

# 90W

## ELECTROMAGNETIC BRAKE MOTOR
## □90㎜ LEAD WIRE TYPE

| SIZE mm sq. | Type | Poles | Output | Voltage | Frequency | Duty | Rated Load | | | | Starting Torque | | Capacitor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Current | Speed | Torque | | | | |
| | | | (W) | (V) | (Hz) | | (A) | (rpm) | (kg-cm) | (N-m) | (kg-cm) | (N-m) | (uF) |
| 90 | S9R90GA( )-E<br>S9R90GA( )-E(TP)<br>S9R90GA( )-ECE | 4 | 90 | 1Ø 110 | 60 | 30min. | 2.20 | 1550 | 5.80 | 0.580 | 8.90 | 0.890 | 30.0 |
| | S9R90GB( )-E<br>S9R90GB( )-E(TP)<br>S9R90GB( )-ECE | 4 | 90 | 1Ø 220 | 60 | 30min. | 1.10 | 1550 | 5.80 | 0.580 | 8.90 | 0.890 | 7.5 |
| | S9R90GC( )-E<br>S9R90GC( )-E(TP)<br>S9R90GC( )-ECE | 4 | 90 | 1Ø 100 | 50 | 30min. | 2.00 | 1250 | 7.20 | 0.720 | 7.00 | 0.700 | 30.0 |
| | | | | | 60 | | 2.25 | 1500 | 6.00 | 0.600 | | | |
| | S9R90GD( )-E<br>S9R90GD( )-E(TP)<br>S9R90GD( )-ECE | 4 | 90 | 1Ø 200 | 50 | 30min. | 0.90 | 1250 | 7.20 | 0.720 | 7.00 | 0.700 | 7.5 |
| | | | | | 60 | | 1.10 | 1500 | 6.00 | 0.600 | | | |
| | S9R90GE( )-E<br>S9R90GE( )-ECE | 4 | 90 | 1Ø 100 | 50 | 30min. | 1.80 | 1300 | 7.20 | 0.720 | 6.30 | 0.630 | 30.0 |
| | | | | | 60 | | 2.10 | 1550 | 6.00 | 0.600 | | | |
| | | | | 1Ø 115 | 60 | | 1.90 | 1600 | 5.80 | 0.580 | 6.90 | 0.690 | 25.0 |
| | S9R90GX( )-E<br>S9R90GX( )-ECE | 4 | 90 | 1Ø 220 | 50 | 30min. | 0.71 | 1300 | 6.90 | 0.690 | 6.80 | 0.680 | 6.0 |
| | | | | 1Ø 240 | | | 0.75 | | 7.20 | 0.720 | 8.60 | 0.860 | |
| | S9I90GU( )-E<br>S9I90GU( )-ECE | 4 | 90 | 3Ø 200 | 50 | Cont. | 0.63 | 1300 | 6.90 | 0.690 | 10.60 | 1.060 | — |
| | | | | | 60 | | 0.60 | 1550 | 6.00 | 0.600 | 8.90 | 0.890 | |
| | S9I90GT( )-E<br>S9I90GT( )-ECE | 4 | 90 | 3Ø 220 | 50 | Cont. | 0.68 | 1350 | 6.80 | 0.680 | 13.00 | 1.300 | — |
| | | | | | 60 | | 0.55 | 1600 | 5.70 | 0.570 | 10.50 | 1.050 | |
| | S9I90GS( )-E<br>S9I90GS( )-ECE | 4 | 90 | 3Ø 380 | 50 | Cont. | 0.32 | 1300 | 6.80 | 0.680 | 10.55 | 1.055 | — |
| | | | | | 60 | | 0.30 | 1550 | 5.70 | 0.570 | 8.20 | 0.820 | |
| | | | | 3Ø 400 | 50 | Cont. | 0.35 | 1300 | 6.90 | 0.690 | 11.70 | 1.170 | |
| | | | | | 60 | | 0.32 | 1550 | 5.80 | 0.580 | 8.90 | 0.890 | |
| | | | | 3Ø 415 | 50 | Cont. | 0.33 | 1350 | 6.80 | 0.680 | 12.00 | 1.200 | |
| | | | | | 60 | | 0.29 | 1600 | 5.70 | 0.570 | 9.50 | 0.950 | |
| | | | | 3Ø 440 | 50 | Cont. | 0.35 | 1350 | 6.90 | 0.690 | 13.30 | 1.330 | |
| | | | | | 60 | | 0.31 | 1600 | 5.80 | 0.580 | 10.50 | 1.050 | |

