

# DATA SHEET

**SUNGMUN CODE :** FSR-08  
**DESCRIPTION :** ROTARY DIP SWITCH

## **SUNGMUN ELECTRONICS CO., LTD.**

Address 301-302, Bucheon Technopark 345, Seokcheon-ro, Ojeong-gu  
Bucheon-si, Gyeonggi-do, Korea  
TEL. +82-32-328-1941~4  
FAX +82-32-328-1945  
E-mail [sungmun@sungmun.co.kr](mailto:sungmun@sungmun.co.kr)  
Website [www.sungmun.com](http://www.sungmun.com)

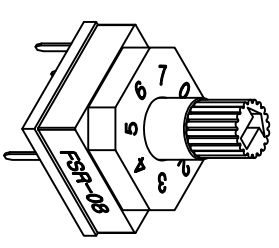
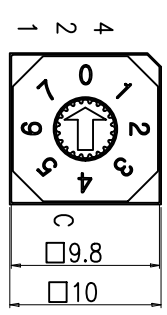
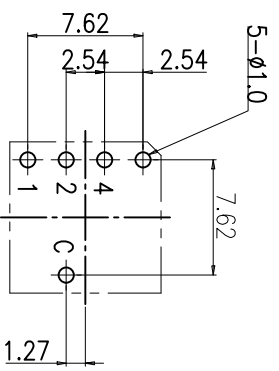


**SUNGMUN**  
ELECTRONICS

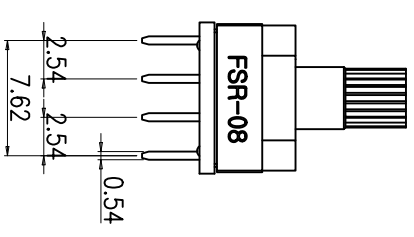
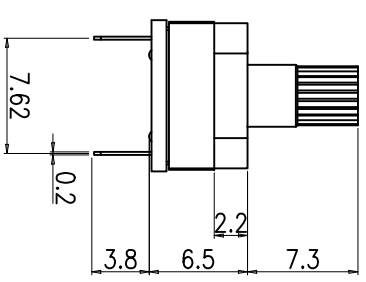
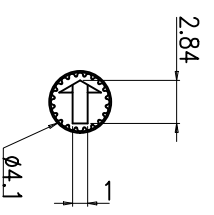
| REV. NO. | DATE | REVISION | DR | CH | APP |
|----------|------|----------|----|----|-----|
| △        |      |          |    |    |     |

## SPECIFICATION

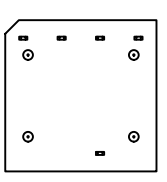
1. Rating : 150mA, DC 42V (Switching)  
200mA, DC 42V (None-Switching)
2. Contact Resistance : 80mΩ Max
3. Insulation Resistance : 100MΩ Min at DC 250V
4. Operating Force : 700gf Max
5. Life cycle : 10,000 steps
6. Packing : 50pcs Tube



P.C.B DIMENSION (Top View)



ACTUATOR



| Real Coded |   |   |   |   |
|------------|---|---|---|---|
|            | C | 1 | 2 | 4 |
| 08         | ● |   |   |   |
| P          | ● | ● |   |   |
| 0          | ● |   | ● |   |
| S          | ● | ● | ● |   |
| i          | ● |   |   | ● |
| t          | ● |   |   |   |
| o          | ● | ● |   |   |
| n          | ● |   | ● |   |
|            | ● |   | ● |   |
|            | ● |   | ● |   |
|            | ● |   | ● |   |
|            | ● |   | ● |   |

| 01            | -           |            | -          |               | -                 |        | -    |  |  |
|---------------|-------------|------------|------------|---------------|-------------------|--------|------|--|--|
| NO.           | DESCRIPTION | CHECKED    | APPROVED   | MATERIAL      | COLOR / FINISH    | REMARK |      |  |  |
| DRAW/DESIGNED | K.N KIM     | W.J LEE    | W.J LEE    | G.TOL<br>±0.3 | ROTARY DIP SWITCH |        |      |  |  |
| 2022-07-29    | 2022-07-29  | 2022-07-29 | UNIT<br>mm | SCALE<br>N/S  | MODEL NO.         | FSR-08 | REV. |  |  |
|               |             |            | SIZE<br>A4 | DRAW NO.      | FSR-08-03         |        | 03   |  |  |



## 1. Description:

This specification describes "10X10 size of Rotary Dip Switches" which are S, T, F and Q,E series.

