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1.0 INTRODUCTION

To switch on the instrument, press the ⏻ key for 3 seconds. If a menu item is shown, press the left key Exit or Rolling Menu until the measuring window appears. The measurement value is now shown on the display.

1.1 Calibration curves

Name of calibration curve	Meaning	Unit	Instrument
relHum	Relative humidity of Air	%RH	RH1 / RH5
Dew Point	Dew point	°C or °F	RH1 / RH5
absHum	Absolute humidity of Air	g/m³	RH1
EMC Wood	Equilibrium moisture content of wood	%EMC	RH1

1.2 Explanation of calibration curves:

relHum: This shows the relative air humidity in %RH (relative humidity) and the temperature in the selected unit (°C or °F).

absHum: This shows the absolute air humidity in g/m³ (grams of water per cubic meter of air) and the temperature in the selected unit (°C or °F).

Dew Point: This shows the dew point and the temperature in the selected unit (°C or °F).

EMC Wood: This shows the equilibrium moisture content of wood (for the timber stored under these conditions) in % moisture cont. of wood and the temperature in the selected unit (°C or °F).

2.0 OPERATING THE INSTRUMENT

Switching on: Press ⏻ for 3 seconds.

Changing the calibration curve: ▲ or ▼.

Setting the time: Press ⚙ three times - Options – Date / Time

Hold the measurement value (HOLD): Press the H key (this must be set in the menu Log Time)

Switching on the display lighting: Press the ⏻ key briefly; the display lighting switches off automatically after approx. 20 seconds. Pressing any key activates the display lighting.

Switching off: Press the ⏻ key for 5 seconds. The instrument switches off when you stop pressing this key. The instrument switches off approx. 4 minutes after the last key has been pressed.

Changing the menu language: Options – Language – select the language required.

Moving from the simple user level to the menu: The instrument must be switched off. Switch the instrument on and as soon as the display lighting comes on, press ▲ AND ▼ simultaneously until the menu appears.

3.0 VIEW OF THE INSTRUMENT

14.0 WARRANTY

Electromatic Equipment Co., Inc. (Electromatic) warrants to the original purchaser that this product is of merchantable quality and confirms in kind and quality with the descriptions and specifications thereof. Product failure or malfunction arising out of any defect in workmanship or material in the product existing at the time of delivery thereof which manifests itself within one year from the sale of such product, shall be remedied by repair or replacement of such product, at Electromatic's option, except where unauthorized repair, disassembly, tampering, abuse or misapplication has taken place, as determined by Electromatic. All returns for warranty or non-warranty repairs and/or replacement must be authorized by Electromatic, in advance, with all repacking and shipping expenses to the address below to be borne by the purchaser.

THE FOREGOING WARRANTY'S IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE WARRANTY OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE OR APPLICATION. ELECTROMATIC SHALL NOT BE RESPONSIBLE NOR LIABLE FOR ANY CONSEQUENTIAL DAMAGE, OF ANY KIND OR NATURE, RESULTING FROM THE USE OF SUPPLIED EQUIPMENT, WHETHER SUCH DAMAGE OCCURS OR IS DISCOVERED BEFORE, UPON OR AFTER REPLACEMENT OR REPAIR, AND WHETHER OR NOT SUCH DAMAGE IS CAUSED BY MANUFACTURER'S OR SUPPLIER'S NEGLIGENCE WITHIN ONE YEAR FROM INVOICE DATE.

Some State jurisdictions or States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. The duration of any implied warranty, including, without limitation, fitness for any particular purpose and merchantability with respect to this product, is limited to the duration of the foregoing warranty. Some states do not allow limitations on how long an implied warranty lasts but, not withstanding, this warranty, in the absence of such limitations, shall extend for one year from the date of invoice.

