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## READY-TO-USE UNITESS SOFTWARE SUITE

- High reliability and long-term stability
- Superior accuracy
- LoRa-based RF interface covering up to 1,000 m
- Internal memory
- Remote software installation
- Remote firmware upgrade



## INDOOR THERMO-HYGROMETER

# UNITESS THB1

## TECHNICAL DATA SHEET

### PRODUCT SUMMARY

Wireless Thermo Hygrometers Barometers of THB 1 series are designed to measure ambient temperature, relative air humidity, and atmospheric pressure in the premises with the need to control environmental parameters.

UNITESS THB 1 Thermo Hygrometers Barometers can be a part of the UNITESS AMBIENT environmental monitoring system or operate autonomously.

### TEMPERATURE PERFORMANCE

Parameter	THB 1	THB 1B	THB 1C
Temperature measurement range	0...50 °C		
Temperature accuracy	±0.3°C	±0.5 °C	
Temperature resolution	0.1 °C		
Temperature repeatability	0.04		
Temperature long-term drift	<0.03 °C/yr		

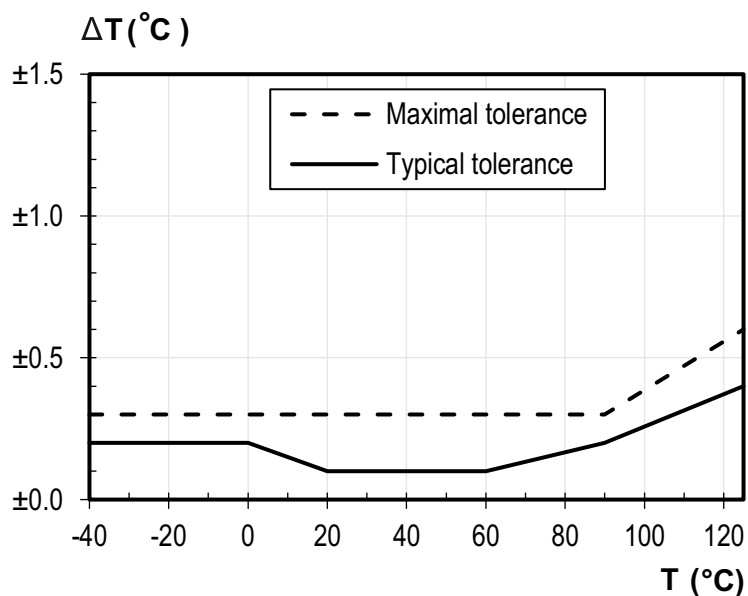


Figure 1: Temperature accuracy

## HUMIDITY PERFORMANCE

Parameter	THB 1	THB 1B	THB 1C
Measurement range of relative humidity	10...90%		
Relative humidity accuracy	±2.0%		
Relative humidity resolution	0.1%		
Relative humidity repeatability	0.08% RH		
Relative humidity long-term drift	<0.25% RH/yr		

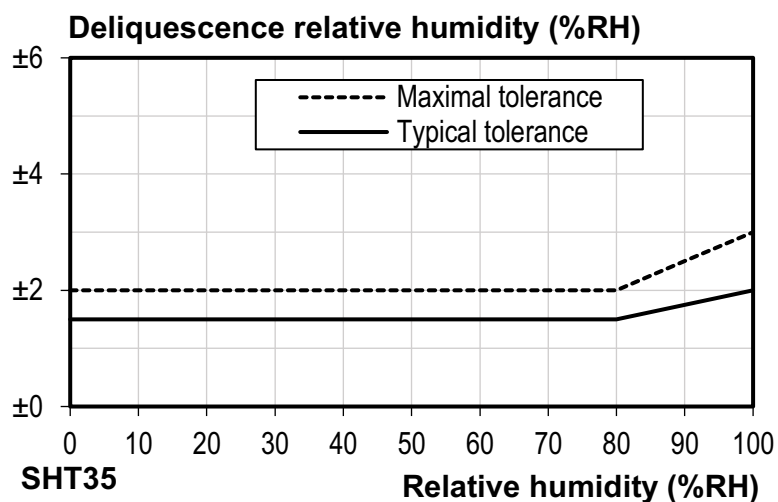


Figure 2: Tolerance of RH at 25°C

## ATMOSPHERIC PRESSURE PERFORMANCE

Parameter	THB 1C	THB 1B	THB 1C
Pressure measurement range	86...106 kPa		-
Pressure accuracy	0.1 kPa		-
Pressure resolution	0.1 °C		-

## DATA LOGGER PERFORMANCE

Internal data logger and opportunity to save measurement values to the database.

