

TE31/TE32 Series

Induction Motor Speed Controller

User's Manual



Scan to view online



- Wire connection Panel, Easy wiring, Easy Controlling
- Slow Start(SS) - Slow Down(SD) - Instantaneous Brake
- Internal and external speed control
- DIN rail installation of European standard

1. Specs

Type	TE31	TE32
Power input (V)	Single phase AC100-115	Single phase AC200-230
Power frequency (Hz)	50 60	50 60
Current (A)	3	
Motor power	Max. ≤ 135W	
Range of speed controlling	90~1400 90~1700	90~1400 90~1700
Functions	• Speed control : Two kinds of speed control internally • Instantaneous Brake : After 0.5 second Electric brake, No function for Position holding • Slow start/Slow down : during unload situation in 0~25 seconds, it will effect by inertia	
Temperature environment	0 ~ +40°C	
Humidity environment	Max. <85%	
Dimension (mm)	104(L) X 65(W) X 44(H)	
Weight (g)	160g	

⚠ DANGER

- Take protective device of over current, instant stop, over temperature, ground fault interrupter. **⚠ May cause dead or serious injury etc.**
- Do not use product near explosive, water, corrosive gas, or combustible material. **⚠ It may cause fire**
- Do not forcibly put stress, or lead a heavy article on or stuff foreign matter into it. **⚠ It may cause electric shock, trouble, and damage**
- Avoid damage caused by earthquake, fire, artificial accident, please set and fix it for confirmation. **⚠ Prevent electric shock, injury, fire, trouble and damage**
- Install an external emergency stop circuit to turn the power off in the instant halt of operation. **⚠ Prevent electric shock, injury, fire, trouble and damage**
- Connect the Controller and Motor to ground. **⚠ Prevent electric shock**
- Neither reach nor touch the Controller terminals while power is on. **⚠ It may cause electric shock, trouble, and damage**
- Execute safety examination after earthquake **⚠ Prevent fire, injury, electric shock**
- Have a professional expert set the wiring construction accurately. **⚠ Prevent electric shock, injury, fire, and trouble**
- Do not work for moving, wiring or inspection with the power on **⚠ Prevent electric shock, injury, fire, and trouble**
- Do not touch the internal parts of the Controller. **⚠ It may cause electric shock, scald**

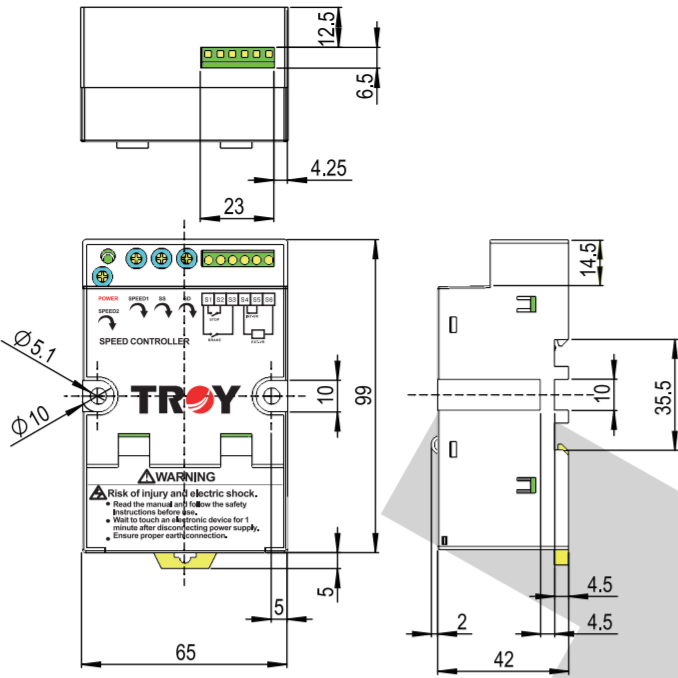
- Do not stand/sit on product or put heavy article on it. **⚠ It may cause electric shock, trouble, damage**
- Ensure that wiring has been correctly done. **⚠ Prevent injury trouble, damage**

※Please dealing according to industry littering as discarding the product.

