





Portable Data Acquisition Logger



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Chapter 1: General

Device Overview

The MadgeTech Titan S8 is a portable, multi-use industrial data logger with eight channels and a user-friendly touchscreen interface. This versatile logger measures and records temperature, current, voltage and pulse simultaneously and displays data in real time. The Titan S8 is compatible for use with many thermocouple, RTD or thermistor probes as well as a number of voltage output sensors, current switches, transmitters and transducers.

Versatility makes Titan S8 the perfect companion for industrial engineers, quality assurance professionals, compliance officers or automotive technicians. The Titan S8 is very easy to use and configure via the built in capacitive touchscreen graphic display.

The Titan S8 is a powerful, independent tool. Unlike many other data loggers, the Titan S8 delivers an all-in-one data collection and monitoring solution that does not require a PC or any downloaded software for operation.

External Features



- » Power Button: To power on and power off the device, hold down the Power button for 3 seconds.
- » Home Button: The Home button will return the user to the home screen.
- » Input Ports: The Titan S8 features 8 sensor channel inputs plus one alarm port and a ground (details on pages 5-6).
- » LCD Touchscreen: 5 inch LCD capacitive touchscreen.
- » USB Port: The Titan S8 has a built-in USB port for downloading data to a flash drive.
- » Power Input: Charging port.

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Device Orientation

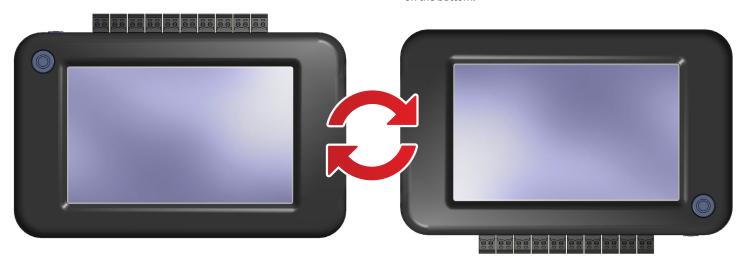
The Titan S8 display can rotate 180 degrees depending on the desired orientation of the device. This option is available from the Settings menu under the Display section. Please note: Power restart required in order to apply screen rotation

Desktop Orientation

For handheld and tabletop use, the inputs will be on the top.

Wall Mount Orientation

For wall mount use the unit will be rotated so that the inputs will be on the bottom.



Tabletop Orientation

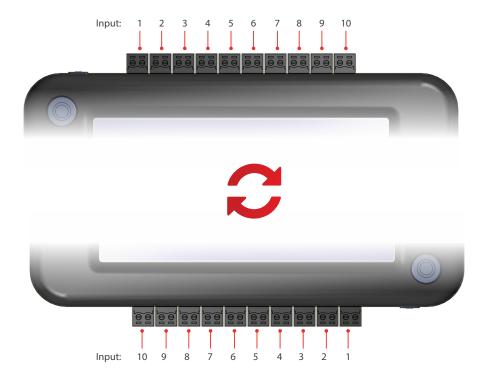
The Titan S8 features a built in kickstand on the back of the device for use on a flat surfaces.





Device Inputs

The Titan S8 features 10 ports. Please refer to the image below for the port number as it relates to device orientation.



Channels and Functions

Ports 1 thru 8 are sensor input channels (Temperature, Current or Voltage) Port 9 serves as an alarm output Port 10 serves as a ground for the device

Frequency or Pulse Counter

Can only be used on port 1

3-Wire and 4-Wire PT100 RTD Sensors

Use ports 1-2, 3-4, 5-6, or 7-8

2-Wire PT100 RTD Sensors

Can be used on ports 1-8

Sensor Types & Measurement Ranges

Each of the 8 input channels can be individually configured for the following types and sensor ranges.

Parameter	Input Type	Range
» Current	Current input	0 mA - 24 mA
» Frequency (port 1 only)	Frequency input	20 to 10,000 Hz
» Pulse / Counter (port 1 only)	Pulse input	0 to 4,000,000,000 Pulses
» Voltage	Volt input	0 V - 10 V
» Voltage	Millivolt input	0 mV - 100mV
» Temperature	Thermistor NTC-1 (2252)	-25 °C to +150 °C
» Temperature	Thermistor NTC-2 (10K)	-25 °C to +150 °C
» Temperature	PT100 RTD 2-Wire	-200 °C to +400 °C
» Temperature	PT100 RTD 3-Wire	-200 °C to +400 °C
» Temperature	PT100 RTD 4-Wire	-200 °C to +400 °C
» Temperature	Thermocouple J	-210 °C to +760 °C
» Temperature	Thermocouple K	-270 °C to +1370 °C
» Temperature	Thermocouple T	-270 °C to +400 °C
» Temperature	Thermocouple E	-270 °C to +980 °C
» Temperature	Thermocouple R	-50 °C to +1760 °C
» Temperature	Thermocouple S	-50 °C to +1760 °C
» Temperature	Thermocouple N	-270 °C to +1300 °C
» Temperature	Thermocouple B	+50 °C to +1820 °C

Powering, Charging and Downloading Data



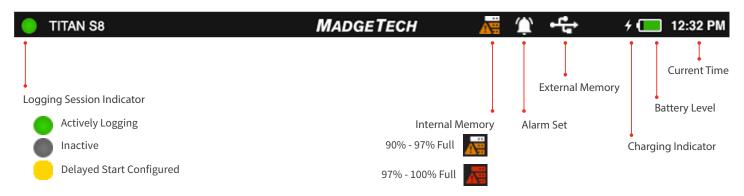




Chapter 2: User Interface

Top Menu Bar

The top bar of the Titan S8 Interface features status icons and useful information to refer to while using the device.



Home Screen

The Home screen will display the following options when the Home button is selected.

- » Channel Configuration: Configure parameters and options for each channel
- » Real-Time: Quickly view Real-Time data for all active channels
- » Start Logging: Start logging using current settings (Stop logging if device is active)
- » Current Session: View data from the current logging session as graph, tabular or real-time
- » Data Storage: View and offload logged sessions
- » Settings: Access device preferences and options



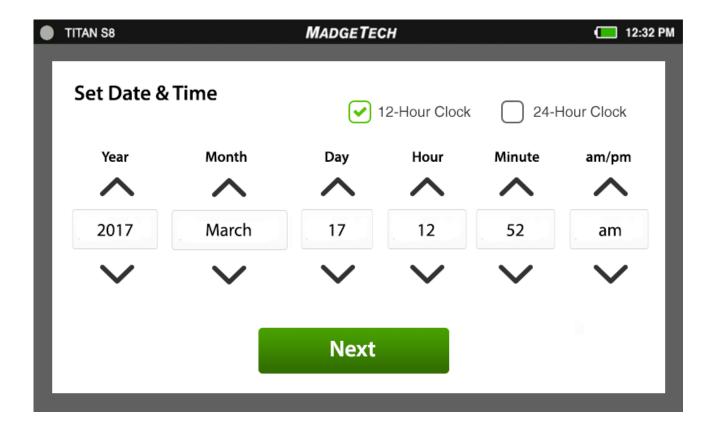
Home Button



Start Up Steps

Follow these steps for first use or when the device is powered up.

