DATAGARRISON STATION
USERS GUIDE

1

Contact Information

For support, please contact the company from which you purchased the product: Upward Innovations Inc. or an Upward Innovations Inc. Authorized Dealer.

Upward Innovations Inc.
19 Research Rd.
East Falmouth, MA 02536
USA

US: 877-943-4328
International: 1-774-392-0856
Hours of operation: 8AM and 5PM Eastern Time
E-mail: info@datagarrison.com
Web site: https://DataGarrison.com/

Table of Contents

General Information

DataGarrison Stations are all-in-one, solar-powered weather stations that are compatible with HOBO (tm) smart sensors, as well as SDI12, ModBus, and analog sensors. They automatically transmit environmental data to a secure Internet server and alert customers if sensors exceed user-defined alarm conditions. Customers can monitor and configure the stations at DataGarrison.com.

Designed to survive in harsh environments—from -40 to 80 degrees Celsius and at any humidity level—the stations are housed in durable weatherproof enclosures with GORE (tm) vents to keep moisture out.

Proprietary smart charging technology automatically compensates for temperature variations, maximizing a station's power capacity. Battery power is transmitted with sensor data for continuous online monitoring.

DataGarrison Stations operate on Iridium satellite and cellular data networks, for total worldwide coverage.

Specifications

DataGarrison Satellite Stations	
Temperature Range	-40 to 80 C (-40 to 176 F)
Power	3 Watt solar panel and 7.0 AH rechargeable battery pack.
Solar charging	Temperature compensated charging voltage optimizes battery life and performance. Typically requires an average of one or two hours of direct sunlight per day and operates for one month in continuous cloud cover. Device will hibernate when battery capacity drops to 25% and will begin operating again when fully charged. Data is stored locally while hibernating and all stored data will be transmitted when device comes out of hibernation.
Weight	3 kg (7 lbs)
Dimensions	Enclosure: 22 X 17 X 11 cm (9 X 7 X 4 inches)
Environmental Rating	NEMA 6 weatherproof.
Communication	Configuration: Bluetooth via an Android App. Sensor Communications: HOBO (tm); ModBus (over RS-232 or RS-485); and SDI-12.
Power consumption	Satellite link/receive/transmit: 70 mA average; and standby: 1.4 mA.
LED's	Five LED's on main circuit board indicate Power, Bluetooth, In Range, Receive, and Low Battery.
Server update	User configurable from every 30 minutes to once a month
Remote alarms	User configurable connectivity and high/low sensor value alarms. Maximum latency for sensor alarms: logging interval plus one minute during typical network conditions.
Remote control	Stations can be controlled over the Web. Functions include changing the transmission and data logging intervals.
Compatible Sensors	HOBO smart sensors, ModBus, SDI-12, and analog (0-5 volts and 4-20 mA).
Raw data format	Tab-delimited text.
Data access	Raw data can be downloaded and accessed from any Web browser via password-protected, SSL connections. Live plots can be configured and viewed from the same connection.
Mounting	Sun-facing wall or pole, mounted straight up.
Frequency	1616 to 1626.5 MHz
Satellite Network	Iridium satellite constellation
Coverage	Works throughout the world.
Federal certifications	FCC certified for use in the U.S. and authorized for use throughout the world. FCC ID: Q639602.

Quick Start

1. Disconnect the DataGarrison Station battery cable inside the enclosure.
2. Connect all sensors to the DataGarrison Station.
3. Visit https://DataGarrison.com and log in with the provided user ID and password. If ModBus or SDI-12 sensors are being used, follow the steps in the **ModBus and SDI-12 Configuration** section. Then click on 'Control Panel' and select 'start/restart logging' from the drop-down list (see the next page). Enter in the desired settings and click 'Submit'. **Note:** be sure to click 'Submit' only once.
4. If the station is the Iridium satellite version, place or mount outside in an area with good views to the horizon. If it is the cellular version, place in an area with adequate cellular coverage.
5. Connect the battery cable inside the enclosure, and then hit the black 'reset' button on the upper-right side of the circuit board. **Note:** be sure that hitting 'reset' is the last step.

**IMPORTANT 1): do not send any further commands from the website until valid data can be seen under 'Latest Conditions' on the left side of the station's online account, which usually appears within 30 minutes of hitting reset.

**IMPORTANT 2): once valid data is seen under 'Latest Conditions', check the transmission interval listed below that data. During winter months, we recommend setting the transmission interval to at least every 6 hours (360 minutes). This interval can be set from the drop-down list on the 'Control Panel' page.

Note: If data is not available online within ninety minutes, see the **Troubleshooting** section.

Start/restart logging command

IMPORTANT: Commands sent from DataGarrison.com will not be received or executed by the remote station until the station's next transmission interval or after its reset button is physically pressed.

