QDS

Quench Detection Sytem

4-Channel Multi-Range Precision Digital Quench Detection System

CAENels
Gear For Science

User Interface Manual

POWER SUPPLY SYSTEMS

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This product is CE certified.

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Document Revision	Date	Comment
0.1	August 26th, 2021	Document created
1	August 22nd, 2024	Updated address and revision numbering
2	March 4th, 2025	GUI pictures updated, compatible with QDS Viewer 1.0.0. Text revised in all sections.

1. Introduction

This chapter describes the main features of the QDS Viewer user interface for the QDS – Quench Detection System.

1.1 The main window

Figure 1 shows the main window of the *QDS Viewer* interface with the following features:

1) *Refresh button* – discover CAEN ELS devices on the network (broadcast);
2) *Actions button* – connect to the device and start data acquisition, or disconnect from the device and stop data acquisition;
3) *Device Info box* – summary of the main information about the device;
4) *Additional Features* – monitoring, configuration and correction windows;

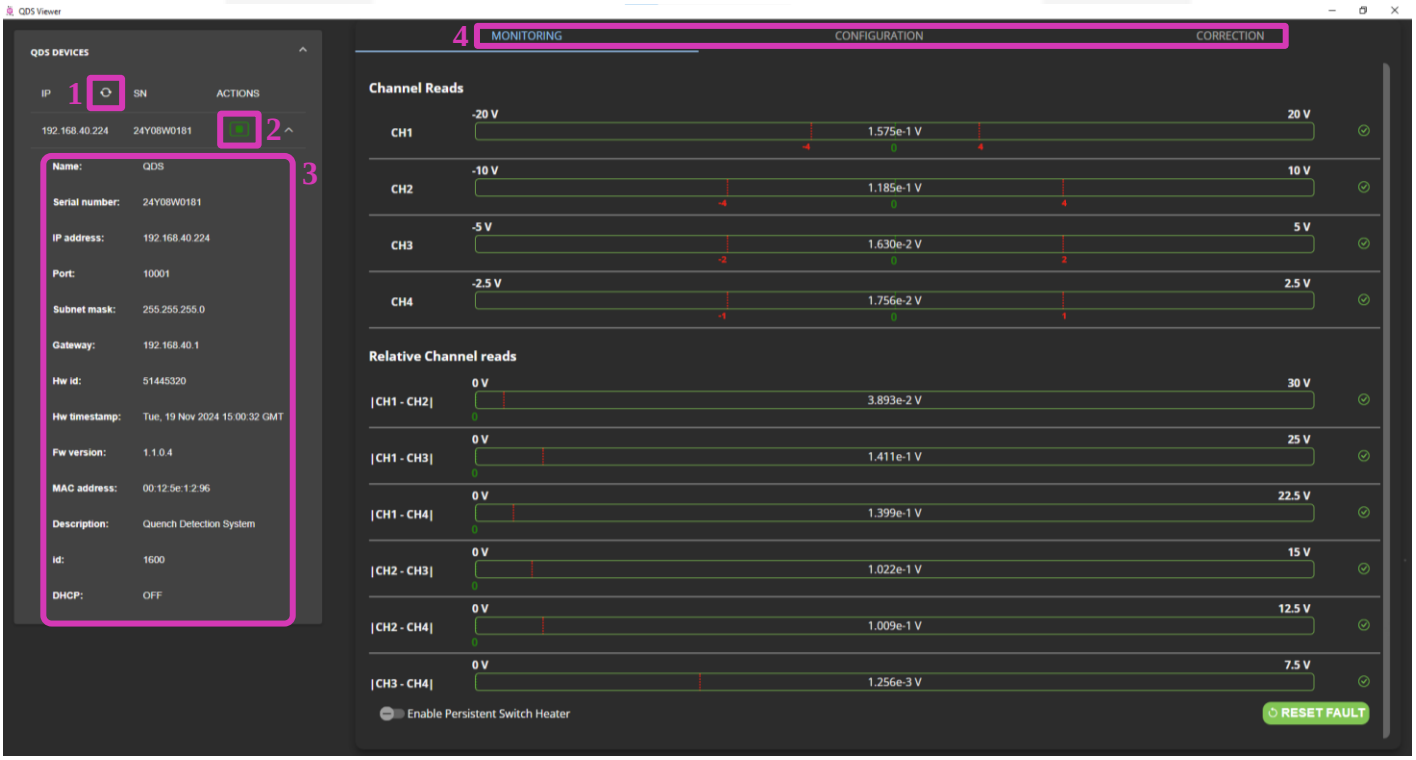

Figure 1: Main window

1.2 Additional Features

1.2.1 Monitoring window

The "*Monitoring window*" is the main window of the QDS device. Each channel is represented by a horizontal bar which can be highlighted in green (channel enabled), grey (channel disabled) or red (channel in fault condition).

The window has the following main characteristics:

1) These numbers indicate +Full Scale (*1a*) and -Full Scale (*1b*);
2) These are the real/time voltage readings in [V]. The dashed vertical bars and values (*2a*) indicate the thresholds positions with respect to the total length of the horizontal bar. The zero value of the thresholds are reported in green (*2b*) at the center of horizontal bar below the voltage reading;
3) This is one of the two clickable buttons of the monitoring window and can be used to Enable/Disable the *persistent switch heater*, OFF (0 [V]) or ON (12 [V] or 24 [V]);
4) This button has a double function: it indicates status of the QDS and it can be used to reset the status of the QDS. In normal operation (No fault condition) the icon is green (as in **Figure 2**), while in fault condition the icon becomes red (as reported in **Figure 3**). By clicking the "*reset fault*" button the fault conditions are cleared.