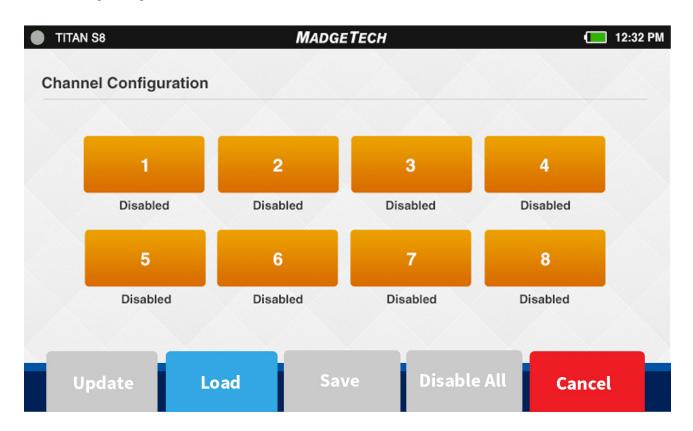
- » Power Button: Press and hold the Power Button for 3 seconds to power up the device.
- » Screen Ready: Wait for the device to iniate, you will see the MadgeTech logo when complete.
- » Local Time: Enter the local time to be used by the device and click Next.
- » Home: When the device presents the Home screen it is ready to use.



Channel Configuration

When the Channel Configuration icon is selected, the device will display the screen shown below

- » Channel 1-8: Configure the type of channel input, units, engineering units (if applicable), alarms and user calibration adjustments.
- » Update: Applies the current channel configuration to make the device ready to start logging.
- » Save: The user has the ability to save the current channel configuration so it may be loaded and used later.
- » Load: The Load button will load previously saved channel configurations.
- » Disable All: Clears the configuration of all channels, returning them to the default disabled status.
- » Cancel: Cancels changes then goes back to home screen.



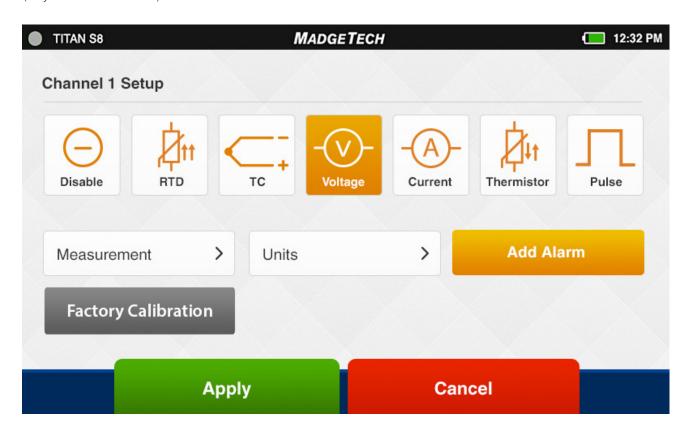


Select Channel Configuration

Channel Setup

When the user selects a channel, the device will display the screen shown below with the following options.

- » Disable (Channel is not being used)
- » RTD (RTD probe)
- » TC (Thermocouple probe)
- » Voltage
- » Current
- » Thermistor (Thermistor probe)
- » Pulse (Only available on channel 1)







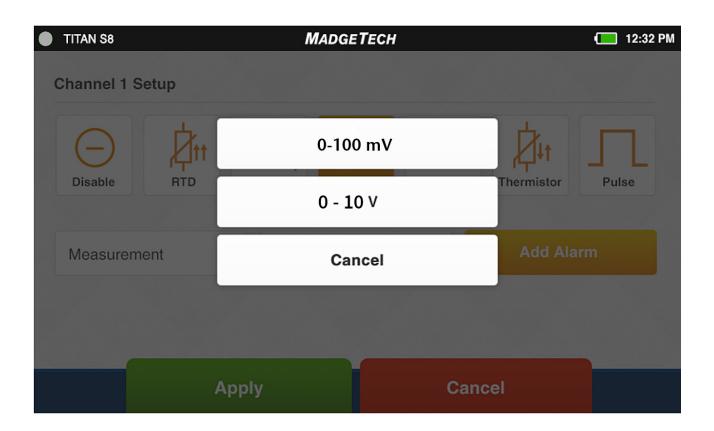


Select a Channel

Measurement Setup

When the user selects a measurement parameter, the device will display the the relevant options for that selection. (Example shown are the Voltage options)

Select the Measurement button to display a popup screen of relevant measurement types to choose from.









Measurement Parameter

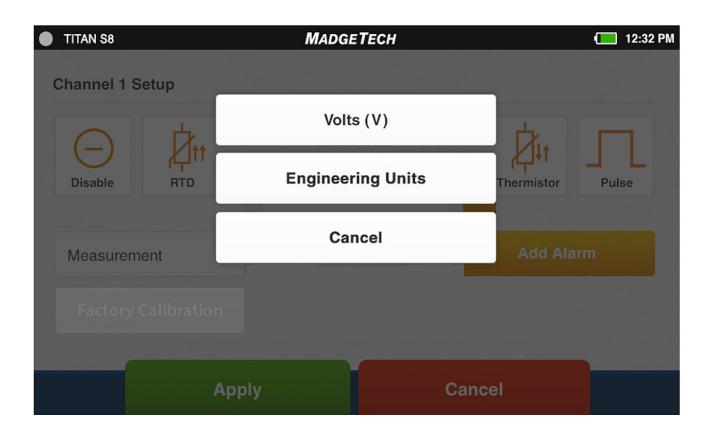


Measurement Type

Measurement Units

When the user selects the Units button, the device will display a popup menu of the relevant options for that selection. (Example shown are the Voltage options)

» Engineering Units: This will be an option to setup if the user selects the Voltage, Current or Pulse sensor. (see details page 13)









Measurement Parameter

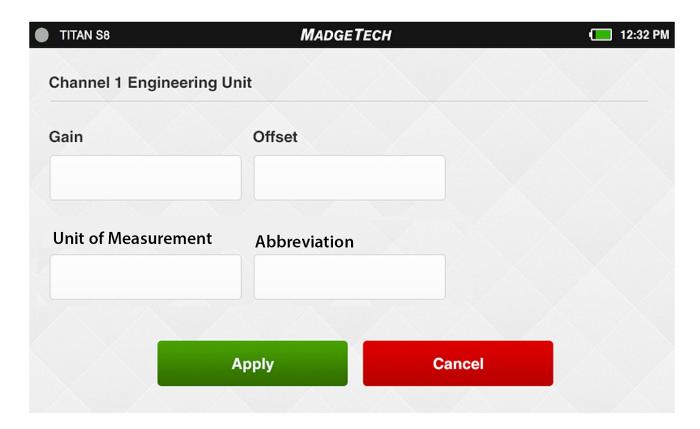


Measurement Units

Engineering Units

Engineering Units can be applied to a any channel measuring Voltage, Frequency or Pulse to display readings in a user selected custom unit of measure.

