STR-3

STANDARD 3-PHASE 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 STR-3 series of transformer fan speed controllers regulate the rotational speed of three-phase voltage controllable motors by varying the output voltage. They are equipped with auto-transformers and control the speed manually in five steps. The used technology provides a regulated output voltage with a perfect sinusoidal shape.

ARTICLE CODES

Article code	Rated max. current [A]
STR-3-35L10	3,5
STR-3-50L10	5,0
STR-3-75L10	7,5
STR-3100L10	10,0
STR-3130L10	13,0

INTENDED AREA OF USE

- Speed control of voltage controllable 230 VAC three phase motors
- For indoor use only

TECHNICAL DATA

- Supply voltage: 230 VAC / 50—60 Hz
- Maximum motor current: depends on the version (see article codes)
- Unregulated output: 230 VAC
- Wide power range
- 5-step rotary switch for manual control plus off-position
- LED status indication
- Enclosure: sheet steel (RAL 7035, polyester powder coating)
- Protection standard: IP54 (according to EN 60529)
- Operating ambient conditions:
  - Temperature: -20—35 ºC
  - 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

CE

WIRING AND CONNECTIONS

Connections	
Pe	Earth terminals
R	Power supply 3*230 VAC / 50—60 Hz
S	
T	
N	Unregulated output, neutral
L1	Unregulated output, phase (230 VAC / 50—60 Hz)
U	Regulated output to motor
V	
W	

⚠ ATTENTION

Make sure you use cables with an appropriate diameter.

MOUNTING INSTRUCTIONS IN STEPS

Before you start mounting the STR-3, read carefully *"***Safety and Precautions"** and follow these steps. Choose a smooth solid surface for installation (a wall, panel, etc.).

Follow these steps:

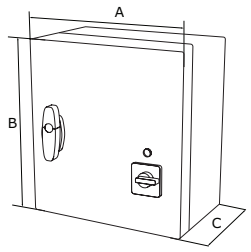
1. Open the door of the controller. Mind the wires that connect the rotary switch with the autotransformer. The mounting holes are on the inside back panel of the enclosure and are covered with blanking plugs.
2. Mount the enclosure using corrosion resistant screws or bolts. Mind the correct mounting position and unit mounting dimensions (see **Fig. 1** *Mounting dimensions* and **Fig. 2** *Mounting position*).
3. Pay attention to 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.

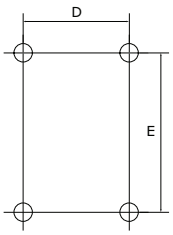
Not respecting the abovelisted rules can reduce service life and relieves the manufacturer of any responsibilities.

4. Once secured in position, the mounting screws or bolts should be sealed to maintain the IP rating of the enclosure.

5. Because the controller enclosure is made of metal, it must be earthed and bonded to other existing metal surfaces.

Fig. 1 Mounting dimensions

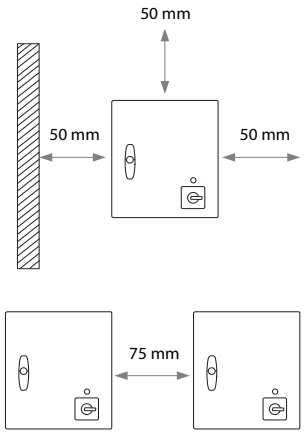




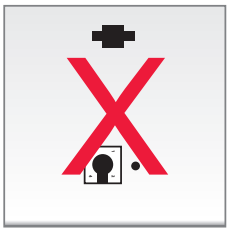
Article code	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
STR-3-35L10	300	325	185	255	255
STR-3-50L10	300	325	185	255	255
STR-3-75L10	300	425	185	255	255
STR-3100L10	300	425	185	255	355
STR-3130L10	300	423	235	255	355

Fig. 2 Mounting position

Correct



Incorrect



6. 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.

6.1 Connect the power supply lines (terminals R, S, T and PE);

6.2 Connect the motor(s) (terminals U, V, W and PE) ;

6.3 If applicable, connect the unregulated output (L1 and N). It can be used to supply a 230 VAC valve, lamp, etc. when the knob is not at '0' position (see **Table 1** below).

⚠ ATTENTION

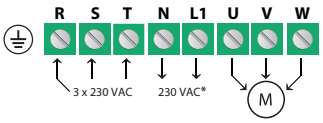
A safety isolator/disconnect switch should be installed on the mains electricity side of all motor drives.

⚠ ATTENTION

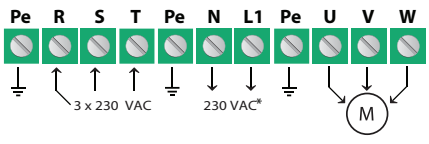
The earth wire (green-yellow) of the electrical supply and of any equipment connected to the controller must be connected to the terminals marked as PE.

Fig. 3 Wiring and connections

STR-3-35L10, STR-3-50L10, STR-3-75L10



STR-3100L10, STR-3130L10



**** Do not connect N from the power supply network.***

ATTENTION

All works must be carried out with equipment fully isolated from the power supply.

ATTENTION

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

7. Close the cover.
8. Turn the knob at '0'.
9. Tighten the cable glands.
10. Switch on the mains supply.
11. Make sure the transformer controller can operates normally (consider an isolating switch).
12. Turn the knob into the relevant position to adjust the output voltage.

Optional settings

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

Table 1 Voltage

Knob position	0	1	2	3	4	5
Regulated output [VAC]	0	80	110	140	170	230
Unregulated output [VAC]	0	230	230	230	230	230

VERIFICATION OF INSTALLATION

ATTENTION

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

After connecting the unit to the mains supply, the green LED on its cover should light up indicating that the controller is supplied.

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.