

WAREMA Weather station pro

Operating and installation instructions



Der SonnenLichtManager

Valid from
1 December 2024
Keep for future use.

General information

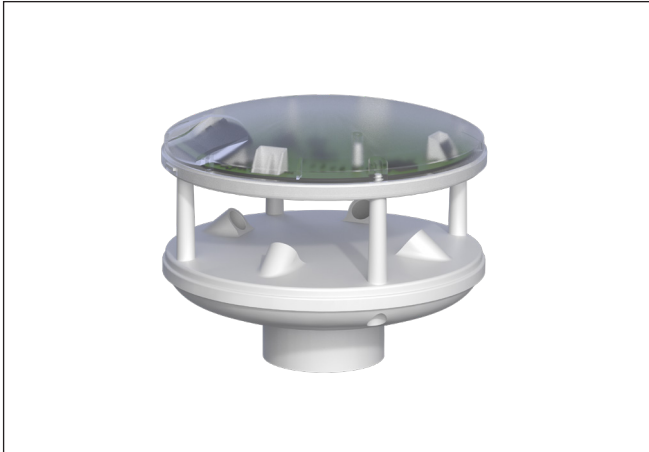


Fig. 1 WAREMA Weather station pro

The WAREMA Weather station pro collects measuring values for brightness, wind speed and wind direction, precipitation and outside temperature and sends the current time, date and geographical position to the receiver via GPS. The measuring values are sent to the Omnexo Central control unit or the KNX secure Sensor Interface via the bus connection and the connected sun shading products are correspondingly controlled on the basis of this data. The weather station is mounted outside by means of a supplied fixing bracket or an optional pole.

Intended use

The WAREMA Weather station pro is an electronic device for the collection of measuring values in combination with an Omnexo Central control unit, or a KNX secure Sensor Interface. The approval of the manufacturer must be obtained for any use of the device other than its intended purpose specified in these instructions.

Safety instructions



WARNING

The electrical installation (assembly) / dismantling must be performed by a certified electrician in accordance with VDE 0100 and/or with the standards and legal requirements pertaining to the respective country. The electrician must observe the installation notes and instructions included with the electrical devices supplied.



WARNING

If hazard-free operation cannot be assumed, the device must not be started or must be deactivated. This assumption is justified if:

- ▶ the housing or the connecting 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 WAREMA Weather station pro collects measuring values for brightness, dawn/dusk, wind speed, wind direction, precipitation and outside temperature. It is equipped with a GPS receiver to transmit the current time, date and geographical position.

The weather station is connected as a network device via a four-wire bus line.

The 24 V DC power supply is provided by a separate power supply unit or the KNX secure Sensor Interface.

Brightness measurement

The brightness is recorded by four photo sensors arranged at right angles (see Fig. 3 on page 2).

A second measuring range is used to collect the dawn/dusk values.

The measuring values can be switched between ambient brightness (in Lux) and radiation on the facade (infrared radiation in W/m²).

Wind measurement

The wind is measured by four ultrasound transducers arranged at right angles.

These are used to record both the wind speed and direction.

Precipitation measurement

Precipitation in the form of a fine drizzle, rain or snow is recorded. Precipitation is optically measured.

In order to prevent it from activating due to high humidity, the sensor surface is heated.

The slope of the sensor surface provides the required angle to allow water to run off the sensor surface.

Temperature measurement

The outside temperature is recorded.

The temperature is measured by ultrasound sensors.

GPS

The WAREMA Weather station pro is equipped with an integrated GPS receiver.

This records the date and time along with determining the geographical position.

Integrated heating

The weather station is equipped with a built-in heating unit.

This largely prevents ice or snow accumulating on the device.

Installation

Install the weather station using the mounting bracket provided.

