



PLAZMO INDUSTRIES

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## 5 wire Touch screen 60600100 SPECIFICATION

**Document No:** 3668A

**Version No:** A

**Customer's part No:** 6.2" Touchscreen

**Product No:** 60600100

**Issue Date:** 2015-11-04

### 1. Product description

- 1.1 5 Wire Resistance Type
- 1.2 Film/Glass Type

### 2. Criteria of Materials

- 2.1 **Upper Electrode film**
  - 2.1.1 Base material: ITO Film
  - 2.1.2 Type: Haze and anti-glare hard ring
  - 2.1.3 Thickness:  $188 \pm 10 \mu\text{m}$
  - 2.1.4 Resistance:  $400 \pm 100 \Omega/\text{sq}$
- 2.2 **Lower Electrode**
  - 2.2.1 Base material: ITO Glass
  - 2.2.2 Thickness:  $1.1 \pm 0.1\text{mm}$
  - 2.2.3 Resistance:  $500 \pm 100 \Omega/\text{sq}$
- 2.3 **Connector Tail**
  - 2.3.1 FPC

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### 3. Characteristics

#### 3.1 Mechanical characteristics

- 3.1.1 Outside dimension:  $173.00 \pm 0.20$  mm  $\times$   $70.00 \pm 0.20$  mm  
3.1.2 View area:  $151.00 \pm 0.20$ mm  $\times$   $55.50 \pm 0.20$ mm  
3.1.3 Thickness:  $1.58 \pm 0.15$ mm  
3.1.4 Input method: (Pen)  
3.1.5 Operating force:  $20 \sim 100$ g (A.A area shrink within 3mm)  
Shape of pen end:  $\phi 0.3$  mm  $\sim$   $\phi 0.5$ mm  
3.1.6 Hardness of surface:  
Hard surface :  $\geq 3H$  [ JIS K 5400 ]  
3.1.7 Heat seal intensity: X  $> 2.0$ kgf Y  $> 500$ gf Z  $> 200$ gf

#### 3.2 Electrical characteristics

- 3.2.1 Operating Voltage: DC5V 35mA  
3.2.2 Loop resistance: X:  $20 \sim 500 \Omega$  Y:  $20 \sim 500 \Omega$   
3.2.3 Linearity :  $\leq \pm 4.0\%$   
3.2.4 Insulation resistance:  $\geq 20M \Omega$  At DC 25V.  
3.2.5 Insulation ability:  $\geq 60$ sec. At DC 25V.  
3.2.6 Chatting times:  $< 15$ ms  
3.2.7 C  $\leq 5$ nf

#### 3.3 Optical characteristics

- 3.3.1 Total Transmittance:  $\geq 78\%$  [JISK7105]

### 4. Processing Environment:

- 4.1 Operating Temperature:  $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$   
4.2 Operating Humidity:  $\leq 90\%$ RH  
4.3 Storage Temperature:  $-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$   
4.4 Storage Humidity:  $\leq 90\%$ RH

### 5. Environmental test

- 5.1 High temperature:  $+70^{\circ}\text{C}$ , 120 hr.  
5.2 Low temperature:  $-20^{\circ}\text{C}$ , 120 hr.  
5.3 High temp./high humidity test:  $60^{\circ}\text{C} \& 90\%$ , 120hr.  
5.4 High Low temperature test:  $-20^{\circ}\text{C}$  30min/ $+70^{\circ}\text{C}$  30min

This is the test1 Cycle, within 24hr. (30min in either temperature increase or decrease).  
Taken from our environmental measurement machine, and placed 24hr in room temperature before test.

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The followings conditions are be required.

