Ringder

Model: THERM02+

CONTROLLER FOR A WIDE VARIETY OF TEMPERATURE CONTROL APPLICATIONS



MODEL:
Thermo2+

1. Product overview

After unpacking and before switching on, make sure that the unit and all its accessories are perfectly in order. If there has been any damage in transit, consult your dealer or the manufacturer immediately.Keep the packaging materials (polythene bag, polystyrene, nails etc.) out of reach of children because they represent a potential source of danger. This also applies to small parts supplied, which can be swallowed.

This electronic thermostat can be used for a wide variety of temperature control applications, for example for heating and cooling greenhouses and winter gardens, or for monitoring water temperatures in aquariums, the air temperature in terariums or the soil temperature in seed beds. It is simple to operate and can be connected to any type of heating cable, heating mat or other heating or cooling devices, provided that the maximum heating power of 3000 W is not exceeded.

This thermostat is only licensed for connection to 230 V / 50-60 Hz a.c.voltage.The unit must beprotected from high degrees of contamination and moisture.
If it is used for any application other than that described above it may be damaged and risks such as short-circuiting, fire,electric shock etc. may ensue.The safety and installation instructions muste bstrictly adhered to.

2. Safety suggestion

Read carefully and follow these instructions as well as the general advice on safety and risks before installation. Keep this leaflet in a safe place for future reference. If you have any doubt about the safety of the unit seek the advice of an expert. If the unit is used in a greenhouse make sure that the electrical connections are carried out by qualified personnel.

- Only a 230 V/50-60 Hz mains socket in the public supply network may be used as a power source. Never try to operate the unit at a diferent voltage.
- Consult an expert if you have any doubts about the operation, safety or connection of the unit.
- This unit may only be used indoors.
- When opening the cover or removing parts, the unit must be disconnected from the mains supply.
- Never switch the mains plug on or off with wet hands.
- Never pull on the mains cable itself, always pull the plug out of the socket by the gripping surfaces.Do not use the unit in an easily inflammable atmosphere (e.g. in the vicinity of fuel gas or spray bottles). Risk of explosion and fire!
- Never install the unit close to water cocks, washbasins or other water sources.
- Do not insert any objects in the openings of the unit. Risk of injury, electric shock or damage to the unit!
- When assembling make sure that the connecting cable is not squeezed or damaged by sharp edges. If such damage gives rise to open points on the unit it must under no circumstances be connected to the mains supply. Danger!
- Always pull the plug out of the socket before cleaning the unit. Only clean with a dry cloth.
- Remove the plug from the socket whenever the unit is switched off.
- If it is to be assumed that harmless operation is no longer possible, the unit must be switched off and protected against unintentional operation, which is the case when:

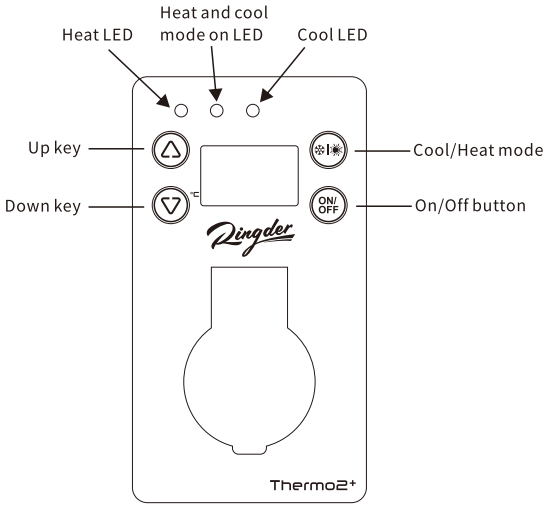
— the unit or mains cable show visible damage
— the unit no longer operates
— after being stored for a long time under unfavourable conditions
— after heavy transport loads

- Units that operate on mains voltage should not get into the hands of children.
- The unit is not suitable for use in cattle breeding areas.
- These instructions for use form part of the unit and should be kept in a safe place. If the unit is passed on to third parties these instructions for use should also be provided.
- In industrial installations the accident prevention regulations of the industrial professional association for electrical installations and equipment must be complied with.
- Never pour liquids over the unit as this presents the risk of a fire or fatal electric shock. If this should happen, however, pull the plug out of the socket and consult a specialist.
- If you are uncertain about correct connection, or if you have any questions which are not clarified in the course of the instruction, contact the manufacturer or a specialist.
- This unit is not intended for use by persons (including children) with limited physical, sensory or mental capacity. This also applies to persons who do not have sufficient experience in or knowledge of handling the product, unless they are being supervised or instructed in the use of the unit by a person responsible for their safety.

3. Technical specification

Power	230V/ 50~60Hz
Input	＜1.5W
Max. switching current	16A
Max. breaking capacity	3000W
Control range	0~40°C
Distinction rate	±1°C
Measuring temperature range	-50~99°C
Switching accuracy	±1°C
Protection class	II
Protective system	IP X4
Sensor length	approx.1.0 m

4. Indicator light and key



When installing,check that the unit or mains cable is not damaged.Also make sure that the sensor cable has not become sharply kinked as this may impair operation.

