



*Magic Touch*

# *Super Elite Technology Co., Ltd.*

ISSUE NO : 2K8AA096

DATE : 10/23/2008

## **4 Wires Touch Panel SE-AC225174-1 (10.4'')** Film/Glass Specification

<b>APPROVAL BY</b>	<b>CHECKED BY</b>	<b>REPORTED BY</b>
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<p><b>1. Suitability</b> [適用]</p> <p>This specification is for Four Wire analog resistive touch panel. 本規格適用於 4 線-類比電阻式觸控面板。</p> <p><b>2. Application</b> [應用]</p> <p>The touch panels used as the input devices for general electric appliances and OA equipment. 觸控面板這類型的輸入裝置，在一般電子產品及 OA 設備上廣泛的被使用。</p> <p><b>3. Environmental Requirement</b> [環境特性]</p> <p><b>3.1 Operation Temperature and humidity</b> [操作溫度及溼度] -10°C to 60°C, &lt;90%RH (Non-condensing) [沒有結露]</p> <p><b>3.2 Storage Temperature and humidity</b> [儲存溫度及溼度] -20°C to 70°C, &lt;90%RH (Non-condensing) [沒有結露]</p> <p><b>4. Shape and Dimension</b> [外型尺寸] Please refer the last page of this specification. [請參考最後一頁]</p> <p><b>5. Optical Performance</b> [光學特性] Total Light Transmittance &gt;80%. (JIS K7361) [全光線透過率&gt;80%.] (JIS K7361)</p>						
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<p><b>6. Electrical Performance</b> [電氣特性]</p> <p>6.1 Connector Resistance [端點電阻]  200Ω &lt; X Axis [軸] &lt; 900Ω  200Ω &lt; Y Axis [軸] &lt; 900Ω</p> <p>6.2 Insulation Resistance [絕緣電阻]  20MΩ ↑ @ DC 25V</p> <p>6.3 Linearity [直線性]  X Axis [軸] : ±1.5%  Y Axis [軸] : ±1.5%</p> <p>6.4 Operating Voltage [操作電壓]  3~7V DC</p> <p>6.5 Operating Current [操作電流]  5mA ~ 25mA。</p> <p><b>7. Mechanical Properties</b> [機械特性]</p> <p>7.1 Activation Force [作動壓力]  Finger : 30 ~ 100 gf, 8R silicon rubber(rubber hardness:50~60°)  [手指 : 30 ~ 100 gf, 8R silicon 橡膠(橡膠硬度:50~60°)]</p> <p>7.2 Surface hardness [表面硬度]  ≥3H ( JIS K5400)</p> <p>7.3 FPC Peeling Strength [FPC 剝離強度]  500 g/cm (Peeling at an angle 90° toward film)  500 g/cm [向上垂直剝離]</p> <p>7.4 FPC Bending Strength [FPC 耐屈折性]  FPC bending 10times or more by R1mm angle 500g, each bending 180° .  Meet electrical specs after test.  [FPC 彎曲 180° , 彎曲半徑 R1mm , 拉力 500g , 符合電氣特性規格]</p> <p>7.5 Flexible pattern insert/pull out resistance [FPC 耐插 / 拔 特性]  one test cycle : connector unlock =&gt;Flexible pattern insert =&gt; connector lock=&gt;  connector unlock =&gt;Flexible pattern pullout =&gt; connector lock  [1次 : 打開卡筭=&gt;接上FPC=&gt;閉合卡筭=&gt;打開卡筭=&gt;取出FPC=&gt;閉合卡筭]</p> <p>30 times at least. The requirements in 6.1 , 6.2 , 6.3 shall be satisfied.  [最少30次 , 需符合6.1 , 6.2 , 6.3規格]</p>					
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## 8. Environment Test [環境測試]

### 8.1. High Temperature Test [高溫測試]

after putting panels at 70°C for 240 hours, then leaving for 24 hours at room temperature.

The requirements in 6.1, 6.2, 6.3 shall be satisfied.

