davicom
Site Monitoring Systems by Comlab

AXON units	Version 1.0.2 **2023-11-30**
Quick Start Guide	MAN1035

Davicom, a division of Comlab Inc.
2272, Léon-Harmel, Québec, QC, Canada G1N 4L2

www.davicom.com

Warranty

Comlab Telecommunications Inc. (Comlab) warrants all its products to be free from any defect in manufacture for a period of two years after delivery to the original purchaser. All warranty returns must be authorized by a Comlab representative.

The limitation of liability under this warranty shall be to repair or replace any part of the product which proves to be defective after inspection by Comlab. This warranty shall not apply to any Comlab product that has been disassembled, modified, physically or electrically damaged, inappropriately installed, or any product that has been subjected to conditions exceeding the applicable specifications or ratings.

This warranty is the full extent of obligation and liability assumed by Comlab with respect to its products. Comlab neither makes nor authorizes any person or company to make any other guarantee or warranty concerning its products.

Disclaimer

Comlab assumes no liability for any direct, indirect or consequential injury, loss, economic loss, damage, fines or penalties incurred through the use, or inability to use Comlab products.
Comlab products are not intended for use in medical, life-saving, life-sustaining or critical applications. Comlab customers using or selling Comlab products for use in such applications do so at their own risk and agree to fully indemnify Comlab for any damages resulting from such improper use or sale.

Comlab reserves the right to make design changes to its products without incurring any obligation to make the same changes to previously sold units.

Safety information

The Davicom unit should be installed by qualified technical personnel only. Installation of this device by an unqualified person could result in hazardous conditions to the installer or other personnel, and/or damage to the unit or other equipment. Ensure that proper safety precautions have been taken before installing this unit and any associated equipment.

The Davicom unit is designed to meet standard safety requirements, and it is extremely important that it not be modified in any way. Modification of this equipment will void the warranty and could pose a hazard to the user of this equipment or to maintenance personnel.

Service of the Davicom should be performed by qualified technical personnel who are familiar with the unit. Note that the Davicom unit is designed for indoor use in a dry location. Installation and operation in other locations could be hazardous.

Depending on your installation, the Davicom unit may contain HIGH VOLTAGES. Exercise caution when working in and around the unit if it is connected to your site wiring. To ensure proper lightning and power surge protection, make sure that the grounding terminal on the rear of the Davicom units is securely connected to the ground wiring at the equipment site.

Regulatory Compliance

FCC (USA)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference
(2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by Comlab may void the user's authority, as granted by the FCC, to operate this device and should not be made.

Industry Canada

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

EC Declaration of Conformity

In accordance with EN ISO 17050:2010

We	Comlab Telecommunications Inc
of	2272 Leon-Harmel St Quebec, Quebec, Canada, G1N 4L2

declare that:

Equipment	Davicom, DV Telemetry System
Type	AXON-8A, AXON-8D and AXON-5R

in accordance with the following Directive(s):

2014/35/EU	The Low Voltage Directive and its amending directives
2014/30/EU	The Electromagnetic Compatibility Directive and its amending directives
2014/53/EU	The Radio Equipment Directive and its amending directives

has been designed and manufactured to the following specifications:

EN 55032: 2015	*Electromagnetic compatibility of multimedia equipment. Emission requirements. Class B*
EN 55035: 2017	*Electromagnetic compatibility of multimedia equipment. Immunity requirements.*
EN 62368-1:2014	*Audio/Video, information and communication technology equipment. Safety requirements.*

I hereby declare that the equipment named above has been designed to comply with the relevant sections of the above referenced specifications. The unit complies with all applicable essential requirements of the Directives.

Signed by: .....

Name:	John Ahern
Position:	President
Done at	Quebec City, Canada
On	2023-07-28

CE

987/04D1880

Revisions

Version	Change	Date	By
0.1	Initial version	2023-07-01	JAH
1.0	Text & image corrections	2023-08-04	ATM
1.0.1	Minor text corrections	2023-08-09	ATM
1.0.2	Addition of default IP address in TOC	2023-11-30	JAH

TABLE OF CONTENTS

1. Introduction: What is an AXON?

AXON devices are intelligent products specifically designed for smaller remote telemetry applications. They provide users with autonomous devices that interface with various sensors and relays for alarm, monitoring & automation functionalities. Thanks to their SNMP agents, these products are the perfect remote telemetry companions to report to any SNMP Manager, including Davicom's Cortex Series. Moreover, their HTML5 web-based interfaces provide an easy-to-operate environment for visualization and configuration of the units.

There are 3 types of AXON modules:

- An Analog Input module with 8 bipolar differential inputs, the AXON-8A
- A Digital Input module with 8 opto-isolated status inputs, the AXON-8D
- A Relay Output module with 5 SPDT (Form C) relays, the AXON-5R

In addition to SNMP, AXON modules can be set to operate in MODBUS-TCP slave mode. This allows them to be used as direct I/O expansion for Davicom Cortex units, or in any other system requiring MODBUS slave I/O points.

One extremely useful feature of the AXON modules is their built-in network ping. Each device can be configured to ping a fixed IP address on the network. If the ping is not answered within a given time, then the AXON can be programmed to take action. This action can be to: initiate an alarm sequence, send a command to another AXON, log a reading, or (in the case of the 5R module) actually use one of its relays to power cycle a flakey network element such as a switch or router.

2. Connections and Switch Configurations

The AXON can run on any DC voltage between 5 and 30 Vdc. The current consumption depends on the actual supply voltage, but is typically 110 mA at 12 Vdc for the 8A & 8D and up to 190 mA for the 5R (with all relays energized). A 2.1mm locking DC Power barrel connector with negative shell is used.

Connect the power supply to your power mains and then connect the 2.1mm locking barrel connector to the AXON.

Once power is applied to the AXON, the unit takes about 5 to 10 seconds to boot-up (except on first start-up or following a factory reset), see paragraph 3.2. The unit is ready once the “ACTIVITY” heartbeat light starts blinking.

Depending on the type of AXON that you are using, you will need to properly set the DIP switches found on the side of the unit.

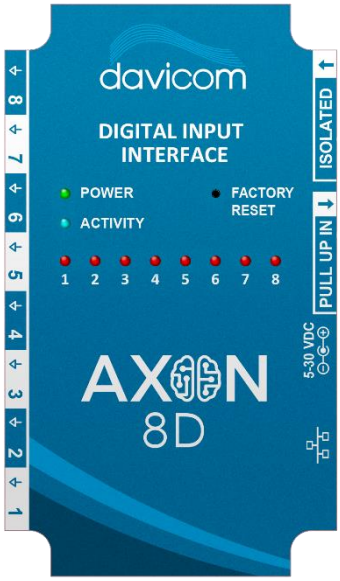
2.1. AXON-8A Connections and Switch Settings

The AXON-8A's flexible analog inputs can accept a wide range of signals. Sensors with various voltage outputs (±0.5, ±2.5, ±5, ±10, ±20 and -40 or +40 V) or current outputs (4-20mA), be they bipolar or differential, can all be connected to the AXON’s inputs. Single-ended measurements are also possible.

DIP switches are used to select whether the input (on an individual basis) operates in bipolar/differential mode (switch up) or in 4-20 mA mode (switch down).
The other set of switches is used to connect the (-) terminal of an individual input to ground if balanced/differential mode is not required (single-ended signals). If using 4-20 mA mode, ensure the corresponding (-) TO GND switch is up.

2.2. AXON-8D Connections and Switch Settings

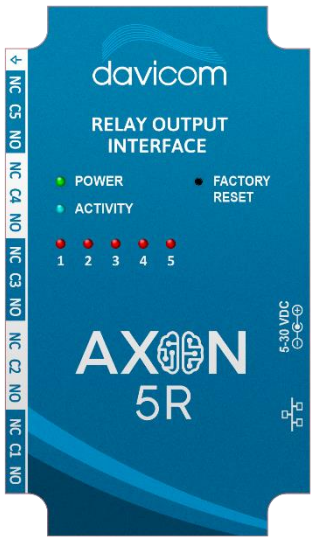
The AXON-8D's inputs are designed for reading logic levels or wet/dry relay contacts, with programmable active-high or active-low settings.



DIP switches are used to determine whether each input's return signal is connected to the unit's common ground, or not (ISOLATED). The other set of switches determines whether each individual input will have a pull-up resistor (10kΩ to internal +3.3V, diode protected against reverse or over-voltage).