- » Gain: User selected gain value
- » Offset: User selected offset value
- » Units Label: User selected label to display
- » Apply: Saves the settings
- » Cancel: Returns the user to the Channel Configuration screen









Measurement Units



Select Engineering Units

Keyboard Function

When the user taps in any text field within the interface, the keyboard will appear.

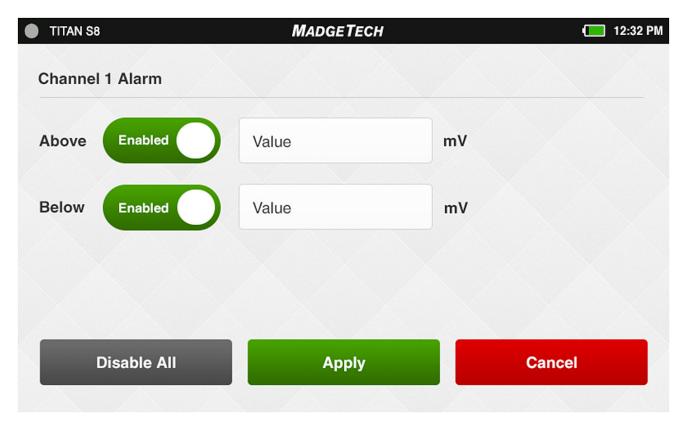
To prevent the keyboard from obscuring content, the screen will always focus on the selected field and bring it into view. Once the text field is complete, the user can tap anywhere on the screen and the keyboard will disappear from view.



Alarms

Users can create one alarm configuration per channel with up to two alarms for that channel. (above and below threshold)

- » Above: The above value indicates the high reading threshold at which the alarm becomes active
- » Below: The below value indicates the low reading threshold at which the alarm becomes active
- » Enable: Tap the Disabled radio button to reveal the text fields for entering the desired values
- » Disable All: Clears the alarm settings
- » Apply: Applies the setting to the current channel
- » Cancel: Cancels changes then returns the user to the Channel Configuration screen

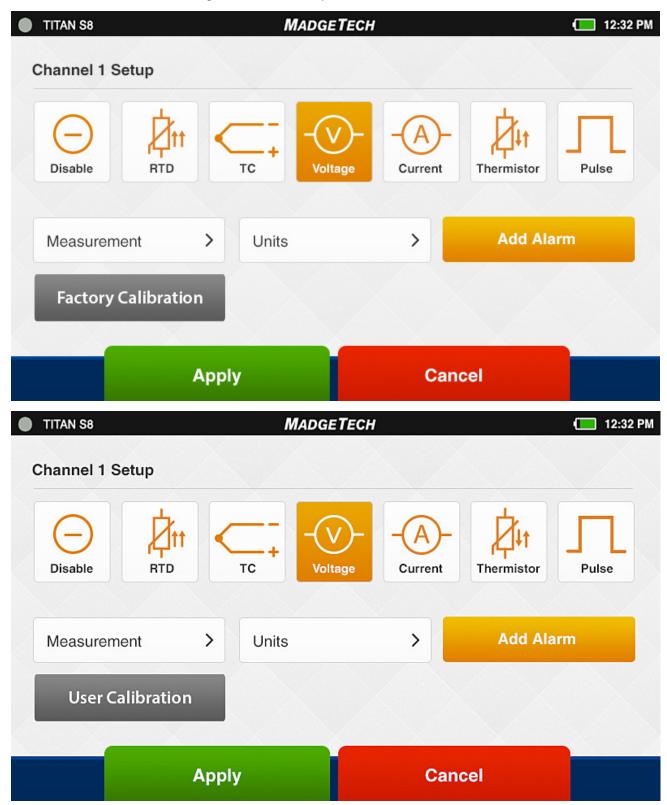




Factory Calibration

The Titan S8 comes with a complete Factory Calibration and provides users the ability to adjust the calibration settings per channel, and roll back to the factory settings at any time. Note: For best performance and accuracy, Factory Calibration should be performed at least once every 12 months.

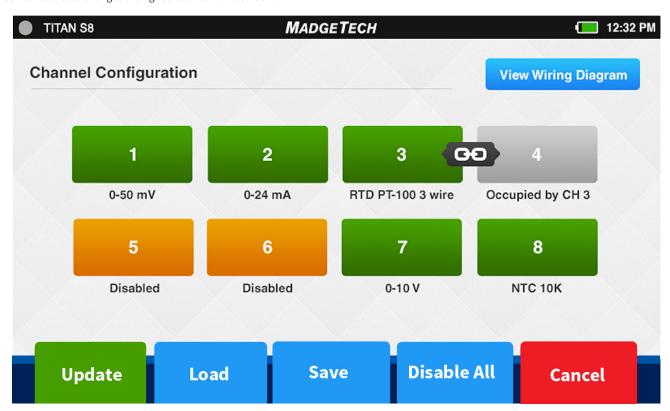
- » Factory Calibration: Indicates the device is currently in the factory calibrated state.
- » User Calibration: Indicates the calibration settings have been modified by the user.



Channel Configuration Overview

An example of a completed channel configuration screen is shown below.

- » View Wiring Diagram: The user will be taken to a screen to show how to properly wire the device.
- » Green Channel: Enabled channel
- » Orange Channel: Disabled channel
- » Linked Channels / Gray Channels: 3 or 4 wire RTD sensor types can be selected for Channels 1, 3, 5 and 7. This sensor type will also occupy the next sequential channel and will be visually represented with a Link icon as seen between Channels 3 and 4 on the screen below.
- » Update: Once the user has configured the channel settings, this button will apply the current settings to all channels.
- » Load: Users have the ability to save a channel configuration to be used later. The Load Button will load previously saved configurations.
- » Save: The user has the ability to save the current Channel Configuration so it may be loaded and used in the future.
- » Disable All: Clears the programmed channels to disable all.
- » Cancel: Cancels user changes then goes back to home screen.





