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# Touch Screen Technology



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# Introduction

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## Purpose:

- This product training presentation will help you understand the various aspects of selecting and using NKK's Resistive Touch Screens.

## Objective:

- What is a Resistance Film Touch Screen?
- Resistive vs. Capacitive
- Touch Screen Product Portfolio
- Controller Boards
- Additional Support Products
- Custom Capabilities
- Applications

Note: Please check the presentation speaker notes for additional slide information.

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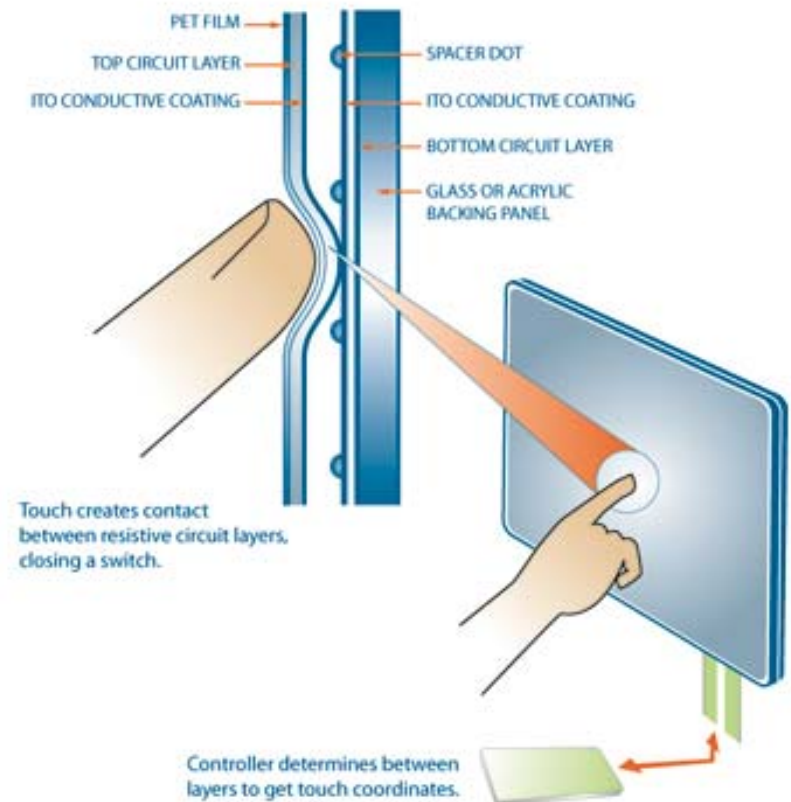


# What is a Resistance Film Touch Screen?

This type of touch screen consists of two layers: conductive glass (ITO glass) and conductive film

Dot spacers separate the two layers

When the screen is touched, the ITO patterns in the top and bottom layer make contact with each other to allow for accurate detection of the touched position