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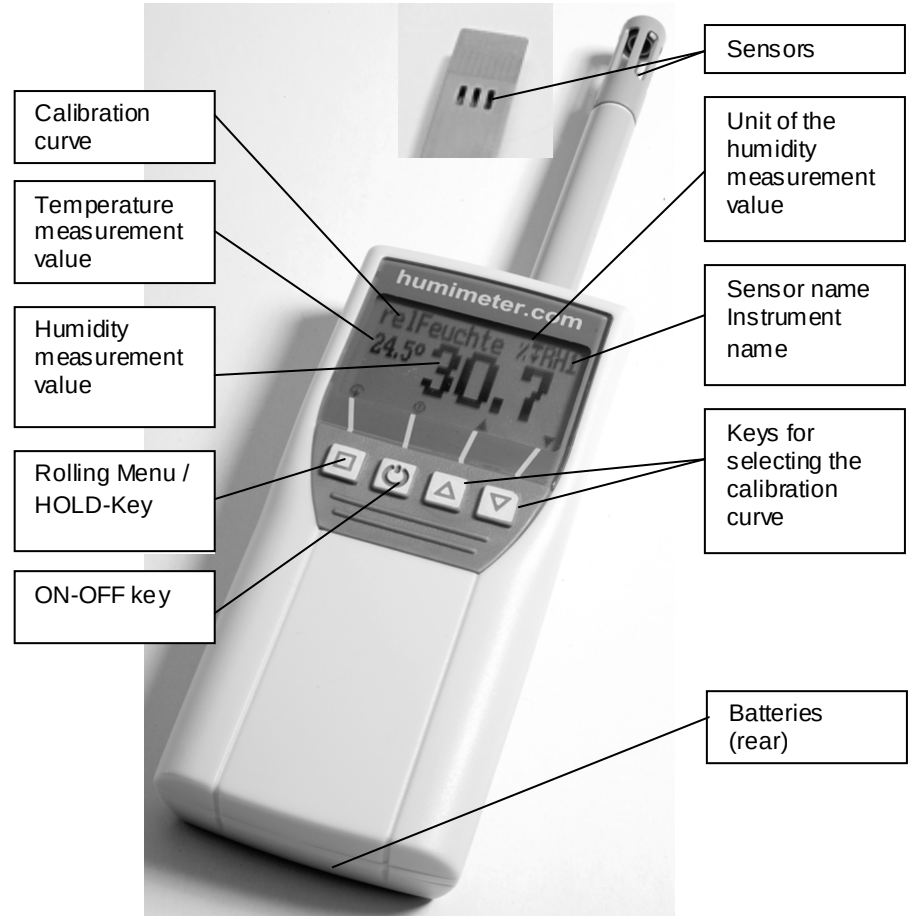
13.0 TECHNICAL DATA

Measurement:	Meas. Range	/ Resolution	/ Accuracy
Rel. humidity:	0 to 100%RH	/ 0,1%	/ ±1,5% (0 - 90% at 25°C)
Temperature Pt1000 DIN B °C:			
	-10 to +60°C	/ 0,1°C	/ ±0,4°C (at 25°C)
Temperature °F:	-14 to 140°F	/ 0,3°F	/ ±0,7°F (at 77°F)
Dew point °C:	-55 to +60°C	/ 0,1°C	
Dew point °F:	-67 to 140°F	/ 0,3°F	
abs. humidity:	0 to 130g/m³	/ 0,1g/m³	
Equilibrium moisture content of wood:	2 to 30%	/ 0,1%	/ ±0,5% (at 25°C)

Operating temp. range	-10°C to 60°C / 14 to 140°F
Storage temp	-20°C to 60°C / -4 to 140°F
Temperature compensation	Automatic
Memory for meas. values	approx. 10.000 meas values
Menu languages	Deutsch, English, Français, Italiano
Power supply	4 x 1,5 Volt AA Alkaline Batteries (approx. 1800 measurements)
Switchoff time	after approx. 4 minutes
Power consumption	55 mA (with display lighting)
Display	128 x 64 matrix display, with LED-backlighting

Dimensions:	Housing	Sensor	Weight
RH1:	145 x 63 x 24mm	100mm x Ø 12mm	220 g
RH5:	145 x 63 x 29mm	295mm x 20mm x 4mm	220 g

Protection class	IP 40
Delivery includes	Wooden case 4 x 1,5 Volt AA Alkaline Batteries Short instruction manual



4.0 MENU

There are 4 menu levels. The symbols show the key functions in the different menus.