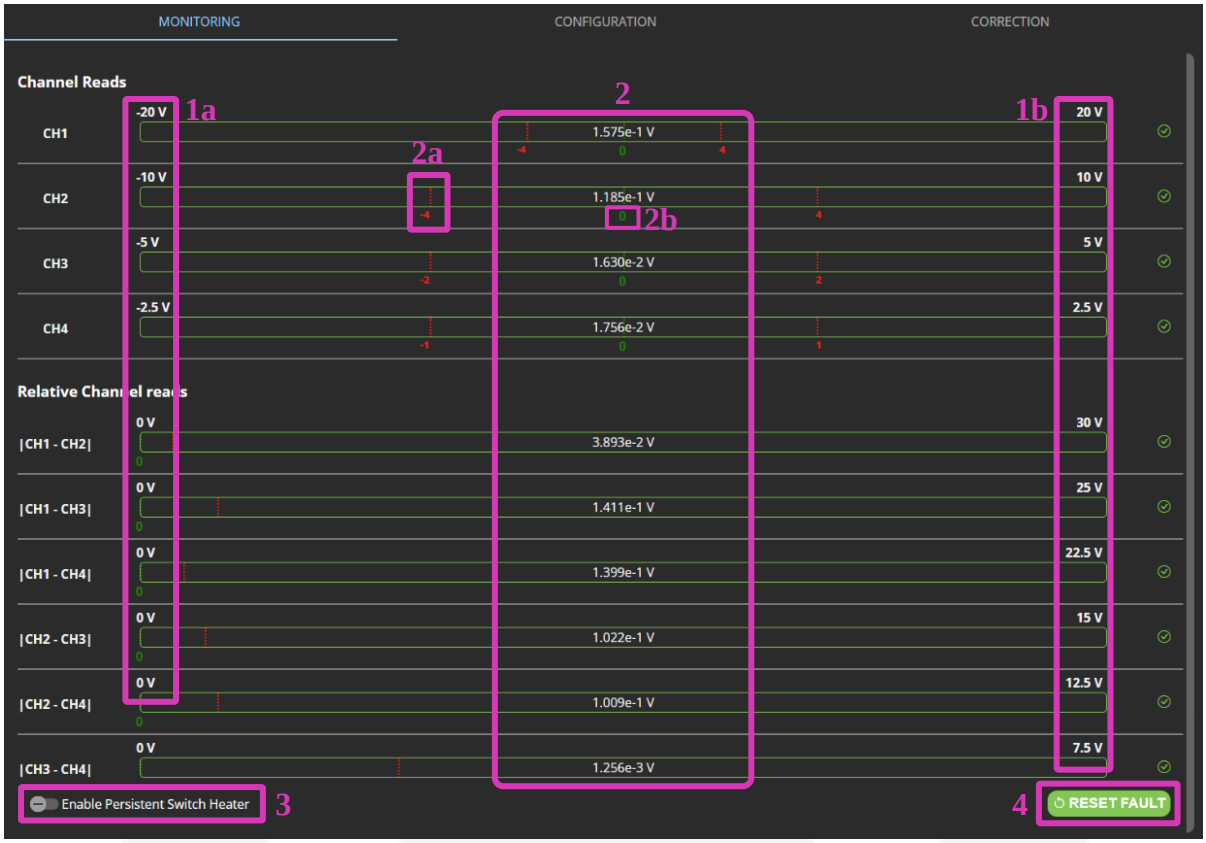

Figure 2: Monitoring window

Figure 3: Monitoring window in fault condition.

1.2.2 Configuration window

Figure 4 shows the *"Configuration window"* which can be used to configure all the main parameters of the QDS device. When changing a parameter, the new value is applied by pressing "enter" (on the keyboard) or by mouse-clicking on a random area of the configuration window.

On the configuration window the following configurations are available:

1. Enable the selected channels;
2. Select the range of the corresponding channel;
3. Indicates the full scale of the corresponding channel depending on the actual range;
4. Set the thresholds in [V];
5. Set the time windows in [ms].
6. *Store Configuration* button: saves enabled channels, thresholds and time windows in the non-volatile memory. The saved configuration will be loaded by default at the next start-up. **For safety reasons the range values are not saved in the volatile memory and the ranges are always set to range 0 (the higher range) at start-up**;
7. *Restore Default* button: restores default ranges, thresholds and time windows (see the *"Quench Detection System Commands Reference Manual"* for more information). This parameters are applied in real-time but not saved in the non-volatile memory. To save them use the *store configuration* button;

