SPEED CONTROLLER (SR CE TYPE)

1. Characteristics

- Speed controller SR series are developed by the demands of speed variation.
- It uses the IC circuit that our company independently developed and is small, light weight and reliability.
- With acquisition of CE Mark certification, the product guarantees higher reliability.
- The rotating speed of the motor may be adjusted by a speed control variable resistor located at the front of the case and can also operate long-range by an extra speed setter.
- Increase of instantaneous stop function by electromagnetic brake
- Miniaturized type with 11pin plug

■ The product acguired CE mark
(File NO. E9766429E01 Certificate Institute: TUV Rhinland)

■ SPECIFICATIONS

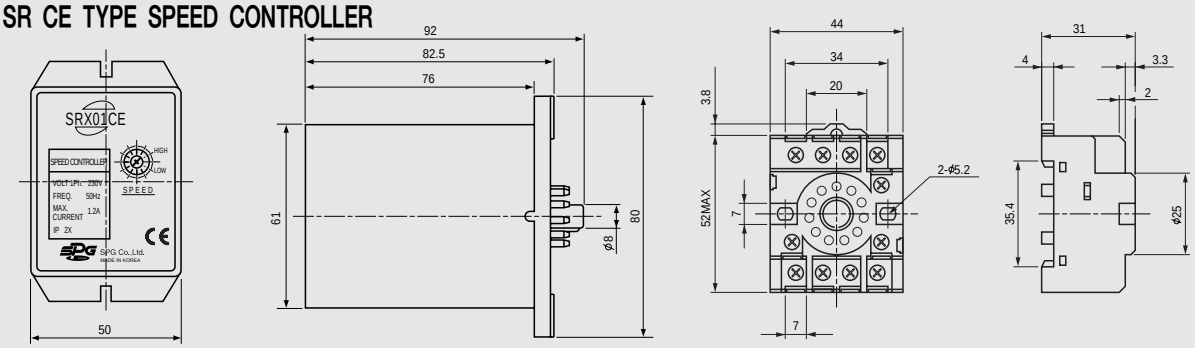
SPEC \ MODEL		SR CE TYPE									
		SRA01CE	SRA02CE	SRB01CE	SRB02CE	SRC01CE	SRC02CE	SRD01CE	SRD02CE	SRX01CE	SRX02CE
Rated Voltage		AC110V 60Hz		AC220V 60Hz		AC100V 50/60Hz		AC200V 50/60Hz		AC220~240V 50Hz	
Operation Voltage Range		±10%									
※1 APPLICABLE MOTOR OUTPUT	INDUCTION	6W	15W~90W	6W	15W~90W	6W	15W~90W	6W	15W~90W	6W	15W~90W
	REVERSIBLE	6W	15W~40W	6W	15W~40W	6W	15W~40W	6W	15W~40W	6W	15W~40W
	E · S	6W	15W~90W	6W	15W~90W	6W	15W~90W	6W	15W~90W	6W	15W~90W
Speed control range		50Hz : 90~1400rpm				60Hz : 90~1700rpm					
Speed variation		5%(standard)									
Speed setting device		Built in external speed setting device attachable									
Braking		Possible to stop for certain period by electric brake									
※2 Braking period		0.5sec(standard)									
Parallel operation		Not suitable for parallel operation									
Slow Run, Slow Stop		none									
Operation Temperature		-10~50℃									
Storage Temperature		-20~60℃									
Ambient humidity		85%Maximum(non condensing)									

※1: Suitable motors are Socket Type Speed Control Motor of ours. (Use for 12V motor T.G)

※2: The electric brake does not have holding toque.

■ DIMENSIONS

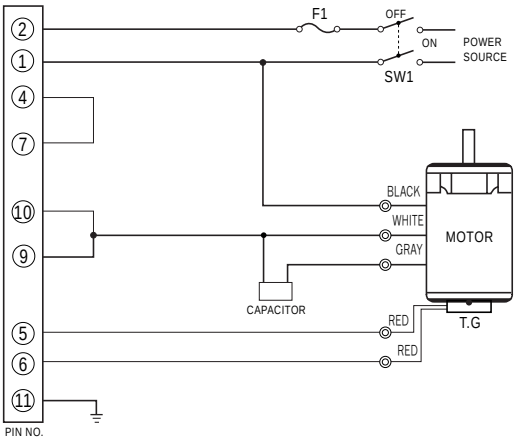
▼ SR CE TYPE SPEED CONTROLLER



SCHEMATIC DIAGRAM

1-1 Uni Direction+Variable Speed

■ INDUCTION MOTOR (6W~90W)
■ REVERSIBLE MOTOR (6W~40W)

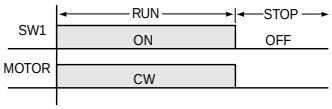


SW1	AC 125V or AC 250V	MIN. 5A
F1	AC 125V or AC 250V	3A

▲For wiring of 220V-240V, 50Hz motor, change gray to brown.

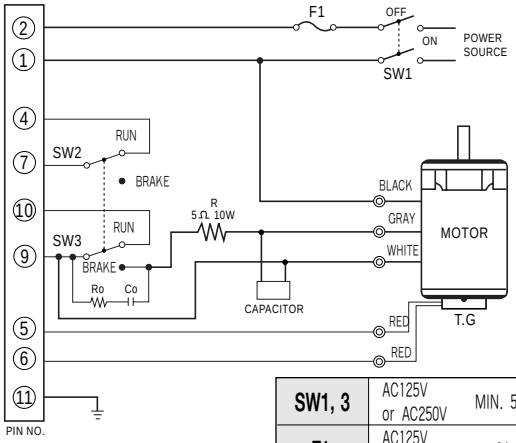
Note)
1. The motor rotating direction is CW when viewed from output shaft. When adjusting to CCW, change and connect white and gray wire of motor.
2. The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 175 for the connection method.

◆ Example of operation



1-2 Uni Direction+Variable Speed+Brake

■ INDUCTION MOTOR (6W~25W)
■ REVERSIBLE MOTOR (6W~25W)

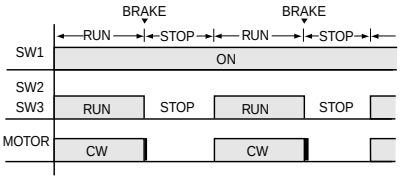


▲For wiring of 220V-240V, 50Hz motor, change gray to brown.

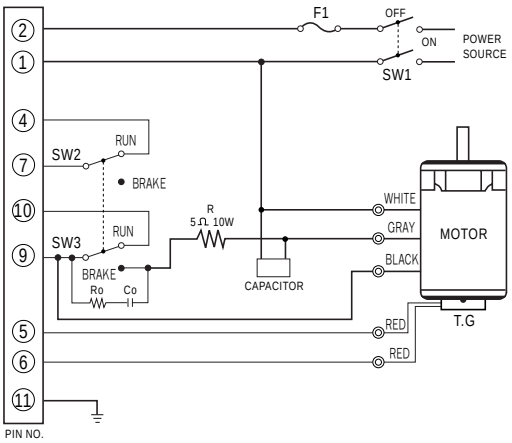
SW1, 3	AC125V or AC250V	MIN. 5A
F1	AC125V or AC250V	3A
SW2	DC 20V 10mA	
Ro,Co	Ro=10~200Ω(MIN. 1/4W) Co=0.1~0.2μF (AC125WV ,AC250WV)	
R	4.7Ω~6.8Ω MIN. 10W	

Note)
1. The motor rotating direction is CW when viewed from output shaft. When adjusting to CCW, change and connect white and gray wire of motor.
2. When switched from Run to Stop, electric brake will function about 0.5 sec. and motor will come to stop instantaneously.

◆ Example of operation



1-3 Uni Direction+Variable Speed+Brake

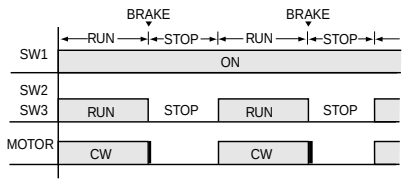


▲For wiring of 220V-240V, 50Hz motor, change gray to brown.

