

Weather station multisense

Operating and installation instructions



Der SonnenLichtManager

Valid from
1 April 2022
Keep for future use.

General information



Fig. 1 Weather station multisense

The Weather station multisense measures values for brightness, wind, precipitation and temperature. The measuring values are transferred to the WAREMA Wisotronic via a four-wire bus line. It controls the connected sun shading products as a function of this weather information. The weather station is mounted outside by means of a fixing bracket or a pole.

Intended use

The Weather station multisense is an electronic device for the collection of measuring values in combination with the WAREMA Wisotronic. The approval of the manufacturer must be obtained for uses outside of the purposes listed in these instructions.

Safety instructions



WARNING
The electrical installation (assembly)/dismantling must be performed by a certified electrician in accordance with the electrical installation regulations published by the Association of German Electrical Engineers (VDE 0100) or the standards and regulations of the country in which the device is being installed. The electrician must observe the installation instructions included with the electrical device.



WARNING

If it appears that hazard-free operation is not possible, the device may not be started or must be deactivated. This assumption is justified if

- ▶ The housing or the supply lines show signs of damage,
- ▶ The device is no longer working.



WARNING

The sensor may only be operated with safety extra low voltage.



WARNING

An automatically controlled mechanism may begin to move unexpectedly!

- Therefore, never place any objects in the area of movement of an automatically controlled mechanism.
- Disconnect the power supply of the controlled sun shading products before maintaining or cleaning the products.

Function

The Weather station multisense records precipitation events such as rain or snow, wind speed, ambient brightness, dawn/dusk and outside temperature. The weather station only needs to be connected as a network station; the 24 V DC voltage supply is provided via a 4-wire bus cable.

Four photo sensors arranged at right angles record the ambient brightness; sensor 1 also records dawn/dusk values in a second measuring area.

Sensor surface to detect precipitation

A switch signal is triggered by the sensor in the event of precipitation in the form of drizzle, rain or snow. The sensor surface can be heated. If the outside temperature falls below +15 °C or precipitation is registered, the heater is activated and thereby prevents triggering due to high relative humidity alone or ice formation at negative temperatures. After the sensor surface has detected precipitation, it quickly dries again because of the heating. The inclination of the sensor surface creates the required angle to allow the water to drain off the sensor surface.

Installation

Install the weather station using the mounting bracket provided.

- The weather station must be mounted in an upright position with a maximum inclination of $\pm 2^\circ$. The photodiodes must be at right angles to the building facades being shaded. Please refer also to the information in the "Sun control" chapter in your operating instructions.
- The weather station should be mounted accessibly on the highest point of the roof structure or the conservatory. To avoid hindering accurate wind evaluation, do not mount the device away from the wind.
- For the system to function properly, precipitation must be able to hit the sensor surface without interference.
- The supply line must be routed so that water cannot enter into the device or into the building. Use weather-resistant (suitable for outdoor installation) cables such as 4 x AWG 26 UL BK.
- The total line length from the weather station to the Wisotronic must not exceed 200 m if a twisted pair line is used and must be routed in an interference-proof manner.

i Depending on the mounting situation, you can also directly route the line of type JY(St)Y to the Weather station multisense. It must be ensured that the line is protected against UV radiation (e.g. in a conduit, hose) along its entire length.

- The photodiode 1 is used for the dawn/dusk control. The weather station should therefore be positioned so that the photodiode cannot be influenced at night by street or garden lighting or other external light sources (e.g. flashlights).
- Trees, bushes or parts of the building can shade the sensor during the course of the day. In this case, the sensor cannot deliver exact values and the results will be incorrect. Therefore, select the installation location carefully.

i The weather station can also be mounted on an optionally available pole. This requires an additional fixing adapter (special accessory).

Note also the mounting information for the weather station in the installation instructions of the Wisotronic.

Connection

An on-site overload current protection device (fuse) and a disconnecting and isolating switch to switch off the entire system must be provided.

- Route the line in such a way that water cannot flow into the device.
- Use a line that is approved for the operating voltage and is resistant to weather and UV radiation (suitable for outdoor use).
- Connect the weather station to the Wisotronic as per wiring diagram Fig. 4 on page 4.

The device meets the requirements on interference resistance and interference emission for use in residential and commercial areas.

