

3. ENVIRONMENTAL CHARACTERISTICS

環境特性

Status 狀態		Temperature 溫度
(1)	Operation 操作溫度	-20~70°C
(2)	Storage 儲存溫度	-40~80°C

Note: The environment is of normal atmosphere pressure

註:在正常氣壓的環境

4. OPTICAL CHARACTERISTICS

光學特性

Item 項目		Specification 規格
(1)	Transparency 透光度	80±2%

Note1: Transparency is measured by using BYK-Gardner instrument.

Note2: Test method-satisfy (2) of item 10 on Page 8.

註:透光度用BYK-Gardner 儀器量測。符合第8 頁,10-2 規範。

5. ELECTRICAL CHARACTERISTICS

電氣特性

Item 項目		Specification 規格
(1)	Terminal Resistance 端點阻抗	XL-XR: 300~1600Ω, YU-YD: 150~500Ω
(2)	Linearity Tolerance 線性誤差	≤1.5% (Test method reference item 9 on Page 7) (測試方式參看第 7 頁第 9 項)
(3)	Operation Voltage 操作電壓	5VDC
(4)	Chattering 反應時間	≤30ms
(5)	Insulation 絕緣阻抗	≥20MΩ, 25VDC
(6)	Endurance 耐壓測試	No arcing damage at 25VDC, 60sec.
(7)	Operative Resistance 操作阻抗	≤2KΩ

6. MECHANICAL CHARACTERISTICS

機械特性

	Item 項目	Condition 條件	Specification 規格
(1)	Activation Force 作動力	Stylus R0.8	Avg: 5~50g
(2)	Impact 落球測試	Φ22.0mm Steel Ball,45g, Height=30cm	1 time, no damage (Impact at center area)
(3)	Static Load 靜置荷重	15kg at Φ20mm area for 30sec	Satisfy (1), (2), (5) of item 5 and (1) of item
(4)	Hardness 表面硬度	3H pencil, pressure 1n,45°(JIS K5400)	≥ 3H
(5)	Tail Peeling 排線拉力強度	300g/cm by 90 degree	Satisfy (1) of item 5
(6)	Tail Bending 排線繞折強度	10 times by radius R:1mm 500g left & right 135 degree	Satisfy (1) of item 5

7. RELIABILITY

信賴性特性

	Item 項目	Condition 條件	Specification 規格
(1)	Constant Temperature and Humidity 恆溫恆 濕測試	60°C, 90%RH, 240 hrs and normalized for 4 hrs 溫度60°C 濕度90%, 240 小時回 常溫4 小時後測試	After the reliability test, the PET layer may have same change of appearance; but the electrical characteristics still satisfy (1)of item 4; (2),(4) of item 5; 經信賴性測試後, 上 層 薄膜可能會有外觀上 的變化, 但電氣功能 仍 符合第 4 項的(1) 和第 5 項的(2)、(4)。
(2)	Heat Cycle 高溫測試	80°C, 240 hrs and normalized for 4 hrs 溫度80°C, 240 小時回常溫4 小 時後測試	
(3)	Cold Cycle 低溫測試	-40°C, 240 hrs and normalized for 4 hrs 溫度-40°C, 240 小時回常溫4 小 時後測試	
(4)	Thermal Cycle 冷熱循環	-40~80°C, 0.5hr each, 10 cycles and normalized for 4 hrs 溫度-40 到80°C, 各30 分鐘, 共10 個循環, 回常溫4 小時後 測 試	

8. DURABILITY

耐久特性

Item 項目	Condition 條件	Specification 規格
(1) Finger Touch 打點測試	1,000,000 times, R8, Silicon Rubber (Please refer to page 13)	Satisfy(1),(2),(5) of item 5;
(2) Pen Sliding 劃線測試	100,000 times, R0.8, Stylus (Please refer to page 13)	Satisfy(1), (2), (5) of item 5;