1. **Type selection:**
2. **Saving:**
3. **Additional level:**

Rolling Menu: Use this key to enter the different menu levels and main menu.

Power: Press this key for to switch the instrument off (5 sec.) or on (3 sec.). Press this key briefly to activate the display lighting.

Up: This key moves you to the next type/calibration curve.

Down: This key moves you to the previous type/calibration curve.

Disk: Use this key to save measurement values.

If this symbol and a number are beside the disk symbol an AutoLog series is started.

If only a number is shown in front of the disk symbol the measurement value can be saved manually (manual log). Zero means that the number of values saved at that time is zero.

Alternatively: Hold: The currently shown measurement value is held. It is released when another key is pressed.

View logs: If no logs are active (the last measuring series has been completed), you can use this symbol to view the saved measuring series.

Alternatively: Edit logs: If logs are active (the current measuring series is not yet completed), you can press this symbol and then enter e.g. batch number and supplier's data for the series.

Edit type: Needed to calibrate user-defined calibration curves

In the additional level, press (Rolling Menu) to enter the main menu.

4. Main menu

Edit Logs
- Manual Logs
- Auto Logs
- Clear Logs

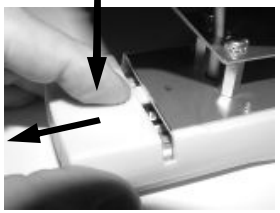
Print Logs
- Last Logs
- All Logs
- Clear Logs

Send Logs
- Manual Logs
- Auto Logs
- Clear Logs

Options
- Date / Time
- Log Time
- Language
- Unlock
- °C / °F
- Userlevel
- BL On Time
- Auto Off Time
- Calibrate
- Materialcalib.
- Password
- Reset

Status

10.0 CHANGING THE BATTERIES



Batteries are supplied in the instrument when delivered.

Changing the batteries:

Use a finger to press the arrow on the battery cover and pull it back.

Remove the flat batteries and replace them with four new 1.5 Volt AA Alkaline Batteries. Make sure you place the battery poles in the right positions.

Press the batteries down so you can close the cover.

11.0 LIABILITY

The manufacturer is not liable for any incorrect measurements and resulting damages.

As this rapid measurement procedure is influenced by product-specific and application-specific conditions, we recommend you carry out a plausibility check on the measurement results. Each instrument has a serial number and warranty seal. If this is broken we cannot provide warranty. If the instrument is defective, contact Electromatic via www.checkline.com.

12.0 OPTIONAL ACCESSORIES

Wall holder / table stand Two-in-one holder for the RHx instrument series made of acrylic glass.

Interface for printing saved data on a portable printer and/or transferring data to a PC incl. Software **humimeter LogMemorizer**

Humimeter LogMemorizer data recording and analysis software for Windows® PCs based on a database; for recording data, direct analysis of measurement values in the program, numerous export functions.

Portable measurement value printer – Battery-powered direct thermal printer

Sword cover for RH5 to protect the sword-shaped sensor for use with heavy stacks.

Sword cover remover for RH5 for removing the sword cover from heavy stacks.

Checking unit and humidity standards: For checking your own RHx humimeter.

8.0 TEMPERATURE BEHAVIOUR OF THE SENSORS

During humidity and temperature measurement there are many parameters which affect the time required until the real measurement value is displayed.

The parameter which may cause the largest measuring errors, is the difference in temperature between the sensors or between the measuring instrument and the substance to be measured or the air.