▲Closed impedance

$20\ \Omega < X\ \text{Axis} < 500\ \Omega$

$20\ \Omega < Y\ \text{Axis} < 500\ \Omega$

▲Linearity error

X Axis:  $\leq \pm 4.0\%$

Y Axis:  $\leq \pm 4.0\%$

▲Insulation impedance

$\geq 20M\ \Omega$  @ DC 25V

**5.5** Notes life  $\geq 10 \times 10^4$  words min)

Shape of pen end:  $\Phi 1.6\text{mm}$

Materials of pen: Poly-acetal resin written

Pressure Load: 150g

Speed: 60mm/s

Sliding range: A.A area shrink within 3 mm

Underlined 10 0'000 times in fixed position of TOUCH PANEL, If sliding back and force, it counts twice.

Following conditions are necessary:

▲Closed impedance

$20\ \Omega < X\ \text{Axis} < 500\ \Omega$

$20\ \Omega < Y\ \text{Axis} < 500\ \Omega$

▲Linearity error

X Axis:  $\leq \pm 4.0\%$

Y Axis:  $\leq \pm 4.0\%$

▲Insulation impedance

$\geq 20M\ \Omega$  @ DC 25V

**5.6** Input life  $\geq 1 \times 10^6$  times min

Shape of pen end:  $\Phi 8.0\text{mm}$       Materials of pen: SIR60

Pressure Load: 150g      Frequency: 2 times/s

Click range: A.A area shrink within 3mm

Pointed making 1 million times in a fixed position of TOUCH PANEL, The following

conditions are necessary:

▲Closed impedance

$20\ \Omega < X\ \text{Axis} < 500\ \Omega$

$20\ \Omega < Y\ \text{Axis} < 500\ \Omega$

▲Linearity error

X Axis:  $\leq \pm 4.0\%$

Y Axis:  $\leq \pm 4.0\%$

▲Insulation impedance

$\geq 20M\ \Omega$  @ DC 25V

## 6. Inspection Criteria

### 6.1 Inspection Scope

The following criteria only apply to the viewed parts of touch screen, and the non-viewed parts are free of inspection of shatter crack, scratch and impurities on appearance if without functional errors. The surface of touch screen is touch surface – the face of product, while the glass surface is non-touched surface – the back of product.

## 6.2 Sampling plan / Allowed Standard in Inspection

MIL-STD-105E II:

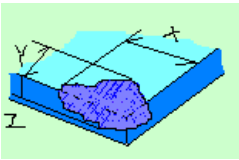
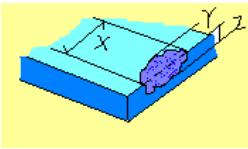
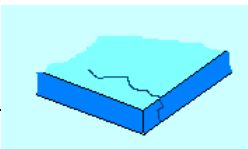
AQL	Critical	0.01	-----	Electrical performance
AQL	Major	0.65	-----	Dilapidation, unqualified
AQL	Minor	1.00	-----	Scratch, impurities

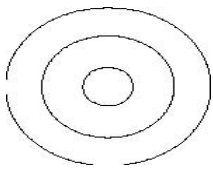
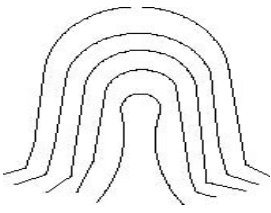


## 6.3 Inspection conditions

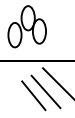
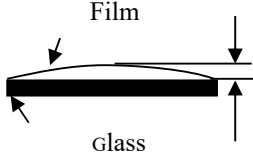
Check distance: 30-45cm      Light source: 500-800Lux  
 Angle: the product 45° beveled to the table surface      Sight:1.0  
 Time: 10s-20s.

## 6.4 Inspection Specifications

- (1) Clear visual outline, and specified the smudge, judge the standard of impurities.
- (2) Unclear visual outline, specified the smudge. The ones can not be defined though light are qualified.
- (3) The following standard only related to display area. Any inferior items lies outside of display area will be accepted, if not affect the function.

