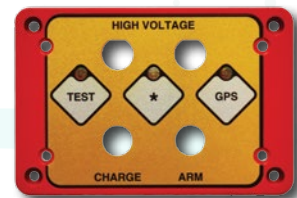


# Custom PiezoPanels

When you need a reliable, high-quality operator interface, select a PiezoPanel<sup>®</sup> from Wilson-Hurd. Featuring a completely sealed design with no moving parts, this switching product offers an extremely long life. Every PiezoPanel<sup>®</sup> that we produce is custom built to your exact specifications. With a sealed, corrosion-resistant top faceplate to protect the electrical switch package, a PiezoPanel<sup>®</sup> may be placed in even the toughest environments, including oil and gas exploration; oceanographic applications; and food processing plants. Our engineering team will collaborate with you to create a keypad that will be aesthetically pleasing and high performing.



## Advantages of a PiezoPanel<sup>®</sup>:

- Superior durability
- Longevity - capable of more than 50 million actuations
- No moving parts
- Ease of cleaning
- Chemical, weather & vandal resistance

## Design Options Available:

- Faceplate material choices - stainless steel, aluminum, glass, or plastic
- Selective texture
- Clear or colored windows or lenses
- ESD, RFI & EMI shielding
- Metal or plastic back panels
- Bezels
- Displays (VFD, LED, LCD)
- LEDs
- Visible & audible feedback
- Adjustable operating sensitivity



# Custom PiezoPanels

## Technical Data

### Operating Characteristics

- Uses piezoelectric elements in place of conventional flex membrane switch contacts
- For high volume applications, the piezo element can be printed
- An activation force applied to the faceplate causes the piezoelectric element to emit an active voltage signal to power an interface
- Simple interface or bridge circuitry is required to convert the piezoelectric signal from analog to digital
- The sensitivity can be adjusted by raising or lowering the electrical switching level
- Specific design requirements are met using custom interface electronics, analog and digital ICs, microprocessors with software filters
- Interface electronics emulate one of the following switch types: one shot, momentary, or toggle
- Interface electronics eliminate contact bounce associated with other switching technologies
- Speed accommodates operating frequencies of 1kHz without difficulty

### Type

Operating Force

### Specification

6-12 oz. (Note: a specific operating force can be custom designed into your PiezoPanel®)

Operating Force Speed

Approximately 10 N/s

Mechanical Loads

Accommodates loads from 200N/cm<sup>2</sup> to 5000 N/cm<sup>2</sup>

Number of Actuations

>50 million actuations

Operating Temperature

-40°C (-40°F) to 60°C (140°F)

Storage Temperature

-60°C (-76°F) to 80°C (176°F)

Output Capacitance

Standard value: 5 to 20 nF,  
Typical value: 7 nF

Signal Impulse Time Constant

Typical value: 70ms  
(7nF, 100MΩ)

Output Signal

Output voltage is determined by operating force & speed; faceplate material; faceplate thickness. ≈2.5 v/n

## Construction