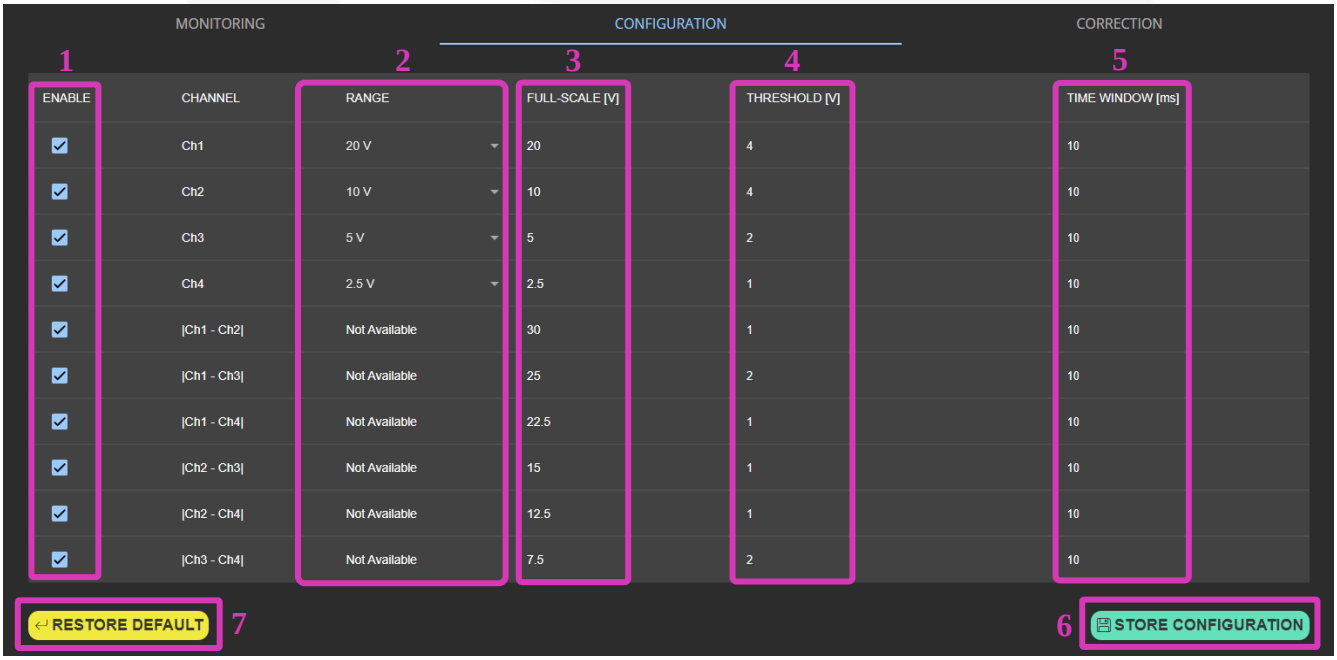

Figure 4: Configuration window

1.2.3 Correction window

The *"Correction"* window allows the user to set an additional offset on specific channels and specific ranges (box 1 in **Figure 5**). Use the "*Enable user correction*" button (box 2 in **Figure 5**) to