2.3. AXON-5R Connections

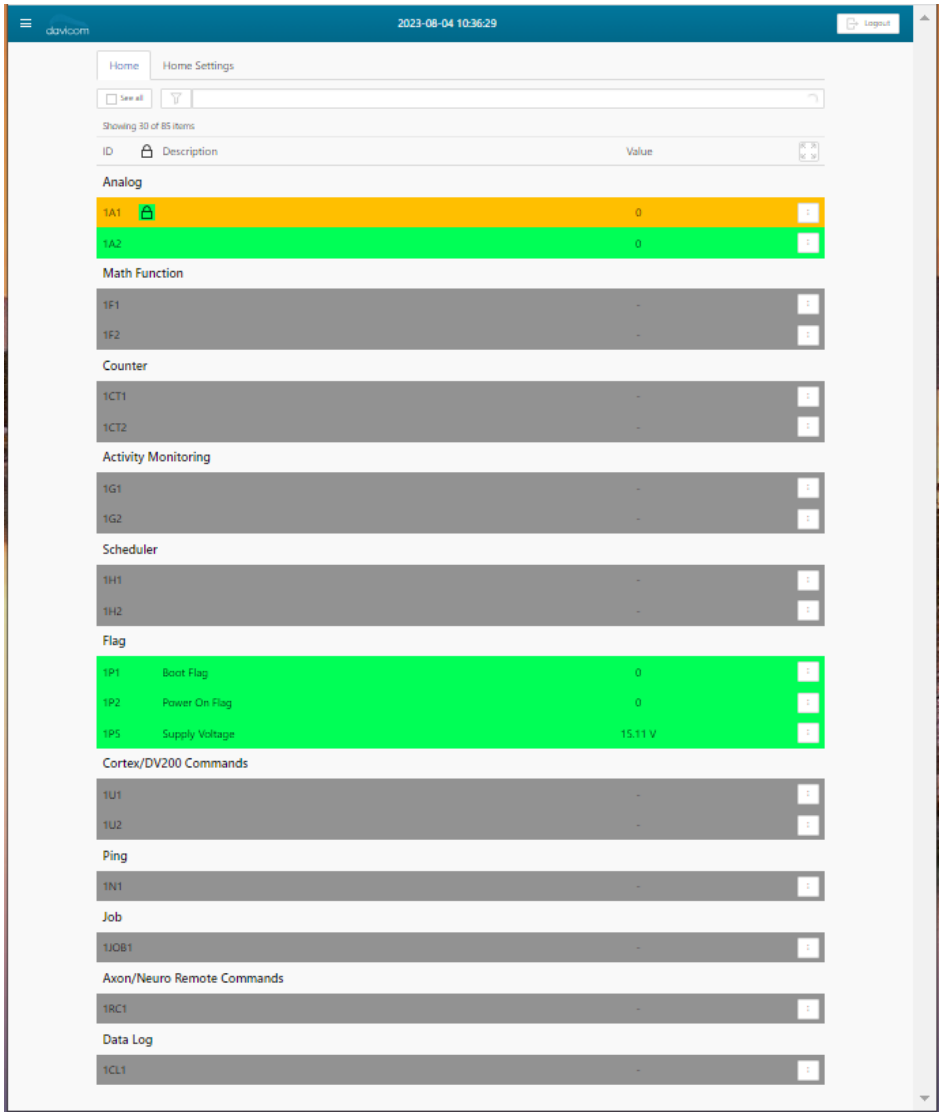
The AXON-5R's relay outputs can control other devices. From remotely switching off a faulty device to automatically power-cycling network elements, the AXON-5R can take smart decisions to keep your operations humming along. The AXON 5R does not have any configuration switches.



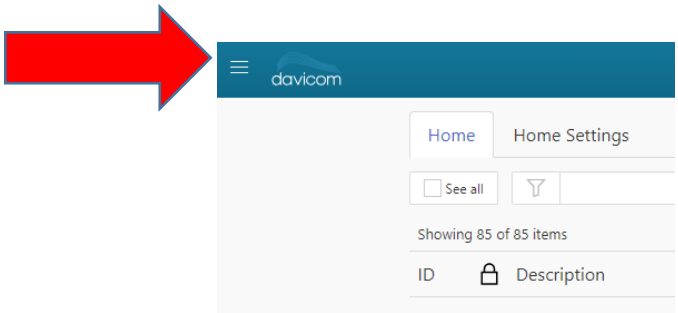
2.4. Menus and General Navigation Guidelines

2.4.1. Menus

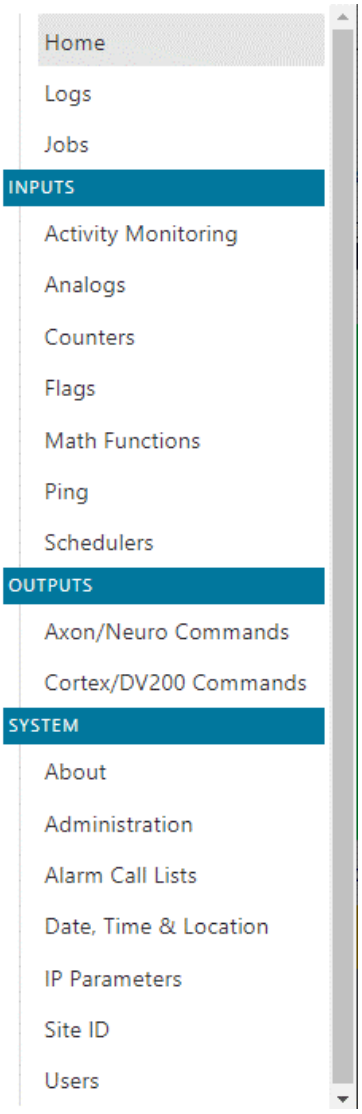
Home page—shows I/O readings and gives access to the configuration menu.



Clicking on the hamburger menu at the upper left will open up the main configuration drop-down menu.



Main Configuration drop-down menu:



General Menu structure:

HOME	*Returns to Home page*		
LOGS	SYSTEM LOG	*Displays complete System Log*	
	DATA LOG	*Displays individual Data Logs*	
	DATA LOG CONFIG	*Configuration of Data Log settings*	
	TRANSFER PARAMETERS	*Configuration of Log transfer parameters (email, frequency…)*	
JOBS	*Configuration of up to 4 JOBS (also known as State Machines)*		
INPUTS	ACTIVITY MONITORING	*Used to monitor and/or cumulate activity duration of up to 8 Inputs or IDs*	
	ANALOGS (AXON-8A only)	*Configures settings for 8 Analog Inputs (thresholds, conditions…)*	
	COUNTERS	*Configures settings for 8 counters (Up, Down, Reset, Initial Value…)*	
	DIGITALS (AXON-8D only)	*Configures settings for 8 Digital Inputs (active High, active Low…)*	
	FLAGS	*Configures alarm settings for 5 System Flags*	
	MATH FUNCTIONS	*Configuration of 8 Math functions (+,-,*, log, VSWR, Average…)*	
	PING	*Configuration of Network Ping (address, delay, period…)*	
	SCHEDULERS	*Configuration of 8 schedulers (hourly, daily, weekly …)*	
OUTPUTS	Axon/Neuro Commands	*Configuration of Commands between AXON units*	
	Cortex/DV200 Commands	*Configuration of Commands to CORTEX/DV200 units*	
	RELAYS (AXON-5R only)	*Configuration of Relay settings (mode, pulse width, colours…)*	
SYSTEM	ABOUT	*Displays unit serial number, firmware version…*	
	ADMINISTRATION	GENERAL	*Reboot, factory reset, firmware update…*
		CONFIGURATION TRANSFER	*Import or export (save) unit configuration*
		PRODUCTION	*Reserved for production & tests*
	ALARM CALL LISTS	*Configuration of alarm call delays, modes, mute times, targets …*	
	DATE, TIME & LOCATION	MANUAL	*Manual setting of date and time*
		NTP SYNC	*NTP Server address, sync time…*
		DAYLIGHT SAVING TIME	*Automatic DST start/end dates …*
		LOCATION	*Latitude & Longitude settings for Sunrise/Sunset calculations & map displays*
	IP PARAMETERS	GENERAL	*General IP settings*
		E-MAIL	*E-mail server, port & authentication settings*
		WEB	*Internal Web server settings*
		SNMP	*SNMP Agent settings (V1, V2c, V3 …)*
		AXON/NEURO COMMAND SERVER	*AXON/NEURO Command Server security & port settings*
		SSL CERTIFICATE	*SSL Certificate Encryption and settings*
	SITE ID	*Site ID & Name*	
	USERS	SUPERVISOR	*Set SUPERVISOR Role Username & Password Must be configured on initial log-in.*
		OPERATOR	*Set OPERATOR Role Username & Password*
		VIEWER	*Set VIEWER Role Username & Password.*

2.4.2. Button identification and functions

When in selected configuration windows, the following buttons will generally appear at the bottom of the window.

	Delete
	Refreshes the web page (note that any changes made to the page will be lost if not saved first)
	Apply Changes (Save)
	The “*” symbol on the Save button shows that changes have been made to the page/view and that a Save should be performed
	Return to Home page

For the next step, please connect a network (Ethernet) cable between the AXON and your computer. The AXON should have been previously powered-up as explained in Paragraph 2.

3. Initial Log-In and Network Setup

3.1. Default IP address (192.168.1.210)

The AXON's factory default IP address is 192.168.1.210.

For the next steps, you will need to temporarily set your computer's IP address within this range or create an Alias in your computer's Network settings. For example, you can use 192.168.1.211.

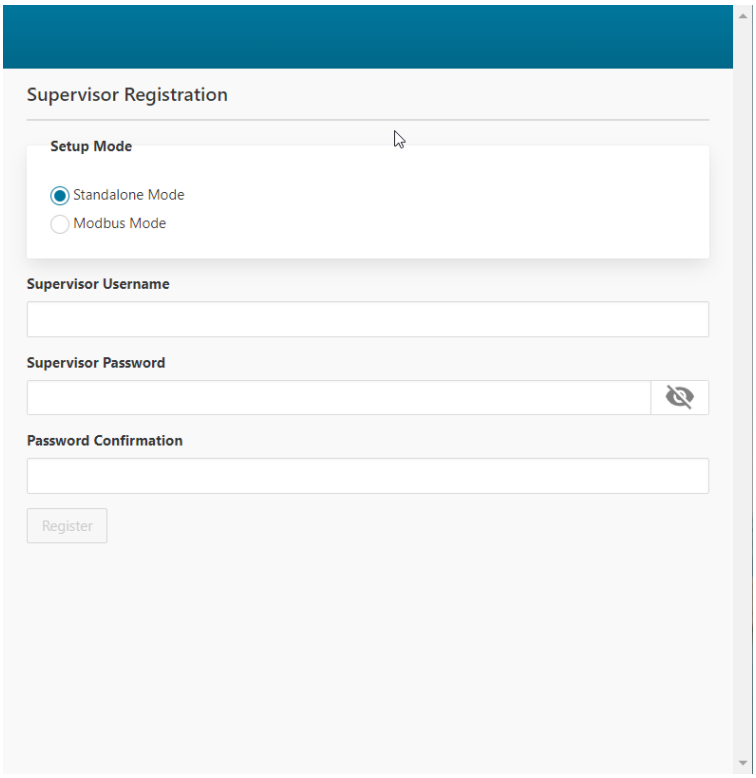
3.2. Mandatory initial login credential change

The state of California has enacted regulation SB-327 that dictates that all IoT devices that are sold or offered in the state of California must adhere to specific regulations in regards to passwords configured on the device. All passwords are required to either be unique or prompt for a password change before the user has access to it.