SW1, 3	AC125V or AC250V	MIN. 5A
F1	AC125V or AC250V	3A
SW2	DC 20V 10mA	
Ro,Co	Ro=10~200Ω(MIN. 1/4W) Co=0.1~0.2μF (AC125WV ,AC250WV)	
R	4.7Ω~6.8Ω MIN. 10W	

Note)
1. The motor rotating direction is CW when viewed from output shaft. When adjusting to CCW, change and connect white and gray wire of motor.
2. When switched from Run to Stop, electric brake will function for 0.5sec. and motor will come to stop instantaneously.
3. The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 175 for the connection method.

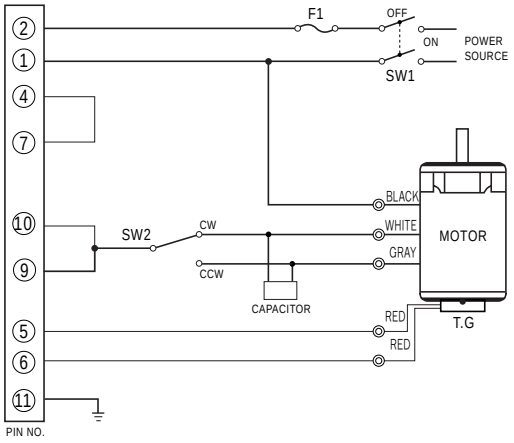
◆ Example of operation



Note)
The power switch should be off and check the PIN number when inserting a control pack into socket groove. (There is a possibility to be burned.)

2-1 Reverse+Variable Speed

■ INDUCTION MOTOR(6W~90W)
■ REVERSIBLE MOTOR (6W~40W)

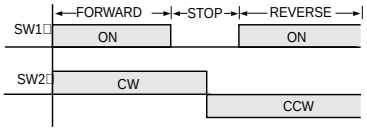


▲For wiring of 220V-240V, 50Hz motor, change gray to brown.

SW1	AC 125V or AC 250V	MIN. 5A
F1	AC 125V or AC 250V	3A

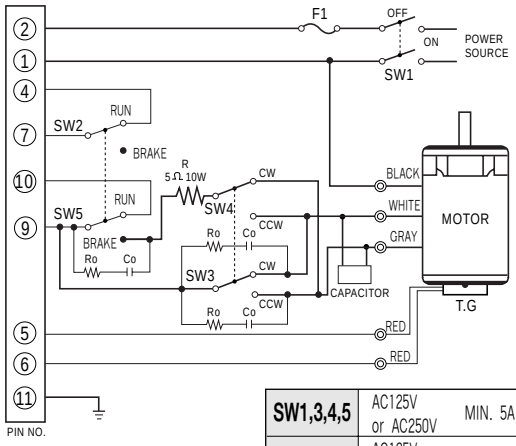
Note)
1. Set "Stop" period for induction motor and switch SW2 after rotation has stopped.
2. Reversible Motor does not need "Stop" period. It has no relation operating SW2 when SW1 is on.
3. The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 178 for the connection method.

◆ Example of operation



2-2 Reverse+Variable Speed+Brake

■ INDUCTION MOTOR (6W~25W)
■ REVERSIBLE MOTOR(6W~25W)

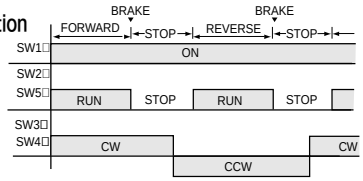


▲For wiring of 220V-240V, 50Hz motor, change gray to brown.

SW1,3,4,5	AC125V or AC250V	MIN. 5A
F1	AC125V or AC250V	3A
SW2	DC 20V 10mA	
Ro,Co	Ro=10~200Ω(MIN. 1/4W) Co=0.1~0.2㎌ (AC125WV ,AC250WV)	
R	4.7Ω~6.8Ω MIN. 10W	

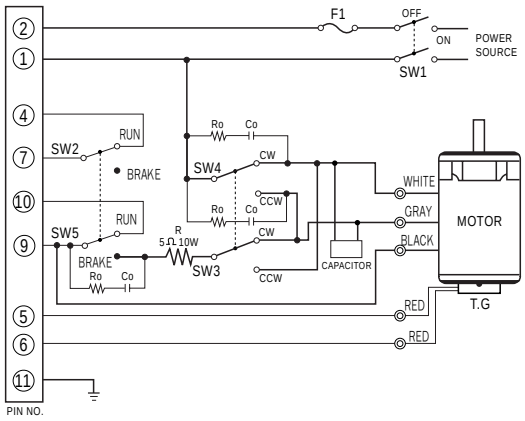
Note)
1. When switched from Run to Stop, electric brake will function for 0.5sec. and motor will come to stop instantaneously
2. Do not operate SW4, SW5 for this 0.5 sec.
3. Changing period of SW4, SW5 should be done quicker than Stop to Run of SW2, SW3

◆ Example of operation



2-3 Reverse+Variable Speed+Brake

■ INDUCTION MOTOR (40W~90W)
■ REVERSIBLE MOTOR (40W)

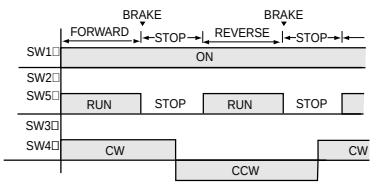


▲For wiring of 220V-240V, 50Hz motor, change gray to brown.

SW1,3,4,5	AC125V or AC250V	MIN. 5A
F1	AC125V or AC250V	3A
SW2	DC 20V 10mA	
Ro,Co	Ro=10~200Ω(MIN. 1/4W) Co=0.1~0.2㎌ (AC125WV ,AC250WV)	
R	4.7Ω~6.8Ω MIN. 10W	

Note)
1. When switched from Run to Stop, electric brake will function for 0.5sec. and motor will come to stop instantaneously
2. Do not operate SW4, SW5 for this 0.5 sec.
3. Changing period of SW4, SW5 should be done quicker than Stop to Run of SW2, SW3
4. The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 178 for the connection method.

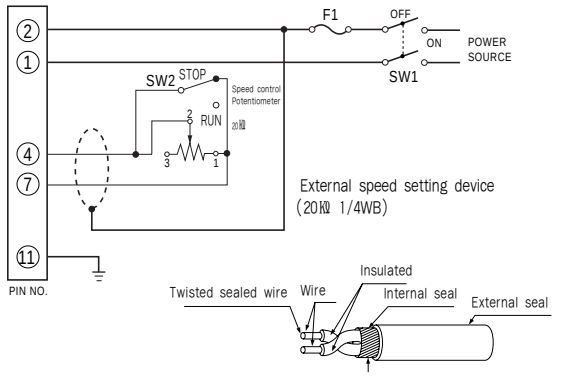
◆ Example of operation



Note)
The power switch should be off and check the PIN number when inserting a control pack into socket groove. (There is a possibility to be burned.)

3-1 External speed setting device

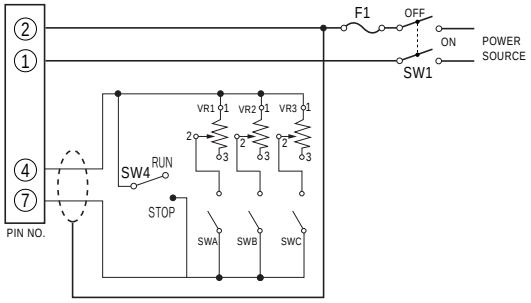
■ When Distance Control is Necessary



External speed setting device to No. 2 pin of the socket

Note)
1. Set the volume to 'LOW'.
2. Shorten the connection cable as much as possible May cause faulty action. In such case use twist shield cable and connect it to No.2 terminal.

