



# Heating and ventilation unit VUP12...

## VENTILATION AND HEATING UNIT FOR PYRANOMETERS

### INTRODUCTION

Discover the cutting-edge **ventilation and heating unit VUP12**: the optimal solution that allows increasing the precision of solar radiation measurements while maintaining the sensor's operating temperature uniform. Say goodbye to inaccuracies caused by environmental factors with our state-of-the-art technology.

### FEATURES

#### Uniform Temperature Always

The ventilation functionality minimizes the well-known "Type A" offset common to pyranometers and pyrgeometers, ensuring precise data thanks to the stabilization of the sensor's temperature.

Whether it's scorching sun or freezing cold, our unit withstands all weather conditions, preventing dew and frost formation on the sensor's optical part. The **ventilation is normally always in operation** to maintain the pyranometer's temperature uniform and to prevent dust from settling on the dome.

#### Heating activation

But that's not all: thanks to the heating function, it's possible to tackle even the harshest climates, avoiding snow and ice accumulation on the sensor's dome. Our unit is intelligently designed to **activate heating only when necessary**, removing snow or ice without compromising accuracy.

#### Adaptive Flexibility

Equipped with two independent heating circuits of equal power, it seamlessly adapts to the unique climate of the installation location. Only one of the two independent heating circuits can be activated if the climate is not particularly severe; or both circuits can be activated if the climate is harsher.

#### Compliant with Standards

Compatible with the LPS02... and LPS10... series pyranometers, our unit ensures compliance with industrial standards, including **IEC 61724-1**, **ISO/TR 9901**, and the "BSRN Operations Manual."

Choose the best value for money – invest in the **VUP12** and elevate your solar radiation measurements to unparalleled accuracy and reliability.



#### ACCORDING TO THE STANDARD

Fully compliant with:

- IEC 61724-1
- ISO/TR 9901
- "BSRN operations manual"



#### COMPACT SOLUTION

Small dimensions allow uniform heating in a short time

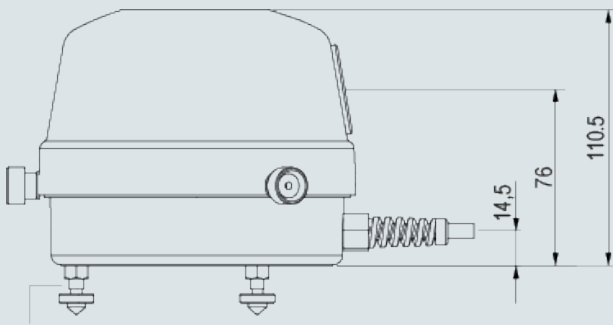


#### WEATHERPROOF ASSURANCE

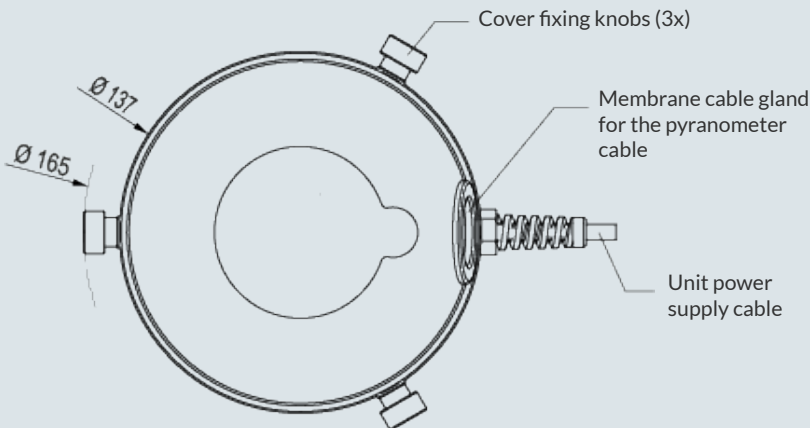
Uninterrupted operation in any weather condition

## Technical specifications

Ventilation power supply	12 Vdc $\pm$ 10% / 1.6 W
Heating power supply	12 Vdc $\pm$ 10% 6 W (heating 1) + 6 W (heating 2)
Operating conditions	-40...+70 °C / 0...100 %RH Max. altitude 3000 m
Increase of air temperature with heating on	~2.2 °C with ventilation and both heating circuits on ~1.1 °C with ventilation and one heating circuit on
Cable length	5 m standard, ending with free wires
Protection degree	IP 54 IP 67 the internal electrical connection
Weight	0.6 kg approx. (excluding cable)



Height adjustable feet (3x)



## Use of ventilation and heating

Ventilation is normally always in operation, to keep the temperature of the pyranometer uniform and to prevent dust from settling on the dome.

Instead, the need to activate the heating circuits depends on the ambient temperature.

Only one of the two heating circuits can be activated if the climate is not particularly severe; or, both circuits can be activated if the climate is more severe.

The exact temperature at which to activate the heating can also depend on other climat-ic factors. For example, the probability of dew forming on the dome is affected by whether the climate is dry or humid. Therefore, the exact activation temperature should be adapted to the place of installation.

Ventilation	Heating 1	Heating 2	Temperature range
ON	ON	ON	< 0 °C
ON	ON	OFF	-5...+25 °C
ON	OFF	OFF	>+20 °C