Radio temperature and humidity sensor

ASH 2200US

Operating instructions

ELV Electronics Ltd. • Hong Kong

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Contents

1. General

The ASH 2200US radio climate sensors make it possible to determine values for temperature and humidity at the location of the sensor and to transmit the data by radio to a reception station suitable for this purpose, for example to the ELV BA 1010US. The sensors can be flexibly mounted at different locations: outdoors, in the green house, in the cellar, garage, storage room and many other places. This permits you to install a complete monitoring system consisting of diverse locations.

Functional features:

ASH 2200US

- Freely addressable, battery operated, radio universal temperature and humidity sensor for the temperature range -30.0 °C to +70 °C and the humidity range 5 % to 95 % relative humidity.

Please read these instructions fully and thoroughly before initial commissioning; they contain information for the correct use of this device.

Intended use

The external sensing device ASH 2200US can be used outdoors in a temperature range of -30 °C to +70 °C and a maximum humidity of 95 %. Please observe the instructions regarding the choice of installation location. The manufacturer does not accept any liability for the consequences of improper use; all rights under the warranty will be forfeited.

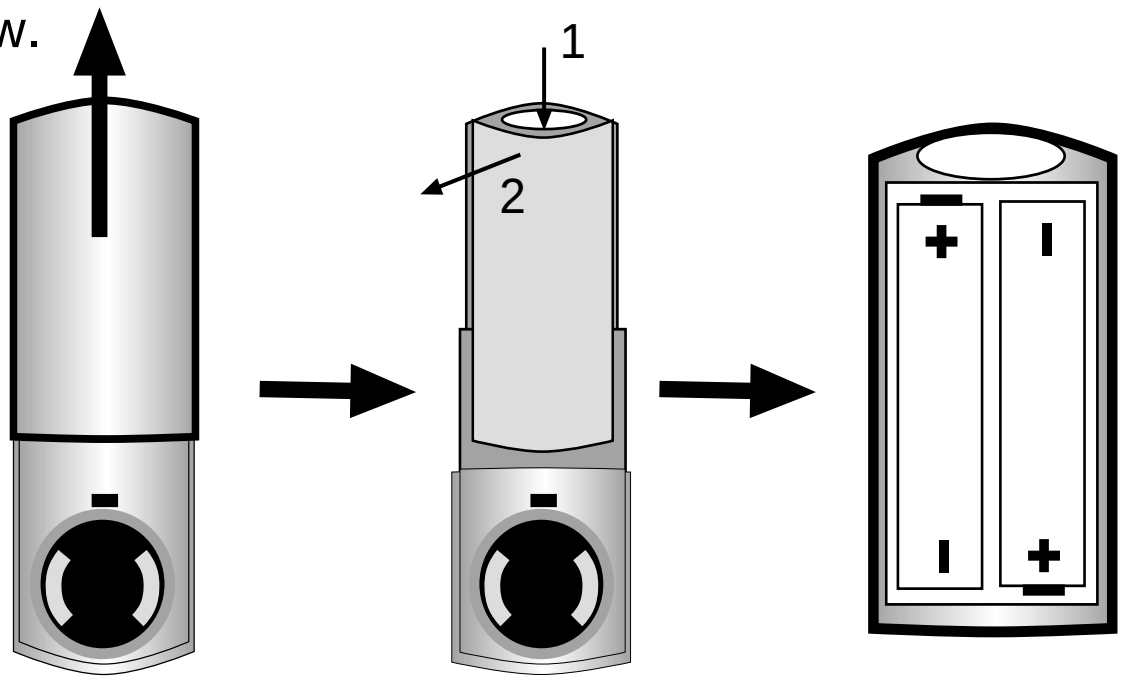
2. Safety and maintenance information

- The device has no user-serviceable parts.
- Avoid extreme moisture (e.g. it should not be directly splashed with or immersed in water), direct sunlight, and extremely dusty environments.
- Clean the display device and the external sensor using a dry linen cloth, which may be slightly dampened to remove obstinate soiling. Do not use solvents for cleaning
- The device should be kept out of reach of children. It is not a toy!

3. Commissioning

3.1. Inserting the batteries

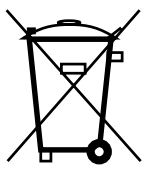
Remove the protective cap on the external sensor and open the battery compartment as shown in the picture below.



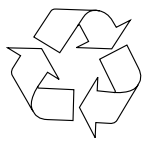
Insert two 1.5 V Mignon batteries (LR 6 / Mignon / AA alkaline) into the battery compartment, ensuring that the polarity is correct (see illustration), and then close the battery compartment.

Place the protective cap back on to the stop.

CAUTION! Observe regulations for the disposal of batteries!



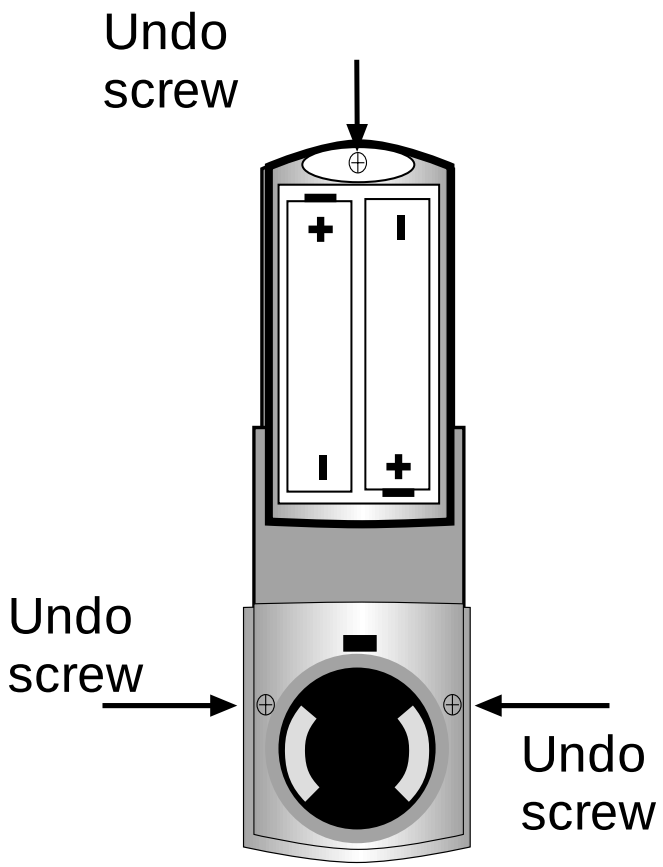
Used batteries and rechargeable accumulators must not be thrown away with household rubbish!