4.1 Switching on/off

As soon as the unit has been connected to the supply voltage it can be switched on by means of the ON/OFF button.To do this the button must be press for 3 seconds.Immediately after switching on the unit determines the ambient temperature of the sensor and indicates it on the display.
To switch off, again press the ON/OFF button for 3 seconds.

4.2 Cool/Heat mode

It is possible to alternate between the heat and cool mode by pressing the ❄|☀ button. Keepthe ❄|☀ button pressed for 3 seconds to change mode.On the display ☀ appears for 4 seconds for heating and ❄ for cooling. At the same time you can detect the mode that has been set by means of the LED's.The red LED stands for heating and the green LED for cooling.

4.3 Setting the required temperature

Press the △ or ▽ button briefly to switch to the setting mode.The already set temperature now flashes in the display. Using the △ and ▽ buttons you can change the temperature in 1°C steps.(Setting range: -50°C to +99 °C). After you have set a new temperature,it is saved automatically and the menu closes after 3 seconds. Now the display again shows the current ambient temperature.

4.4 Operating modes

It is indicated by the yellow LED whether the heat or cool mode is active.

LED's			Operating mode
Red	Yellow	Green	
on	off	off	"Heat" mode selected /the oretical temperature reached / heat mode off
on	on	off	"Heat" mode selected /theoretical temperature not reached/heat modeon

LED's			Operating mode
Red	Yellow	Green	
off	off	on	“Cool” mode selected/theoretical temperature reached/cool mode off
off	on	on	“Cool” mode selected/theoretical temperature not reached/cool mode off
Display shows “HH” with signal tone			Interrupted working circuit or short-circuit or temperature above 99°C/heat mode off

5.Assembly and installation

5.1 Assembly

⚠ All electrical connections must be carried out by a professional electrician and strictly comply with the wiring instructions. Do not install the controller in any of the following environments:

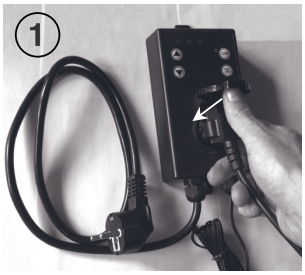
· Relative humidity ⩾ 90% with risk of condensation;
· Locations with flammable or explosive substances;
· Subject to continuous water spray;
· Strong vibration or shock;
· Dusty environments;
· Exposed to corrosive or contaminating gases (e.g., sulfur, ammonia, fumes);
· Ambient temperature below -10°C or above 60°C;
· RF interference or strong magnetic fields (e.g., near transmitters or power distribution rooms).

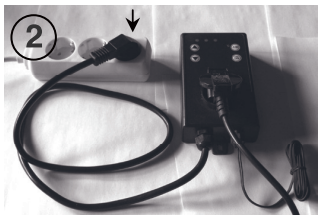
5.2 Installation

Make sure that the mains voltage corresponds to the voltage indicated in Chapter 2 (technical data).The place of installation must be chosen so that the unit can under no circumstances get wet (e.g.dripping condensation, open roof hatches, etc.) or fall into water.

The thermostat may be operated in a horizontal or vertical position.

1. Connect the heating or cooling unit to the thermostat. To do so, insert the plug of the corresponding heating or cooling unit in the socket on the thermostat.
2.Now connect the connecting cable of the thermostat to a 230V mains socket.
3. Position the end of the sensor cable at the most suitable point for temperature control.





5.2.1 Room temperature control

The sensor should be installed at half room height and should be freely suspended. The room temperature can only be optimally controlled when the sensor is not influenced by draughts, solar radiation or other heat or cold sources.

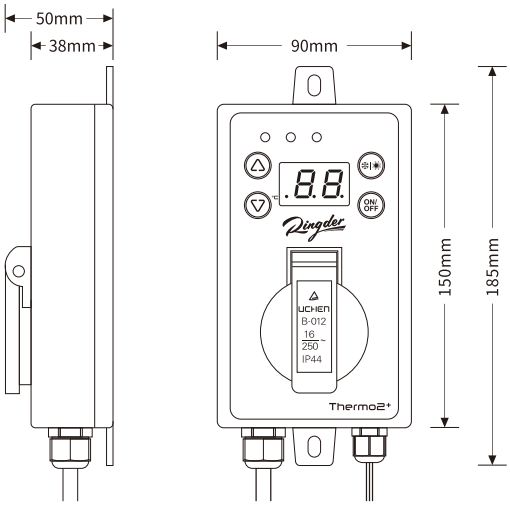
5.2.2 Cultivation of plants and seeds

Position the sensor in the soil close to the roots. The sensor must be entirely surrounded by soil. In large plant pots the sensor should be located in the middle of the pot.

5.2.3 Water temperature control

For water temperature control (e.g. in an aquarium), the sensor should be positioned in the central layers of water. Here too the sensor must be completely surrounded by water.

6. PRODUCT DIMENSIONS



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Http://www.ringder.com