■ When Multi-Stage Speed Setting is Necessary

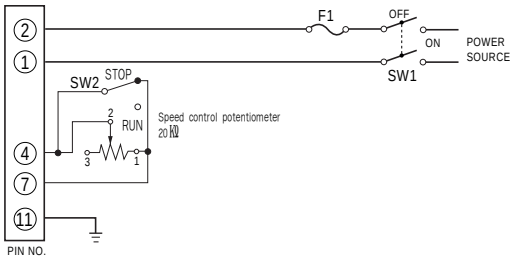


Note)
1. Set the volume to 'LOW'.
2. If multi-stage speed control is needed, install VR1, VR2, and VR3 respectively and the speed can be changed by SWA, SWB, and SWC. The open/close time of the switch is advised to follow the open/close time of the relay contact point.

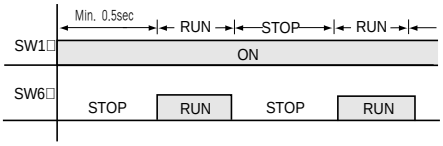
3-2 For prompt start(1)

▼ Without braking

※ When starting of motor is slow while starting signal is input at Run switch(SW1), use external volume VR at SW2 for Run/Stop.



◆ Example of operation



Note)
1. Input time of SW1 should be about 0.5sec quicker than starting signal of SW2.
2. Set the volume "LOW" and use external volume VR to control speed.
3. During Run/Stop operation, control SW2 while SW1 is on. Even with small signal motor can be controlled.
4. When not in use for long period turn SW1 off.

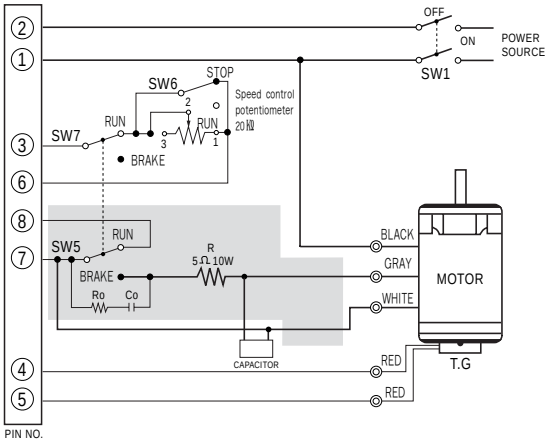
Note)
The power switch should be off and check the PIN number when inserting a control pack into socket groove. (There is a possibility to be burned.)

3-3 For prompt start(2)

▼ With Braking

■ **INDUCTION MOTOR(6W~25W)**

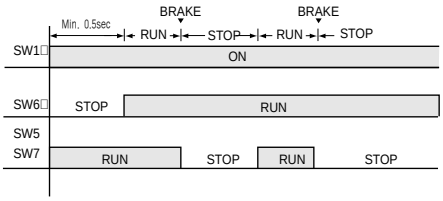
■ **REVERSIBLE MOTOR (6W~25W)**



SW1, 5	AC125V or AC250V	MIN. 5A
F1	AC125V or AC250V	3A
SW6, 7	DC 20V 10mA	
Ro,Co	Ro = 10~200 Ω (MIN. 1/4W) Co = 0.1~0.2㎌ (AC125WV ,AC250WV)	
R	4.7 Ω ~6.8 Ω MIN. 10W	

▲For wiring of 220V-240V, 50Hz motor, change gray to brown.

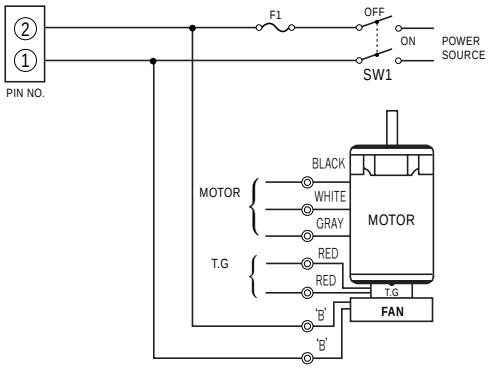
◆ **Example of operation**



Note)

1. This wiring is for unidirection + Variable speed + braking of motors 25W or less. For motors 40W and over ▭ part of wiring is different. Refer to the electrical wiring diagram for the corresponding connection.
2. Input time of SW1 should be about 0.5sec quicker than SW6.
3. Set the volume "LOW" and use external volume VR to control speed.
4. When not in use for long period turn SW1 off.

3-4 Box fan motor connection method



VOLTAGE	LEAD WIRE COLOR 'B'
SINGLE PHASE AC100V~110V	BROWN
SINGLE PHASE AC 200V~240V	YELLOW

▲For wiring of 220V-240V, 50Hz motor, change gray to brown.

※ For the connection of something other than the box fan, refer to the electrical wiring diagram for the corresponding connection.

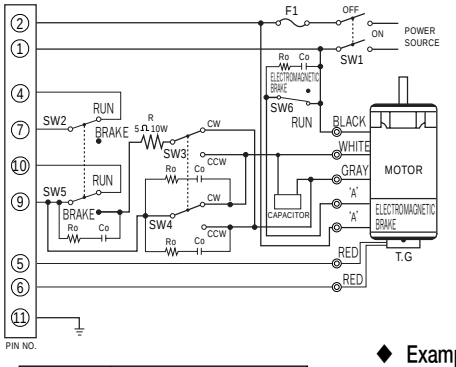
Note)

The power switch should be off and check the PIN number when inserting a control pack into socket groove. (There is a possibility to be burned.)

4-1 Wire connection for electromagnetic brake motor

When electric brake of controller is used at the same time

■ E·S MOTOR (6W~25W)

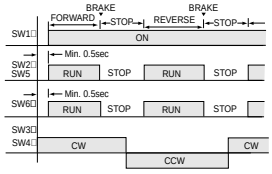


▲For wiring of 220V~240V, 50Hz motor, change gray to brown.

VOLTAGE	LEAD WIRE 'A'
SINGLE PHASE AC100V~110V	Blue
SINGLE PHASE AC200V~240V	Orange

SW1,3,4,5,6	AC125V or AC250V MIN. 5A
F1	AC125V or AC250V 3A
SW2	DC 20V 10mA
Ro,Co	Ro=10~200Ω(MIN. 1/4W) Co=0.1~0.2㎌ (AC125WV ,AC250WV)
R	4.7Ω~6.8Ω MIN. 10W

◆ Example of operation



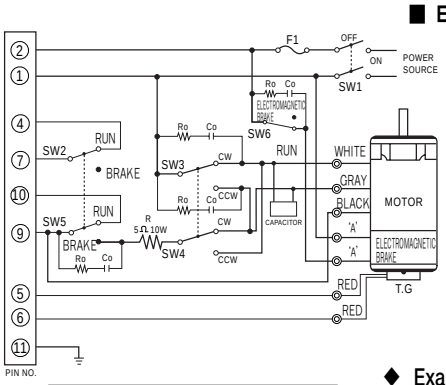
Note)

1. When switched from Run to Stop, electromagnetic brake will function for about 0.5sec. and motor will come to stop instantaneously.
2. Operate SW3, SW4 after the motor has stopped.
3. Changing period of SW3, SW4 should be done quicker than stop to run of SW2, SW5, SW6.
4. Power input for SW1 should be more than about 0.5sec. quicker than starting signals of SW2, SW5, SW6.
5. When Run/Stop, operate with SW2, SW5, SW6 while SW1 is 'On' condition. Even with small signal it can control the motor. Turn SW1 off when not used for long period.

4-2 Wire connection for electromagnetic brake motor

When electric brake of controller is used at the same time

■ E·S MOTOR (40W~90W)

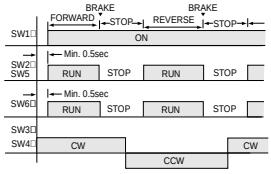


▲For wiring of 220V~240V, 50Hz motor, change gray to brown.

