

Touch Screen Displays User Guide

Thank you for purchasing our Touch Screen Display!
Please check the model of the Display you are setting up:

- DS-3000-Pro-1 Single Channel display
- DS-3000-Pro-4 Four Channel display
- DC-100 Single Channel display controller
- DC-400 Four Channel display controller

All the features presented in DS-3000-Pro are also available on DC display controllers. The display controllers offer additional features of Logger (to log the sensors data) and USB Relay (to control external devices based on sensor data).

The instructions mentioned in the DS-3000-Pro section of this manual also apply to the DC display controllers.



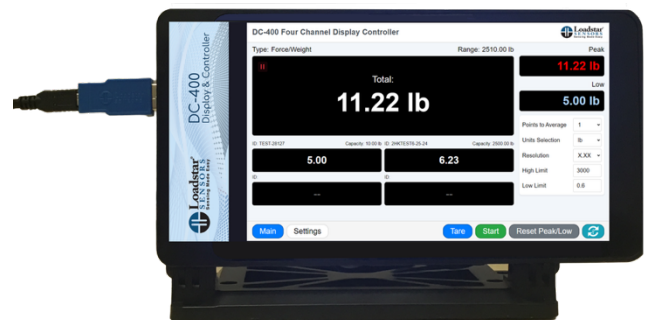
DS-3000-Pro-1 Single Channel Display



DS-3000-Pro-4 Four Channel Display



DC-100 Single Channel



DC-400 Four Channel

1. Compatibility

- 1) Any resistive load cell mated and calibrated with a 16-bit USB Load Cell Interface such as DI-100U or DI-100US interface with a miniB to miniB output cable and S2U Serial to USB Dongle.
- 2) Any resistive load cell mated and calibrated with a 24-bit USB Load Cell Interface such as DI-1000U, DI-1000UHS or DI-1000UHS-1K with a straight miniB to USB A cable
- 3) Any resistive load cell mated and calibrated with a four channel 16-bit USB Load Cell Interface such as DI-400U or DI-400UHS
- 4) Any iLoad, iLoadTR or iLoad Pro digital USB sensor (with a miniB to miniB cable and a blue S2U USB dongle) with or without the high-speed upgrade.
- 5) Any resistive load cell mated and calibrated with a 24-bit Wireless Blue Tooth Low Energy (BLE) Load Cell Interface such as DI-1000BLE.

2. Calibration

Please note that the Load Cell and the Digital USB Interface **are already calibrated** and ready to use. You **DO NOT** need to calibrate it again before use. A calibration certificate should be included with your shipment to confirm the calibration. When calibrated the digital interface and the sensor have the SAME ID to show that the pair is calibrated together.

3. Power Supply

A 5V power supply is also included in your package. It comes with a cable with a USB C on one end and a power adapter. An extra part with a USB C female connector on one end and another male C type USB connector on the other end, with an On/Off switch in the middle to turn on/off power to the display.



4. Connecting the Sensors into the Display

The USB sensors are powered by the USB port of the display. You do **NOT** need to power them separately.

Please follow these instructions to use the display with our digital load cell solutions.

- 1) If using DS-3000-Pro-1 or DC-100 then, insert the USB A connector from the USB load cell or USB load cell interface into one of the USB ports on the display. If using DS-3000-Pro-4 or DC-400 then, connect up-to four digital USB load cells into the available USB ports of the display.
- 2) Turn on the power supply after you connect the USB load cells outlined in step 1
- 3) The device should boot up into the display and show you the main screen with the Tare and Start and other buttons.

DC-100 Single Channel Display Controller

Type: Force/Weight ID: TEST-28127 Range: 10.00 lb Peak

5.00 lb

Low

5.00 lb

Points to Average 1

Units Selection lb

Resolution X.XX

High Limit 3000

Low Limit 0.6

Total: 5.00 lb

Main Settings Tare Start Reset Peak/Low

Callouts:

- Sensor ID
- Sensor Capacity & Units
- Sensor Type
- Main Display Area
- Tare / Zero

DC-400 Four Channel Display Controller

Type: Force/Weight Range: 2510.00 lb Peak

11.22 lb

Low

5.00 lb

Points to Average 1

Units Selection lb

Resolution X.XX

High Limit 3000

Low Limit 0.6

ID: TEST-28127 Capacity: 10.00 lb ID: 2HKTEST6-25-24 Capacity: 2500.00 lb

5.00 6.23

ID: ID:

Main Settings Tare Start Reset Peak/Low

Callouts:

- Sensor Capacity
- Main Display Area: Total Force of All Connected
- Sensor ID
- Sensor Capacity & Units
- Tare / Zero

5. Zeroing the Sensors before Use

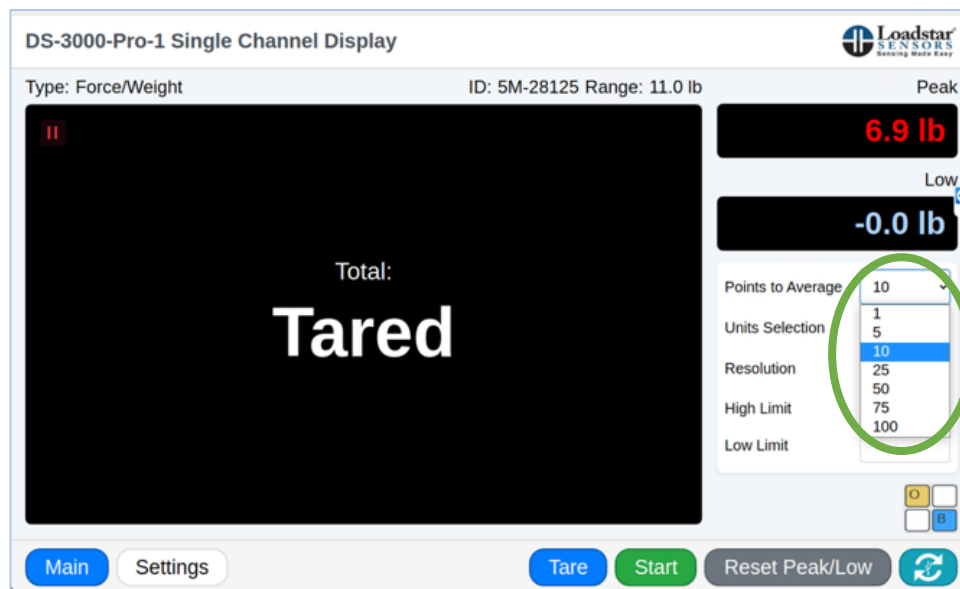
Make sure you remove any loads on the scale or sensor before zeroing out the reading by pressing the Tare button. Whatever pre-load is placed on the sensor will be zeroed out and you'll be able to read the relative weight/force from this point on when additional forces/weights are placed on it.

6. Reading Values from the Sensors

Click on Start to read and display values. With the one channel version you'll be able to display readings from one connected digital USB or BLE load cell. With the four-channel version, you can display readings from one to four connected digital USB or BLE load cells or scales as well as the total of values from all four connected load cells.

