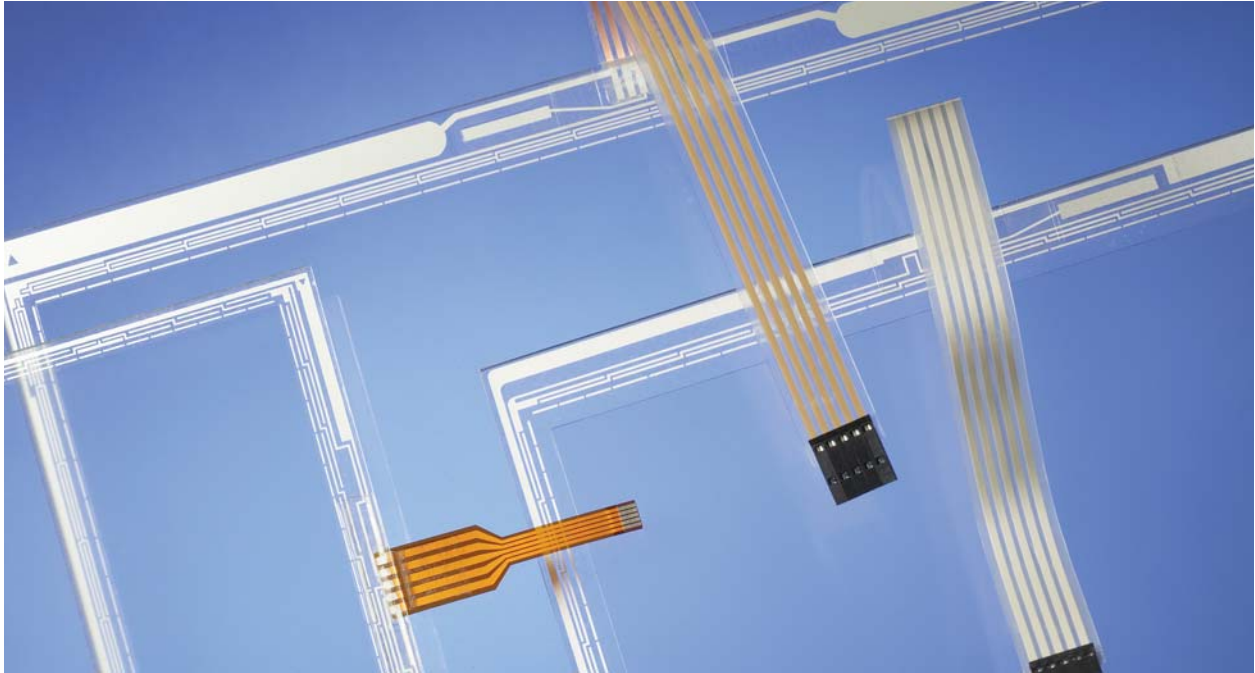


Reliable Performance For Harsh Environment Applications.



Benefits

- Durable, reliable performance for demanding, harsh-environment applications
- Rated at over 35 million activations
- Highly resistant to scratches, abrasions and external contaminants
- Patented optics for superior image clarity and brightness
- A wide variety of options available to match your design specifications

Bergquist 5-wire resistive analog touch screens are ideally suited for durable, reliable performance in a wide variety of demanding physical and harsh-environment applications. Unlike other resistive technologies that must use two opposing layers to create X- and Y- axis measurements, the Bergquist 5-wire utilizes the stable substrate of glass for both X- and Y- axis measurements.

Electrically, the 5-wire operates by supplying five volts to ground and toggling in both directions, thus supplying the X- and Y- measurements. The sense line, or fifth wire, is connected to the top film substrate. When the top layer is depressed, making contact with the base layer, it picks up the voltage data and carries it to the electronics. Because the top film is working only as a pick-up layer, it can tolerate resistance changes without impacting the reliability of the touch points' accuracy from the base layer.

It is for this reason the 5-wire is able to withstand temperature, humidity and mechanical stresses. As a result, 5-wire touch screens are specified at over 35 million activations versus a typical specification of 1 million activations for other types of resistive technologies.

| MECHANICAL | |
|--|--|
| Construction | Top Layer: 7 mil. hard coated polyester film with scratch-resistant, anti-glare or gloss finish on outer surfaces. Transparent conductive coating on inner surface Middle Layer: Near-invisible patented separator dots Bottom Layer: Glass substrate with uniform conductive coating |
| Cable & Connector | Flextail with a variety of 5-position Amp, Berg or ZIF connections available |
| Input Method | Finger, gloved hand, or stylus activation |
| Actuation Force | Stylus: <25 grams with plastic stylus with 0.039" radius Finger: <50 grams with 40 durometer; 0.375" spherical radius silicone finger Custom activation force available |
| ELECTRICAL | |
| Operating Voltage | 2.5 V to 5V DC |
| Positional Accuracy | 98.5% accuracy |
| Isolation | 5M Isolation is the minimum resistance between traces that are not connected in the design when the touch screen is not deliberately activated |
| OPTICAL | |
| <i>All values gained using BYK Gardner hazegard plus. Selection of film will determine final values.</i> | |
| Transmittance | Glass <0.1" (2.54mm) thick: 89% \pm 2 Glass 0.1" (2.54mm) thick: 87% \pm 2 |
| Haze & Clarity | Hardcoat 500303 — Haze 1%, Clarity 98%, Transmission 91% Hardcoat 500304 — Haze 1%, Clarity 98%, Transmission 85% Hardcoat 500269 — Haze 5%, Clarity 81-91%, Transmission 91% Hardcoat 500246 — Haze 8%, Clarity 80-91%, Transmission 85% Hardcoat 500293 — Haze 4%, Clarity 87-93%, Transmission 86% |
| ENVIRONMENTAL | |
| Operating | Temperature: -10° C to 50° C Relative Humidity: 90% RH at 35°C for 240 hours |
| Storage | Temperature: -40°C to 70° C Relative Humidity: 90% RH at 35°C for 240 hours |
| DURABILITY | |
| Point Activation | >35 million actuations. Life expectancy will vary depending on adjustments made to actuator type, dot pattern, durometer size, and force. Test conditions based on 0.375" spherical radius silicone finger with a 350g load at 2 touches per second. |
| Surface Hardness | 4H per ASTM D3363-92 |
| Chemical Resistance | Industrial chemicals: acetone, methylene chloride, methyl ethyl ketone, isopropyl alcohol, hexane, turpentine, mineral spirits, unleaded gasoline, diesel fuel, motor oil, transmission fluid, antifreeze. Food service chemicals: vinegar, coffee, tea, grease, cooking oil, salt, plus most commercial cleaners including ammonia-based glass cleaner and laundry detergent |
| WARRANTY | |
| Touch Screen | 5-year limited warranty, please see warranty for additional terms and conditions |

U.S. Patents 5,736,688; 6,424,339; 6,559,835; 6,611,256
European Certificate I233368