

FCL Components Touch Panels

Resistive and Projected Capacitive



FCL Components Touch Panels

Years of experience

FCL Components Touch Panels

FCL Components is one of the leading touch panel manufacturers. Our production process is based on the best choice of industry materials, achieving an outstanding optical and mechanical performance.

Applications

- Automotive (GPS, car infotainment (first mount), bus, truck, taxi)
- Mobile devices (UMPC, PDA)
- Factory automation (HMI, industrial PC)
- Measuring instruments and industrial control (car diagnostic, oscilloscope, etc.)
- Medical (blood test, dentist appliances, etc.)
- POS, cash register
- Gaming, lotto terminal

Select the touch panel that fits your needs

All touch panels can be offered in customized sizes and optical options to fit your requirements. For those looking for small quantities or fast development, FCL Components can offer a selection of standard touch panels that can be ordered off the shelf.

Controller boards and drivers are also available, making integration easier.

Single Input or Dual Input Resistive Touch Panels

- Pen & finger input
- Gesture recognition
- Light touch
- Customizable input force sensitivity

Multi-Input Projected Capacitive Touch Panels

- Finger input
- Gesture recognition
- Zero-force touch

Features - Resistive Touch Panels

- Single or Dual touch input 4 wire panel
- 2-finger gesture recognition
- Light touch
- Flush surface (customized panel for a completely flat front design)
- Film-Glass, Film-Film or Film-Film-Plastic resistive panels
- Pen, finger, glove input
- Heavy touch option for firm pressing action for safety & security
- High optical quality:
 - Up to 90% transparency
 - As low as 3% reflectivity
 - Anti-glare or clear film
 - Anti-Newton ring technology
- High mechanical quality
 - Sealed construction
 - Scratch resistant
- High temperature and high reliability version (operating 85°C)
- Sizes from 3.8 to 22-inches
- Standard and custom sizes

Features - Projected Capacitive Touch Panels

- 10-finger simultaneous touch detection
- Gesture recognition
- 6H to 7H top surface
- 85% minimum transmissivity
- Cosmetic finish options
 - Colored border
 - Logotype
 - Glass edge treatment
- Water presence rejection
- Palm rejection
- Chip-on-Flex controller
- Standard USB interface

Touch Panels Overview

Projected Capacitive Touch Panel

FCL Components projected capacitive touch panels are available in standard and custom versions. Standard and Custom 3rd party panels are produced by TransTouch Technology Inc. a FCL Components partner company. Custom automotive panels are produced by FCL Components Limited.

Overview of Touch Panel types

Type	Features	Life time	Size	Transparency	Application examples
Glass-Glass	Automotive grade	10 million touches	Up to 9"	90% typical	Navi radio Center stack
Glass-Film-Film	Commercial grade Automotive grade	10 million touches	7-31.5"	85% typical	FA / HMI Process control Digital signage

Resistive Touch Panel

Our standard products are already used in a top performing products. At the same time, we are striving to provide the best "User Experience" with our resistive touch panels by customizable input load sensitivity, as well as by the customizable driver. Let us deliver the best user experience with your products.

FCL Components' 4-wire touch panels can be manufactured in 3.5 to 15-inch and light touch in 3.8 to 22-inch wide type. All of our panels can handle up to 1 million touches with an operating temperature from -5°C to +60°C and storage from -30°C to +70°C.

Overview of Touch Panel types

Type	Features	Pen/Finger	Life time	Size	Transparency	Application examples
Film-Glass - 4-wire	Industry standard Cost effective Dual and single input	Pen & finger	1 million touches	3.8 - 19"	80% standard 90% max.	Measuring instruments HMI
Film-Glass - 4-wire Industrial	Flush surface Dome switches	Finger	1 million touches			FA / HMI Process control
Film-Glass - 4-wire Automotive	High temperature range	Finger	1 million touches	3 - 8"	82% standard 90% max.	GPS, car infotainment
Film-Film-Plastic	Unbreakable LCD screen protection	Pen & finger	1 million touches	Custom size 2 - 7"	80% standard 84% max.	Logistic terminal Smart security meter
Film-Glass - Light touch	Ideal for dual input Cost effective	Pen & finger	1 million touches	3.8-19"	80% standard 90% max.	HMI/FA Measuring instrument POS/ECR

Standard Projected Capacitive Touch Panels (PCAP-S)

Overview

The projected capacitive touch panels (PCAP-S series) feature a film sensor with a top cover glass and are available in sizes from 7"W to 31.5". Basic features are 85% Transmissivity with 1% Haze, gesture operation (10-finger detection), and Operating Life of 10 Million touches. A Chip-on-Film (COF) controller IC with USB Interface is standard, with a 1mm pitch FFC connection.

