



Features and Benefits

- Infinitely variable speed control
- Minimum speed adjustment by internal trimmer
- Flush or surface mounting

Technical Overview

Designed for single-phase voltage controllable motors with a maximum current of 1.5 or 3A. The minimum speed can be adjusted via an internal trimmer.

The unregulated output is active when the motor is enabled. The enclosure allows inset mounting (IP44) or surface mounting (IP54).

Microprocessor controlled to guarantee accurate motor control and to minimise motor noise. Phase angle control (Triac technology) is used to vary the motor voltage and to regulate the motor speed. This variable speed controller is often used to ceiling fans, bathroom exhaust fans, extraction fans etc.

Product Codes

FC-SDY-1.5	Electronic speed controller 0.1 to 1.5A
FC-SDY-3	Electronic speed controller 0.2 to 3A

Specification

Supply voltage	230Vac/1Ph/50-60Hz
Unregulated output	U _{min} - U _s
Minimum speed adjustment	20 to 70% of U _s
Unregulated output	230Vac @ 2A
Control type	Manual
Dimensions	87 x 82 x 63.5mm
Ambient:	
Temperature	0 to 40°C
Humidity	5 to 95% RH non-condensing
Protection category:	
Flush	IP44
Surface	IP54
Country of origin	Bulgaria
Conformity	EMC, LVD, CE & UKCA Marked

WEEE Directive:



At the end of the products useful life please dispose as per the local regulations. Do not dispose of with normal household waste. Do not burn.



Motor Compatibility

Electronic speed controllers can only be connected to motors having appropriate characteristics. Motors must be voltage controllable, asynchronous, squirrel caged and Class 'F' wound. They should be direct driven (not belt driven), with standard or external, high resistance rotors. The motor should be air cooled and should have a frame size sufficient to dissipate the additional heat that is generated when running at low speed or low airflow. It is recommended that motors have internal thermal protection. Two or three wire motors can be used.

The speed controllers operate most efficiently with conventional split capacitor or shaded pole motors. Six or eight pole motors are suitable but four pole motors are preferred as they have a greater control range. Two pole motors can be used but they are difficult to control at low speeds (below 600 rpm) and can cause start-up problems at low voltages. **If there is any doubt regarding a motor's compatibility with electronic speed controllers, contact the fan or motor manufacturer for guidance.**

Selection Criteria & Nominal Current Range

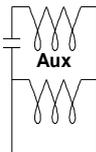
A motor must be well loaded for optimum speed control, so choose one that is just big enough for the application. The load on the motor must be at least 75% of the nominal power of the motor at maximum speed. Choose a speed controller with a maximum current that is just larger than the nominal motor running current. For example, if the motor has a rating of 2.95 amps then select a speed controller with a maximum current of 3 amps. Several motors can be connected to a single speed controller, so long as the speed controller's maximum current is not exceeded.

The speed controller Nominal Current Range stated in the selection tables, refers to the nominal current rating of the motor. The Nominal Current Range is based on a maximum ambient temperature of 30°C. All electronic speed controllers will accept a motor starting current that is up to 3 x greater than the maximum nominal current of the speed controller.

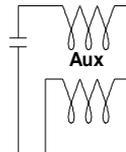
2 & 3-Wire Motors

The FC-SDY speed controllers are suitable for use on two or three wire motors. An additional terminal is provided for this purpose. If a two wire motor is used, the auxiliary terminal can be used to bypass the main switch. Alternatively, it can provide a 230Vac switched output to ancillary equipment.

