

# MICRO SWITCH SPECIFICATION

## 1.GENERAL

- 1-1 Switch action : SS0505P(5A)用SS-CS-350  
1-2 Switch rating : 5A 125VAC, 3A 250VAC  
1-3 Operation temperature range : - 25℃—80℃  
1-4 Preservative temperature range : - 30℃ — 85℃  
1-5 Appearance and dimensions : See outside drawing page  
1-6 Standard conditions : Unless otherwise specified, the test and measurements shall be carried out as follows:

Ambient temperature : 5--35℃

**Relative humidity** : 45--85% RH

**Air pressure** : 86--106 kPa ( 860--1060mbar)

However, if doubt arises on the decision based on the measured values under the above- mentioned conditions, the following conditions shall be employed.

Ambient temperature : 20±2 °C

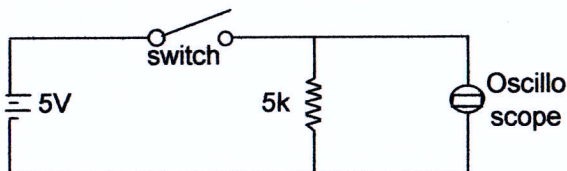
Relative humidity :  $65 \pm 5$  % RH

**Air pressure** : 86—106 kPa ( 860—1060mbar)

## 2.PERFORMANCE

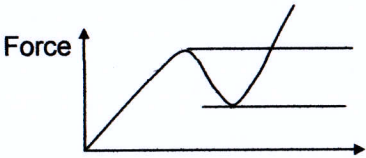
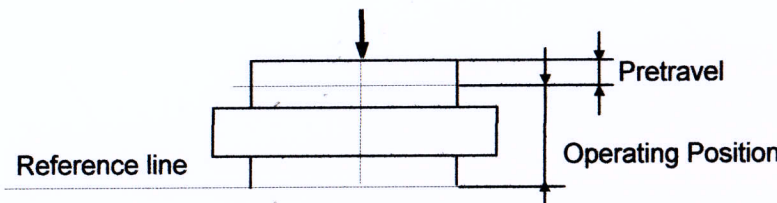
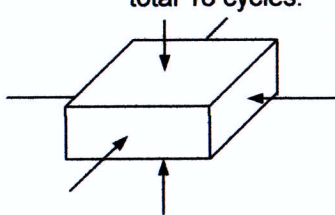
## 2-1 Electrical characteristics

| NO    | ITEM                            | TEST CONDITIONS                                                                                                                                            | PERFORMANCE                  |
|-------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| 2.1.1 | Contact resistance              | Applying a static load twice the actuating force to the center of the stem, measurements shall be made with a 1KHz small-current contact resistance meter. | 30mΩ max.                    |
| 2.1.2 | Insulation resistance           | Measurements shall be made following application of DC 500V potential across terminals and across terminals and frame for one minute.                      | 100MΩ min.                   |
| 2.1.3 | Dielectric withstanding voltage | AC 1000V(50Hz or 60Hz) shall be applied across terminals and across terminals and frame for one minute.                                                    | There shall be no breakdown. |
| 2.1.4 | Bounce                          | Lightly striking the center of the stem at a rate encountered in normal use (3 to 4 operations per sec) bounce shall be tested at "ON" and "OFF".          | 10m sec max.                 |



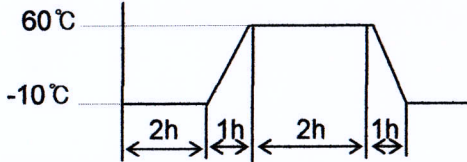
|          |      |                           |       |        |                                                                                     |                 |                 |              |                           |  |        |
|----------|------|---------------------------|-------|--------|-------------------------------------------------------------------------------------|-----------------|-----------------|--------------|---------------------------|--|--------|
|          |      |                           |       |        | APPROVAL                                                                            | CHECK           | DESIGN          | TITLE        | SS0505P(5A)<br>用SS-CS-350 |  | 1<br>3 |
|          |      |                           |       |        |  | 洪文<br>2015.9.16 | 黄忠<br>2015.9.16 |              |                           |  |        |
| MARK     | DATE | APPR.                     | CHECK | DESIGN | 2015.9.16                                                                           |                 |                 | DRAWG<br>NO. |                           |  |        |
| Rev NO.A |      | HIGHLY ELECTRIC CO., LTD. |       |        |                                                                                     |                 |                 |              |                           |  |        |