[放置在 70°C 環境下 240 小時後，需符合 6.1, 6.2, 6.3 規格，各項測試需放置室溫下 24 小時後測試]

### 8.2. Low Temperature Test [低溫測試]

after putting panels at -20°C for 240 hours, then leaving for 24 hours at room temperature.

The requirements in 6.1, 6.2, 6.3 shall be satisfied.

[放置在 -20°C 環境下 240 小時後，需符合 6.1, 6.2, 6.3 規格，各項測試需放置室溫下 24 小時後測試]

### 8.3. Temperature and Humidity Test [恆溫恆溼測試]

after putting panels at 60°C, 90%RH for 240 hours, then leaving for 24 hours at room temperature.

The requirements in 6.1, 6.2, 6.3 shall be satisfied.

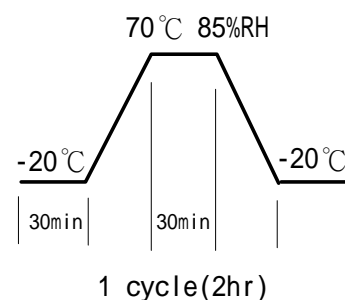
[放置在 60°C, 90%RH 環境下 240 小時後，需符合 6.1, 6.2, 6.3 規格，各項測試需放置室溫下 24 小時後測試]

### 8.4 Heat cycle [冷熱循環測試]

after putting panels at the condition of -20°C for 30 minutes and then 70°C 85%RH for 30 minutes and this process is repeated by 20 cycles, then leaving for 24 hours at room temperature.

The requirements in 6.1, 6.2, 6.3 shall be satisfied.

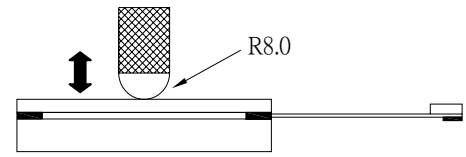
[放置於 -20°C 之環境中持續 30 分鐘，再將溫度提升為 70°C 持續 30 分鐘，此為 1 Cycle，持續 20 Cycle 測試，需符合 6.1, 6.2, 6.3 規格。(其中溫升及溫降各為 30 分鐘)]



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### 8.5 punching life [打點測試]

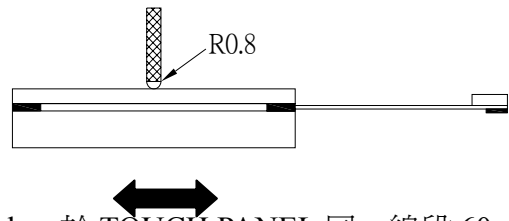
After punching 1,000,000 times with the R8.0 silicon rubber Force : 250g , Speed : 5/sec  
The requirements in 6.1 , 6.2 , 6.3 shall be satisfied.



[使用 250gf 壓力，打點專用筆 R8.0 silicon rubber，速度 5/sec，打點 100 萬回以上。] 且需符合 6.1 , 6.2 , 6.3 規格。]

### 8.6 Writing friction [劃線測試]

100,000 Times or over.  
Pen : R0.8mm Polyester stylus.  
writing force : 250g in active area.  
Speed : 60mm/sec.  
Writing Length : 60mm

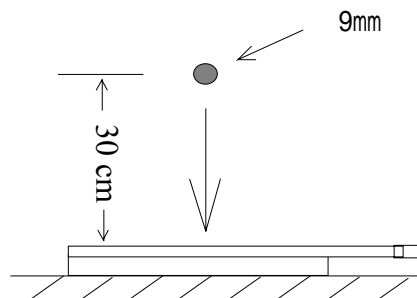


[使用 250gf 壓力，劃線專用筆 R0.8 Polyester stylus，於 TOUCH PANEL 同一線段 60mm 來回劃線，需滿足 10 萬回以上。]

### 8.7 Impact Resistance [耐衝擊性]

No damage when  $\phi$  9mm steel ball is dropped on the surface from 30cm height at 1 time.