This command must be sent to a station within 24 hours before it is tested or installed. It can also be sent while a station is already running to change its logging interval. It will remain in a queue until the station syncs with the DataGarrison.com server after it is powered on, reset, or the transmission interval is reached.

After selecting 'start/restart' logging, the following input boxes will appear.

Start/restart weather station logging

Logging interval: 60   (**minutes**, from 2 to 1080)
Sampling interval: 0   (**minutes**, 0 or from 2 to 4)
Time zone: (GMT -5:00) Eastern Time (US & Canada), Bogota, Lima ▼
Daylight Savings: ☑ (**check only** if daylight savings is considered)
Sensor warm up: 3   (seconds**, maximum 240)

ModBus Sensors (Type: 0 integer, or 1 float)
Address 2   Command 3   Register 0   Length 2   Type 1   ✗
HighAlarm 0   LowAlarm 0
Address 2   Command 3   Register 2   Length 2   Type 1   ✗
HighAlarm 0   LowAlarm 0

Add ModBus Sensor

[Send]

There are four independent and user-defined time spans: *transmission interval*; *logging interval*; *sampling interval*; and *warm up time*. The *transmission* interval is set with its own command, and this is the interval at which the station will sync its data with its online account at DataGarrison.com. The *logging interval, sampling interval,* and *warm up time* are set with the 'start/restart logging' command.

The *logging* interval is the interval at which data points are recorded in the log

file. When the station receives its first (or a new) logging interval, it will begin logging data only after all sensor and station settings are transmitted to the server. Since this initial upload can sometimes take 20 minutes over a satellite connection, the first data point logged may be delayed. For example, if a start/restart command with a 60 minute logging interval was received by the station at 9:51 AM, the first data points will not be logged (and thus will not show up at DataGarrison.com) until 11:00 AM.

The *sampling* interval only applies to certain HOBO smart sensors, which have the ability to maintain a running average of sensor values within the sensor itself. Refer to your HOBO smart sensor documentation to see if a given sensor supports data sampling. Sensors that sample maintain a running average between logging intervals, which is refined at each sampling interval. The resultant average value is stored in the log file at the specified logging interval. A sampling interval of zero will turn off sampling for any capable sensor.

The sensor *warm up* time only applies to ModBus or analog sensors that are powered by the DataGarrison Station. The station powers these sensors for the specified amount of *warm up* time before it extracts values from them. The default *warm up* time of three seconds is safe for most configurations. Certain sensors may require a longer *warm up* time, which will be listed in the respective sensor's user's guide. Some SDI-12 sensors require *warm up* times, but those times are automatically elicited from SDI-12 sensors, as detailed in the SDI-12 protocol documentation.

The two *ModBus* sensors listed were configured based on the *ModBus and SDI-12 Web-based Configuration* section. That section of this guide can be disregarded for stations that only have smart sensors attached, in which case no *ModBus* sensors will appear when selecting 'start/restart logging'.

Hardware Installation

Site selection

The DataGarrison Station must be installed in an area with adequate views to the horizon. Mount it as high as possible—preferably above rooftops and forest canopies. The site should also get adequate sunlight year-round. For extended periods with limited or no sunlight, we recommend contacting our Canadian Distributor, Hoskin Scientific. Hoskin provides our stations with larger solar panels and batteries, which allows them to operate in the Arctic and in Antarctica.

