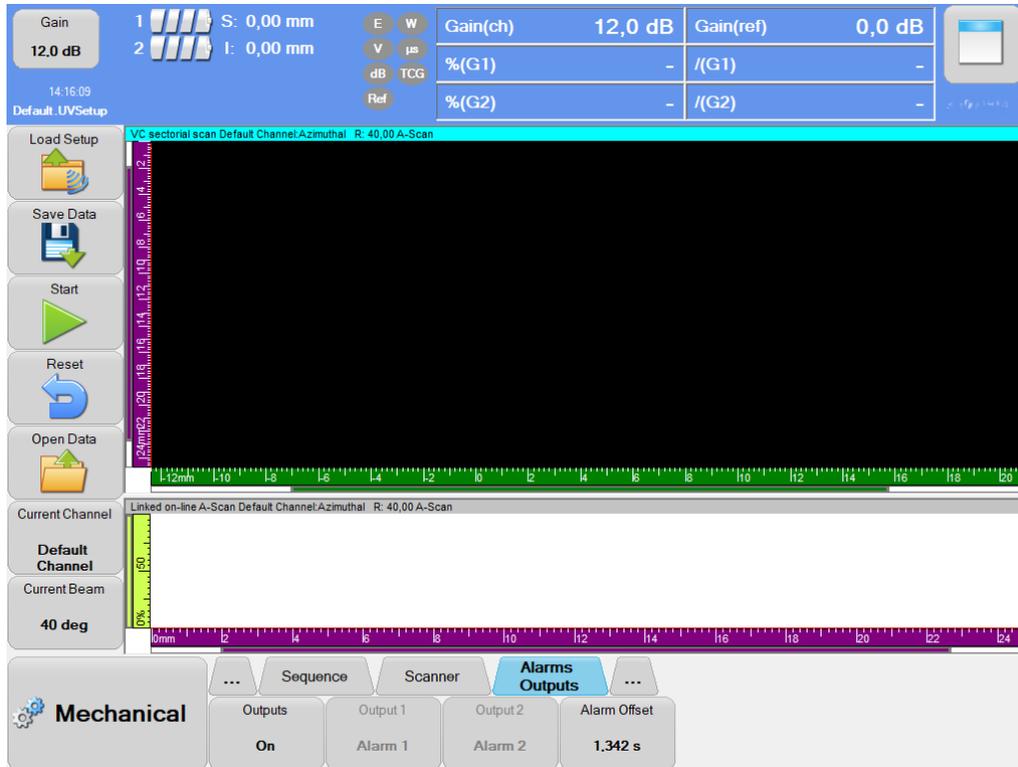


# Alarm Outputs

## Quick Setup Manual



The screenshot displays the software interface for configuring alarm outputs. At the top, there are gain settings for two channels: Channel 1 is set to 12.0 dB and Channel 2 is set to 0.0 dB. A table below these settings shows the relationship between channel gains and reference gains.

Gain(ch)	Gain(ref)
12,0 dB	0,0 dB
%(G1)	/(G1)
%(G2)	/(G2)

Below the gain settings, there are control buttons for 'Load Setup', 'Save Data', 'Start', 'Reset', and 'Open Data'. The main display area shows a 'VC sectorial scan' plot with a scale from 0 to 24 mm. Below the plot, there are settings for 'Current Channel' (Default Channel), 'Current Beam' (40 deg), and a 'Mechanical' section with a gear icon.

The 'Alarms Outputs' configuration is shown at the bottom, with the following settings:

Outputs	Output 1	Output 2	Alarm Offset
On	Alarm 1	Alarm 2	1,342 s

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# 1 Introduction

This document is aimed at providing a brief description on how to configure up to 3 alarm outputs on QUARTZ in Ultravision Classic and Touch interfaces. This new feature is made available on version 3.10R20 (and later) and enables the user to set up to 3 alarm outputs on QUARTZ which was limited to 1 alarm output in previous Ultravision versions.