Internal memory type: Flash.

Memory size: 32 Mb.

Measurement and data transmission intervals: 1...90 min.

Internal memory for 250,000 measurements, storage period at least 10 years

## CONNECTIVITY PERFORMANCE

This wireless thermo hygrometer doesn't have control buttons, which guarantees the complete elimination of the human factor on system operation. LoRa operates in the unlicensed ISM (Industrial, Scientific, and Medical) radio band that is available worldwide and can be used for any purpose without a license in most countries.

Additional expansion of functionality by using a GSM modem

## POWER PERFORMANCE & HOUSING

Consumption current in sleep mode: Up to 50 µA.

The maximum value of the consumed current in the mode of measurements and information transmission: No more than 50 mA.

DC supply voltage range (3 elements of AA type: 3 x 1,5 V).

The battery life lasts about 1.5 years depending on transmit interval (in this case, every 10 minutes), data rate, and environmental factors.

Ingress Protection Code: IP20.

Weight: Up to 0.4 kg.

Overall dimensions: Up to 130x122x42 mm.

## STANDARDS

We perform factory calibrations in line with ISO/IEC 17025 offering a calibration certificate for verified documentation of the measured value deviations. It's valid for 12 months and compliant with GMP and GDP requirements.

## DISPLAY PERFORMANCE

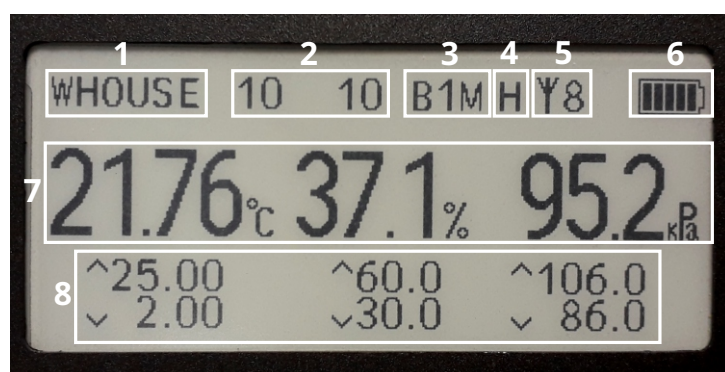


Figure 3: Display performance

1. Name of the device (e.g. the room where the device is installed)
2. Measurement and data transmission intervals
3. Frequency range
4. Logging status
5. Signal status and quality
6. Battery indicator
7. Measured values
8. Limits of values

## UNITESS SOFTWARE SUITE PERFORMANCE

Depending on the request, we provide two types of perpetual software licenses:

- Cloud-based
- Self-hosted

The software has flexible settings, simple, and intuitive interface.

The program enables you to:

- Carry out continuous monitoring of temperature and humidity during storage and transportation of drugs in real-time;
- Save and restore information in cases of signal loss;
- Transfer data on the location of the vehicle and the conditions of carriage to the server;
- Print out a check with information on the conditions of transportation of medications;
- Track instances when temperature and humidity go beyond the set limits;
- Adjust the interval for reading information from a thermo hygrometer;
- Manage the list of users who have access to information;
- Automatically generate an electronic «Register of storage conditions for medicinal products»;
- Log «audit trails» with timestamps for entering, changing, and deleting data that contains user IDs;

- Log outbox SMS messages;
- Generate various types of reports (Excel, Word, PDF).



Figure 4: Software screenshots

## COMMON USE CASES

- Calibration laboratories
- Cleanrooms
- Medicinal products
- Biotechnology
- Data centers
- Food safety



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Have an idea for improvement? Give us a shout!