Mounting

Mount the station with the two clamps provided onto to a pole between 1.5 and 2.0 inches in diameter, facing the direction to where the sun will be at noon (southward in the northern hemisphere and northward everywhere else).
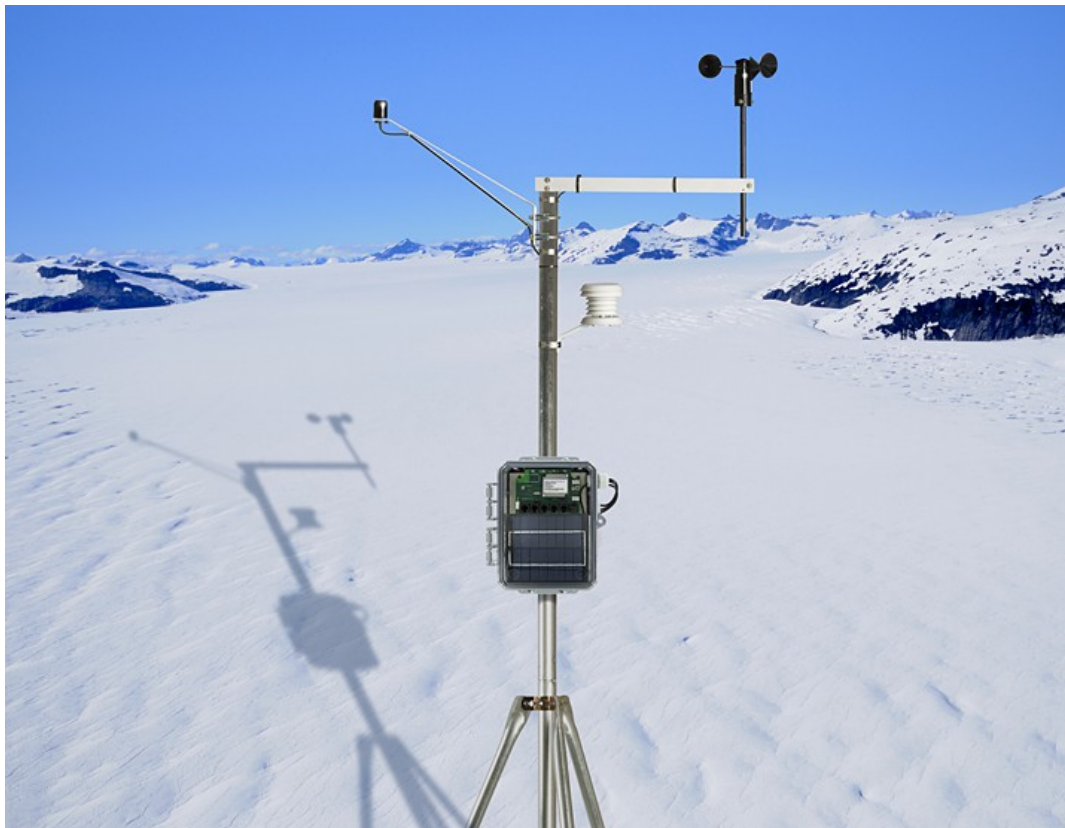
Hardware Operation

To power up the transceiver, plug the battery connector into its mating connector on the circuit board, then press the *Reset* button. The *Power* light should flicker and then, after a boot up process, come on solid. The *Receive* and *In Range* lights should also come on solid, indicating an online communication session. After two short communication sessions, only the *Power* light will flash every two seconds. This signifies the typical low-power state between transmissions.

Operational indicators
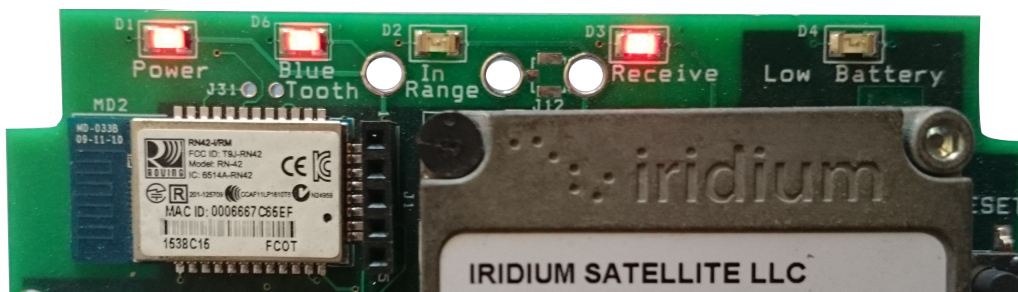
These lights are on the top of the circuit board and can be seen without opening the enclosure.

- *Power*: flashes when the transceiver is operating properly. Remains solid for several seconds at a time when the unit is communicating with the DataGarrison.com server.
- *Bluetooth*: solid when the station is paired or communicating with another Bluetooth device.
- *In Range*: remains solid when connected to a satellite or cell tower, indicating proper communications with the DataGarrison.com server.
- *Receive*: remains solid when the satellite or cellular modem is powered.
- *Low Battery*: solid or flashes continuously when the battery is low. Flickers occasionally when communicating with the Android App via Bluetooth.
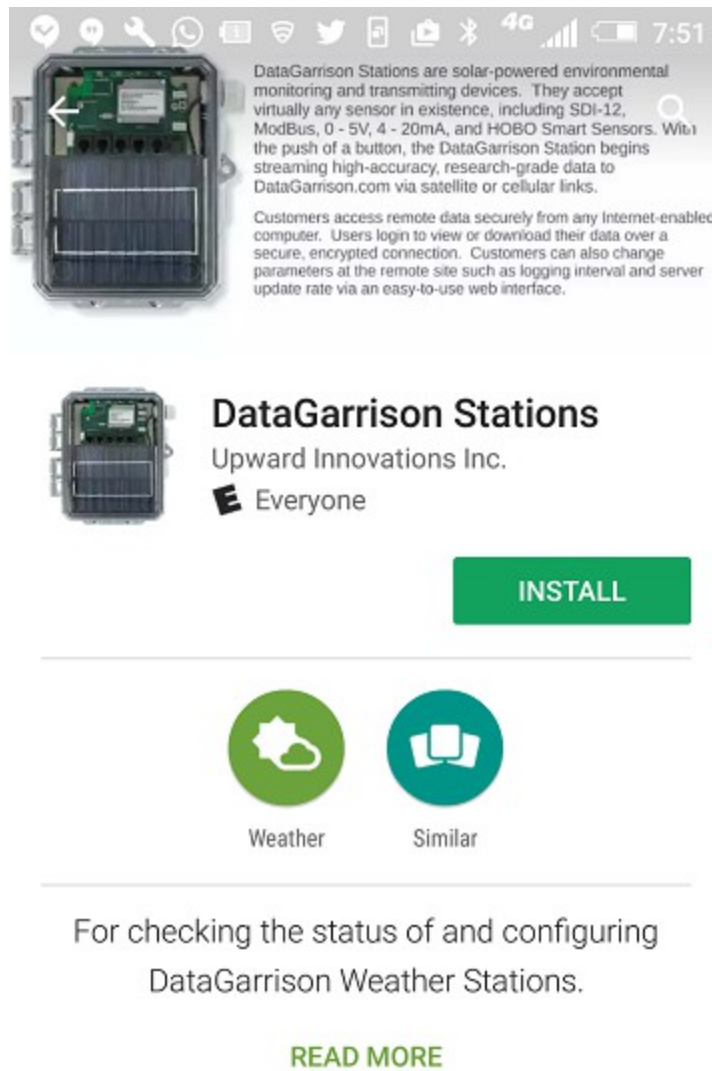
Network detection