Upon first log-in, AXON units require that a Supervisor User enter their own password. Default, factory-set passwords are no longer allowed.

NOTE: This is also the point where you can select whether the AXON will be configured as a Standalone unit for Web & SNMP or if it will be used as a MODBUS slave unit.

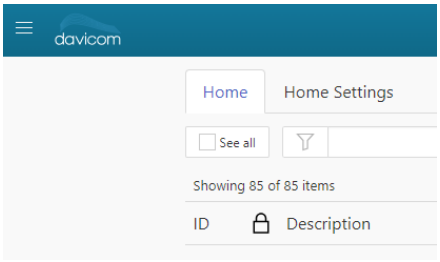
This mode can be changed later, from the Administration/General menu, without doing a factory reset.



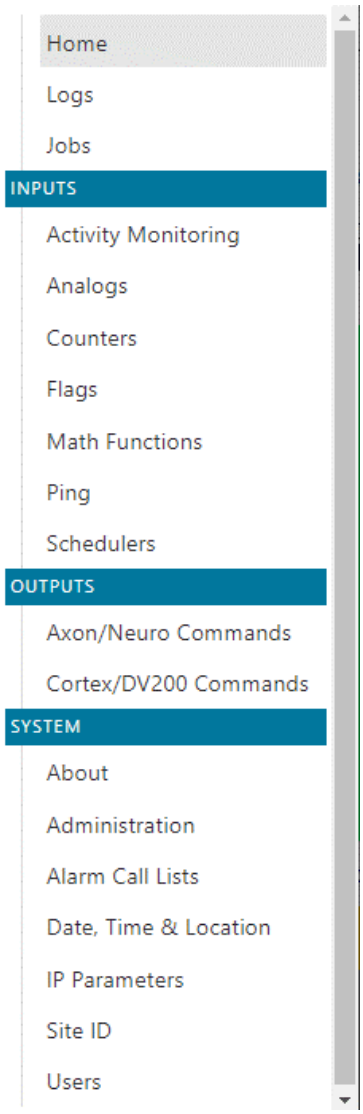
After this initial step, the first Login process can take up to 30 seconds while the system configures its setup and web page views.

3.3. Network setup

Once you have set the username and passwords, you will be able to access the setup menu. From the Home Page, click on the hamburger menu at the upper left.



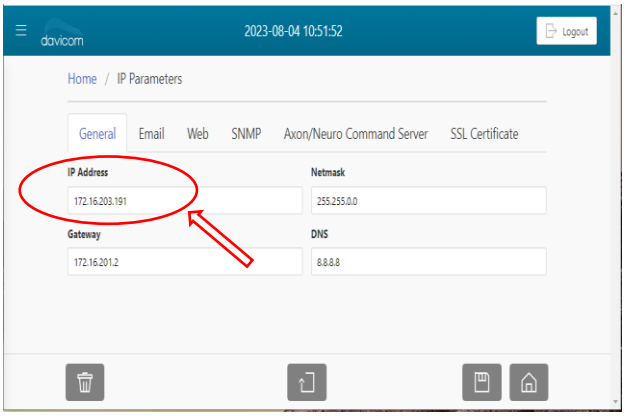
The following drop-down menu will appear.

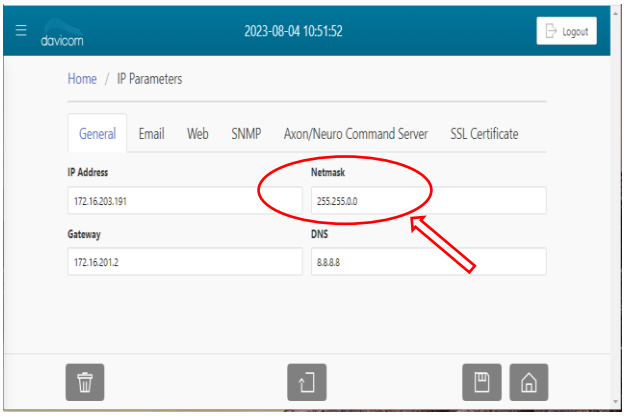


Select IP Parameters and then the General Tab

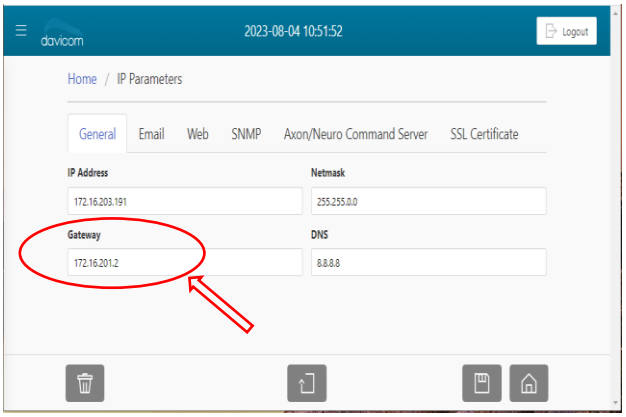
3.3.1. General IP settings

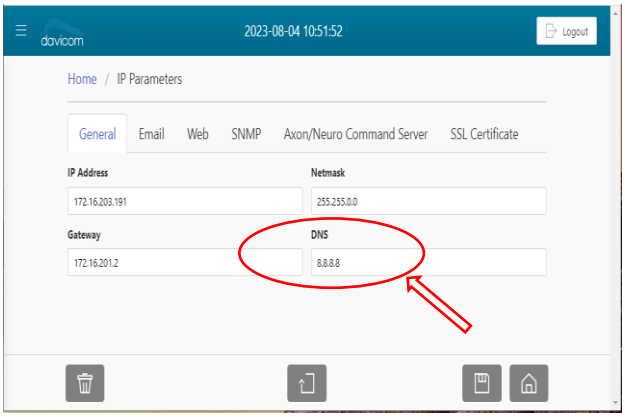
Set the IP Address, Netmask, Gateway and DNS for your unit.
NOTE: The numbers entered in the fields below are only used as examples. Do not enter the numbers as you see them below, you must set the information according to your own device and network setup.



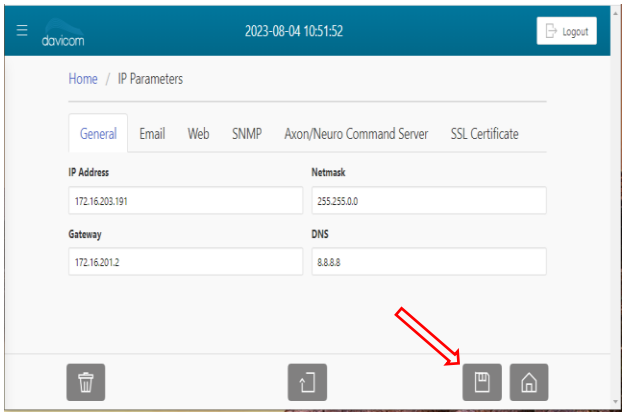


It is very important to set a gateway, otherwise, the unit may not communicate successfully with the outside network.





Save the IP settings.

