

旋轉感測器製品規格書

ROTARY SENSOR SPECIFICATIONS

1. 一般事項 General

1.1 使用溫度範圍 Operating Temperature Range: -40 ~ +85°C

1.2 保存溫度範圍 Storage Temperature Range: -40 ~ +85°C

1.3 試驗狀態 Test conditions

若無特別規定限制, 試驗及測定以標準狀態測之

Unless otherwise specified, the atmospheric conditions for making measurements and tests are as follows.

溫度 Ambient temperature: 5 ~ 35°C

相對濕度 Relative humidity: 45 ~ 85%

氣壓 Air pressure: 86 ~ 106kPa (860~1060 mbar)

但對此標準狀態之測定值發生判定疑問或有特別要求則以基準狀態為準測定

Should any doubt arise in judgment, Test shall be conducted at the following conditions

溫度 Ambient temperature: 20±2°C

相對濕度 Relative humidity: 60 ~ 70%

氣壓 Air pressure: 86 ~ 106kPa (860~1060 mbar)

2. 外觀, 構造, 尺寸 Appearance, construction and dimensions.

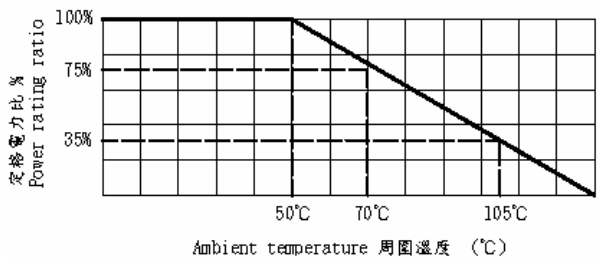
2.1 外觀 Appearance

各部份之加工須良好, 機能上不能有生鏽、刮傷、裂痕、電鍍不良及剝離等現象發生

Switch shall have good finishing, and shall have no rust, crack or plating failures

2.2 構造、尺寸: 依組立圖 Construction and dimensions: Refer to individual product drawing.

3. 電氣性能 Electrical performance

NO.	項目 Property	試驗條件 Test conditions	判定基準 Performance
3.1	全阻抗值 Total resistance	測定端子1-3間的阻抗值 Measurement shall be made by the resistance between terminal 1 and 3	公稱全阻抗值 Nominal total resistance ±30%
3.2	額定電力 Power rating	端子1和3間所能連續負荷之最大電力 Power rating is based on continuous full load operation at the maximum voltage between terminal 1 and terminal 3 周圍溫度和額定電力的關係如下圖表示 Power rating to ambient temperature shall be denoted on the following graph  Ambient temperature 周圍溫度 (°C)	0.15W

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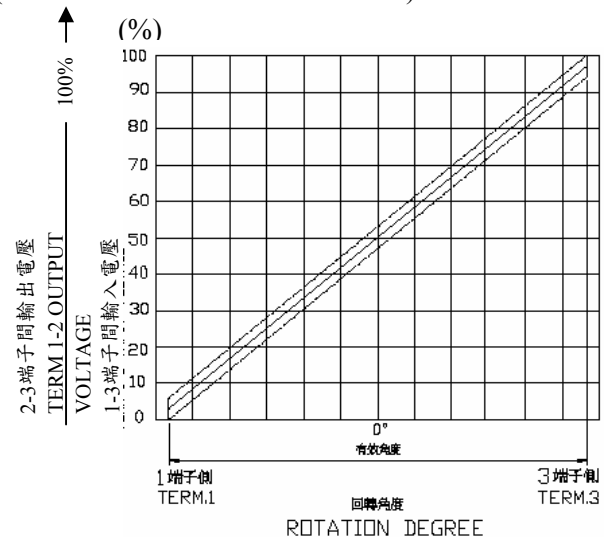
2008.10.30

