User Manual, DS Energy - Wood Humidity Sensor

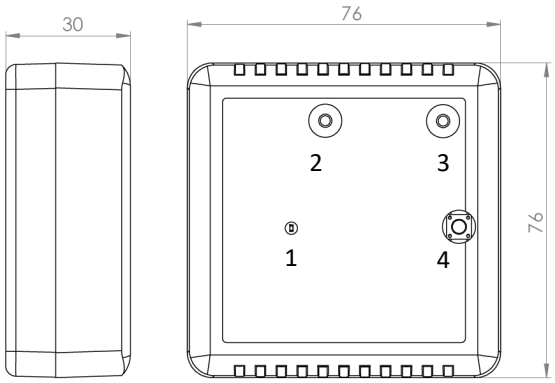


Illustration key:

1) Status LED 2-3) Mounting holes 4) Push button

Technical data:

Communication:	LoRa WAN
Operating range:	-20 °C to 60 °C
Wood humidity measurement range:	7% - 25% humidity
Power supply:	3.6V battery
Dimensions:	76 mm x 76 mm x 30 mm
IP:	20
Battery lifetime:	> 8 years with 1 measurement per day

Safety/Handling:

Read this user manual carefully before use. The product must be kept out of reach of children.
It is under no circumstances acceptable to make modifications to the product beyond normal use.

Startup:

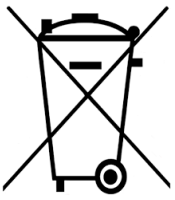
Mount the humidity sensor at the desired measurement point using the supplied screws at POS 2 and 3. When the screws are fully tightened and the sensor is mounted, hold the button (POS 4) down for approx. 5 seconds and the sensor will be activated.
After approx. 25 seconds, feedback is received (POS 1) on whether the sensor measures humidity and the mounting is therefore OK. 2 blinks = OK mounting. 1 blink = NOT OK.

During operation:

Short press < 3 sec:	System status of the LED. 1 blink = unknown status, 2 blinks = connecting to network, 3 blinks = connected to network, 4 blinks = idle status.
Medium press > 3 sec < 10 sec:	Activation of device from idle status.
Long press > 10 sec < 20 sec:	Display of wood humidity status. 1 blink = outside reading range, 2 blinks = within reading range, OK.
Extra long press > 20 sec:	Reboot. The device enters idle mode

Disposal:

The product must be disposed of as electronic waste containing a battery.
Do NOT dispose of it as combustible waste.



Command description

The following protocol for downlink commands is defined:

Byte 0	Command
Byte 1-x	Command data

Kommando tabel

Hex Value	**Description**
01	Set duty cycle
02	Reboot (No command data)
03	Numbers of messages before the module enters automatic re-join mode
04	Rejoin (No command data)
14	Set wood type

Wood type values:

Værdi hex	**Beskrivelse**
00	Generic
01	Pine
02	Spruce

Examples:

Example 1: To change transmit time (e.g. to 5 hours), send 01012C. The first two digits indicate the wood type, i.e. 01 = Pine, while 012C is the value 300 in Hex format.

Data upload from the unit is set to every 300 minutes = 5 hours.

Example 2: To change the wood type to e.g. Spruce, send the following payload 1402.

Example 3: To restart the system, send 02. After restart, the device enters idle mode.

Regarding uplink payload, the following applies:

Byte #	Description
0	SW Version
1	MSB MCU core temperature (f7.8 format)
2	LSB MCU core temperature (f7.8 format)
3	MSB Ambient temperature (*C * 100)
4	LSB Ambient temperature (*C * 100)
5	MSB Ambient humidity (%)
6	LSB Ambient humidity (%)
7	Battery level (0-254)
8	MSB Wood Humidity (% * 10)
9	LSB Wood Humidity (% * 10)
10	Wood Type

EU Declaration of Conformity

We, DS Energy, hereby declare under our sole responsibility that:

Product: DS Energy Wood Humidity Sensor

Which is used to measure the humidity level in wood, as well as any other measurement functionality, is in compliance with the EU directive and the following harmonized standards:

- Radio Equipment, 2014/53/EU
- Hazardous substances in electrical and electronic equipment, RoHS 2011/65/EU
- General product safety, 2001/95/EC

Signature

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Jarl Gorridsen, 2022-11-22

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