When the DataGarrison Station is first powered on, it may take a few minutes before a satellite or cell tower is detected. Once detected, the *In Range* light will turn on. If the *In Range* light never comes on, the antenna's line of site to the horizon may be obstructed. If so, move the unit to another area and raise the station as high as possible and hit the reset button. If the *In Range* light remains off for a significant time after that, see the **Troubleshooting** section.

App Installation

An Android App named *DataGarrison Stations* is available at 'Google Play' to configure stations equipped with Bluetooth. Over a Bluetooth connection, the App can display sensor values and indicate the battery percentage, and change station settings.

Visit 'Google Play' on any Bluetooth-capable Android device to install *DataGarrison Stations*.

11

App Operation

IMPORTANT: First wait for the DataGarrison Station to settle into standby mode. This is when the 'Power' light flashes once every two seconds by itself. Attempts to communicate with the station at other times may conflict with a station's attempt to communicate with the DataGarrison.com server.

Paring a DataGarrison Station with an Android device

When the DataGarrison Station's 'Power' light is flashing every two seconds, pair your Android device with the station if not paired already. If a password is requested, type in 1234. If the *Power* light does not flash after several minutes, consult the **Troubleshooting** section.

Once paired, open the *DataGarrison Stations* App, which should scan for and find the station. When found, click 'Stop Scanning' and select it.

Logging Interval	
Logging Interval (m)	Send

Transmission Interval	
Transmit Interval (m)	Send

000000

Wake	Start Logging
Refresh	Help
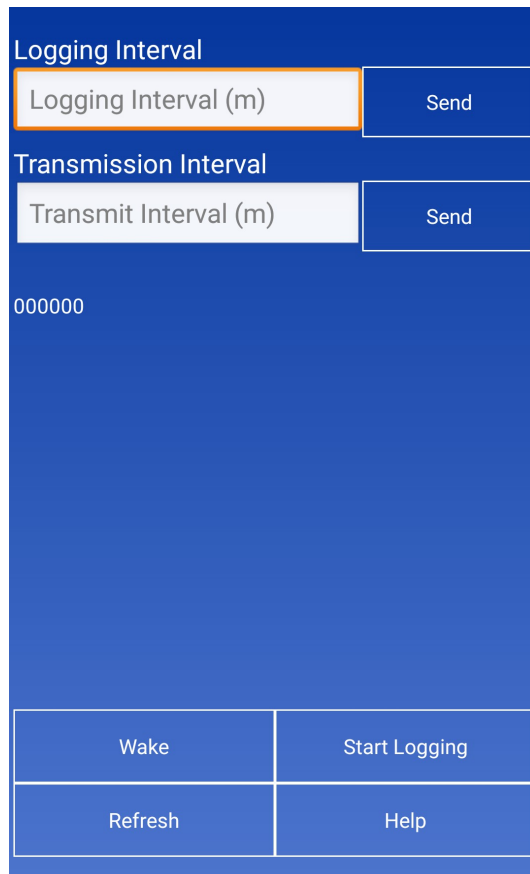
A blue screen should appear, with the '0' character being written every two seconds. If you do not see the '0' characters, restart the App. If you have trouble connecting, reboot the Android device and try again.

When you see the '0' characters, click on the 'Wake' button. After a few seconds, you should see a series of strange characters[1] in response. This means that you are successfully connected. After this, you can send any command to change station settings. The station will respond to most commands with a similar series of odd characters, indicating a successful settings change. You can verify settings changes by hitting the 'Refresh' button (see below).

