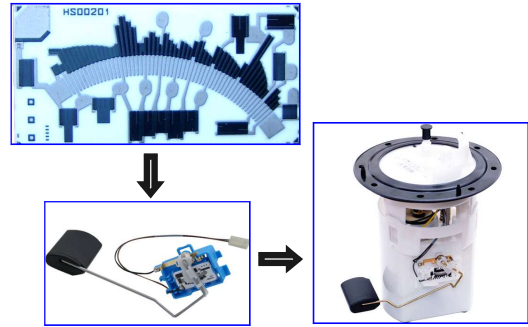


油位傳感器用厚膜電阻板 TFR for Fuel Level Sensor

特點 Features

FLS系列產品包括摩托車油位電阻片、汽車油位電阻片，是本公司專門為汽車、摩托車油位傳感器設計的電阻板。採用厚膜工藝加工而成，具有良好的耐柴油、汽油腐蝕性和良好的抗磨性能。

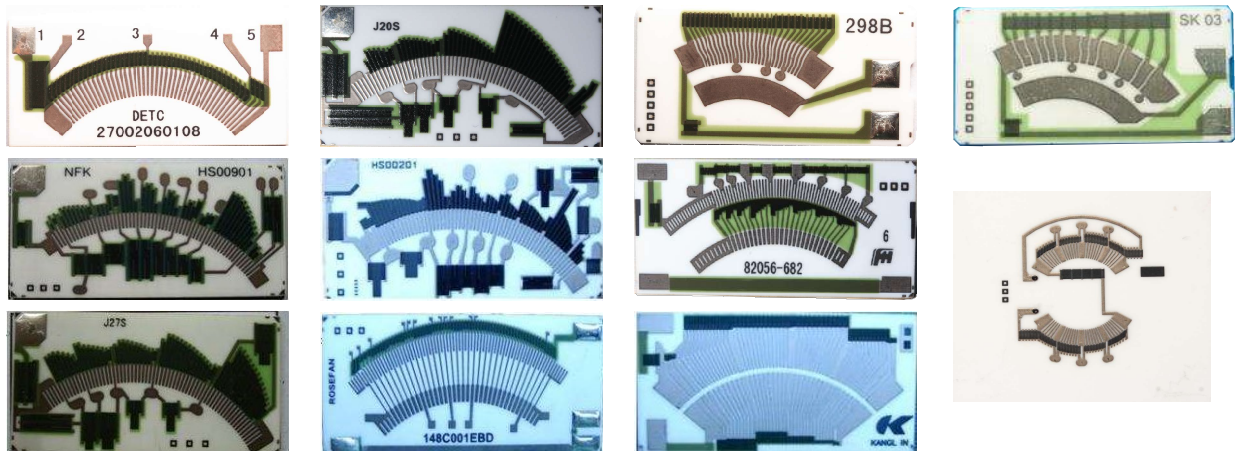
FLS series products which include motorcycle and automobile, are the resistor panel which are especially designed for automobile and motorcycle oil sensor. It is manufactured by using thick film technology, with good resistance to diesel, petrol and good corrosion resistance anti-wear performance.



額定值 Ratings

- * 工作溫度範圍 Operating temperature range: $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$.
- * 基片材料 Substrate materials: $96\%\text{AL}_2\text{O}_3$.
- * 導體材料 Conductor material: Ag/Pd, 導體附着力強 Strong adhesion.
- * 耐磨指標: 鍍青銅觸點在電極表面滑動(接觸壓力為 $0.25 \pm 0.05\text{N}$)，200萬次(空氣中)或500萬次(汽油或柴油中)后能滿足電阻特性要求。
Wear life: When bronze slide on the conductor (pressure is $0.25 \pm 0.05\text{N}$), the resistance can be filled after 200 million cycle (in the air) or 500 million cycle (dip in gasoline or diesel oil).
- * 電阻阻值精度 Resistance tolerance: $\pm 1\%$ or $\pm 0.5\%$.
- * 電阻溫度系數 Temperature coefficient(TCR) : $\pm 250\text{ppm}/^{\circ}\text{C}$.

相關產品 Other Applications



- * 可根據客戶實際要求進行訂制。
We can especially product for the client, if the client has special requirements to the products.

