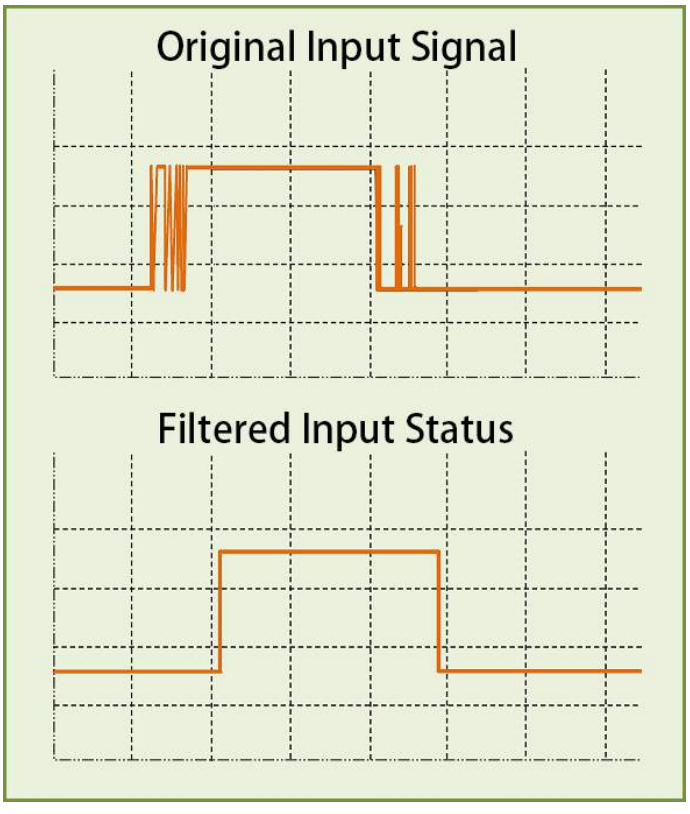
| 分類/Classification | ☐ tDS ☐ tGW ☑ PETL/tET/tPET ☐ DS/PDS/PPDS ☐ tM-752N<br>☐ I/O Card ☐ VXC Card ☐ VxComm ☐ Other | | | | |
|---|---|---|---|---|---|
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# Q: What is Digital-Input Filter (DI Filter)?

A: An input signal can come from a myriad of sources, such as buttons, switches, sensors, or relays, etc. Each of these types of mechanical device also contributes to a common problem - "**contact bounce**".

The switch between Digital Input states is usually accompanied by a number of unwanted pulses, known as "switch bounce". In certain environments and situations, these input signals may inevitably generate an unstable signal or noise, which can potentially cause incorrect data counting or operation failure. Consequently, it is imperative that these errors are removed from the input signals, especially if the signals are used in crucial applications.

A low-pass Digital Input filter is a software function that can be used to eliminate high-frequency interference from input signals. The input state will only be changed when the width of any new signal is greater than the value specified as the filtering time, meaning that short, high-frequency interference pulses will be ignored, as illustrated in the diagram below. This is especially useful when attempting to eliminate contact bounce.




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