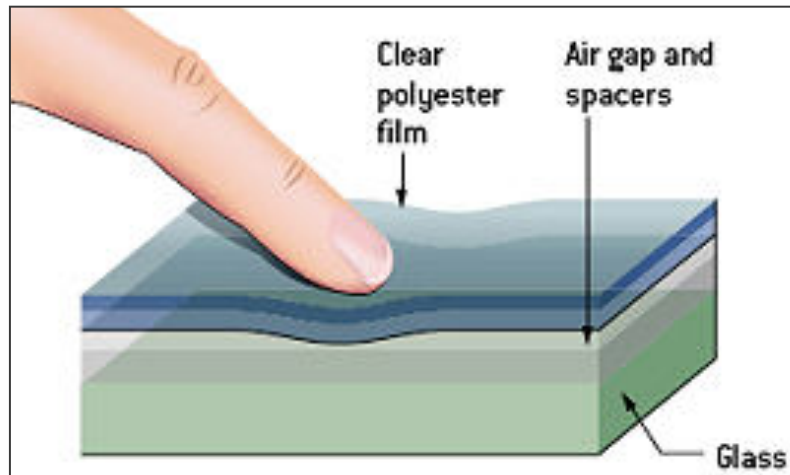


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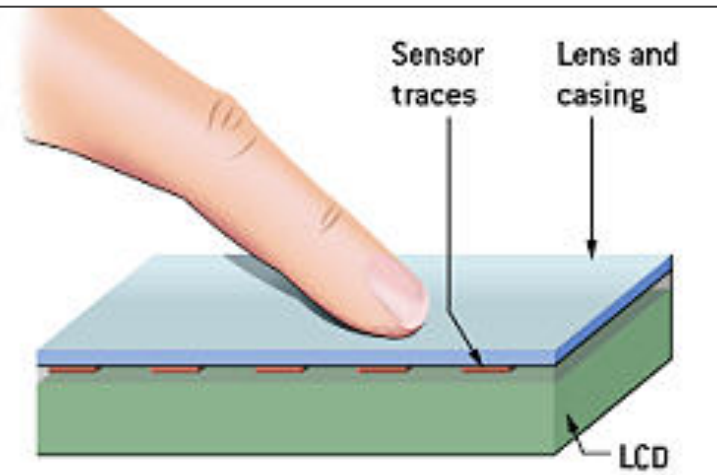
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# Resistive vs. Capacitive



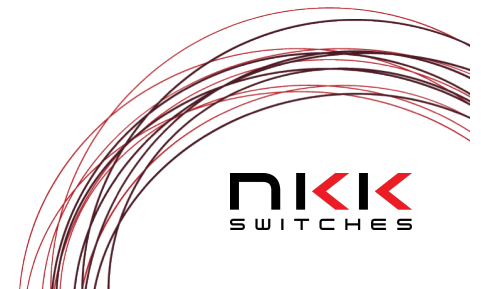
Resistive



Capacitive

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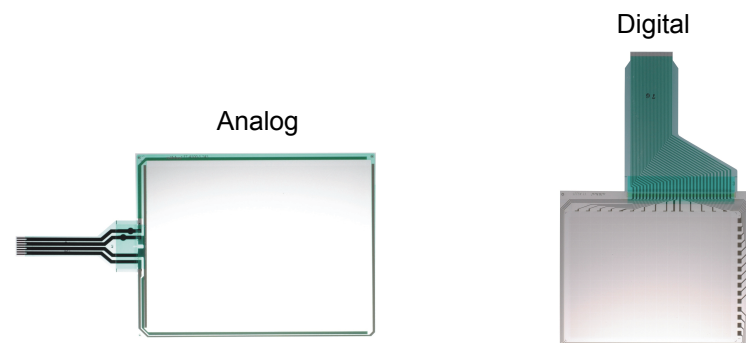


# NKK's Resistive Touch Screen Product Portfolio

- Wide Range of Available Sizes
- Non-Glare and Hard Coated Surface
- Digital and Analog Touch Screens
  - 4 & 5 Wire Metal (Analog)
- Anti-Newton Ring (ANR) Technology
- Choice of input:
  - Finger
  - Gloved Finger
  - Stylus
- Contact Reliability with Connector
- Digital Screen Resolution of Touch Sensitivity is 15x15 (# of Keys)
- RoHS Compliant
- Custom Solutions Available

	Min Screen	Max Screen	Standard Screen Sizes
5 - Wire	10.4	19*	10.4, 12.1, 15
4 – Wire	2.5*	19*	5.7, 6.5, 8.4, 10.4, 12.1, 15
Digital	2.2*	12.1*	5.7

\* Indicates Custom Solution



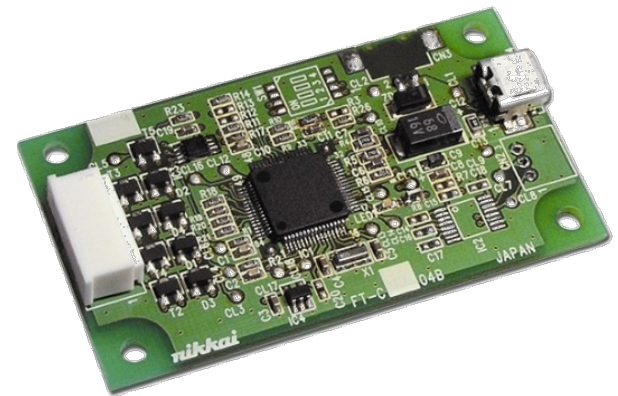
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# Controller Boards

- High Quality and Reliable
- Easy Integration Replacing Mouse Functionality
- Overall Dimensions: 65.0mm x 37.0mm (2.559" x 1.457")
- One Controller Required per Touch Screen
  - Analog 4 & 5 - Wire
    - Use NKK Controller or build your own
  - Digital
    - Build your own controller
- Communication Options:
  - 5 - Wire (Analog)
    - USB
    - RS232
  - 4 - Wire (Analog)
    - USB
    - RS232
- Controllers Support the Following Operating Systems:
  - Windows 7
  - Windows Vista
  - Windows XP
  - Windows NT4.0/2000