• 特性 Characteristics

試驗項目 Test Item	規定值 Standard	測試方法 Test Method
導體耐磨性 Wear life	試驗后產品接觸導線不斷綫，試驗后阻值符合要求。 After test contact wire line, after the test value conforms to the requirement	使用材料為鈹青銅的滑動觸點在導體層的滑動區內接觸導體，觸點與導體層滑動區的接觸壓力為 $0.25\text{ N} \pm 0.05\text{ N}$ ，來回磨擦，每一個來回為一次，試驗要求不少于200萬個周期(空氣中)或500萬個周期(浸入汽油或柴油中)。 Materials used for the bronze sliding contact area in sliding contact with the conductor layer of the conductor, the conductor layer sliding contact with the contact area pressure $0.25\text{ N} \pm 0.05\text{ N}$, rub back and forth, back and forth to each one, the test requires less than 200 million cycles (in the air) or 500 million cycle (dip in gasoline or diesel oil).
耐有機溶劑 腐蝕性 Corrosion resistance to organic solvents	$ \Delta R/R \leq 1\%$	使用溶劑：85%柴油(或92#汽油)+15%乙醇。 Solvent: 85% diesel (or 92 # gasoline) + 15% ethyl alcohol 溶劑溫度： $(23 \pm 5)^\circ\text{C}$ Solvent temperature: $(23 \pm 5)^\circ\text{C}$ 浸泡時間： $(10 \pm 1)\text{h}$ Soaking time: $(10 \pm 1)\text{h}$
耐焊接熱 Resistance to Soldering Heat	$ \Delta R/R \leq 1\%$	將焊盤完全浸入 $270^\circ\text{C} \pm 5^\circ\text{C}$ 的錫槽，保持 $(5 \pm 1)\text{s}$ 。恢復時間 $(24 \pm 4)\text{h}$ 。 The pad completely immersed in $270^\circ\text{C} \pm 5^\circ\text{C}$ of the tin bath, to maintain $(5 \pm 1)\text{s}$. Recovery time $(24 \pm 4)\text{h}$.
電阻溫度系數 T.C.R	在規定值內 within specified T.C.R	IEC 60115-1 4.8 $+25^\circ\text{C}/-55^\circ\text{C}/+25^\circ\text{C}/+125^\circ\text{C}/+25^\circ\text{C}$
溫度快速變化 Rapid Change of Temperature	$ \Delta R/R \leq 1\%$	IEC 60115-1 4.19 $-40^\circ\text{C}(30\text{分鐘}) \sim \text{常溫}(5\text{分鐘}) \sim 85^\circ\text{C}(30\text{分鐘})$ 5個循環； $-40^\circ\text{C}(30\text{min}) \sim \text{normal temperature}(5\text{min}) \sim 85^\circ\text{C}(30\text{min})$ 5cycles;
短時間過負載 Short Time Overload	$ \Delta R/R \leq 1\%$	IEC 60115-1 4.13 施加2.5倍額定電壓或最大過負荷電壓(取較小者)，持續5秒。 Apply 2.5 times rated voltage or Max overload voltage, whichever is lower, for 5 s.
70°C 耐久性 Endurance at70°C	$ \Delta R/R \leq 1\%$	IEC 60115-1 4.25.1 $70^\circ\text{C} \pm 2^\circ\text{C}$ ，1000小時 額定電壓通1.5小時，斷0.5小時，持續1000小時。 $70^\circ\text{C} \pm 2^\circ\text{C}$ ，1000h Rated voltage 1.5h on/ 0.5h OFF 1000h.
穩態濕熱 Damp Heat Steady State	$ \Delta R/R \leq 1\%$	IEC 60115-1 4.24 $40^\circ\text{C} \pm 2^\circ\text{C}$ ， $93\% \pm 3\%\text{RH}$ ，1000h.
低溫貯存 Low Temperature Storage	$ \Delta R/R \leq 1\%$	將產品放置于 $(-55 \pm 1)^\circ\text{C}$ 的低溫試驗箱存儲，持續時間：1000 h。 Place the product in the low temperature storage chamber which the temperature is $(-55 \pm 1)^\circ\text{C}$, duration: 1000 h.
高溫貯存 Resistance to Dry Heat	$ \Delta R/R \leq 1\%$	將電阻板放置于 $(125 \pm 1)^\circ\text{C}$ 的高溫試驗箱存儲，持續1000 h。 Place the resistance plate on the $(125 \pm 1)^\circ\text{C}$ high temperature storage chamber, continuous 1000 h.

* 上述試驗電阻值均按總阻值進行測量判斷。

The above test resistance values are measured by total resistance values.

■ 修訂履歷 Revision History

版本Version	日期Date	修訂內容 Change Description	修改確認 Checked by
V2020.0	2020-06-23	- 原版 The original version.	吳曉玲 Xiaoling Wu
V2020.1.0	2021-01-13	- 刪除額定值中“額定電壓” Delete the rated voltage in Ratings.	何志江 Zhijiang He

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