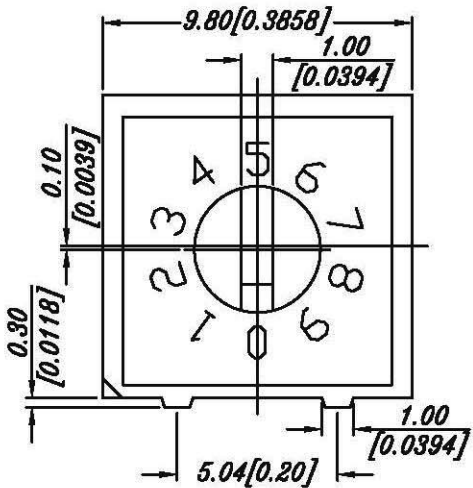
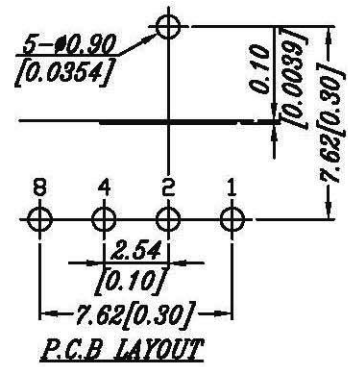


SRH4HA-16R



SRH4HA-10R

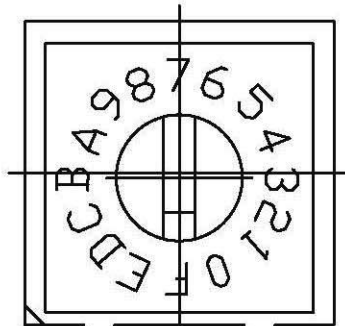


P.C.B LAYOUT

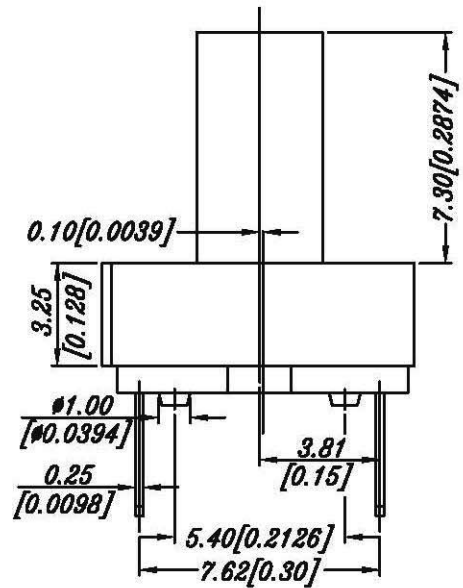
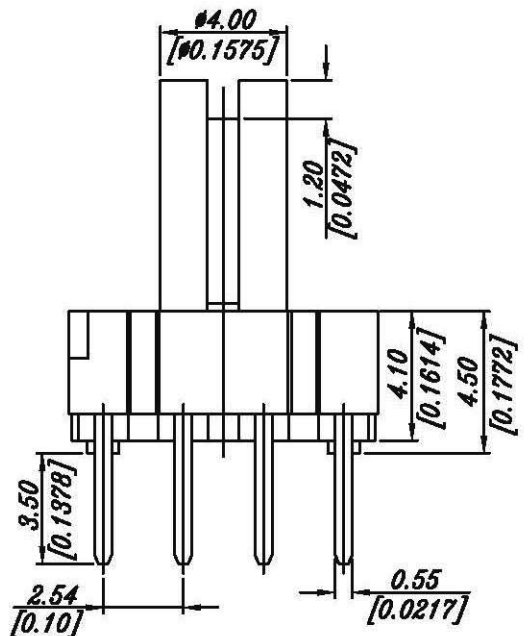
NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS ,  
BRACKETED DIMENSION ARE IN INCHS.
2. GENERAL TOLERANCE: ±0.2 mm.

|                    |
|--------------------|
| Available Mode No. |
| SRH4HA-10R         |
| SRH4HA-16R         |
| SRH4HA-16C         |