規格書內容更改

zhong
xuefeng

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NO.	項目 Property	試驗條件 Test conditions	判定基準 Performance
3.3	抵抗變化特性 Taper	電壓法測定 Measurement shall be made by the resistance law method .	直線型 Linear type
3.4	額定電壓 Rated voltage	額定電壓 Rated voltage $E=\sqrt{PR}$ 額定電力 P: Power rating (W) 公稱全阻抗值 R: Nominal total resistance (Ω) 當額定電壓超過最高使用電壓的時候, 最高使用電壓即為額定電壓。 When the rated voltage exceeds the maximum operating voltage , the maximum operating voltage shall be the rated voltage .	
3.5	絕緣阻抗 Insulation resistance	外框(外蓋)-阻抗體端子間印加250V D.C,1分鐘後測定 Applied position: between individual terminals of resistor and frame (case) Test voltage : 250V DC, measured after 1 minute	100M Ω 以上 100M Ω min.
3.6	耐電壓 Voltage proof	外框-阻抗體端子間印加2mA.250V A.C.60HZ,測試1分鐘 Between individual terminals of resistor and frame (case) . Trip current 2mA. 250VA.C. 60HZ 1min.	不可有絕緣破壞 Without breakdown
3.7	電壓出力值 Output voltage	在端子1-3間印加5V D.C 把柄在X-X,Y-Y 方向動作時, 端子1-2間的電壓值對端子1-3間的電壓值之比 (端子1-2 間電壓/端子1-3間電壓x100%) Output voltage is defined the ratio of the voltage terminals 1-2 to terminals 1-3 . 5V D.C shall applied to the terminals between 1 and 3 . And then output vpltage shall be measured with the lever operation on the line X-X and Y-Y . (Terminal 1-2/ terminal 1-3 x100%) 	誤差值： ± 3% Absolute : ± 3%

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NO.	項目 Property	試驗條件 Test conditions	判定基準 Performance
3.8	最高使用電壓 Max operating Voltage		DC 250V

4. 機械功能: Mechanical specification

	項目 Property	試驗條件 Test conditions	判定基準 Performance
4.1	動作力 Operating force		100gf.cm 以下 100gf.cm MAX
4.2	全回轉角度 Total rotational angle		360° 回轉(Endless)
4.3	電氣使用有效角度 Effective Electrical angle		340° ± 10°
4.4	鉸合強度 Strength of rivet	在軸之方向加壓力或張力之靜負荷50N (5Kgf) 10秒 Push and pull static load of 50N (5Kgf) shall be applied to the shaft in the axial direction for 10S	不可有電氣或機械上的異常 Appearance without damage no excessive abnormality in rotational feeling , and electrical characteristics shall be satisfied.

5. 耐久性能 Durability

NO.	項目 Property	試驗條件 Test conditions	判定基準 Performance
5.1	無負荷壽命 Operating life without load	在無負載下連續動作100,000次(動作速度20次/分) Sensor shall be operated 100,000 cycle at 20 cycle/minute without load	全阻抗值,初期值+40%/-40% The changing in total resistance to the value of before test is : +40%/-40%
5.2	電氣負荷壽命 Electrical life with load	在50±2°C 環境下,以0.15W 負載,測試1000小時 Sensor shall be tested at 50±2°C with load 0.15W for 1000 hours	電壓出力值誤差值 Output voltage Absolute: ± 3%

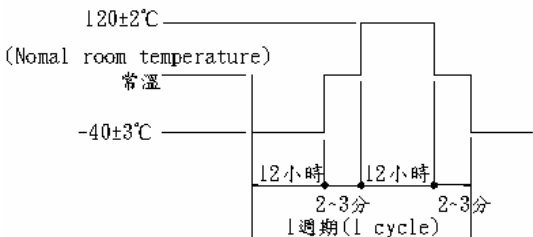
6. 耐候環境性 Environmental test

NO.	項目 Property	試驗條件 Test conditions	判定基準 Performance
6.1	耐寒性 Cold proof	-40±2°C 放置96小時試驗後,置于常溫常濕中1小時,除去水滴後,在1小時內測定之。 After testing at -40±2°C for 96 hours , the sensor shall be allowed to stand under normal temperature and humidity conditions for 1 hour ,and then measurement shall be made within 1 hour . Water Drops shall be removed .	全阻抗值,初期值+40%/-40% The changing in total resistance to the value of before test is: +40%/-40% 電壓出力值誤差值: Output voltage Absolute: ± 3%