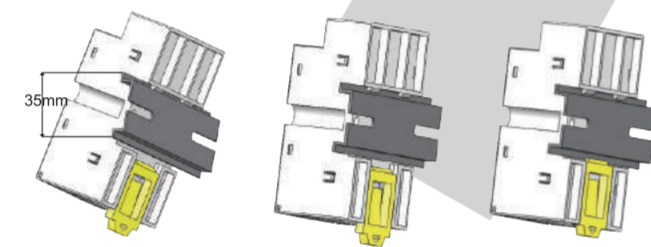
⚠ ATTENTION

- When conducting trial operation, make Motor fixed. Confirm motion before composing machine system. **⚠ May cause injury or product damage**
- When temperature of Controller or Motor is rising, please do not touch it. **⚠ Prevent injury**
- Do not reform, assemble or repair the Controller. **⚠ It may cause scald.**
- Move the product with a great care so as to prevent from the danger such as tumble or turnover. **⚠ It may cause electric shock, injury, fire.**
- When power recovers after interruption, don't approach devices since it may restart operation suddenly. **⚠ It may cause injury, damage.**
- Please follow the appointed voltage. **⚠ It may cause injury.**
- Do not cut-in or off the power frequently. **⚠ Prevent injury, fire, electric shock**
- Do not use damaged Controller or Motor. **⚠ It may cause scald, fire.**
- Do not put obstacle around Controller and Motor or it'll be a fire. **⚠ It may cause scald, fire.**
- Please have the cause troubleshooting as tripping, and restart after safety confirming. **⚠ It may cause injury, fire, electric shock**
- Have an expert execute maintenance and inspection. **⚠ Prevent injury**
- Neither block nor stuff the aspiration/exhaust vent with foreign particle. **⚠ It may cause electric shock, trouble, fire.**
- Use Controller and Motor in designed combination. **⚠ Prevent fire**
- Do not put a heavy impact on shaft of Motor and Controller. **⚠ It may cause trouble.**
- Please turn power off as stop using for a long period. **⚠ It may cause injury from wrong operating.**
- Mount the product on an incombustible material such as metal. **⚠ It may cause fire**
- Do not set magnetic contactor in main power during Motor rotating or stopping. **⚠ It may cause electric shock, trouble, fire.**
- Do not drive Motor axis from external. **⚠ It may cause fire, trouble, electric shock.**

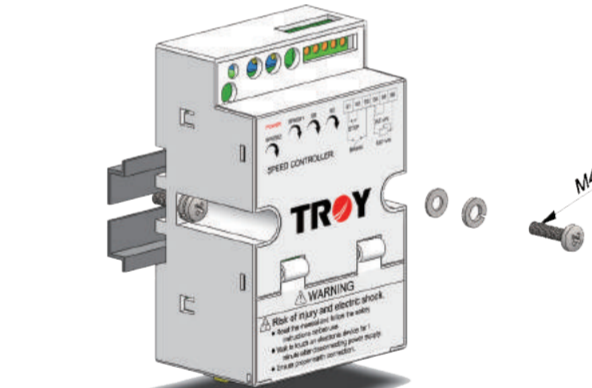
2. Dimension



3. Installation



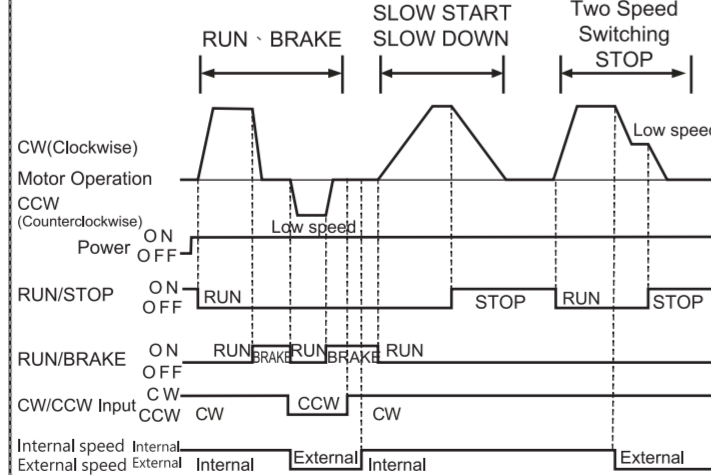
Using DIN rail in 35mm size



Using two screws (M4 : No attachment, Min> 15mm) fastening to installing hole of two sides of controller

4. Sequence diagram

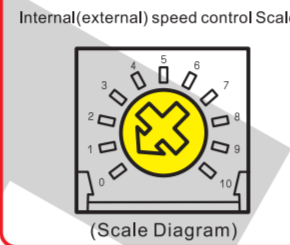
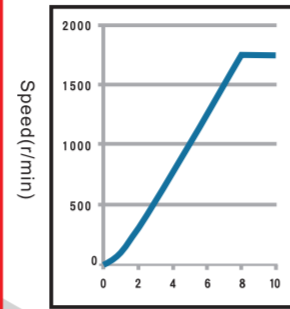
Below is diagram for switching two speed. Setting high speed internally, and low speed externally.