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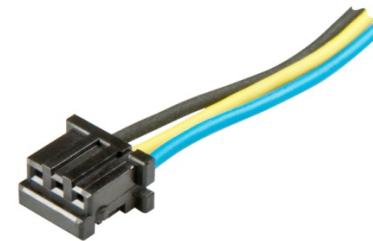
# Additional Support Products

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- IC Interface: USB and RS232C
- High Speed and Accurate
- Built-in Calibration Function
- Data Function Removal Built-In to Eliminate Noise



- AT713 Receptacle Connector with code connects to RS232C communication of the controller boards



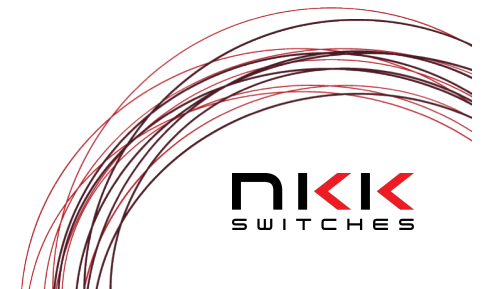
- AT714 Receptacle Connector with code connects to the power source of the control boards



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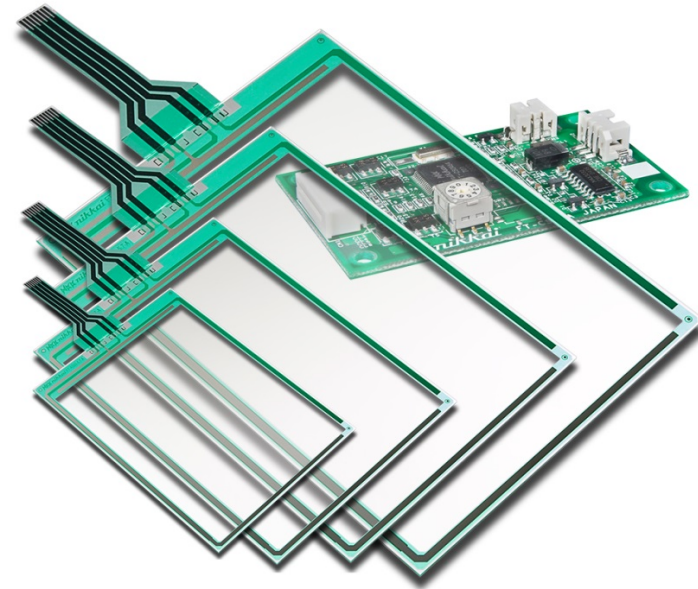




# NKK's Custom Touch Screen Capabilities

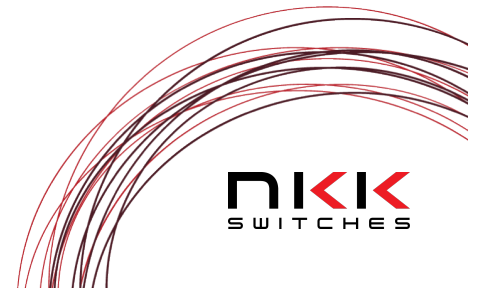
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- Screen Size
- Type of Film
- Tail Location and Type
- Glass Thickness
- Material Combinations
- # of Keys (Digital)
- Integrated Assemblies



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# Resistive Touch Screen Applications

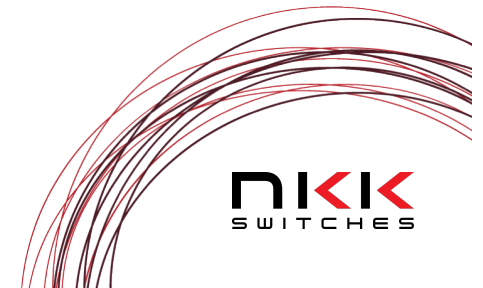
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- Information Kiosks
- Industrial Automation
- Banking, Exchange Management Systems
- Broadcast
- Office Automation
- Medical Equipment
- Hand-held Devices
- Hospitality and Restaurant
- Gaming



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# Thank you!

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