EN

TRANSFORMER SPEED CONTROLLER
User's manual

RSA5D

VENTS

www.ventilation-system.com

CONTENTS

Safety requirements 3
Purpose 6
Delivery set 6
Operation guidelinesï 6
Technical data 7
Design and operating principle 8
Mounting and set-up 9
Technical maintenance 11
Troubleshooting 11
Storage and transportation regulations 11
Manufacturer's warranty 12

SAFETY REQUIREMENTS

The controller application range is limited by the fan electric motor characteristics. The fan electric motor must be designed for voltage regulation by means of a transformer.
The speed controller and its connected equipment may cause 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 electrotechnical equipment 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 must 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 the «Technical specifications» section. The speed controller must be properly earthed.

Handle the device with care. 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 power mains and remove them.

Do not apply overvoltage to any parts of the speed controller 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, high 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.

THE PRODUCT MUST BE DISPOSED SEPARATELY AT THE END OF ITS SERVICE LIFE.
DO NOT DISPOSE THE UNIT AS UNSORTED DOMESTIC WASTE.

PURPOSE

The RSA5D, series controllers are used to control the output of three-phase fans by change of the supply voltage. The controller has five speed settings which correspond to five fixed positions of the speed selector on the front panel

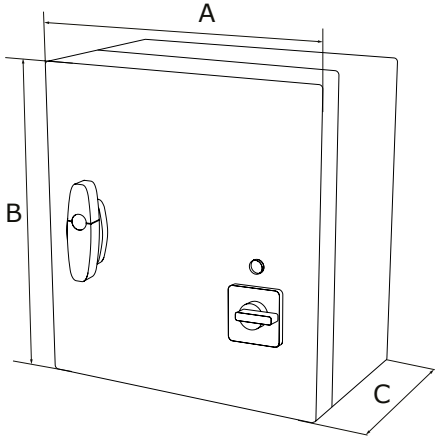
DELIVERY SET

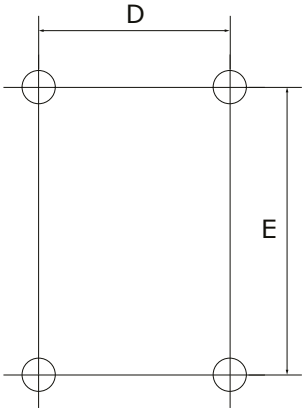
Automatic transformer – 1 piece
User's manual – 1 piece
Packing – 1 piece

OPERATION GUIDELINESÏ

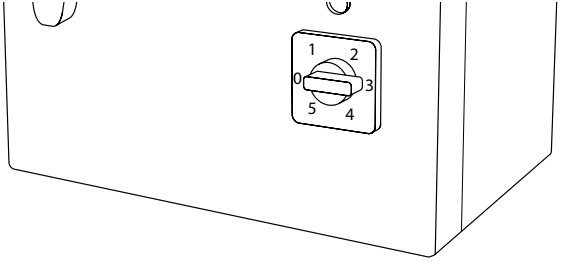
The product is designed to be connected to a 3x400 V / 50-60 Hz AC mains.
The unregulated output is 230 V, 2 A alternating current.
The case is made of sheet steel (RAL7035, polyester powder coating).
Protection type against access to hazardous parts and water ingress is IP54.
ATTENTION! The degree of protection is indicated for the mounted product.
The product may be operated at ambient temperatures ranging from -20 °C to +35 °C.
Relative humidity 5...95 % rH (without condensation).
WARNING. Do not operate the product outside the specified temperature range.
According to the type of protection against electric shock, the product belongs to class I devices.
The product may only be used indoors.

