

# 3.9", 4 Wire Touch Panel

## Product Specification

<b>PRODUCT NUMBER</b>	<b>DTS408-0390-00</b>
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Product Mgr	Quality Mgr	Engineering	Document Control
Date:	Date:	Date:	Date:

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**REVISION RECORD**

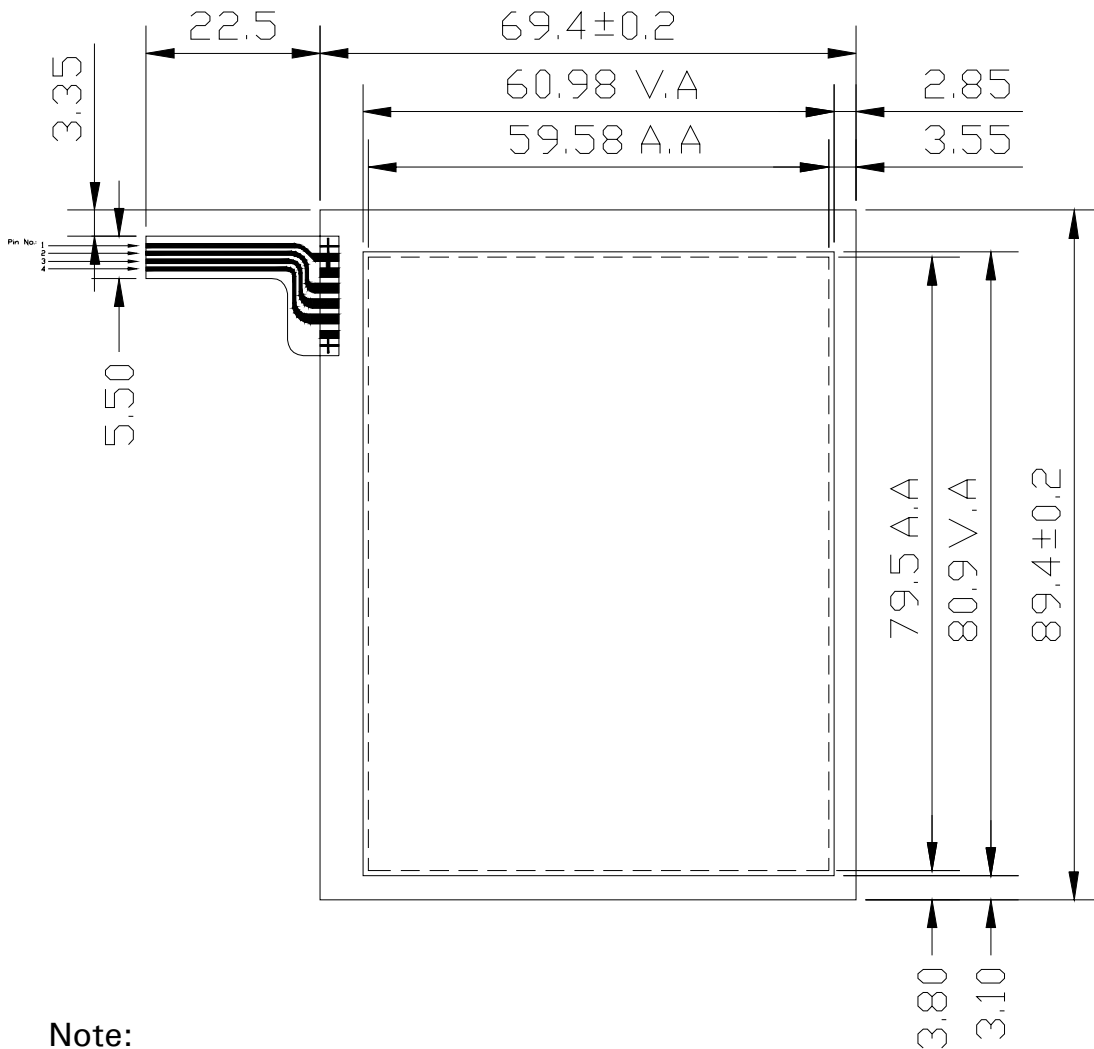
<b>Rev.</b>	<b>Date</b>	<b>Page</b>	<b>Par.</b>	<b>Comment</b>	<b>ECN no.</b>
A	07/31/06	--	--	Initial DCA Release	E3186
B	06/30/08	5	2	Changed Recommended Touch Decoder; Controller and Cable.	E3759

## 1 Main Features

UNIT=MM

ITEM	CONTENTS
Overall Dimension	69.4 (W) x 89.4 (H) x 1.0 (D)
Viewing Area	60.98 (W) x 80.9 (H)
Active Area	59.58 (W) x 79.5 (H)
ROHS Compliant	Yes
Surface Hardness	3H
Optical Clarity	80%
Operation Temperature	-10°C ~ 60°C
Storage Temperature	-20°C ~ 70°C
Endurance Test Strikes	+ 1 Million
Operating Voltage	5VDC, Nominal
Resistance	200Ω-900Ω
Linearity	<1.5%
Faceplate Surface	<input type="checkbox"/> ITO Film without hard-coating <input type="checkbox"/> ITO Film with hard-coating <input checked="" type="checkbox"/> ITO Film with anti-glare <input type="checkbox"/> ITO Film with anti-Newton ring <input type="checkbox"/> ITO Film with hard-coating and anti-Newton ring <input type="checkbox"/> ITO Film with anti-glare and anti-Newton ring
Operating Pressure	15~70g
Message Noise	5m sec ~ 15m sec
Type	Film to Glass

## 2 Mechanical Drawing



**Note:**

Film: ITO Film: 0.188 mm.  
 Glass: ITO Glass: 0.7 mm.  
 Total Thickness: 1.0 ± 0.1 mm.  
 Tail Material: FPC.  
 Pitch: 1.0 mm

**Recommended Touch Decoder Kit:**

Controller: TSC400-11F-000 (USB)  
 TSC600-01A-000 (RS-232)

Cable: TSCP-0F10-000 (PIN to ZIF cable)  
 TSCC-1E-000 (USB External cable)  
 TSCC-0E-000 (RS-232 External cable)

Pin#	Assignment
1	RIGHT
2	TOP
3	LEFT
4	BOTTOM

### 3 Optical Performance

Light transparency should be kept above 80% under the visible wave length when the wave length is 550nm.

