

GTTE1 | TRANSFORMER FAN SPEED CONTROLLER WITH ELECTRIC HEATING CONTROL

Mounting and operating instructions



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SAFETY AND PRECAUTIONS



Read all the information, the datasheet, Modbus map, mounting and operating instructions and study the wiring and connection diagram before working with the product. For personal and equipment safety, and for optimum product performance, make sure you entirely understand the contents before installing, using, or maintaining this product.



For safety and licensing (CE) reasons, unauthorised conversion and /or modifications of the product are inadmissible.



The product should not be exposed to abnormal conditions, such as extreme temperatures, direct sunlight or vibrations. Long-term exposure to chemical vapours in high concentration can affect the product performance. Make sure the work environment is as dry as possible; avoid condensation.



All installations shall comply with local health and safety regulations and local electrical standards and approved codes. This product can only be installed by an engineer or a technician who has expert knowledge of the product and safety precautions.



Avoid contact with energised electrical parts. Always disconnect the power supply before connecting, servicing or repairing the product.



Always verify that you apply appropriate power supply to the product and use appropriate wire size and characteristics. Make sure that all the screws and nuts are well tightened and fuses (if any) are fitted well.



Recycling of equipment and packaging should be taken into consideration and these should be disposed of in accordance with local and national legislation / regulations.



In case there are any questions that are not answered, please contact your technical support or consult a professional.

PRODUCT DESCRIPTION

The GTTE1 series of transformer fan speed controllers regulate the rotational speed of single-phase voltage controllable motors by varying the output voltage according to a measured temperature. They are equipped with auto-transformer(s) and control the speed of the supply and extraction fan automatically in five steps according to the temperature input of the ready connected flying lead sensor. An electric heater can be controlled (ON/OFF) via the extra output. The GTTE1 series are pre-wired and do have integrated sockets for fans and heater.

ARTICLE CODES

Article code	Rated max. current [A]	Fuse (5*20 mm) [A]
GTTE1-35L22	3,5 A	T 5,0 A-H (5*20 mm)
GTTE1-75L22	7,5 A	T 12,5 A-H (5*20 mm)

INTENDED AREA OF USE

- Ventilation control by single phase 230 VAC units in function of the measured temperature. Application field: greenhouses, stables, sheds, etc.
- Temperature controlled ventilation systems
- For indoor use only

TECHNICAL DATA

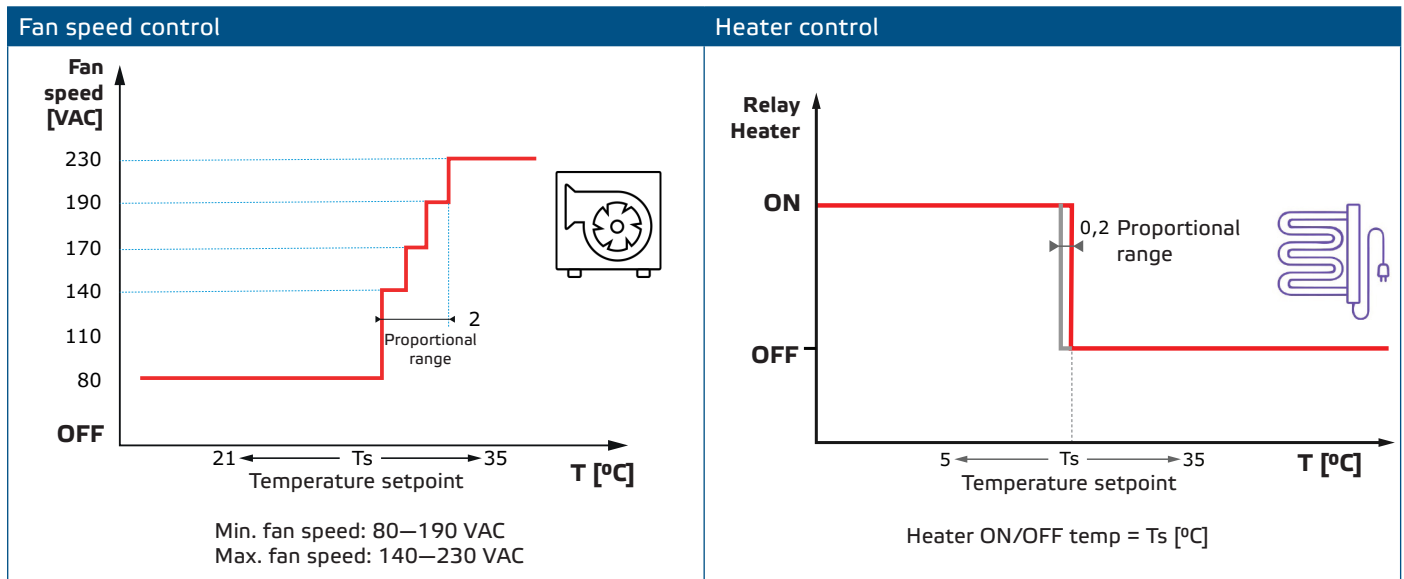
- 2 Schuko Euro sockets for connecting a supply and / or extraction fan
- 1 Schuko Euro socket for connecting an electric heater (Imax. 16 A)
- Power cables with plugs 230 VAC / 16 A
- Ready connected 4 m flying lead PT500 temperature probe
- All sockets are separately and externally fused
- Integrated external plate for easy wall fixing
- Temperature ON/OFF control for electrical heater (16 A)
- Potentiometer for temperature setpoint range: 21–35 °C
- Rotary switches for minimum and maximum speed setting
- Enclosure: plastic (R-ABS, UL94-V0, grey RAL 7035)
- Protection standard: IP54 (according to EN 60529)
- Operating ambient conditions:
 - ▶ Temperature: -10–40 °C
 - ▶ Rel. humidity: 5–80 % rH (non-condensing)