7. Selecting Points to Average

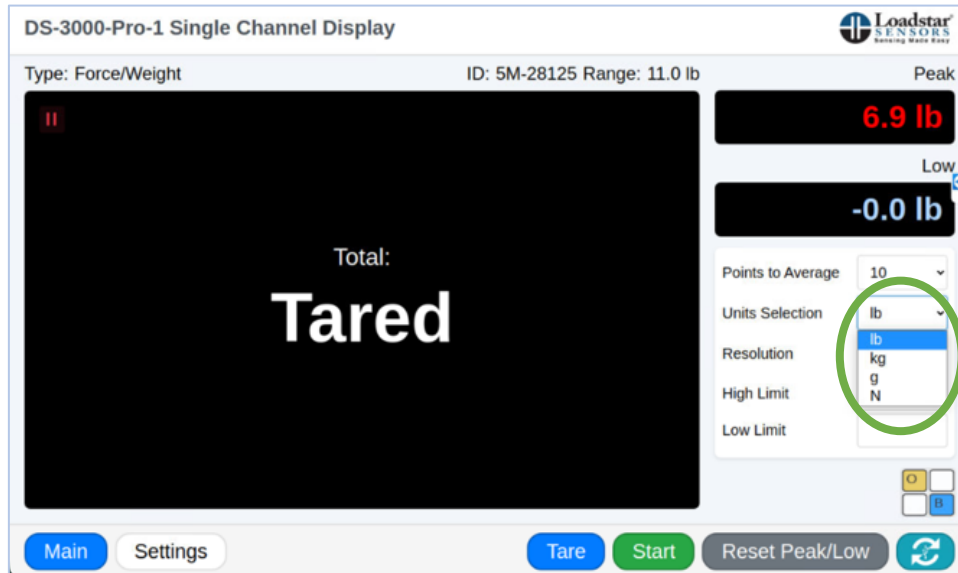
The Main panel will show an average of the last 'N' readings. This is useful to reduce noise or limit how fast the values change. Select Points to Average from the drop-down list (shown in the green circle):



Please note that increasing the number of points reduces the noise but introduces a delay or latency, depending on how fast the data is being received by the display. For example, if you say 100-point average and you are getting 10 points per second, it may take as many as 10 seconds to reflect the applied load. This could affect how alerts and triggers respond to a change. Please use this feature carefully for your specific application.

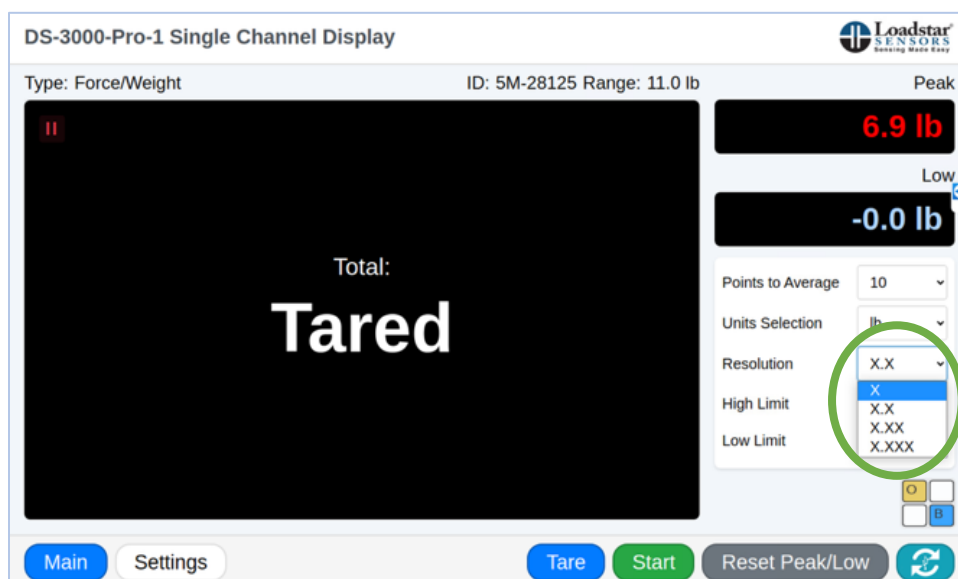
8. Selecting Units

You can change the units to Kg, N or gram by selecting the Units from the drop-down list (shown in the green circle):



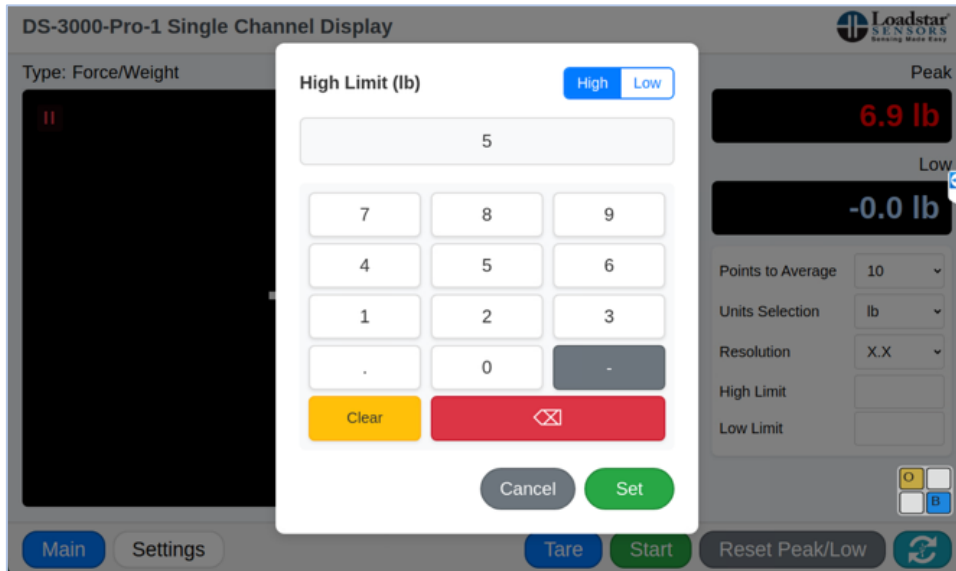
9. Selecting Resolution

You can select the display resolution that best fits your application. Use the appropriate resolution for your particular sensor accuracy for e.g. if it is a +/- 0.1% accuracy sensor with a 100 lb load capacity, then use x.x then the inaccuracy is +/- 0.1 lb, so no point in displaying it as 53.195 since the hundredth and thousandth value of the number beyond the decimal is not meaningful. So best to display it as 53.2 (rounded off to the nearest 0.1).



10. Setting Limits

The High and Low limits correspond to the visual and audio alerts configured in the Settings View. Enter the values and select the Set button to save the limits. Once you set these limits, you can go to the Settings menu to configure how these limits are used.



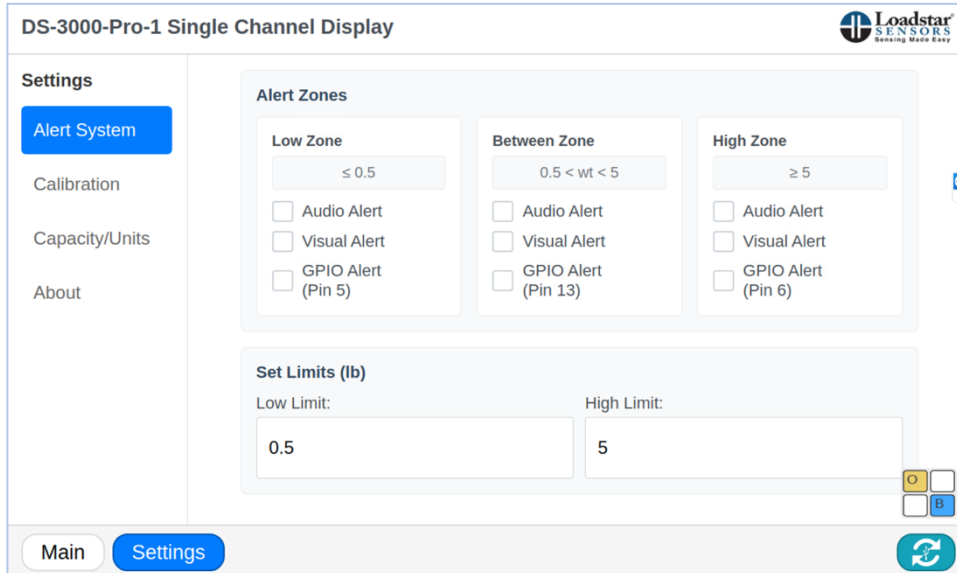
11. Setting Alerts

The DS-3000 uses both visual and audio alerts when the total reading falls within the configured range in the Alert Settings. It also warns when a sensor is overloaded beyond its rated capacity, usually safe up to 50% over the rated capacity.

Before setting the alerts, set the Low limit and High limit - specify the weight/force values that define the alert zones. Readings below the Low limit are in the “Low” zone; above the high limit are in the “High” zone; between the two are in the “Between” zone.