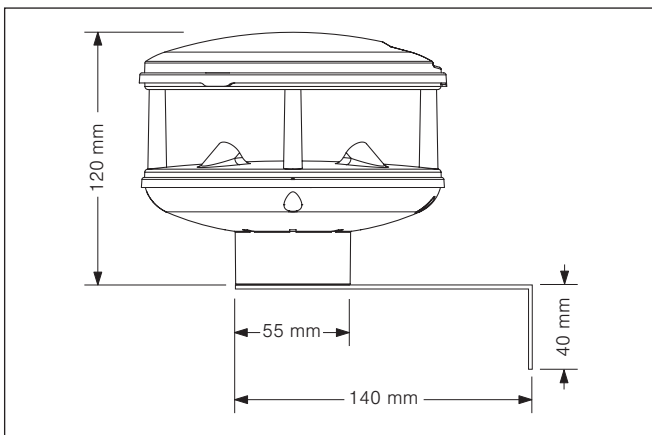


Fig. 2 Wall-mounted using the mounting bracket

- The weather station must be mounted in an upright position with a maximum inclination of $\pm 2^\circ$ and set up to also record the sun when it's low.
- Install the weather station in an easily accessible location at the highest point of the roof structure. To avoid hindering accurate wind evaluation, do not mount the device away from the wind.
- For facade installation, select a position that allows the measuring values to be collected for all hangings to be controlled.
- Align photodiode 1 to the northernmost facade. For installation directly on the facade, align photodiode 1 to the facade.
- For the system to function properly, precipitation must be able to hit the sensor surface without interference.
- In order to ensure dawn/dusk control, the weather station should be positioned so that the photodiodes 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 sensors during the course of the day, resulting in an incorrect measurement result. Therefore, select the installation location carefully.



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



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. The function of the ice monitoring is not impaired.

Types of installation

Alignment of the photodiodes

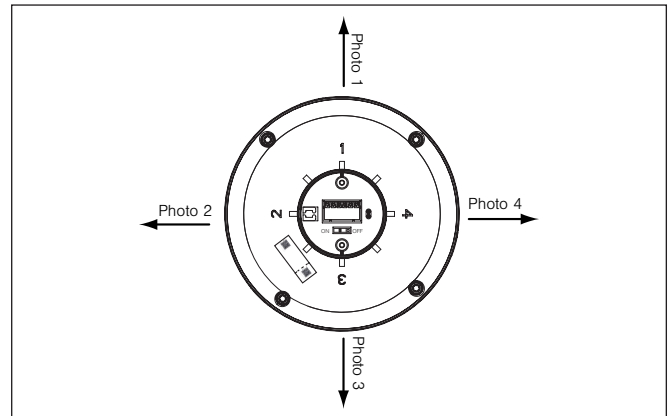


Fig. 3 Position of the photodiodes on the device

Installation version

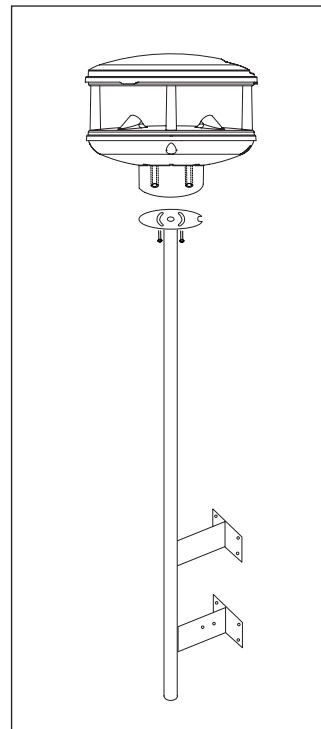


Fig. 4 Wall installation on pole

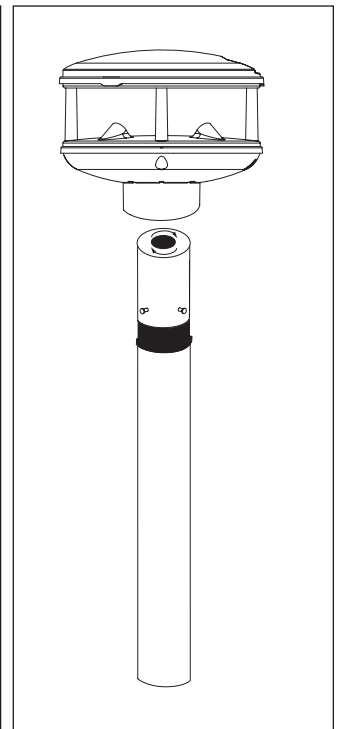




Fig. 5 Mast installation with 50 cm dia. adapter on pole (dia. 49 mm)


Electrical connection


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

- Use a line that is approved for the operating voltage and is resistant to weather and UV rays (suitable for outdoor use), e. g. as 4 x AWG 20 UL SW.
- The connecting line must be routed so that water cannot enter into the device or into the building.
- The total line length must not exceed 1,200 m if a twisted pair line is used and routed in an interference-proof manner.
- Pay attention to the minimum voltage at the weather station (voltage drop) and use a separate power supply unit for the power supply if necessary.
- Connect the weather station to the Omnexo Central control unit as per wiring diagram Fig. 6 on page 5. Follow the wiring diagram in figure Fig. 7 on page 6 to connect the weather station to the KNX secure Sensor Interface.
- The bus lines must be provided with terminating resistors at the beginning and end of the line.
- HUBs are needed for longer line lengths.
- If you are using the optional WAREMA Weather station pro power supply unit 24 V DC/1.3 A AP (article number 2057430), a branch line of max. 10 m to the WAREMA Weather station pro is permissible.
- A max. line length of 50 m is permissible between the KNX secure Sensor Interface and WAREMA Weather station pro 24 V DC/1.3 A AP (article number 2057430).
- Please take out the ID labels  from the devices and give them to your system integrator (see also page 4). A clear allocation of the devices and ID labels must be ensured.