TECHNICAL DATA





	A, mm	B, mm	C, mm	D, mm	E, mm	Weight, kg	Current, A
RSA5D-1,5-M	300	325	185	255	255	11,6	1,5
RSA5D-4,0-M	300	425	185	255	355	18,2	4,0
RSA5D-6,0-M	300	425	235	255	355	22,3	6,0
RSA5D-8,0-M	300	425	235	255	355	27,2	8,0
RSA5D-11,0-M	400	430	235	355	355	38	11,0
RSA5D-14,0-M	400	430	235	355	355	43	14,0



Voltage, V

Switch position ▶	0	—	1	2	3	4	5
RSA5D-1,5-M	0	—	130	180	230	300	400
RSA5D-4,0-M	0	—	130	180	230	300	400
RSA5D-6,0-M	0	—	130	180	230	300	400
RSA5D-8,0-M	0	—	130	180	230	300	400
RSA5D-11,0-M	0	—	130	180	230	300	400
RSA5D-14,0-M	0	130*	170	220	260	300	400

* Available but not connected.

DESIGN AND OPERATING PRINCIPLE

The device is a three-phase speed controller enclosed in a metal casing with electric junctions. The device front panel features a speed selector, a signal lamp which indicates normal operation of the controller.

The controller has five speeds selectable by means of a speed selector to one of the five fixed positions or «O» (Off). The controller is equipped with TK terminals for connection of the thermal contact built into the fan motor. When actuated the thermal contact cuts voltage supply to the fan motor. The controller also has terminals L1, N for connection of external equipment (e. g. air damper actuators). Setting the controller knob to «O» cuts the voltage supply to the fan motor.

The maximum current for pin N, L1 is 2 A.

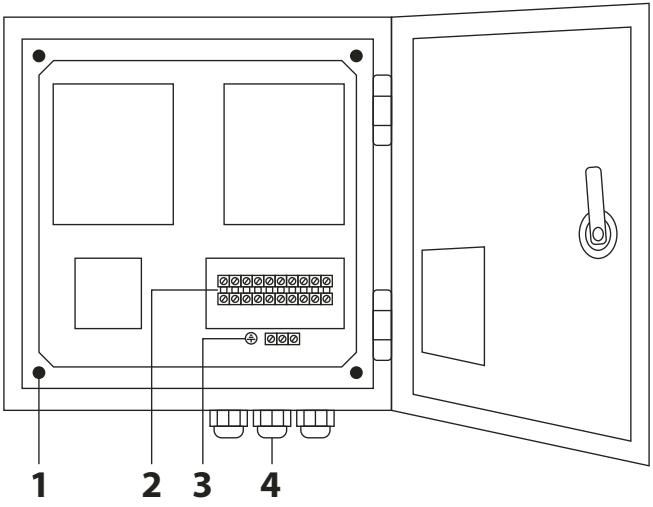
MOUNTING AND SET-UP

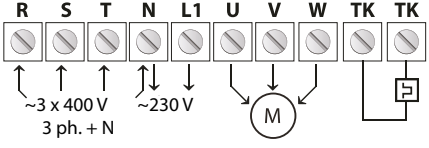
ATTENTION! Following the device transportation or storage under temperatures below zero let the unit warm up in the specified operating conditions for at least 4 hours.

ATTENTION! Mount the device vertically for proper operation

- Check the device visually for any damage to the casing.
- Open the device front panel.
- Fasten the controller to the mounting surface using mounting holes 6 in the rear wall of the unit.
- Complete the electrical connections according to the wiring diagram. The external wires are connected to the device by means of bolt-and-nut terminals. The cables are routed into the unit through the cable glands.
- The external lead-in must be equipped with an automatic switch built into the stationary wiring.
- Supply the power voltage and start the device.

ATTENTION! If the thermal contact of the fan motor or thermostat could not be connected to the controller, it is necessary to install jumpers between the TK contacts.





1 – mounting holes, 2 – terminals, 3 – grounding, 4 – hermetic seals.
R, S, T – supply voltage ~3x400 V/50–60 Hz; N – neutral; L1 – unregulated output, phase (~230 V/50–60 Hz/2 A); U, V, W – regulated motor output; TK, TK – TK control for thermal protection of motors.

TECHNICAL MAINTENANCE

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.
ATTENTION! Do not allow liquid to get on electrical components!