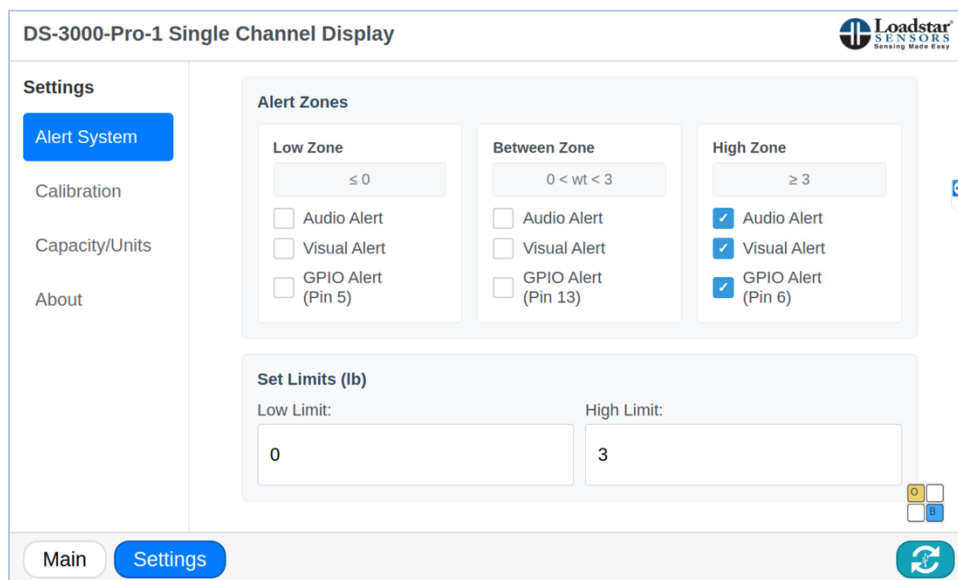
Zone Options — For each zone (Low, Between, High), you can turn audio and visual alerts on or off. When a reading enters a zone that has audio or visual enabled, the unit plays the alert sound and/or changes the display

All alerts will continue to loop until the trigger condition clears or reading is stopped. Please note that the audio alerts require an external speaker to be connected to the Display. No internal sound speaker currently exists within the display.

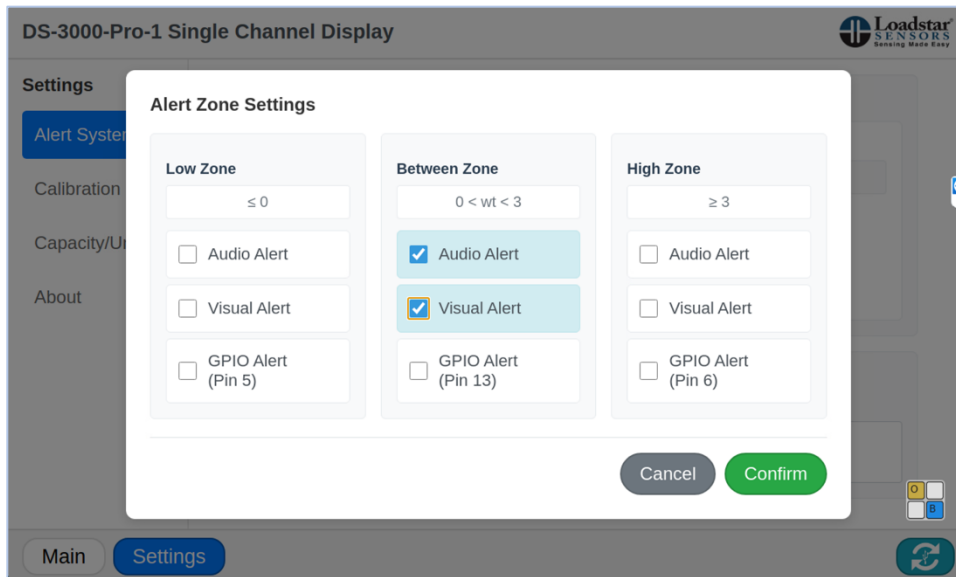
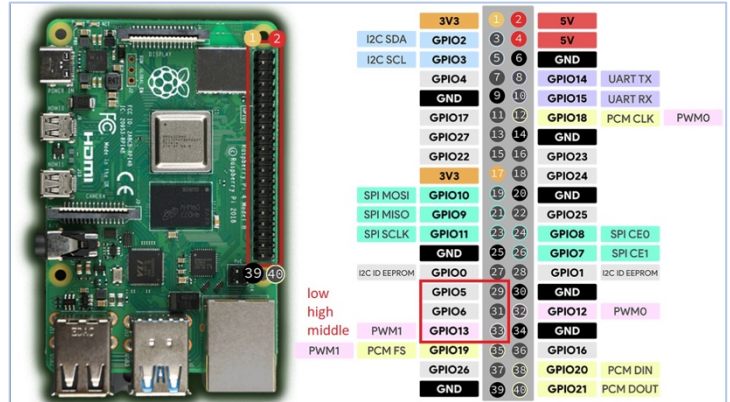
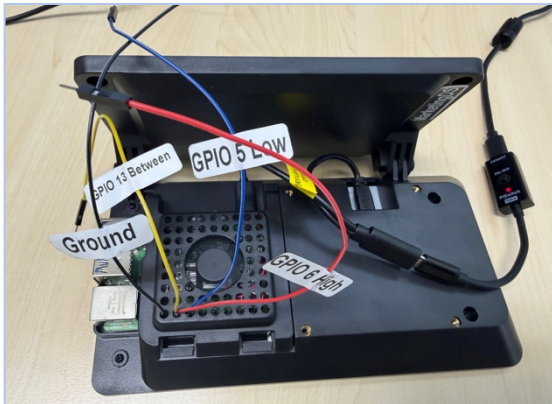


Note: Audio alerts require an audio device plugged into the 3.5mm audio output.

When you click on any check box in the Alert Zone, a popup window will appear.



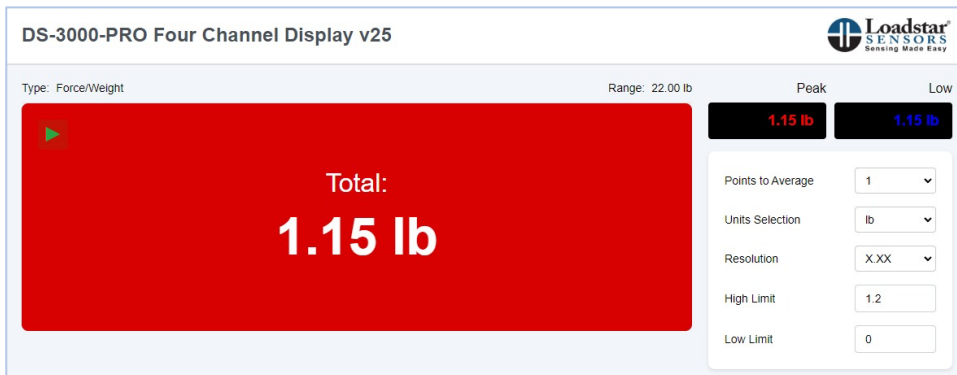
Select the alert zones by clicking on the appropriate checkboxes. For e.g. if you want to set an alert when the load goes beyond a certain level In this case above 3 lb), then you can check the boxes in the High Zone for an Audio Alert (beep, from the connected speaker if any), a Visual Alert (a red background is shown around the displayed values) and even an electronic signal – high – on Pin 6) on the controller board.



If you want to set an alert when the load is within a certain range then you can check the boxes in the Between Zone for an Audio Alert (beep, from the connected speaker if any), a Visual Alert (a red background is shown around the displayed values). This is very useful in applications where one must apply a certain load and hold it in a certain range such as in the case of thermal press applying a logo label to a T-shirt. A certain force must be applied and held for a certain period for the label to be firmly glued to the T-Shirt. In this application letting a user hear a beep when the user is applying the correct load in the desired range, would be very helpful in improving productivity, without having to “see” the values on the display.