[使用  $\phi$  9mm 鋼球，由 30 cm 高處，自由落體撞擊 TOUCH PANEL 表面一次，沒有損壞。]



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### 9. Appearance [外觀標準]

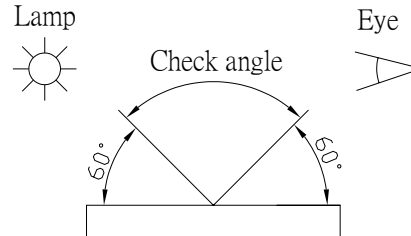
#### 9.1 Inspection condition [檢驗方法]

(A) The lightness of place: 500~800 LUX [光源在 500~800 流明]

(B) The distance of eyeshot: 30 CM (The panel must be checked under the light transparency condition.) [眼睛距離 30 公分]

(C) The angle of eyeshot:  $>60^\circ$  [角度  $>60^\circ$ ]

(D) Inspection time: 10 sec [檢驗時間：10秒]



#### 9.2 Inspection Standard [檢驗基準]

Dot spacer on the active area, it allows two dots are disappeared.

[在動作區內的 dot spacer，2 點消失不見是允許的]

Suitable in the visible area. Except dot spacer.

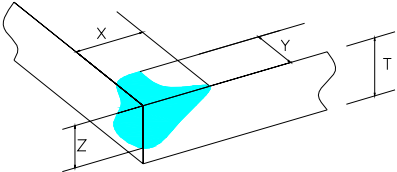
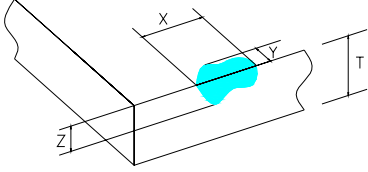
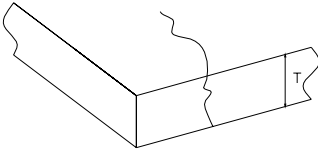
[檢驗範圍在可視區以內，但 dot spacer 除外]

Items [項目]	Specifications Explain [規格說明]		
1. Granular foreign Object [點狀異物]	D 0.35 mm	allow [允許]	 $(X+Y)/2 = D$
	$0.35 \text{ mm} < D < 0.4 \text{ mm}$	3	
	$0.4 \text{ mm} < D$	0	
	The color of the Granular foreign object is not allowed. [有顏色的點狀異物是不允許的]		
2. Linear foreign Matter [線狀異物]	W 0.075 mm, L 8.0 mm	allow [允許]	
	$W > 0.075 \text{ mm}$ or $L > 8.0 \text{ mm}$	0	
3. scratch [刮傷]	W 0.075 mm, L 8.0 mm	allow [允許]	
	$W > 0.075 \text{ mm}$ or $L > 8.0 \text{ mm}$	0	

L : Length [長度], W : Width [寬度], D: Average Diameter [平均直徑]

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### 9.3 Glass Flaw [ 玻璃瑕疵 ]

Items [ 項目 ]	Specifications Explain [ 規格說明 ]	
Glass Fragment [ 玻璃破片 ]	1. Corner Fragment [ 角落破片 ]  	$X \leq 3.0\text{mm}$ $Y \leq 3.0\text{mm}$ $Z \leq T$
	2. Edge Fragment [ 邊緣破片 ]  	$X \leq 3.0\text{mm}$ $Y \leq 3.0\text{mm}$ $Z \leq T$
	3. Progressive Fragment [ 線段的破片 ]  	None allowed [ 不允許 ]

note [ 註 ] : X: Wide [ 寬 ], Y: length [ 長 ], T: Glass thickness [ 玻璃厚度 ]。

### 9.4 Quality inspection standard: [ 品質檢驗標準 ]

Adapt to AQL MIL-STD-105D [ 適用 AQL MIL-STD-105D ]

Inspection Base: according to AQL MIL-STD-105D(Charter II)