SRH4HA-16C



| TYPE   | POSITION | CODE |   |   |   |  |
|--------|----------|------|---|---|---|--|
|        |          | 1    | 2 | 4 | 8 |  |
| 16 R   | 0        | ●    | ● | ● | ● |  |
|        | 1        | ○    | ● | ● | ● |  |
|        | 2        | ●    | ○ | ● | ● |  |
|        | 3        | ○    | ○ | ● | ● |  |
|        | 4        | ●    | ● | ○ | ● |  |
|        | 5        | ○    | ● | ○ | ● |  |
|        | 6        | ●    | ○ | ○ | ● |  |
|        | 7        | ○    | ○ | ○ | ● |  |
|        | 8        | ○    | ● | ● | ○ |  |
|        | 9        | ○    | ● | ● | ○ |  |
| 16 R.C | A        | ●    | ○ | ● | ○ |  |
|        | B        | ○    | ○ | ● | ○ |  |
|        | C        | ●    | ● | ○ | ○ |  |
|        | D        | ○    | ● | ○ | ○ |  |
|        | E        | ●    | ○ | ○ | ○ |  |
|        | F        | ○    | ○ | ○ | ○ |  |

CIRCUIT CHART

|         |        |  |  |
|---------|--------|--|--|
| APPD:   | QTY:   |  |  |
| CHKD:   | SCALE: |  |  |
| DR:     | REV:   |  |  |
| DESIGN: | UNITS: |  |  |
|         |        |  |  |
| DATE:   |        |  |  |
| BY:     |        |  |  |
| APPD:   |        |  |  |

|  |                     |                                      |
|--|---------------------|--------------------------------------|
| 喜威達企業股份有限公司<br>SWEETA PRODUCTS CORPORATION |                     | PART NAME:<br>ROTARY TYPE DIP SWITCH |
| DATE: 11.30.04<br>DESIGN: 林后謙              | REV: A<br>UNITS: mm | DWG NO:<br>SRH4HA-□□□                |
| PART NO:<br>SRH4HA-□□□                     |                     | MAT'L:<br>FINISH:                    |
|  |                     | SRH4HA                               |

# ROTARY SWITCH SPECIFICATION

文件編號： E-B-AR01  
 版次： A  
 頁次： 1 / 4

## 1. Style:

This specification describes "Rotary Switch" mainly used as signal switch of electric devices with the general requirements of mechanical and electrical characteristics.

1.1 Operating Temperature Range : -25 ~ +80°C

1.2 Storage Temperature Range : -40°C ~ +85°C

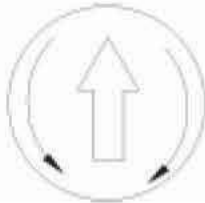
## 2. Current Range:

2.1 Non-Switching : 100mA, 50V DC

2.2 Switching : 25mA, 24V DC

## 3. Type of Actuation: Rotating

## 4. Test Sequence :

|                               | ITEM | DESCRIPTION                     | TEST CONDITIONS  | REQUIREMENTS   |
|-------------------------------|------|---------------------------------|--|--|
| <b>ELECTRIC PERFORMANCE</b>   | 1    | Visual Examination              | By visual examination check without any out pressure & testing.  | There shall be no defects that affect the serviceability of the product. |
|                               | 2    | Contact Resistance              | ①To be measured between the two terminals associated with each switch pole.<br>②Measurements shall be made with a 1kHz shall current contact resistance meter. | 100mΩ max. (initial)   |
|                               | 3    | Insulation Resistance           | 250V DC, 1 minute ± 5 seconds.   | 100MΩ min.   |
|                               | 4    | Dielectric withstanding Voltage | 250V AC (50Hz or 60 Hz) shall be applied between all the adjacent terminals and between the terminal and the frame for 1 minute.                               | There shall be no breakdown or flashover.                                |
|                               | 5    | Capacitance                     | 1 MHz ± 10 kHz   | 5 pF max.  |
| <b>MECHANICAL PERFORMANCE</b> | 6    | Operation Force                 | Applied in the direction of operation.<br>                                  | 200gf·max<br>(1.96N·max)   |