Checking and configuring a station

Set Logging Interval

Only set this interval if you wish to start a new log file or are configuring your station for the first time.

Enter the appropriate logging interval in minutes, and then tap the corresponding 'Send' button. A series of odd characters in response indicates a successful change.

Set Transmission Interval

Enter the appropriate transmission interval in minutes, and then tap the corresponding 'Send' button. A series of odd characters in response indicates a successful change.

Start Logging

Tap the 'Start Logging' button to activate logging data at the specified interval. The station will not begin logging right away, as it requires time to upload an initial file containing sensor and station configuration information.[2]

---

1 These characters represent the expected binary command response string, which is not human-readable. Receiving this string almost always represents a successful exchange between the App and the DataGarrison Station. Click the 'Refresh' button to verify station settings.

2 When the station receives a start logging command, it will begin logging data only after all sensor and station settings are transmitted to the server. Since this initial upload can sometimes take 20 minutes over a satellite connection, the first data point logged may be delayed. For example, if a start logging command with a 60 minute logging interval was received by the station at 9:51 AM, the first data points may not be logged (and thus will not show up at DataGarrison.com) until 11:00 AM.

Status

Tap 'Status' to read sensor values and station settings. Sensor values are displayed first, followed by station information. If the 'Start Logging' button was pressed, a logging state of '2' will be displayed, indicating that the station will begin logging in the near future (usually within a time of the logging interval plus 20 minutes). A 'Logging State' of '1' means the station is currently logging. A 'Logging State' of '0' means the station is not logging and will not transmit data.

**IMPORTANT: set the transmission rate accordingly. During winter months, an update rate of once every 6 hours (360 minutes) is recommended.

Wake

Only tap 'Wake' if you see '0' characters being written every two seconds.

Exit App

When finished, exit the App by clicking the back arrow twice. This will allow the settings to take effect and online updates to resume.

ModBus and SDI-12 Hardware Configuration

ModBus

DataGarrison Stations communicate with MobBus sensors via three-wire serial or two-wire RS485 lines. The serial lines are accessed with a custom serial cable (part number CAB-001) and the RS485 lines via a terminal strip on the DataGarrison Station circuit board. Connect a device's RS485+ (A) line to the RS485+ input and its RS485- (B) line to the RS485- input. Also, be sure to connect the device's ground to the GND input. If the device requires power from the station, connect its power line to SW-V (switching voltage). If six volts is not adequate to power the ModBus device, your station likely requires a 12-volt regulator. Therefore when ordering, be sure to request that this regulator be pre-installed.

SDI-12

SDI-12 devices connect to the appropriate inputs on the terminal strip: GND, SDI12, and SW-V (switching voltage). If six volts is not adequate to power the device, your station will likely require a 12-volt regulator, so when ordering, be sure to request that this regulator be pre-installed.

ModBus and SDI-12 Web-based Configuration

Download and use as a template, the following example configuration spreadsheet: http://DataGarrison.com/users/ModBus-SDI-12-Example.xls

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Unused Column	Unused Column	ACTIVE SENSORS					HOBO, ModBus, and SDI-12 Sensor Configuration					
2			Unique ID	Unused	Modbus addr	Unused	Command	Registers	Multiplier	Offset	Units (optional)	Sensor Name (optional)	Format
3													
4													
5													
6			Active 1		255		H	na	1	0	°C	Outside Temperature	na
7			Active 2		255		H	na	1	0	%	Outside Humidity	na
8			Active 3		255		H	na	1	0	°C	Inside Temperature	na
9			Active 4		1		3	1-2	1	0	W/m^2	Solar Irradiance	Unsigned integer
10			Active 5		1		3	3-4	1	0	°C	Cell Temperature	Float
11					0		S	2	1	0	V	DC Voltage	Integer
12			Active 7		0		S	3	1	0	kW	AC Power Output	Integer
13													
14													

Configuration spreadsheet

The active portions of the spreadsheet begin on column C and row 6, and the format of this sheet must be strictly adhered to for the proper logging and transmission of attached sensors. You can insert and delete rows in this area as needed, but do not attempt to add information outside of this area.

You can add notes to unused cells in your spreadsheet file, but these notes

15

should be added below the required information and **never** in column C. Anything in a column C cell triggers DataGarrison.com to parse all data from the respective row, and if unexpected or invalid information exists there, a station's log file can be corrupted.

Every sensor being logged and transmitted must have a unique value in the 'Unique ID' column (C). If the respective cell is left blank for any sensor, that sensor will be ignored. Note that cell C11 is blank in the above example, which means the sensor listed in row 11 will be ignored.

