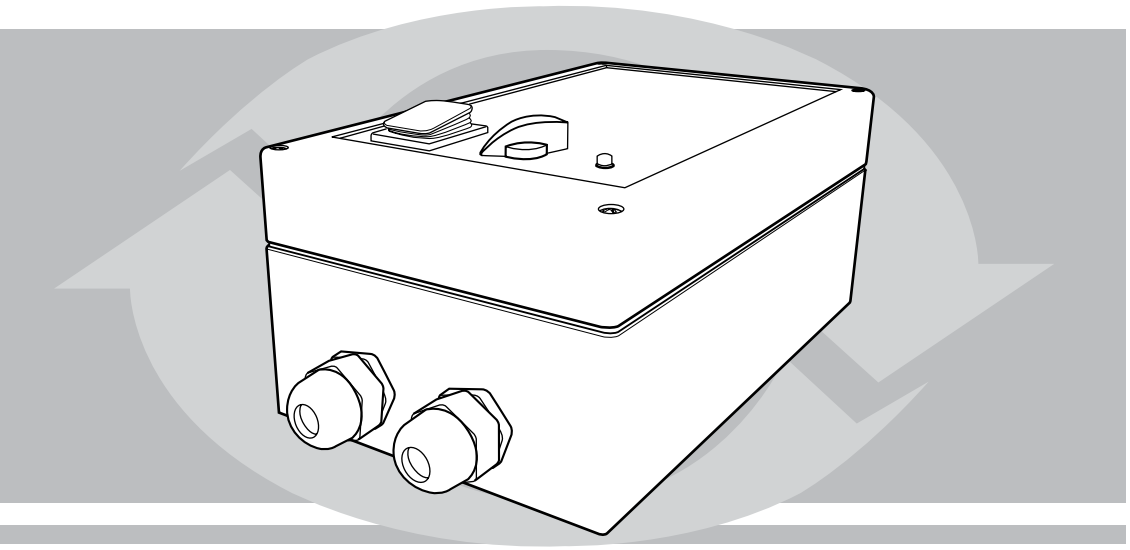
TRANSFORMER SPEED CONTROLLERS RSA5E-2-P SERIES



Contents

PURPOSE

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he RSA5E-2-P series controllers (hereinafter "Device") are used to control the output of single-phase fans by step changing of the supplied voltage. The controller has five speed settings which correspond to five fixed positions of the rotating knob on the front panel.

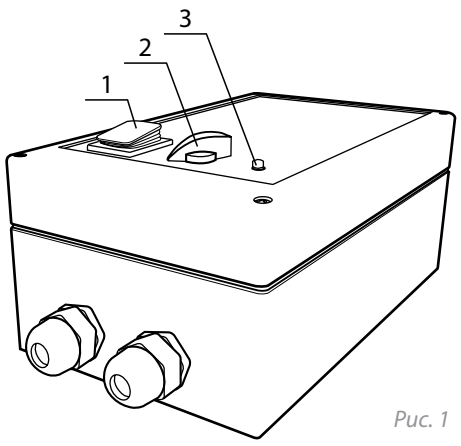
PACKAGE CONTENTS

- Automatic transformer **1 piece**
- User's Operation Manual **1 piece**
- Packing **1 piece**

TECHNICAL SPECIFICATIONS

Designation	RSA5E-2-P
ominal Load Current [A]	2,0
Fuse [A]	2,5
Dimensions [mm]	222x120x100
Weight [kg]	3,1

Switch Position	Output Voltage [V/50 Hz]
1	230
2	190
3	160
4	130
5	110



Puc. 1

- Supply Voltage: **230 V/50 Hz**
- Fan Motor Nominal Voltage: **230B/50 Hz**
- Lead-In: screw terminal block **0,5..2,5 mm²**
- Operating Ambient Temperature: **+5°C..+40 °C**
- Protection Class: **IP44**

DESIGN AND OPERATING PRINCIPLE

The controller casing is made of non-combustible thermoplastic. The device is a single-phase transformer with output voltages of 110V - 130V - 160V - 190V - 230V supplied from 220V, 50 Hz mains. The front panel features On/Off button 1 (see Fig. 1), speed selector 2 and signal lamp 3 which indicates controller operation in the emergency mode. The device is equipped with the fan motor circuit breaker which disrupts the feed circuit on actuation of the thermal contact in the fan motor on terminal TK (see Fig.4).