# ROTARY SWITCH SPECIFICATION

文件編號：E-B-AR01  
 版次：A  
 頁次：2 / 4

|  |               |   |  |  |                      |
|--|---------------|---|--|--|----------------------|
| MECHANICAL PERFORMANCE   | 7             | Stop Strength   | A static load of 1 kgf is applied in the vertical direction operated for a period of 15 seconds. | There shall be no sign of damage mechanically. |                      |
|  | 8             | Soldering Heat Resistance   | 1.Soldering Temperature :  |  | As shown in item 2~6 |
|  |               |   | P.C.BOARD TERMINAL<br>RH \ RV  | SMT TYPE<br>TERMINAL RM                        |                      |
|  |               |   | 260°C±5°C  | See the Temperature<br>profile                 |                      |
|  |               |   | 5±1sec   |  |                      |
| 2.Duration of Solder Immersion:<br>5±1 sec.<br>3.Frequency of Soldering Process:<br>2 times max.<br>(PCB is 1.6mm in thickness.) |               |   |  |  |                      |
| 9  | Vibration     | Shall be vibrated in accordance with Method 201A of MIL-STD-202F<br>1)Frequency: 10-55-10 Hz 1 min/cycle.<br>2)Direction: 3 vertical directions including the direction of operation.<br>3)Test Time: 2 hours each direction. | As shown in item 2~6   |  |                      |
| 10   | Shock         | Shall be shocked in accordance with Method 213B condition A of MIL-STD-202F<br>1)Acceleration: 50G.<br>2>Action Time : 11 ± 1 m sec.<br>3)Testing Direction: 6 sides.<br>4)Test cycle : 3 times in each direction             | As shown in item 2~6   |  |                      |
| 11   | Solderability | 1)Soldering Temperature: 230±5°C<br>2)Flux: 5-10 seconds.<br>3)Duration of solder Immersion:3±0.5 sec.  | No anti-soldering and the coverage of dipping into solder must more than 75% was requested.      |  |                      |

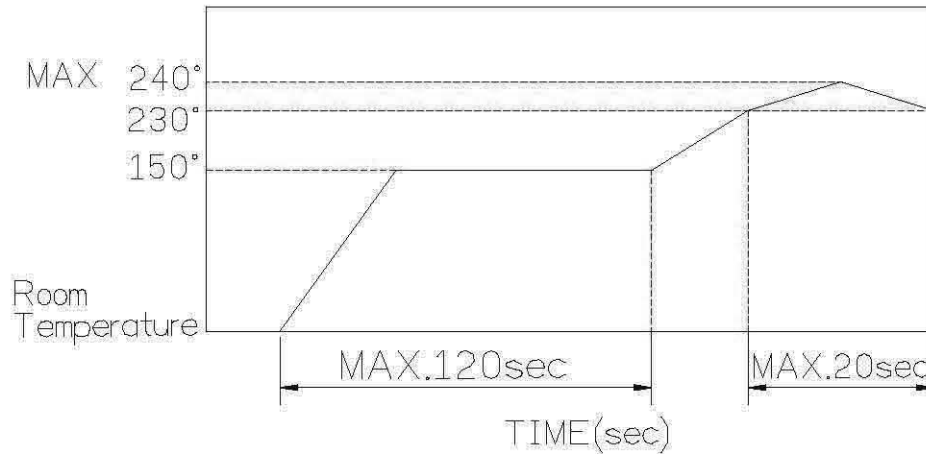
# ROTARY SWITCH SPECIFICATION

文件編號：E-B-AR01  
 版次：A  
 頁次：3 / 4

|               |            |                             |  |  |  |
|---------------|------------|-----------------------------|--|--|--|
| WEATHER-PROOF | DURABILITY | 12                          | Operation Life   | Measurements shall be made following the test set forth below:<br>1)25 mA, 24V DC resistive load<br>2)Rate of Operation: 15~20 cycles/ minute<br>3)Step of Operation: 20000 Steps. | 1)As shown in item 3,4<br>2)Contact Resistance: 200mΩ max.<br>3)final-after test |
|               | 13         | Resistance Low Temperature  | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made :<br>1)Temperature : -40°C±3°C<br>2)Time: 96 hours                                | As shown in item 2~6   |  |
|               | 14         | Resistance High Temperature | Following the test set forth below the Sample shall be left in normal temperature and humidity conditions for an hour before measurements are made :<br>1)Temperature : 85°C±2°C<br>2)Time: 96 hours                                 | 1)As shown in item 3~6<br>2)Contact Resistance: 200mΩ max.   |  |
|               | 15         | Resistance Humidity         | Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made :<br>1)Temperature : 40°C ±2°C<br>2)Relative Humidity :90~95%<br>3)Time: 96 hours | 1) As shown in item 4,6<br>2)Contact Resistance: 200mΩ max.<br>3)Insulation Resistance : 10MΩ min.   |  |

## 5. SOLDERING CONDITIONS:

### ■ Condition for Soldering - RM Series



- The condition mentioned above is the temperature on the Cu foil of the PCB surface.

