

FORCE SENSING OR TOUCH?

HOW THEY WORK AND DIFFER

Force sensing and capacitive touch are two different ways devices detect user input. Force sensing measures the amount of pressure applied, enabling more precise and dynamic interactions, while capacitive touch detects the electrical properties of your finger for fast, light taps and gestures.

When precision and reliability matter, force sensing stands out. Vishay's VCNL sensor family is optimized to deliver exactly this, offering high accuracy and seamless integration for next-generation touch solutions.



Force Sensing



Requires physical pressure or surface deformation

Can be integrated with various pliable materials

Intended activation of the application by a defined force level

Can simulate button-like feedback

Works reliably with gloves

VS

Capacitive Touch



Detects proximity of a conductive object

Needs a specific conductive layer

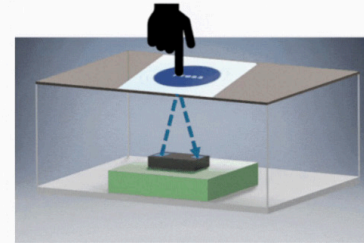
Higher risk of unintended activation

Only supports flat touch with no tactile feedback

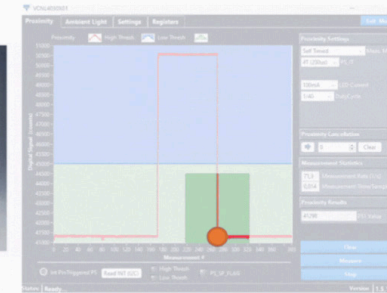
Often fails when used with gloves

Enabling Optical Force Sensing with Vishay's VCNL Family

Application



Signal



Benefits of VCNL4030X01 in Force Sensing Applications

- ✓ False trigger avoidance
- ✓ Real push button experience
- ✓ Any bendable surface can act as an input device
- ✓ High resolution displacement measurement down to 10 μm
- ✓ Can be combined with haptic feedback



For questions: SensorTechSupport@vishay.com

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