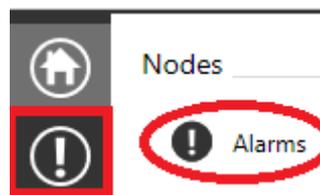


Pi Toolset - Alarms

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Alarms Node

The "Alarms" node can be found as every other node under the Home tab. As well, a quick button will always be available on the left bar:



When clicking on either one or the other button, you will enter the Alarms setup page:

Alarms

The ordering of alarms determines the order in which they are evaluated on the bar and hence the order in which they will be presented on any available display when triggering. Ensure that critical alarms come before less critical ones.

Alarm_Press_Oil_Low
Press_Oil_Eng_ECU < 2 bar

Alarm_Temp_Coolant_High
Temp_Coolant_ECU > 100 °C

Alarm_V_Batt_Low
Battery Voltage < 11.5 V

Alarm_Press_Fuel_Low
Press_Fuel_ECU < 4 bar

Alarm_Temp_Oil_High
Temp_Oil_ECU > 130 °C

General

Name: Alarm_Press_Oil_Low

Short Text: Oil P Max 5 characters

Long Text: Oil P Low Max 14 characters

Enabled:

Display Channel: Press_Oil_Eng_ECU Channel that can be displayed when the alarm triggers

Dps: 2 Unit: bar

Conditions

The alarm will trigger when the condition has been met for the specified guard time. Up to four qualifying conditions may also be specified, each of which must be met before the main condition will be evaluated.

Condition: Channel Press_Oil_Eng_ECU < 2000 bar

Guard Time: 0.500 s

Re-Trigger Guard Time: 2.000 s Period that must elapse after alarm reset before it can re-trigger

Qualifiers:

- Strategy RPM Qualifier State = Active
- Strategy Moving = Moving

Acknowledgement

When an alarm is triggered, the threshold adjustment value is applied as follows:
 1) To clear the alarm the value must return to its normal range and the difference between the value and the current threshold must exceed twice the threshold adjustment value.
 2) After user acknowledgement, the threshold adjustment value is added to (or removed from) the current alarm threshold as appropriate.
 N.B. Threshold adjustments are only available where the alarm condition is not a bitwise operation.

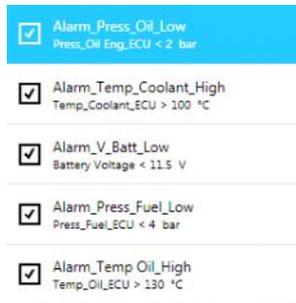
Allow Acknowledge: Whether the user is able to acknowledge (dismiss) this alarm

Adjust Threshold:

Threshold Adjustment: Offset 0.050 bar

Review and order alarms previously created

The left bar gives you the possibility to see quickly every alarm already created in the setup.



This is summarized with the Alarm name, a quick condition telling when the alarm is active, and a tick box to see if the alarm is enabled or not (unticking the Alarm will disable the Alarm which means this alarm is not physically present anymore in the box and so can't be used. This has the advantage to avoid deleting the alarm and so if you need it again in the future, just tick the alarm and it will be available in the entire setup).

Please note that the alarm order is important! If two alarms are present at the same time, the upper one will have the priority on the lower one and so will be displayed first on the dash for example (depending on dash settings). To change the priority, just use the arrows buttons to move up/down the alarms.



Create a new alarm

To create a new alarm, first click on the "Plus" button on the left bar:



You will then have a new page on the right hand side where you can set your alarm settings:

General

Name:

Short Text: Max 5 characters

Long Text: Max 14 characters

Enabled:

Display Channel: Channel that can be displayed when the alarm triggers

Dps: Unit:

Conditions

The alarm will trigger when the condition has been met for the specified guard time.
Up to four qualifying conditions may also be specified, each of which must be met before the main condition will be evaluated.

Condition: User unit?

Guard Time: s

Re-Trigger Guard Time: s Period that must elapse after alarm reset before it can re-trigger

Qualifiers:

Acknowledgement

When an alarm is triggered, the threshold adjustment value is applied as follows:
1) To clear the alarm the value must return to its normal range and the difference between the value and the current threshold must exceed twice the threshold adjustment value.
2) After user acknowledgement, the threshold adjustment value is added to (or removed from) the current alarm threshold as appropriate.
N.B. Threshold adjustments are only available where the alarm condition is not a bitwise operation.

