

5-step Control | AC fans

Manual air curtain control

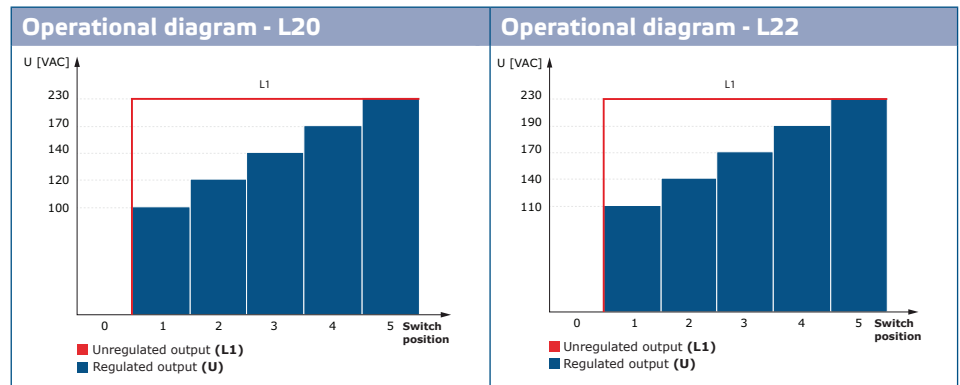


SOLUTION DESCRIPTION

This solution controls an air curtain with single-phase voltage controllable motors and a maximum current of 20 A. It regulates the air volume of an air curtain in five steps by changing the fan speed manually via the rotary switch. Air curtains generate a stream of directed air – heated or unheated – over the door or gate opening to protect the indoor environment from entering draughts, cold air, insects, dust, or pollution. Typically, this solution is applied to control air curtains in industrial applications, such as production and logistics halls, warehouses, or exhibition halls.

Operational diagrams

The speed of the air curtain is changed by the rotary switch. The rotary switch is placed on the front panel of the controller and has 5 steps for the fan speed plus the OFF position. In the OFF position (zero), the air curtain is disabled.



The unregulated output is active when the air curtain is enabled. Because this output is either ON (230 Volt) or OFF (0 Volt), it is called 'unregulated output'. The maximum current of this output is 2 A. It can be used to control a water valve to regulate the flow of hot water to the LPHW coil.

This solution includes contact for remote start/stop via an external switch, such as a door contact. When a door contact is activated the air curtain starts running at a selected speed.

The TK monitoring function deactivates the motor in case of overheating. If the motor is not equipped with TK contacts, bridge both TK terminals of the STRA1 controller to simulate normal motor temperature. After a power failure, the air curtain automatically restarts.

Autotransformer technology is used to reduce the motor voltage and the fan speed in 5 steps. This speed controller is therefore only suitable for voltage controllable motors. If you are not sure whether your motor is voltage controllable, it is best to contact the motor manufacturer. Autotransformer technology is very reliable and robust. It generates a motor voltage with perfect sinusoidal shape. This results in exceptionally quiet motor operation and extended service life. A special impregnated coating reduces the electrical noise from the autotransformers.

Typical applications

- Manual control of air curtains with single-phase motors controllable by voltage
- Manual 5-step control of air curtains with the combined motors current up to 20A
- Manual 5-step control of air curtain with the remote START/STOP via an external switch, such as a door contact
- Control of air curtains used in large door or gate openings in buildings such as manufacturing, warehouse, logistics halls, or exhibitions centers
- For indoor use only

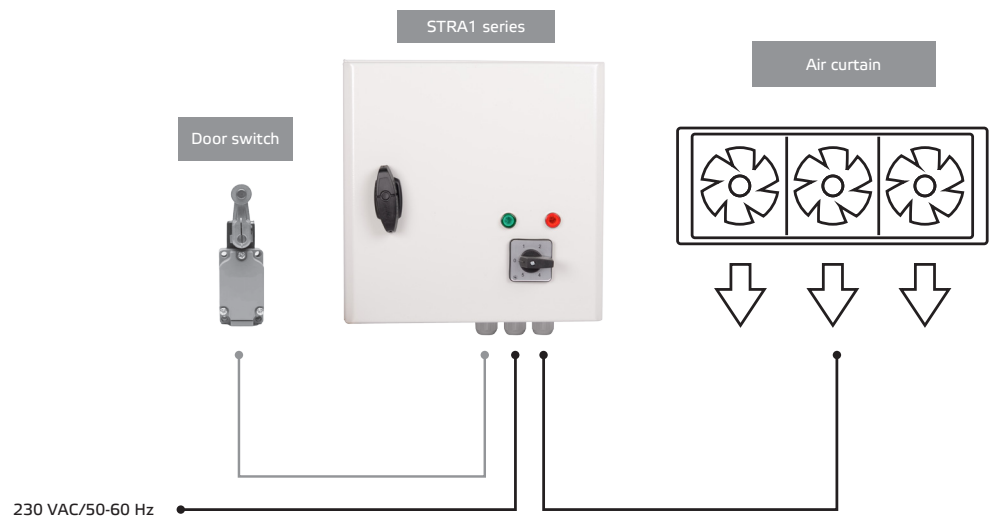
TECHNICAL DATA

The STRA-1 speed controller shall be used for indoor installation and can be surface mounted. The enclosure is made of high-quality r-ABS plastics (models 1,5A up to 7,5A) or steel sheet (models 10A up to 20A). It offers IP54 protection against ingress of dirt, dust, and moisture.

- Supply voltage: 230 VAC / 50–60 Hz
- Maximum (combined) motor current: 1,5 - 20,0 A, depending on the STRA1 version
- Unregulated output: 230 VAC / 2A
- TK monitoring for thermal motor protection
- Auto restart after power failure
- 230 VAC alarm output
- LED status indication
- 2 dry contact inputs for remote ON / OFF switching
- Operating ambient conditions: Temperature: -20–35 °C, Rel. humidity: 5–95 % rH (non-condensing)

WIRING AND CONNECTIONS

One example of the solution is shown in the connection diagram below, different combinations are possible.



Install the products following the mounting instructions on the corresponding products' pages on sentera.eu.