VOLTAGE	LEAD WIRE 'A'
SINGLE PHASE AC100V~110V	Blue
SINGLE PHASE AC200V~240V	Orange

SW1,3,4,5,6	AC125V or AC250V MIN. 5A
F1	AC125V or AC250V 3A
SW2	DC 20V 10mA
Ro,Co	Ro=10~200Ω(MIN. 1/4W) Co=0.1~0.2㎌ (AC125WV ,AC250WV)
R	4.7Ω~6.8Ω MIN. 10W

◆ Example of operation

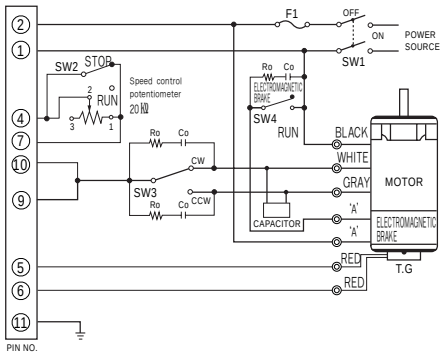


Note)

1. When switched from Run to Stop, electromagnetic brake will function for about 0.5sec. and motor will come to stop instantaneously.
2. Operate SW3, SW4 after the motor has stopped.
3. Changing period of SW3, SW4 should be done quicker than stop to run of SW2, SW5, SW6.
4. Power input for SW1 should be more than 0.5sec. quicker than starting signals of SW2, SW5&SW6.
5. When Run/Stop, operate with SW2, SW5, SW6 while SW1 is On condition. Even with small signal it can control the motor. Turn SW1 off when not used for long period.
6. The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 178 for the connection method.

4-3 Wire connection for electromagnetic brake motor

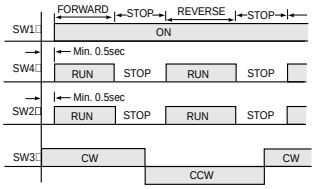
When electric brake of controller is used at the same time



■ E·S MOTOR (6W~90W)

▲For wiring of 220V~240V, 50Hz motor, change gray to brown.

◆ Example of operation



VOLTAGE	LEAD WIRE 'A'
SINGLE PHASE AC100V~110V	Blue
SINGLE PHASE AC200V~240V	Orange

SW1,3,4	AC125V or AC250V MIN. 5A
F1	AC125V or AC250V 3A
SW2	DC 20V 10mA
Ro,Co	Ro=10~200Ω(MIN. 1/4W) Co=0.1~0.2㎌ (AC125WV ,AC250WV)

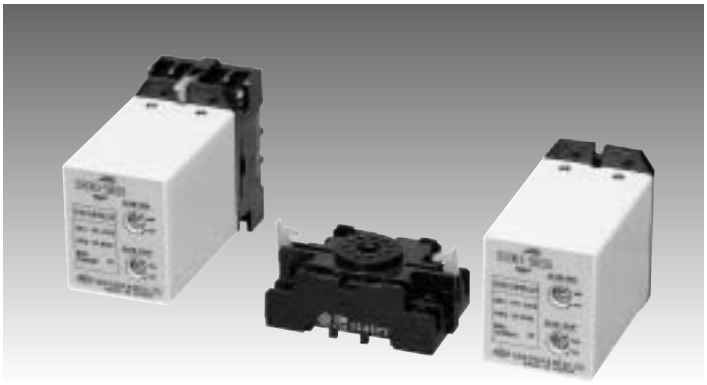
Note

1. Set the stop period to stop and convert to SW2 after rotation has stopped.
2. Input period for power switch SW1 should be about 0.5sec. quicker than the signal of start operating of SW6, SW9.
3. When Run/Stop, operate with SW2, SW4 while SW1 is on. Even with small signal it can control the motor Turn SW1 off when not used for long period.
4. Set the volume low and control the speed with external speed setting device VR.
5. The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 178 for the connection method.

Note)

The power switch should be off and check the PIN number when inserting a control pack into socket groove. (There is a possibility to be burned.)

SPEED CONTROLLER (SOCKET SS HIGH OUTPUT TYPE)



●SOCKET SS TYPE (HIGH OUTPUT)

- Used for induction speed control motors of 6W~90W, reversible speed control motors of 6W~40W and electromagnetic brake speed control motors of 6W~40W.
- Built-in speed setting device on the case enables to control and set the speed of motors.
- Instantaneous stop function is possible by electric brake.
- It is a compact plug-in type with 11pins so it is easy to set and use.
- It has slow run and slow stop functions, so operating and braking are not working rapidly, instead slowly.
- There is time (period) setting device installed to control easily slow run and slow stop function.
- Parallel operation is possible.

※Parallel operation means that with one speed control volume, It can control plural speed controller at same time at same speed.

▼ SPECIFICATIONS

SPEC \ MODEL		SS TYPE				
		SSA03-SRSS	SSB03-SRSS	SSC03-SRSS	SSD03-SRSS	SSX03-SRSS
Rated Voltage		SINGLE-PHASE AC110V	SINGLE-PHASE AC220V	SINGLE-PHASE AC100V	SINGLE-PHASE AC200V	SINGLE-PHASE AC220V~240V
Operation Voltage Range		±10%				
Power Source Frequency		60Hz		50/60Hz		50Hz
Rated Current		3.0A				
※1 APPLICABLE MOTOR OUTPUT	Induction	6W~90W	6W~90W	6W~90W	6W~90W	6W~90W
	Reversible	6W~40W	6W~40W	6W~40W	6W~40W	6W~40W
	E・S	6W~40W	6W~40W	6W~40W	6W~40W	6W~40W
Speed control range		90~1700rpm		90~1400rpm/90~1700rpm		90~1400rpm
Speed variation		5%(standard)				
Speed setting device		Built in external speed setting device attachable				
Braking		possible to stop for certain period by electric brake				
※2 Braking period		0.5sec (standard)				
Parallel operation		Possible				
Slow Run, Slow Stop		Possible(0.5sec~15sec/1200rpm)				
Operation Temperature		-10℃~50℃				
Operation humidity		85%Max (non condensing)				
Storage Temperature		-20℃~60℃				
Insulation resistance		100㏁ or more when 500V megger is applied between the pin and the housing at ambient temperature and humidity				
Dielectric strength		No abnormality after input of 1500V 50/60㎐ between the pin and the housing at ambient temperature and humidity for 1min				

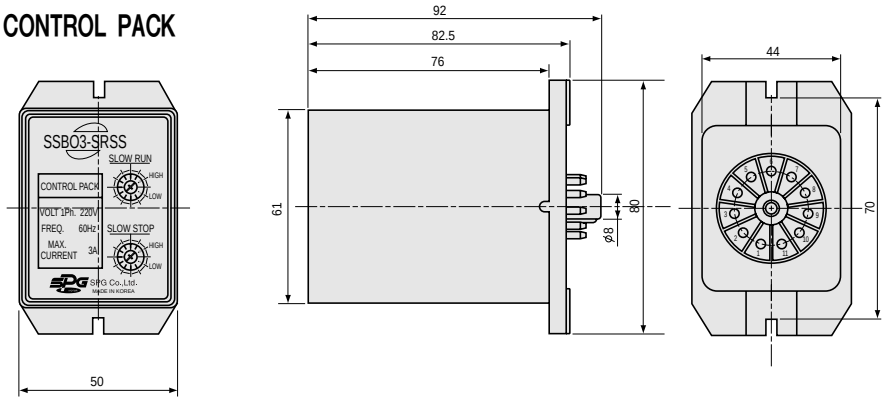
※1.: Applicable motors are socket type control motors of SPG. (Use for 24V motor T.G)

※2.: There are no holding toque on electric brake.