Allow Acknowledge: Whether the user is able to acknowledge (dismiss) this alarm

Adjust Threshold:

Threshold Adjustment:

General Settings

Name: This will be the name of the alarm channel. Please put a sensible name (recommended as *Alarm_Quantity_Channel_Qualifier*) as this will be the name of the channel created depending on the settings you will put afterward. Quick to find that the "Alarm_Press Oil_Low" channel will be a channel that is enabled when the Oil Pressure is low...

Short Text: When the alarm is ON, you have the ability to display a short text on the dash, this is where you set your short text.

Long Text: When the alarm is ON, you have the ability to display a long text on the dash, this is where you set your long text.

Enabled: When this box is ticked, the alarm is created so can be used in Math Channels, display pages, ... If unticked, the alarm is not created, the Channel is not present so can't be used anywhere.

Display Channel: When the alarm is ON, you have the ability to display a channel value on the dash, this is where you set which channel to display.

You can define the number of decimal places to display (Dps) and as well the unit (Unit)

Conditions Settings

Condition: This is where you define under which condition the alarm is ON. This can be referred to a channel (Oil Pressure channel for example) or a Bitfield channel (Button for example). If you choose to refer to a channel value, you will then need to declare which channel it refers to, under which conditions. For example, the following alarm will be ON if the Channel "Angle_Damper FL_Omega" is greater or equal than 37.5 degrees:

Condition

Guard Time: This is the amount of time that the condition above must be true to set the alarm ON. For example, if guard time is set to 2.000 seconds, the alarm created with the above settings will be ON only when the "Angle_Damper FL_Omega" channel value will be greater or equal than 37.5 degrees and so for a continuous time of 2 seconds.

Re-Trigger Guard Time: Period that must elapse after alarm reset before it can re-trigger.

Qualifiers : You can add as well qualifiers to set if the alarm is enabled or not depending on situations. The strategies available will be either the ones automatically created by Toolset (Car, Engine, Logging and Moving) or the one that you created. For more information on how to create Qualifiers, please refer to the user manual "Pi Toolset - Systems Status". For example, if the following qualifier is set, the alarm will only be ON if the above conditions are respected AND if the car is moving: (Avoid unnecessary alarms during warm up for example)

Qualifiers

Acknowledgement Settings

Allow acknowledge: If this box is ticked, the user (driver) will be able to acknowledge the alarm ("clear" it). If it is unticked, the alarm will be always ON or OFF depending on its settings and nothing can override it.

Adjust Threshold: This option is only available when the "Allow Acknowledge" box is ticked. This second tick box allows you to change the threshold of the alarm when it is ON and the user acknowledge it. For example if the following settings are set with the above conditions, the alarm will first be set ON when "Angle_Damper FL_Omega" channel value will be greater or equal than 37.5 degrees and so for a continuous time of 2 seconds. Then, if the user acknowledge it, the alarm will next be set ON if "Angle_Damper FL_Omega" channel value will be greater or equal than $37.5 + 2.5 = 40$ degrees and so for a continuous time of 2 seconds and so on... this threshold adjustment will only be reset when the car is stopped, when you power off the car or when the difference between the value and the current threshold exceed twice the threshold adjustment.

Allow Acknowledge Whether the user is able to acknowledge (dismiss) this alarm

Adjust Threshold

Threshold Adjustment

Setting the Acknowledge Button

On the top of the left bar, you have a spanner button which allow you to define what the acknowledge button is linked to:



Clicking on this you will be able to link the acknowledge button to the physical button you want to use. In this example, the acknowledge strategy will be true only when the Driver button will be pressed for a Long Hold. Please refer to the button section to define the timing. Please note as well that acknowledging an alarm will only acknowledge the highest priority alarm, which means that if you have 3 alarms active at the same time, you will need to acknowledge 3 times (in our example, press and long hold the Driver button 3 times).



Your alarm is now ready to be used, as a channel or being displayed on the dash.