5. Function Instruction

Instruction

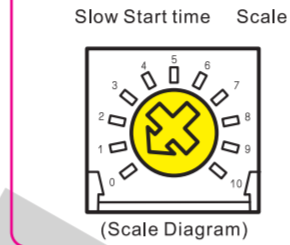
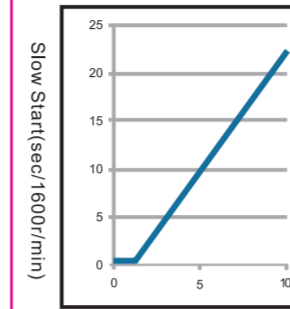
• **Internal Speed control**
Speed range:
60Hz - 90~1700r/min ;
50Hz - 90~1400r/min ;
Rotating clockwise with internal knob will be faster. It can also control speed with VR in long distance occasion.



Speed 2 Internal control

Instruction

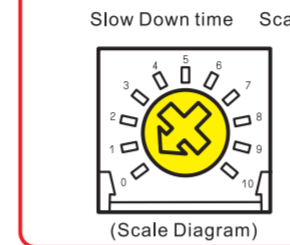
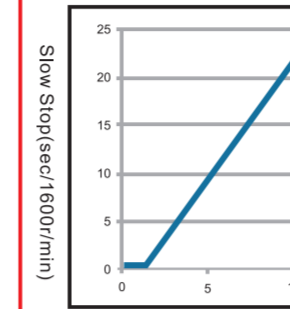
• **SLOW START**
It will have effect on start time (unload) and two parts of speed control (low to high speed)
Rotating clockwise with SS knob will lengthen the START time. Original set is scale "0"
(No SLOW START function)



Slow Start Control

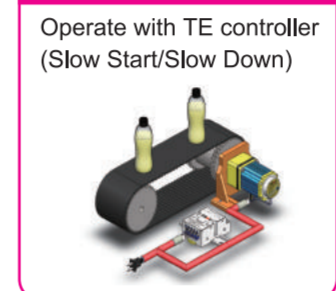
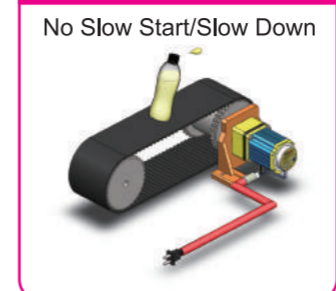
Instruction

• **SLOW DOWN**
It will have effect on stop time (unload) and two parts of speed control (high to low speed)
Rotating clockwise with SD knob will lengthen the STOP time. Original set is scale "0"
(No SLOW DOWN function)



Slow Down Control

Example of Slow Start/Slow Down



Notice Important

- Don't control RUN/STOP by power switch(SW1) immediately but using SW2. Avoid powering on and rotating at the same time.
- Two parts speed switching will be affected by SS and SD.
- It can rotate oppositely in a flash with Reversible Motor as 6R · 8R · 9R series.
- It must be stopped before changing the rotating direction with Induction Motor as 6I · 8I · 9I series.
- High frequency will rise the temperature, make temperature switch off and stop rotating, so it must upon 4 seconds

Motor output power	Cycle
6-40W	above 2 seconds (RUN for 1 second and STOP for 1 second)
60W · 90W · 135W	above 4 seconds (RUN for 2 seconds and STOP for 2 seconds)

- The brake is Electric brake. After braking for 0.5 second, it don't have holding torque. If you need holding torque, you can choose Electromagnetic Brake Motor.
- Don't use controller as open collector to control TE31/32 in RUN/STOP/BRAKE/INTERNAL-EXTERNAL to control speed.