11.1 Visual Alerts

When the reading is in a configured alert zone (below the low limit, above the high limit, or between the two), the main display will flash red. Which zones show a visual alert is set in **Settings** under the limit/alert configuration.



11.2 Audio Alerts

You can turn on a sound for each alert zone (low, between, high) in **Settings**. When the reading enters and stays in a zone that has audio enabled, the DS-3000 plays the alert sound on repeat (beep sound).

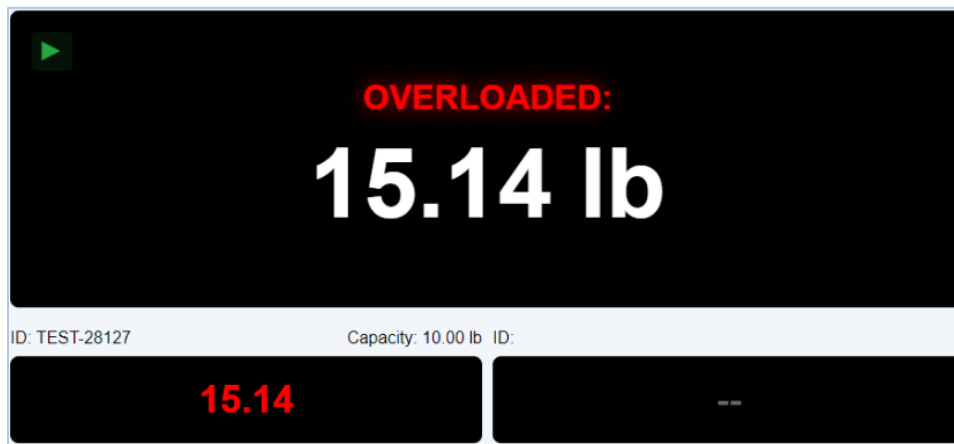
Note: Audio alerts require an audio device plugged into the 3.5mm audio output.

You can connect any speaker with the 3.5mm jack into the audio connector. When the limit exceeds the set limit, you will hear the audio alert.



11.3 Overload Alerts

If the weight on a sensor exceeds its capacity, the DS-3000 treats that as an overload. The display shows **OVERLOADED** in the main display and the text flashes red for the affected channel. The unit also plays a separate overload alert sound (urgent alarm). Reduce the load below the sensor's capacity to clear the overload; the display and any overload sound return to normal once the reading is within range.



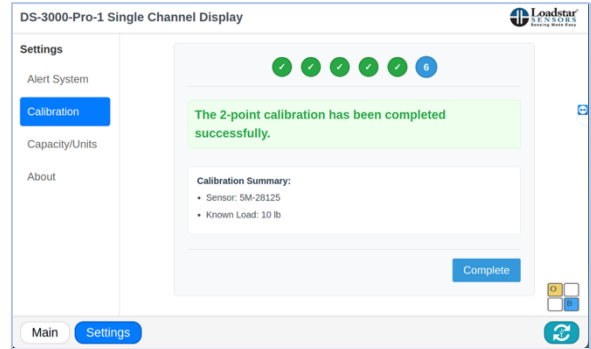
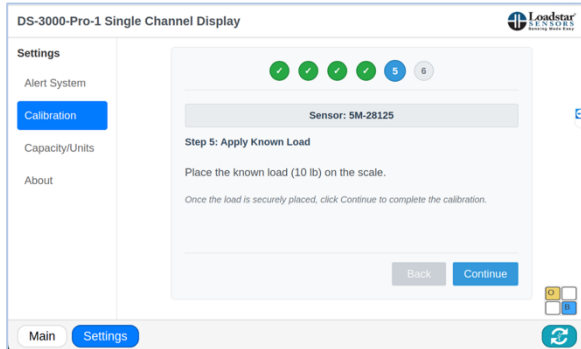
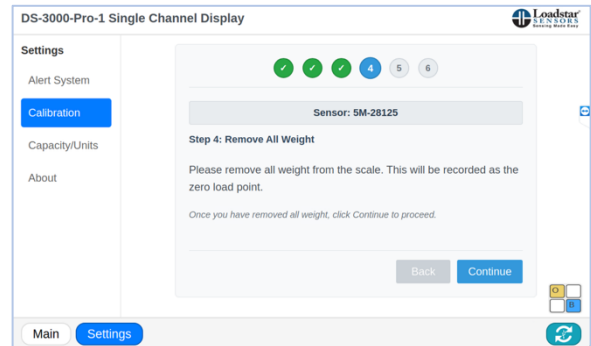
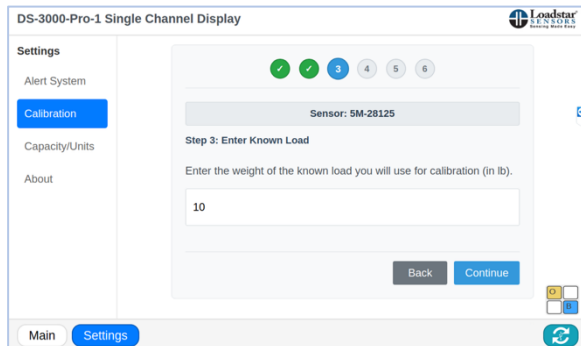
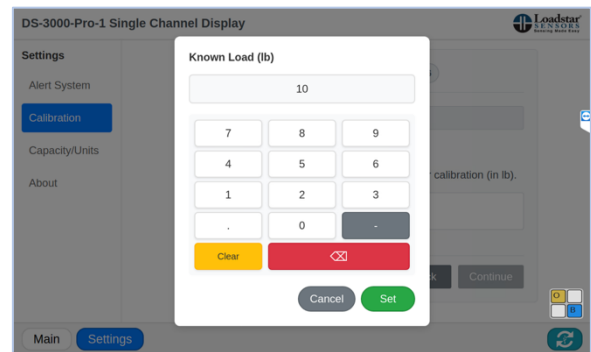
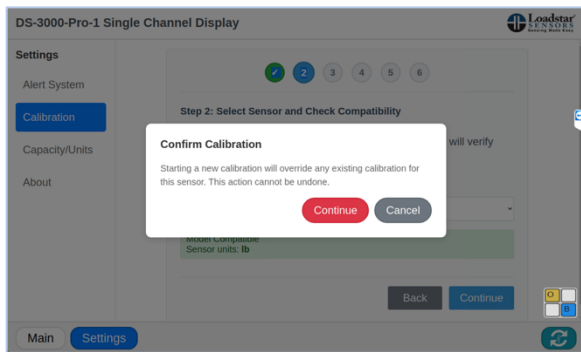
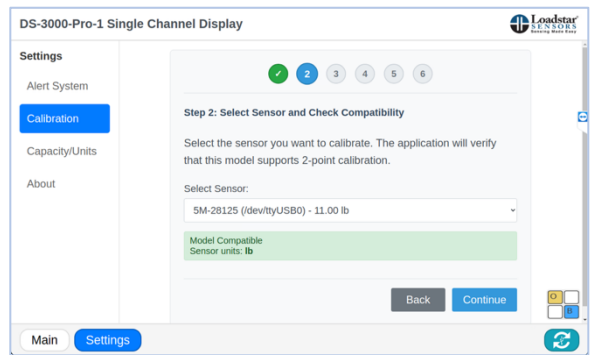
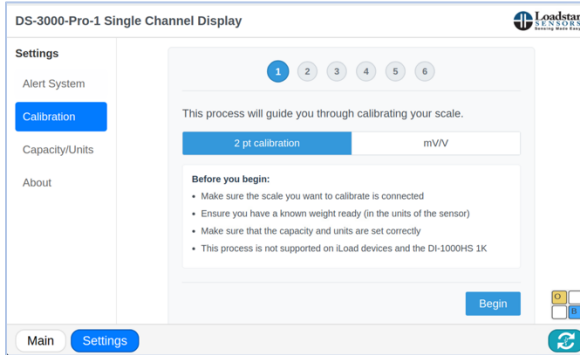
12. Calibration

Use this menu to calibrate the connected sensor(s) so displayed values match known weights or forces. The calibration screen lets you choose **2-Point** or **mV/V** calibration before you begin.

