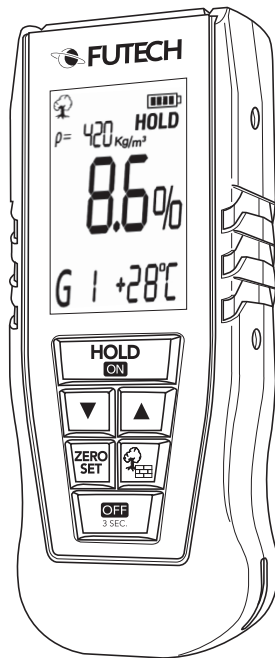


# USER MANUAL

190.10 - HYDRO



EN ENGLISH

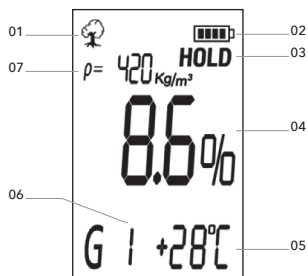
Manual  
in your language?

Check the back cover

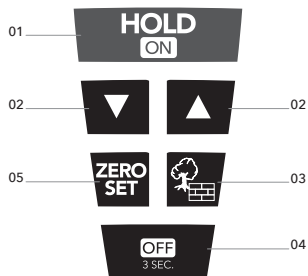


**FUTECH**  
futech-tools.com

## OVERVIEW



- 01. Selected material
- 02. Battery status
- 03. Measurement recording (Hold)
- 04. Measuring result
- 05. Temperature
- 06. The number of chosen material group
- 07. Chosen density



- 01. Power ON / measurement hold button
- 02. Choosing material group button
- 03. Choosing material button
- 04. Power OFF (3 sec.)
- 05. Auto zero mode button



## INTRODUCTION

---

On the front panel, there is a digital display (see picture) and a keyboard consisting of six buttons (see picture). The humidity sensor is located under the back panel of the device. The device is powered by 2x AAA alkaline batteries, housed in the battery compartment at the lower back part of the device.

## APPLICATION FIELD

---

- The device is made for the rapid moisture testing of various types of wood and concrete. The device measures the moisture content of a material, judging by its electrical resistance at a temperature above 0°C.  
Variety of measuring items:
  - 8 groups - wood
  - 6 groups - concrete (light and heavy), concrete blinding coat. Full list of material groups you can find in the application 1.
- The main application field: various kinds of timber works, as well as construction production and technologies, in which the humidity of materials regulated by normative-technical or technical documentation.
- The device produces with averaged characteristics settings.

- Operating temperature: +5 ... +40°C, with several humidity till 90% at the temperature 25°C and air-pressure 86 ... 106 Pa.

## OPERATION

---

### ■ TURN ON/OFF THE DEVICE

---

Turn the device on by briefly pressing the **HOLD/ON** button. If the display remains blank or the battery status indicator shows low battery voltage, replace the power supply.

To turn the device off, press and hold the **OFF** button until the device powers down.

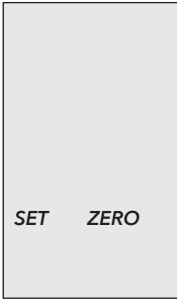
If no buttons are pressed for 20 seconds, the screen backlight will turn off. You can reactivate it by pressing any button.

The device will automatically turn off after 1 minute of inactivity.

### AUTO ZERO MODE

---

If you press button **ZERO/SET**, the device will enter auto zero mode. The following information will appear on the screen:





SET ZERO

At this point, ensure the sensor of the device is at least 30 cm away from all objects, then press the **ZERO/SET** button again. The device will perform auto-tuning and then switch to measuring mode, as shown in the picture.

**SETTING ZERO...**

Using auto zero mode, you calibrate the humidity sensor readings to zero. To avoid deviations, the auto zero mode should be used periodically, within a time range of 10-15 minutes.

#### ■ MEASURING MODE

After selecting the material using the  button and the material group using the  button, place the sensor plate on the testing surface. To obtain accurate readings, ensure that the sensor fits snugly against the test surface, with no gaps between the sensor and the surface. Then, read the result.

The surface should be even, clean, and homogeneous, without deep dents or protrusions. While obtaining measurements, the device should be pressed lightly against the test

surface with a force of about 1 kg.

To hold the result on the screen, for example, when measuring a surface where you cannot see the device, press the **HOLD/ON** button. "HOLD" will appear at the top of the screen, and the last measured value will remain visible until you press the **HOLD/ON** button again.

Moisture measurement results can be obtained for:

- Wood  
arithmetic mean of more than three measurements
- Concrete  
arithmetic mean of more than five measurements

The measuring depth is 15-20 mm, depending on the moisture content and density of the material being measured. The device is calibrated for this depth. If the thickness of the chosen material is less than 15 mm, perform the measurement by holding the device with the material in the air to ensure the sensor does not pick up data from other materials.

