Don't Use Old Switch Technology in Today's Modern Electronic Circuits!

Mechanical switch technology has been around since the days of Thomas Edison. It was designed to prevent destructive contact arcing when a high-current circuit is broken. These switches are still fine for switching AC/DC current such as lighting, washers, dryers, garbage disposals, air conditioners, etc., but they have some serious drawbacks when it comes to today's electronic circuits. The primary drawback is switch bounce. The other drawback is that their functionality is quite simple: either open or closed. More advanced functions like push-on/push-off and handshaking are not supported.

With a traditional mechanical switch, there is no clean contact when it opens and closes. Instead, there are mechanical rebounds where the contacts continue to open and close repeatedly until they settle into the new position. In addition, the snap action of the mechanical switch tends to augment the intensity of the bounce, which adds to the duration of the bounce.

Switch bounce, if not handled properly, can cause system malfunctions that may lead to disastrous effects in the military, automotive, medical, avionic, and industrial systems. LogiSwitch's NoBounce™ technology is based on adaptive proprietary algorithms that have proven to be robust over years of use in real-world deployments.

The beauty of this new switch technology is that it completely eliminates switch bounce without adding complexity to the design. It is also a modern digital solution that works directly with users' logic-based systems. With this technology, the system is not required to constantly monitor switch inputs for asynchronous signals. NoBounce switches and ICs generate only

cleanly debounced signals. In addition, the optional LogiSwitch handshake protocol is a technique designed to provide extremely fast switch service routines and eliminate polling. LogiSwitch switches also have a toggle output for push-on-push-off applications.

A high-level view of our IC and switch products is given below. Please see the individual datasheets and application notes for a deeper view.

All LogiSwitch LS100 series devices include NL/HS (Normally Low/Handshake) pins that incorporate the LogiSwitch handshake protocol. This protocol is a technique designed to take control of the switch service routine and eliminate time-wasting polling for switch release.
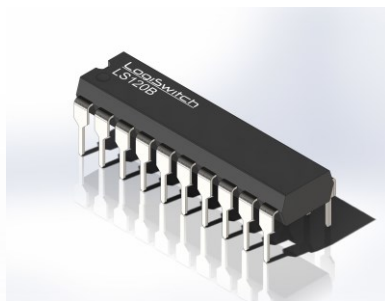
IC's

LS10 Series

The LS10 Series of LogiSwitch debouncer/noise filter chips features low-impedance 25 mA totem-pole outputs for each channel. Outputs and inputs are of the same polarity and may be selected for use as active high or active low. The LS10 Series utilizes LogiSwitch's proprietary NoBounce technology resulting in a high level of noise immunity. Noise spikes of less than 20 ms duration are prohibited from initiating or terminating a cycle.

LS100 Series

A feature of the LS100 Series, exclusive to LogiSwitch, is immediate output change with no delay on both actuation and release of the switch. The active high output follows the switch input in non-handshake cycles with the bounce/noise removed.

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Switches

LogiSwitch NoBounce switches and IC are a modern robust solution to problems caused when using the over 100-year-old mechanical switch technology. Modern systems deserve modern solutions!

Every LogiSwitch Switch features LogiSwitch NoBounce™ technology and comes with three separate clean, debounced outputs, including two momentary selections: Normally High (low when pressed) or Normally Low/Handshake NL/HS (high when pressed) (see User Guide) and an optional latched Toggle (push on/push off) selection. The Toggle output is user-selectable via shunt for either the Toggle output, compatible with all LogiSwitch NoBounce Switches, or the active low LED input for the ring LED on/off operation.

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IP67 NoBounce illuminated vandal-resistant pushbutton switches come in 22 mm, 19 mm, and 16 mm diameters.

The 6 mm pushbutton NoBounce switch represents the simplest digital switch in the LogiSwitch line.

The LS-KW10 series and the LS-8xxx series of NoBounce mini limit switch products are digital limit switches for optimal use in industrial automation and robotics applications, or any application where clean, fully debounced, high-speed switch poll-free processing is desired.

The LS-KW10 series limit switches have the following lever options:

- No Lever
- Short Lever
- Long Lever
- Arc Lever
- Roller Lever

The LS-8108 mini limit switch with adjustable roller arm. The arm can be adjusted anywhere in the 360-degree rotation. The arm also can be used with the roller up or down.

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