[ 檢驗基準 : 照 AQL MIL-STD-105D(Charter II) ]

Broken seriously (otherness, scrape)0.01% ----- Cr ( Critical Defect ) [ 嚴重缺點 ]

Obvious (otherness, scrape)0.4% ----- Ma(Major Defect) [ 主要缺點 ]

Not obvious (otherness, scrape)2.5% ----- Mi( Minor Defect) [ 次要缺點 ]

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### 10. Inspection Methods [ 檢驗方式 ]

#### (1) Linearity specification [ 直線性規格 ]

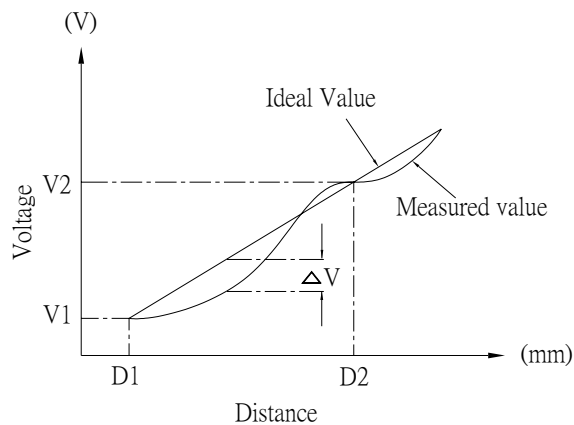
Linearity  $\pm 1.5\%$  max [ 直線性最大 $\pm 1.5\%$  ]

#### (2) Linearity

Linearity is the value max. error voltage divided by voltage difference on active area.

[ 線性誤差最大值 = [ 最大偏移電壓 $\Delta V$  / 在動作區內電壓差 $(V2-V1)$  ] \* 100% ]

$$\text{Linearity} = [ |\Delta V| / (V2-V1) ] * 100 \%$$



V2 : Start voltage in the active area of touch panel.

V1 : End voltage in the active area of touch panel.

D2 : End point in the active area of touch panel.

D1 : Starting point in the active area of touch panel.

$\Delta V$  : Maximum shift value

$$\text{Linearity} = [ |\Delta V| / (V2-V1) ] * 100 \%$$

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### 11. Attention of Mounting Condition [安裝注意事項]

11.1. To avoid short-circuit , don't touch Housing top against PET Film.

[避免 Housing 前端部分觸壓 PET Film，造成短路.]

11.2. Leave  $0.5 \pm 0.2\text{mm}$  space between Housing and PET Film to make sure PET Film won't be pressed causing short-circuit.

[ Housing 與 PET Film 之間約保持  $0.5 \pm 0.2\text{mm}$  間距，以確保 PET Film 不受到按壓而造成短路]

11.3. Stick Housing on PET Film isn't suggested.

[Housing 不建議使用黏著於 PET Film 上.]

11.4. Suggest to hold Housing with plastic material and make it between Housing and PET Film(Suggest to add cushion at 4 sides of Touch Panel that can anti-shake·anti-dust and raise the product stability).