This device meets the requirements on electromagnetic immunity and electromagnetic interference for use in residential and commercial environments.

 For operation, an external power supply unit must be installed in the vicinity of the WAREMA Weather station pro.

 If the WAREMA Weather station pro is the last bus device in the bus line, the terminating resistor needs to be manually set (see Fig. 6 on page 5, illustration displays active terminating resistor)

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

Commissioning

With the KNX bus coupler, the WAREMA Weather station pro is ready for operation after being connected to the KNX bus coupler and application of the operating voltage.

To be able to commission the weather station for an Omnexo Central control unit, it must be set up in the Omnexo software. To determine the serial number, place the magnet (in central control unit scope of delivery) on the ID label until the status LED lights up for confirmation. (see Fig. 6 on page 5.)

Alternatively, you can manually enter the serial number manually (see label on device).



When commissioning, note that the weather station has an internal temperature correction feature that improves measurement accuracy.

When the operating voltage is first switched on, a temperature measurement is taken at the weather station.



If the WAREMA weather station needs to be connected to other central units, please observe the instructions and special features of the device in question during commissioning or contact your specialised retailer.

Maintenance

There are no parts within the device that require maintenance.

Cleaning

The weather station should be checked for dirt (e.g. bird droppings) and cleaned carefully four times a year.

- Clean the device with a soft damp cloth. Steam or high pressure washers, abrasive sponges, abrasive agents and solvents such as alcohol or petroleum must not be used!

Liability

Failure to comply with the product information in these instructions and any use of the device other than its intended use may result in the manufacturer refusing to honour warranty claims for product damage. In this case, liability for secondary harm to persons or damage to property will also be excluded. Observe the information in the operating instructions for your sun shading system. The automatic or manual operation of the sun shading system while iced over and the use of the sun shading system during severe weather may cause damage and must be prevented by the operator through 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.

KEEP IN A SAFE PLACE FOR COMMISSIONING!

Affix the ID label for the WAREMA Weather station pro here



Note down installation location here

Technical data

WAREMA Weather station pro	min.	type	max.	Unit
Supply				
Operating voltage (SELV)	21.6	24	26.4	V DC
Current consumption	30		1200	mA
Temperature sensor*				
Measuring range	-20		60	°C
Resolution		0.5		°C
Accuracy		±2		°C
4 direction-dependent photo sensors				
Measuring range	0		100	klx
Omnexo resolution		1		klx
KNX resolution		2		lx
Accuracy		±10		%
Dawn/dusk measuring range	0		1000	lx
Resolution at dawn/dusk		1		lx
Accuracy at dawn/dusk		±10		%
Radiation transmission onto facade				
Measuring range	0		1300	W/m ²
Resolution		1		W/m ²
Accuracy		±10		%
Wind speed				
Measuring range	0		25	m/s
Omnexo resolution		1		m/s
KNX resolution		0.1		m/s
Accuracy		±1		m/s
Wind direction				
Measuring range	0		360	°
Omnexo resolution		45		°
KNX resolution		1		°
Precipitation sensor				
Measuring range	Precipitation yes/no			
GPS module				
Parameter	Position, date, time			
Interface				
Bus interface	RS485 (two-wire bus)			
Housing				
Dimensions	145 x 120 x 145 mm (WxHxD)			
Degree of protection	IP 44			
Safety class	III			
Installation	Wall/pole			
Miscellaneous				
Conformity	CE specified under www.warema.com/ce			
This device complies with the EMC directives for use in residential and commercial areas and the standard EN 50491-2 "Environmental Conditions".				
WAREMA Renkhoff SE declares herewith that the radio system type WAREMA Weather station pro is in compliance with the 2014/53/EU guideline.				