This series is suitable for a wide variety of applications including industrial, Instrumentation and medical products.

While the standard sizes shown fit many applications, the cover glass is often required to be customized to meet product design requirements, so we offer cover glass customization, as well as full custom sizing design service. Active and passive pen support upon request.

The PCAP-S series is manufactured by Transtouch Technology, Inc., a FCL Components partner company.



Features

Standard Features

Glass-Film-Film structure

Chip-on-Film (CoF) Flex Tail

Major OS driver support

Standard interface: USB

Standard glass finish: Clear (glossy)

RoHS compliant

Optional Features

Custom Cover Glass

Flex only optional

Graphic Border / Logo

Strengthen Glass

Anti-Glare (AG) & Anti-Smudge (AS)

Controller IC upgrade

Full Custom Design available

Active Pen support available

Standard Part Numbers

Diagonal (inches)	Part number ROHS compliant	Transparent size (mm)	Glass thickness (mm)	Tail (Flex) length mm	Controller IC
31.5	T010-3101-T323	702.40 x 396.58	1.8	82.8 *	EXC3188 + EXC5440
21.5	T010-3101-T290U	481.80 x 272.30	1.8	70.0	EXC3188
18.5	T010-3101-T280U	411.80 x 232.40	1.8	70.0	EXC3188
15.6	T010-3201-T661U	346.16 x 195.59	1.8	70.0	EXC3188
15.6	T010-3201-T663U	346.16 x 195.59	1.8	70.0	ILI2510
15	T010-3201-T651U	310.20 x 235.23	1.8	70.0	EXC3160
12.1	T010-3201-T580U	248.50 x 187.00	1.8	69.8	EXC3160
12.1	T010-3201-T582U	248.50 x 187.00	1.8	69.8	ILI2510
12.1W	T010-3201-T560U	257.92 x 166.20	1.1	100.0	EXC3000
12.1W	T010-3202-T290U	257.92 x 166.20	1.1	100.0	EXC80H84
10.4	T010-3201-T592U	214.20 x 161.40	1.1	70.0	EXC3160
10.1	T010-3201-T513U	219.64 x 138.14	1.1	72.0	EXC3146
10.1	T010-3202-T100U	218.96 x 137.60	1.1	55.3	ILI2511
7	T010-3301-T207U	154.30 x 93.37	1.1	63.0	EXC3132

*: Requires separate controller board.

Custom 3rd Party Projected Capacitive Touch Panels (PCAP-S)

Overview

The projected capacitive touch panels (PCAP-S series) feature a film-film sensor with a top cover glass structure and are available in custom sizes up to 31.5 inches. They feature 86% (typical) transparency, 10 simultaneous inputs and an operating life of 10 million taps. A Chip-on-Film (COF) controller IC requires minimal mounting space.

The PCAP-S series is manufactured by Transtouch Technology, Inc., a FCL Components partner company.

Features

Standard & Custom Features

Chip-on-Film (CoF) Flex Tail

Windows™ and Android™ support *1

USB interfaces *1

Custom cover glass options (AG, AS, bevel)

Strengthened glass options

Graphic border / logo options

Custom design product

Optional Optical or Air-gap bonding with LCD



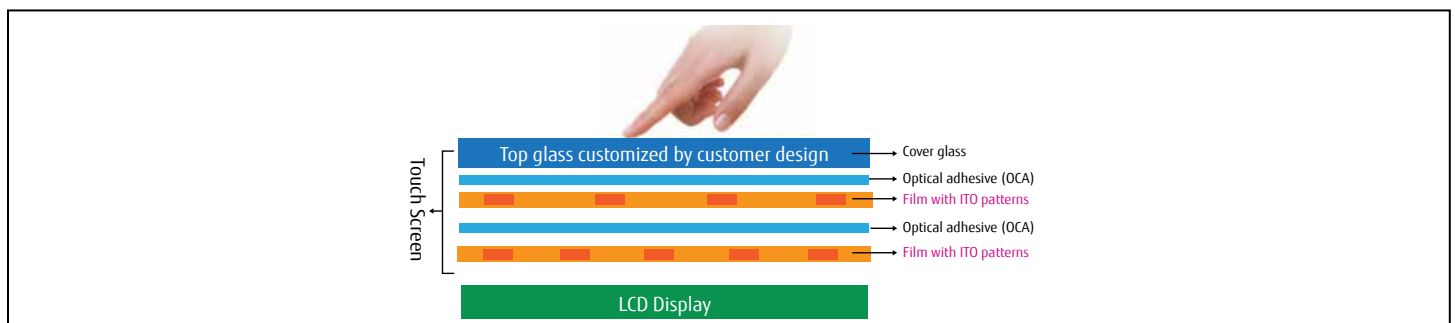
Item		Specifications
Type		Projected Capacitive Touch Panel
Input method		Finger (up to 10 simultaneous inputs)
Panel size		Up to 31.5-inches
Hardness		6H
Construction		Film-film sensor / cover glass
Tapping life		Min. 10,000,000
Position accuracy		Max. ±2mm
Optical	Transparency	86% min. (gloss finish)
	Haze	1.0 % (typical) (gloss finish)
Electrical rated voltage		5.0VDC (typical)
Consumption current *2		Active (10 simultaneous inputs): max. 85mA (example from 18.5" panel) Low power mode: 5mA
Environmental conditions	Temperature	-5° to +60°C *3 operating
	Humidity	20 to 90% RH *3