enable immediately the user correction offsets.

Use the "*Save user correction*" button (box 3 in **Figure 5**) to save the user correction offsets in the non-volatile memory ready to be loaded at the next start-up.

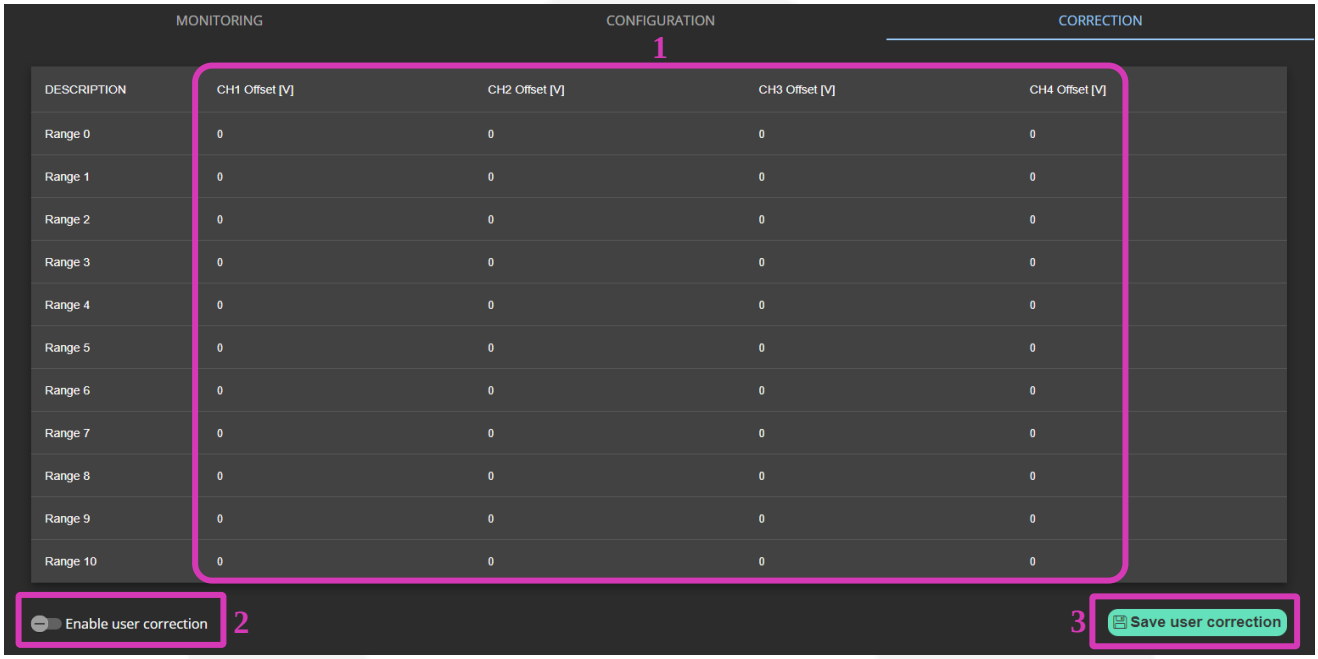

Figure 5: User Offset Correction window