Revision: 1.00
https://iot-portal.com Yes
https://iot-portal.com/app No
Mobile: Yes
Desktop: Yes

Input/Event Hold

It is often desirable to ignore transient events of just a few seconds or even ignore input changes lasting several hours. This can be achieved using a hold. Holds are not simple delays; they allow message sending to be cancelled if the input returns to the idle or opposing state.

If an input is likely to be noisy and change states briefly, a ***Device Hold*** is most appropriate. This is available on analogue inputs 1-4 on most devices. This allows brief fluctuations in state of several seconds to be ignored. By default, this is set to 2s on these inputs. A device hold is implemented on the remote device.

When it is possible that a temporary alarming state may exist for several minutes or hours but it is not critical to alert users until a long time has passed, then a ***Server Hold*** is more appropriate. This will cancel a queued message if the state returns to idle or the opposing state. The server hold is performed by the portal. Server Holds should be combined with Device Holds where available.

*The Hold Controls are available on each input card by clicking the **Settings Button***

Server Hold and Device Hold Controls

Hold controls are available for each input and sensor by clicking the 'Input Button' (see above) on its input card on the Live Screen. 1-wire sensors do not have a Device Hold. The Device Hold is only available on inputs 1-4.
Device holds of several seconds can be set for each input by entering the number of seconds in the device hold text box. Generally, we recommend a minimum of 2s and a maximum of 200s. The timing of device holds is fairly accurate. The server will not log events occurring during a Device Hold.

Server holds are measured in whole minutes. The time is not precisely measured as message sending, after the hold period, is performed by an asynchronous process which occurs every 20s. The hold will therefore be:

Hold Time (s) = Device Hold Time + Server Hold Time (x60s) + (0 to 20s)

If a Device Hold is available (inputs 1 to 4), then a device hold of just a few seconds should be combined with the server hold for optimum performance.

How it works

Device Hold – when a voltage or temperature threshold is exceeded, an event is normally generated. On inputs with a hold, a hold is generated instead. Once the hold times-out, the device checks the input is still in the appropriate triggered state and will add an event to the event queue if so. The event is sent to the portal like there was no hold and is processed normally.

Server Hold – when an event is received, the hold database on the server is checked to see if any holds have been set up for this device and input. If there is a hold for this event, the hold period is added to the current time and the event is stored and not sent.

If the opposite event is received by the portal, the hold is cancelled and no message will be sent. For example, if input 1 sent a low event starting a server hold timer and then subsequently the device sent an Input 1 high event, this will cancel the hold and no message will be sent.

It is only possible for a matching event to be sent if the device has returned to idle or the alternate state. Therefore, if the device sends a matching event during an existing hold period, the hold timer is restarted.

Finally, once the hold period is over, the portal will interrogate the device to check it is still in the state matching the initial trigger event. If so, the message is sent. If it's not possible to contact the remote device, the message is sent anyway. If input has returned to the idle or opposite state, the message is not sent.

Limitations

Using a large hold value for the Device Hold increases the risk a valid message may be lost if something happens to the remote device whilst in hold. Some applications may risk loss of power or signal in the alarming condition. This should be kept in mind when using long Device Holds.

If the Server Hold period is long relative to the expected period between events the likelihood of the idle state being inverted increases. For example, if a daily event is held for several hours, it increases the likelihood of the portal seeing the alarming state as idle and message sending occurring at the wrong moment. To avoid this scenario, **the 'Server Hold' time should be set on the Live Screen only when the device is in the idle or opposing state.**

Security

Only admin users have access to the Live Screen and hence this control. All actions occur within the portal VPN. Only numeric values are accepted by the 'Server Hold'.

Threats to Existing Installations and Recommended Testing

There are no potential threats to existing installations or devices. Hold functions have been implemented since v3 firmware (currently v8). No changes have been made to the hold firmware in v8.
The portal hold database contains no device IDs unless a 'Server Hold' time is specified.