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Cobra4 Sensor-Unit Weather: Humidity, air pressure, temperature, light intensity, altitude

12670-00

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Fig: 12670-00 Cobra4 Sensor-Unit weather

Operating instructions

CE The unit complies with the corresponding EC guidelines.

CONTENTS

1 SAFETY PRECAUTIONS

- Carefully read these operating instructions completely before operating this instrument. This is necessary to avoid damage to it, as well as for user-safety.
- Only use the instrument for the purpose for which it was designed.
- Only use the instrument in dry rooms in which there is no risk of explosion.
- Protect Cobra4 Sensor-Unit Weather from dust, moisture and vapours. Use a slightly moist lint-free cloth to clean the instrument. Do not use aggressive cleaning agents or solvents.
- Take care that no liquid penetrates in through the housing openings, as such penetration would result in damage to Cobra4 Sensor-Unit Weather.
- When using the instrument in the open air, do not allow rainwater or splash water to enter into the housing.
- Only use the experimental set-up for the purpose for which it is intended.
- Do not open up the instrument.
- Only connect the data output of Cobra4 Sensor-Unit Weather to the measured data recording instruments specifically intended for it.
- The present-day state of software development makes it impossible to guarantee that a product is free of faults. PHYWE Systeme GmbH & Co. KG therefore does not take on any liability for damages that occur during the installation or the use of the instrument.

2 PURPOSE AND CHARACTERISTICS

Cobra4 Sensor-Unit Weather contains sensors that simultaneously measure air pressure, relative humidity, air temperature and light intensity.

Cobra4 Sensor-Unit Weather can be connected to one of the following measured data recording instruments, as appropriate for the type of application, and transfer the weather data to it;

- a Cobra4 Wireless-Link (12601-00) for data transfer to a computer by wireless,
- a Cobra4 USB-Link (12610-00) for data transfer to a computer via a USB-cable,
- a handheld Cobra4 Mobile-Link instrument (12620-00).

The interface to a measured data recording instrument is at the front of the Sensor-Unit, whereby a mechanically secure click connection is ensured by the mushroom-shaped click-on connector and a hole.

3 FUNCTIONAL AND OPERATING ELEMENTS

3.1 Operating elements

Cobra4 Sensor-Unit Weather has no manual operating elements. Operation of it is carried out via a handheld Cobra4 Mobile-Link or, in the case that it is connected to a Cobra4 USB-Link or a Cobra4 Wireless-Link, via a computer. The connection between the Sensor-Unit and any one of the three measured data recording instruments is active as soon as it is made.

3.2 Functional elements

All sensors are inside the housing and below the measurement openings. The measurement opening for the light intensity sensor is at the front of the housing, the measurement openings for temperature, moisture and pressure sensors at the top and bottom of it.