Channel Configuration

Apply Channel Configuration

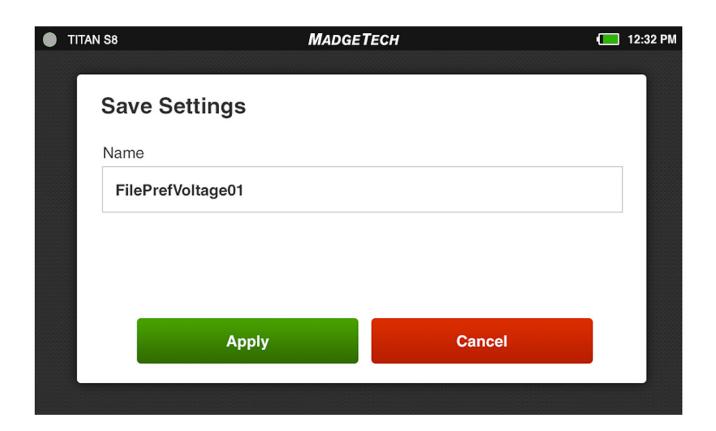
Once channels are configured as desired, the user must then select Apply to use those settings.

A pop up as shown to the right will confirm that settings have been applied.



Saving Configuration Settings

Completed channel configurations can be saved for repeated use. The user can select Save from the channel configuration screen to select a name for the saved settings file and apply them.

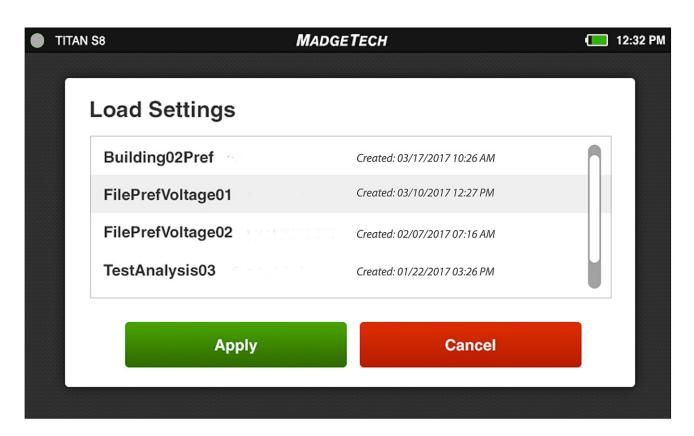




Load Configuration Settings

Saved channel configurations can be easily loaded for repeated use. The user can select Load from the channel configuration screen to choose from the list of previously saved settings files.

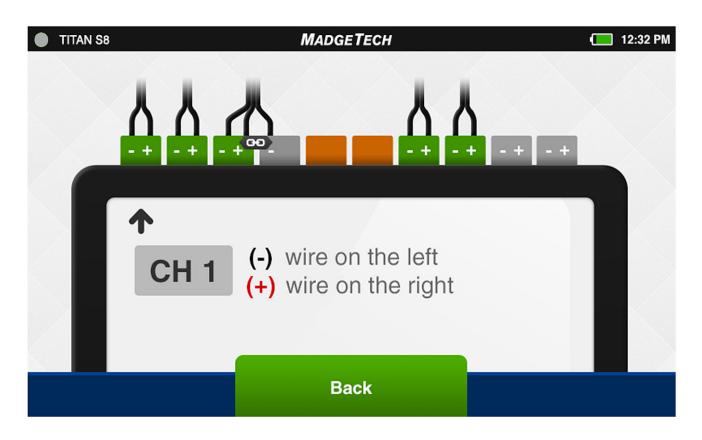
Note: Loading a saved settings file will replace the exisiting configuration.





Wiring Diagram

From the channel configuration screen, the user can select the Wiring Diagram button to display the proper wiring of the unit based on the currently applied configuration. Please note the position of channel 1 in regards to screen orientation.



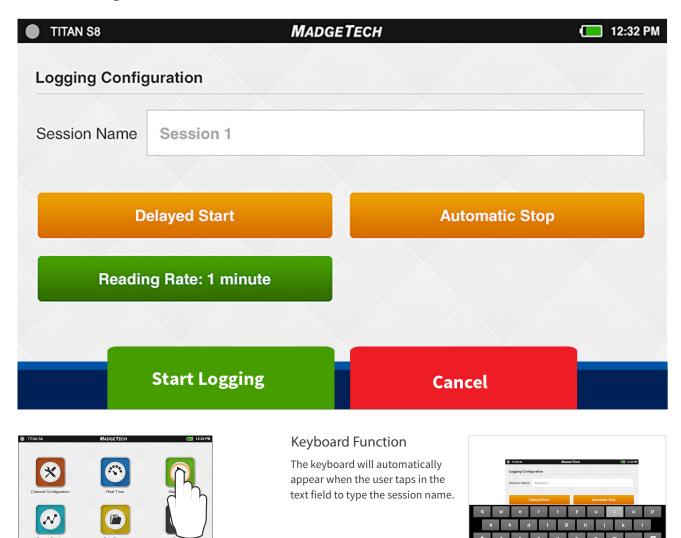


Chapter 3: Logging, Viewing and Managing Data

Start Logging

When Start Logging is selected from the Home screen, the Logging Configuration screen will appear and the user will be prompted to name the data logging Session. This name will identify the task or period of time for users and the recorded data stored on the device will be accessible under this session name.

- » Session Name: The user will enter the desired name for the logging session. If no name is given, a unique default name will be assigned (i.e. Session 1)
- » Delayed Start: The user has the option of either selecting a Delayed Start time or simply tap the Start Logging Data button to start immediately.
- » Automatic Stop: The user has the option of selecting an Automatic Stop time. If no time is selected, the user will use the Stop Logging button on the Home screen to manually stop the device.
- » Reading Rate: The user has the option of selecting a reading rate. The reading rate will default to 1 minute, or use the setting of the last session configuration.
- » Start Logging Data: The user will select Start Logging to begin logging data immediately.
- » Cancel: Cancels user changes and returns back to the home screen.

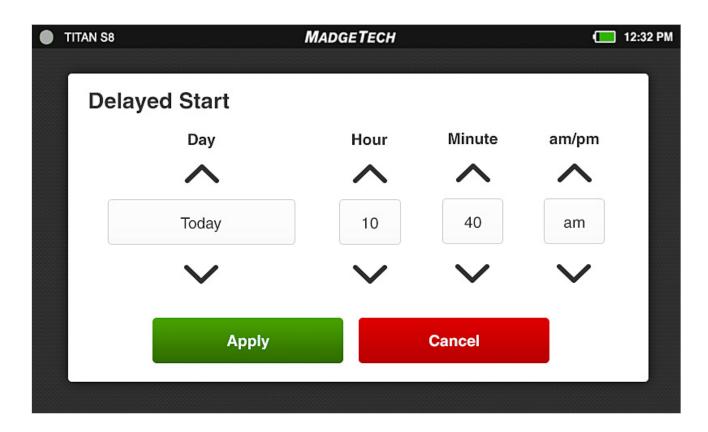


Start Logging

Delayed Start

If the user selects Delayed Start, the following configuration screen will appear.