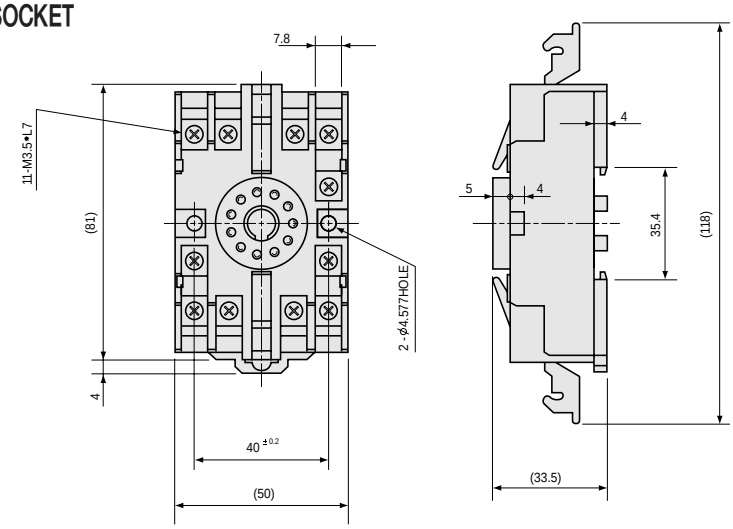
DIMENSIONS

SS TYPE (HIGH OUTPUT) SPEED CONTROLLER

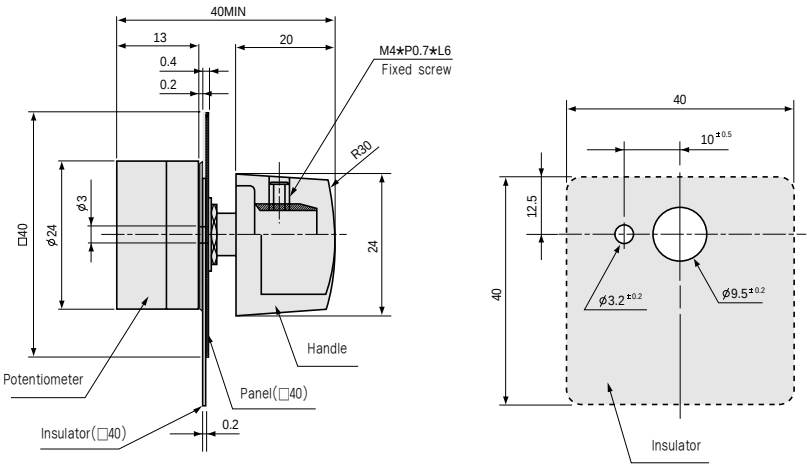
▼ CONTROL PACK



▼ 11PIN SOCKET

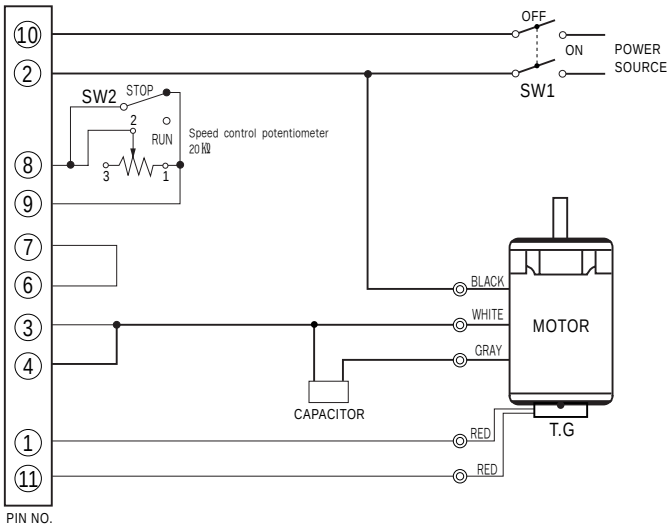


▼ VARIABLE RESISTOR 20㏀ 1/4W



SCHEMATIC DIAGRAM(INDUCTION MOTOR)

1-1 Uni Direction+Variable Speed (6W-90W)

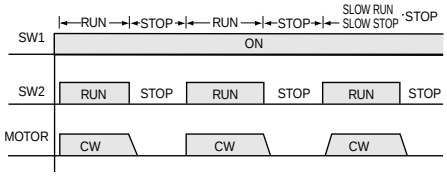


▲For wiring of 220V~240V, 50Hz motor, change gray to brown.

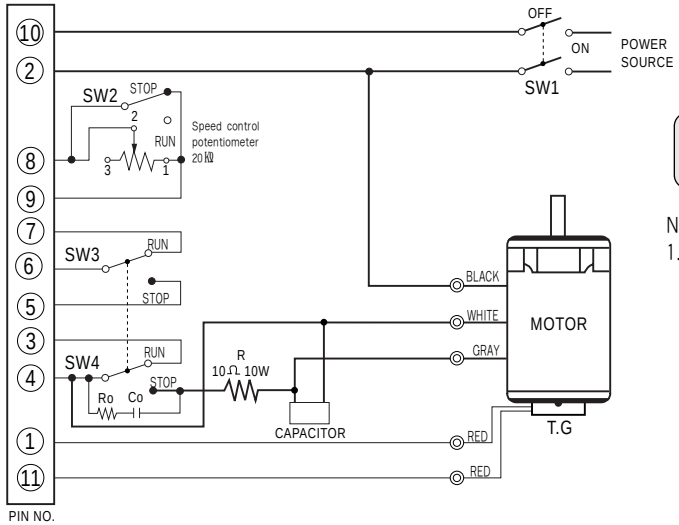
SW1	AC125V or AC 250V MIN. 5A
SW2	DC 20V 10mA

Note)
1. The motors, rotating direction is CW when viewed from output shaft. When adjusting to CCW direction, exchange white wire to gray.
2. The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 202 for the connection method.

◆ Example of operation



1-2 Uni Direction+Variable Speed+Brake (6W~25W)

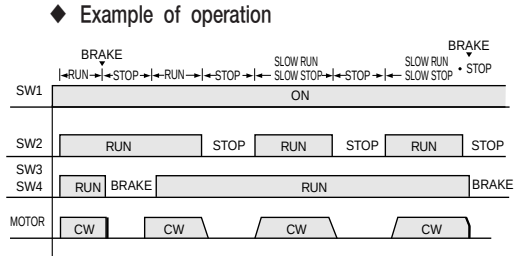


▲For wiring of 220V~240V, 50Hz motor, change gray to brown.

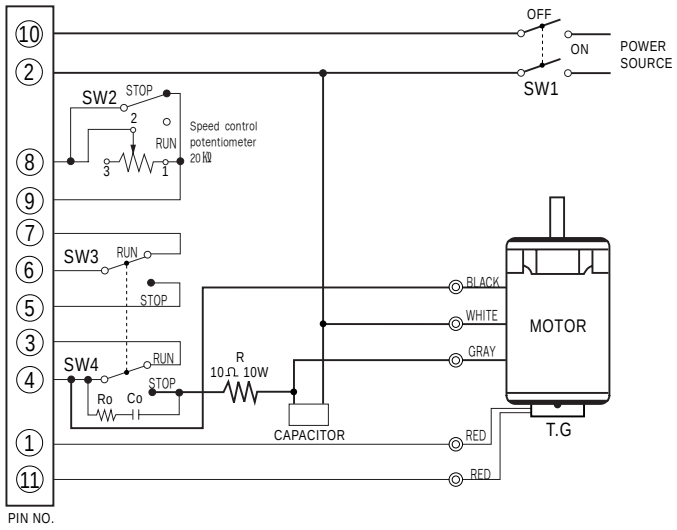
SW1,4	AC125V or AC 250V MIN. 5A
SW2,3	DC 20V 10mA
Ro,Co	Ro = 10~200Ω (MIN. 1/4W) Co = 0.1~0.2㎌ (AC125WV, AC250WV)
R: Braking external resistor	10Ω, MIN. 10W

Note)
1. The motor rotating direction is CW when viewed from output shaft When adjusting to CCW direction, exchange white wire to gray.

◆ Example of operation



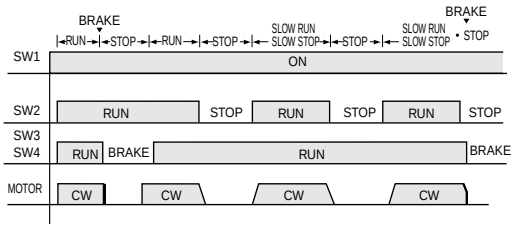
1-3 Uni Direction+Variable Speed+Brake (40W~90W)



▲For wiring of 220V~240V, 50Hz motor, change gray to brown.