### 4 Electrical Performance

Test Item	Test Condition
Connector Resistance	300Ω<X Axis: 900Ω
	200Ω<Y Axis: 800Ω
Insulation Resistance	20MΩ @25V DC
Electrostatic Endurance	No abnormal appearance after 10kv, 100Ω, 250PF electrostatic used.
Linearity	X Axis: 1.5%
	Y Axis: 1.5%
Operating Voltage	3V ~ 12V DC
Operating Current	5mA ~ 25mA

## 5 Environmental Test

### 5.1 High Temperature Test

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After running the panels at 70°C for 240 hours, leave it for 24 hours at room temperature.

Test Item	Test Condition
Resistance between leads	300Ω<X Axis: <900Ω
	200Ω<Y Axis: <800Ω
Linearity	X Axis: 1.5%
	Y Axis: 1.5%
Insulation Resistance	20MΩ @25V DC

### 5.2 Low Temperature Test

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After running the panels at -20°C for 240 hours, leave it for 24 hours at room temperature.

Test Item	Test Condition
Resistance between leads	300Ω<X Axis: <900Ω
	200Ω<Y Axis: <800Ω
Linearity	X Axis: 1.5%
	Y Axis: 1.5%
Insulation Resistance	20MΩ @25V DC

### 5.3 Temperature and Humidity Tests

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After running the panels at 40°C,90%RH for 240 hours, leave it for 24 hours at room temperature.

Test Item	Test Condition
Resistance between leads	300Ω<X Axis: <900Ω
	250Ω<Y Axis: <800Ω
Linearity	X Axis: 1.5%
	Y Axis: 1.5%
Insulation Resistance	20MΩ @25V DC

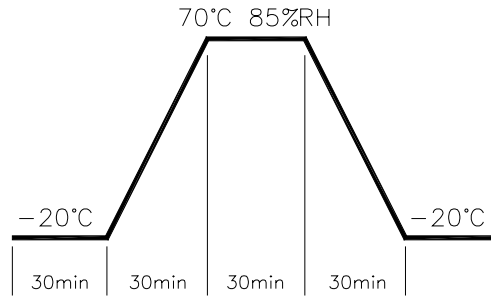
### 5.4 Temperature Cycle Tests

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After running the panels at the condition of -20°C for 30 minutes → +70°C @85%RH for 30 minutes, repeated 20 cycles, leave it for 24 hours at room temperature.

Test Item	Test Condition
Resistance between leads	300Ω<X Axis: <900Ω
	200Ω<Y Axis: <800Ω
Linearity	X Axis: 1.5%
	Y Axis: 1.5%
Insulation Resistance	20MΩ @25V DC





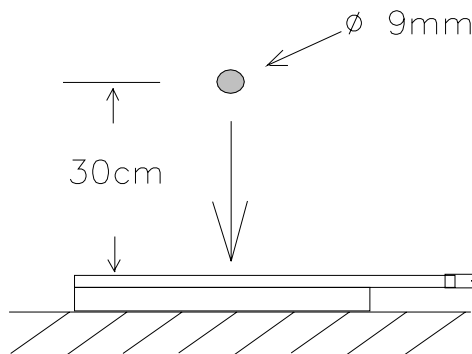
### 5.5 Punching Life

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

Test Item	Test Condition
Resistance between leads	300Ω<X Axis: <900Ω
	200Ω<Y Axis: <800Ω
Linearity	X Axis: 1.5%
	Y Axis: 1.5%
Insulation Resistance	20MΩ @25V DC

### 5.6 Impact Resistance

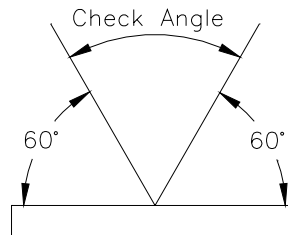
No damage when the ∅9mm steel ball is dropped on the surface from 30cm height for 1 cycle.



## 6 Appearance and Inspection Standards

### 6.1 Inspection Condition

- (A).The brightness of the area: 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 the area: natural sunlight.



### 6.2 Inspection Standard

Suitable in the visible area, except dot space.

1. Spot, otherness	$\xi \leq 0.5\text{mm}$	Ignored
	$\xi > 0.5\text{mm}$	NG
2. Rub	$\xi \leq 1.0\text{mm}$	Ignored
	$1.0\text{mm} < \xi \leq 1.5\text{mm}$	2 points above & distance >50mm
	$\xi > 1.5\text{mm}$	NG
3. Cicatrices (Line) L: Length W: Width	$L < 10.0\text{mm}$ & $0.15\text{mm} < W \leq 0.2\text{mm}$	1 line is allowable 2 lines are reject 2 points above & distance >50mm
	$W \leq 0.15\text{mm}$	Ignored
	$W > 0.20\text{mm}$	NG
4. Edge Warp	Edge Warp $\leq 0.5\text{mm}$	Ignored
	Edge Warp $> 0.5\text{mm}$	NG