

RTR-1

REMOTE SWITCHED 230 VAC
TRANSFORMER CONTROLLER

Mounting and operating instructions



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SAFETY AND PRECAUTIONS



Read all the information, the datasheet, 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 contacts 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 RTR-1 series of transformer fan speed controllers regulate the rotational speed of single-phase voltage controllable motors by varying the output voltage. They are equipped with an auto-transformer and control the speed manually in steps via a remote device, e.g. a switch or thermostat. The technology used provides a regulated output voltage with a perfect sinusoidal shape.

ARTICLE CODE

Article code	Rated max. current, [A]	Fuse rating
RTR-1-15L22	1,5	(5*20 mm) T-3,15 A-H
RTR-1-25L22	2,5	(5*20 mm) T-4,0 A-H
RTR-1-35L22	3,5	(5*20 mm) T-5,0 A-H
RTR-1-50L22	5,0	(5*20 mm) T-8,0 A-H
RTR-1-75L22	7,5	(6*32 mm) T-12,5 A-H

INTENDED AREA OF USE

- Fan speed control of voltage controllable motors (pumps and fans) in ventilation systems
- For indoor use only

TECHNICAL DATA

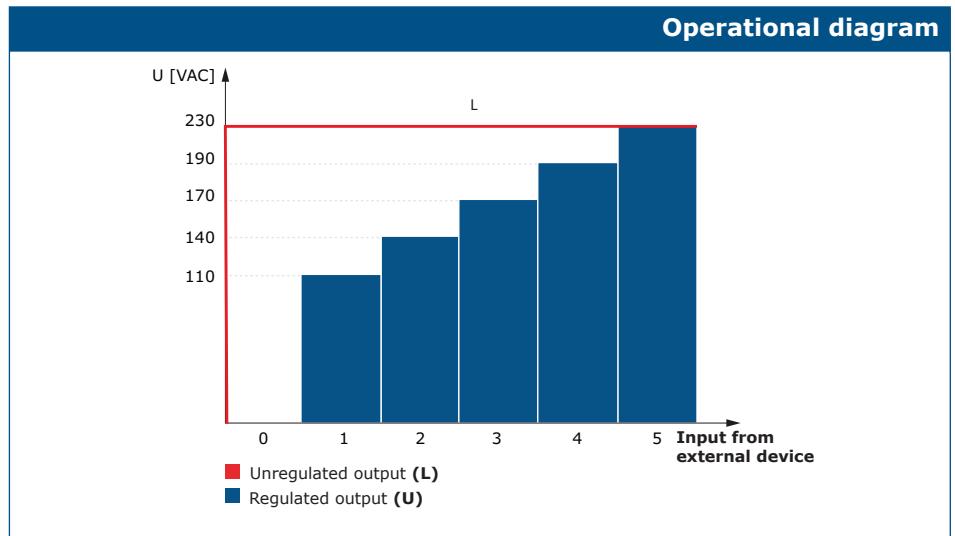
- Supply voltage: 230 VAC / 50–60 Hz
- Unregulated output: 230 VAC / 2 A
- Remote fan speed control via external device (e.g. Sentera's SMT-1-30-4C switch)
- Transformer taps directly connected to the terminal block
- Enclosure: plastic (R-ABS, UL94-V0, grey RAL 7035)
- Protection standard: IP54 (according to EN 60529)
- Operating ambient conditions:
 - ▶ Temperature: -20–35 °C
 - ▶ Rel. humidity: 5–95 % rH (non-condensing)

STANDARDS

- Low Voltage Directive 2014/35/EC
- EMC Directive 2014/30/EC: EN 61326
- WEEE Directive 2012/19/EC
- RoHs Directive 2011/65/EC



OPERATIONAL DIAGRAM



WIRING AND CONNECTIONS

L	Power supply, line (230 VAC / 50–60 Hz)
N	Power supply, neutral
L	Unregulated output, line
L1	Not connected
N	Unregulated output, neutral
U	Regulated output to motor, neutral
P	Regulated output to motor, line
1	External switch, common
2	
3	
4	
5	

ATTENTION

Make sure you use cables with an appropriate diameter.