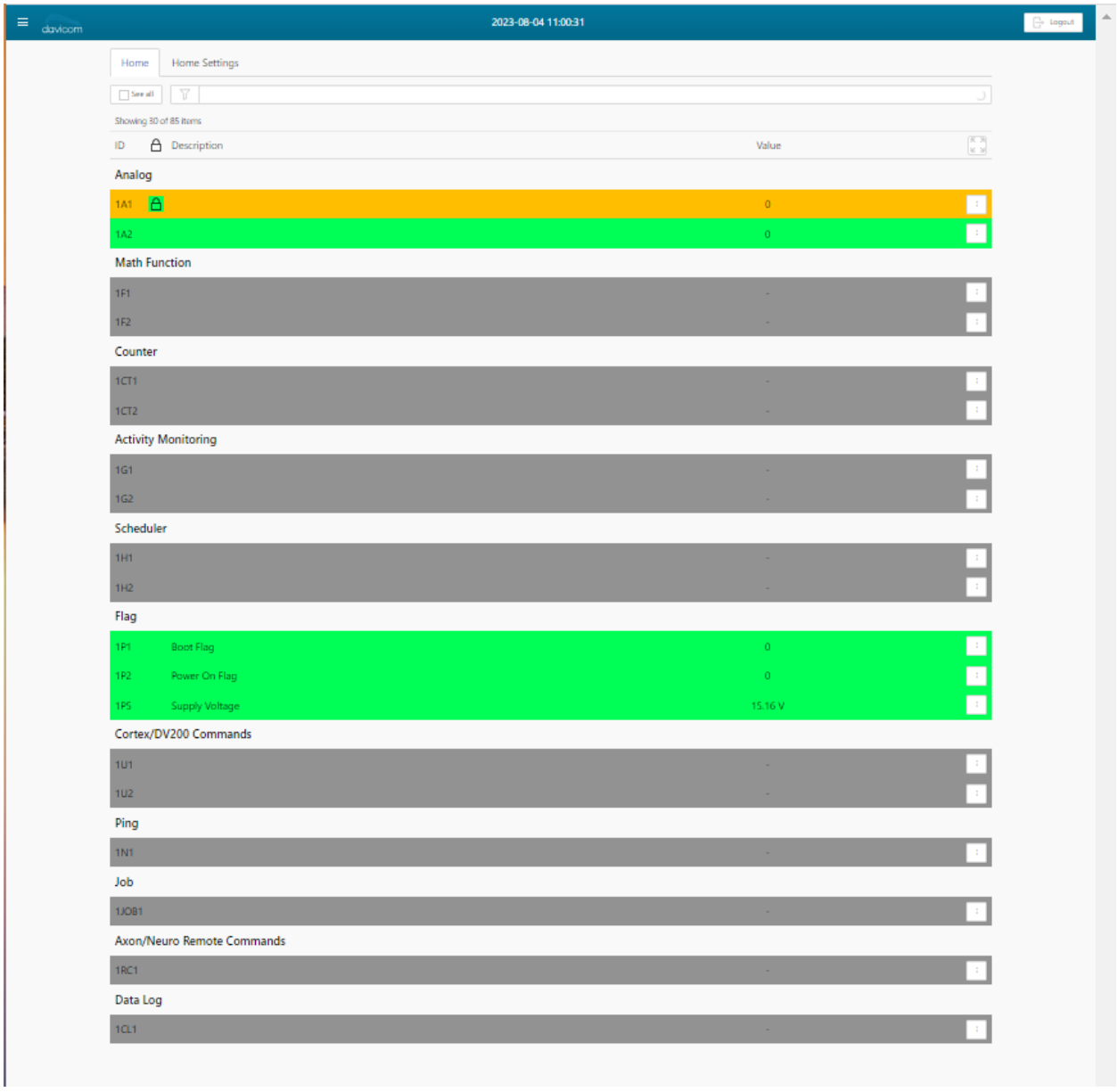


4. The AXON as a Standalone Unit

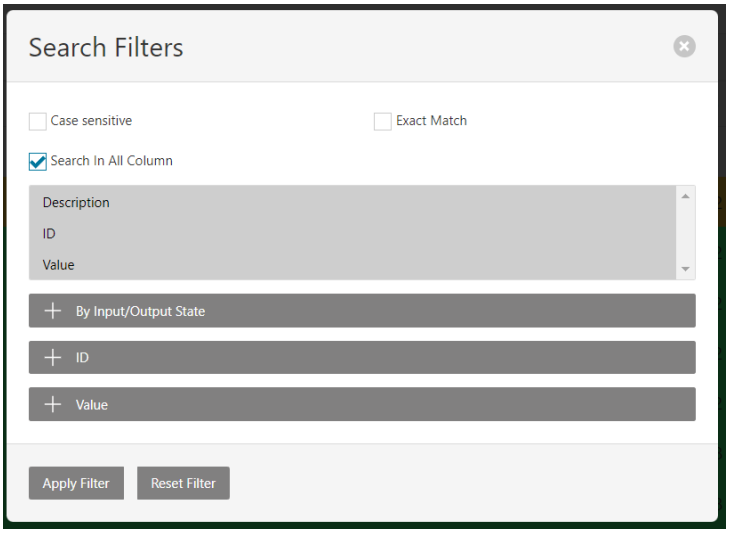
4.1. Home Page

The Home page shows the unit's I/O readings as well as the status of all the calculations and monitoring it performs on a continuous basis. The view presented below shows only a few elements from each section to help the image fit on this page. By default, absolutely every input and derived input is shown on the Home page. You can individually select, re-order, hide and filter them all.

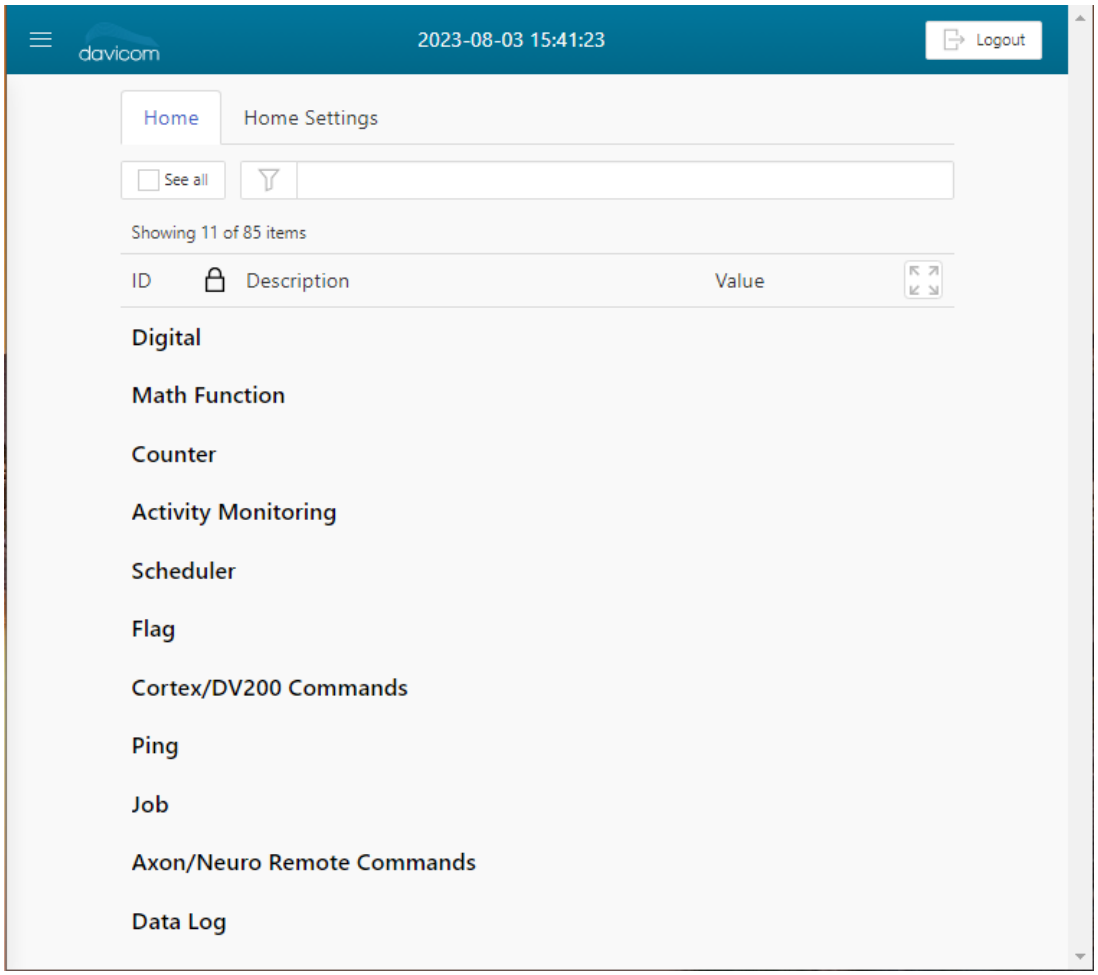
The ⋮ box at the very right of each element allows direct access to configure, and (depending on the type of input) to reset or control the element. You can also right-click on the element with the mouse



Filtered views are available through the Filter icon.



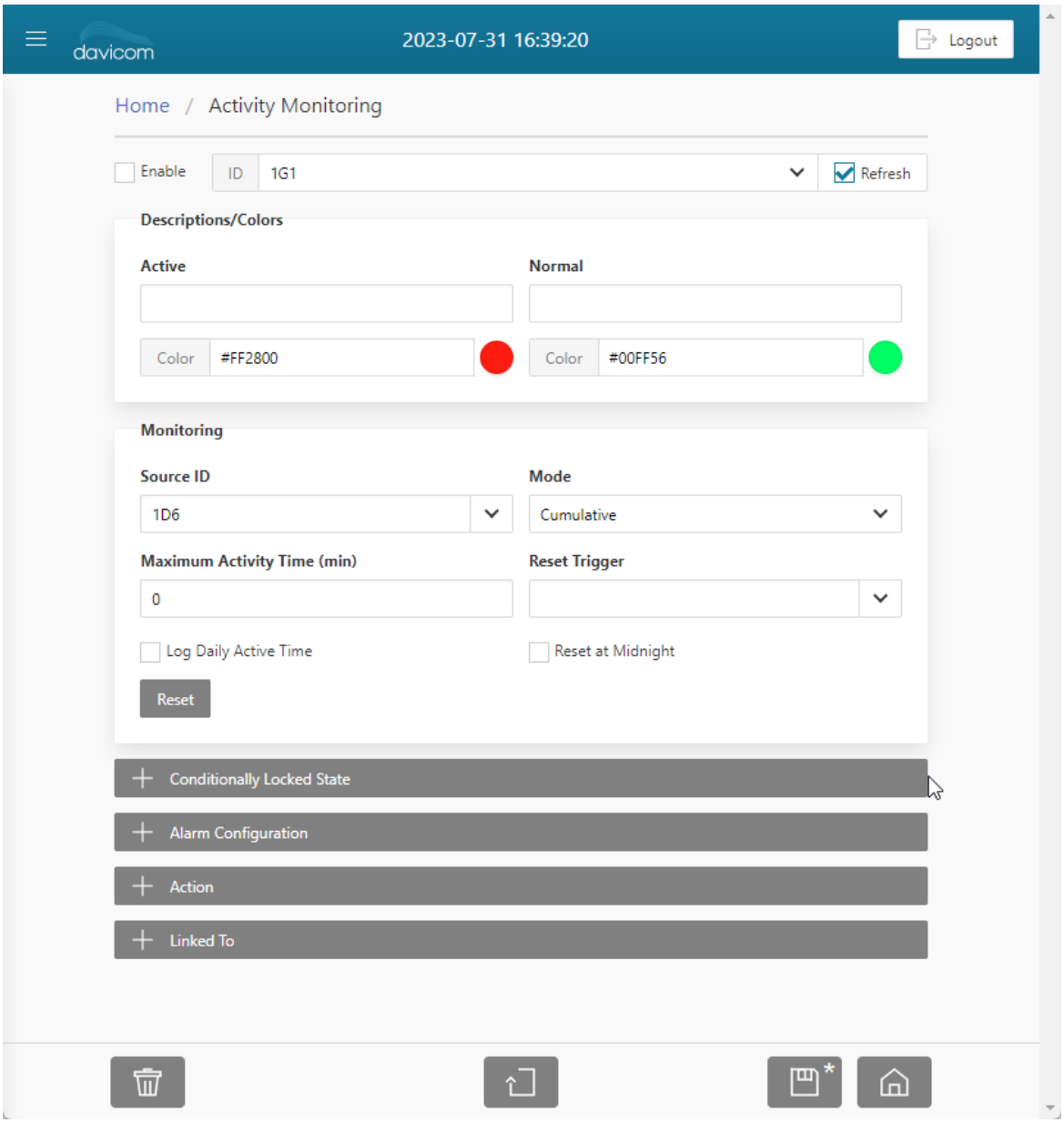
Each Home Page section is shown below (example shown is for AXON-8A). To see all of the points within each section, check the **See all** box at the upper left.



