Template:FMB964 I/O settings

When no I/O element is enabled, AVL packet comes with GNSS information only. After enabling I/O element(s) AVL packet contains current value(s) of enabled I/O element(s) along with GNSS information.
If the device is connected to configurator all current I/O values are displayed in *Current Value* column.
Priority field allows enabling I/O elements and setting them a priority so they are added to the data packet, which is sent to the server. By default 12 I/O elements with low priority are enabled: *Ignition*, *Movement*, *Data Mode*, *GSM Signal*, *Sleep Mode*, *GNSS Status*, *GNSS PDOP*, *GNSS HDOP*, *External Voltage*, *Speed*, *Battery Current* and *Battery Voltage*. *Priority* level (AVL packet priority) can be Low, High or Panic. All records made by FMB1YX are regular, and regular packets are sent as low priority records. When *Low priority* event is triggered, FMB1YX makes an additional record with an indication that the event was caused by an I/O element change (depending on *Operand* configuration). When *High priority* is selected, module makes an additional record with high priority flag and sends event packet immediately to the server using GPRS. *Panic priority* triggers same actions as *High priority*, but if GPRS fails, it sends an AVL packet using SMS data if SMS data sending is enabled and the number is provided in *SMS/Call Settings*.
High and *Low* levels define I/O value range. If I/O value enters or exits this range, FMB1YX generates an event. *Operand* parameter defines when to generate event: *On Exit*, *On Entrance*, *On Both*, *On Hysteresis* or *On Delta Change*.
When *Event Only* is selected, I/O element status value will be appended only to eventual records, otherwise I/O element status value will appear in each AVL record.

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Contents

Operands

Operand On Exit

Record is generated when input value leaves a range between low and high level limits.

Operand On Entrance

Record is generated when input value enters a range between low and high level limits.

Operand On Both

Record is generated by both On Exit and On Entrance operands' logic at same time.

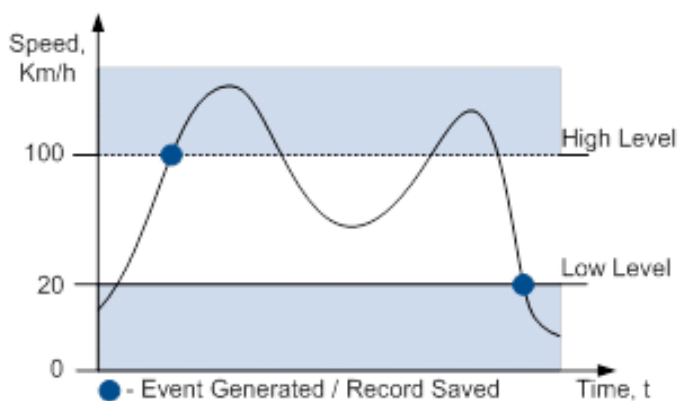## Operand Monitoring

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No event at all. Values are recorded only when other triggers worked.

Operand On Hysteresis

Record is generated when input value crosses the high limit value from below the low limit value or vice versa.

Operand On Change

Record is generated when input value changes.

Operand On Delta Change

Record is generated when input value changes and the absolute change becomes equal to or higher than the limit value.

Avg Const

If *Avg Const* value is 10, new value must be present for 1 second to register the change to a new value. Internal sampling is done every 40 ms, so 25 samples are taken per second. To configure 5 seconds of averaging multiply 10 by 5 yielding 50 as *Avg Const* value. The same logic works if the device is in Deep Sleep mode.
Averaging follows RC exponential curve, see image below:

For Boolean values of 5τ, values is used, that means value change is taken when new values is averaged to more than 99.3%.

OBD II (Blue-tooth) and LVCAN I/O elements

OBD II (Blue-tooth) and *LVCAN* sections show I/O elements that can be obtained accordingly from OBD II Blue-tooth dongle and LV-CAN200/ALL-CAN300 connected to FMB1YX device. All I/O configuration is as described in [Template:FMB I/O settings](#) section, except OBD II (Blue-tooth) I/O elements does not have an averaging constant parameter.
Detailed description of LVCAN I/O element configuration is given in [Template:FMB CAN adapters](#).