Content		Blemish picture	Type	Standard	Judge	Remark
Glass	It' s damaged to turn Cape		Ma	$X \leq 4.0\text{mm}$	OK	Based on without affecting function
				$Y \leq 3.0\text{mm}$	OK	
				$Z \leq T$	OK	
	In addition to turning Cape any breakage of scope		Mi	$Y \leq 2.0\text{mm}$	OK	
				$Z \leq 1/2T$	OK	
			Ma	$X \leq 4.0\text{mm}$	OK	
Flaw		Cr	Product any pare exists extension or rupture	Reject		

Spot ((includes white and black spots)		Mi	$D \leq 0.15\text{mm}$ (Not allowed over 2 Pieces gathered in the circle of 25mm diameter)	OK	
		Ma	$0.15 < D \leq 0.25\text{mm}$ , N=2 gap>25mm,OK	OK	
		Cr	$D > 0.25\text{mm}$	Reject	
Scratch		Mi	$W \leq 0.03\text{mm}$	OK	
		Ma	$0.03 < W \leq 0.07$ , $L \leq 8\text{mm}$ N=2 gap>20mm,OK	OK	
		Cr	$W > 0.07\text{mm}$	Reject	
Linear		Mi	$W \leq 0.03\text{mm}$	OK	
		Ma	$0.03 < W \leq 0.07$ , $L \leq 5\text{mm}$ gap>20mm,OK	OK	
		Cr	$W > 0.07\text{mm}$	Reject	
Newton   s ring)	The rule Newton   s wreath				
Newton   s ring	Irregular Newton   s wreath				
Icon Carry on the back gum district(The silk prints form of written)		Ma	Can see area、ICON Dirty stain、Linear、Bubble it is standard to press the IP parts of stain,line thingand bubble examination.	NG	
		Cr	The outside frame outruns a product edge,inside the frame get into to see area.	NG	
Inside dirty (Product inner part)		Ma	Present a shape	NG	At the light descend the eyes see to
			Long-like in shape		

			Concentrated form Inclined line-like in shape Water is line-like in shape(Contain palm lines)		see inside the area to order standard scope inside the dirtydiameter size of piece-like in shape obviously dirty vestige
Protection film and surface dirt		Mi	The protection film is stuck to product both sides,edge and product to align.The protection film outruns a product edge $\leq 2$ mms	OK	
		Ma	After product starts to tore a protection film,eyes' seeing to check TP surface is dirty to print.	NG	
FPC		Ma	1、 Not allowed to have folding 2、 Gold finger area does not allow to have exposed copper,scratches,oxidation,e tc. 3、 Clear printing	OK	
		Ma	1、 Edge is not allowed to be put on the edge of the corner. 2、 Scratch and gall does not affect the function	OK	

Remark:

W: Width ;

L: Length ;

Dis: Distance);

D: diameter.