4.2. INPUTS

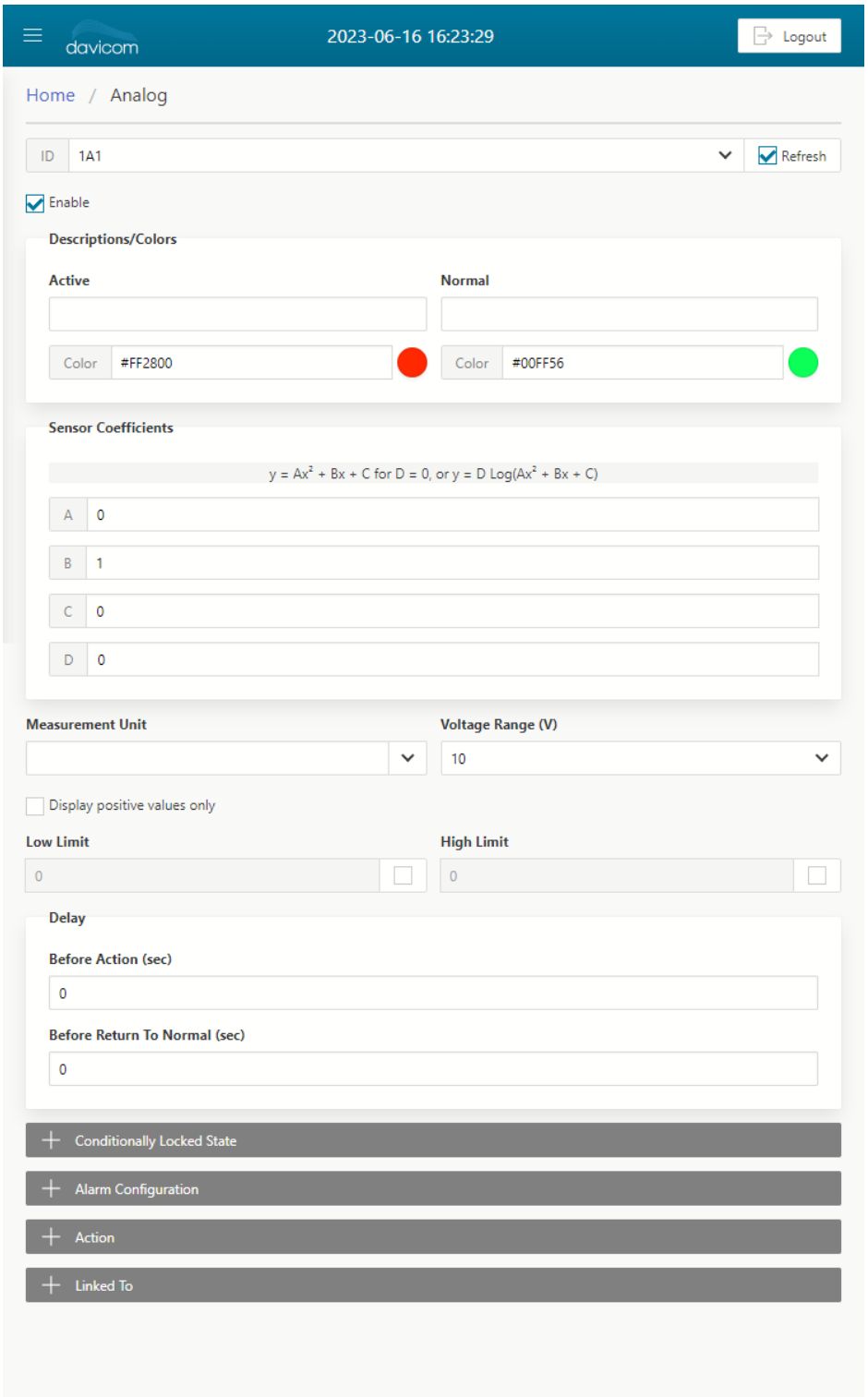
4.2.1. Activity Monitoring

Activity Monitoring is used to detect if any Input or ID is active for too long or also to run a cumulative total of the active time for any Input or ID. A good example would be to check if an air conditioner has been running continuously for too long. Another example would be to calculate the cumulative run-time of a generator in order to plan oil changes.



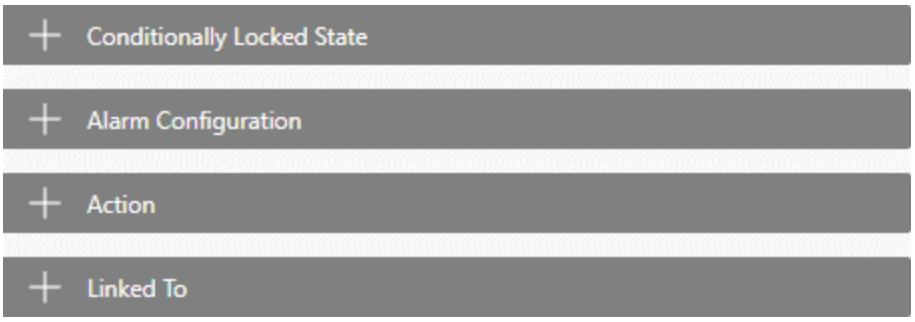
4.2.2. Configuring the Analog Inputs (AXON-8A only)

The following window allows complete configuration of the Analog Inputs:



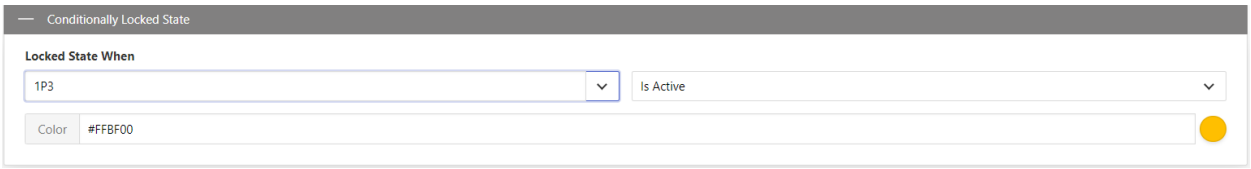
The A, B and C parameters allow sensor linearity, gain and offset to be fine-tuned, respectively. The corresponding equation is shown in the View window. The D parameter is used for logarithms as also shown in the equation.

The 4 sections at the bottom of the screen will be found in most Configuration windows of the AXON, and they have the same functionality in all these different Configuration screens.



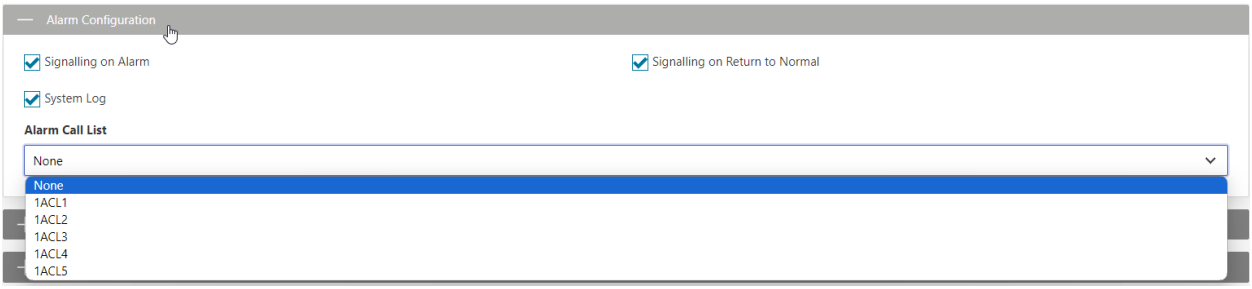
4.2.2.1. Conditionally Locked State

This screen is used to set which (if any) other input (or ID) in the AXON will lock the current input. In the example below, if the 1P3 Flag (Sunrise) is Active, then 1A1 will be locked (or muted).



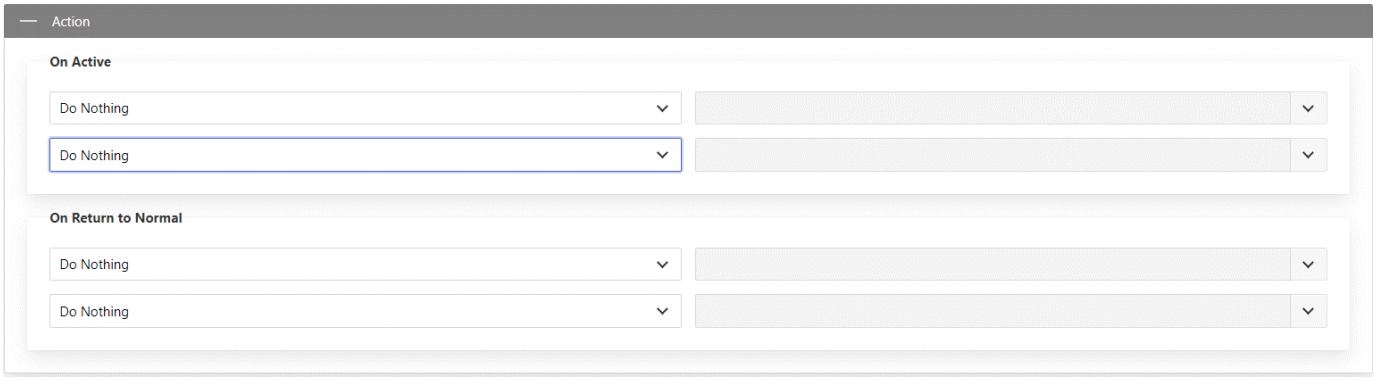
4.2.2.2. Alarm Configuration

This screen is used to configure which of the 5 Alarm Call Lists (ACL) will be called-up if the High or Low limits are exceeded.