*1: Please contact us for other applications.

*2: It may differ according to firmware adjustment.

*3: Max. wet bulb temperature is 38°C. No condensation.

Structure



Resistive Touch Panels

Overview

The 4-wire technology comes in a standard version with anti-scratch hard-top coating, an anti-glare finish to avoid the mirror effect. The standard transparency for these touch panels is 82%. The technology allows pen and finger inputs which make the touch panels suitable for tablets that make use of pen writing, cash registers and many other applications.

The 4-wire panels can also be offered in customized sizes and support design options, such as flush surface (flat and stylish surface).

Standard 4-Wire Resistive Panel

Diagonal (inches)	Ratio	Part number ROHS compliant	Transparent area (mm)	Glass thickness (mm)	Tail (Flex) length mm	Transparency %
15.0	4x3	N010-0554-T902A	309.2 x 234.23	1.1	61	80
12.1	4x3	N010-0554-T805A	250.9 x 190.8	1.1	75	82
10.4	4x3	N010-0554-T303A	216.2 x 164.6	1.1	75	80
8.4	4x3	N010-0554-T504A	173.8 x 131.8	0.7	75	80
6.5	4x3	N010-0554-T043A	133.6 x 102.7	1.1	61	82
5.7	4x3	N010-0554-T009A	122.0 x 93.9	1.1	46.2	80
3.8	4x3	N010-0554-T703A	61.6 x 82.5	0.7	21	80

4-Wire Light Touch Resistive Panel

Diagonal (inches)	Ratio	Part number ROHS compliant	Transparent size (mm)	Glass thickness (mm)	Tail (Flex) length mm	Transparency %
22	wide	FID-1111-501-A22	479.76 x 303.1	1.8	120	80
19	4x3	FID-1111-381-A19	382.9 x 307.7	1.8	120	80
17.1	4x3	NC01111-T281	342.3 x 274.1	1.8	61	80
15.3	wide	NC01152-T021	338.08 x 204.44	1.1	61	80
15	4x3	NC01111-T261	309.2 x 234.23	1.1	61	80
12.1	wide	NC01111-T081	264.12 x 167.2	1.1	120	80
12.1	4x3	NC01111-T241	250.9 x 190.8	1.1	61	80
12.1	4x3	NC01111-T242	250.9 x 190.8	1.1	75	80
10.4	4x3	NC01111-T221	216.2 x 164.6	1.1	61	80
10.4	wide	NC01111-T222	216.2 x 164.6	1.1	75	80
10.1	wide	FID-1154-401-A10	223.4 x 141.5	1.1	50	80
8.4	4x3	NC01111-T202	173.8 x 131.8	1.1	75	80
7	wide	NC01152-T101	157.4 x 95.0	1.1	50	82
4.3	4x3	NC01111-T181	99.1 x 57.5	1.1	50	80
3.8	4x3	NC01111-T161	61.6 x 82.5	0.7	21	80

Automotive 4-Wire Touch Panels, Film-Glass

Single / dual touch - standard / light touch

The automotive film/glass touch panels can be manufactured from 3.5 to 9 inches. They are designed for finger applications and can handle 1 million finger touches. They have a wide operating temperature range of -30°C to +85°C and the storage temperature range is -40°C to +95°C.

FCL Components' automotive 4-wire series can be used as a single or dual touch panel. Besides the standard auto-

motive 4-wire touch panel series FCL Components offers an automotive 4-wire light touch series.

This light touch version is ideal for dual touch gesture functions like zooming a map or flipping pages. The standard product sizes are 6.5 and 7 inch in 16/9 format.

The transparency can go up to 90% and reflection down to 3%. Customized sizes, custom optical quality and the flush surface design option can be offered.

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