To shorten the time required for the sensors/instrument to reach the same temperature as the substance or air, proceed as follows:

- **RH1:** Move the instrument around in the air
  - Hold the instrument securely in your hand and move it carefully backwards and forwards. **Do not hit other objects with the instrument!**

- **RH5:** Move the sword-shaped sensor into the paper stack
  - First push the sword only a short distance into the stack (10 cm). At brief intervals (10 seconds), push it a few more centimetres into the stack.
    - If the temperature difference is large, repeat this procedure (several times if necessary).
  - If you use the sword cover to protect the sword-shaped sensor, make sure they are both the same temperature.
    - In this case, push the sword cover little by little into the stack and leave the sword-shaped sensor in the cover long enough to ensure a correct measurement result!

9.0 LOOKING AFTER THE INSTRUMENT

Do not drop the instrument or expose it to excessive temperatures. Only clean it with a lint-free, dry cloth. The instrument is not waterproof. Do not immerse the sensor in liquid.

For more information on looking after the instrument, see www.checkline.com
How often you need to check the instrument depends on the use and the required level of accuracy. You can check humimeter RHx instruments yourself (see Optional accessories)

For a fee we can also carry out a calibration at the factory. In this case you will also receive a calibration certificate.

5.0 OTHER SYMBOLS AND KEY FUNCTIONS

Menu:

↵ Confirm – activates menu item
▲ Up – long press => jumps to the start of the menu
▼ Down – long press => jumps to the end of the menu

Exit – exits the menu item or menu

Keys in menu items:

⇧ Shift – 2nd functional level of the keys
👓 Show the measurement values of the series
▲ Up – next measurement series (chronological)
▼ Down – previous measurement series (chronological)
Change additional data
Delete the measuring series or measurement value
👓▲ Next measurement value (chronological)
👓▼ Previous measurement value (chronological)
0..9 Enter digits
A..Z Enter characters
> Continue or move one character to the right
< Move one character to the left
✓ Yes
X No
OK: OK

6.0 OTHER INSTRUMENT FUNCTIONS – OVERVIEW

- Manual saving of single measurement values in a measurement series
- Automatic saving of measurement values in a measuring series
- Selection of the automatic saving interval (3 seconds to 4 hours)
- Display of the measuring series and measurement values directly on the instrument
- Printout of the saved measuring series
- Transfer and saving of the measuring series on a PC
- Display of the memory and battery status
- Selection of the menu language (DE, EN, FR, IT)
- Temperature shown in degrees Celsius or degrees Fahrenheit
- Activation of a simple user operation

7.0 COMMON REASONS FOR INCORRECT MEASUREMENTS

Sunlight or other sources of heat or cold which do not correspond to the ambient temperature

Measuring errors due to differences in temperature

To show how important it is that the temperature of the instrument is the same as the temperature of the substance to be measured, the table below shows measuring errors due to a temperature difference of only 1°C / 1.8°F between the measuring instrument and the substance to be measured at different ambient temperatures.

	10°C (50°F)	20°C (68°F)	30°C (86°F)
10%r.H.	± 0.7%	± 0.6%	± 0.6%
50%r.H.	± 3.5%	± 3.2%	± 3.0%
90%r.H.	± 6.3%	± 5.7%	± 5.4%

At room temperature (20°C/68°F) and assumed paper m oisture value of 50%r.H. a deviation of 1°C / 1.8°F between the measuring sens or and the substance to be measured results in a measuring error of 3.2%r.H. A deviation of 3°C / 5.4°F would result in a measuring error of over 10%.

Further examples are given in the „Mollier i-x“ diagram.

Dripping or sprayed water

Irreversible damage to the sensor element due to aggressive gases

Danger of condensation following temperature changes

Dirty moisture sensor

Foreign objects on the sensor

CHECK·LINE®
BY ELECTROMATIC

RH1 & RH5

RELATIVE HUMIDITY METER

CHECK·LINE®
INSTRUMENTS

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OPERATING INSTRUCTIONS