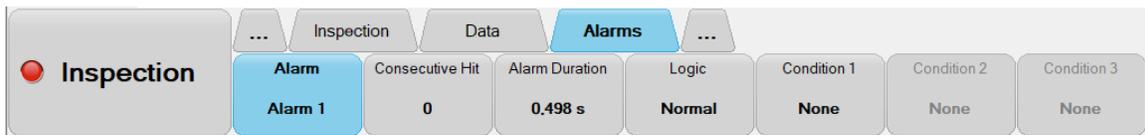
## 2 Setup and Parameters

The two following sections will describe how to configure up to 3 alarm outputs in Touch and Classic interfaces.

### 2.1 Touch Interface

The following instructions provide a quick start guide to set up the alarm outputs in the Touch interface.

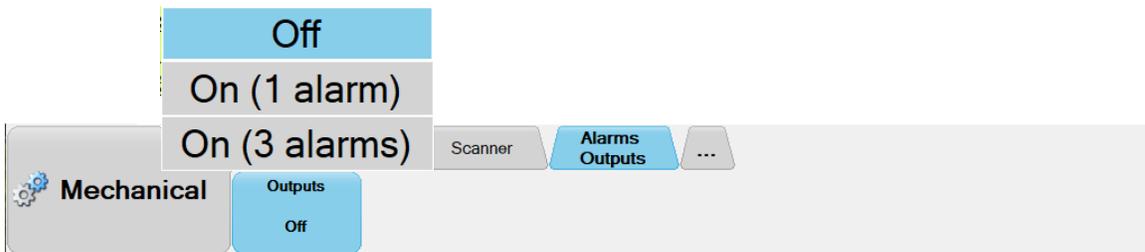
1. The conditions under which the alarms are triggered can be set in Inspection > Alarms. For more information, you can refer to section 3.



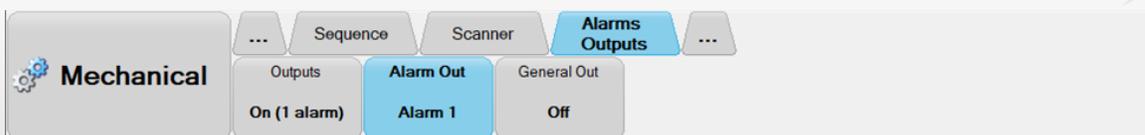
2. The user can enable the Outputs parameter in Mechanical > Alarms Outputs.



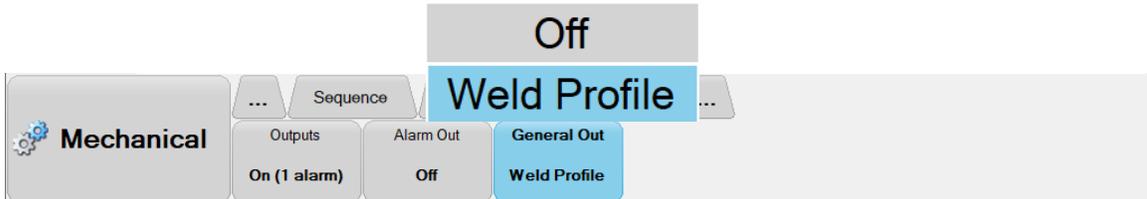
3. Upon pressing the Outputs button, a list appears within which the user can select one of the following configurations:
  - **Off**: No alarm output can be configured.
  - **On (1 alarm)**: Up to 1 alarm output can be configured.
  - **On (3 alarms)**: Up to 3 alarm outputs can be configured (Available only on QuartzZ).



