Schaller

Messtechnik / humimeter.com

User manual

mould and air guard

humimeter SW1

to prevent from health threats

General

Health threat by mould:

The formation of mould always goes along with an increased moisture concentration in your room. Already a relative humidity of 70% encourages the growth of mould in living spaces. Increased air humidity can be caused by conventional activities in the household like cooking, taking a shower or drying of laundry. Also plants and humans release water, which is emitted into the surrounded air. Furthermore, in new buildings residual moisture from building material can be released. In order to prevent an infestation or the increased growth of mould spores in living spaces, simple measures like reasonable ventilation and appropriate heating can be taken. If your living area is already infested with mould, this should be treated rapidly and effectively, and a new formation should be prevented. The appearance of mould can also cause allergic reactions of the body as well as inflammatory reactions and infectious diseases.

User manual
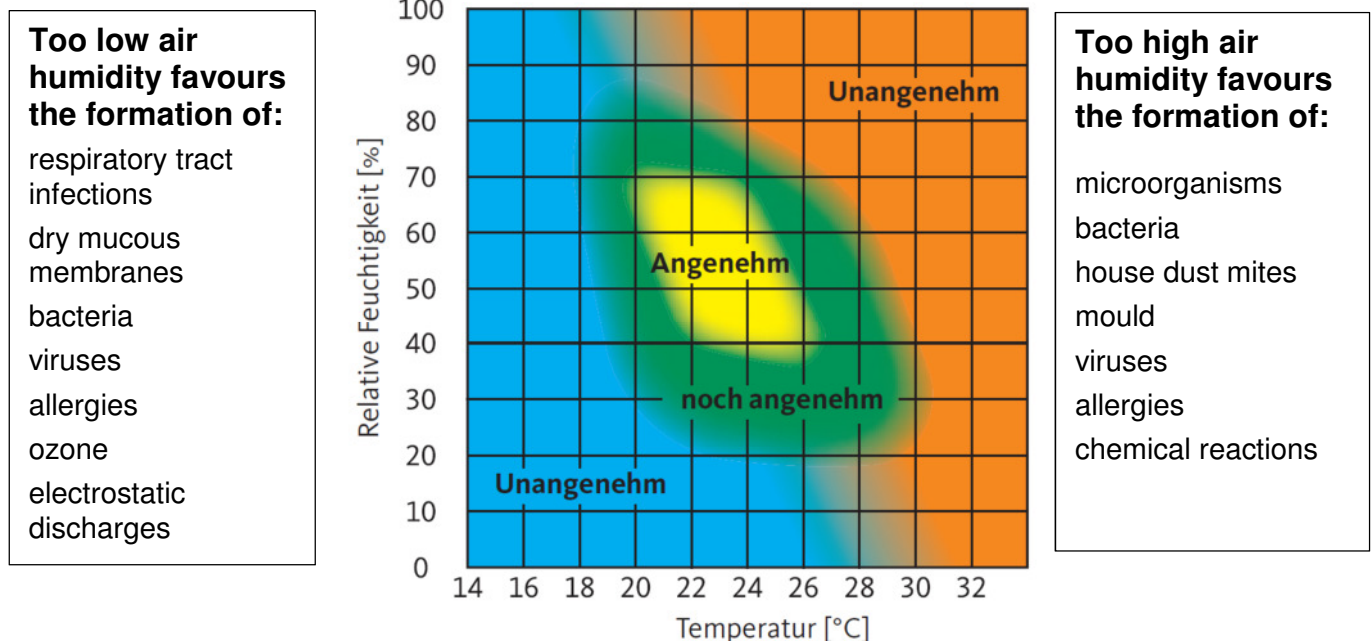
Function Preventing and avoiding mould:

Mount a wall hook on a position with increased potential of mould (e.g. outer wall) and position the humimeter SW1 device on the hook. Switch on the instrument by pressing the ⏻ button for 3 seconds. Select the calibration curve "Risk of mould" using the arrow keys ▲ or ▼. The device switches on regularly and checks the level of risk. In case of a high or very high risk of mould an optical alarm is activated. The humimeter SW1 can be activated at any time by pressing the ⏻ button for 3 seconds. The instrument clearly shows the level of risk (no/little/increased/high/very high risk of mould) immediately.

Function ventilation monitor:

Switch on the instrument and select the calibration curve "Absolute humidity" using the arrow keys ▲ or ▼. Measure the absolute air humidity in a central position of your room, and subsequently the absolute air humidity outdoors. For that, go outside and leave the humimeter SW1 there for approx. 10 minutes. If the absolute air humidity outdoors is lower than the air humidity inside the room, riskless ventilation is possible. On the other hand, if the outdoor measuring value is higher than the indoor one, ventilation will increase the risk of mould.

Function climate monitor:

Switch on the instrument and select the calibration curve "relative humidity" using the arrow keys ▲ or ▼. Measure the relative humidity in a central position of your room and let it adjust to the surrounding climate for a few minutes. The **ideal interior air humidity is between 40% and 60% relative air humidity**. Too damp but also too dry air is felt as unpleasant and may have significant negative effects on your health.