To avoid deviations, use the auto zero mode (refer to "AUTO ZERO MODE").



## ■ SENSOR TEMPERATURE UNITS

---

If you hold the ▼ button, the temperature unit changes from Celsius to Fahrenheit. A second long press will change it back to Celsius.

## MAINTENANCE

---

Users should perform periodic preventive measures and checks.

- Keep the device clean and protected from bumps, dust, and moisture; wipe it with a clean, soft cloth after each use.
- If the battery status indicator shows low voltage, turn off the device and replace the power supply.
- Optimize battery life by turning on the device before measuring and turning it off after use.
- If the device becomes unresponsive during operation and does not turn off, open the battery compartment for a few seconds, remove one battery, reinsert it, and restart the instrument.
- If the device does not respond when turning it on, remove the batteries, clean the battery contacts with an alcohol-soaked swab or fine sandpaper, reinsert the batteries, and check if the device functions.
- Repairs must be conducted by authorized

after-sales service centers. The device is a highly technical product and should not be repaired by users; therefore, we do not provide complete technical documentation to users

- For long-term storage, remove the batteries from the compartment to prevent damage from leakage.

## ■ COMPLETE SET

---

Instrument	1x
Battery	2x
Manual	1x
Bag	1x

## SPECIFICATIONS

WORKING RANGE		
CONSTRUCTION MATERIAL	Heavy concrete (2400kg/m <sup>3</sup> )	from 0,1 to 10%
	Light concrete (2200kg/m <sup>3</sup> )	from 0,1 to 20%
	Screed (1700-2000kg/m <sup>3</sup> )	from 0,1 to 35%
	Gypsum (1400kg/m <sup>3</sup> )	from 0,1 to 35%
WOOD	(420-700kg/m <sup>3</sup> )	from 2 to 65%

ACCURACY WITHIN LIMITS, %		
CONSTRUCTION MATERIAL	from 1 to 10%	up to ± 0,9%
	from 10 to 35%	up to ± 1,5%
WOOD	from 1 to 10%	up to ± 1,0%
	from 10 to 20%	up to ± 1,5%
	from 20 to 45%	up to ± 2,0%
	from 45 to 65%	up to ± 2,5%

The device equipped with calibration curves on the following materials above "Working range".

TECHNICAL SPECIFICATIONS		
SCANNING DEPTH	Wood	20mm
	Concrete	10mm
DENSITY RANGE	Wood	420-700kg/m <sup>3</sup>
	Concrete	1800-2400 kg/m <sup>3</sup>
TIMBER GROUP	1-8	
CONCRETE GROUP	1-4	
RESOLUTION	0,1% humidity; 1°C / 1°F	
MEASURING RANGE	Wood	2.0 -65%
	Concrete	0-35%
TEMPERATURE RANGE	-10°C / +60°C	
OPERATING TEMPERATURE	-0°C / +40 °C	
POWER SUPPLY	2x 1,5V AAA Alkaline batteries	
POWER INPUT	17mA (incl. lightning)	
AUTO SHUT OFF FUNCTION	1 minute	
DIMENSIONS	110x43x25mm	
WEIGHT INCL. BATTERIES	75 gram	
POWER SUPPLY	2x AAA batteries	
POWER INPUT (WITH LED)	17mA	
OPERATING TIME	10 hours	
DIMENSIONS	110x43x25mm	
WEIGHT	75g	

The device constructed as an electronic unit with the integrated humidity sensor.



## TIMBER TABLE

GROUP	DENSITY KG/M <sup>3</sup>	SPECIES
1	< 420	Spurce, poplar, aspen
2	421-460	Pine, basswood, oregon
3	461-500	Alder, cedar, meranti
4	501-540	Larch, cherry, mahogany
5	541-580	Ramin, walnut, elm
6	581-620	Ash, maple, birch, teak
7	621-660	Beech, pear, yew
8	661-700	Oak, hickory

## CONCRETE TABLE

GROUP	DENSITY KG/M <sup>3</sup>	SPECIES
1	<1400	Gypsum
2	1401-1700	Screed
3	1701-1800	Low density screed
4	1801-2000	Regular density screed
5	2001-2200	Light concrete
6	2201-2400	Heavy concrete

### NOTE

Since concrete production varies between brands, specific data such as density (specific weight) must be obtained from the manufacturer. This information is crucial for determining the correct group setting on the device.



# USER MANUAL

other languages:



**DA** DANSK



**DE** DEUTSCH



**ES** ESPAÑOL



**ET** EESTI KEEL



**FI** SUOMEN KIELI



**FR** FRANÇAIS



**IS** ÍSLENSKA



**IT** ITALIANO



**NL** NEDERLANDS



**NO** NORSK



**PT** PORTUGUÊS



**SL** SLOVENŠČINA



**SV** SVENSKA



-  Facebook  
@futechtools
-  LinkedIn  
futechtools
-  World Wide Web  
futech-tools.com
-  YouTube  
@futechtools