If HOBO smart sensors (symbolized by an 'H' in the command column) are not used, delete the content in the respective cells in column C. If HOBO sensors are used, each one must be listed before any ModBus or SDI-12 sensors, and in the order in which they appear in the station, from left to right. The sensor that is connected to the left-most port on the DataGarrison Station must be listed first, and the sensor connected to the right-most port must be listed last. Then ModBus and SDI-12 sensors can follow.

While optional, the 'Units' and 'Sensor Name' columns (K and L) are useful for identifying the sensors and their units within your user account at DataGarrison.com. In these columns, avoid special characters and use * as the degrees symbol for temperature.

Some sensors require multipliers and/or offsets to convert a raw sensor value into the appropriate units. If so, enter these in columns I and J respectively, where the multiplier would be 'm' and the offset 'b' in the formula $y = m*[raw\_value] + b$. 'y' would become the converted value in the desired units, which will be logged and transmitted.

ModBus sensors

ModBus devices have a unique ModBus address, which must be listed in the 'ModBus Addr' column (E).

ModBus sensor values are stored in 'registers' or 'coils', and must be extracted using either the 3 or the 4 command respectively. In the above example file, two ModBus sensors are evident by '3' commands appearing in cells G9 and G10. Consult your sensors manual to determine which command is required. If you are unsure, use the '3' command as it is the most commonly used command.

The registers 1-2 are listed in H9, which means that those two 16-bit registers (totaling 32 bits) are required for that sensor value. Register 3 listed in H10 means that this other ModBus value is 16-bits wide, and no other register is required. Consult with the manufacturer's ModBus Register Map to determine

16

which registers are required.

The Format column (M) must be filled in correctly for all ModBus sensors, or they will not be displayed or stored properly. Valid values for ModBus sensors include float, integer, and unsigned integer.

SDI-12 sensors

SDI-12 devices have a unique address, which must be listed in the 'ModBus Addr' column (E).

SDI-12 sensors values are extracted from delimited string(s), and the custom command 'S' tells the DataGarrison Station that the given spreadsheet row represents an SDI-12 sensor. See cells G11 and G12.

SDI-12 devices do not require registers, so the register column represents a sensor's sequence in the delimited string(s). If the sensor required is the second value listed in that string, then a value of '2' should be in the register column. H11 and H12 list 2 and 3 respectively, meaning that these rows represent the second and third sensor listed in the SDI-12 return string(s).

The Format column (M) must be filled in correctly for all SDI-12 sensors with *only* the following value: integer.

Upload and activate the spreadsheet

Once properly formatted, upload your spreadsheet to the DataGarrison Station's online account by visiting its 'Preferences' page. Scroll down and click on *Upload ModBus Configuration File*, browse to the file on your computer and then click *Upload.* Then click on the following link: <u>Click here to import ModBus and sensor information from the file into the database.</u>

Values from your spreadsheet will be displayed across the web browser, signifying successful insertions into your account's database, and you should click the 'Back' button a few times, then click on the 'Control Panel'. At this point, you may notice a change in the sensor names on the left side of the page, consistent with your spreadsheet, but these settings have not yet reached your remote device. To send them to your device for activation, select 'start/restart logging' from the drop down list on the 'Control Panel' page.

Enter the appropriate intervals and time zone, then click 'Send'. Your station will then receive the settings the next time it transmits a data or status message. If you are near your station, you can hit the 'reset' button to force a status transmission. Sensor information should then be available online within about

twenty minutes and sensor data should arrive within a logging interval afterwards.

Firmware Upgrades

Over the air

All new DataGarrison Stations can be upgraded remotely by sending the firmware command from the drop-down list on the station's 'Control Panel' page at DataGarrison.com. If this command is not available, your station is not likely able to perform over the air upgrades. That capability was added at the same time as the unrelated Bluetooth-capability. So if your station does not have a postage-stamp sized Bluetooth module installed directly beneath the *Power* and *Bluetooth* lights inside the station enclosure, your station likely cannot perform over the air firmware upgrades. However, by following the instructions below and upgrading your station's firmware locally, you will install the new over-the-air feature.

WARNING: Upgrading firmware over the air uses up a significant portion of your service plan and may cost as much as $200.00 for satellite upgrades. Therefore we do not recommend upgrading firmware over the air unless some new functionality in the new version of firmware is absolutely necessary.

Local upgrades

To upgrade the firmware locally, you need a laptop PC, a Microchip ICD3 firmware loader from Mouser.com, as well as firmware interface cable and a new firmware file from Upward Innovations Inc. The following instructions assume that you have this hardware and the firmware file.

