

# Template:FTX8XX/9XX Input/output (I/O)

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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.

Permanent I/O	Current value	Priority	Operand	Low level	High level
<input type="checkbox"/> Ignition Indicates the state of ignition, according to the selected source.	N/A	None	Monitoring	0	0
<input type="checkbox"/> Movement Indicates movement state of the device, that determines the data acquisition mode currently used: 0 - on stop, 1 - moving.	N/A	None	Monitoring	0	0
<input type="checkbox"/> Instant movement Instant movement without delay.	N/A	None	On change	0	1
<input type="checkbox"/> GSM signal GSM signal quality level from 0 to 5, where 0 means no connectivity and 5 means excellent signal.	N/A	None	Monitoring	0	0
<input type="checkbox"/> External voltage Voltage in mv supplied by external power source.	N/A	None	Monitoring	0	0
<input type="checkbox"/> GSM area code Location area code (LAC) that depends on GSM operator. It provides unique number which is assigned to a set of base GSM stations.	N/A	None	Monitoring	0	0
<input type="checkbox"/> Battery voltage	N/A	None	Monitoring	0	0
<input type="checkbox"/> Battery current Current in ma being provided by internal device battery.	N/A	None	Monitoring	0	0
<input type="checkbox"/> Trip odometer Trip distance value calculated by GNSS.	N/A	None	Monitoring	0	0
<input type="checkbox"/> Total odometer Virtual odometer value.	N/A	None	Monitoring	0	0

## Search

Enter the keyword to search for the desired permanent I/O.

## More Filters

It provides additional filter options such as Priority, Operand, and rows with currently available values.

## View Columns

Filters the necessary tabs when making configuration changes or viewing. Priority, Operand, Low Level, High Level, and Event Only Options are available filters. The Input name and Current Values are permanent columns.

## Permanent I/O

I/O element name.

## Current Value

If the device is connected to the **Configurator**, then all the current I/O values can be seen here.

## Units

Units of measurement.

## Priority

This field allows the enabling of the I/O elements and sets them a priority so they are added to the data packet, which is sent to the server. By default **7 I/O elements** with **Low priority** are enabled:

Ignition, Movement, GSM Signal, External Voltage, Battery Voltage, Battery Current, Total Odometer. All records made by FTX9XX are regular, and regular packets are sent as low priority records.

Priority level (AVL packet priority) can be:

### **None Priority**

The module doesn't make additional records.

### **Low Priority**

The module makes an additional record with an indication that the **event was caused by an I/O element change** (depending on [Operands](#) configuration).

### **High Priority**

The module makes an additional record with High priority flag and **sends event packet immediately** to the server using **GPRS**.

## **High and Low Level**

These levels define I/O value range. If I/O value **enters or exits** this range, FTX9YX **generates an event**.

## **Event Only**

When this 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.

## **Operands**

Defines when to generate event: [On Exit](#), [On Entrance](#), [On Both](#), [Monitoring](#), [On Hysteresis](#), [On Change](#) or [On Delta Change](#).

### **Operand On Exit**

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



### **Operand On Entrance**

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



### **Operand On Both**

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



## Operand Monitoring

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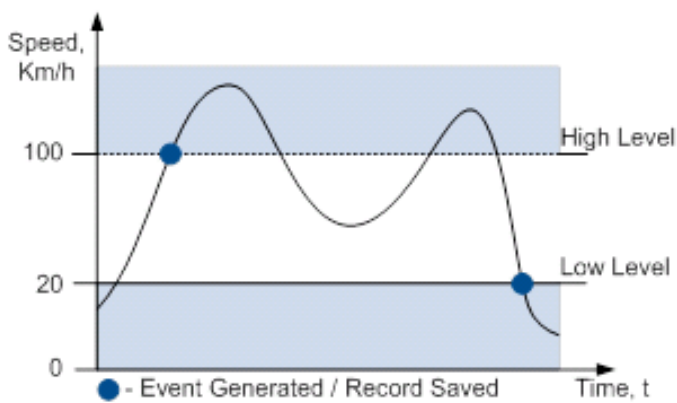
No event at all. Values are recorded only when other triggers worked.



## Operand On Hysteresis

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



## Operand On Change

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Record is generated when input value changes.



## Operand On Delta Change

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