※Please inquiry with local officer or distributor to choose product

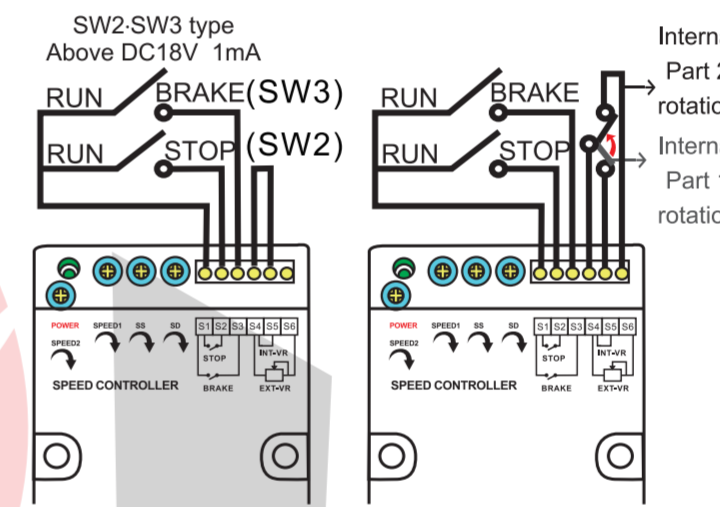


※Responsibility of environment protection
We place important on spreading environment protection. Each package can be recycled. Please using litter dealing process and recycling to replace the old product.
By your attending, we protect the earth together.
※ We won't inform individually if we promote the product characteristics. Please inquiry with each office. Thank you very much.

7. Wiring for control

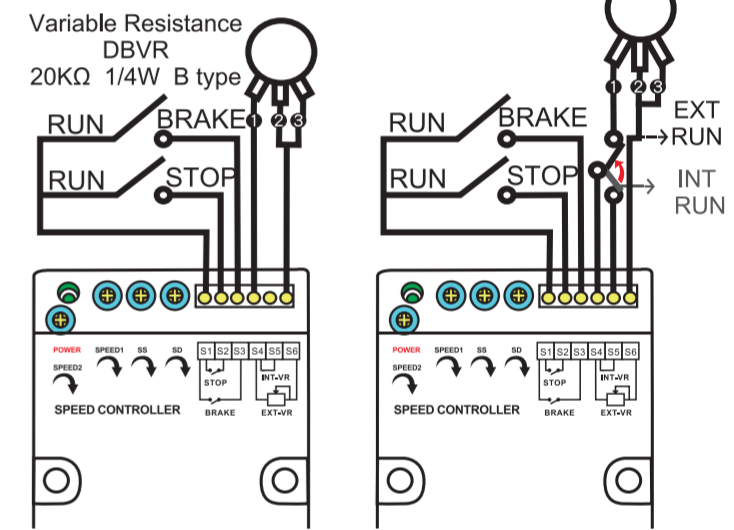
Speed Control - Internal

- 1 One Part Speed Control
- 2 Two Parts Speed Control
- 7 One Part Speed Control
- 2 Two Parts Speed Control



※As two part of speed control, Part 1 use SPEED 1 to control and Part 2 use SPEED 2 to control.

Speed Control - External (Variable Resistance)



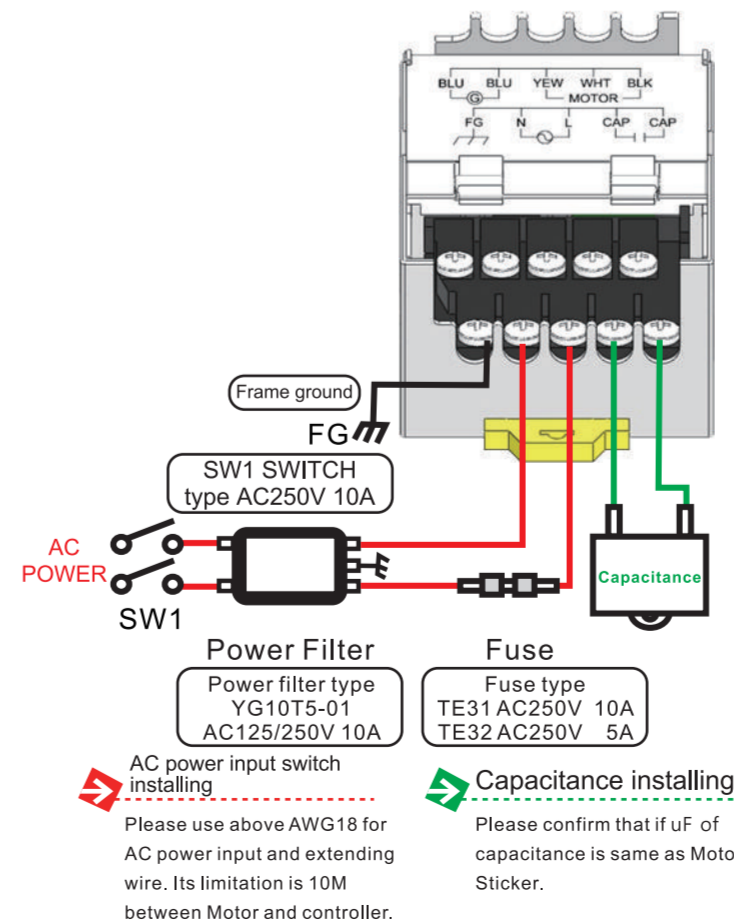
※Notice when using variable resistance, the SPEED 2 must be adjusted to bottom counterclockwise. Or it will affect the range for speed control. Scale was set as zero originally.

