

MS-21 Pyrgeometer

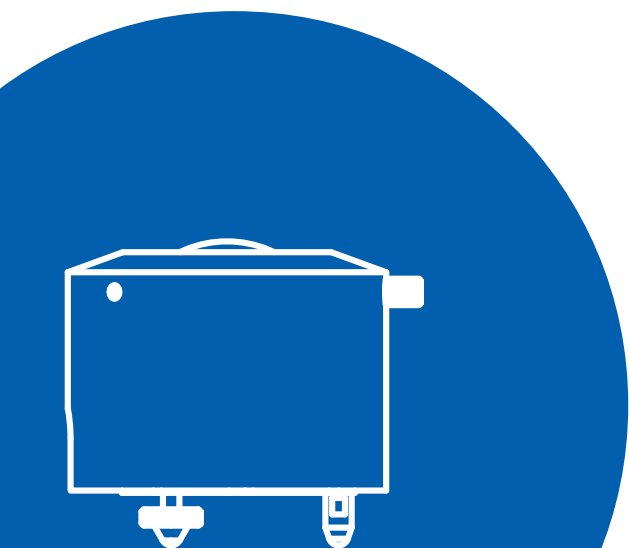
Thank you for purchasing this EKO product.

The Quick Start Guide provides basic instructions to help you set up and get started. Please see the Instruction Manual for more detailed information about this product.

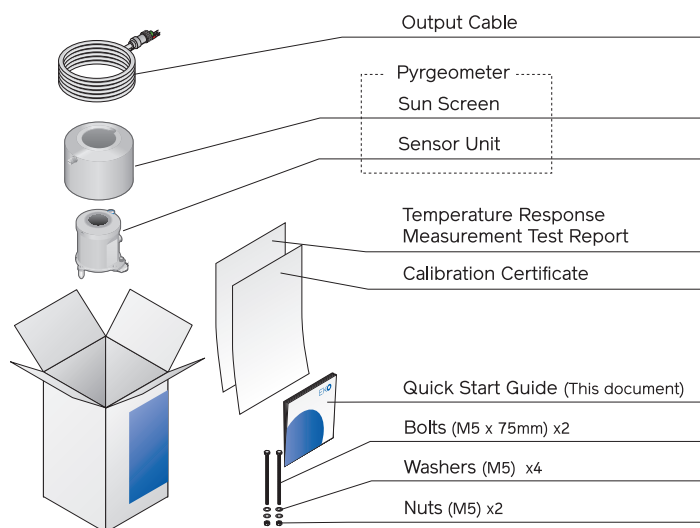
Product Warranty

For warranty terms and conditions, please consult the Instruction Manual, EKO Instruments, or your distributor for further information.

Please Note: All of our products are tested to ensure that they meet their published specifications. The warranty included in the conditions of delivery is valid only if the product has been installed and used in accordance with the instructions provided in the Instruction Manual.



1 In the Box



First, please check the package contents. If any part is missing or damaged, please contact EKO or your EKO distributor.

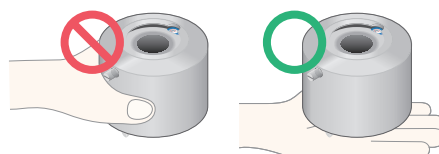
- Please download the instruction manual from the EKO website.



- We recommend that you keep the original packaging for return shipping in case of recalibration or repair.

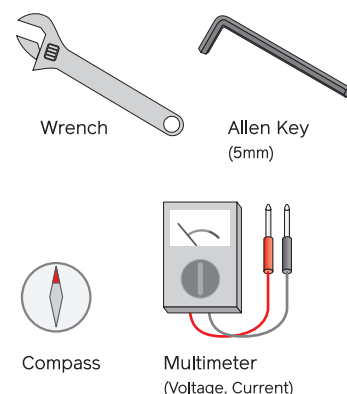
Handling Caution

Always hold the pyrgeometer at the bottom when carrying. Do not hold the sun screen part, as the sensor unit may drop.



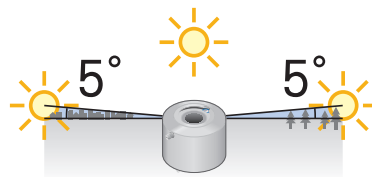
2 Preparing to Install

1 Required Tools

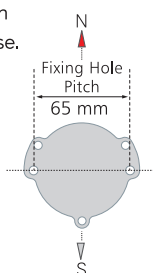


2 Location & Setup Conditions

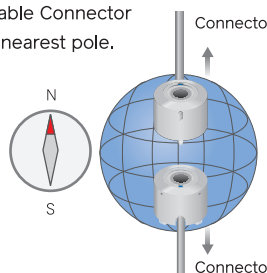
- Select a location with free horizon, without any obstructions and light reflections throughout the day.



- Orientation of Fixing Holes on Installation Base.



- Place the pyrgeometer with the Cable Connector facing the nearest pole.