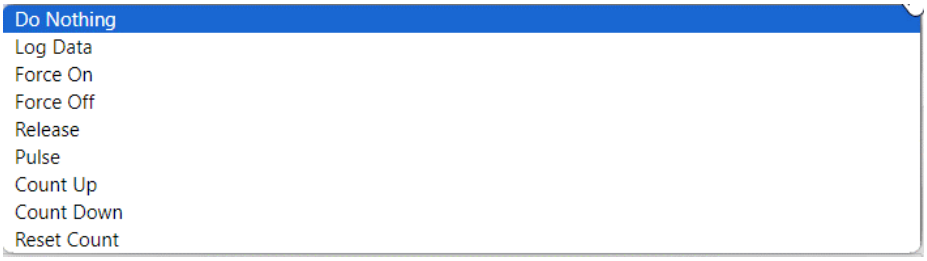


4.2.2.3. Action

This screen is used to configure special actions that can occur should the alarm thresholds be exceeded.



These actions can be:



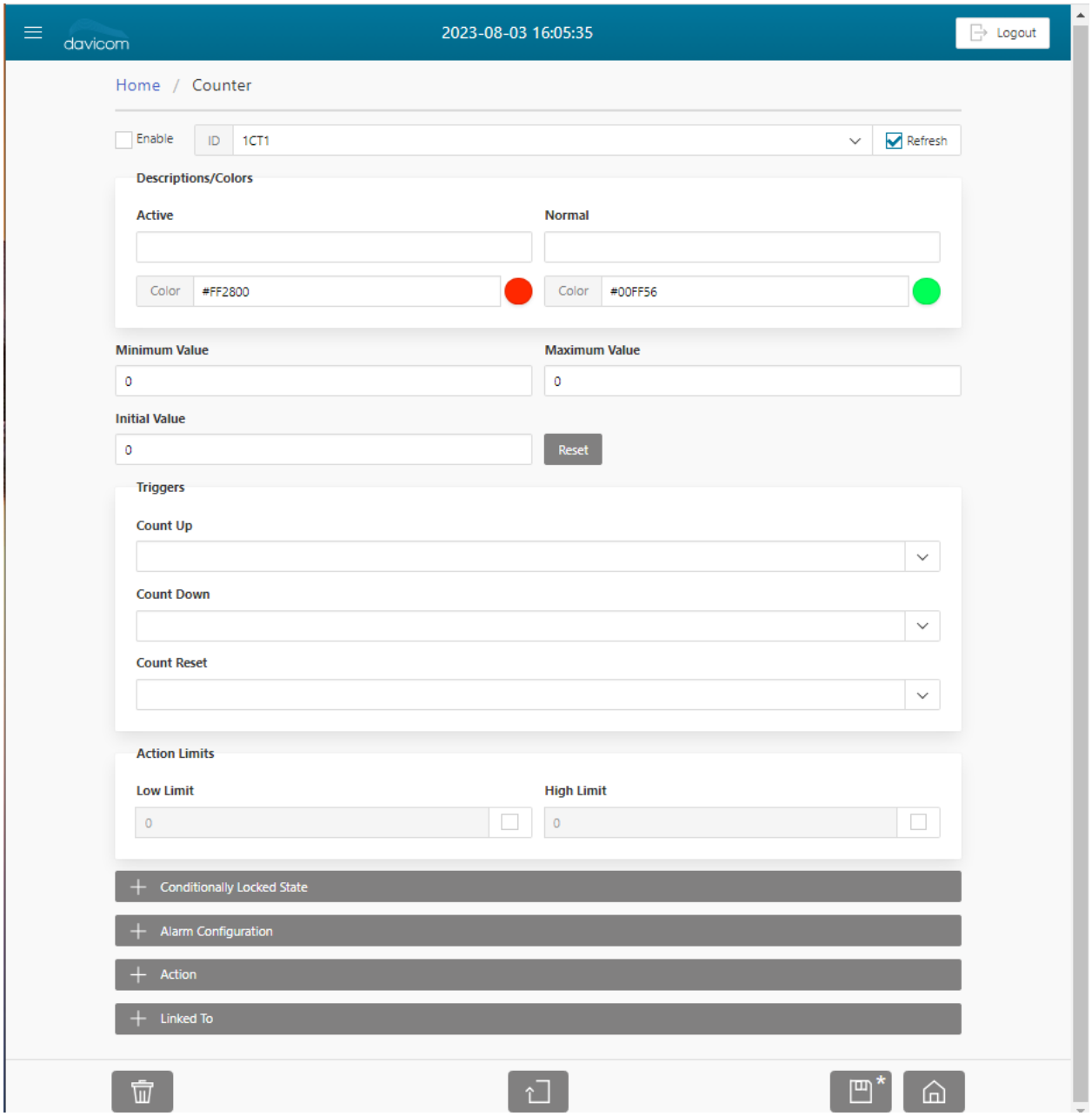
- To put data from any input into the Data Log (input is selectable from the drop-down on the right side)
- To Force a Relay ON (Relay is selectable from right-side drop-down)
- To Force a Relay OFF
- To Release a Relay (set it free)
- To Pulse a Relay
- To Count Up, Down or Reset one of the 8 Counters (Counter is selectable on right-side drop-down)

4.2.2.4. Linked To

The Linked To screen is for information only. It displays any other Input or ID that would have an influence on operation of the current input. In the example shown below, 1D4 is shown to be Locking Out 1A1 in the case where 1D4 is Active.

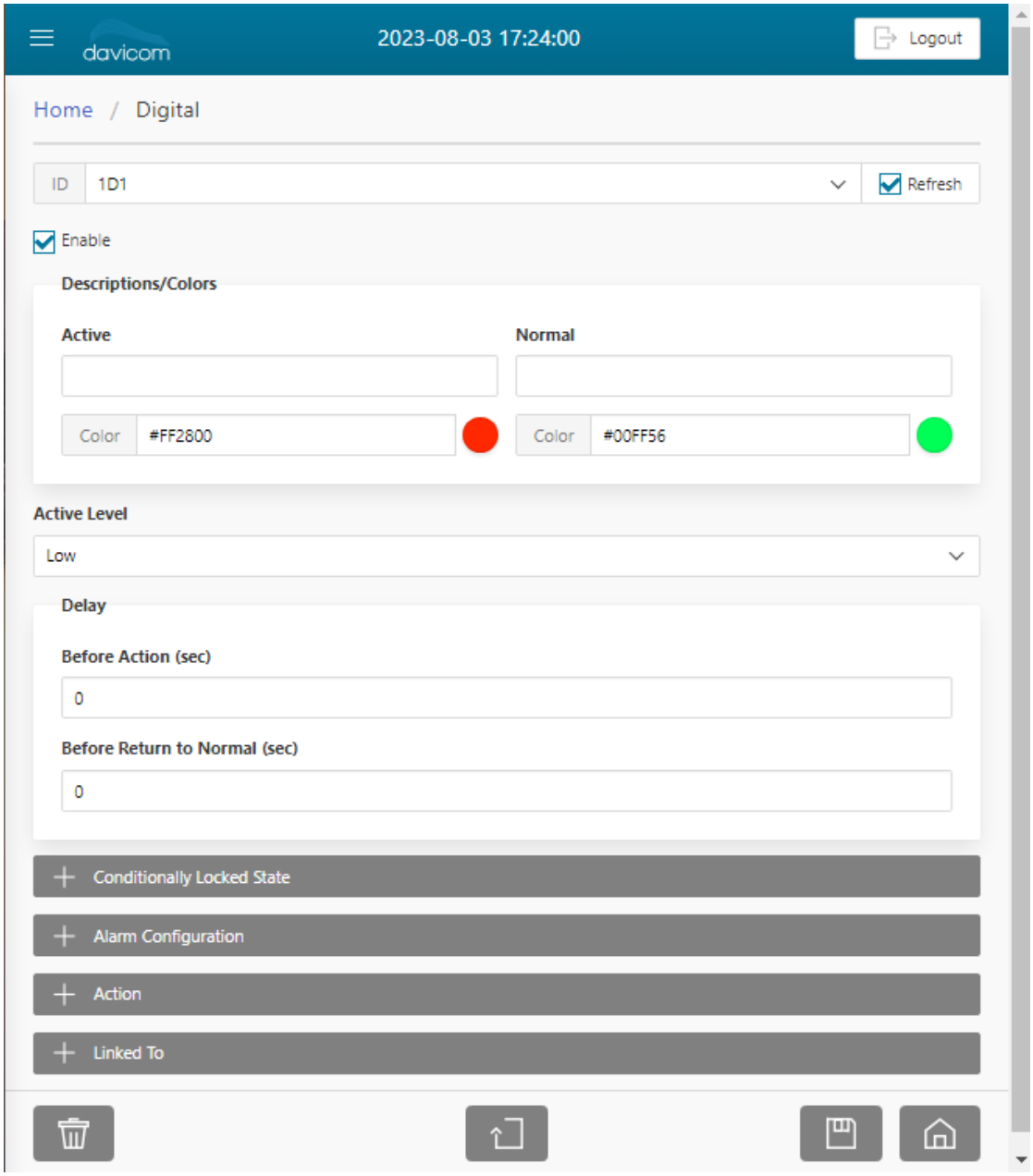
4.2.3. Counters

The Counters screen allows configuration of the event counters. These counters can count up or down, and be reset by external inputs or IDs. Thresholds are set in the Action Limits fields. The Minimum and Maximum values define settings past which the counter does not count up or down any more.