## 2-2 Mechanical characteristics

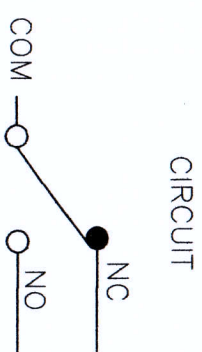
| NO    | ITEM                     | TEST CONDITIONS                                                                                                                                                                                                       | PERFORMANCE                                    |
|-------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| 2.2.1 | Operation force          | Push by recommended operating condition<br>                                                                                          | Push force :105gf Max<br>Return force:12gf min |
| 2.2.2 | Travel                   | Push by recommended operating condition<br>                                                                                         | Pretravel: 3.3mm Max.                          |
| 2.2.3 | Operating Position       | The Position of the actuator at Which the contacts snap to the operated contract position.                                                                                                                            | Operating Position: 14.5±0.8 mm                |
| 2.2.4 | Stop strength            | Astatic load of 3kgf shall be applied in the direction of stem operation for a period of 60 seconds.                                                                                                                  | No damage<br>(Electrical and mechanical)       |
| 2.2.5 | Stem strength            | The maximum force to withstand a pull applied opposite to the direction of stem operation shall be measured.                                                                                                          | 500gf min.                                     |
| 2.2.6 | Vibration test           | 1)Amplitude : 1.5mm<br>2)Sweep rate :10-55-10Hz for 1 minute.<br>3)Sweep method : Logarithmic frequency sweep rate.<br>4)Vibration direction : X.Y.Z(3 directions)<br>5)Time : Each direction 2 hours (Total 6 hours) | No 2.1 and 2.2.1 to 2.2.2 shall be satisfied.  |
| 2.2.7 | Impact shock test        | 1)Acceleration : 80G<br>2)Cycles of test : 3 cycles each in 6 directions, for a total 18 cycles.<br>                               | No 2.1 and 2.2.1 to 2.2.2 shall be satisfied.  |
| 2.2.8 | Wave Soldering heat test | Soldering area : t/2 of P.W.B thickness<br>(P.W.B : t = 1.6)<br>Soldering temperature : 255 ±5℃<br>Soldering time : 5±1 sec.                                                                                          | No damage<br>(Electrical and mechanical)       |

|          |      |       |       |        |                                                                                     |           |           |           |                           |
|----------|------|-------|-------|--------|-------------------------------------------------------------------------------------|-----------|-----------|-----------|---------------------------|
|          |      |       |       |        | APPROVAL                                                                            | CHECK     | DESIGN    | TITLE     |                           |
|          |      |       |       |        |  | 洪文        | 黄忠        |           |                           |
|          |      |       |       |        | 2015.9.16                                                                           | 2015.9.16 | 2015.9.16 | DRAWG NO. | SS0505P(5A)<br>用SS-CS-350 |
| MARK     | DATE | APPR. | CHECK | DESIGN |                                                                                     |           |           |           | 2<br>3                    |
| Rev NO.A |      |       |       |        | HIGHLY ELECTRIC CO., LTD.                                                           |           |           |           |                           |