1-1 Operating / Storage Temperature Range : -40°C ~ +85°C

## 2. Rating:

2-1 None-Switching : 200 mA, DC 42V

2-2 Switching : 150 mA, DC 42V

3. Type of Actuation : Rotating

## 4. Electrical Characteristics

| ITEM | DESCRIPTION                     | TEST CONDITIONS  | REQUIREMENTS   |
|------|---------------------------------|--|--|
| 4-1  | Visual Examination              | By visual examination check without any out pressure & testing.  | There shall be no defects that affect the serviceability of the product. |
| 4-2  | Contact Resistance              | ① To be measured between the two terminals associated with each switch pole.<br>② Measurements shall be made with a 1kHz shall current contact resistance meter. | 80mΩ max.  |
| 4-3  | Insulation Resistance           | 250V DC, 1minute ±5seconds   | 100 MΩ min.  |
| 4-4  | Dielectric withstanding Voltage | 250V AC(50Hz or 60Hz)shall be applied between all the adjacent terminal and between the terminal and the frame for 1 minute.                                     | There shall be no breakdown or flashover.                                |

## 5. Mechanical Characteristics

| ITEM | DESCRIPTION     | TEST CONDITIONS  | REQUIREMENTS  |
|------|-----------------|--|---|
| 5-1  | Operation Force | Operating direction shall be clockwise or counter clockwise direction  | 700gf·cm max  |
| 5-2  | Operation Life  | Measurements shall be made following the test set forth below:<br>1)150mA, 42V DC resistive load<br>2)Rate of operation: 15~20 cycles/ minute<br>3)Step of operation: 10,000 steps | 1)As shown in item 4-3, 4-4<br>2)Contact Resistance:<br>200mΩ max |

## 6. Environmental Characteristics

| ITEM | DESCRIPTION                 | TEST CONDITIONS  | REQUIREMENTS   |
|------|-----------------------------|--|--|
| 6-1  | 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                               | 1)As shown in item 4-3, 4-4, 5-1<br>2)Contact Resistance:<br>200mΩ max                                     |
| 6-2  | 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 4-3, 4-4, 5-1<br>2)Contact Resistance:<br>200mΩ max                                     |
| 6-3  | 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 4-4, 5-1<br>2)Contact Resistance:<br>200mΩ max<br>3)Insulation Resistance:<br>10 MΩ min |

7. This item is "RoHS" Compliant

8. Manual Soldering : Max 350°C, 3 sec.

9. Wave Soldering : Max 260°C, 5 sec.

10. Reflow Soldering Conditions: (SMD type only)



### 10-1 Condition for Soldering

| Profile Feature                                     | Pb-Free Assembly |
|---|------------------|
| Average Ramp-UP Rate( $T_s\ max$ to $T_P$ )         | 3°C/second max   |
| Preheat   |                  |
| - Temperature Min( $T_s\ min$ )                     | 150°C            |
| - Temperature Max( $T_s\ max$ )                     | 200°C            |
| - Time ( $t_s\ min$ to $t_s\ max$ )                 | 60-180seconds    |
| Time maintained above:                              |                  |
| - Temperature ( $T_L$ )                             | 217°C            |
| - Time ( $t_L$ )                                    | 60-150seconds    |
| Peak/Classification Temperature( $T_P$ )            | 260°C +0°C/ -5°C |
| Time within 5°C of actual Peak Temperature( $T_P$ ) | 5~10 seconds     |
| Ramp-Down Rate                                      | 6°C/sec max      |
| Time 25°C to Peak Temperature                       | 8 minutes max    |