



TOP-TOUCH ELECTRONICS CO., LTD

Sample Approval

Supplier Name: Top-Touch Electronics Co., ltd

Supplier Address : Shenyue Industry Zone, Li guang Village, Guan lan Town, Bao'an District, Shenzhen, China

Part Number: TTW4121001---(T8230FG)

Description: 4 Wires Resistive Type

Top-Touch Approve:

Engineering	Technology	QA	Sales	Approve	Remark

Customer Approve:

Engineering	QA	Project Management	Other

4 Wires Touch Panel Product Specification

Structure : PET----- Glare hard coating & Anti-Newton Ring
Glass----- ITO glass1.8mm
Dot Pitch-----5.0mm×5.0mm
Connector: FPC(4-Pin)

General Specifications:

Item	Specifications	Unit
Dimensional Outline	271.00±0.3(L) ×206.00±0.3(W)	mm
Viewing Area	254.00(L)×192.00(W)	mm
Active Area	248.00(L) ×186.00(W)	mm

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1. Suitability

This specification suit analog resistance touch panel. Which used in LCD module.

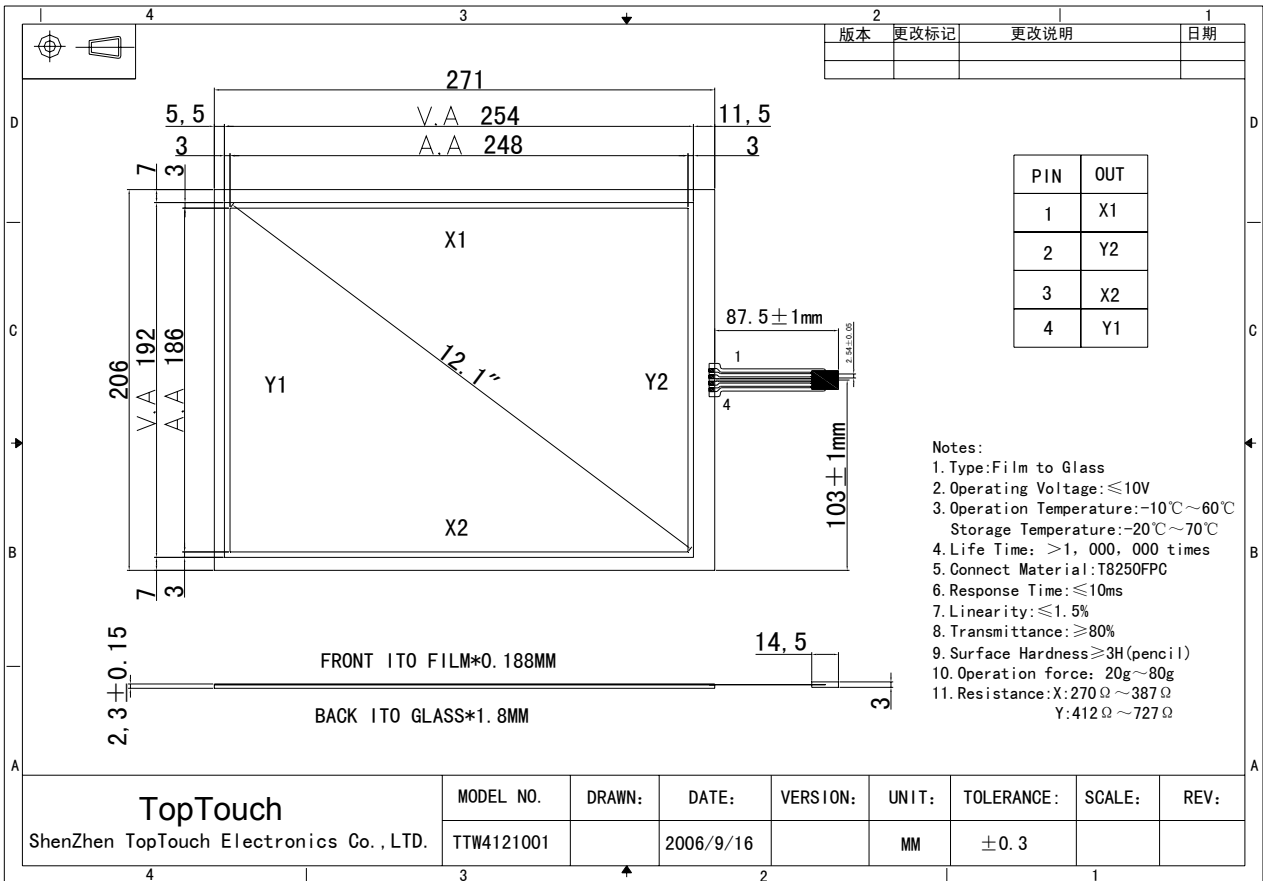
2. Apply To Specification

- 2.1 Surface Hardness: 3H
- 2.2 Optical Clarity: 80 %↑
- 2.3 Operating Temperature: -10°C ~ 60°C
- 2.4 Endurance Test strikes: Over 1 million
- 2.5 Operating Voltage: DC5V
- 2.6 Resistance: 200Ω ~ 900Ω
- 2.7 Linearity : <1.5%
- 2.8 Faceplate Surface: Anti-glare coating
- 2.9 Operation Pressure: 15 ~ 70g
- 2.10 Storage Temperature: - 20°C ~ 70°C
- 2.11 Message Noise: 5 m sec ~ 15 m sec
- 2.12 Operating Current: 5mA ~ 25mA
- 2.13 Isolation Resistance: 20MΩ↑ @ DC 25V

3. Dimension Size

Refer diagram I