TROUBLESHOOTING

Trouble	Possible reasons	Troubleshooting
Device is not working.	Limited or no connection.	Check the correct connection to the electrical power mains.
Fan is not rotating when the controller is on.	Minimum fan rotation speed is set incorrectly.	Adjust the minimum fan rotation speed.

STORAGE AND TRANSPORTATION REGULATIONS

- Store the unit in the manufacturer's original packaging box in a dry closed ventilated premise with temperature range from +5 ˚C to +40 ˚C and relative humidity up to 70 %.
- Storage environment must not contain aggressive vapors and chemical mixtures provoking corrosion, insulation, and sealing deformation.
- Use suitable hoist machinery for handling and storage operations to prevent possible damage to the unit.
- Follow the handling requirements applicable for the particular type of cargo.
- The unit can be carried in the original packaging by any mode of transport provided proper protection against precipitation and mechanical damage. The unit must be transported only in the working position.
- Avoid sharp blows, scratches, or rough handling during loading and unloading.
- Prior to the initial power-up after transportation at low temperatures, allow the unit to warm up at operating temperature for at least 3-4 hours.

MANUFACTURER'S WARRANTY

The product is in compliance with EU norms and standards on low voltage guidelines and electromagnetic compatibility. We hereby declare that the product complies with the provisions of Electromagnetic Compatibility (EMC) Directive 2014/30/EU of the European Parliament and of the Council, Low Voltage Directive (LVD) 2014/35/EU of the European Parliament and of the Council and CE-marking Council Directive 93/68/EEC. This certificate is issued following test carried out on samples of the product referred to above.

The manufacturer hereby warrants normal operation of the unit for 24 months after the retail sale date provided the user's observance of the transportation, storage, installation, and operation regulations. Should any malfunctions occur in the course of the unit operation through the Manufacturer's fault during the guaranteed period of operation, the user is entitled to get all the faults eliminated by the manufacturer by means of warranty repair at the factory free of charge. The warranty repair includes work specific to elimination of faults in the unit operation to ensure its intended use by the user within the guaranteed period of operation. The faults are eliminated by means of replacement or repair of the unit components or a specific part of such unit component.

The warranty repair does not include:

- routine technical maintenance
- unit installation/dismantling
- unit setup

To benefit from warranty repair, the user must provide the unit, the user's manual with the purchase date stamp, and the payment paperwork certifying the purchase. The unit model must comply with the one stated in the user's manual. Contact the Seller for warranty service.

The manufacturer's warranty does not apply to the following cases:

- User's failure to submit the unit with the entire delivery package as stated in the user's manual including submission with missing component parts previously dismounted by the user.
- Mismatch of the unit model and the brand name with the information stated on the unit packaging and in the user's manual.
- User's failure to ensure timely technical maintenance of the unit.
- External damage to the unit casing (excluding external modifications as required for installation) and internal components caused by the user.
- Redesign or engineering changes to the unit.

- Replacement and use of any assemblies, parts and components not approved by the manufacturer.
- Unit misuse.
- Violation of the unit installation regulations by the user.
- Violation of the unit control regulations by the user.
- Unit connection to power mains with a voltage different from the one stated in the user's manual.
- Unit breakdown due to voltage surges in power mains.
- Discretionary repair of the unit by the user.
- Unit repair by any persons without the manufacturer's authorization.
- Expiration of the unit warranty period.
- Violation of the unit transportation regulations by the user.
- Violation of the unit storage regulations by the user.
- Wrongful actions against the unit committed by third parties.
- Unit breakdown due to circumstances of insuperable force (fire, flood, earthquake, war, hostilities of any kind, blockades).
- Missing seals if provided by the user's manual.
- Failure to submit the user's manual with the unit purchase date stamp.
- Missing payment paperwork certifying the unit purchase.

FOLLOWING THE REGULATIONS STIPULATED HEREIN WILL ENSURE A LONG AND TROUBLE-FREE OPERATION OF THE UNIT

USER'S WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE PURCHASE DATE STAMP

Quality Inspector's Stamp

Sold by
(name and stamp of the seller)

Manufacture Date

Purchase Date

Certificate of acceptance

RSA5D _____

The fan is recognized as serviceable.