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NO.	項目 Property	試驗條件 Test conditions	判定基準 Performance
6.2	耐熱性 Dry heat	<p>85±2°C 放置96小時試驗後,置于常溫常濕中1小時,在1小時內測定之.</p> <p>After testing at 85±2°C for 96 hours, the sensor shall be allowed to stand under normal room temperature and humidity conditions for 1 hour, and then measurement shall be made within 1 hour.</p>	
6.3	耐濕性 Damp heat	<p>在溫度40±2°C,相對濕度95%放置96小時試驗後,置于常溫常濕中1小時,除去水滴後,在1小時內測定之.</p> <p>After testing at 40±2°C and 95% RH for 96 hours, the sensor shall be allowed to stand under normal room temperature and humidity conditions for 1 hour, and then measurement shall be made within 1 hour. Water Drops shall be removed.</p>	
6.4	溫度循環試驗 Change of temperature	<p>以下記條件做5個周期的試驗後放置1小時以內測試之,但是水珠必須去除.</p> <p>After 5 cycles of following conditions, the sensor shall be allowed to stand under room temperature and humidity conditions for 1 hour and measurement shall be made within 1 hour after that. Water drops shall be removed.</p> <div style="text-align: center;">  <p>120±2°C (Nomal room temperature) 常溫 -40±3°C</p> <p>12小時 2-3分 12小時 2-3分</p> <p>1週期 (1 cycle)</p> </div>	
6.5	焊錫耐熱性 Resistance of soldering heat	<p>依下列條件試驗後測定之</p> <p>The test shall be conducted under the following conditions 焊錫 Re-flow soldering Re-flow</p> <p>置於180±2°C之高溫槽2分鐘後再置於260±2°C的高溫槽1分鐘,然後回到常溫測試</p> <p>The sensor shall be stored in a chamber at 180±2°C for 2 min. Then the sensor shall be kept in a chamber at 260±2°C for 1 min. The measurement shall be made after going back to normal room temperature</p>	

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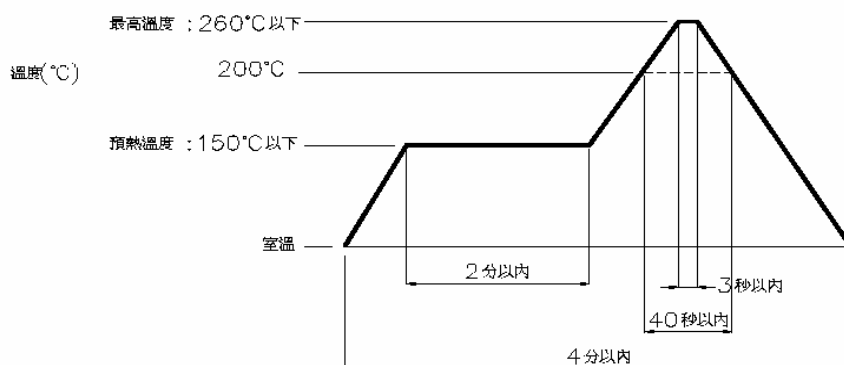
7. 焊錫使用注意事項 Precaution in soldering

*焊錫條件 Reflow soldering condition .

焊錫方式參考例 Example of re-flow soldering condition (reference) Re-flow

加熱方式：以遠距離紅外線上下加熱之

Heating method : Double heating method with infrared heater



溫度分布圖°C

(1)上述條件為P.C.B 組裝表面溫度,部份基板因材質,大小及厚度等引起基板溫度與sensor 表面溫度很大 sensor 表面溫度勿超過260°C請確認

The condition mentioned above is the temperature on the P.C board surface on which parts are mounted . In cases where board's temperature greatly differs from sensor's surface temperature depend on the board's material thickness etc. Care therefore should be taken to prevent the sensor's surface temperature from exceeding 260°C

(2)因REFLOW 爐的種類不同,條件設計上亦有差異,使用前詳加確認

As the conditions vary somewhat depending on the kind of reflow soldering equipment please make sure you choose the right one before use

* 人工焊錫條件 Manual soldering

若以人工焊錫實施焊錫時, 必須附帶下列條件：

In case an manual soldering apparatus is used for soldering adhere to the following conditions

項目 Item	焊錫條件 Soldering condition
焊錫溫度 Soldering temperature	350°C以下 350°C max.
連續焊錫時間 Continuous soldering time	3 秒以下 3 sec max.

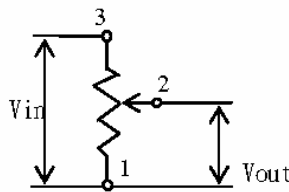
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8. 其它注意事項 Other precautions :

- (1). 在焊錫過程中, 不可用溶劑或類似品清洗感測器。
Following the soldering process do not try to clean the sensor with a solvent or the like .
- (2). 焊錫時請注意防止助焊劑從感測器頂部滲入。
Safeguard the sensor assembly against flux penetration from its top side .
- (3). 為了避免保管場所的環境引起端子變化, 未到使用之前, 請勿拆封, 感測器的保存期限出貨後3個月內。
Please have the products keep in close status and the storage time is 90 days guaranty after delivering the goods at most .
- (4) 使用回路 : Application
電壓調整型使用 The controller shall be applied to voltage-devider circuit



ROHS COMPLIANCE

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