9. LINEARITY INSPECTION

METHOD

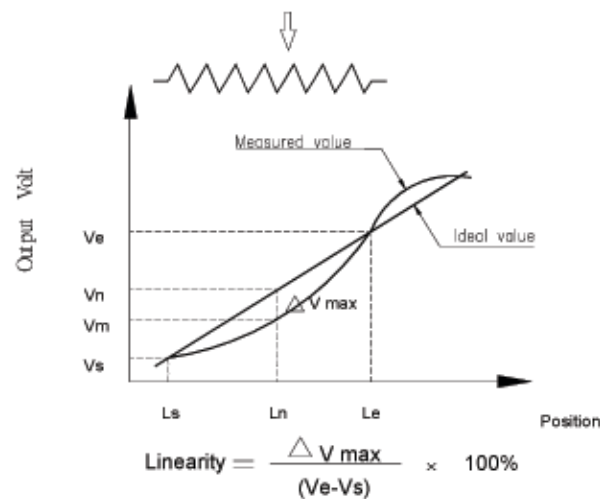
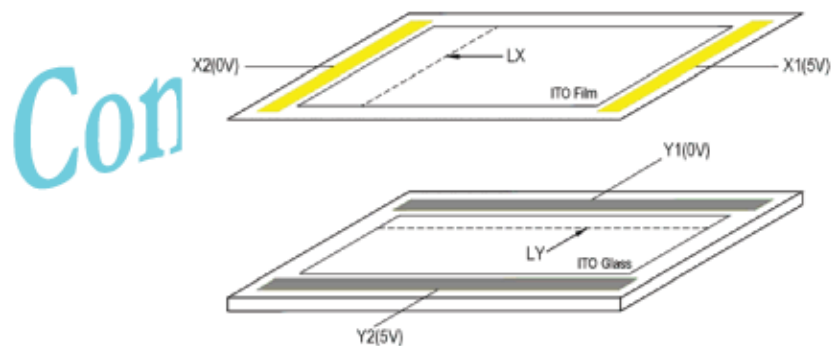
線性測試方式

Voltage (DC 5V) is applied to X1 or Y2 and ground (0V) is applied to X2 or Y1.

Use stylus to draw straight lines (LX and LY) at 5 mm intervals within active area and detect the voltage at Y2 or X1 to Measure the voltage differences between X1 and X2 or Y1 and Y2.

電壓 5VDC 接到 X1 或 Y2, 0V 接到 X2 或 Y1。使用塑膠筆在動作區內劃間隔

5mm 的 LX 和 LY 的線條。量測 X1 和 X2 或 Y1 和 Y2 之間的電壓。



10. APPEARANCE INSPECTIONS

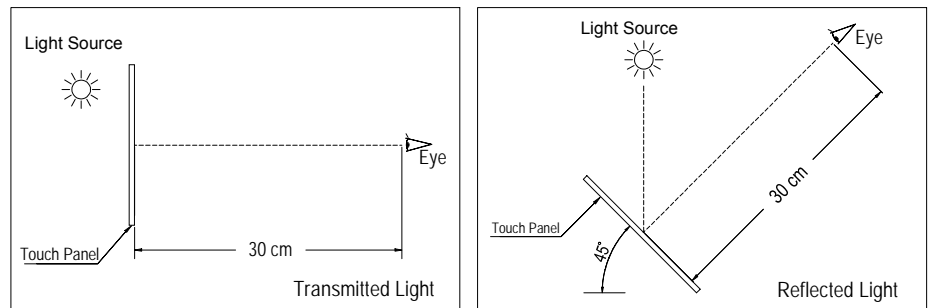
外觀檢驗說明

(1) The flaws and impurities are allowed outside viewing area except for those affecting electrical functions.

不影響產品電氣功能的情況下可視區之外允許有裂傷和髒污。

(2) The inspection shall be performed by using one 1200±200LUX fluorescent lamp as back or side light. The panel shall be placed at 30cm away from eyes as shown below.