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<p>4. Optical Performance Light transparency should keep above 80%↑ under the visible wave when the wave length is 550mm.</p> <p>5. Electrical Performance</p> <p>5.1 Connector Resistance 300Ω < X Axis < 900Ω 200Ω < Y Axis < 800Ω</p> <p>5.2 Insulation Resistance 20MΩ↑ @ DC 25V</p> <p>5.3 Electrostatic Endurance No abnormal appearance after 10kv, 100Ω, 250PF electrostatic used.</p> <p>5.4 Linearity X Axis : 1.5% ↓ Y Axis : 1.5% ↓</p> <p>5.5 Operating Voltage 3V ~ 12V DC</p> <p>5.6 Operating Current 5mA ~ 25mA °</p>					
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6. Environment Test

6.1 High Temperature Test

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

A. Resistance between leads

300Ω < X Axis < 900Ω

200Ω < Y Axis < 800Ω

B. Linearity

X Axis : ±1.5%↓

Y Axis : ±1.5%↓

C. Insulation Resistance

20MΩ↑ @ DC25V

6.2 Low Temperature Test

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

A. Resistance between leads

300Ω < X Axis < 900Ω

200Ω < Y Axis < 800Ω

B. Linearity

X Axis : ±1.5%↓

Y Axis : ±1.5%↓

C. Insulation Resistance

20MΩ↑ @ DC25V

6.3 Temperature and Humidity Test

After putting panels at 40°C, 90%RH for 240 hours, then leaving for 24 hours at room temperature.

A. Resistance between leads

300Ω < X Axis < 900Ω

250Ω < Y Axis < 800Ω

B. Linearity

X Axis : ±1.5%↓

Y Axis : ±1.5%↓

C. Insulation Resistance

20MΩ↑ @ DC25V

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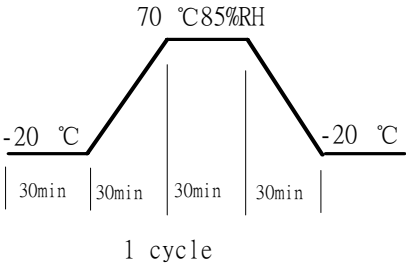
6.4 Repetition of High and Low Temperature and Test

After putting panels at the condition of -20°C for 30 minutes and then 70°C85%RH for 30 minutes and this process is repeated by 20 cycles , then leaving for 24 hours at room temperature.