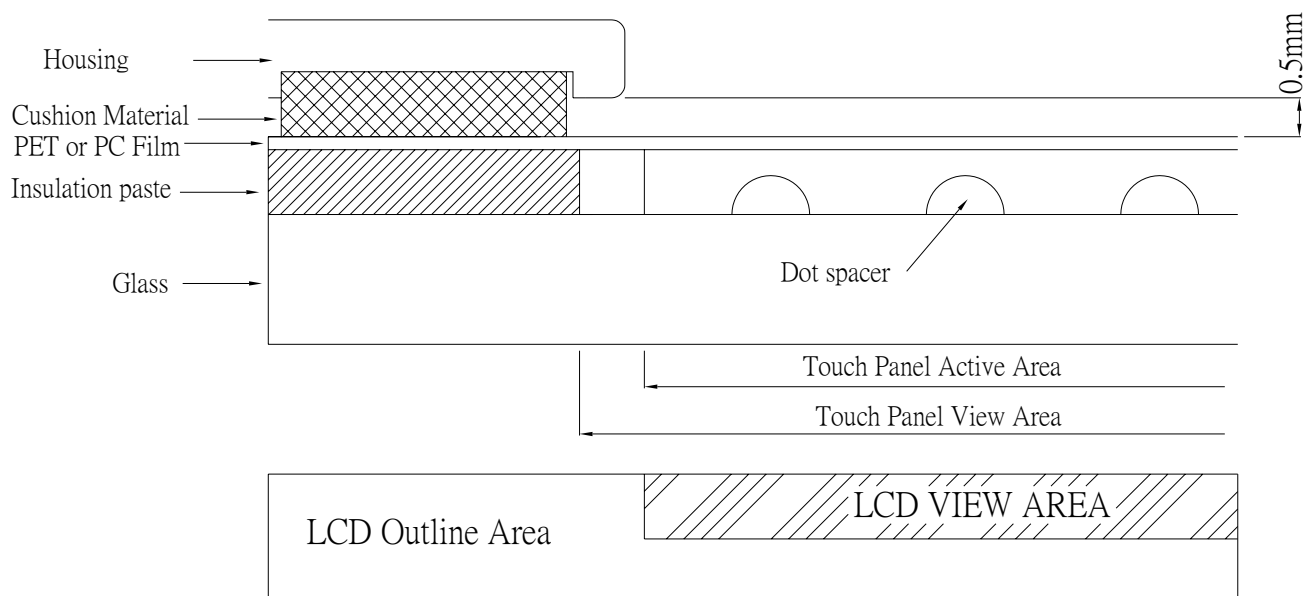
[建議使用橡膠類材質支撐 Housing，使其介於 Housing 與 PET Film 之間(建議在 Touch Panel 四周加上襯條,此做法具有防震.防塵效果對其產品穩定度將大幅提昇).]

11.5. The holding housing substance only can put within Insulation Area.

[支撐 Housing 之物品只能位於絕緣區 (Insulation Area) 之中]