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he controller design also enables connection of an indoor thermostat or freezing protection thermostat to terminal TC (see Fig.4). Opening of the thermostat contacts cuts the voltage supply to the fan motor.

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larm lamp 3 activates on opening of the thermal contact or the thermostat contacts. Controller also has terminals U1, U, N (see Fig. 4) for connecting external equipment (e.g. air damper actuators). When button 1 is set to "Off" and on thermal contact or thermostat contact opening terminals U1, N and the fan electric motor are de-energized. Contact U is constantly under the voltage of 220V/50 Hz as it powers the air damper actuators which not equipped with a return spring.

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he controller can be controlled remotely as necessary by connecting a remote control panel (P5-5) (see Connection Options).

SAFETY PRECAUTIONS AND WARNINGS

ATTENTION! The controller application range is limited by the fan electric motor characteristics:

- The fan electric motor must be designed for TRIACAC voltage regulation.
- The downward regulation range is selected based on the fan parameters. The entire fan regulation range must be within its operating envelope to prevent the fan motor breakdown.

⚠ The speed controller and its connected equipment may present an electric shock hazard. Therefore, the device shall be connected and operated only by adequately qualified staff familiar with this manual. The speed controller belongs to electrical machinery with voltages up to 1000 V.

⚠ The device must be disconnected from the power mains for any and all operations with the device internals.

⚠ The speed controller shall only be used with single-phase motors. The total current consumption of the electrical appliances connected to the device shall not exceed the limit value (see Technical specifications).

⚠ The device should not be operated under the limit load current. The speed controller must be properly earthed.

⚠ Use the device with due caution. Do not subject it to shocks and overloads or expose it to liquids and dirt. Should any foreign objects penetrate onto the controller circuit board, disconnect the unit from the mains and remove them.

⚠ Do not apply overvoltage to any of the speed controllers parts while testing the device (e.g. with a megohmmeter etc.).

⚠ Disconnect the cable from the speed controller prior to any measurements on the cable or motor!

DO NOT:

⊗ Operate the device in the presence of smoke or smell commonly associated with burning insulation, elevated noise or vibration, in case of structural integrity loss or formation of cracks in the casing or with broken connectors;

⊗ Cover the device with any materials, mount any gauges and objects on top, block the vents or fill them with any foreign objects;

⊗ do not use the device in areas with an explosive or chemically aggressive environment detrimental to metals and insulation or under the influence of droplets or spray; do not use outdoors;

⊗ Connect any electric motors (individual or part of any equipment) with the phase current consumption (usually stated on the nameplate) in excess of the limit phase load current for the device;

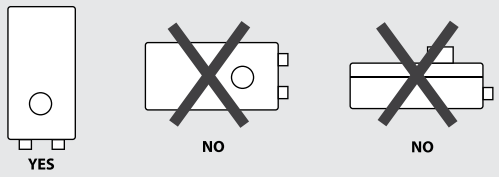
⊗ Connect the device output terminals to the power mains.

INSTALLATION AND SETUP

ATTENTION! Following the device transportation or storage under temperatures below zero let the unit warm up in the specified operating conditions for at least 4 hours.

- Check the device visually for any damage to the casing;
- Remove the front panel by unscrewing self-tapping screws 7 (see Fig. 2);
- To facilitate installation unplug connector 6 (see Fig. 3);
- Fasten the controller to the mounting surface using mounting holes 8 (see Fig. 2) in the rear wall of the unit;

ATTENTION!
MOUNT THE DEVICE VERTICALLY FOR PROPER OPERATION



- Complete the electrical connections according to the wiring diagram (see Fig. 4). The external wires are connected to the device by means of bolt-and-nut terminals 5(see Fig. 3). The cables are routed into the unit through sealed lead-ins 4 (see Fig. 3). The external lead-in (220V/50Hz) must be equipped with an automatic switch built into the stationary wiring.

ATTENTION! If the thermal contact of the fan electric motor or the thermostat is not connected to the controller, bridge contacts TCTC or TKTK correspondingly (see Fig. 4).

- Plug in connector 6 (see Fig. 3) and replace the front cover. Supply the power voltage and start the device.