SW1,4	AC125V or AC 250V MIN. 5A
SW2,3	DC 20V 10mA
Ro,Co	Ro = 10~200Ω (MIN. 1/4W) Co = 0.1~0.2㎌ (AC125WV, AC250WV)
R:Braking external resistor	10Ω, MIN. 10W

◆ **Example of operation**



Note)
1. The motor's rotating direction is CW when viewed from output shaft. When adjusting to CCW direction, exchange white wire to gray.
2. The connection of a fan motor is applicable only if the output of the motor is greater than 60W and refer to page 202 for the connection method.

▼ Method of Use (INDUCTION MOTOR)

- **Run/Stop function**
  If SW2 is switched to "RUN" as section 1-1,2,3, the motor will rotates as per fixed speed set by external speed controller when switched to "STOP" rotation will come to spontaneous stop by inertia force.

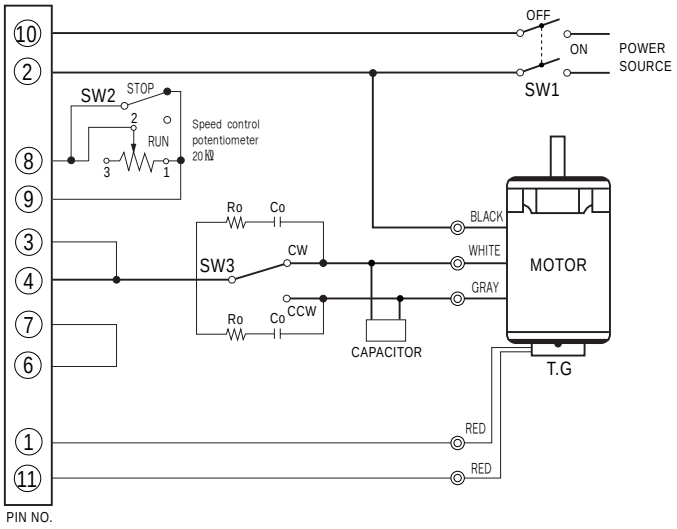
- **Run/Brake function**
  If SW3 and SW4 is turned to stop while SW2 is on RUN condition, the brake will function for about 0.5 seconds and stop the motor instantaneously.

- **Slow Run/Slow Stop function**
  - When SW2 is switched to Run/Stop after slow run, slow stop is set by the volume of controller, the motor will slowly start and slowly stop as per set time.
  - The speed of slow run and slow stop changes in rectilinearly against set time and the slope can be controlled within 0.5sec~15sec/1200rpm.
  - Slow stop is not possible to be set for shorter period than natural stopping period of motor.

  ※ Turn SW1 off to prevent control pack from generating heat when not used for a long period.

SCHEMATIC DIAGRAM(INDUCTION MOTOR)

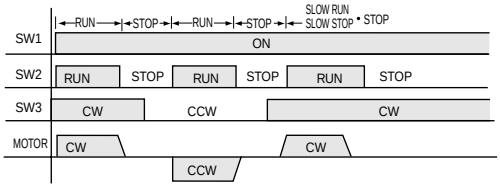
2-1 Reverse+Variable Speed (6W~40W)



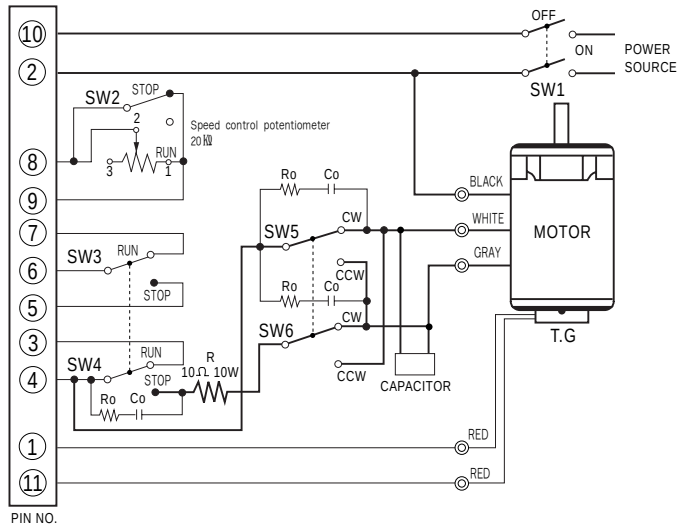
▲For wiring of 220V~240V, 50Hz motor, change gray to brown.

SW1,3	AC125V or AC 250V MIN. 5A
SW2	DC 20V 10mA
Ro,Co	Ro = 10~200 Ω (MIN. 1/4W) Co = 0.1~0.2㎌ (AC125WV, AC250WV)

◆ Example of operation



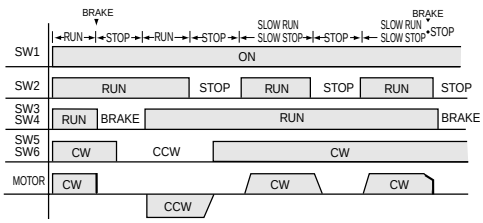
2-2 Reverse+Variable Speed+Brake (6W~25W)



▲For wiring of 220V~240V, 50Hz motor, change gray to brown.

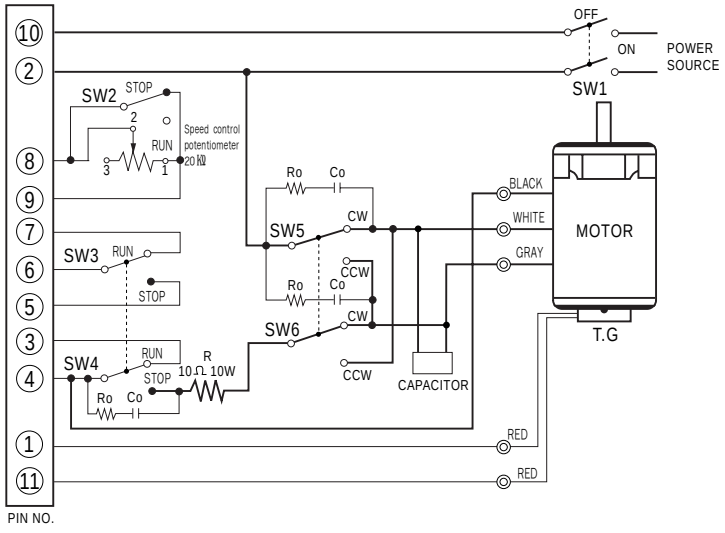
SW1,4,5,6	AC125V or AC 250V MIN. 5A
SW2,3	DC 20V 10mA
Ro,Co	Ro = 10~200 Ω (MIN. 1/4W) Co = 0.1~0.2㎌ (AC125WV, AC250WV)
R: Braking external resistor	10 Ω, MIN. 10W

◆ Example of operation



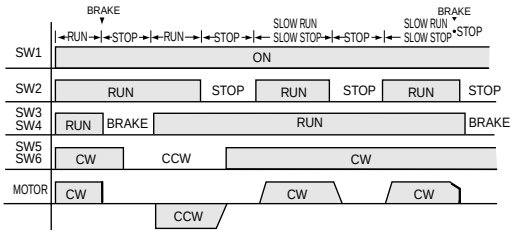
2-3 Reverse+Variable Speed+Brake (40W)

▲For wiring of 220V~240V, 50Hz motor, change gray to brown.



SW1,4,5,6	AC125V or AC 250V MIN. 5A
SW2,3	DC 20V 10mA
Ro,Co	Ro=10~200Ω(MIN. 1/4W) Co=0.1~0.2μF (AC125WV, AC250WV)
R: Braking external resistor	10Ω, MIN. 10W

◆ Example of operation



▼ Method of Use (INDUCTION MOTOR)

- **Run/Stop function**
  If SW2 is switched to "RUN" as section 2-1,2,3, the motor will rotate as per fixed speed set by external speed controller when switched to "STOP" rotation will come to spontaneous stop by inertia force.