WAREMA Weather station pro	min.	type	max.	Unit
Software class	A			
Ambient conditions				
Operating temperature	-30		60	°C
Storage temperature	0		70	°C
Humidity (not condensing)	10		100	%RH
Degree of soiling	2			
Connection				
Interface	Spring terminals			
Permissible line cross-section single-wire/fine-wire without ferrule	0.5 - 1.5 mm ²			
Permissible line cross-section fine-wire with ferrule	0.5 - 0.75 mm ²			
Stripping length	8 - 9 mm			
Maximum line length in Omnexo system as branch line (for recommended power type and optional power supply unit WAREMA Weather station pro)	10 m			
Maximum line length KNX secure Sensor Interface (for recommended line type)	50 m			
Recommended line type	4 x AWG 20 UL (resistant to UV rays)			
Article numbers				
WAREMA Weather station pro	2047095			
Optional accessories				
KNX secure Sensor Interface REG	2065317			
KNX secure Sensor Interface AP	2065318			
WAREMA Weather station pro power supply unit 24 V DC / 1.3 A AP	2057430			
Connecting line 4 x AWG 20 C UL (resistant to UV rays) 3 m	2058245			
Connecting line 4 x AWG 20 C UL (resistant to UV rays) 10 m	2058246			
Pole L = 35 cm; Dia. 20 mm, wall mounting, wall distance 150 mm	632075			
Pole L = 100 cm; Dia. 20 mm, wall mounting, wall distance 150 mm	632085			
Adapter for pole dia. 50 mm	632095			
WAREMA Renkhoff SE Hans-Wilhelm-Renkhoff-Strasse 2 D-97828 Marktheidenfeld, Germany Germany				

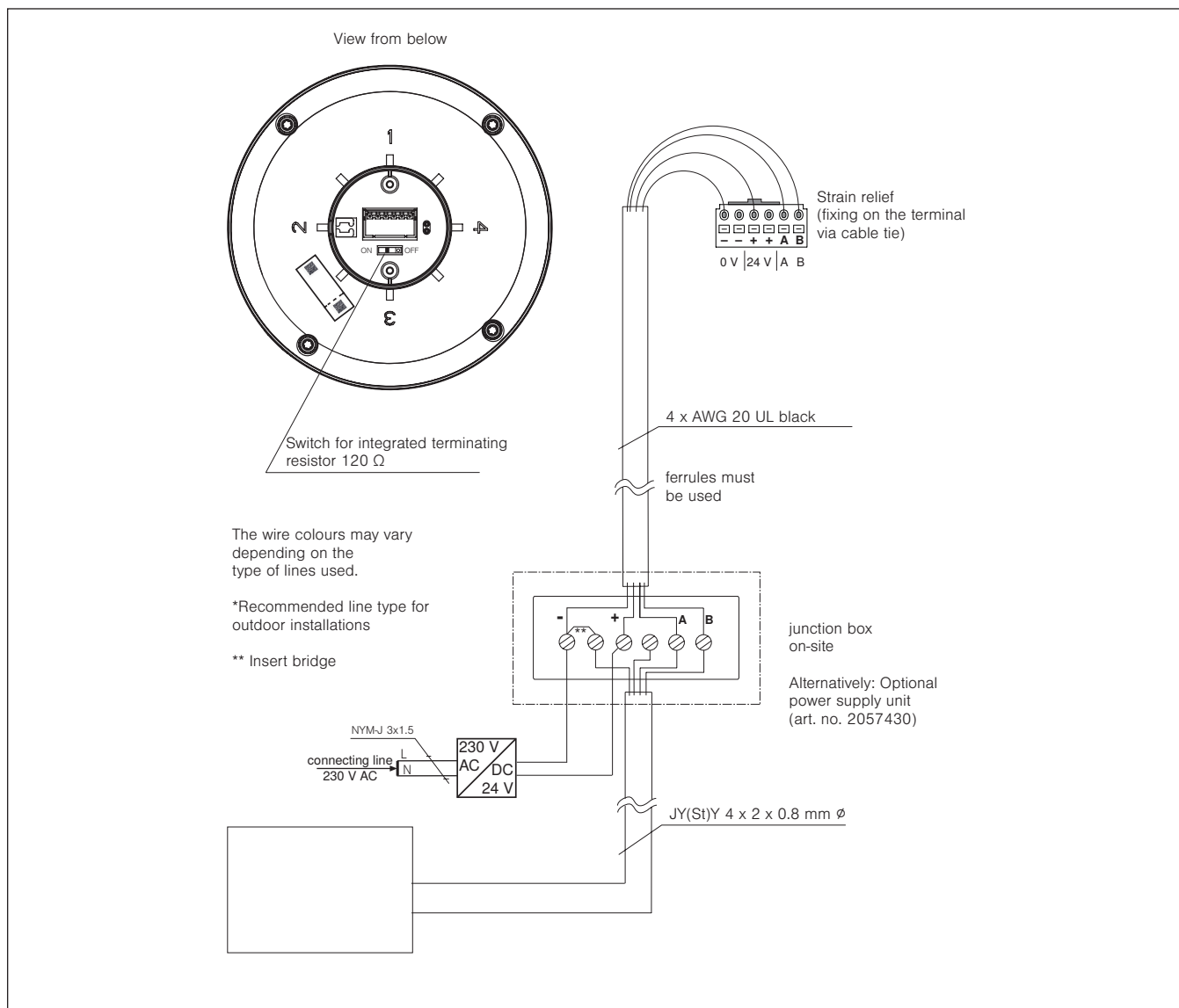


Fig. 6 WAREMA Weather station pro with power supply unit wiring diagram on the Omnexo system