Commissioning

After the device is fully mounted and the operating voltage is connected, the device is ready for operation.

i When commissioning, note that the weather station has an internal temperature correction feature that improves measurement accuracy. The device follows temperature changes at a rate of approx. 10 min per $^\circ\text{C}$. When the operating voltage is first switched on, a temperature measurement is taken at the weather station. If the weather station was previously stored at a considerably lower or higher temperature, it may take several hours before the correct temperature is displayed. If the weather station is already at the temperature of its environment when it is first switched on, the actual temperature measurement value will be displayed from the start.

Assignment of the photodiodes

The numbers 1 to 4 have been factory-assigned to the four photodiodes (see Fig. 2). Therefore, position the photodiodes according to the building facades being shaded (see Fig. 3). Position photodiode 1 to face as northward as possible. It will be far easier to allocate the photodiodes to the individual functions of the Wisotronic later on if you connect the photodiodes to the Wisotronic according to their numbers.

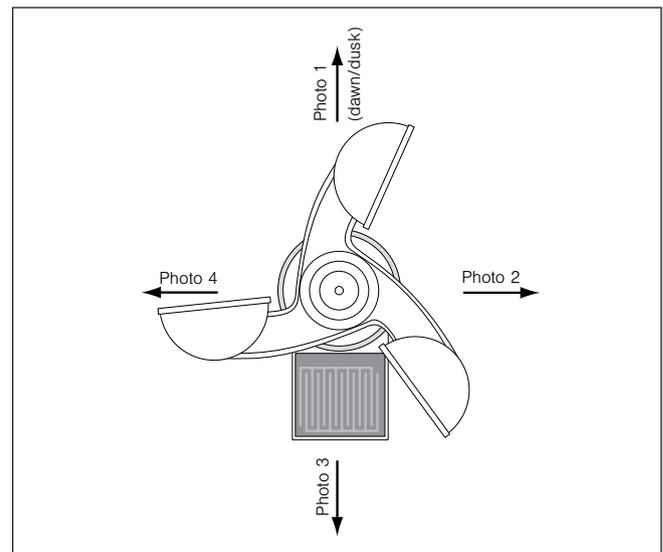


Fig. 2 Position of the photo diodes on the device

Cleaning

The weather station should occasionally be checked for dirt (e.g. bird droppings) and cleaned carefully. Commercially available household cleaners may be used.

Maintenance

There are no parts within the device that require maintenance.

Liability

Failure to comply with the product information in these instructions and use of the unit in a manner that contravenes its intended use and purpose may result in the manufacturer refusing to honour warranty claims for product damage. In this case, liability for consequential harm to persons or damage to property will also be excluded. Follow the instructions in the operating manual of your sun shading system. The automatic or manual operation of the sun shading system when iced over as well as using the sun shading system during severe weather may cause damage and must be prevented by the user by taking suitable precautions.

Obligations for the disposal of electrical devices



A marking with this symbol indicates the following obligations under the scope of legal regulations:

- The owner of this electrical device must dispose of it separately from unsorted municipal waste for further recycling.
- Used batteries and accumulators that are not enclosed in the old device, as well as lamps/bulbs that can be removed from the old device without breaking, must be disposed of separately.
- Distributors of electrical devices and disposal companies are obliged to take back the equipment free of charge.
- The owner must take it upon themselves to delete any personal data contained in the electrical device prior to disposal.

Technical data

Weather station multi-sense	Min.	Typ.	Max.	Unit
Supply				
Operating voltage (SELV)	20	24	28	V DC
Current consumption	30	60	90	mA
Temperature sensor*				
Measuring range	-30		+60	°C
Resolution		0.5		°C
Accuracy		±2		°C
4 direction-dependent photo sensors				
Measuring range	0		100	klx
Resolution during daytime		1		klx
Accuracy during daytime		±1		klx
Resolution at dawn/dusk		2		lx
Accuracy at dawn/dusk		±10		lx
Wind speed				
Measuring range	0		25	m/s
Resolution		1		m/s
Accuracy		±1		m/s
Precipitation sensor				
Measuring range	Precipitation yes/no			
Surface temperature of the sensor surface when heated			40	°C
Dimensions				
WxHxD	130 x175 x130 mm			
Installation	Wall/pole			
Degree of protection/safety class				
Degree of protection	IP 43			
Safety class	III			
Miscellaneous				
Conformity	Viewable at www.warema.de/ce 			
This device meets the EMC directives for use in residential and commercial areas.				
Ambient conditions				
Operating and storage temperature	-30	20	+60	°C
Rel. humidity (non-condensing)	10	40	100	%RH
Degree of soiling	2			
Article numbers				
Weather station	1002 824			
Pole L 0 35 cm; Ø 20 mm, wall installation, Wall distance 150 mm	632 075			
Pole L = 100 cm; Ø 20 mm, wall installation, Wall distance 150 mm	632 085			
Adapter for pole Ø 50 mm	632 095			
WAREMA Renkhoff SE Hans-Wilhelm-Renkhoff-Strasse 2 97828 Marktheidenfeld, Germany				