4.2.4. Configuring the Digital Inputs (AXON-8D only)

The following screen shows the configuration window for the Digital Inputs. The main setting is to determine whether the input will become active on a High logic level, or on a Low logic level.



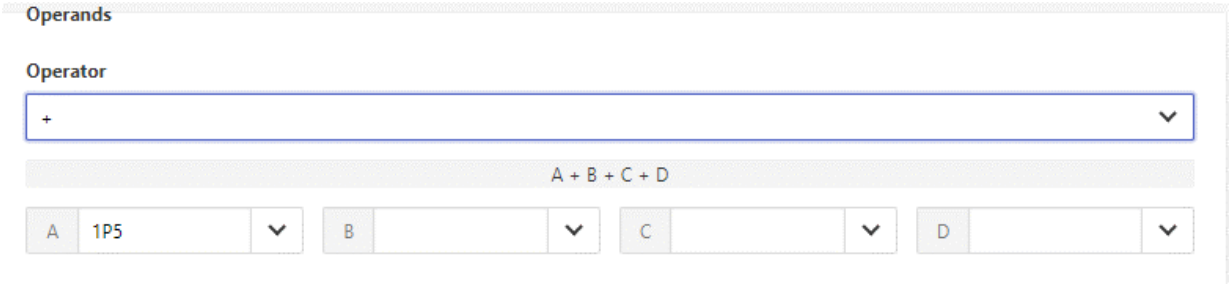
4.2.5. Flags

AXON units have 5 internal Flags that can be useful to detect (and take action on) various important events.
The 5 Flags are:

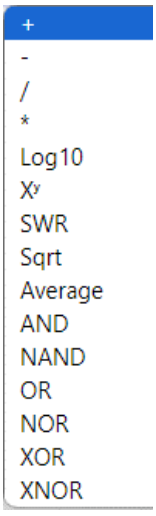
- **1P1-Boot Flag.** This flag becomes active whenever the AXON boots up. It is automatically logged in the System Log, but it can also be used to trigger logging or counting of other events.
- **1P2-Power On Flag.** This flag becomes active whenever an AXON starts-up from a power-down state. It can indicate a power failure at the site, and is different from the Boot Flag.
- **1P3-Sunrise Flag.** This flag becomes active whenever the sun has risen. It obviously requires that the site's Latitude and Longitude be entered into the appropriate fields in the Date, Time & Location screen.
- **1P4-Connection Flag.** This Flag becomes active after 3 failed login attempts to the AXON. This event is logged, and can also initiate an alarm to notify site operators about the failed attempts.
- **1P5-Supply Voltage Flag**. This flag becomes active when the AXON's power supply voltage falls below 4.75 Vdc or if it rises above 30.6 Vdc. For detection of other, higher voltages (for example if an AXON is being powered from a 24 Vdc Bus), a Math function can be used in conjunction with the 1P5 Value to set different measurement limits.

4.2.6. Math Functions

Math functions are used to perform different operations on various Inputs or IDs (the operands).



The drop-down list below shows the different operations that can be performed on the operands. Note that the number of operands will automatically adjust from 1 to 4, depending on the nature of the operation selected. The information window, located just above the operands, shows the actual equation with the relation of the different parameters.



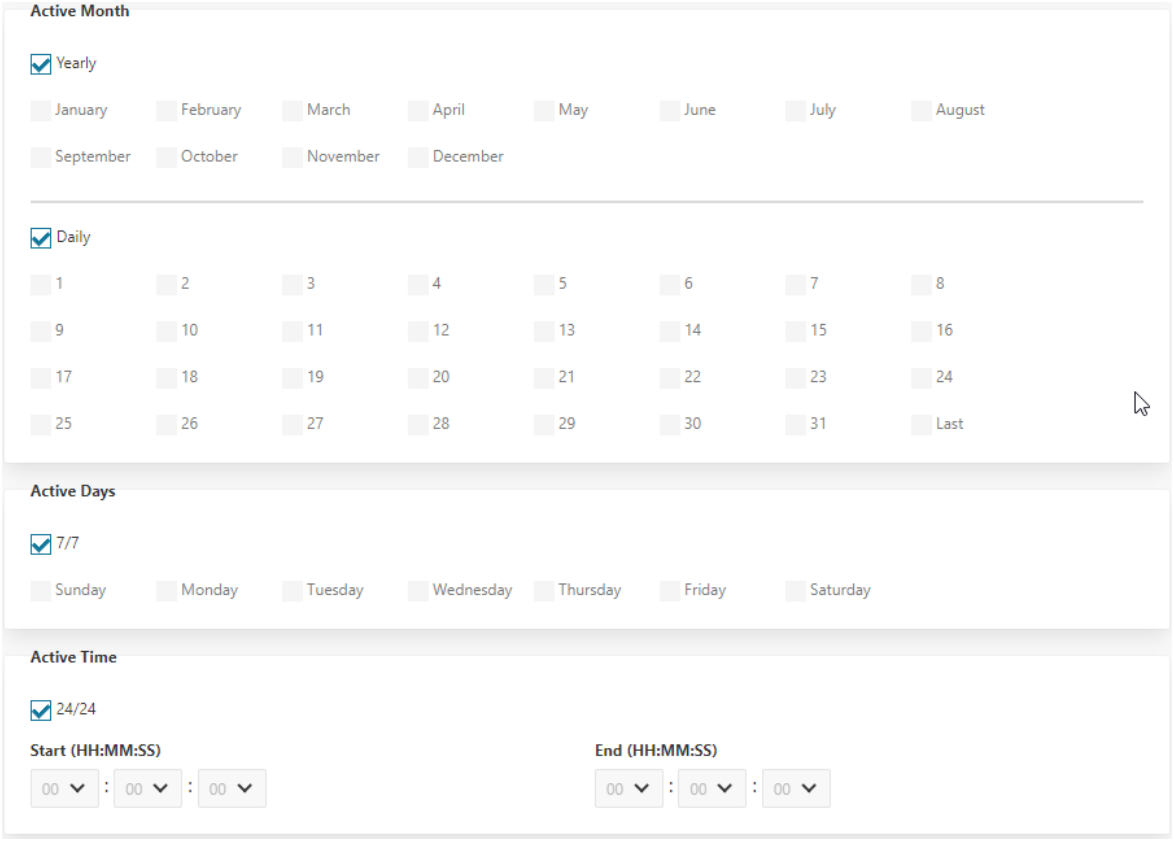
Besides this particularity, the Math Function settings operate in exactly the same way as the Analog input settings.

4.2.7. Ping

The Ping screen allows configuration of the Network Ping's target IP address, as well as the number of retries and time-out before triggering an action or alarm. A test button is available to check operation while configuring.

4.2.8. Schedulers

This screen allows configuration of up to 8 scheduled events. These events can be set up to occur on a yearly, monthly, day-of-the-month, day-of-the-week or hourly basis. Combinations of these parameters are also possible. For example, you can set an event to occur every Monday at 3AM during the month of February.



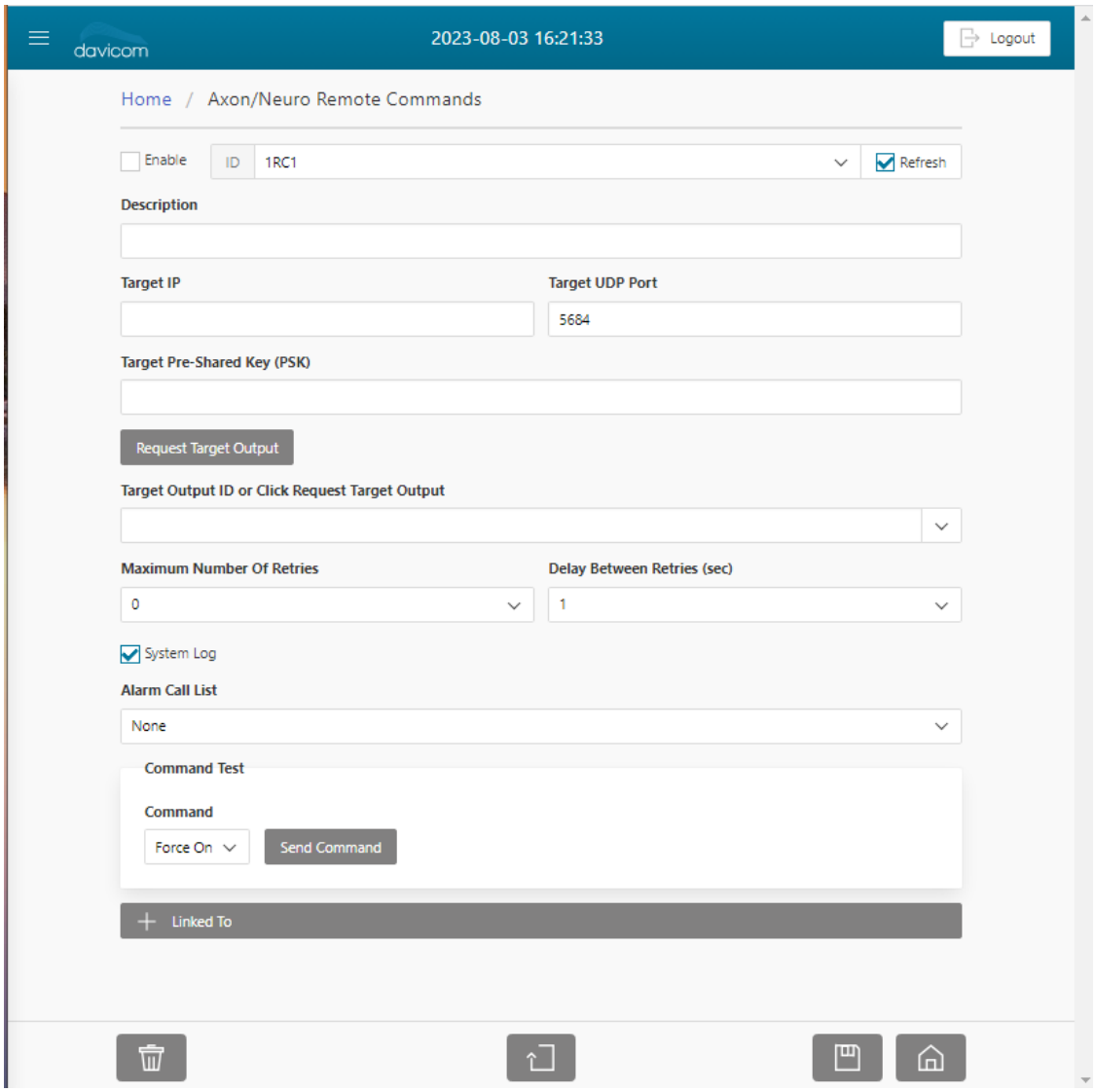
To set events to happen on the first Monday of every month for example, you can select Yearly, unselect Daily, and select days 1 to 7. Then unselect 7/7 and select Monday.