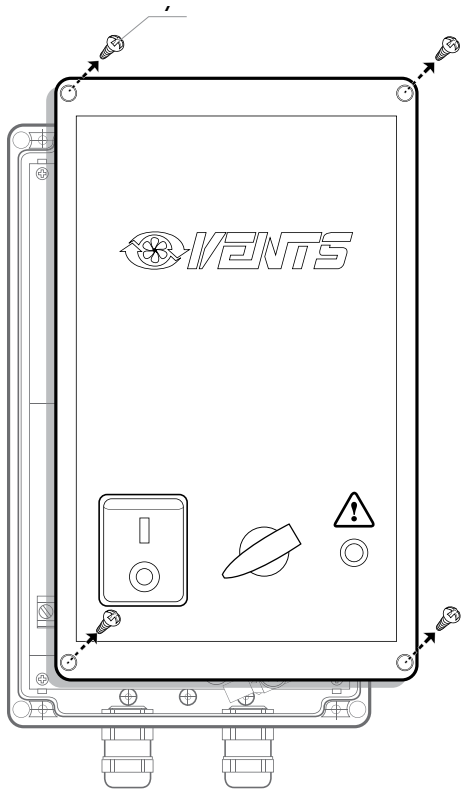


Fig. 2

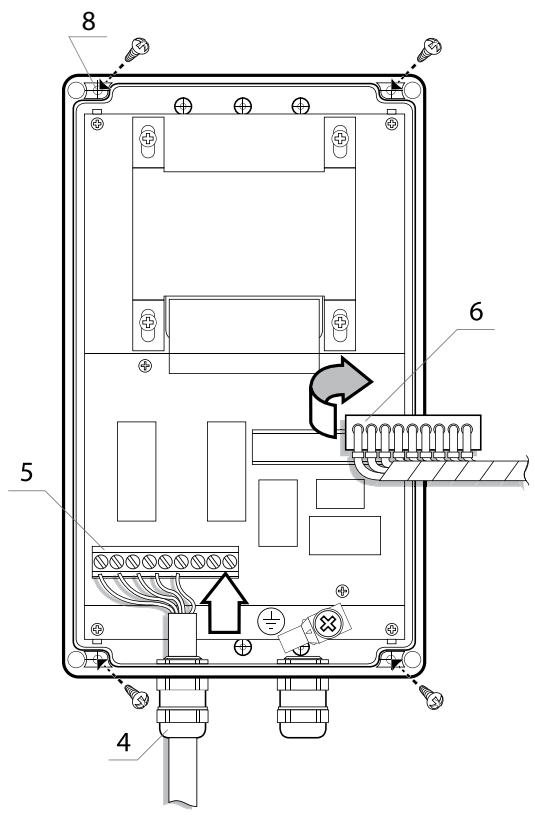
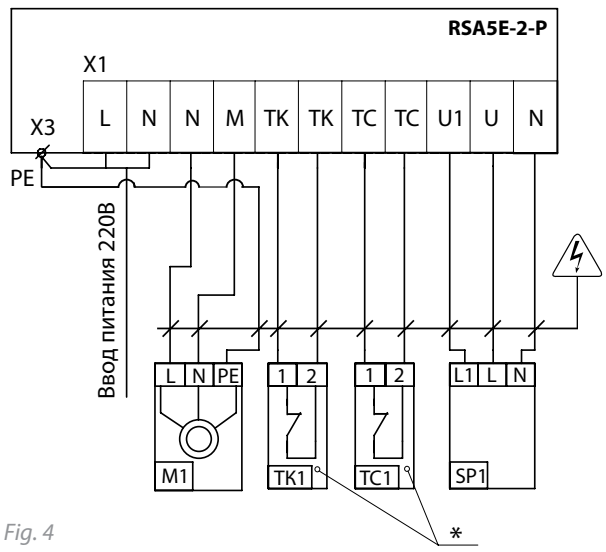


Fig. 3

CONNECTION DIAGRAM



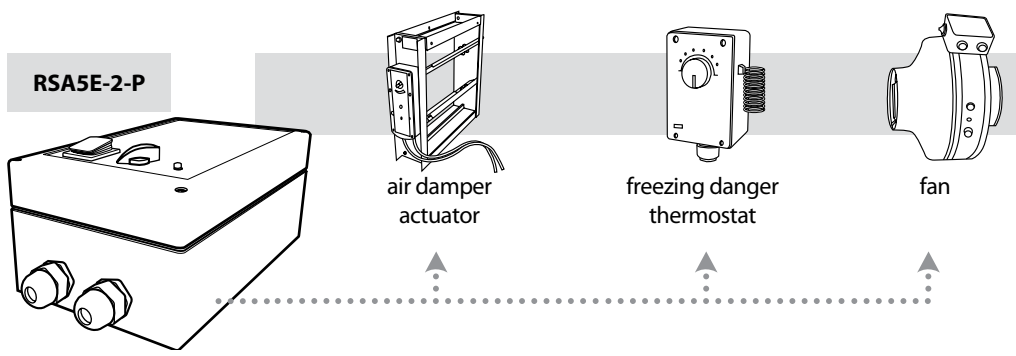
Design.	Designation
M1	Fan Motor
TK1	Motor Thermal Protection
TC1	Indoor thermostat or calorifier «freezing danger» thermostat
SP1	Air Damper Actuator

Electric shock hazard!