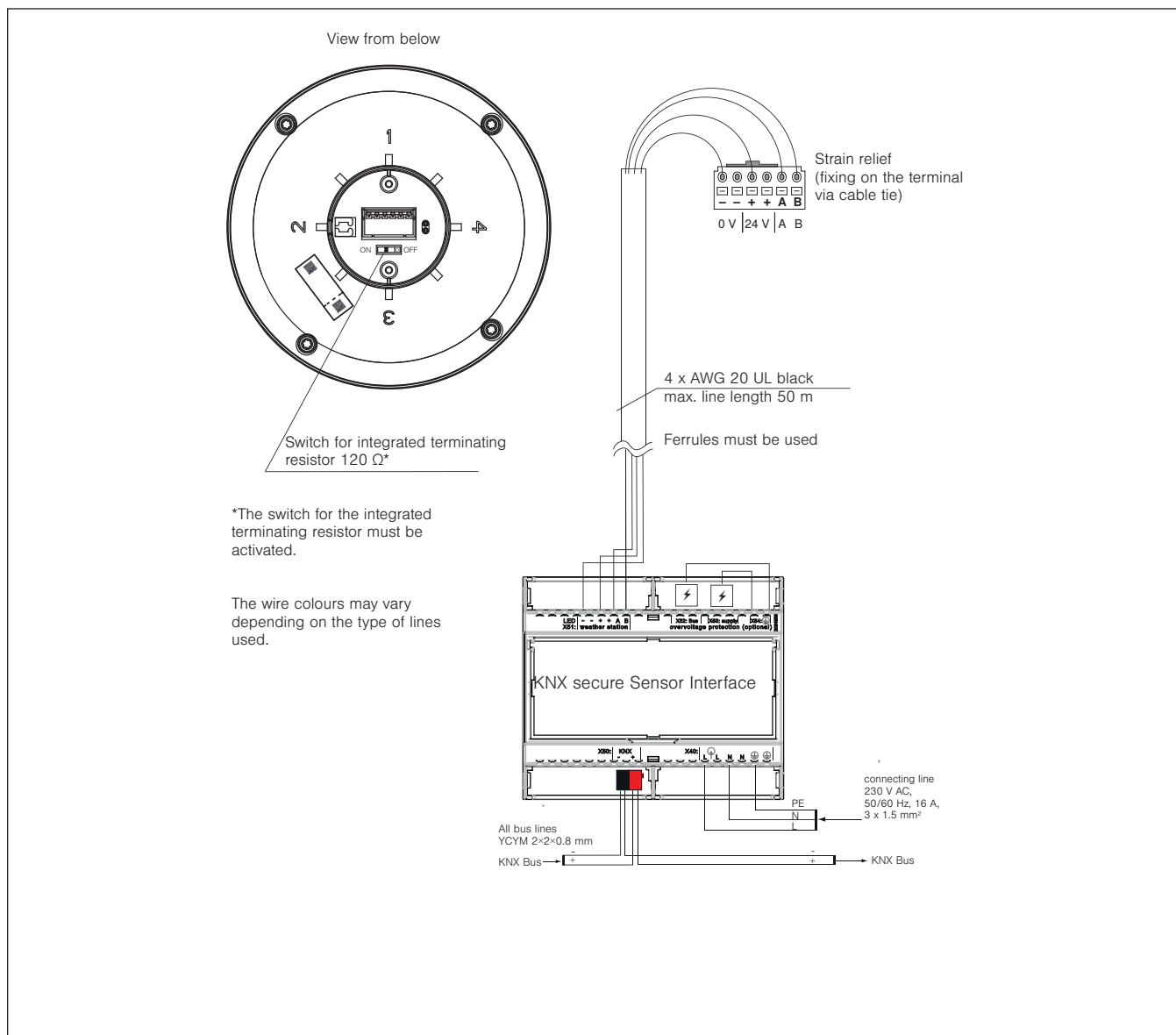


Fig. 7 WAREMA Weather station pro with power supply unit wiring diagram on the KNX system (KNX secure Sensor Interface REG/AP)