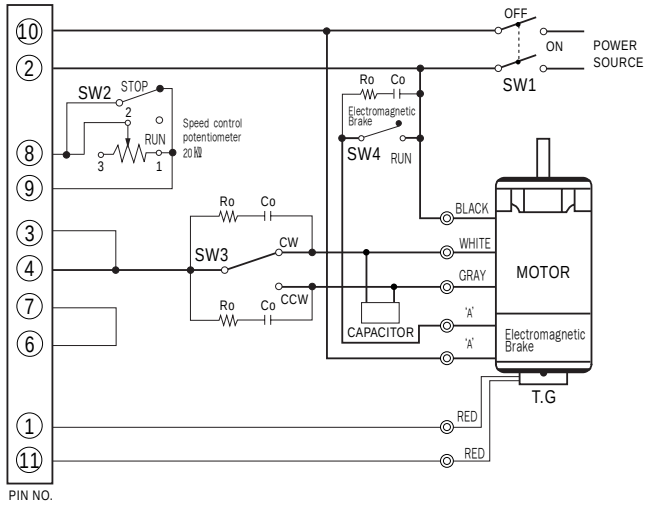
- **Run/Brake function**
  If SW3 and SW4 is turned to stop while SW2 is on RUN condition, the brake will function for about 0.5 seconds and stop the motor instantaneously.

- **Slow Run/Slow Stop function**
  - When SW2 is switched to Run/Stop after slow run, slow stop is set by the volume of controller, the motor will slowly start and slowly stop as per set time.
  - The speed of slow run and slow stop changes in rectilinearly against set time and the slope can be controlled within 0.5sec~15sec/1200rpm.
  - Slow stop is not possible to be set for shorter period than natural stopping period of motor.

  ※ Turn SW1 off to prevent control pack from generating heat when not used for a long period.

SCHEMATIC DIAGRAM (E·S MOTOR)

3-1 Reverse+Variable Speed (6W~40W)

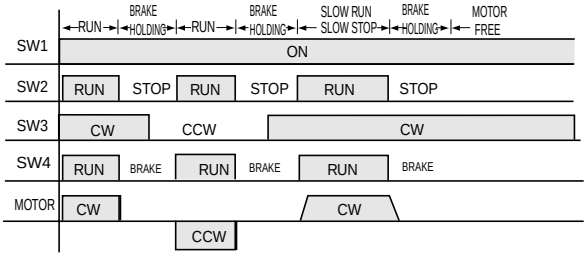


SW1,3,7	AC125V or AC 250V MIN. 5A
SW2	DC 20V 10mA
Ro,Co	Ro=10~200Ω(MIN. 1/4W) Co=0.1~0.2㎌ (AC125WV, AC250WV)

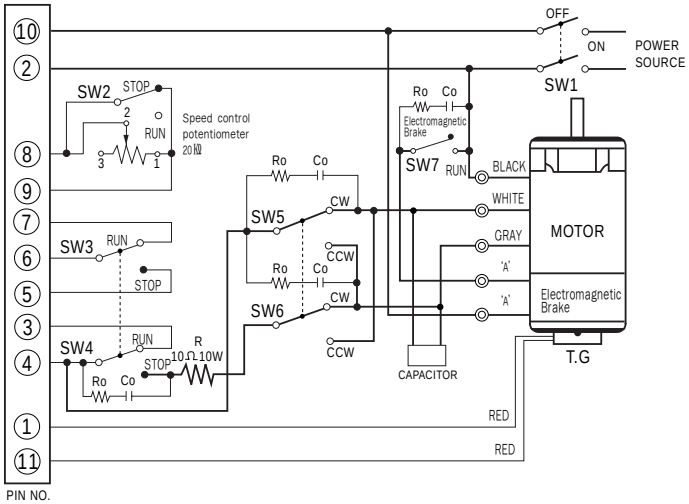
▲For wiring of 220V-240V, 50Hz motor, change gray to brown.

VOLTAGE	LEAD WIRE 'A'
SINGLE PHASE AC100V~110V	Blue
SINGLE PHASE AC200V~240V	Orange

◆ Example of operation



3-2 Reverse+Variable Speed+Brake (6W~25W)

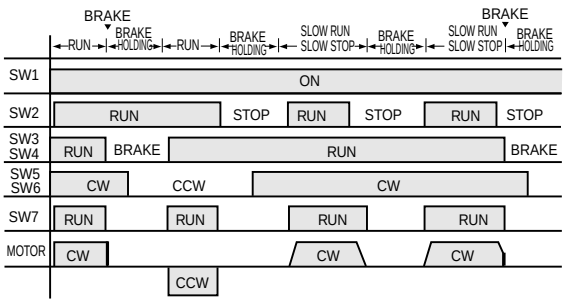


VOLTAGE	LEAD WIRE 'A'
SINGLE PHASE AC100V~110V	Blue
SINGLE PHASE AC200V~240V	Orange

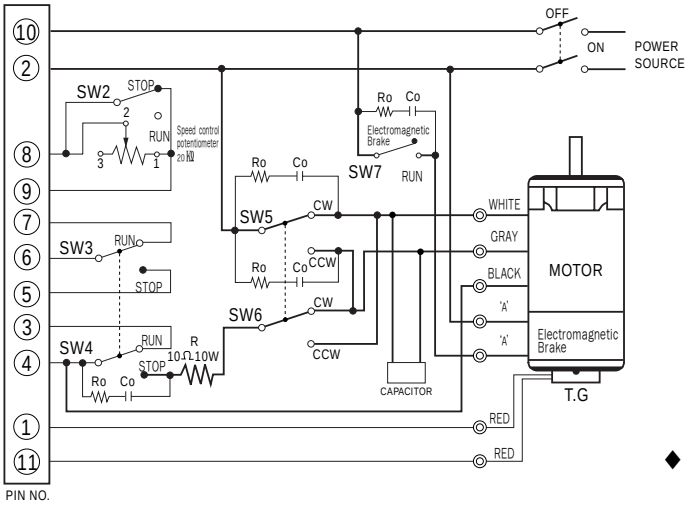
▲For wiring of 220V-240V, 50Hz motor, change gray to brown.

SW1,4,5,6,7	AC125V or AC 250V MIN. 5A
SW2,3	DC 20V 10mA
Ro,Co	Ro=10~200Ω(MIN. 1/4W) Co=0.1~0.2㎌ (AC125WV ,AC250WV)
R: Braking external resistor	10Ω, MIN. 10W

◆ Example of operation



3-3 Uni Direction+Variable Speed+Brake (40W)

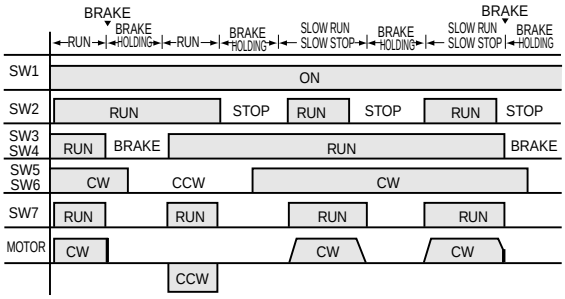


◀ For wiring of 220V~240V motor, change gray to brown.

VOLTAGE	LEAD WIRE 'A'
SINGLE PHASE AC100V~110V	Blue
SINGLE PHASE AC200V~240V	Orange

SW1,4,5,6,7	AC125V Or AC 250V MIN. 5A
SW2,3	DC20V 10mA
Ro,Co	Ro=10~200Ω(MIN. 1/4W) Co=0.1~0.2μF (AC125W ,AC250WV)
R:Braking external resistor	10Ω, MIN. 10W

◆ Example of operation



▼ Method of Use (E·S MOTOR)

- **Run/Stop function**
  If SW2 is switched to "RUN" as section 3-1,2,3, the motor will rotate as per fixed speed set by external speed controller when switched to "STOP" rotation will come to spontaneous stop by inertia force.

- **Run/Brake function**
  If SW3 and SW4 is turned to stop while SW2 is on RUN condition, the brake will function for about 0.5 seconds and stop the motor instantaneously.