Installing ICD 3 device and its driver

1) Install the MPLAB IDE program on the CD that came with your ICD3 loader, install IDE version 8.90 from the following link (valid as of November 2016): http://www.microchip.com/development-tools/downloads-archive
2) Plug the ICD3 device into the PC and follow the instructions.
 --If the ICD3 device was not recognized, go into Device Manager and look for a recently found device, and right-click on it and select 'update driver'
 --Then update the driver manually by locating its folder here: C:/Program Files/MicroChip/MPLab IDE/ICD3/Drivers
 --And finally, click update/install.
3) Connect the custom interface cable from Upward Innovations Inc. into its

18

mating connector on the ICD3.

Loading firmware locally

1) Open the MPLab application
2) Select Program - Settings, and make sure 'Preserve EEPROM' box is checked. Then click OK.
3) Select FILE : Import
 -Navigate to and open the firmware file received from Upward Innovations Inc.
4) Select Programmer : Select Programmer
 -Then select ICD3
 -Click 'OK' on any messages that may pop up.
5) Select Configure : Select Device
 -Select PIC18F8722.
6) Power the target device (the DataGarrison Station) with its battery.
7) Connect the custom cable between the ICD3 device and the 5-pin programming connector on the DataGarrison Station circuit board, which is below the *In Range* light.
8) Click 'OK' on any messages that pop up.
9) You should see 'Target Detected' message in 'Output' window
 -If not, go back to step 6 and remove and reverse the connector by 180 degrees, then re-insert. You should then see 'Target Detected'.
10) Select: Programmer - Program
11) After 'Programming' for about 25 seconds, you should see: "Verify Complete" in the Output window.
 -If so, the new firmware was loaded into the device successfully.

Once complete, your station will be able to perform over the air firmware upgrades regardless of when you purchased the station or if it missing a Bluetooth module.

Troubleshooting

Hardware trouble

The DataGarrison Station's circuit board *battery* connector should be connected to a power source from 6 to 16 volts which can deliver at least 1500 milliamps. If using the Upward Innovations rechargeable battery pack, its voltage must be greater than 6 volts for 6 volt systems and greater than 11.9 volts for 12 volt systems.

- *Power light not flashing*

After applying power and pressing the reset button, the *Power* light should flicker immediately before becoming solid during its normal boot sequence. If the *Power* light does not immediately flicker after the reset button is pressed, and the battery voltage is adequate (see above), contact Upward Innovations Inc. for support.

- *Bluetooth light not turning on*

When connected to the *DataGarrison Stations* App, this light will become solid. If this light does not turn on during an otherwise proper Bluetooth connection, it can be ignored. If having trouble connecting to station with the Bluetooth App however, make sure that either 1) a web-based Bluetooth command was received by the station within the last 48 hours; or 2) the black 'reset' button was pressed on the station recently. If either is true, hit the Station's reset button, reboot the Android device, and once the station's 'Power' light begins flashing every two seconds on its own, try connecting again via the Android App.

- *In Range light not turning on*

If the *Power* light is not flashing or on, see the above 'Power light not flashing' section. The *In Range* light will only turn on after the *Receive* light turns on. If the *Receive* light is not on or flashing, see below. If the *In Range* light does not come on within a few minutes of the *Receive* light coming on, try moving the station to another location (see the **Site Selection** section).

- *Receive light not on or flashing*

If the *Power* light is not flashing or on, see the above 'Power light not flashing' section. The *Receive* light will remain off between transmissions and on when searching for connected to a network. To test the *Receive* light in any mode, hit the 'reset' button on the station. The *Receive* light should turn on within a few minutes.

- ***Low Battery light***

This light should only flash when the battery drops below twenty-five percent of its capacity. If this light is flashing, the battery should be replaced or the DataGarrison Station should be moved to an area that receives several hours of direct sunlight each day. You can determine the exact battery percentage by using the DataGarrison Station Android App (see the **App Operation** section). If the battery is low and the DataGarrison Station has been receiving adequate direct sunlight (more than two hours of sunlight each day), you may have to bring the station to an area with a stronger signal (see the **Site Selection** section) and/or increase the transmission interval.

App trouble

Before running the Android App, be sure only the 'Power' light is flashing and no other lights are solid or flashing.

- ***DataGarrison Station not found or cannot be paired via Bluetooth***

Be sure your Android device has Bluetooth and it is turned on. Also, make sure you have a Bluetooth-enabled DataGarrison Station. If your station was purchased before 2017, it probably doesn't have Bluetooth. To check, look directly below the 'Power' light to see if the postage-stamp-sized Bluetooth module is there. Once you determine that both the DataGarrison Station and your Android device have Bluetooth, follow the steps in the **App Operation** section.

If you still have trouble, make sure that either 1) a web-based Bluetooth command was received by the station within the last 48 hours; or 2) the black 'reset' button was pressed on the station recently. If not, this explains the problem. Regardless, hit the Station's reset button, reboot the Android device, and once the station's 'Power' light begins flashing every two seconds on its own, try connecting again via the Android App.