* Temperature measuring value:

To obtain correct and highly accurate measurement values, the weather station must be installed in direct sunlight.

Therefore, when the sun is shining brightly, the temperature values measured with other thermometers in the shade may differ from the values measured here. This deviation has no effect when you use the ice monitoring function in a network user.

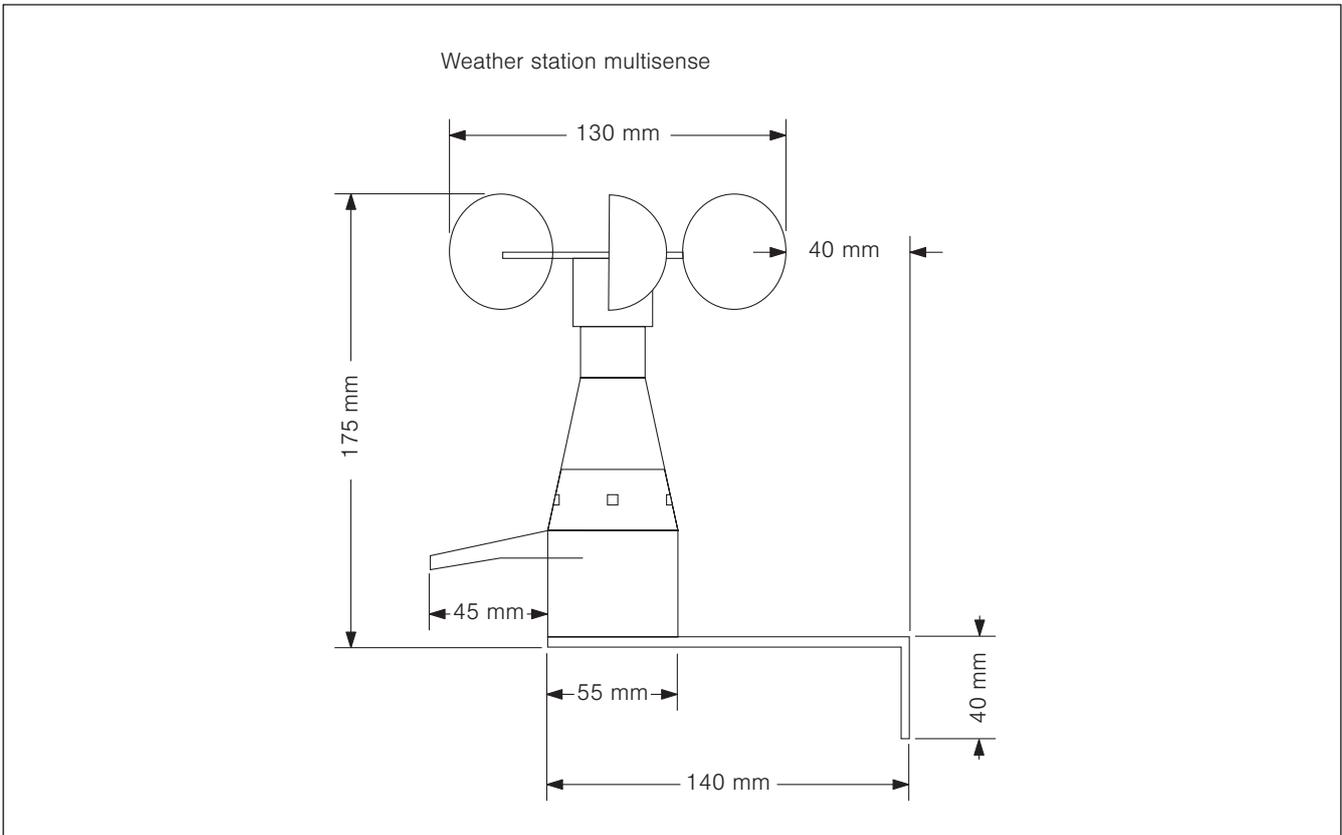


Fig. 3 Weather station multisense dimensions

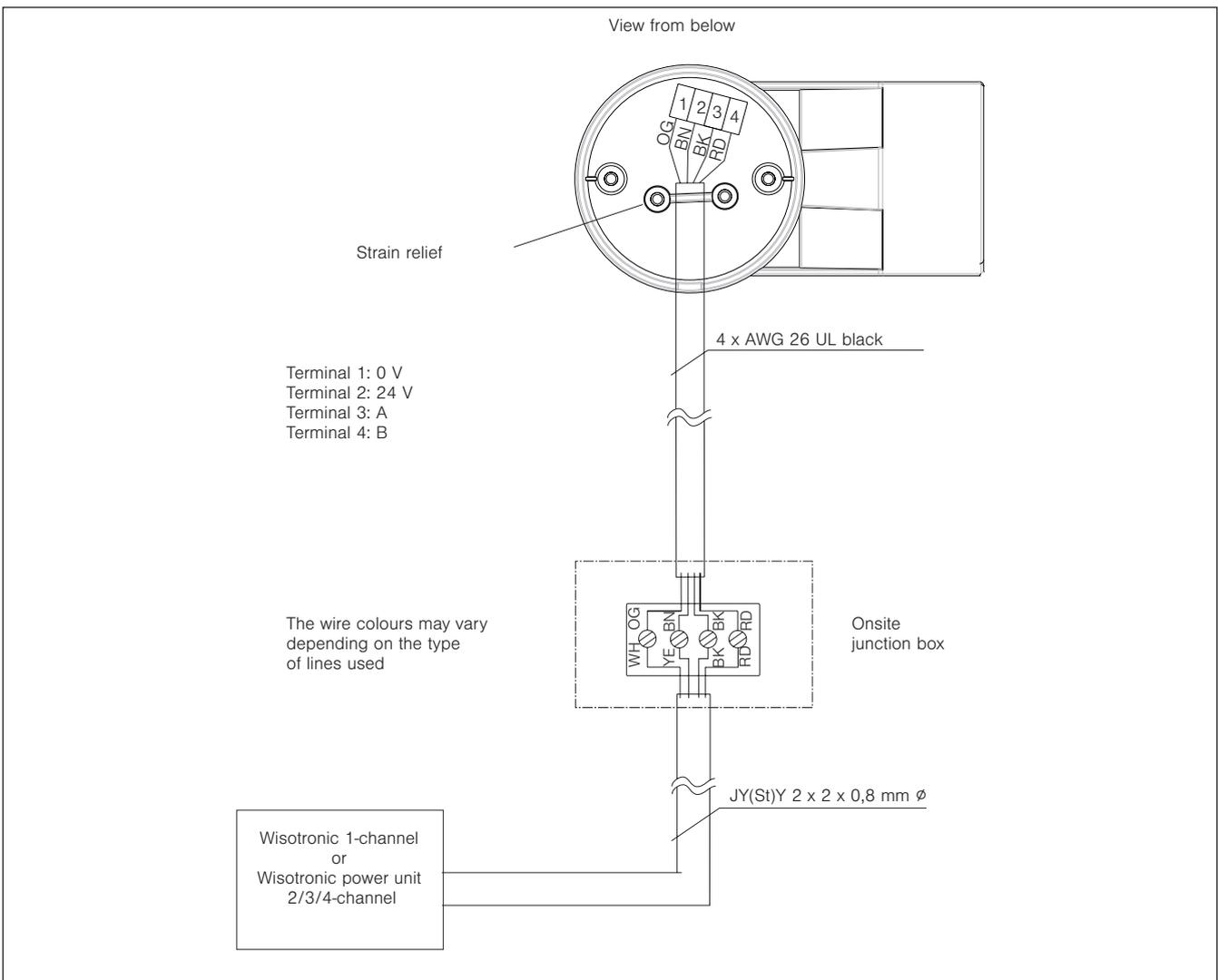


Fig. 4 Weather station multisense wiring diagram