- A. Resistance between leads
 $300\Omega < X \text{ Axis} < 900\Omega$
 $200\Omega < Y \text{ Axis} < 800\Omega$

- B. Linearity
X Axis : $\pm 1.5\% \downarrow$
Y Axis : $\pm 1.5\% \downarrow$

- C. Insulation Resistance
 $20M\Omega \uparrow$ @ DC25V



6.5 Punching Life

After punching 1,000,000 times with the R8.0 silicon rubber Force : 60g , Speed : 5/sec

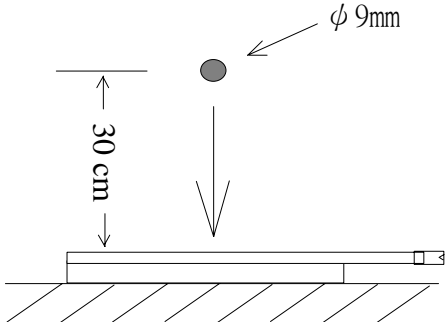
- A. Resistance between leads
 $300\Omega < X \text{ Axis} < 900\Omega$
 $200\Omega < Y \text{ Axis} < 800\Omega$

- B. Linearity
X Axis : $\pm 1.5\% \downarrow$
Y Axis : $\pm 1.5\% \downarrow$

- C. Insulation Resistance
 $20M\Omega \uparrow$ @ DC25V

6.6 Impact Resistance

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



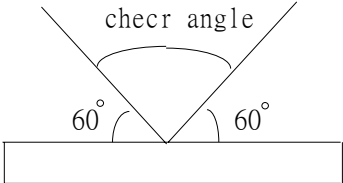
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7. Appearance

7.1 Inspection condition

- (A).The lightness of place: 500 LUX
- (B)The distance of eyeshot:30 CM(The panel must be checked under the light transparency condition.)
- (C)The angle of eyeshot: >60°
- (D)The light source of place : natural sunlight.



7.2 Inspection Standard

Suitable in the visible area. Except dot space.

1. Spot, otherness	$\phi \cong 0.15\text{mm}$	Ignorance
	$0.15\text{mm} \cong \phi \cong 0.25\text{mm}$	$\cong 2$
	$\phi > 0.25\text{mm}$	NG
2. Scratch	$w \cong 0.05\text{mm}$ and $L \cong 2.0\text{mm}$	Ignorance
	$w \cong 0.05\text{mm}$ $2.0\text{mm} < L \cong 4.0\text{mm}$	2 or less & distance > 5mm
	$W > 0.05\text{mm}$ or $L > 4.0\text{mm}$	NG
3. Cicatrices (Line) L: Length W: Width	$W \cong 0.03\text{mm}$	Ignorance
	$L \cong 4\text{mm}$ & $0.03\text{mm} \cong W \cong 0.05\text{mm}$	$\cong 2$ 2 line distance $\cong 10\text{mm}$
	$W > 0.05\text{mm}$	NG
4. Edge warp	Edge warp $\cong 3\text{mm}$	allowable
	Edge warp $\cong 2\text{mm}$	allowable

7.3 Quality inspection standard:

- Adapt to AQL MIL-STD-105D
- Samples inspection QTY: according to AQL MIL-STD-105D(Charter I)
- Inspection Base: according to AQL MIL-STD-105D(Charter II)
- Broken seriously(otherness, scrape)0.01% --- Cr (Critical Defect)
- Obvious(otherness, scrape)0.65% ----- Ma(Major Defect)
- Not obvious(otherness, scrape)2.5% ----- Mi(Minor Defect)

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<p>8.Packing Detail</p> <p>8.1 Packing: Can't have otherness on panel. Pack with EPE material.</p> <p>8.2 Delivery: For Avoiding the badly affect to the product quality, shouldn't delivery in the situation of high humidity and unusually high or low temperature</p> <p>9.Others</p> <p>(1) If there is any question in specification , the decision depends on conferment between manufacturer and customer.</p> <p>(2) If there is any change in specification , can't actualize without document permit.</p> <p>(3) The specification content is different from the individual specification one, decision bases on the latter.</p>					
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