix the sensor to the base of the unit using the two screws supplied.
  - **M5x60 mm** for sensors with mV output (lower than the versions with amplified analog or digital output).
  - **M5x85 mm** for sensors with amplified analog or digital output.

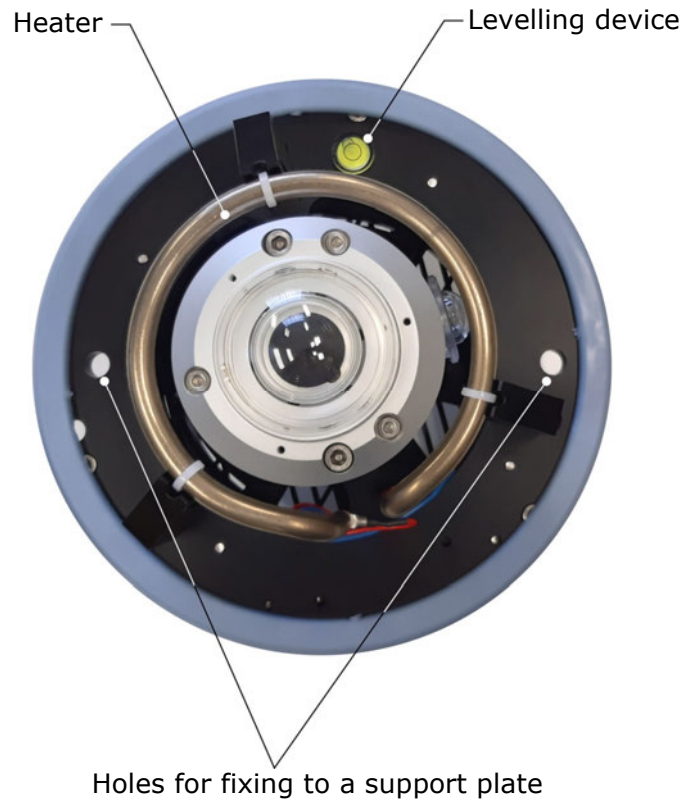


**Fig. 3.3: fixing the sensor inside the unit**

The sensor cable should be routed through the groove on the edge of the base. The sensor must be oriented so that the connector faces the cable exit groove.

### Positioning the unit

For an accurate horizontal positioning, use the levelling device on the top of the base. The unit has two height-adjustable feet for levelling.



**Fig. 3.4: top view of the unit without external housing**

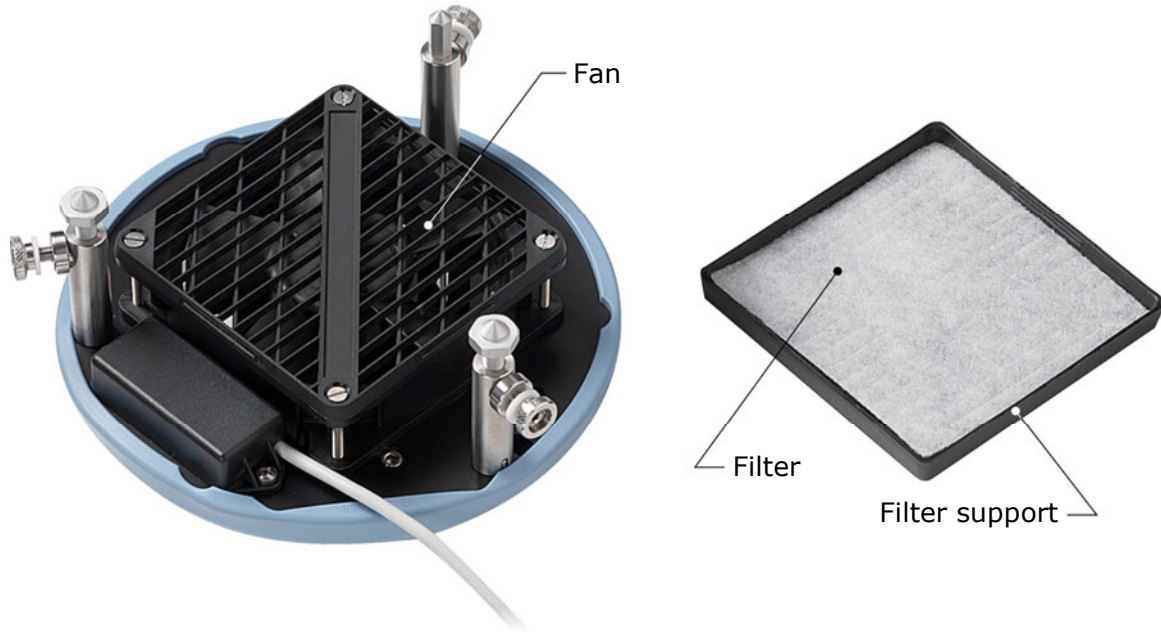
The  $\varnothing 9$  mm through holes on the base can be used to fix the unit to a support plate. At the end of the installation, replace the external housing of the unit and fix it by screwing the three knobs.