Note: Calibration should only be done if the sensor values returned do not match the load.

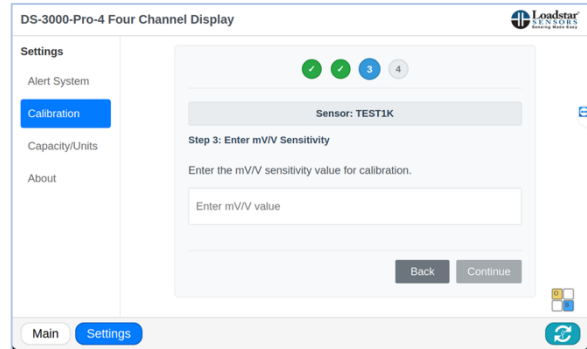
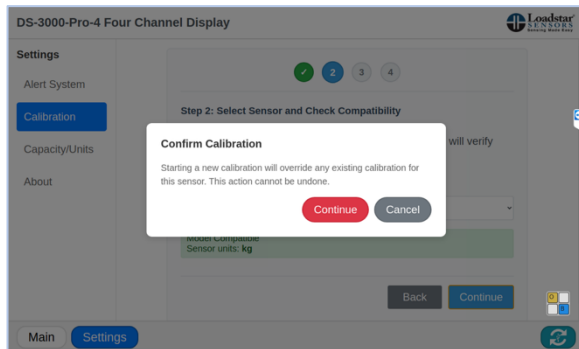
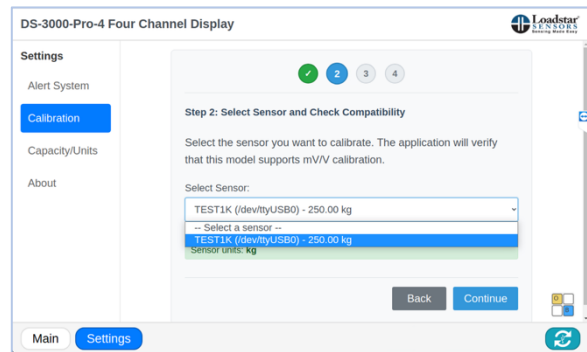
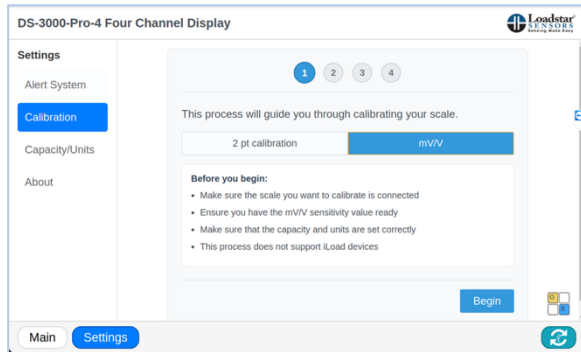
12.1 2-Point Calibration

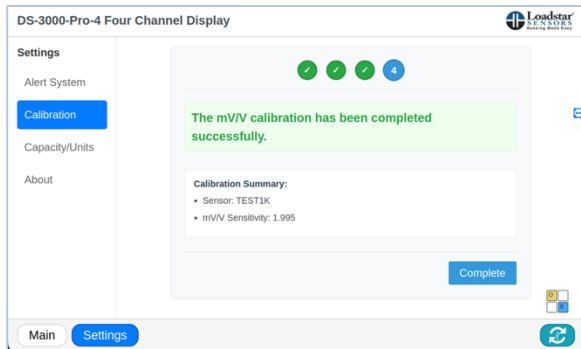
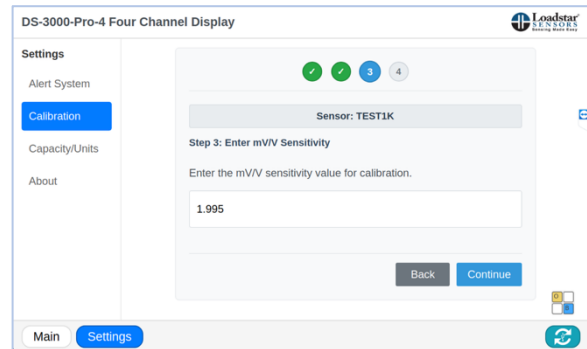
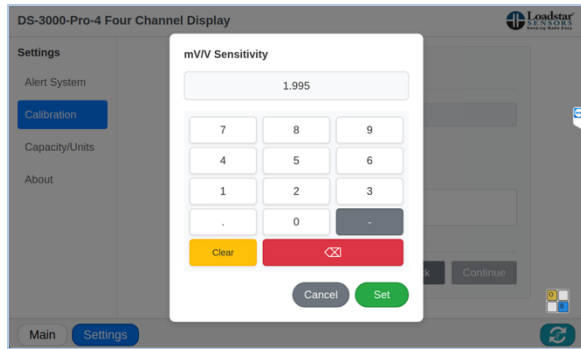
Uses two reference points: zero (no load) and a known weight you place on the sensor. You need a known weight in the sensor's units. The app will prompt you to unload the sensor, then to apply the known load and confirm. This method is not supported on iLoad devices or the DI-1000HS 1K variant; the app will warn you if the selected sensor does not support it.



12.2 mV/V Calibration

Uses the sensor's mV/V sensitivity value from its specification (no physical weight required). The user can enter the sensitivity value and the app will program the sensor. Use this when you have the sensor's datasheet value and do not have a known weight on hand.





After calibration, verify by placing a known weight and checking that the reading is correct (for 2-point, you can use the same known weight). Only perform calibration when necessary and when authorized.

Note that the mV/V value supplied by the Manufacturers maybe dated and may have been calibrated years ago at the time of manufacture. Best practice requires a user to calibrate the load cell with a display prior to use with traceable reference standards and a calibration certificate within the past one year at least. Loadstar Sensors offers Calibration and Recalibration services for your needs. Please contact us to have your system calibrated prior to use.

13. Capacity and Units

Use this menu to set the Capacity (maximum weight/force) and Units for each connected sensor.

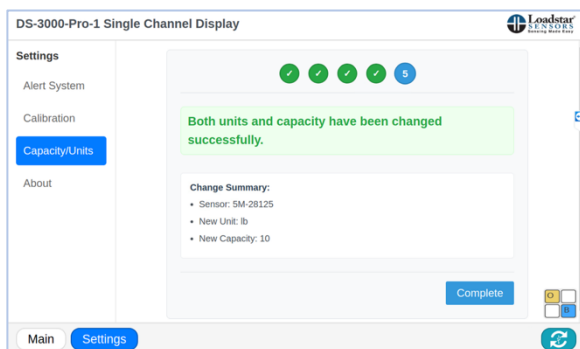
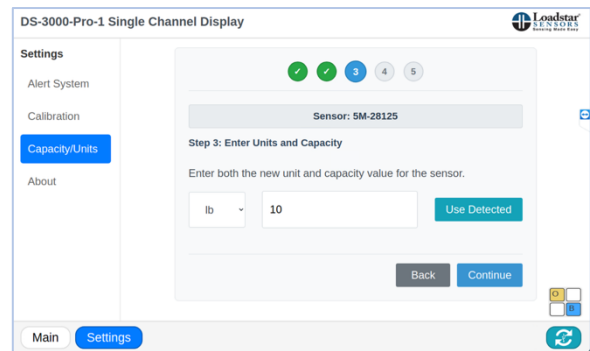
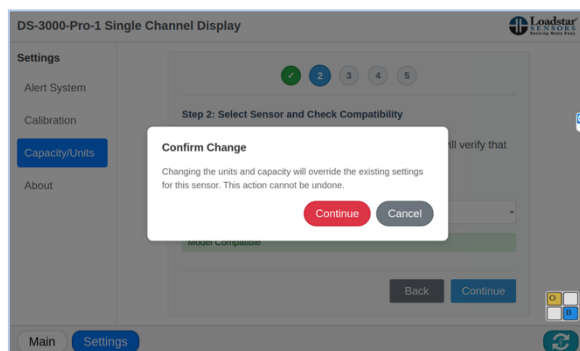
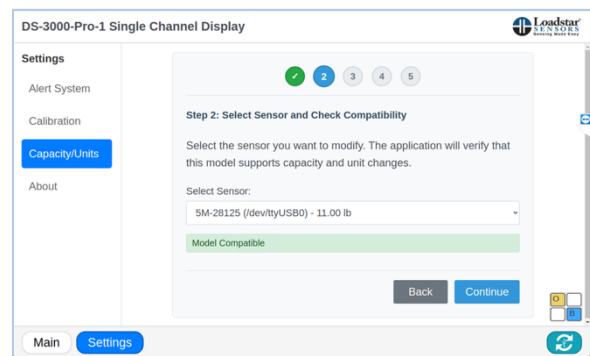
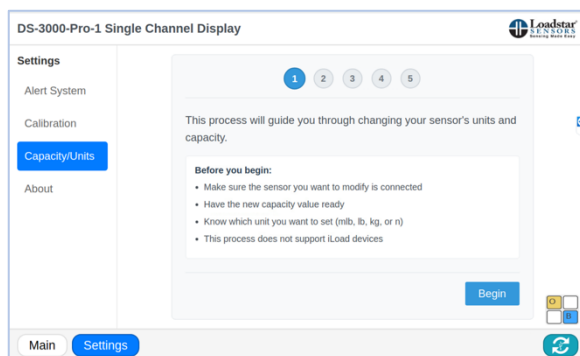
13.1 Capacity