- » Day: Using the up and down arrows, the user is able to adjust the day.
- » Hour: Using the up and down arrows, the user is able to adjust the hour.
- » Minute: Using the up and down arrows, the user is able to adjust the minute.
- » am/pm: Using the up and down arrows, the user is able to select am or pm.
- » Apply: Applies the start or stop time settings and returns the user back to the Logging Configuration screen.
- » Cancel: Returns the user to the Logging Configuration screen.





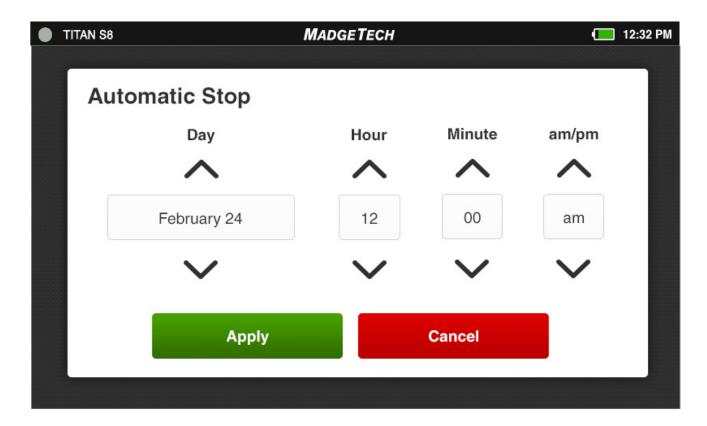
Start Logging

Delayed Start

Automatic Stop

If the user selects Automatic Stop, the following configuration screen will appear.

- » Day: Using the up and down arrows, the user is able to adjust the day.
- » Hour: Using the up and down arrows, the user is able to adjust the hour.
- » Minute: Using the up and down arrows, the user is able to adjust the minute.
- » am/pm: Using the up and down arrows, the user is able to select am or pm.
- » Apply: Applies the start or stop time settings and returns the user back to the Logging Configuration screen.
- » Cancel: Returns the user to the Logging Configuration screen.



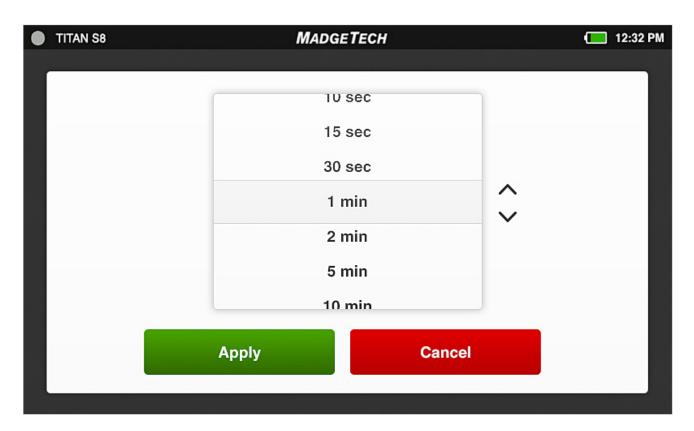


Start Logging

Automatic Stop

Reading Rate

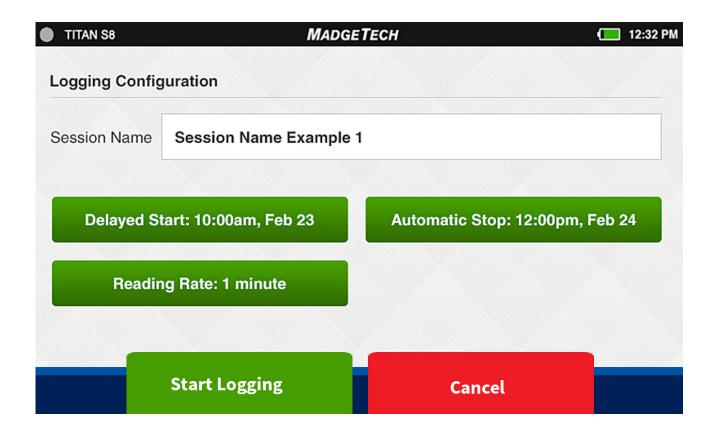
When the user selects Reading Rate, the following configuration screen will appear. Once the desired reading rate is selected, the user must select Apply to use that option, or cancel to return to the previous screen.





Review Session Details and Start Logging

Once the user selects a Session Name, Start Time, Stop Time and Reading Rate, the screen will look similar as it does below. Once the settings are complete, the user will select Start Logging Data to begin Logging Mode. After selecting start, the user will be brought to the Graph screen.



Device Memory Warning

After selecting Start Logging, if the internal memory of the device is 100% full, the user will be notified with a popup warning message and two options to choose from.

- » View Stored Sessions: This button will take the user to the Data Storage screen to delete or remove stored data from the device.
- » Dismiss: This button will take the user back to the Home screen.

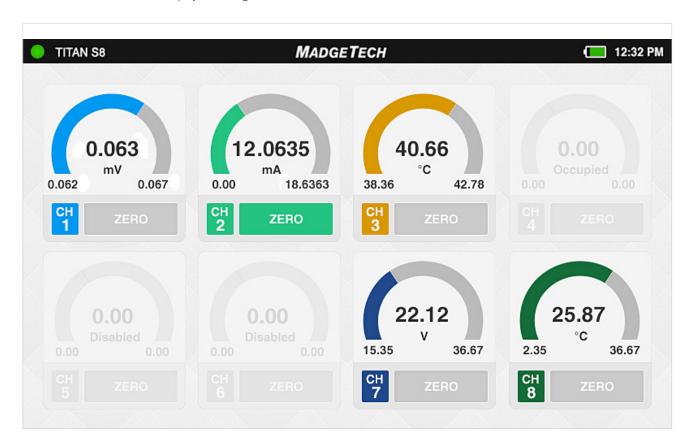
This warning will also appear if the internal memory of the device reaches 100% capacity while actively logging.



Real-Time Data

When Real-Time is selected from the Home screen, the device will display data from all enabled channels and update at the user selected reading rates. The Real-time view is also available from the Current Session menu when the device is actively logging. (see page x)

- » Current Reading: Will be displayed in the center of the gauge
- » Minimum: The minimum reading will be displayed on the bottom left of each gauge
- » Maximum: The maximum reading will be displayed on the bottom right of each gauge
- » Zero: The Zero button will reset the displayed reading to zero

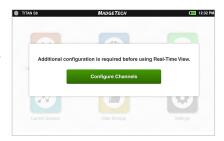




Select Real-Time

Configuration Warning

Real-Time data is only available if the device channels are configured.

