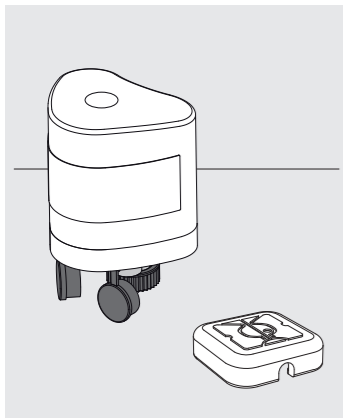


Instruction Sheet



rooftop monitoring system



Looking for the manual?
instruction sheet in Chinese?
declaration of Conformity?
SmartExplorer software?

kippzonen.com/downloads



0.5 kg



-40 °C to 80 °C
-40 °F to 176 °F



IP 67 CE



Kipp & Zonen B.V.
P.O. Box 507, 2600 AM Delft
The Netherlands
+31 15 2755 210
info@kippzonen.com
www.kippzonen.com

User Information

Read this document carefully before installation

Warranty is 2 years from date of invoice, subject to correct installation and use. Kipp & Zonen accepts no liability for any loss or damages arising from incorrect use of the product. Unauthorised modifications may void the warranty and CE/FCC validity. For the latest product support information please visit our website.

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Electrical Connection

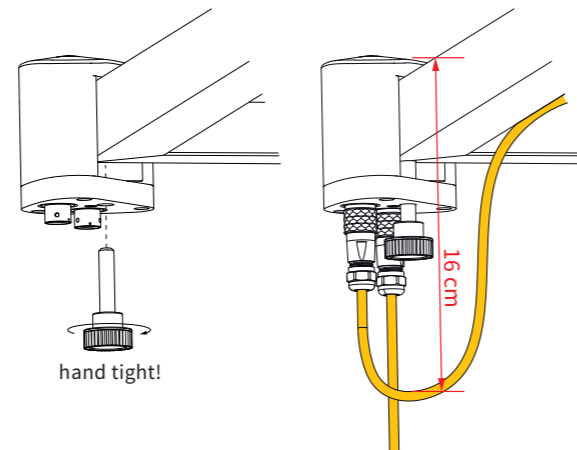
Wire	Function	Connect with
Yellow	Modbus® RS-485	B/B'+
Grey	Modbus® RS-485	A/A'-
Green	Modbus® common / Ground	
White	Power 5 to 30 VDC (12 V recommended) 60 mW max.	
Black	Power ground	
Shield	Housing	Ground *