## 4 MAINTENANCE

The filter covering the fan must be periodically checked. The maintenance period depends on the degree of pollution of the environment in which the unit is installed.

The filter must be replaced if dirty or clogged.

To access the filter, gently pull the filter holder to slide it off the fan body.





## 5 SAFETY INSTRUCTIONS

### General safety instructions

The unit has been manufactured and tested in accordance with the safety standard EN61010-1:2010 "Safety requirements for electrical equipment for measurement, control and laboratory use" and has left the factory in perfect safety technical conditions.

The unit proper operation and operating safety can be ensured only if all standard safety measures as well as the specific measures described in this manual are followed.

The unit proper operation and operating safety can be ensured only in the climatic conditions specified in this manual.

Do not use the unit in places where there are:

- Corrosive or flammable gases.
- Direct vibrations or shocks to the instrument.
- High-intensity electromagnetic fields, static electricity.

### User obligations

The unit operator shall follow the directives and regulations below that refer to the treatment of dangerous materials:

- EEC directives on workplace safety.
- National law regulations on workplace safety.
- Accident prevention regulations.

**NOTES**

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**DICHIARAZIONE DI CONFORMITÀ UE**  
**EU DECLARATION OF CONFORMITY****Delta Ohm S.r.L. a socio unico – Via Marconi 5 – 35030 Caselle di Selvazzano – Padova – ITALY**Documento Nr. / Mese.Anno: **5191 / 07.2019**  
Document-No. / Month.Year :

Si dichiara con la presente, in qualità di produttore e sotto la propria responsabilità esclusiva, che i seguenti prodotti sono conformi ai requisiti di protezione definiti nelle direttive del Consiglio Europeo:  
*We declare as manufacturer herewith under our sole responsibility that the following products are in compliance with the protection requirements defined in the European Council directives:*

Codice prodotto: **HD9906.51**  
Product identifier :Descrizione prodotto: **Unità di ventilazione e riscaldamento**  
Product description : **Ventilation and heating unit**I prodotti sono conformi alle seguenti Direttive Europee:  
*The products conform to following European Directives:*

Direttive / Directives	
2014/30/EU	Direttiva EMC / EMC Directive
2014/35/EU	Direttiva bassa tensione / Low Voltage Directive
2011/65/EU - 2015/863/EU	RoHS / RoHS

Norme armonizzate applicate o riferimento a specifiche tecniche:  
*Applied harmonized standards or mentioned technical specifications:*

Norme armonizzate / Harmonized standards	
EN 61010-1:2010	Requisiti di sicurezza elettrica / Electrical safety requirements
EN 61326-1:2013	Requisiti EMC / EMC requirements
EN 50581:2012	RoHS / RoHS

Il produttore è responsabile per la dichiarazione rilasciata da:  
*The manufacturer is responsible for the declaration released by:***Johannes Overhues**Amministratore delegato  
Chief Executive Officer

Caselle di Selvazzano, 19/07/2019

Questa dichiarazione certifica l'accordo con la legislazione armonizzata menzionata, non costituisce tuttavia garanzia delle caratteristiche.  
*This declaration certifies the agreement with the harmonization legislation mentioned, contained however no warranty of characteristics.*

## WARRANTY

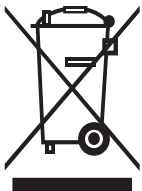
Delta OHM is required to respond to the "factory warranty" only in those cases provided by Legislative Decree 6 September 2005 - n. 206. Each instrument is sold after rigorous inspections; if any manufacturing defect is found, it is necessary to contact the distributor where the instrument was purchased from. During the warranty period (24 months from the date of invoice) any manufacturing defects found will be repaired free of charge. Misuse, wear, neglect, lack or inefficient maintenance as well as theft and damage during transport are excluded. Warranty does not apply if changes, tampering or unauthorized repairs are made on the product. Solutions, probes, electrodes and microphones are not guaranteed as the improper use, even for a few minutes, may cause irreparable damages.

Delta OHM repairs the products that show defects of construction in accordance with the terms and conditions of warranty included in the manual of the product. For any dispute, the competent court is the Court of Padua. The Italian law and the "Convention on Contracts for the International Sales of Goods" apply.

## TECHNICAL INFORMATION

The quality level of our instruments is the result of the continuous product development. This may lead to differences between the information reported in the manual and the instrument you have purchased. In case of discrepancies and/or inconsistencies, please write to sales@deltaohm.com. Delta OHM reserves the right to change technical specifications and dimensions to fit the product requirements without prior notice.

## DISPOSAL INFORMATION



Electrical and electronic equipment marked with specific symbol in compliance with 2012/19/EU Directive must be disposed of separately from household waste. European users can hand them over to the dealer or to the manufacturer when purchasing a new electrical and electronic equipment, or to a WEEE collection point designated by local authorities. Illegal disposal is punished by law.

Disposing of electrical and electronic equipment separately from normal waste helps to preserve natural resources and allows materials to be recycled in an environmentally friendly way without risks to human health.



RoHS

**V1.0**  
**10/2022**