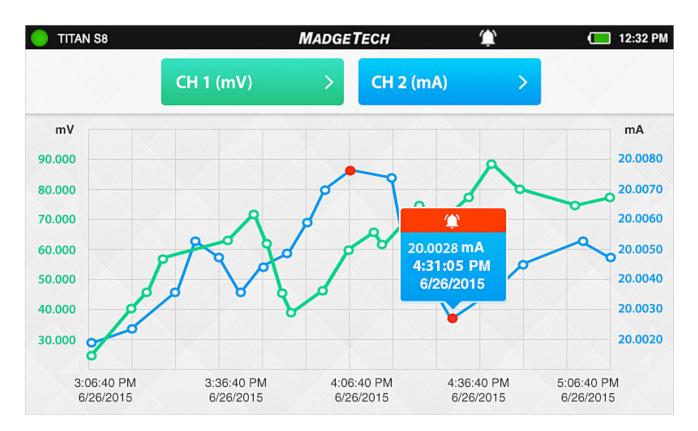


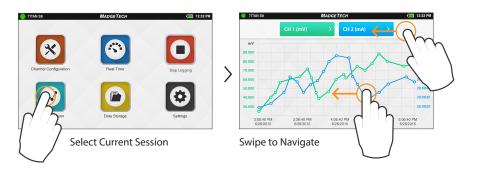
Current Session

Select the Current Session button from the home screen to view the recorded data in various formats, swipe the screen to the left or right to navigate.

Graph View

- » Use the drop down menus at the top to select which channels to view.
- » Touch any point on the graph line to display more detailed information.
- » Triggered alarm events will be visible within the graph.





Swipe Options

- » Swipe left at the top of the screen to go to the tabular data view.
- » Swipe within the graph to scroll through the graph timeline.

Current Session

Select the Current Session button from the home screen to view the recorded data in various formats, swipe the screen to the left or right to navigate.

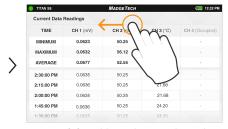
Tabular View

- » Displays the Maximum, Minimum and Average values for the current session.
- » Readings that exceeded user selected thresholds/alarms are displayed as red.
- » Scroll vertically to see data timeline in tabular format.
- » View four channels at a time.
- » Swipe left at the top of the screen to see additional active channels.

TITAN S8		MADGETECH	Ů,	12:32 PM
Current Data	Readings			
TIME	CH 1 (mV)	CH 2 (mA)	CH 3 (°C)	CH 4 (Occupied)
MINIMUM	0.0623	50.25	24.20	-
MAXIMUM	0.0632	56.12	50.08	-
AVERAGE	0.0677	52.55	41.68	-
2:30:00 PM	0.0635	50.25	24.20	-
2:15:00 PM	0.0636	50.25	21.68	-
2:00:00 PM	0.0635	50.25	20.36	-
1:45:00 PM	0.0763	50.25	24.20	-
1:30:00 PM	0.0635	50.25	24.20	







Swipe Left to View Tabular Data

 $\label{thm:continuous} Swipe\ Vertically\ to\ Scroll\ Timeline$

Swipe Left for Additional Active Channels

Additional Views

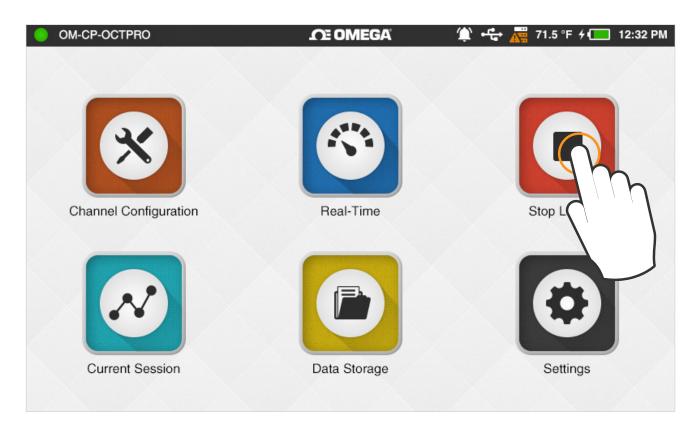
Swipe left and right to rotate through the various screens.

Graph View > Tabular Views > Real-Time View > Current Session Overview

Note: Use the swipe navigation of data views for both current and stored sessions.

Stop Logging

To manually stop a logging session, the user will select the Stop Logging button from the Home screen. Note: Access the Home screen at any time by pressing the Home button.



Stop Logging Confirmation

When the user selects Stop Logging, a popup screen will emerge prompting the user to confirm the action.

- » Stop Logging: This option will end the current logging session.
- » Cancel: Continues logging and returns the user to the Home screen.



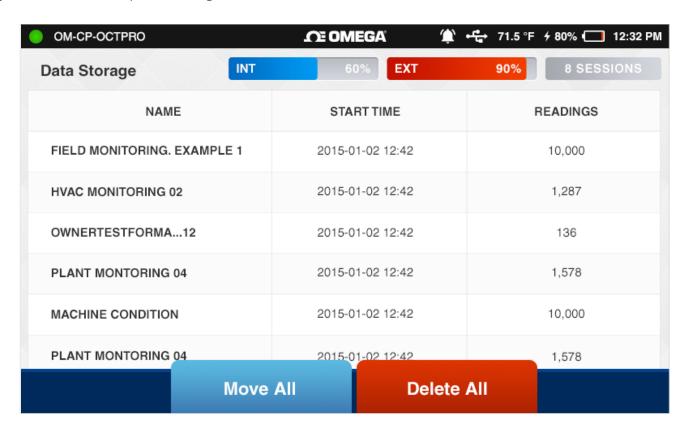
Data Storage

Selecting the Data Storage icon will bring up the screen pictured below. The options available on this screen include the following:

- » INT / Internal Storage: Available percentage of internal memory remaining on the device.
- » EXT / External Storage: Available percentage of memory remaining on the external USB drive.
- » Number of Sessions: The total number of stored sessions on the device.

Stored sessions are displayed in a scrollable list, swipe vertically to browse the list. Session Information includes the Name of the session, the Start Time and date of the session and the number of readings.

- » Session Information: The user can tap on any row to view session specific options.
- » Copy All: This button will copy all the stored sessions to an external USB drive. (If no USB is present, this will be grayed out)
- » Delete All: This button will erase all stored sessions from the internal memory.
- » Eject USB: Select this button prior to removing the external USB drive.







Swipe Vertically to Through Sessions

Saved Session Options

From the Data Storage screen, tap on any row in the list to select a specific session to view options. The session options screen features four actions the user can take on any stored session.

- » Copy: This button will copy the stored session to an external USB drive. If no USB drive is plugged into the device, the Copy button will not display.
- » View Data: The user can view the data of this session in tabular or graph view.
- » View/Edit Note: The user can add notes/comments to the session.
- » Delete: This button will remove the stored session from the device.