Enter the sensor's rated capacity in the chosen unit. The capacity value is used to determine the force applied to the sensor. It is also used for overload detection and display; when the reading exceeds capacity, the unit will show an overload alert.

13.2 Units

Choose the measurement unit (e.g. lb, kg, g, N) for that sensor. The main display will show readings in the selected unit.

Changes apply only to the selected sensor.

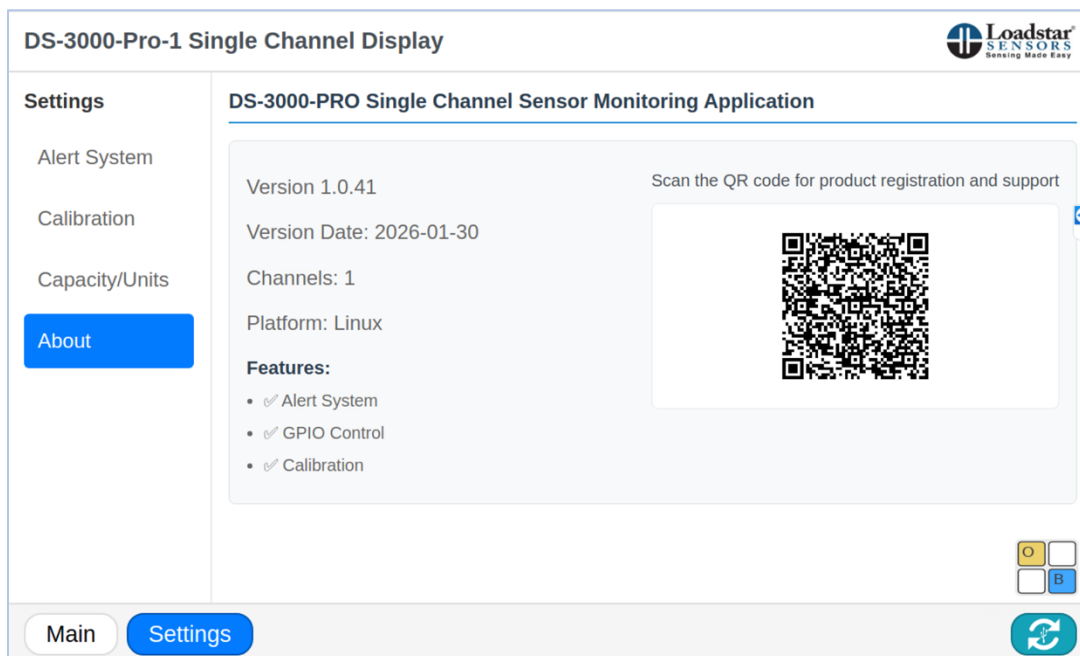


14. About

The About screen shows product and system information:

- Version and Version Date
- Channels (1 or 4).
- Platform (e.g. Linux for Raspberry Pi).
- QR Code - you can scan for product registration and support (Loadstar Sensors website).

Use this screen to confirm which DS-3000 variant and version you are running when contacting support.



15. Trouble Shooting

15.1 No Display: The screen is blank and doesn't seem to be on

- Check that the Display Controller is plugged in and powered.
- Ensure that the power supply is the same one that shipped with the unit.
- If needed, reboot (turn the power on and off) the DS-3000 and wait for the main screen to appear.

15.2 No Readings or Frozen Readings

- Check that the sensor cables are firmly connected.
- Check the sensor interface is turned on (some interface models have an on/off switch)
- Make sure the sensor and interface pairs are calibrated and have a matching serial number
- Power cycle the DS-3000 and see if readings resume.

15.3 Unstable or Unexpected Readings: Display jumps or fluctuates when the load should be steady

- Ensure the sensor and fixture are not moving or vibrating.
- Check that the mechanical setup is stable.
- Try Tare again with only the baseline load on the sensor.
- Use some averaging (say 5 point or 10 point averaging) to reduce the noise but keep in mind that this might introduce some latency before the change in force/weight shows up in the displayed values
- If values still do not match known weights, consider recalibrating (see Calibration).

15.4 Device Disconnection and Reconnection

The Display Controller continuously monitors sensor and relay connections. When a device is unplugged or stops responding, the app detects the disconnection and updates the UI so you can take action.

Note: Sensors may disconnect if the USB connections experience excessive vibration

How the App Shows Disconnections

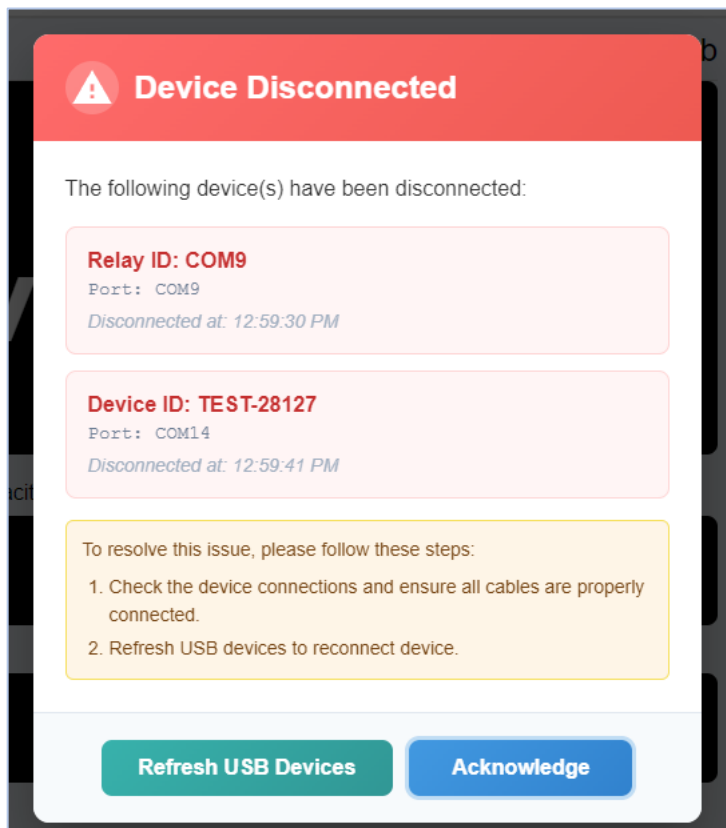
The app shows disconnections by alerting the user in the following ways:

Disconnection Popup

A Device Disconnected popup lists each disconnected device, showing:

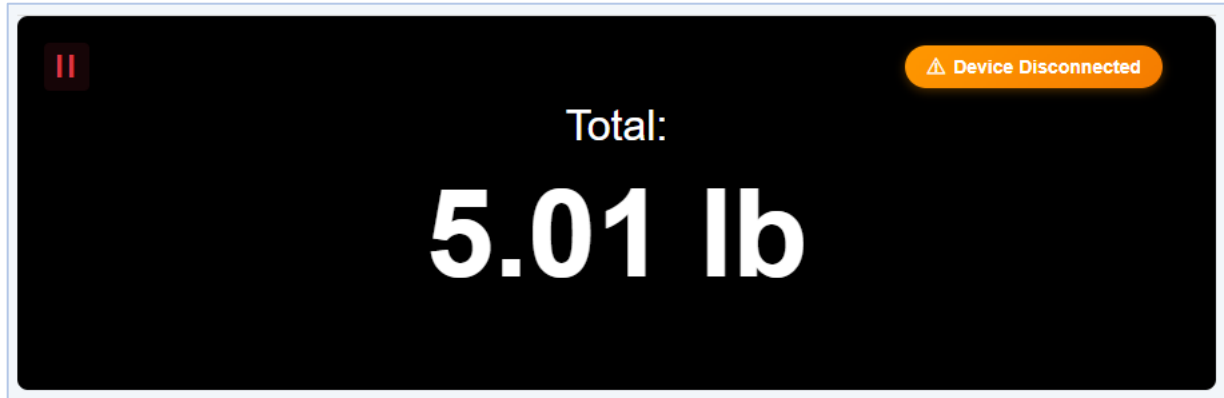
- Device ID (or relay ID)
- USB port (when available)
- Time the device was detected as disconnected

The user can either ignore the disconnection by selecting Acknowledge or Refresh USB Devices to reconnect.



Status Chip on the Main Display

If a USB refresh is not initiated to clear the disconnect, a small warning chip labeled **Device Disconnected** appears in the header of the main display. Tap it to see the disconnection information again.



What Happens When a Device Disconnects

- Disconnected sensors stop contributing to the total; if no sensors are connected, the main display shows **No devices found**.
- Overload alerts for that device.
- Disconnection popup keeps a short history of which devices have disconnected until you refresh devices to clear the disconnection state.

Reconnecting Devices

- Check cables and power — Make sure the sensor interface and any relays are powered and all USB cables are firmly connected.
- Use Refresh — Tap Refresh in the footer to disconnect all devices and rescan for connected USB sensor interfaces.
- Wait for discovery — After a refresh, the main display will briefly show a “Searching...” message while it looks for devices. Newly found devices will appear on the main display and in Settings.
- Re-open the disconnection popup if needed — If the main display still shows the Device Disconnected chip, tap it to review which devices are still offline.

15.5 Unusual Readings or Alerts

If readings or alerts look unusual, power cycling can often clear temporary connection issues.

Power Cycling

The DCI displays are designed to be safely power cycled when needed. Try powering the display Off and then power it back On.

After a restart, connected sensors automatically reconnect and the display returns to the main screen.

Check Calibration

Note that the sensor may have been calibrated years ago at the time of manufacture. Best practice requires a user to calibrate the load cell with a display prior to use with traceable reference standards and a calibration certificate within the past one year at least. Loadstar Sensors offers Calibration and Recalibration services for your needs. Please contact us to have your system calibrated prior to use.

16. Contacting Support

Feel free to reach out to Loadstar Sensors Support team at support@loadstarsensors.com if you're still experiencing issues.

Please provide the following information, so we can assist you better:

- DCI model (1ch or 4ch), version, version date.
- Connected sensor and interface models.
- A photo or video of the DCI screen showing the issue.
- Any recent changes in sensors, cabling, or mounting.

Disclosures

Please use at your own risk. Loadstar Sensors cannot be held responsible for any damages. This product and accompanying documentation are provided "as is" without any warranties, express or implied. Loadstar Sensors, Inc. assumes no responsibility for any errors or omissions that may appear in this document or for any damages, direct or consequential, resulting from the use of the product or information contained herein.

Users are advised to use this product at their own risk. Loadstar Sensors shall not be held liable for any injury, loss, or damage resulting from improper installation, misuse, or operation of this product.

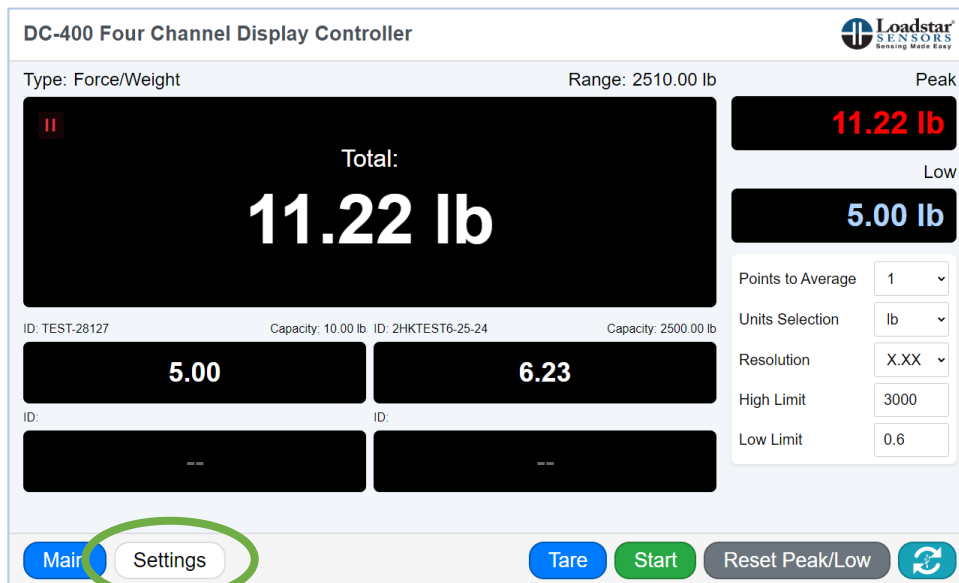
Additional Features in DC-100 & DC-400

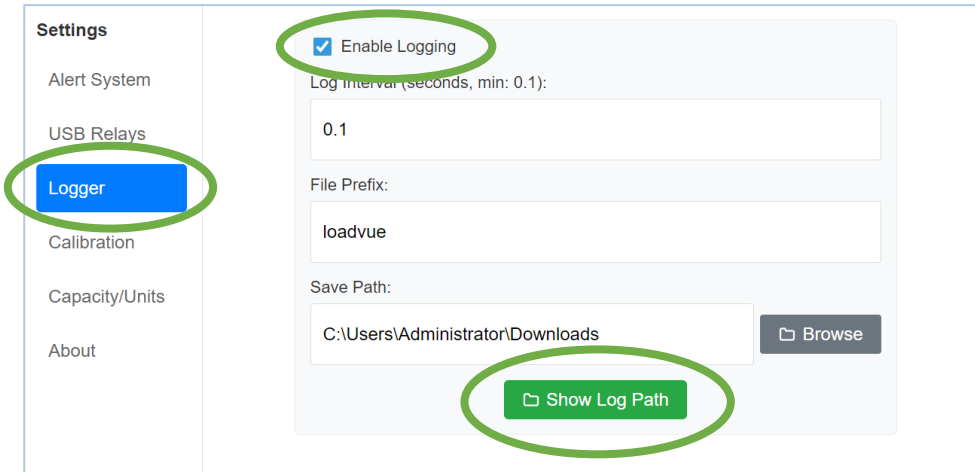
17. Logger (Logging and Data Export)

The Display Controller can log the sensor readings into a CSV file. You can assign the file name and select the destination to save the file.

17.1 Start Logging

Click on the **Settings** button from the main screen.





1. Select **Logger** from the sidebar menu.
2. Select **Enable Logging** checkbox to use the logging feature.
3. Check if the default settings work for you.
 - Log interval = 1.0 second
 - Log file prefix = “log”. The filename format is -YYYY-MM-DDTHH-MM-SS.csv
 - Default save path = /home/loadstar/.config/dc400/logs
4. Start reading. All reads with logging enabled will be recorded.
5. When you are done, check the **save path** for your log file.
6. The Logger settings page includes a **Show Log Path** button that opens the configured save path.