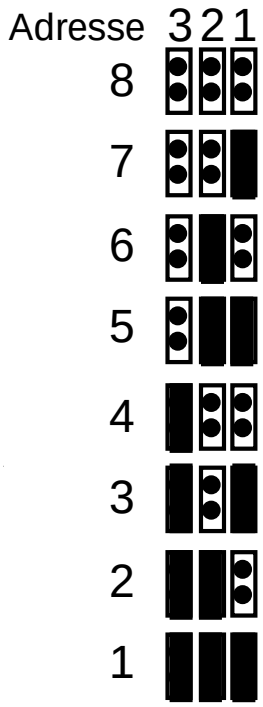
Please take exhausted batteries and rechargeables to your local dealer or to a collection point for hazardous waste or batteries.

3.2. Sensor addressing

Each sensor in the weather monitoring system is assigned an address which enables the receiver to integrate the sensor trouble-free into the system.
The factory setting for each sensor is address 1. Eight addresses are available (1 to 8, corresponding to the display).
You can carry out addressing yourself using the jumpers on the sensor circuit board.
To do that, the protective cap must first be taken off of the sensor housing and the batteries removed.
You then remove the two screws on the back which are on the left and right of the wall holder, remove the screw above the battery compartment, and take off the front half of the housing.



The jumpers can now be placed according to the address table.
The black areas represent a jumper inserted at one of the points (1, 2, 3).

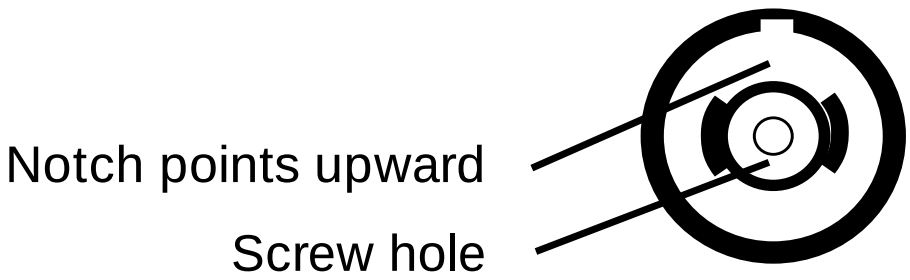


3.3. Installation and dismounting of the external sensor

The external sensor can be very easily installed on a vertical surface using the supplied mounting base.

CAUTION!
Choose an installation location that is not exposed to direct precipitation, direct sunlight, or is extremely dusty! Outdoor installation under a roof overhang, for example, would be a suitable location.

The mounting base is fastened onto a vertical surface with a screw as shown in the following figure. Make sure that the notch in the housing points up as in the drawing.



Now the external sensor can be inserted vertically to the stop in the mounting base.
If the external sensor needs to be dismounted (e.g. to change batteries), it is pulled out to the front.

4. Range and reception interference

The free field range (i.e. the range of the line of sight contact between the transmitter and the receiver) is 100 m under optimum conditions. Walls and even reinforced concrete can be penetrated, which does, however, reduce the range.

In the event of interference, turn the display unit slightly until it is again receiving data from the required sensor.

A reduced range can have the following causes:

- High frequency interference of all kinds
- Buildings of all types or vegetation
- The distance of the transmitter or receiver from conductive surfaces or objects (even to the human body or the ground) has an effect on the radiation characteristics and therefore the range.
- Wide band interference in built up areas can reach levels that reduce the signal-noise ratio throughout the frequency band which reduces the range.
- Devices working on adjacent frequencies can also affect the receiver.
- Badly shielded PCs can radiate into the receiver and reduce the range.

5. Changing the batteries

The batteries in the sensors have a life of up to three years (alkaline batteries). They must be changed when the respective sensor does not appear in the display unit and there is no general and long lasting interference of the radio path, which can usually be recognized when there is no data transmission from other, neighbouring sensors either (see Section 4 “Range and reception interference”).

Batteries are changed as described in Section 3.1. Following a battery change, the sensor is ready for operation again after a test run in test mode (see “Technical data”).

6. Technical data

Data transfer by radio: ..... 433.92 MHz
Free field range: ..... 100 m
Data transfer cycle: ..... 3 min.
External temperature measurement range:
-30.0 °C to +70.0 °C
Temperature measurement resolution: ..... 0.1 °C
Temperature measurement accuracy: ..... ±0.8 °C
Relative humidity measuring range:
5 % - 95 % rel. humidity
Humidity measurement resolution: ..... 0.1 %
Humidity measurement accuracy: ..... ±5 %
Dimensions (Ø x H): ..... 54 x 125 mm
Distance of external sensor to mounting surface:30 mm
Battery: ..... 2 x 1.5 V LR 6/Mignon/AA

7. FCC Information

FCC ID: RNT-ASH2200US

Changes or modifications not expressly approved in writing by ELV Electronics Limited may void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The internal antenna used for this mobile transmitter must provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.