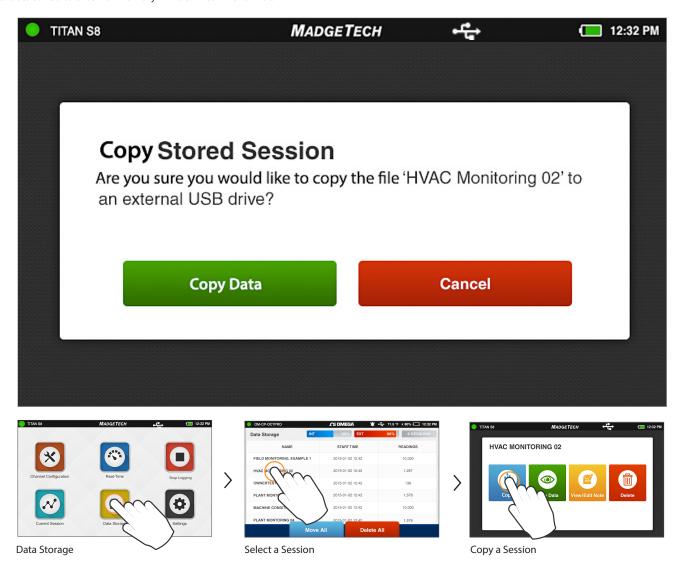


Copy Stored Sessions

Sessions can be copied from the internal device memory to an external USB drive. When the Copy option is selected, the Copy Stored Session popup will appear to confirm the user's request.

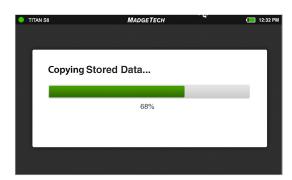
- » Copy Data: The session is copied to the external USB drive.
- » Cancel: Takes the user back to the Options screen.

Note: Data saved to external memory will be in .csv file format.



Copying Data Confirmation

When the user selects Copy Data, a popup screen will emerge to display the progress and confirm completion for the user.



View Data Sessions

When the View Data option is selected, the user is presented with the Tabular Data view of that session. From this screen the user can swipe left and right to navigate other views of the recorded data from that session (see swipe navigation options on page 28).

TITAN S8		MADGETECH	-€ -	12:32 PM
Current Data I	Readings			
TIME	CH 1 (mV)	CH 2 (mA)	CH 3 (°C)	CH 4 (Occupied)
MINIMUM	0.0623	50.25	24.20	-
MAXIMUM	0.0632	56.12	50.08	-
AVERAGE	0.0677	52.55	41.68	-
2:30:00 PM	0.0635	50.25	24.20	-
2:15:00 PM	0.0636	50.25	21.68	-
2:00:00 PM	0.0635	50.25	20.36	-
1:45:00 PM	0.0763	50.25	24.20	-
1:30:00 PM	0.0635	50.25	24.20	





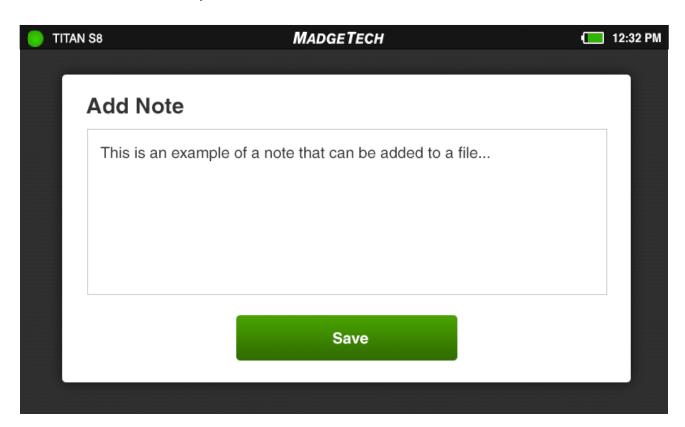


Select a Session

View Session Data

View/Edit Note

When the View/Edit Note option is selected, the user is presented with a text entry screen. Text entered here is stored as a note associated with a particular session. This can be accessed and edited by users as desired.









Select a Session

View/Edit Note



Note Flag

When a note has been added to a logging session, a notes icon appears in the list of sessions.

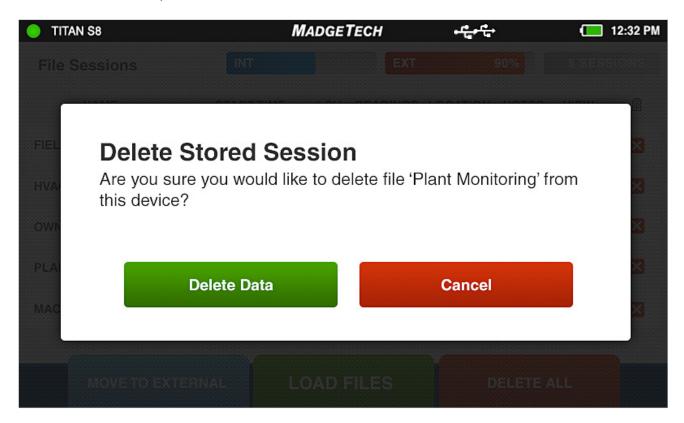
Delete a Note

To delete a note, simply edit to remove all text and save.

Delete Stored Sessions

When the Delete session option is selected, the user is presented with a pop up screen confirming the request.

- » Delete Data: Confirm the data removal.
- » Cancel: Takes the user back to the Options screen.



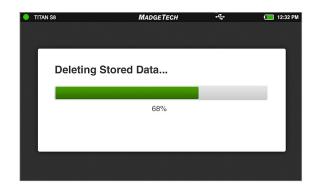






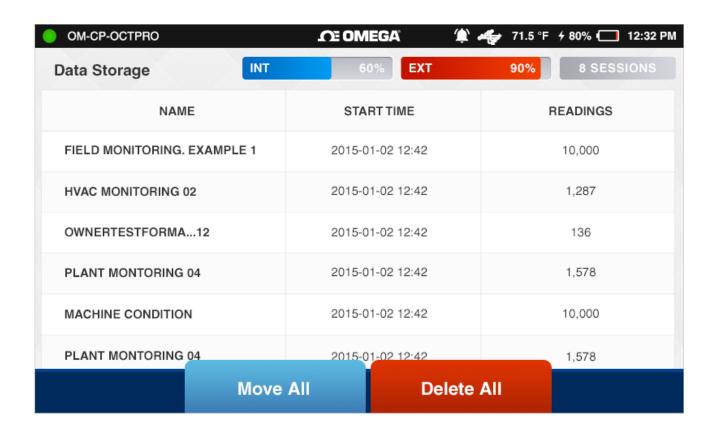
Deleting Stored Data Confirmation

When Delete Data is seleted a pop up screen will display a progress bar and confirm when action is complete. After data is successfully removed the user will be returned to the Data Storage screen.