Too low air humidity favours the formation of:

respiratory tract infections

dry mucous membranes

bacteria

viruses

allergies

ozone

electrostatic discharges

Too high air humidity favours the formation of:

microorganisms

bacteria

house dust mites

mould

viruses

allergies

chemical reactions

Calibration curves

calibration curve	description	unit	measuring range
risk of mould	risk of mould		*No* up to *Very high*
abs. humidity	absolute air humidity	g/m³	0 to 130 g/m³
rel. humidity	relative air humidity	% rh	0 to 100%

Definition of calibration curves

Risk of mould:

The calibration curve "risk of mould" clearly evaluates the risk, grouped into 5 risk levels. The risk levels are related directly to the relative air humidity.

risk level	% relative humidity
no	< 65
little	65% - 72%
increased	72% - 80%
high	80% - 90%
very high	> 90%

Absolute humidity:

shows the contained amount of water in gramme per cubic metre of air. The absolute humidity is a direct degree for the amount of water vapour contained in a certain air volume. It shows how much moisture can maximally condense or how much water has to be evaporated to receive a certain desired air humidity.

Relative air humidity:

indicates the relation between the current water vapour pressure and the maximal possible water vapour pressure (called saturation vapour pressure).

The relative humidity shows the degree the air is saturated with water vapour. For example:

50% relative humidity indicates that at the current temperature and the current pressure the air is saturated with water vapour for half of its value, 100 % relative humidity means that the air is totally saturated. When the air has more than 100 % of relative humidity, the excessive moisture would condense or form fog.

Operating the instrument

Switching on: Press ⏻ for three seconds.

Changing the calibration curve: ▲ or ▼.

Menu: Switch on the instrument pressing the ⏻ key and immediately, during showing the start logo, press both arrow keys ▲ and ▼ and keep them pressed until the main menu appears.

Setting date and time: Menu - *Options – date / time*

Set date and time using the button **0..9**, according to the format indicated (JJ.MM.TT). After entering the year, press the button ➤ for entering the month and ➤ again for entering the day. For changing from date to time also press the button ➤ . After finishing, press **OK** for saving the entered data.

Changing measuring interval: Menu – *Options- Interval*

Standard is a measuring interval of 15 minutes. To increase the battery life, this interval can be exceeded to up to 12 hours. We recommend a measuring interval of about 15 minutes to one hour.

Datalog: For activating the datalog, effect the following steps:

Unlock: Menu - *Options – Unlock*

The standard password is the 4-digit serial number. Insert the number and confirm by pressing OK.

Changing user level: Menu - *Options – O User level*

For activating the advanced user, highlight this menu item.

Datalog time: Menu – *Options – Datalog time*

Select your desired interval (except Hold) using the arrow keys and confirm by pressing **OK**.

Deactivating interval: Menu – *Options – Interval*

Select „off" by pressing the ▲ button and confirm by pressing **OK**.

Starting the Autolog / **saving measuring values**

Back in the measuring window press the ⬇ key to reach the store menu. For saving a measuring value or activating an automatic log, press the 🔲 button.

For completing the AutoLog, switch on the device (if necessary) and press the 🔲 button. If you want to add additional data please press the ✎ button. Additional data can also be entered on the PC subsequently.

For returning to the normal use, all menu items have to be reset: Unlocking by entering the password, changing user level to single user O, deactivating Autolog (or set to "manual"), changing the interval to 15 minutes, returning to the measuring window.

Switching on the display lighting: Press the ⏻ key briefly; the display lighting switches off automatically after approx. 2 minutes. Pressing any key activates the display lighting again.

Modifying display lighting time: Menu – *Options – BL On Time*

The period for display lighting can be modified by pressing the ▲ and ▼ keys.

Auto off: The instrument switches off automatically after approx. four minutes.

Modifying Auto off time: Menu – *Options – Auto Off time*

The period for switching off can be modified by pressing the ▲ and ▼ keys.

Menu level overview – advanced user

Type selection menu

Next calibration curve
Previous calibration curve
Power off

Store menu

Show last log
Store new log
Power off

Main menu

Switch lower
Switch upper
Open this menu/Enter

Edit Logs	*Options*
Manual Logs	Date/Time
Auto Logs	Interval
Clear Logs	Language
	Unlock
Print Logs	°C/°F
Last Logs	DataLog Time
All Logs	Userlevel
Clear Logs	BL On Time
	Auto Off Time
Send Logs	Materialcalib.
Manual Logs	Password
Auto Logs	Reset
Clear Logs	*Status*

Keypad symbols

Measuring window:

Symbol	Meaning
⟳	Rolling menu
⏻	Power ON / OFF
▲	Switch upper
▼	Switch lower
⊟	Save
⊞	Hold
⟳⊟	Autolog
ʿᴏᴏʾ	Watch saved data
✐	Enter supplier´s data

Menu:

Symbol	Meaning
↵	Enter
▲	Switch upper
▼	Switch lower
⊩	Exit
0..9	Enter numbers
A..Z	Enter letters
➤	Next or right
◀	Left
✓	Yes
✗	No
⇧	Shift
OK	OK

Design of the device

wall holder

warning light

calibration curve

display of measuring value

ON button

selection of calibration curve

batteries slot (flipside)

humimeter.com

Schimmelgefahr

Keine

Conditioning of the sensor

The conditioning of the sensor (time until the device shows the actual measuring value) depends on several parameters. The parameter responsible for the highest measuring error is a temperature discrepancy between the sensors resp. the whole measuring instrument and the material to measure resp. the air.

