



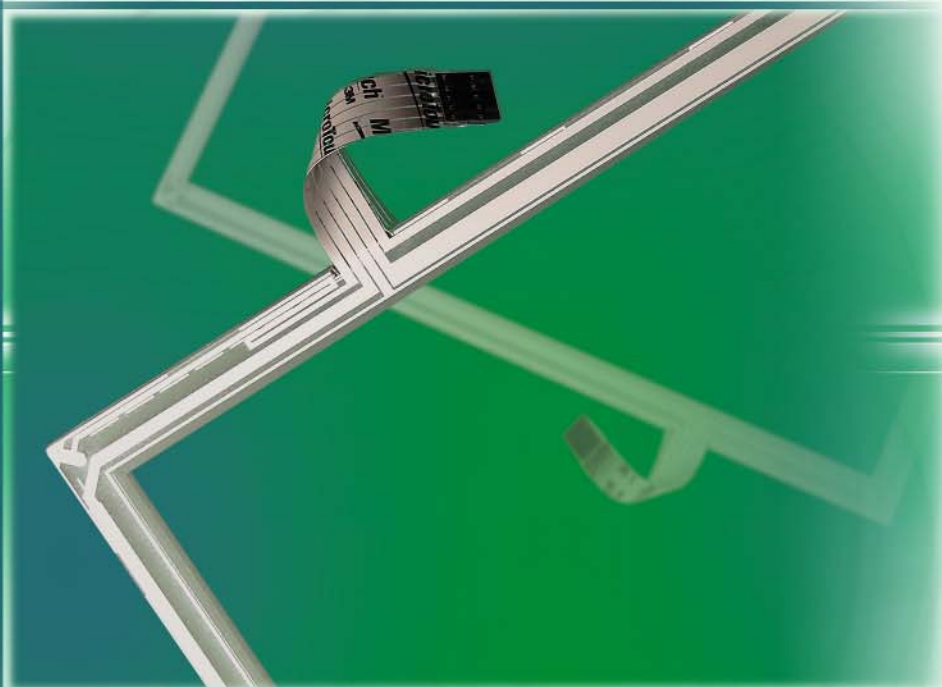
# 5-wire Resistive Touch Screen

HIGH-VALUE

FAST

VERSATILE

EASILY INTEGRATED



## Product Highlights

- Recognizes touch input from stylus, finger, gloved hand, pen or tool
- Integral tail design built for durability
- Environmentally robust with insulator layers protecting circuitry in high temperatures and humidity
- Fast response time
- Offered in current driven mode or voltage gradient mode providing choices in electronics

## Touch Solutions for Point of Sale, Hospitality, and Industrial Applications

Fast, accurate, and affordable, MicroTouch™ 5-wire FG (Film on Glass) resistive technology from 3M Touch Systems is the preferred solution for applications that require input flexibility and fast response time. Point of Sale, Hospitality, and Industrial environments benefit from an environmentally robust solution and the 5 year warranty. Built with durability in mind, MicroTouch 5-wire resistive touch screens incorporate progressive design procedures that include a robust insulated layered construction and integral tail design.

## Making the Difference

3M Touch Systems has committed to perfecting the science of building resistive touch screens. By taking a hands-on approach to coating, printing, and processing its own conductive film, 3M is confident it has built accuracy and reliability into every resistive product.

# MicroTouch™ 5-wire Resistive Touch Screen

## Electrical

Operating Voltage	2.5V to 5V DC
True Position Error	≤ 1% within Precision Area *Outside precision area, linearly increasing to 2% at the edge of the active area.
Isolation	≥ 15 M Ω Isolation is the minimum resistance between traces that are not connected in the design when the touch screen is not deliberately activated.

## Optical

	All values gained using BYK Gardner hazegard plus.
Transmittance	Glass < 0.1" (2.54mm) thick: 82% ± 2    Enhanced option: 85% ± 2 Glass ≥ 0.1" (2.54mm) thick: 80% ± 2    Enhanced option: 83% ± 2
Haze and Clarity (Typical Values)	Hardcoat HCC01 – Haze 2%, Clarity 90% Hardcoat HCG12 – Haze 5%, Clarity 80% Hardcoat HCG10 – Haze 11%, Clarity 64%

## Environmental

Operating	<i>High Temperature and Humidity:</i> +50 degrees C and 90% RH non-condensing (80% RH for FG parts with unpatterned ITO on glass layer. Parts using unpatterned glass will have this indicated on the drawing) <i>Low and High Temperature:</i> -20 degrees C to +50 degrees C, 20-50%RH, non-condensing
Storage	>2 weeks, integrated or non-integrated, 15 degrees C to 30 degrees C ambient conditions. -40 degrees C to -21 degrees C and +51 degrees C to +70 degrees C 20-50% RH, non-condensing limited for ten days continuous.

## Mechanical

	Data is for .004" diameter separator dots on a 0.14" pitch. Tested using a 3M Touch Systems SMT3e controller.
Activation Force	Stylus: < 25g average with plastic stylus with 1 mm radius, full hemispherical tip. Finger: < 50g average with 5/8" diameter silicone finger
Option	Custom activation force and palm rejection available.

## Durability

	Data is for .004" diameter separator dots on a 0.14" pitch. Tested using a 3M Touch Systems SMT 3e controller.
Point Activation	>35,000,000 activations at a single point with a 5/8" diameter silicone finger with a 350g load at 2 touches per second.
Gouge Hardness	≥ 4H per ASTM D3363-92 for HCC01, HCG10, HCG12 F per ASTM D3363-92 for HCC02 and HCG13

## Chemical Resistance

The touch screen surface finish is unaffected by exposure to the following chemicals for a period of one hour at 22 degrees C, 45% relative humidity. ASTM-F-1598-95.

Tea, Coffee, Ketchup, Mustard, Vinegar, Beer, Coca-Cola, Red Wine, Cooking Oil, Wisk Laundry Detergent, Fantastik All Purpose Cleaner, Joy Dishwashing Liquid, Windex, Formula 409 Cleaner, Clorox Bleach (5.25%), Hydrogen Peroxide (3%), Lysol, Ethyl Alcohol, Isopropyl Alcohol Acetone, Methyl Ethyl Ketone (MEK), Toluene, Concentrated Hydrochloric Acid, Naptha, Mineral Spirits, Gasoline, 10W30 Motor Oil, Diesel Fuel, Transmission Fluid, Brake Fluid, Antifreeze, Hydraulic Oil

## Warranty

5 years

\* Precision Area is the center 96% of the X and Y active area dimensions.



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For more information  
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visit [3Mtouch.com](http://3Mtouch.com) or  
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**NOTICE:** Given the variety of factors that can affect the use and performance of a 3M Touch Systems Product (the "Product"), including that solid state equipment has operation characteristics different from electro mechanical equipment, some of which factors are uniquely within User's knowledge and control, it is essential that User evaluate the 3M Touch Systems Product and software to determine whether it is suitable for User's particular purpose and suitable for User's method of application. 3M Touch Systems' statements, engineering/technical information, and recommendations are provided for User's convenience, but their accuracy or completeness is not warranted. 3M Touch Systems products and software are not specifically designed for use in medical devices as defined by United States federal law. 3M Touch Systems products and software should not be used in such applications without 3M Touch Systems' express written consent. User should contact its sales representative if User's opportunity involves a medical device application.

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