11.6. The edge of touch panel is conductive. Don't touch it with metal after mounting.

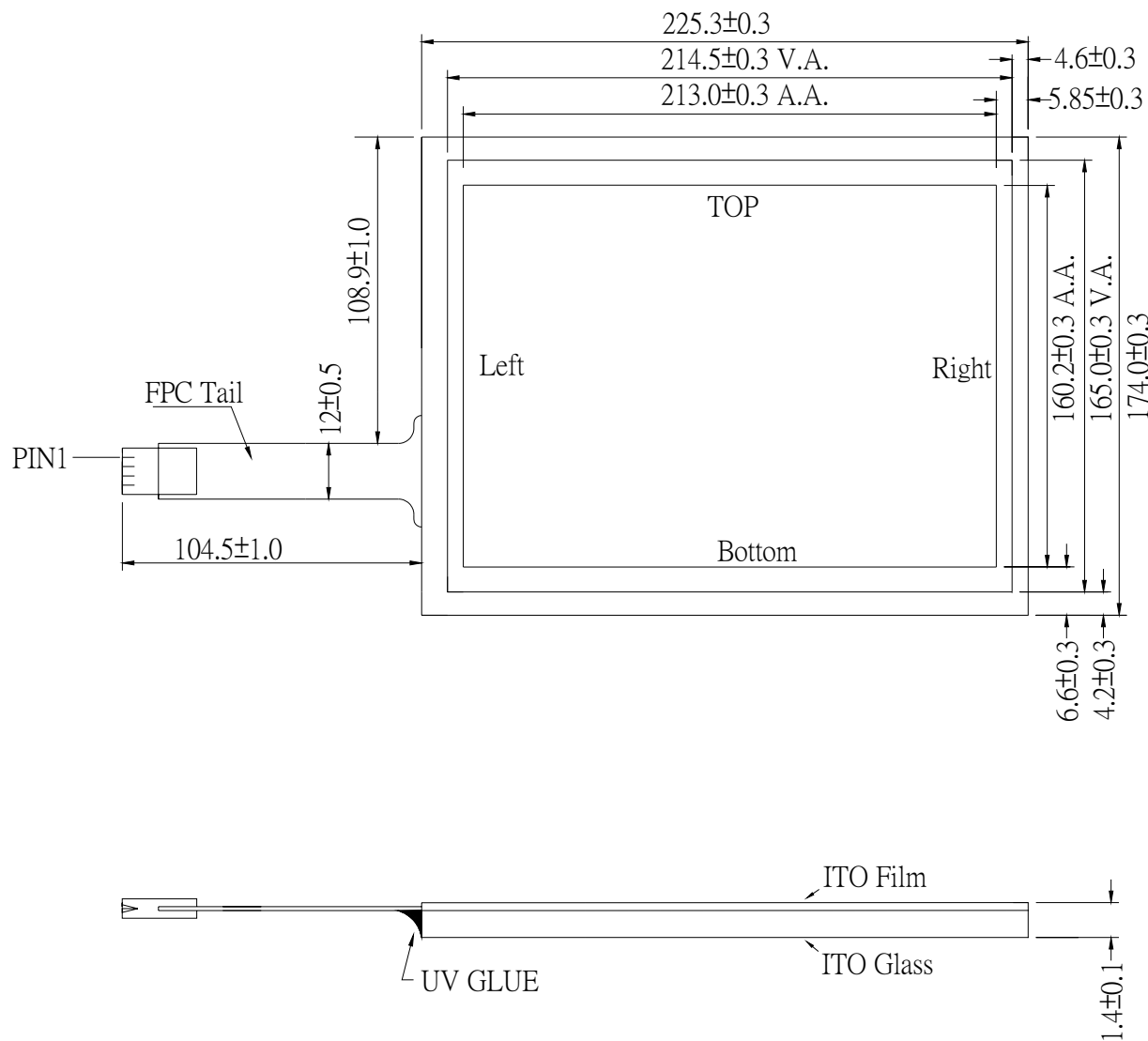
[Touch Panel 四邊有導電性,安裝時必免與金屬或導電物品接觸.]



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<p><b>12. Packing Detail</b> [包裝細節]</p> <p>13.1 Packing: [包裝]</p> <p>Dirt adhering is not allowed. Pack with paper carton as well as pay attention to the safety of outside package. [不可有髒東西附著，使用紙盒包裝，並注意包裝外箱之安全事項。]</p> <p>13.2 Delivery: [運送]</p> <p>For Avoiding the badly affect to the product quality, shouldn't delivery in the situation of high humidity and unusually high or low temperature. [惡劣地環境會影響品質，避免在高溫、高濕環境條件下做納入工作。]</p> <p><b>13. Others</b> [其它]</p> <p>1.) Since this is glass product, please watch out for the safety and keep it carefully as well. 2.) After panel testing ok, if it is unusual by setting or wrong using, it doesn't belong to assurance range。 3.) After this Specification is approved, it couldn't have any random changes。 4.) After receiving the products, please examine all in two weeks for your quality certification. [因本產品為玻璃製品，請注意安全及小心存放。] [本產品經檢測為良品後，因安裝或使用不當，而造成異常，不在保證範圍內。] [本承認書經承認後，不得隨意變更。] [收貨 2 週內無回覆,表示產品無問題，QC 允收。]</p> <p><b>15. This panel provides quality assurances that are listed as above。</b> [本產品提供如上所述的品質保證。]</p>					
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Note :

Pin Pitch : 2.54 mm

Pin 1 : Right

Pin 2 : Top

Pin 3 : Left

Pin 4 : Bottom

Total Thickness :  $1.4 \pm 0.1$  mm

Faceplate Surface : Anti-glare coating

V.A. : VIEW AREA

A.A. : ACTIVE AREA

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		確認	Cheng		變更日期:	