### 2-3 Climatic characteristics

| NO    | ITEM                | TEST CONDITIONS                                                                                                                                                                         | PERFORMANCE                                                                                                                                                            |
|-------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.3.1 | Cold test           | 1) Temperature : $-30\pm 2^{\circ}\text{C}$<br>2) Duration of test : 96 hours<br>3) Take off a drop water<br>4) Standard condition after test : 1 hour                                  | Contact resistance : $150\text{m}\Omega$ max.<br>No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied.                                                              |
| 2.3.2 | Heat test           | 1) Temperature : $80\pm 2^{\circ}\text{C}$<br>2) Duration of test : 96 hours<br>3) Standard conditions after test : 1 hour                                                              | Contact resistance : $150\text{m}\Omega$ max.<br>No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied.                                                              |
| 2.3.3 | Temperature cycle   | 1) Test cycles : 5 cycles<br>2) Standard conditions after test : 1 hour<br>3) 1 cycle :<br>            | Contact resistance : $150\text{m}\Omega$ max.<br>No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied.                                                              |
| 2.3.4 | Humidity test       | 1) Temperature : $60\pm 2^{\circ}\text{C}$<br>2) Relative humidity : 90–95%<br>3) Duration of test : 96 hours<br>4) Take off a drop water<br>5) Standard conditions after test : 1 hour | Contact resistance : $150\text{m}\Omega$ max.<br>No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied.                                                              |
| 2.3.5 | Operating life test | 1) 5A 125VAC, 3A 250VAC Resistance load<br>2) Operation speed : 6–10 cycles/min<br>3) Push force : Maximum value of operation force<br>4) Cycles of operation : 100,000cycles           | Contact resistance : $250\text{m}\Omega$ max.<br>Bounce : 20m sec max.<br>Actuating force: $\pm 30\%$ initial force<br>No 2.1.2 to 2.1.3 and 2.2.2 shall be satisfied. |
|       |                     |                                                                                                                                                                                         |                                                                                                                                                                        |
|       |                     |                                                                                                                                                                                         |                                                                                                                                                                        |

|          |      |                           |       |        |                                                                                     |           |           |              |                           |  |        |
|----------|------|---------------------------|-------|--------|-------------------------------------------------------------------------------------|-----------|-----------|--------------|---------------------------|--|--------|
|          |      |                           |       |        | APPROVAL                                                                            | CHECK     | DESIGN    | TITLE        | SS0505P(5A)<br>用SS-CS-350 |  | 3<br>3 |
|          |      |                           |       |        |  | 洪文        | 黄忠        |              |                           |  |        |
|          |      |                           |       |        | 2015.9.16                                                                           | 2015.9.16 | 2015.9.16 | DRAWG<br>NO. |                           |  |        |
| MARK     | DATE | APPR.                     | CHECK | DESIGN |                                                                                     |           |           |              |                           |  |        |
| Rev NO.A |      | HIGHLY ELECTRIC CO., LTD. |       |        |                                                                                     |           |           |              |                           |  |        |



|                 |                 |                                                                                                               |         |                                                                                     |                                       |
|-----------------|-----------------|---------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------|---------------------------------------|
| 海立電氣股份有限公司      |                 |                                                                                                               |         | HIGHLY ELECTRIC CO., LTD.                                                           |                                       |
| 0.000 $\pm$     | 0.000 $\pm$     | SCALE 3 : 1                                                                                                   | EDITION | A                                                                                   | MATERIAL                              |
| 0.00 $\pm$ 0.5° | 0.00 $\pm$ 0.10 | APPROVED/DATE<br><div style="border: 1px solid red; padding: 2px;">             洪文 2015.9.16           </div> |         | UNIT                                                                                | PROCESS                               |
| 0.0 $\pm$ 1°    | 0.0 $\pm$ 0.25  | CHECKED/DATE<br>洪文 2015.9.16                                                                                  |         | m/m                                                                                 | TYPE NO.<br>SS0505P(5A)<br>用SS-CS-350 |
| 0 $\pm$ 2°      | 0 $\pm$ 0.50    | DRAWN/DATE<br>黃忠 2015.9.16                                                                                    |         |  | DRG NO.<br>SS0505P(5A)<br>用SS-CS-350  |
| ANGULAR         | LINEAR          |                                                                                                               |         |                                                                                     |                                       |
| TOLERANCE       |                 |                                                                                                               |         |                                                                                     |                                       |