Care instructions

Do not drop the instrument or expose it to excessive temperatures. The instrument is not waterproof. Do not immerse the sensor in liquid.

The intervals for checking the instrument depend on your operational demands and the required level of accuracy. In general the drift of the sensor according to the degree of use (constant humidity or use within the whole moisture measuring range) is beneath 0.5% per year.

Exemption from liability

For misreadings and wrong measurements and of this resulting damage we refuse any liability. This is a device for quick determination of moisture. The moisture depends on multiple conditions and multiple materials. Therefore we recommend a plausibility check of the measuring results. Each device includes a serial number and the guarantee stamp. If those are broken, no claims for guarantee can be made.

Changing the batteries

Press with your finger onto the arrow of the battery cap and pull it back. Remove the empty batteries. Put four new **1.5 Volt AA Alkaline batteries** in the device. Make sure that the position of the battery poles is correct. Press down the batteries and close the cap.

If the battery symbol appears in the measuring window resp. if a critical charge of battery is shown in the status, the batteries have to be changed IMMEDIATELY. If you do not use your humimeter device for a longer period,

remove the batteries. For eventual resulting damages we cannot provide any warranty.

In case of a faulty device, please contact Schaller GmbH (www.humimeter.com) or your dealer.
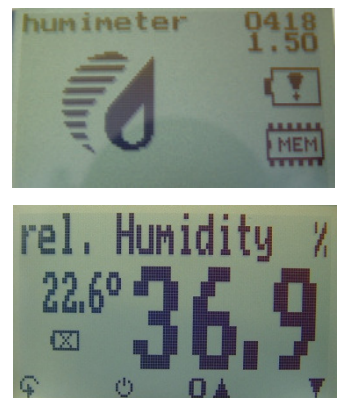
Technical data

Measurement	Measuring range	/ Resolution	/ Accuracy
Rel. air humidity:	0 to 100% rh	/ 0.1%	
Calibration:	10 to 90%		/ ± 2% rh (at 25°C/50%rh)
Temperature °C:	-10 to +60°C	/ 0.1°C	/ ± 0.3°C (at 25°C)
Temperature °F:	14 to 140°F	/ 0.3°F	/ ± 0.5°F (at 77°F)

Operating temperature range:	-10°C to 60°C / 14 to 140°F
Storage temperature:	-20°C to 60°C / -4 to 140°F
Temperature compensation:	automatic
Data storage:	approx. 10,000 measuring values
Menu languages:	English, German, French, Italian, Spanish, Russian
Power supply:	4 pcs. of 1.5Volt AA Alkaline batteries
Life time battery:	mould warning function: approx. 12 months ventilation monitor: approx. 1300 measurements
Auto Off time:	after approx. 4 minutes
Power consumption:	30 mA (with display lighting)
Display:	128 x 64 matrix display, with LED backlight
Dimensions housing:	166 x 64 x 30 mm
Weight:	210g (with batteries)
Protection class:	IP 40
Scope of supply:	humimeter SW1, 4 x 1.5Volt AA Alkaline batteries, manual

!IMPORTANT! Please read

Common reasons for incorrect measurements

- **Don´t position the instrument at a wall that was treated with mould remover recently**

- **Sunlight or other sources of heat or cold that doesn´t correspond to the surrounding temperature**

- **Dripping or sprayed water**

- **Danger of condensation because of changing temperature**

- **Polluted moisture sensor**

- **Foreign objects on the sensor**

- **Measuring errors due to too short conditioning time**

To demonstrate the importance of temperature adjustment, 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.F.	±0.7%	±0.6%	±0.6%
50%r.F.	±3.5%	±3.2%	±3.0%
90%r.F.	±6.3%	±5.7%	±5.4%

At room temperature (20°C/68°F) and an assumed moisture value of 50%r.h. a deviation of 1°C / 1.8°F between the measuring sensor 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%.

Short manual:

Mould warning function:

Calibration curve: *Risk of mould*

Insert batteries – hang instrument on the wall

In case of a mould risk the warning light is blinking.

Ventilation monitor:

Calibration curve: *Absolute humidity*

If the measuring value **INDOORS is HIGHER** you can ventilate.

INDOORS   **- OUTDOORS**   **- VENTILATE?**

If the measuring value **INDOORS is LOWER** you may **NOT** ventilate.

Climate monitor:

Calibration curve: *relative humidity*

Ideal interior air humidity: 40%-60%

A too high or too low value is felt as unpleasant and may cause health risks.