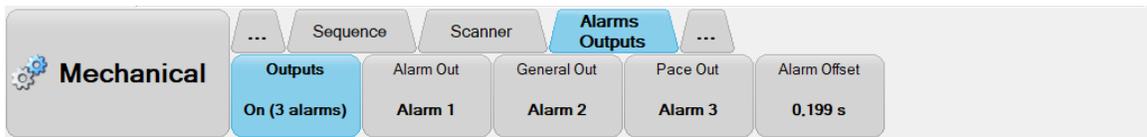
4. If the user selects "On (1 alarm)", new buttons appear in the Alarms Outputs tab.
  - **Alarm Out**: It displays the alarm condition linked to the "Alarm Out" output. By pressing the "Alarm Out" button, a list of alarm conditions containing Alarm 1, Alarm 2, and Alarm 3 appears and hence the user can select one alarm condition. In the latter case, no alarm output signal will be triggered at "Alarm Out".



- **General Out:** When the Outputs parameter is set to “On (1 alarm)”, this button appears in the Alarms Outputs menu only if the “Weld Profile” menu is available and activated in Ultravision. This button displays the alarm condition linked to the “General Out” output. By selecting “Weld Profile” for this parameter, the “Alarm Out” is automatically set to “Off”.



5. If the user selects “On (3 alarms)”, new buttons appear in the Alarms Outputs tab.
  - **Alarm Out:** It displays the alarm condition linked to the “Alarm Out” output. When the Outputs parameter is set to “On (3 alarms)”, the user can either link “Alarm Out” to the conditions defined under Alarm 1 or set it to “Off”. In the latter case, no alarm condition will be linked to this output.



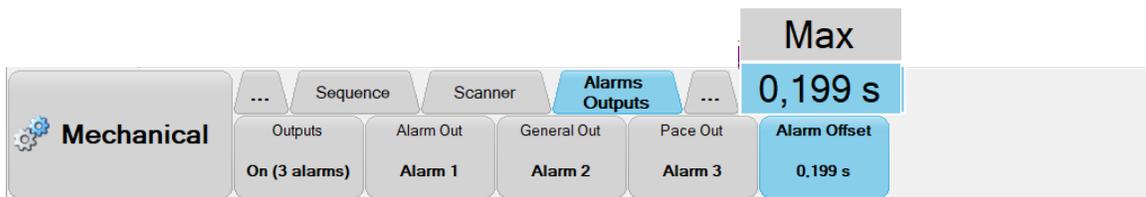
- **General Out:** This button displays the alarm condition linked to the “General Out” output. When the Outputs parameter is set to “On (3 alarms)”, one of the following conditions can be selected for “General Out”:
  - **Off:** No alarm output signal will be triggered at General Out
  - **Alarm 2:** The alarm conditions defined under Alarm 2 will be linked to General Out
  - **Weld Profile:** The alarm conditions defined in the Weld Profile menu will be linked to General Out.
- **Pace Out:** When the Outputs parameter is set to “On (3 alarms)”, the Pace Out connection can be transformed to an alarm output and the alarm conditions linked to this connection can be controlled via the Alarms Outputs tab. This button displays the alarm condition linked to the “Pace Out” output. The user can either link “Pace Out” to the conditions defined under Alarm 3 or set it to “Off”. In the latter case, no alarm output signal will be triggered at “Pace Out”.



To pick up the alarm output signal, the following connectors/pins should be used:

- **General Out:** Pin A of the I/O connector (as well as Pin C as Ground); TTL signal type
- **Alarm Out:** Pin B of the I/O connector (as well as Pin C as Ground); TTL signal type
- **Pace Out:** Pace Output connector

- **Alarm Offset:** By pressing the Alarm Offset button, Ultravision allows the user either to select the Max value or to manually enter a value (in seconds unit). The Alarm Offset determines the delay between the time at which the alarm conditions are met and the time at which the output alarm signal is triggered.