STANDARDS

- Low Voltage Directive 2014/35/EC
 - ▶ EN 60335-1:2012
- EMC Directive 2014/30/EC:
 - ▶ EN 61000-6-3:2007/A1:2011/AC:2012, EN 61000-6-2:2005/AC:2005



OPERATIONAL DIAGRAMS



WIRING AND CONNECTIONS

Wiring and connections			
	1 - Standard power supply Euro plug cable for heater (1,5 m)	Power supply	230 VAC / 50–60 Hz
	2 - Standard power supply Euro plug cable for controller (1,5 m)	Power supply	230 VAC / 50–60 Hz
	3 - Temperature sensor probe	Length	4 m, connected to PT500
		Resistance	500 Ω at 0 °C
		Sensor measuring range	-30–70 °C
	4 - AC extraction fan socket	Load connection	230 VAC / 50–60 Hz
	5 - AC supply fan socket		230 VAC / 50–60 Hz; I _{max} 16 A (3 kW)
	6 - Heater socket	Operating range	21–35 °C, 1 °C scale
	7 - Temperature setpoint potentiometer		
	8 - Minimum regulated output voltage via rotary switch*		80 / 140 / 170 / 190 VAC
9 - Maximum regulated output voltage via rotary switch*		140 / 170 / 190 / 230 VAC	

* Of both pulsion and extraction fan. Pulsion and extraction fans operate at identical speed.



Make sure you use cables with an appropriate diameter to connect the fans to the GTTE1 controller.

MOUNTING INSTRUCTIONS IN STEPS

Before you start mounting the unit, read carefully **“Safety and Precautions”** and follow these steps. Choose a smooth solid surface for installation (a wall, panel, etc.).

Follow these steps:

1. Drill holes into the surface and secure the fastenings (hooks, wall plugs, etc.) into them. Mind the correct mounting position and unit mounting dimensions. (See **Fig. 1 Mounting dimensions** and **Fig. 2 Mounting position**.)
2. Pay attention to the following instructions in order to minimize the operating temperature:
 - 2.1 Respect the distances both between the wall / ceiling and the device and between two devices as shown in **Fig. 2**. In order to ensure sufficient ventilation of the controller, clearance on every side has to be maintained.
 - 2.2 When installing the device, please keep in mind that the higher you install it, the warmer the device will get. For example, in a technical room the correct installation height can be of great importance.
 - 2.3 If maximum ambient temperature cannot be adhered to, please provide extra forced ventilation / cooling.
 - 2.4 Leave sufficient space around the unit (for load connecting to the sockets). Allow at least 90–100 mm for connection maintenance (to insert plug/plugs into the sockets).

Not respecting the abovelisted rules can reduce service life and relieves the manufacturer of any responsibilities.



ATTENTION

It is recommended to install appropriate protective circuit on the input as this transformer controller is not internally short-circuit proof. Recommended automatic circuit breaker with “C” characteristics should be selected according to the transformer rated maximum current.



ATTENTION

Do not install the controller above heating equipment.