※The wire length of controlling is limited below 2M.

6. Wiring for power

Terminal Instruction

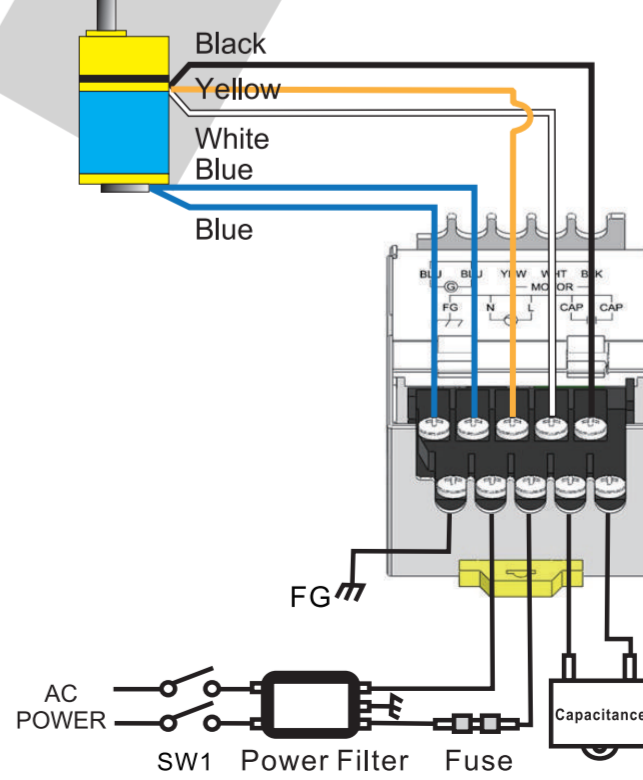
- E F** : Link to Generator wire(blue)
- G H I** : Link to Motor(clockwise)
※As terminal of Motor is black, white and yellow from right to left, the Motor rotates clockwise.
- G H I** : Link to Motor(counterclockwise)
※As terminal of Motor is black, yellow and white from right to left, the Motor rotates counterclockwise.
- J** : FG terminal
- K L** : AC power input
- M N** : capacitance terminal



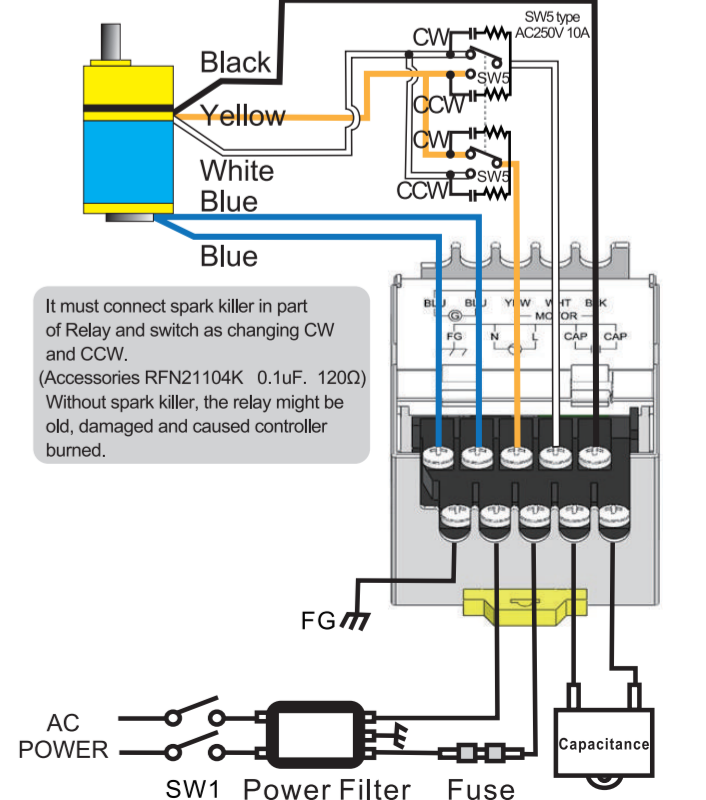
8. Wiring for Motor

Rotating Direction - One direction

※Below wiring example is clockwise.



Rotating Direction - Counterclockwise/Clockwise Switching



It must connect spark killer in part of Relay and switch as changing CW and CCW. (Accessories RFN21104K 0.1uF. 120Ω) Without spark killer, the relay might be old, damaged and caused controller burned.