❖ 기종명 S9R90GE-E는 UL규격 인증 제품으로 THERMALLY PROTECTED TYPE입니다.(UL FILE NO. E172720) (S9R90GE-E is UL approved(UL FILE NO. E172720) thermally protected type.)
❖ 사용하는 전압 사양에 따라 CONDENSER 용량이 다르게 사용되므로 사용전압에 맞게 CONDENSER 용량을 바르게 사용하여 주십시오. 고장의 원인이 됩니다. 주문시 사용전압을 제시하여 주십시오. 제시가 없으면 115V용 CONDENSER로 포장 출하됩니다. (Appropriate capacitors shall be used according to the voltage for S9R90GE-E type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.)
❖ 기종명 맨 끝자리에 CE가 명기된 MODEL의 인증 관련 내용은 SPG 규격 인증품 현황을 참고하여 주십시오. S9R90GE( )-ECE는 115V용 사양으로만 출하됩니다. 또한 기종명 S9R90GE-E, S9R90GX-E는 TP가 내장된 THERMALLY PROTECTED TYPE입니다. (CE marked at the end of model name indicates that it is thermally protected type which has received CE with built-in TP. S9R90GE( )-ECE is available only for 115V specification.)
❖ 본 DATA는 전자 BRAKE MOTOR에서 전자 BRAKE를 제거하고 MOTOR 단독으로 측정한 DATA입니다. (Above data is measured with brake removed from electromagnetic brake motor.)
❖ ( )는 L, H Type을 표시합니다. L은 GEAR HEAD의 L과, H는 GEAR HEAD의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.)
❖ 삼상 380V~440V 모터에서는 인버터 사용을 주의하여 주십시오. 인버터 사용시 권선의 절연이 열화되어 모터가 파손될 수 있습니다. (For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.)

## 50Hz

| GEAR RATIO / MODEL | | 3 | 3.6 | 5 | 6 | 7.5 | 9 | 10 | 12.5 | 15 | 18 | 20 | 25 | 30 | 36 | 40 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | 180 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | rpm | 500 | 416 | 300 | 250 | 200 | 166 | 150 | 120 | 100 | 83 | 75 | 60 | 50 | 41 | 37 | 30 | 25 | 20 | 16 | 15 | 12 | 10 | 8 | 7.5 |
| S9KC□B( ) | kg-cm | 18.2 | 21.9 | 30.4 | 36.5 | 45.6 | 54.7 | 60.8 | 68.4 | 82.1 | 98.6 | 110 | 124 | 149 | 178 | 198 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| S9KC□B( )-S | N·m | 1.784 | 2.146 | 2.979 | 3.577 | 4.469 | 5.361 | 5.958 | 6.703 | 8.046 | 9.663 | 10.78 | 12.15 | 14.60 | 17.44 | 19.40 | 19.60 | 19.60 | 19.60 | 19.60 | 19.60 | 19.60 | 19.60 | 19.60 | 19.60 |

## 60Hz

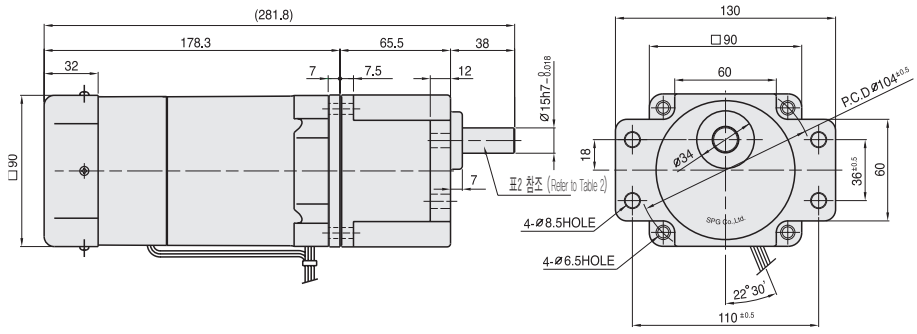
| GEAR RATIO / MODEL | | 3 | 3.6 | 5 | 6 | 7.5 | 9 | 10 | 12.5 | 15 | 18 | 20 | 25 | 30 | 36 | 40 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | 180 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | rpm | 600 | 500 | 360 | 300 | 240 | 200 | 180 | 144 | 120 | 100 | 90 | 72 | 60 | 50 | 45 | 36 | 30 | 24 | 20 | 18 | 15 | 12 | 10 | 9 |
| S9KC□B( ) | kg-cm | 14.6 | 17.5 | 24.3 | 29.2 | 36.5 | 43.7 | 48.6 | 54.8 | 65.7 | 78.8 | 87.6 | 99.0 | 119 | 143 | 158 | 198 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| S9KC□B( )-S | N·m | 1.431 | 1.715 | 2.381 | 2.862 | 3.577 | 4.675 | 4.763 | 5.370 | 6.439 | 7.722 | 8.585 | 9.702 | 11.66 | 14.01 | 15.48 | 19.40 | 19.60 | 19.60 | 19.60 | 19.60 | 19.60 | 19.60 | 19.60 | 19.60 |