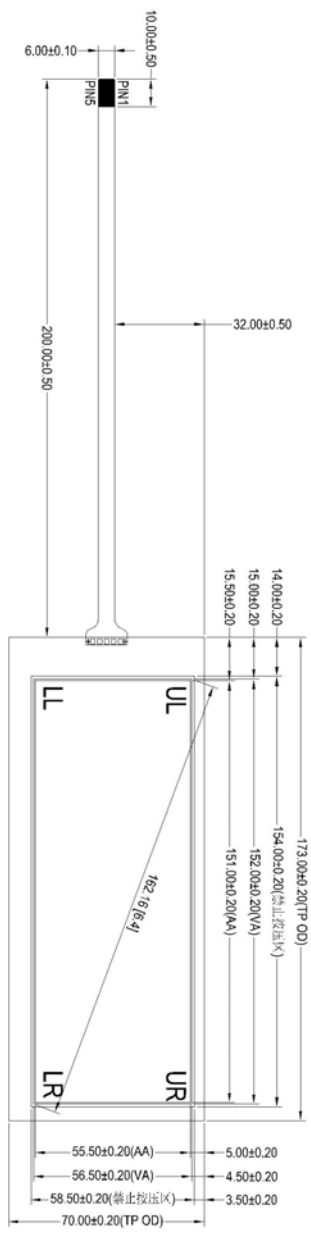
## 7 packing transportation

**7.1 Packing** The attached smudge are not allowed,and packed by polystyrene materials.

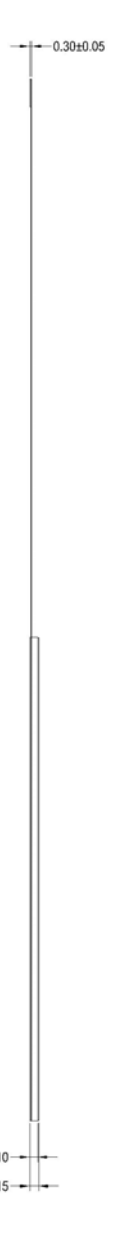
**7.2 Transportation** Avoid direct sunshine and high temperature or humidity during transportation.

1: 请尽早确认, 并以书面形式回复, 以便双方工程图纸保持一致;  
 2: 由于公制制程工艺与TP工艺要求有所偏差, 请留意图内红色部分!

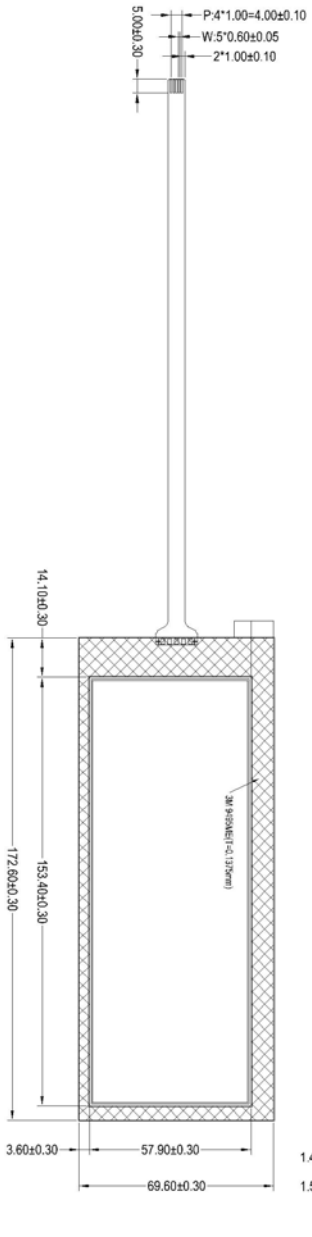
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正视图

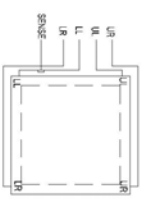


侧面结构图



背视图

- Spec:
1. Operating Voltage: DC5V 35mA(Typ);
  2. Operating force: 20~100g;
  3. Inertia:  $S \pm 4.0\%$ ;
  4. Insulation resistance:  $\geq 20M\Omega$ , 25V(DC);
  5. Operating Temperature:  $-10^{\circ}C \sim +60^{\circ}C$ ,  $\leq 80\%RH$ ;
  6. Storage Temperature:  $-20^{\circ}C \sim +70^{\circ}C$ ,  $\leq 90\%RH$ ;
  7. Total Transmittance:  $\geq 77\%$ ;
  8. Product Type: ITO Film/ITO Glass Type;
  9. Connector Tail: FPC connect(FPC By Golden Pitches,  $T=0.188mm$ );
  10. ITO Film: Haze and anti-glare hard ring
  11. ITO Glass: Tempered Glass  $T=1mm$ ;
  12. Service life:  $\geq 35,000$ , 000, 000 times;
  13. Chating times:  $\leq 35,000$ , 000, 000 times;
  14. All materials in the drawing comply with the RoHS.



Pin	Logic
1	UR
2	UL
3	LL
4	LR
5	SENSE

Designed	宫保宇	Product No.	WM-3688A-GRB1-FDA
Checked	钟法葵	Client No.	
Approved		Unit: mm	
		Standard tolerance: ±0.20	
		Sheet No.	1 of 1
		Proj(1)	
		Date	2015.10.26

Rev. 1.1

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