If you still cannot communicate with the station with the Android App after following all the steps above, contact Upward Innovations Inc. for support.

Warranty and Returns

Upward Innovations Inc. contact information

Address
Upward Innovations Inc.
19 Research Rd.
East Falmouth, MA 02536

US: 877-943-4328
International: 1-774-392-0856
Hours of Operation: 8AM and 5PM Eastern Time
E-mail: info@datagarrison.com
Web site: https://DataGarrison.com/

Note**:** Returns must have an RMA # obtained from Upward Innovations Inc. listed on the box with the address (Attn. RMA #) as described in the **Returns** section below.

Warranty

Upward Innovations Inc. ("UI") warrants to the original end-user Purchaser for a period of one year from the date of original purchase that the product(s) purchased will be free from defect in material and workmanship. During the warranty period UI will, at its option, either repair or replace products that prove to be defective in material or workmanship. This warranty is void if the product has been damaged by the Purchaser because of improper maintenance, abuse, misuse, mishandling, misapplication, error or negligence of Purchaser, or if there has been an unauthorized alteration, attachment or modification.

THERE ARE NO WARRANTIES BEYOND THE EXPRESSED WARRANTY AS PROVIDED IN THIS DOCUMENT. IN NO EVENT SHALL UI BE LIABLE FOR LOSS OF PROFITS OR INDIRECT, CONSEQUENTIAL, INCIDENTAL, SPECIAL OR OTHER SIMILAR DAMAGES ARISING OUT OF ANY BREACH OF THIS CONTRACT OR OBLIGATIONS UNDER THIS CONTRACT, INCLUDING BREACH OF WARRANTY, NEGLIGENCE, STRICT LIABILITY, OR ANY OTHER LEGAL THEORY. LIMITATION OF LIABILITY. The Purchaser's sole remedy and the limit of UI's liability for any loss whatsoever shall not exceed the Purchaser's price of the product(s). The determination of suitability of products to the specific needs of the Purchaser is solely the Purchaser's responsibility.

THERE ARE NO WARRANTIES BEYOND THE EXPRESSED WARRANTY IN THIS DOCUMENT. EXCEPT AS SPECIFICALLY PROVIDED IN THIS DOCUMENT, THERE ARE NO OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTIBILITY OR FITNESS FOR A PARTICULAR PURPOSE. NO INFORMATION OR ADVICE GIVEN BY UI, ITS AGENTS OR EMPLOYEES SHALL CREATE A WARRANTY OR IN ANY WAY INCREASE THE SCOPE OF THE EXPRESSED WARRANTY OFFERED WITH THE SALE OF THIS PRODUCT.

INDEMNIFICATION. Products supplied by UI are not designed, intended, or authorized for use as components intended for surgical implant or ingestion into the body or other applications involving life-support, or for any application in which the failure of the UI-supplied product could

create or contribute to a situation where personal injury or death may occur. Products supplied by UI are not designed, intended, or authorized for use in or with any nuclear installation or activity. Products supplied by UI are not designed, intended, or authorized for use in any aeronautical or related application. Should any UI-supplied product or equipment be used in any application involving surgical implant or ingestion, life-support, or where failure of the product could lead to personal injury or death, or should any UI-supplied product or equipment be used in or with any nuclear installation or activity, or in or with any aeronautical or related application or activity, Purchaser will indemnify UI and hold UI harmless from any liability or damage whatsoever arising out of the use of the product and/or equipment in such manner.

LEGAL REMEDIES. This warranty gives you specific legal rights. You may also have other rights which vary by jurisdiction. The remedies provided herein are in lieu of all other remedies, express or implied.

Returns

Note: Please direct all warranty claims to the place of purchase.

Before returning a failed unit directly to Upward Innovations Inc., you must obtain a Return Merchandise Authorization (RMA) number from Upward Innovations Inc.. You must provide proof that you purchased the Upward Innovations Inc. product(s) directly from Upward Innovations Inc. (purchase order number or Upward Innovations Inc. invoice number). Upward Innovations Inc. will issue an RMA number that is valid for 30 days. You must ship the product(s), properly packaged against further damage, to Upward Innovations Inc. (at your expense) with the RMA number marked clearly on the outside of the package. Upward Innovations Inc. is not responsible for any package that is returned without a valid RMA number or for the loss of the package by any shipping company. Loggers must be clean before they are sent back to Upward Innovations Inc. or they may be returned to you.

Repair policy

Products that are returned after the warranty period or are damaged by the customer as specified in the warranty provisions can be returned to Upward Innovations Inc. with a valid RMA number for evaluation.

Appendix A
IRIDIUM Worldwide Coverage

The Iridium system is the only communications system providing true global communications coverage of every ocean, all land areas, and the Poles. The network blankets the Earth, enabling two-way communications for devices installed in remote areas.