* Connect to ground if radiometer not grounded

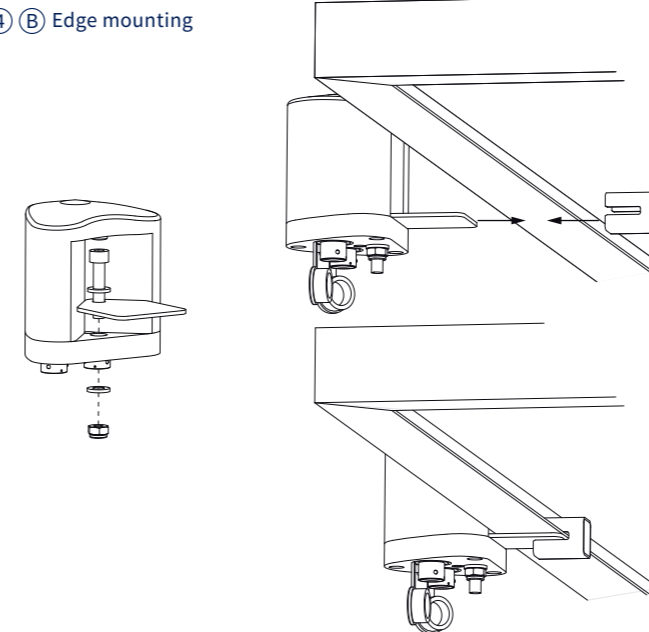
Mechanical Installation

- Check delivery contents
- Check if the standard RT1 communication parameters match your system⁽¹⁾:
2-wire RS-485 with Modbus® RTU protocol, 19200 baud, 8 databits, even parity, 1 stopbit (also known as 19200 - 8E1)
⁽¹⁾ If the parameters do not match your system:
Connect the RT1 to your PC with RS485-USB interface and run the Kipp & Zonen SmartExplorer software to change the parameters.
- Determine a good spot on a solar panel in your solar rooftop park which is a location with the same amount of sun and shade as most of the PV panels
- Mount the RT1 in one of the following ways:
 - At a corner of a solar panel (*preference position*)
 - Screw out the thumbscrew just enough for the RT1 to fit over the corner of the PV panel
 - Position the RT1 in such a way that it fits well and snugly to both sides of the PV panel, then turn in the thumb screw until it is hand tight and feels well secured
 - Do not plug in the cable to the host or Modbus® gateway unless the cable is properly installed
 - Edge (if corner mount is no option) by using the side installation adapter
 - Remove and store the thumb screw
 - Put the adapter plate in the RT1 and secure with the nut and screw
 - Align the RT1 with the side of the PV panel and keep securely in place
 - Position the PowAR Cinch™ in front of the adapter plate
 - Push on the PowAR Cinch™ and make sure that it is fully engaged
- Install the PV panel temperature sensor by the following steps:
 - From the RT1 sensor, pull off the black dust cap of the 2-pin connector
 - Insert the 2-pin plug in the 2-pin connector of the RT1 sensor
 - Clean the surfaces of the locations for the cable supports and for the PV panel temperature sensor⁽²⁾ at the back of the PV panel
 - ⁽²⁾ The best location for the temperature sensor is the center of the PV panel
 - Stick the temperature sensor to the cleaned surface at back of the PV panel
 - Place with care as the temperature sensor can not be removed once installed**
 - Stick the cable tie mounts to the cleaned surfaces at the back of the PV panel
 - Secure the cable to the cable supports by using tie wraps
- Connect the 5-wire cable to your data logger / SCADA / Modbus® gateway
- Direct this cable to the RT1
- From the RT1 sensor, pull off the black dust cap of the 5-pin connector
- Insert the 5-pin plug in the 5-pin connector of the RT1 sensor
- Secure the cable
- Check the data in the Smart Explorer software or your monitoring software