使用1200±200LUX亮度的日光燈和觸控面板放在距眼睛30公分做檢驗。



(3) Glass flaw 玻璃裂傷

<p>Corner flaw 角裂傷</p>		<p>Please refer to page 12, item 14 參看第 12 頁第 14 項</p>
<p>Edge flaw 邊緣裂傷</p>		<p>Please refer to page 12, item 14 參看第 12 頁第 14 項</p>
<p>Progressive flaw 逐漸裂傷</p>		<p>Not allowed 不允許</p>

T=Glass thickness
T:玻璃厚度

11. INSTALLATION GUIDE

組裝注意事項

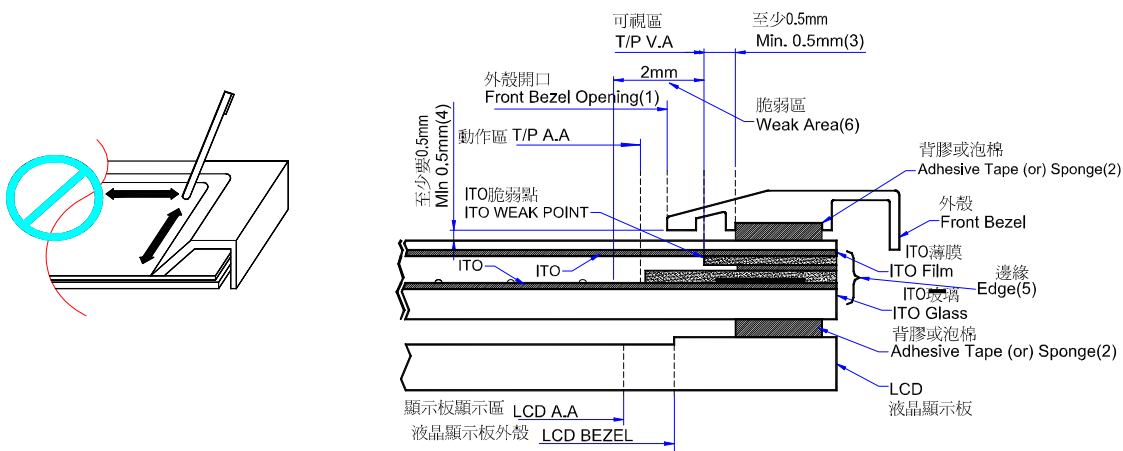
- (1) Front Bezel Opening must be located between View Area and Active Area.
外殼的開口要設計在可視區和動作區之間。
- (2) Elastic materials are recommended as supports to fix the Touch Panel. 建議使用彈性材質來固定觸控面板。
- (3) Support materials must be designed out of the Silver Bar.
將背膠或泡棉材質的設計不可超過銀線的內側。
- (4) Front Bezel Opening must be designed with enough gap to the Touch Panel surface in any conditions.
無論在靜態或外殼有施力的情況下，外殼和觸控面板表面之間要有足夠的空隙。
- (5) **Avoid direct bezel contact with edges of the Touch Panel after mounting.**
組裝之後應避免外框直接碰觸到面板的外側邊緣。

*** (6)** The area between the View Area and Active Area is a none-input area and also very fragile. **It is absolutely forbidden to draw lines along the edge of this area because it will cause damage on the ITO layer and functional failure of the Touch Panel.** 觸控面板的可視區和動作區之間的區域為禁止輸入區,也就是脆弱區。嚴禁在此區內邊緣劃線,如此會造成薄膜的 ITO 層被破壞而觸控面板喪失功能。

If the applications of customer need to draw lines along the edges, please contact engineer to discuss the design of the Front Bezel.
*** (7)** 若客戶的使用需要在邊緣畫線,請連絡工程師討論外殼的機構設計。

This installation guide is only for customer reference.

*** (8)** 此組裝方式僅供客戶參考。



***Note: Please take attention seriously on items 6, 7 and 8.**

*注意: 請特別注意第 6、7 和 8 項。