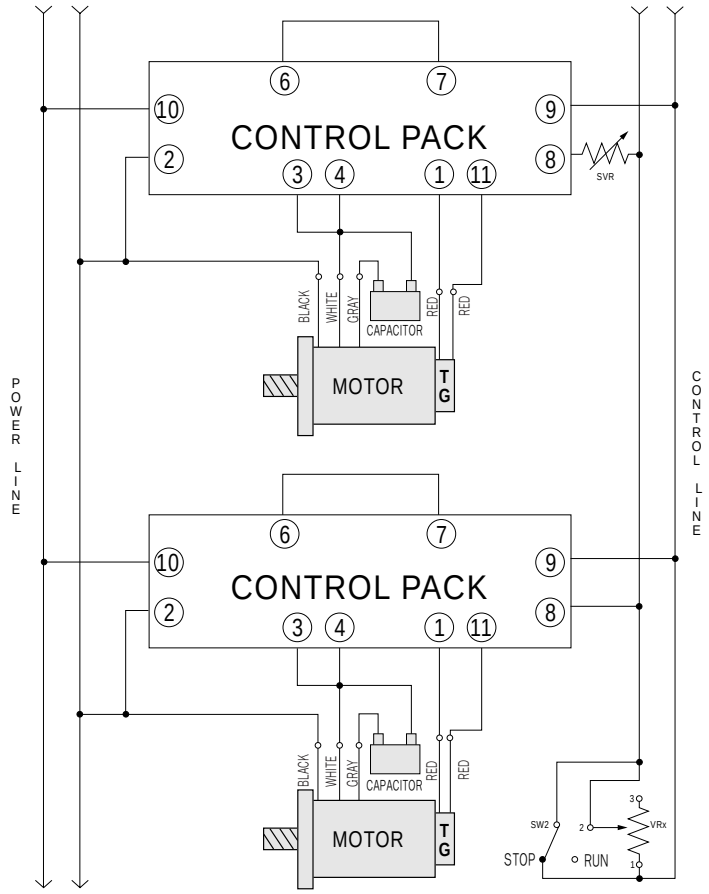
- **Slow Run/Slow Stop function**
  - When SW2 is switched to Run/Stop after slow run, slow stop is set by the volume of controller, the motor will slowly start and slowly stop as per set time.
  - The speed of slow run and slow stop changes in rectilinearly against set time and the slope can be controlled within 0.5sec~15sec/1200rpm.
  - Slow stop is not possible to be set for shorter period than natural stopping period of motor.

  ※Turn SW1 off to prevent control pack from generating heat when not used for a long period.

APPLICATION OF SCHEMATIC DIAGRAM

▼ Parallel operation

SS TYPE high output controller can control speed of multiple motors using one variable resistor as per following diagram at same speed.



▼ Usage(Parallel operation)

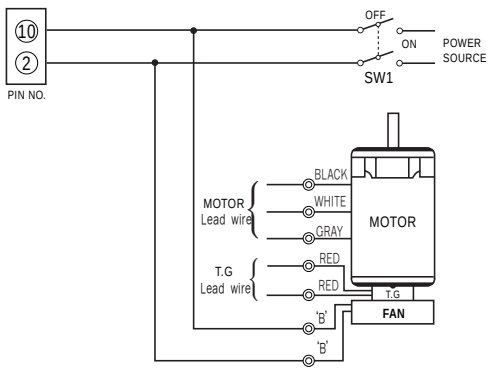
Connect power supply line(Terminal No. ②,⑩)& control line (Terminal No. ⑧, ⑨) for same line like the side wiring. In case of other motor and control pack, set power line and control line for parallel operation.

⚠ Warning

- Connect to correct pin numbers for power line and control line.
- The capacity of variable resistor for speed setting is calculated in following way.
  VRX=20/N ㏀, N/4W(N: Quantity of motor)
  eg) For 2EA of motors, it is 10㏀ 1/2W
- Although every motor runs at almost same speed, there could be slight error due to difference of load and variation of products. To prevent this phenomenon, prepare 5-10% of resistance and 1/4 capacity of VR×(Variable resistance for speed setting)with SVR(Variable resistor for precise control) of terminal ⑧.

▲For wiring of 220V-240V, 50Hz motor, change gray to brown.

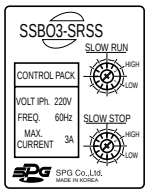
▼ Connection Method for BOX FAN MOTOR



VOLTAGE	LEAD WIRE COLOR 'B'
SINGLE PHASE AC100V~110V	Brown
SINGLE PHASE AC200V~240V	Yellow

※ For the connection of something other than the box fan, refer to the electrical wiring diagram for the corresponding connection.

▼ Panel

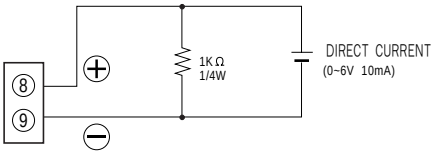


VR1	Variable resistor for Slow Run period
VR2	Variable resistor for Slow Stop period

▼ Speed control by using external direct current

When speed is controlled by external direct current instead of supplied variable resistor for external speed setting, connect the wires of direct current with control pack as following diagram.

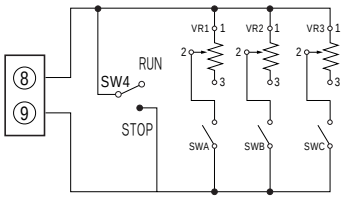
(However, output of direct current has to be seperated and insulated with alternative current input and avoid changing polarity.)



(The connection of speed control by using external direct current.)

▼ Converting of multistage speed

1.When multistage speed control is required, set each VR1, VR2 & VR3 and converting can be possible by using SWA, SWB, and SWC. Keeping converting time of switching should be similar to the operating time of relay operation.

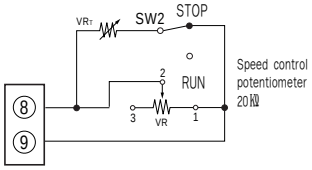


VR1,2,3	20㏀ 1/4W B Characteristic
SW1,2,3,4	DC 20V 10mA

2.In the packing of control pack there is one set of external speed setting volume. When needed more, please purchase SVR20KH of SPG.

▼ How to quicken operating speed

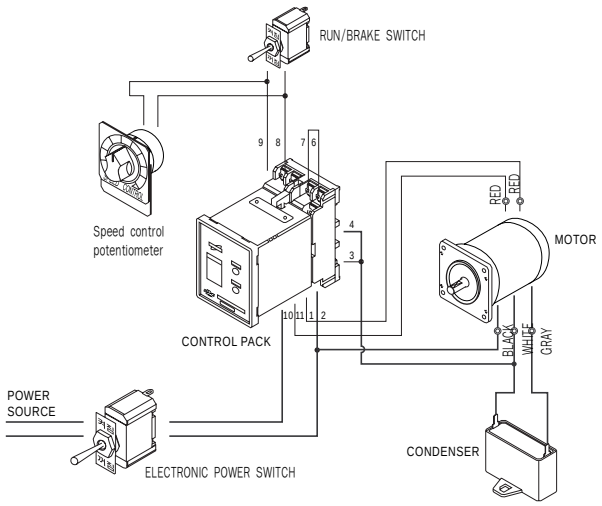
To quicken operating speed, as the set speed is decelerated, there are more delays to start rotations when switch is turned 'ON'. If this causes problems, please refer to following diagram and connect VRT (Variable resistor for operating time control)



VRT	2㏀ 1/4W B Characteristic
SW2	DC 20V 10mA

※ For instantaneous stop, operate both RUN/BRAKE switch and RUN/STOP switch above.
※ Place RUN/STOP switch to stop and control VRT until motor starts.

▼ Total system



1. Speed of motor can be controlled without steps by using variable speed resistor for external speed setting. Turn to (HIGH) for high speed, and (LOW) for low speed.
2. There are operating current flowing on thick line. Use cable with 0.75㎟ for thick line and 0.5㎟ for thin line.
3. For single-phase AC220V~240V 50Hz motors, change gray wire to brown.