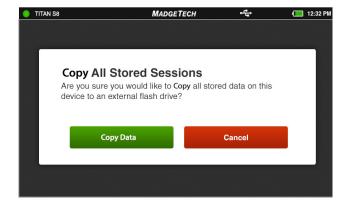
Copy All or Delete All

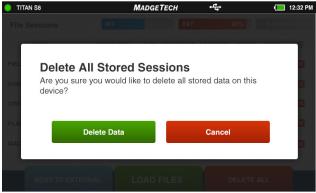
- » Copy All: This will copy the entire list of stored sessions to the external memory in .csv file format. The original files will remain saved to the internal memory of the device until the user manually deletes them.
- » Delete All: This will permanently erase all stored session data.



Confirmation Screen

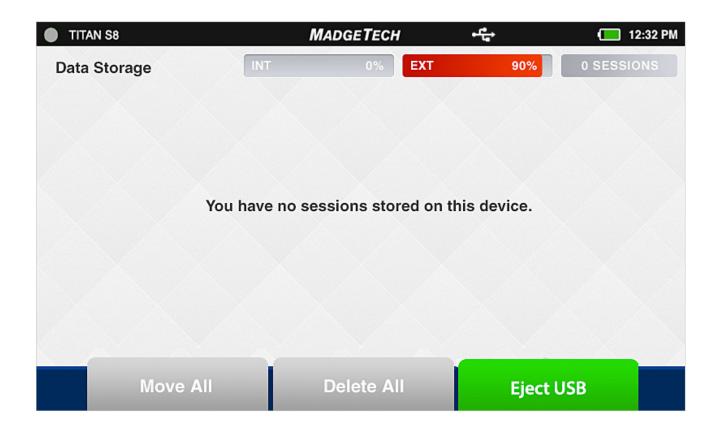
If a user selects the Copy All or Delete All option, they will be presented with a confirmation screen. Selecting Cancel from either screen will return the user to the Data Storage screen and the stored data will not be moved or deleted.





No Stored Sessions

Before first use or after all data has been deleted, the Data Storage screen on the device will resemble the screen shown below.

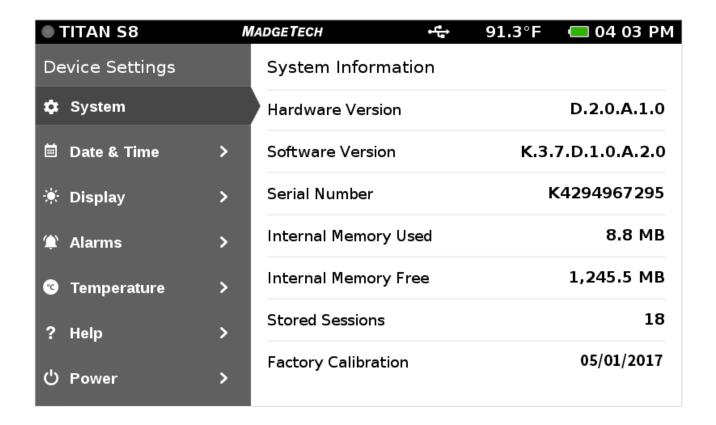




Chapter 4: Settings, Preferences and Support

Device Settings

When the Settings button is selected from the Home screen, the user is presented with options, preferences and information as shown below.





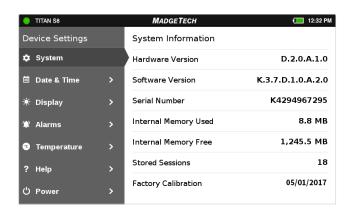
System

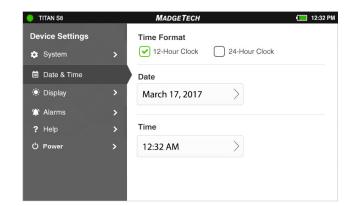
The System panel displays an overview of information specific to the device including:

- » Hardware Version
- » Software Version
- » Serial Number
- » Internal Memory Used and Available
- » Number of Stored Sessions
- » Factory Calibration Date

Date & Time

The Date & Time screen will display the current data and time as well as providing the user with 12-Hour or 24-Hour clock options.

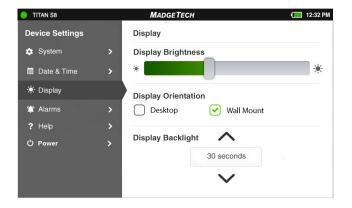




Display

The Display screen allows the user to adjust options for the touchscreen display including:

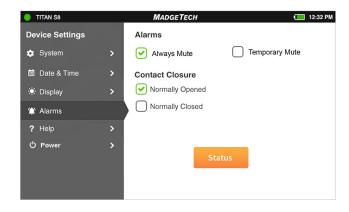
- » Display Brightness Level
- » Display Backlight Delay
- » Display Orientation (requires reboot)



Alarms

The Alarms screen provides the user with two Contact Closure options for when an alarm is triggered.

- » Normally Opened
- » Normally Closed



Product User Guide

Help Menu

For a comprehensive User's Guide for the Titan S8, please visit the MadgeTech website: www/madgetech.com/user-guides.

Power

Sleep mode and Power off via screen.

Device Maintenance

To provide optimum performance and accuracy, MadgeTech reccomends an annual factory calibration for the Titan S8.

To send a device back to MadgeTech for calibration, service or repair, please visit the MadgeTech website: www.madgetech.com/service

Support

The MadgeTech technical sales team and techical support staff are just an email or phone call away. They are ready and eager to assist in guiding the use of MadgeTech products as well as identifying and solving data logging challenges to provide you with the best solution.

For contact information and options, please visit the MadgeTech website: www.madgetech.com/contact-us

Chapter 5: Titan S8 Specifications

Dimensions	6.65 in x 4.40 in x 1.41 in (168.9 mm x 111.8 mm x35.8 mm) Data logger only
Touch Screen Dimensions	5 inches
Number of Channels	8
Weight	1.3 lbs (20.8 oz)
IP Rating	IP20
Start Modes	Immediate Start & Delay Start
Memory	100,000,000 readings; 1 GB
Battery Type	Rechargable 3.7 V Lithium Ion Battery Pack
Battery Life	Continuous on-screen Sampling: 10 hours
Data Format	Exported .csv file format
Time Accuracy	±1 minute/month
Operating Environment	0 °C to +50 °C (32 °F to +122 °F); 0 %RH to 95 %RH non-condensing
Enclosure Material	PC / ABS Enclosure, TPE Protective Boot
Calibration	Factory calibration required annually

BATTERY WARNING: BATTERY MAY EXPLODE OR FIRE IF MISTREATED. DO NOT DISASSEMBLE OR DISPOSE OF IN FIRE. DO NOT CHARGE EXCEPT SPECIFIED WITH CHARGING CONDITION. DO NOT HEAT ABOVE 212 °F, OR SHORT CIRCUIT. DO NOT CRUSH OR MODIFY.

Product User Guide			
Notes			

Need Help?

Product Support & Troubleshooting:

» Contact our Knowledgeable Customer Support Team at (603) 456-2011 or www.madgetech.com/contact-us