❖ GEAR HEAD 품명 중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.)
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.)
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 200㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.)
❖ 회전방향은 ■색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction. )
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ ( )는 L, H Type을 표시합니다. L은 MOTOR의 L과, H는 MOTOR의 H와 사용하여 주십시오. (( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.)

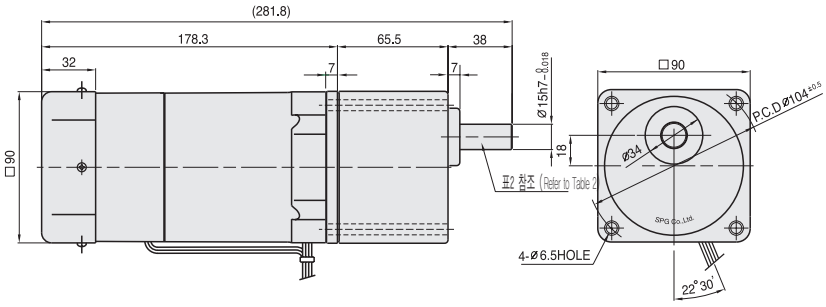
# DIMENSIONS

## ✚ GEARED MOTOR

※MOTOR MODEL : S9R90G□□-E
※HEAD MODEL : S9□C3B□-S~S9□C200B□-S

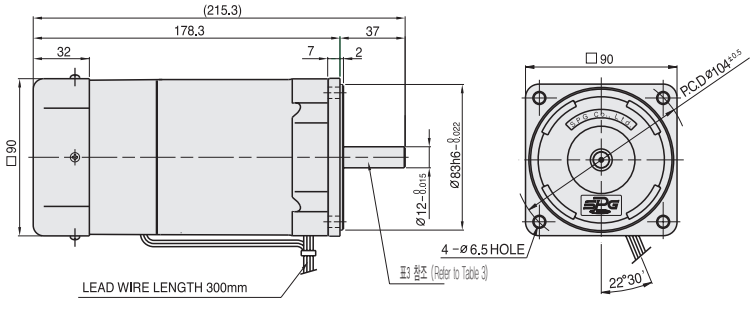



※HEAD MODEL : S9□C3B□~S9□C200B□



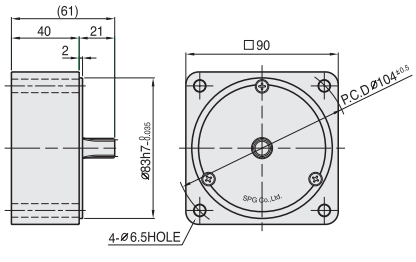

## ✚ MOTOR

※MOTOR MODEL : S9R90□□□-E




## ✚ INTER-DECIMAL GEAR HEAD

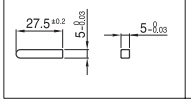
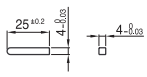
※MODEL : S9GX10B(H,L)-S




## ✚ WEIGHT – (표1 (Table1))

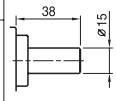
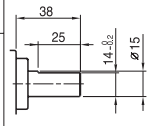
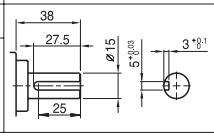
| PART | | WEIGHT(kg) |
|---|---|---|
| MOTOR | | 3.41 |
| DECIMAL GEAR HEAD | | 0.65 |
| GEAR HEAD | S9□C3B□ ~S9□C10B□ | 1.21 |
| | S9□C12.5B□ ~S9□C20B□ | 1.30 |
| | S9□C25B□ ~S9□C60B□ | 1.40 |
| | S9□C75B□ ~S9□C200B□ | 1.45 |

## ✚ KEY SPEC

| GEAR HEAD | MOTOR |
|---|---|
|  |  |

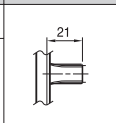
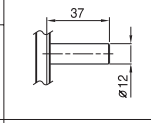
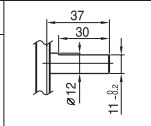
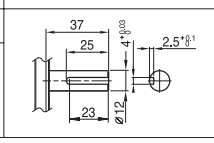


