

# Custom Touchscreens



Eliminating the need for buttons or keys, touchscreens have changed the way electronic equipment is used by simplifying the user experience. Utilizing both resistive and capacitive technologies, our touchscreen solutions can be integrated into your panel with a wide selection of additional design features to fit your unique application.

While the applications people are most familiar with are computers, smartphones, and gaming consoles, the list of uses for touchscreens continues to grow including such applications as medical equipment, industrial machinery, self-service kiosks, bank ATMs, and satellite-navigation equipment.



## The Wilson-Hurd Advantage

- We can provide you with exactly what your project requires, from essential components to complete turn-key solutions.
- You retain full control of the look and feel of your interface, while we handle the processing overhead for graphics, and touch tracking.
- We perform quick menu development through image files, graphical coordinates, or real-time instruction. You can easily customize menus at any time.
- Our interrupt-driven processor solution responds quickly to handle events and accept external inputs, to augment touchscreen inputs.
- Our system flexibility allows interfacing with multiple protocols, to mediate complete redesigns due to customer requirement changes (screen sizes or technology change), or lack of current part availability. Revision changes would be transparent to the end-user.
- Our engineers have included built-in software libraries to enable your product development through simple function calls.

## Design Options & Product Features

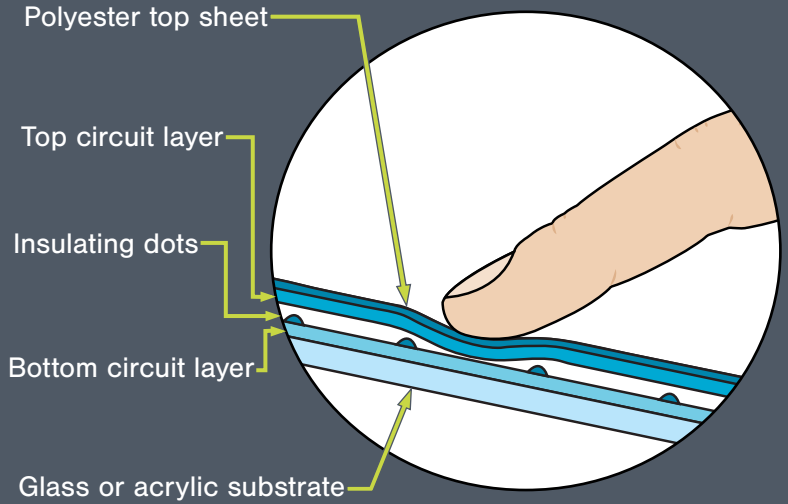
- Capacitive multi-touch and gesture support
- Optical bonding capabilities
- Cover lens options include: glass (soda lime, chemically strengthened, tempered), plastics (polycarbonates, acrylics), and coatings (hardcoat, anti-glare, anti-reflective, polarized, UV resistant).
- Support for various communication standards, including: SPI, I2C, UART, and USB
- Display interfaces, including: 24-bit parallel, LVDS, and HDMI
- Screen sizes supported:
  - Resistive 2.2"-22"
  - Projected Capacitive 3.5"-17"
- Operating temperatures: -30°C (-22°F) to 80°C (176°F)



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## Resistive Touchscreens

Two clear conductive layers (glass or acrylic substrate and polyester top sheet) are separated by insulating dots. A touch compresses the flexible top layer into contact with the bottom glass layer, causing electrical contact between the layers. A voltage gradient is applied to the top and bottom layer (X and Y axis) sequentially; the opposite layer is used as a voltage probe. The controller calculates the X and Y position based on the voltage level received by the probed layer.



### Characteristics

- Low cost
- Low power consumption
- Compatible with any pointing device, including gloves
- PET top sheet provides shard containment if broken
- Liquid does not impact performance
- May require recalibration
- More prone to damage
- Top layer flexing causes wear
- Lower optical clarity

## Capacitive Touchscreens

Conductive pointing devices, such as your finger, change the electrostatic field of the device. The change in capacitance is measured at each point on the grid, allowing the touch position to be located.

### Characteristics

- Clean, solid glass panel
- Superior optical performance
- No mechanical movement - extreme endurance
- Operates with finger, gloves, or active stylus
- Can handle environmental extremes
- Multi-touch & gesture capabilities
- Highly accurate
- Susceptible to EMI