There are cases where board's temperature greatly differs from switch's surface temperature depending on board's material, size, thickness, etc. Care, therefore, should be used not to allow switch's surface temperature to exceed 240°C.

### ■ Manual Soldering

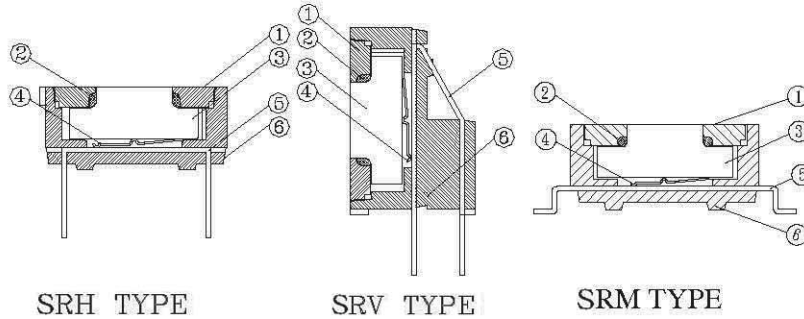
|                           |                |
|---------------------------|----------------|
| Soldering Temperature     | Max.350°C      |
| Continuous Soldering Time | Max. 3 seconds |

### ■ Precautions in Handling

Care should be exercised so that flux from the upper part of the printed circuit board does not adhere to the switch.

Please make sure that there is no flux rose over the surface of the PCB.

| ITEM | DESC.         | Q'TY | MATERIALS                                 | TREATMENT   | REMARK |
|------|---------------|------|---|---|--------|
| 1.   | COVER         | 1    | HIGH - TEMP.<br>THERMOPLASTIC<br>NYLON 9T | MOLDED BLACK  | -      |
| 2.   | SEALED RUBBER | 1    | SILICONE                                  | -   | -      |
| 3.   | ACTUATOR      | 1    | HIGH - TEMP.<br>THERMOPLASTIC<br>LCP      | MOLDED WHITE  | -      |
| 4.   | CONTACT       | 1    | ALLOY COPPER                              | GOLD PLATED AT CONTACT<br>AREA.   | -      |
| 5.   | TERMINAL      | 1    | BRASS                                     | ① GOLD PLATED AT<br>CONTACT AREA, TIN/LEAD<br>AT TERMINATION AREA<br>② CONTACT AND TERMINAL<br>PLATING: GOLD PLATING<br>OVER NICKEL | -      |
| 6.   | BASE          | 1    | HIGH - TEMP.<br>THERMOPLASTIC<br>NYLON 9T | MOLDED BLACK  | -      |



REMARK:

① PROD. NO. : S □ □ □ □ □ - □ □ □ □ - □

R = Rotary Type

Termination Type

H = Through Hole

V = Right Angle

M = S.M.T

Number of Terminals

4=4x1

3=3x3

2=3x2

Actuator Type

Recessed Actuator

H= High Actuator

M= 3.2 mm(Only For 16 Steps.)

Package Style:

B = Tube Package

T/R= Tape & Reel

R = Real Codes.

C = Complementary Codes  
(Only For 16 Steps.)

Number Of Steps:

10 = 10 Steps .

16 = 16 Steps .

□ = Terminal : Tin/Lea

Solder Plating

A = Terminal : Gold Plating

Over Nickel

|      |          |       |
|------|----------|-------|
|      |          |       |
|      |          |       |
|      |          |       |
|      |          |       |
|      |          |       |
| A    | DWG. REL |       |
| REV. | ECO. NO. | APPD. |

|                                    |                        |
|------------------------------------|------------------------|
| TITLE:<br>ROTARY TYPE DIP SWITCHES | APPD. :                |
| PRROD. NO. :SR□□□□-□□□□            | CHKD. :                |
| FILE NO. : E-B-CR01                | PR. : 楊佩儒              |
|                                    | REV : A SHEET : 1 of 1 |