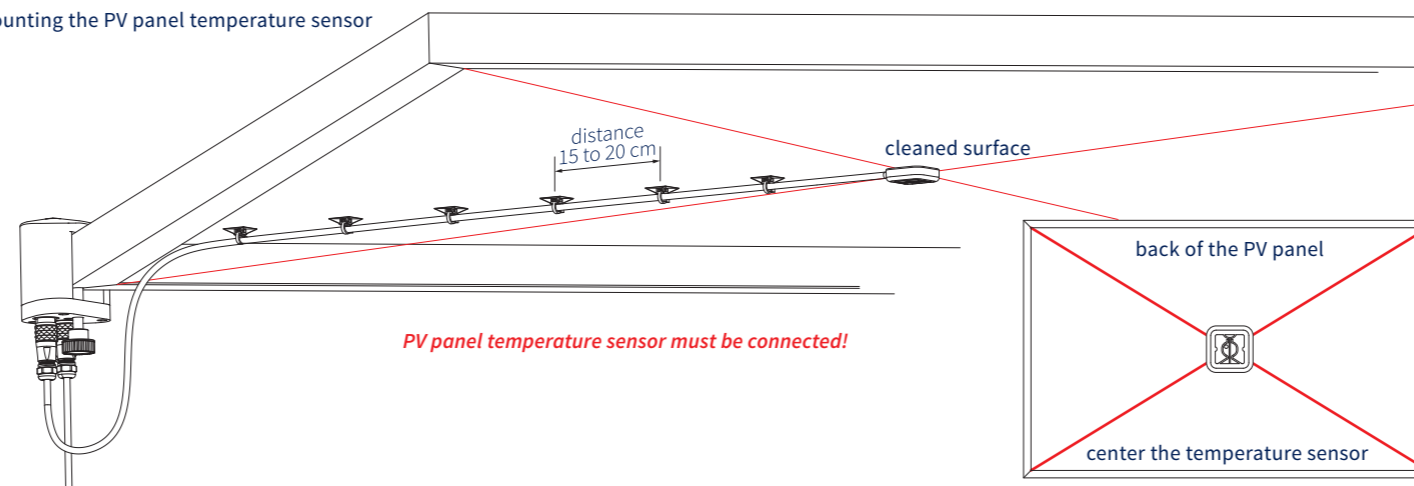
4 A Corner mounting



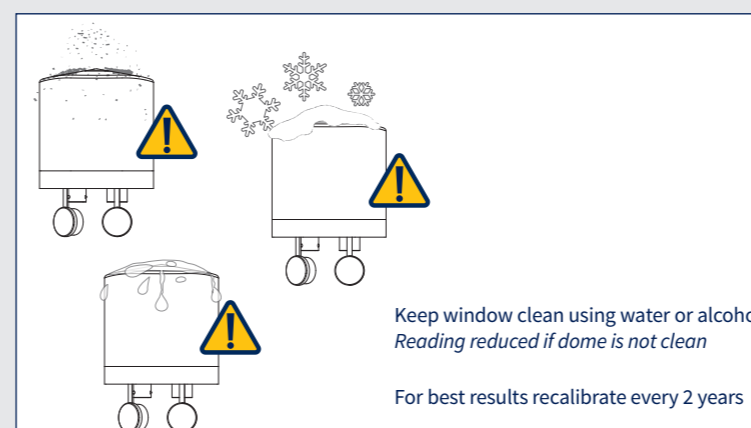
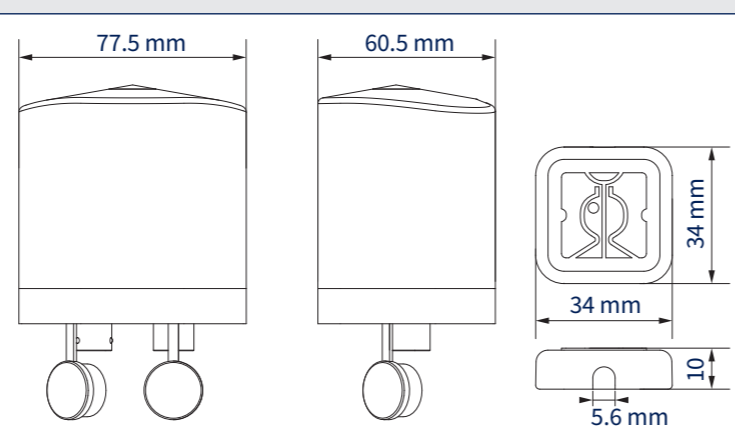
4 B Edge mounting



5 Mounting the PV panel temperature sensor



- a RT1 housing
 - b Two dust caps
 - c Thumb screw
 - d Side installation adapter
 - e Side mounting nut, ring and M6x30 screw
 - f Side mounting PowAR Cinch™ clamp
 - g 2-pin plug with 3 m cable with temperature sensor
 - h 5-pin plug with 20 m cable to host
 - i 15x cable tie mount + binder, for mounting the cable of the temperature sensor
 - j Alcohol wipes
 - k Instruction sheet
 - l Calibration certificate
- Keep original packaging for recalibration



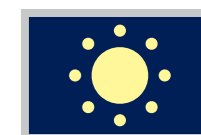
Modbus® address	1 ^(*)
Communication	19200 baud, 8 bits, even parity, 1 stopbit ^(*)
^(*) default setting, can be adjusted	
For manual and software please visit www.kippzonen.com	



Fully cloudy
50 to 120 W/m²



Sunny, partly cloudy
120 to 500 W/m²



Clear and Sunny
500 to 1300 W/m²

Delivery Contents

Dimensions

Maintenance

Settings & Typical Values