## ✚ GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

| MODEL | 출력축 구분 (TYPES OF OUTPUT SHAFT) |
|---|---|
| STRAIGHT TYPE<br>S9SC3B□ ~S9SC200B□ |  |
| D-CUT TYPE<br>S9DC3B□ ~S9DC200B□ |  |
| KEY TYPE<br>S9KC3B□ ~S9KC200B□ |  |



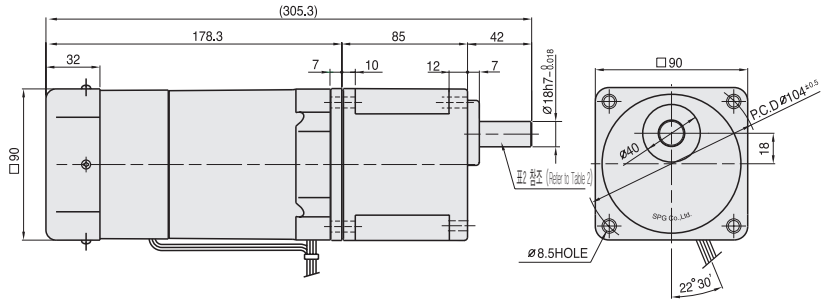
## ✚ MOTOR 출력축 사양 (SPEC for output shaft of motor) – (표3 (Table3))

| MODEL | 출력축 구분 (TYPES OF OUTPUT SHAFT) |
|---|---|
| GEAR TYPE<br>S9R90G□□-E |  |
| STRAIGHT TYPE<br>S9R90S□-E |  |
| D-CUT TYPE<br>S9R90D□-E |  |
| KEY TYPE<br>S9R90K□-E |  |

# DIMENSIONS

## GEARED MOTOR

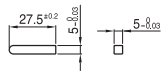
※MOTOR MODEL : S9R90G□H
※HEAD MODEL : S9□D3B~S9□D200B



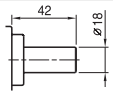
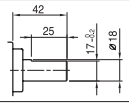
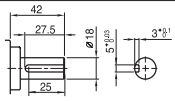

## WEIGHT – (표1 (Table1))

| PART | | WEIGHT(kg) |
|---|---|---|
| MOTOR | | 3.41 |
| GEAR HEAD | S9□D3B ~S9□D10B | 1.65 |
| | S9□D12.5B ~S9□D20B | 1.80 |
| | S9□D25B ~S9□D60B | 1.90 |
| | S9□D75B ~S9□D200B | 1.95 |

## KEY SPEC

| GEAR HEAD |
|---|
|  |

## GEAR HEAD 출력축 사양 (SPEC for output shaft of gearhead) – (표2 (Table2))

| MODEL | 출력축 구분 (TYPES OF OUTPUT SHAFT) | MODEL | 출력축 구분 (TYPES OF OUTPUT SHAFT) | MODEL | 출력축 구분 (TYPES OF OUTPUT SHAFT) |
|---|---|---|---|---|---|
| STRAIGHT TYPE |  | D-CUT TYPE |  | KEY TYPE |  |
| S9SD3B ~S9SD200B | | S9DD3B ~S9DD200B | | S9KD3B ~S9KD200B | |

## 50Hz

| MODEL \ GEAR RATIO | | 3 | 3.6 | 5 | 6 | 7.5 | 9 | 10 | 12.5 | 15 | 18 | 20 | 25 | 30 | 36 | 40 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | 180 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | rpm | 500 | 416 | 300 | 250 | 200 | 166 | 150 | 120 | 100 | 83 | 75 | 60 | 50 | 41 | 37 | 30 | 25 | 20 | 16 | 15 | 12 | 10 | 8 | 7.5 |
| S9KD□B | kg-cm | 18.2 | 21.9 | 30.4 | 36.5 | 45.6 | 54.7 | 60.8 | 68.4 | 82.1 | 98.6 | 110 | 124 | 149 | 178 | 198 | 248 | 297 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| | N·m | 1.784 | 2.146 | 2.979 | 3.577 | 4.469 | 5.361 | 5.958 | 6.703 | 8.046 | 9.663 | 10.78 | 12.15 | 14.60 | 17.44 | 19.40 | 24.32 | 29.13 | 29.42 | 29.42 | 29.42 | 29.42 | 29.42 | 29.42 | 29.42 |