MOUNTING INSTRUCTIONS IN STEPS

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

Follow these steps:

1. Unscrew the front cover and open the enclosure.
2. Fix the unit onto the wall or panel using the provided screws and dowels. Mind the correct mounting position and unit mounting dimensions. (See **Fig. 1 Mounting dimensions** and **Fig. 2 Mounting position**.)
3. Pay attention to the following instructions in order to minimize the operating temperature:
 - 3.1 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.

- 3.2 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.
- 3.3 If maximum ambient temperature cannot be adhered to, please provide extra forced ventilation / cooling.

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

Fig. 1 Mounting dimensions

Article code	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
RTR-1-15L22	170	255	140	155	194
RTR-1-25L22	170	255	140	155	194
RTR-1-35L22	170	255	140	155	194
RTR-1-50L22	170	255	140	155	194
RTR-1-75L22	200	305	140	183	236

Fig. 2 Mounting position

Correct

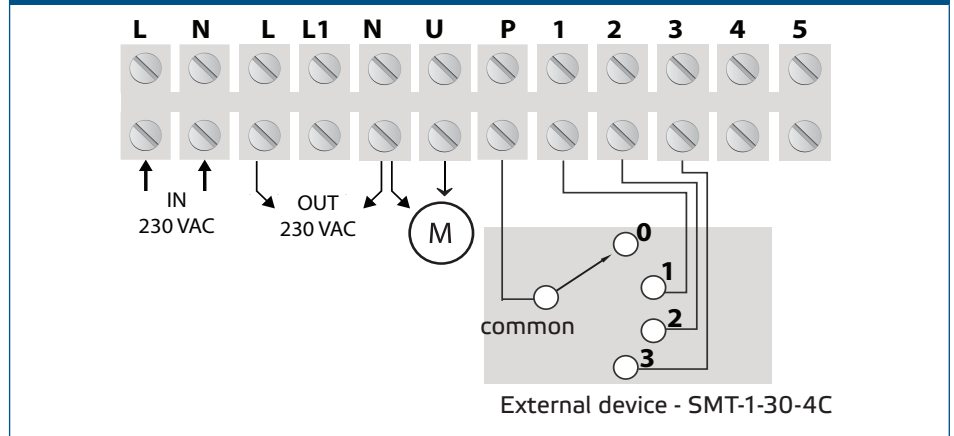
Incorrect

- 4. Insert the cables through the cable glands and do the wiring according to the wiring diagram (see **Fig. 3**) while adhering to the information from section **“Wiring and connections”** above.
 - 4.1 Connect the power supply line (terminals L, N and protective earth).
 - 4.2 Connect the motor(s) (terminals U, N and protective earth).
 - 4.3 Connect the external switch (e.g. Sentera’s SMT-1-30-4C) (terminals P and 1, 2, 3, 4, 5 as indicated in **Fig. 3** below)
 - 4.4 If applicable, connect the unregulated output (L and N). It can be used to supply a 230 VAC valve, lamp, etc. The unregulated output is active when the supply voltage is present.

ATTENTION

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

Fig. 3 Wiring diagram



ATTENTION

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

5. Close the cover and secure it with the screws.
6. Tighten the cable glands.
7. Switch on the mains supply.
8. The controller needs to be switched on via the external switch.
9. Make sure the transformer controller can operate normally (consider an isolating switch).
10. Turn the external switch into the relevant positions to adjust the output voltage.

Optional settings

The standard configuration of the output voltages is as indicated in **Table 1** below.

Table 1 Voltage series							
Wires							
Regulated output [VAC]							
Output voltage**	0	80*	110	140	170	190	230
Unregulated output [VAC]							
L	230	230	230	230	230	230	230

* Available but not connected.

** Because more than 5 output voltages are available, it is possible to adjust the steps by changing the internal wiring.

VERIFICATION OF INSTALLATION

ATTENTION

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

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.