Fig. 1 Mounting dimensions

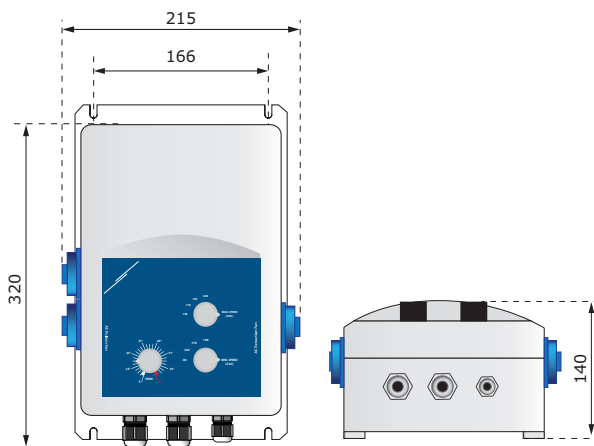
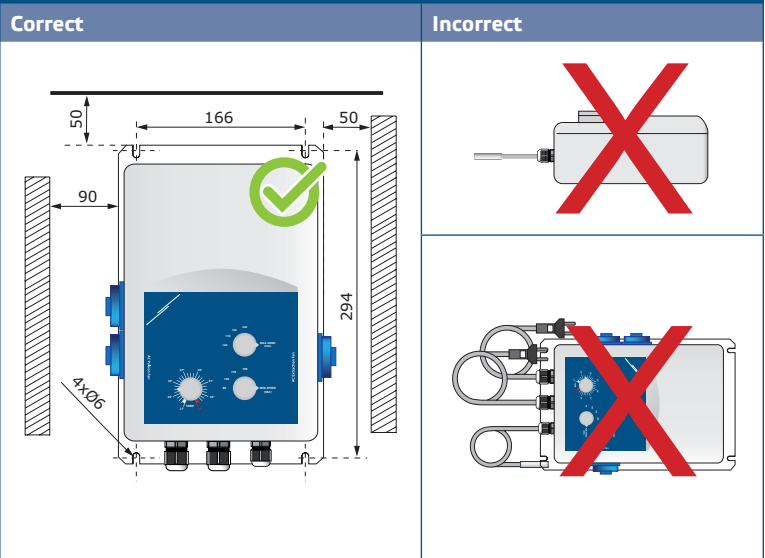


Fig. 2 Mounting position



3. Fix the unit onto the wall / panel.

ATTENTION

A safety isolator / disconnect switch should be installed on the mains electricity side of all motor drives.

ATTENTION

The controller must be properly earthed.

ATTENTION

The Schuko sockets are intended only for connecting two fans and a heater. The total load connected to sockets must not exceed the rated maximum current of the GTTE1 controller. Do not plug other types of electric appliances into them!

OPERATING INSTRUCTIONS

ATTENTION

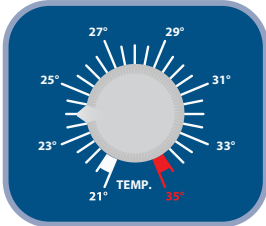
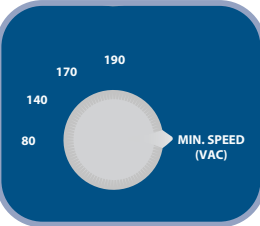
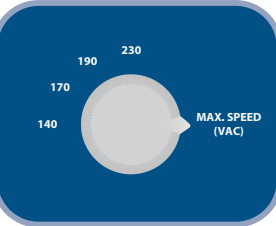
Make sure the connections are correct before you power the unit.

ATTENTION

Make sure the mains supply voltage is within the admissible rated maximum current of the product.

1. Switch off the mains power supply before connecting any power cables.
2. Plug the load (fans and heater) cables into the socket according to the connecting diagram.
3. Install the PT500 temperature probe in an appropriate zone in order to measure the relevant ambient temperature.
4. Plug the GTTE1 into the mains electricity network.
5. Select the temperature setpoint using the temperature potentiometer (**Fig. 3**).
6. Set the minimum and maximum fan speed using the switches (**Fig. 3**).

Fig. 5 Knob positions

a. Temperature set point selection	b. Minimum fan speed selection	c. Maximum fan speed selection
		

VERIFICATION OF INSTALLATION



ATTENTION

Use only tools and equipment with non-conducting handles when working on electrical devices.

To check the operation of the controller, do the following:

1. Set the temperature to the minimum position (21 °C).
 - 1.1 The connected fans must run at maximum speed (if the difference between the setpoint temperature and ambient is 2 °C higher than the selected setpoint value).
 - 1.2 The electric heater must be OFF.
2. Set the temperature setpoint to the maximum position (35 °C).
 - 2.1 The connected fans must run at minimum speed (80 VAC) (if the measured temperature is below the setpoint value).
 - 2.2 The electric heater must be ON.

If the unit does not work according to the instructions, the wiring connections and settings need to be checked.

Safe operation depends on proper installation. Before start up, ensure the following:

- The mains supply is connected correctly.
- Protection is provided against electrical shock.
- The cables are the appropriate size and fuse-protected.
- There is sufficient air flow around the unit.



ATTENTION

The unit is supplied with electrical energy at voltages high enough to inflict personal injury or threat to health. Take the relevant safety measures.



ATTENTION

Disconnect and confirm that there is no live current flowing to the unit before servicing.



ATTENTION

Avoid exposing the controller to direct sunlight!

TRANSPORT AND STORAGE

Avoid shocks and extreme conditions; stock in original packing.

WARRANTY AND RESTRICTIONS

Two years from the delivery date against defects in manufacturing. Any modifications or alterations to the product after the date of publication relieve the manufacturer of any responsibilities. The manufacturer bears no responsibility for any misprints or mistakes in this data.

MAINTENANCE

In normal conditions this product is maintenance-free. If soiled, clean with a dry or damp cloth. In case of heavy pollution, clean with a non-aggressive product. In these circumstances the unit should be disconnected from the supply. Pay attention that no fluids enter the unit. Only reconnect it to the supply when it is completely dry.