2-Wire



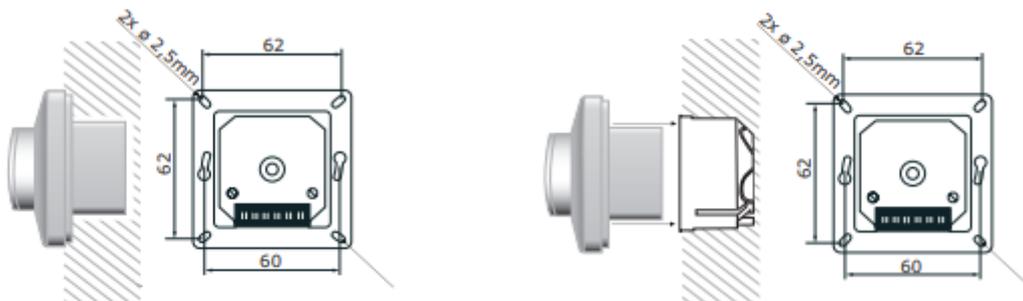
3-Wire



Mounting

Flush mounting

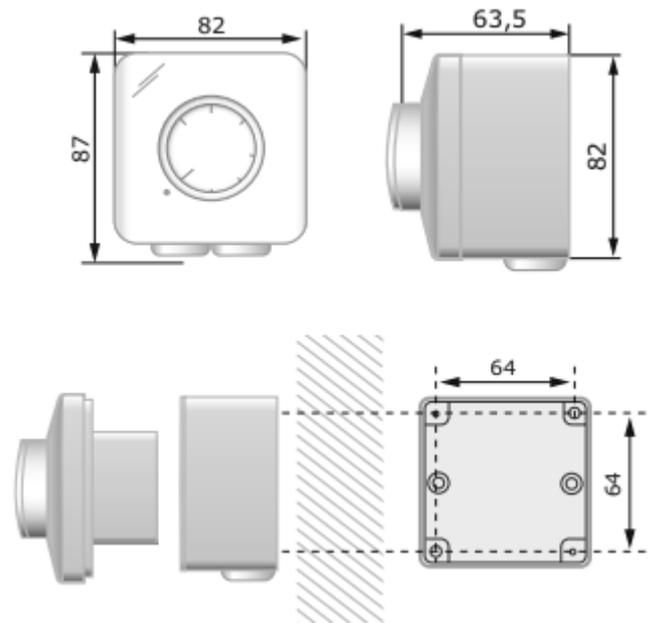
1. Disconnect the mains supply.
2. Remove the knob by pulling it out.
3. Unscrew the washer to remove the cover of the external enclosure.
4. Do the wiring according to the wiring diagram.
5. Mount the internal enclosure into the wall according to the mounting dimensions shown below.
6. Adjust the Vmin trimmer in order to set the minimum speed. The factory setting is 100Vac.
7. Mount back the cover and secure it with the washer.
8. Put back the knob and turn it to off position.
9. Turn on the power supply



Mounting (continued)

Surface mounting

1. Disconnect the mains supply.
2. Remove the knob by pulling it out.
3. Unscrew the washer to remove the cover of the external enclosure.
4. Mount the external enclosure onto the surface by means of the screws and dowels adhering to the mounting dimensions shown below.
5. Insert the cables through the grommets.
6. Do the wiring according to the wiring diagram
7. Insert the internal enclosure into the external one and fix it using the screws. NOTE Mount the unit so that the terminal block and connections are at the lower side.
8. Adjust the Vmin trimmer in order to set the minimum speed. The factory setting is 100Vac.
9. Mount back the cover and secure it with the washer.
10. Put back the knob and turn it to off position.
11. Turn on the power supply



Connections

- 1 Minimum speed trimmer
- L Power supply (230Vac ±10% 50/60Hz)
- L1 Unregulated output (230Vac ±10% 50/60Hz I_{max} 2A)
- N Power supply, neutral
- N Unregulated output, neutral
- U2 Regulated output to motor, neutral
- U1 Regulated output to motor, live

Connections are via spring contact type terminal block
 Suitable for wire 1.5mm²



Whilst every effort has been made to ensure the accuracy of this specification, Sontay cannot accept responsibility for damage, injury, loss or expense from errors or omissions. In the interest of technical improvement, this specification may be altered without notice.