## 60Hz

| MODEL \ GEAR RATIO | | 3 | 3.6 | 5 | 6 | 7.5 | 9 | 10 | 12.5 | 15 | 18 | 20 | 25 | 30 | 36 | 40 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | 180 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | rpm | 600 | 500 | 360 | 300 | 240 | 200 | 180 | 144 | 120 | 100 | 90 | 72 | 60 | 50 | 45 | 36 | 30 | 24 | 20 | 18 | 15 | 12 | 10 | 9 |
| S9KD□B | kg-cm | 14.6 | 17.5 | 24.3 | 29.2 | 36.5 | 43.7 | 48.6 | 54.8 | 65.7 | 78.8 | 87.6 | 99.0 | 119 | 143 | 158 | 198 | 238 | 266 | 300 | 300 | 300 | 300 | 300 | 300 |
| | N·m | 1.431 | 1.715 | 2.381 | 2.862 | 3.577 | 4.675 | 4.763 | 5.370 | 6.439 | 7.722 | 8.585 | 9.702 | 11.66 | 14.01 | 15.48 | 19.40 | 23.34 | 26.09 | 29.42 | 29.42 | 29.42 | 29.42 | 29.42 | 29.42 |

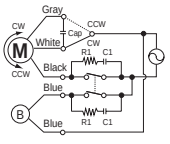
❖ GEAR HEAD 품명중 □은 감속비를 표시합니다. (The code in □ of gearhead model is for gear ratio.
❖ GEAR HEAD와 조합한 경우의 허용 TORQUE입니다. (It is the permissible torque of the assembled motor and gearhead.))
❖ 감속비 1/10의 중간 GEAR HEAD를 접속한 경우의 허용 TORQUE는 300㎏-㎝입니다. (The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.)
❖ 회전방향은 ■ 색이 MOTOR의 회전방향과 동일방향이고, 기타는 MOTOR 회전방향과 반대방향입니다. (■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.)
❖ 회전수는 MOTOR의 동기 회전수(50Hz : 1500rpm, 60Hz : 1800rpm)를 기준으로 하여 감속비로 나누어서 계산하였습니다. 실제의 회전수는 부하의 크기에 따라서 표시된 수치보다 2~20% 적습니다. (Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.)
❖ 'H' Type 전용으로 기종명에 표시하지 않습니다. MOTOR의 H와 사용하여 주십시오. (Only "H" type is applicable. Please use "H" type motor.)

# SCHEMATIC DIAGRAMS

회전방향은 MOTOR의 SHAFT 끝쪽에서 볼 때의 회전방향입니다. (The direction of motor rotation is as viewed from the front shaft end of the motor.)

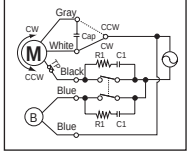
S9R90GA-E
S9R90GC-E

**CW,CCW**



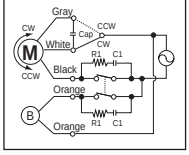

S9R90GA-ECE
S9R90GC-ECE
S9R90GE-E
S9R90GE-ECE

**CW,CCW**



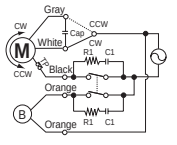

S9R90GB-E
S9R90GD-E

**CW,CCW**



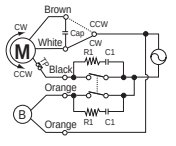

S9R90GB-ECE
S9R90GD-ECE

**CW,CCW**



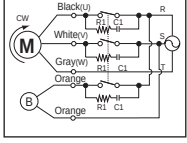

S9R90GX-E
S9R90GX-ECE

**CW,CCW**

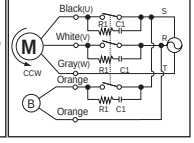



S9I90GU-E
S9I90GT-E

**CW**

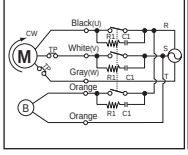



**CCW**

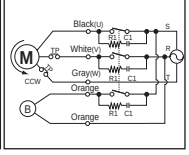



S9I90GU-ECE
S9I90GT-ECE

**CW**

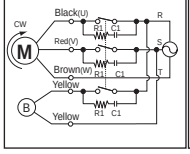



**CCW**

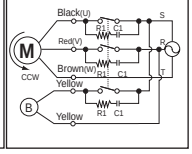



S9I90GS-E
S9I90GS-ECE

**CW**




**CCW**




$R_1$ = 10~200 Ω (Min.1/4 W)
$C_1$ = 0.1~0.33 μF (AC125WV or AC250WV)