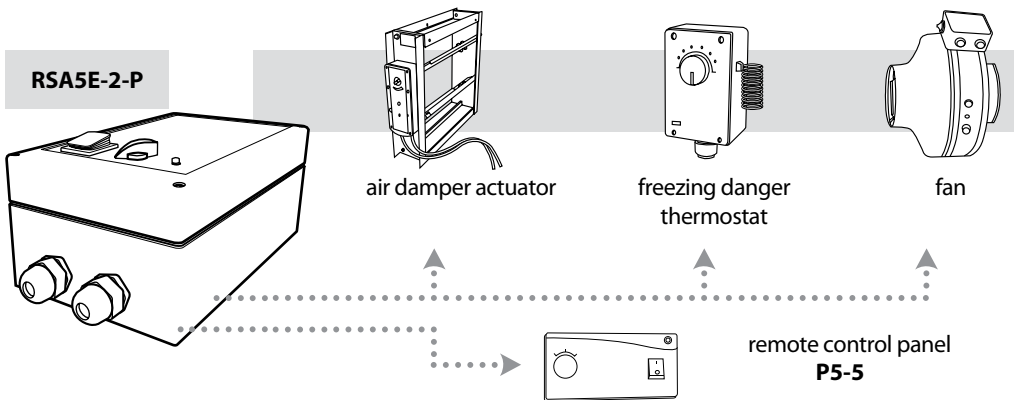
Fig. 4

*—The controller may be operated without thermal protection (TK1) in which case bridge TK terminals. The controller may be operated without the thermostat (TC1) in which case bridge TC terminals.

CONNECTION OPTIONS **OPTION NO. 1**



CONNECTION OPTIONS **OPTION NO. 2**



ТЕХНИЧЕСКОЕ ОБСЛУЖИВАЕНИЕ

- Periodically clean dust, fibres and other contamination from the ventilation holes.
- Make sure the external wires are tightly connected to the screw terminals of the device.

TRANSPORTATION

The device shall be carried in the manufacturer's packing without limitation to the means of transport, distance or speed. Once received by the user the devices shall be stored in the original packing at temperatures ranging from -40 to +35 °C and relative humidity up to 80%. The storage premises shall be free from dust and corrosive acid or alkaline vapours.

WARRANTY

The manufacturer warrants trouble-free operation of the speed controller over the period of 12 months from the sale date within the warranty storage period. The warranty storage period is 24 months from the manufacturing date. If the sale date and vendor's stamp are missing, the warranty period shall be calculated from the manufacturing date. The customer shall be entitled to free repair of the device in case of any malfunction of the controller occurring through the manufacturer's fault within the warranty period.

ATTENTION! The manufacturer shall not be liable for any injuries or damage caused by non-compliance with the installation and operation regulations set forth herein.

ATTENTION! Check the controller certificate of sale and acceptance for completeness (the required information includes the manufacturing and sale dates, manufacturer's and vendor's stamps).

WARRANTY SERVICE IS DENIED IN THE FOLLOWING CASES:

- Violation of the storage, transportation, installation and operation rules set forth herein;
- Failure to present the original certificate of sale and acceptance providing evidence of sale; Missing warranty card;
- Device repair by unauthorized persons and entities;
- Mechanical damage, traces of chemicals and penetration of foreign objects
- Damage caused by force majeure consequences (e.g. fire, lightning strike, flood, accident etc.);
- Misuse of the device;
- Connection to the power mains non-compliant with the required parameters specified in p.3 of the Operation Manual;
- Connection of loads with current consumption in access of the maximum permissible current as specified in p.3 of the Operation Manual.

Warranty Card

Acceptance Inspector's Stamp

Manufacturing Date _____

Shipment Date _____

Name _____

Date _____

Signature _____

Notes

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