17.2 Log File Location and Format

Log files are saved in the folder configured in the Logger settings. The filenames include **Date** and **Time**, so each session produces a separate file. The files are saved in **CSV** (comma-separated values) format. You can open them in a spreadsheet or text editor.

Data saved in log file:

- Timestamp
- Total Weight
- Individual sensor values
- Sensor IDs and capacity

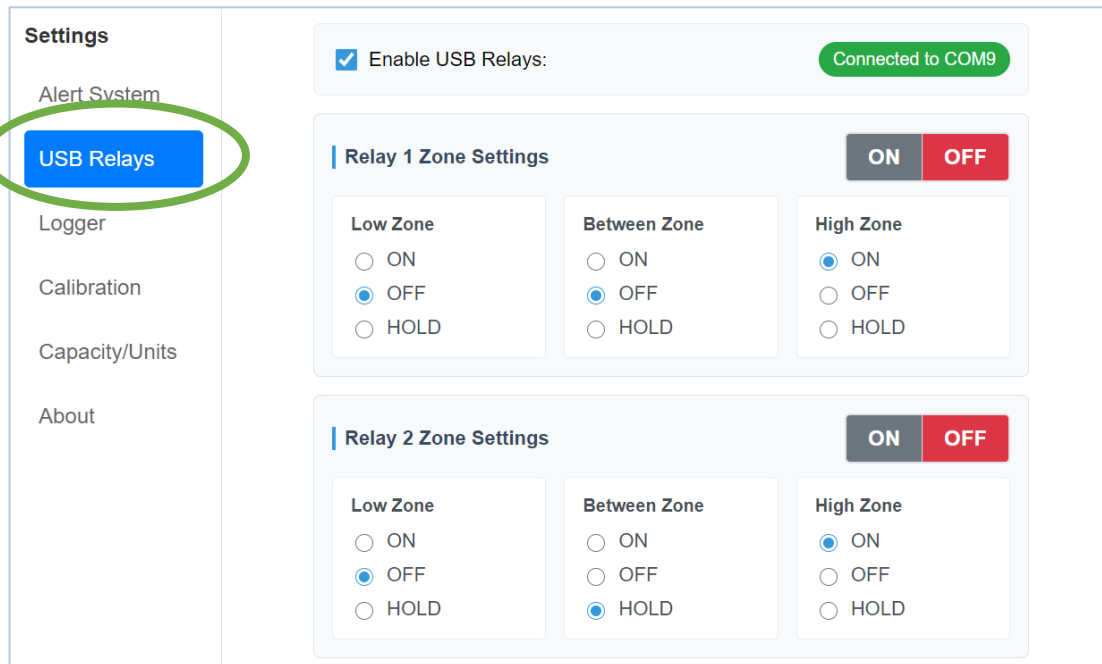
	A	B	C	D	E	F	G	H
1	timestamp	total_weight	sensor_1_value	sensor_1_id	sensor_1_capacity	sensor_2_value	sensor_2_id	sensor_2_capacity
2	2026-03-17T22:33:14.160Z	5.211356	4.986356	TEST-28127	10	0.225	M3-30383	50
3	2026-03-17T22:33:14.263Z	5.209855	4.986855	TEST-28127	10	0.223	M3-30383	50
4	2026-03-17T22:33:14.371Z	5.211648	4.986648	TEST-28127	10	0.225	M3-30383	50
5	2026-03-17T22:33:14.475Z	5.21219	4.98619	TEST-28127	10	0.226	M3-30383	50
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7	2026-03-17T22:33:14.685Z	5.209648	4.986648	TEST-28127	10	0.223	M3-30383	50
8	2026-03-17T22:33:14.789Z	5.209564	4.986564	TEST-28127	10	0.223	M3-30383	50
9	2026-03-17T22:33:14.894Z	5.210481	4.986481	TEST-28127	10	0.224	M3-30383	50
10	2026-03-17T22:33:14.997Z	5.210439	4.986439	TEST-28127	10	0.224	M3-30383	50
11	2026-03-17T22:33:15.103Z	5.209398	4.986398	TEST-28127	10	0.223	M3-30383	50
12	2026-03-17T22:33:15.204Z	5.210606	4.986606	TEST-28127	10	0.224	M3-30383	50
13	2026-03-17T22:33:15.309Z	5.210731	4.986731	TEST-28127	10	0.224	M3-30383	50
14	2026-03-17T22:33:15.412Z	5.209772	4.986772	TEST-28127	10	0.223	M3-30383	50
15	2026-03-17T22:33:15.518Z	5.209439	4.986439	TEST-28127	10	0.223	M3-30383	50
16	2026-03-17T22:33:15.619Z	5.209814	4.986814	TEST-28127	10	0.223	M3-30383	50
17	2026-03-17T22:33:15.723Z	5.211063	4.987063	TEST-28127	10	0.224	M3-30383	50
18	2026-03-17T22:33:15.827Z	5.209606	4.986606	TEST-28127	10	0.223	M3-30383	50
19	2026-03-17T22:33:15.933Z	5.208772	4.986772	TEST-28127	10	0.222	M3-30383	50
20	2026-03-17T22:33:16.035Z	5.209772	4.986772	TEST-28127	10	0.223	M3-30383	50
21	2026-03-17T22:33:16.141Z	5.209481	4.986481	TEST-28127	10	0.223	M3-30383	50
22	2026-03-17T22:33:16.242Z	5.211063	4.987063	TEST-28127	10	0.224	M3-30383	50
23	2026-03-17T22:33:16.342Z	5.207523	4.986523	TEST-28127	10	0.221	M3-30383	50
24	2026-03-17T22:33:16.446Z	5.20798	4.98698	TEST-28127	10	0.221	M3-30383	50
25	2026-03-17T22:33:16.548Z	5.207855	4.986855	TEST-28127	10	0.221	M3-30383	50
26	2026-03-17T22:33:16.654Z	5.209814	4.986814	TEST-28127	10	0.223	M3-30383	50
27	2026-03-17T22:33:16.759Z	5.211855	4.986855	TEST-28127	10	0.225	M3-30383	50
28	2026-03-17T22:33:16.865Z	5.20998	4.98698	TEST-28127	10	0.223	M3-30383	50
29	2026-03-17T22:33:16.972Z	5.20998	4.98698	TEST-28127	10	0.223	M3-30383	50
30	2026-03-17T22:33:17.074Z	5.210938	4.986938	TEST-28127	10	0.224	M3-30383	50
31	2026-03-17T22:33:17.182Z	5.210938	4.986938	TEST-28127	10	0.224	M3-30383	50
32	2026-03-17T22:33:17.284Z	5.210938	4.986938	TEST-28127	10	0.224	M3-30383	50
33	2026-03-17T22:33:17.388Z	5.210938	4.986938	TEST-28127	10	0.224	M3-30383	50

Sample Log File

18. USB Relays

The Display Controller can automatically switch connected USB relays on/off when limits are crossed or when you trigger them manually. These outputs can switch or drive external devices.

Note: Incorrect wiring or misuse can cause injury or equipment damage.



18.1 Relay control

Relay controls are available under **Settings > USB Relays**. From there you can:

- Check connection status (connected/disconnected) and connected USB port.
- Enable/disable the relay feature via the checkbox
- Turn relays **on** or **off** manually for testing or direct control.
- See relay status (e.g. on/off) in the UI.
- Set on/off/hold for the low, between, and high zones.
 - Hold means that the relay will hold the last state (on/off) until it crosses into a new trigger zone that toggles it.

18.2 Relay Channels

- Loadstar Sensor relays come in both 1-channel and 2-channel options
- The relay settings allow the 2 channels to be configured separately
- The Relay 2 Zone Settings will still be visible if a 1-channel relay is connected
- The Relay 2 Zone Settings will not have any effect on a 1-channel relay