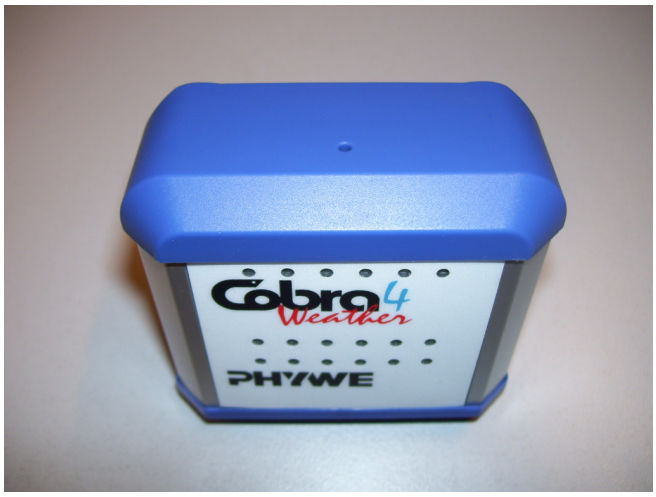

Fig. 2: Opening in the top for the light intensity sensor

4 NOTES ON OPERATION

This Cobra4 Sensor-Unit Weather fulfils all of the technical requirements that are compiled in current EC guidelines. The characteristics of this product qualify it for the CE mark.
This instrument is only to be put into operation under specialist supervision in a controlled electromagnetic environment in research, educational and training facilities (schools, universities, institutes and laboratories).
This means that in such an environment, no mobile phones etc. are to be used in the immediate vicinity. The individual connecting leads are each not to be longer than 2 m.
The instrument can be so influenced by electrostatic charges and other electromagnetic phenomena (HF, bursts, indirect lightning discharges) that it no longer works within the given specifications. Carry out the following measures to reduce or eliminate the effect of such disturbance: Ensure potential equalization at the PC (especially with Laptops). Use screening. Do not operate high frequency emitters (e.g. radio equipment or mobile radiotelephones) in the immediate vicinity. When a total failure of the instrument occurs, unplug it and plug it back in again for a reset.

5 HANDLING

This section describes how to use the Sensor-Unit and record weather data. To avoid failure or improper operation, please read carefully through this section.

5.1 Putting Cobra4 Sensor-Unit Weather into operation

Please make sure that the current version of measure is installed on your PC.
Download free of charge via:
www.phywe.com … software … measure
measure main program
measure module Cobra4
Alternatively, the software update can be performed with the measure DVD.

Connect Cobra4 Sensor-Unit Weather to the measured data recording instrument selected from the three possible ones by means of the click-catch 15-pin plug connector. The Sensor-Unit is immediately ready to use, as the voltage for it is supplied by the measured data recording instrument.
Further information on the control of the measured data recording instruments is to be found in their operating instructions.

5.2 Recording of weather data

In general, a quick reaction measured values of temperature and relative humidity to fluctuations is supported by an active air exchange (e.g. as caused by swinging the Cobra4 Sensor-Unit Weather or by wind).

Air pressure and altitude measurements:
Do not cover the measurement opening at the back of the housing during measurement.
Air pressure differences determined in measurements made in hilly or mountainous areas allow differences in altitude to be calculated using the barometric height formula. The measuring sensitivity of the Cobra4 Sensor-Unit Weather allows altitude measurements to be made even in buildings.

Measurement of temperature and relative humidity:
Do not cover the measurement opening at the back of the housing during measurement. Hold the Weather Sensor-Unit so that the back of it is not exposed to sunlight or any other light source.
Light intensity measurement:
Hold the measurement opening at the narrow side of the housing exactly in the direction of the light source, the intensity of which is to be measured. For photometric measurements, please cover the housing to prevent from unwanted ambient straylight.

Further information on the recording of weather data and other functions is to be found in the operating instructions of the measured data recording instruments.

6 TECHNICAL SPECIFICATIONS

(Typical for 25°C)

Operating temperature range 5... 40°C
Relative humidity < 80%

Sensors

Air pressure:	
Measuring range	10…1100 hPa
Resolution	0,1 hPa
Accuracy	± 1,5 hPa
Temperature:	
Measuring range	-40 …+125 °C
Resolution	0,1 K
Accuracy	± 0,5 °C
Relative humidity:	
Measuring range	0 …100 %
Resolution	0,1 %
Accuracy	± 5 %
Light intensity:	
Measuring range	0 … 100.000 lx
Resolution	1 lx
Accuracy	± 5 %
Wavelength range	320 … 1050 nm
Altitude	
calculation using air pressure, Zero-point settable	
Resolution	1 m
Data transfer rate per sensor:	1 Hz
Connector:	Sub-D-15-pin
Dimensions (L x B x H)	60 x 70 x 30 mm
Weight:	60 g

7 PARTS SUPPLIED

The extent of delivery is as follows:

- Cobra4 Sensor-Unit Weather 12670-00
- Operating Instructions

8 NOTES ON THE GUARANTEE

We guarantee the instrument supplied by us for a period of 24 months within the EU, or for 12 months outside of the EU. Excepted from the guarantee are damages that result from disregarding the Operating Instructions, from improper handling of the instrument or from natural wear.
The manufacturer can only be held responsible for the function and technical safety characteristics of the instrument, when maintenance, repairs and alterations to the instrument are only carried out by the manufacturer or by personnel who have been explicitly authorized by him to do so.

9 WASTE DISPOSAL

The packaging consists predominately of environmentally compatible materials that can be passed on for disposal by the local recycling service.

Should you no longer require this product, do not dispose of it with the household refuse.

Please return it to the address below for proper waste disposal.

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