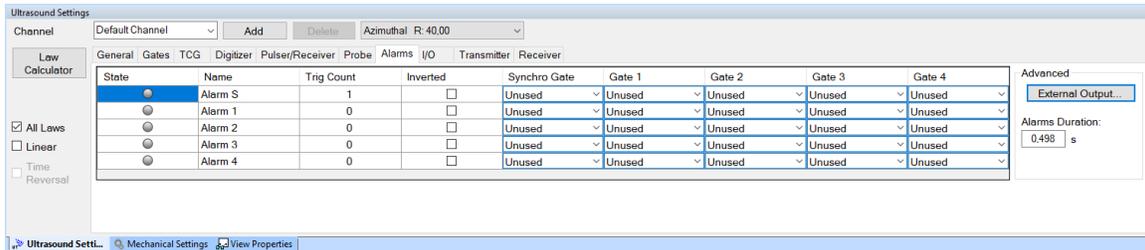


Alarm Offset can take a value within the interval of 0.005 s to 1.342 s.

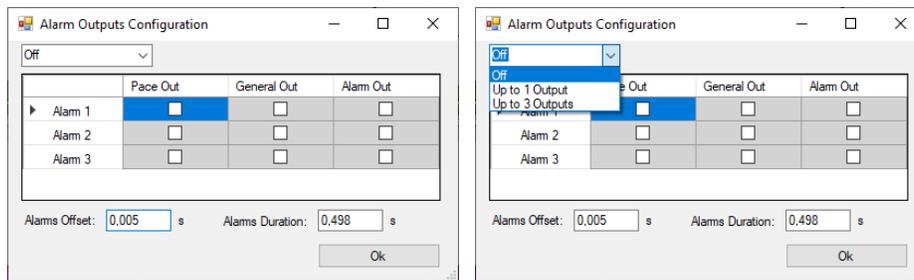
## 2.2 Classic Interface

The following instructions provide a quick start guide to set up the alarm outputs in the classic interface.

1. The conditions under which the alarms are triggered can be set in Ultrasound Settings > Alarms. For more information, you can refer to section 3.



6. The user can enable the alarm outputs using the “External Output...” button in the Advanced section of Ultrasound Settings > Alarms. Upon pressing “External Output...” a new window pops up. Using the dropdown list located at top left of this window, the user can select one of the following configurations:



- **Off:** No alarm output can be configured.
- **On (1 alarm):** Up to 1 alarm output can be configured.
- **On (3 alarms):** Up to 3 alarm outputs can be configured (Available only on Quartz).



To pick up the alarm output signal, the following connectors/pins should be used:

- **General Out:** Pin A of the I/O connector (as well as Pin C as Ground); TTL signal type
- **Alarm Out:** Pin B of the I/O connector (as well as Pin C as Ground); TTL signal type
- **Pace Out:** Pace Output connector

2. Once the alarm outputs are enabled, the user manually enter the Alarm Offset value (in seconds unit). The Alarm Offset determines the delay between the time at which the alarm conditions are met AND the time at which the output alarm signal is triggered.



Alarm Offset can take a value within the interval of 0.005 s to 1.342 s.

## 3 Managing Alarms

### 3.1 Touch Interface

To use the alarms, the user has to define a set of conditions based on the status of the signal within a defined detection gate. For each alarm, you can define up to three (3) conditions that have to be met before the alarm is turned on.

Each condition that sets the alarm status can be defined as:

- a. *None*  
Associated condition is not used for alarm status determination.
- b. *Not Gate i*  
No signals crossing the associated gate threshold.
- c. *Gate i*  
A signal is crossing the associated gate threshold.



CAUTION

Condition 1 must be first defined before Condition 2 is enabled. Condition 3 will be enabled only when Condition 2 is defined.

The user can also set the interpretation logic:

- a. *Normal*  
Alarm status (turned on or off) is determine by the normal interpretation of the defined conditions.
- b. *Inverted*  
Alarm status (turned on or off) is determine by the inverted interpretation of the defined conditions.

In addition, by pressing the Alarm Duration button, Ultravision allows the user either to select the Max value or to manually enter a value (in seconds unit). Alarm Duration defines how long the alarm output signal is triggered.



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