3 Installation

1 Mount the pyrgeometer on the installation base

2 Level the pyrgeometer



Horizontal surface:

Level the pyrgeometer by adjusting the leveling screws.

Inclined surface:

Install on an inclined surface after leveling the pyrgeometer by adjusting the leveling screws on a horizontal surface.

3 Fasten the pyrgeometer to the installation base



For installation do not remove the leveling screws.

4 Securely insert the output cable into the sensor unit



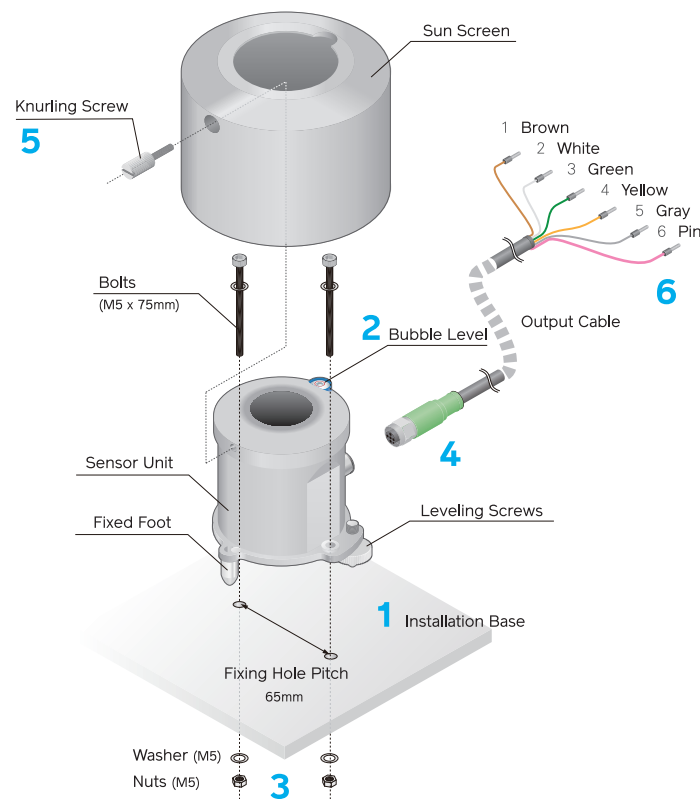
Connect the power cable grounding wire to prevent electrical shocks.



Fix cable to prevent damage from high winds or other adverse weather conditions.

5 Attach the sun screen

Place the sun screen in the proper position; insert the tab inside the sun screen to the groove on the sensor unit. Fasten the knurling screw, and check that it is secure.



0-20mV Output

	Connect to
1 Brown	Output +
2 White	Output -
3 Green	Pt100 (A)
4 Yellow	Pt100 (B)
5 Gray	Pt100 (B)
6 Pink	Pt100 (A)
FG	FG*

*Grounding: Make sure to connect to ground or measurement error will occur due to noise on output signal.

6 Wiring

Connect the output cable to each terminal.

4 Measurement & Maintenance

Measurement Range

Set measurement range on the measuring instrument according to the below output range.

Measurement Range	± 20 [mV]
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Calculate Infrared Irradiance

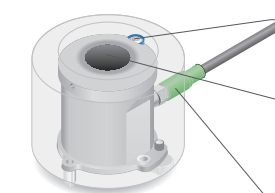
Using the following formulas, pyrgeometer output value can be converted into Infrared irradiance.

0-20mV Output

$$L_d [W/m^2] = \frac{E [\mu V]}{S [\mu V/W/m^2]} + 5.67 \times 10^{-8} \times (T [C] + 273.15)^4$$

L_d : Downward atmospheric longwave radiation [W/m²]
 E : Pyrgeometer output voltage [μV]
 S : Sensitivity [μV/W/m²]
 T : Sensor temperature [°C]

Periodic Maintenance



Bubble Level:
Check if the bubble is within the center ring. Readjust if necessary.

Silicon Lens:
Keep the Silicon lens clean by wiping with a soft cloth and alcohol based cleaning solution. Make sure there are no scratches on the Silicon lens.

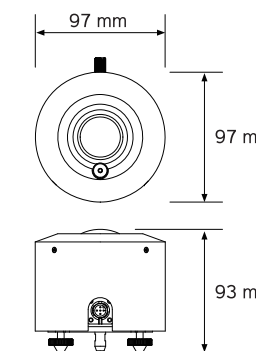
Connector & Cable Condition:
Check and make sure the connector is connected securely and the cable is not damaged. Also check the cable is fixed.

Recalibration & Desiccant Replacement

To maintain the highest levels of measurement accuracy, we recommend periodic recalibration of your product every 2-years. Please contact EKO Instruments for more information about our 'Recalibration Service'.

Thanks to the advanced design of this sensor, there is no need to change the desiccant, and any user attempts to change the desiccant may void your warranty.

Specifications



	MS-21
Fixing Hole Pitch	65 mm
Width	Φ97 mm
Height	93 mm
Mass	0.7 kg
Operating Temperature	-40 ~ 80 °C

EKO INSTRUMENTS



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