For the 2nd Monday, select days 8 to 14,
For the 3rd Monday, select days 15 to 21,
For 4th Monday, select days 22 to 28,
For the 5th Monday, select days 29 to 31,

4.3. OUTPUTS

4.3.1. AXON/NEURO Commands

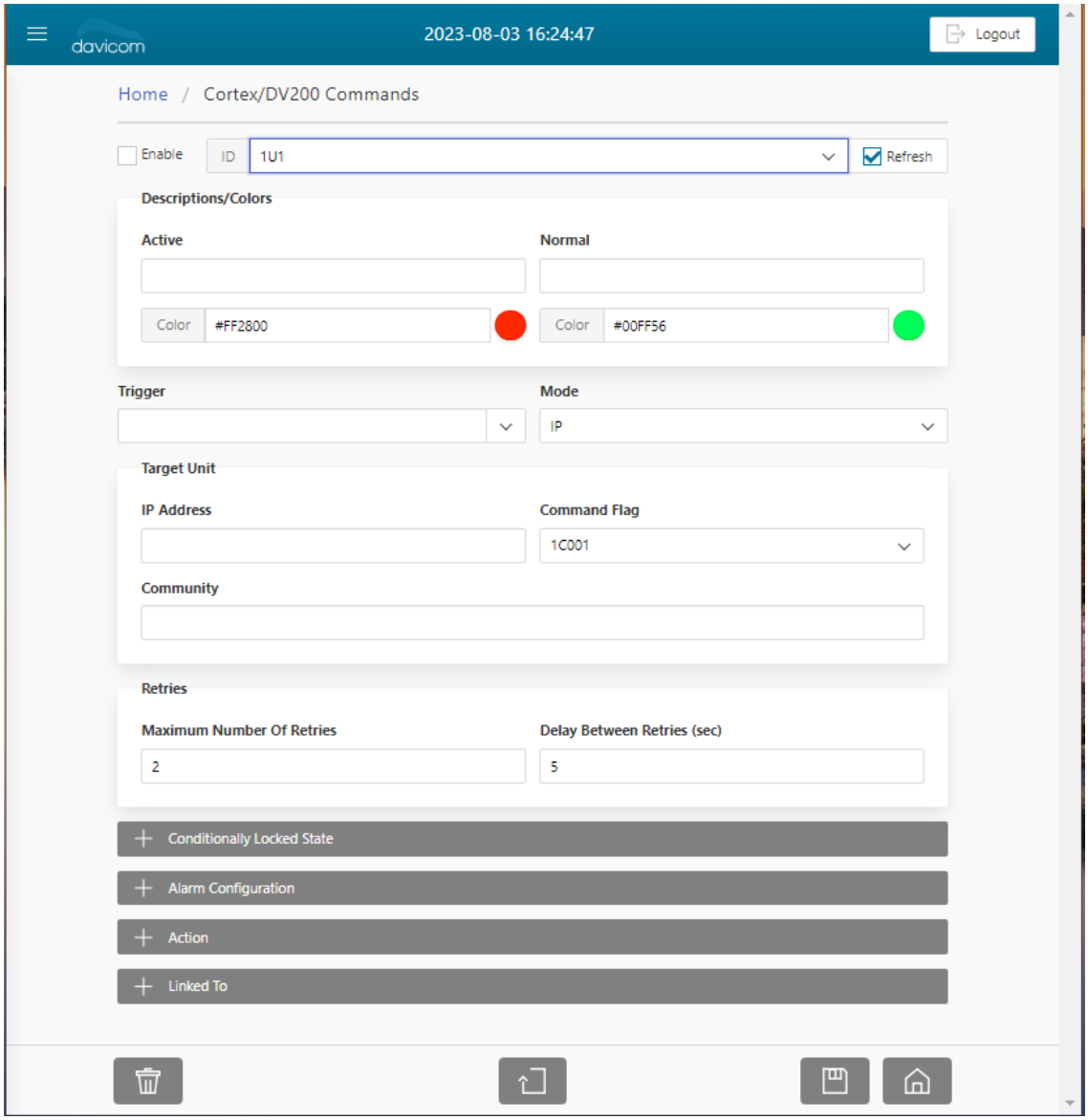
The AXON/NEURO Command screen allows configuration of the various parameters to send a relay action command to a remote AXON-5R (or NEURO) device over an IP network. Note that the IP settings (UDP port and PSK) must have been pre-configured as shown in Paragraph 4.4.4.4.



A **Send Command** test button is also available to validate operation during setup.

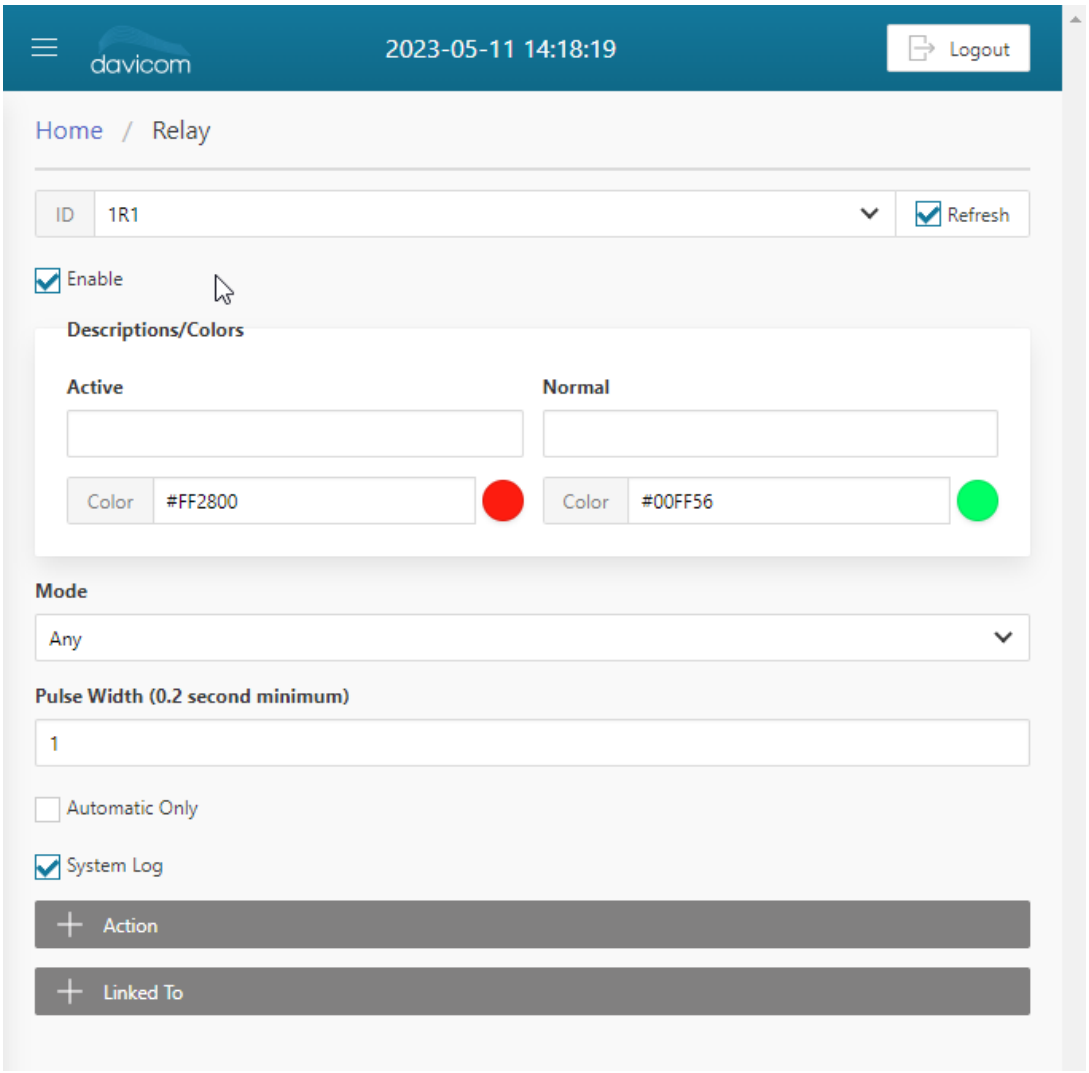
4.3.2. Cortex/DV200 Commands

This screen allows configuration of commands that can be sent to Davicom Cortex or DV-200 units. The IP address of the remote unit must be entered, as well as which Command Flag in that unit is to be controlled. The Community is an “SNMP-like” password.



4.3.3. Configuring the Relay Outputs (AXON-5R only)

The screen below shows the settings for the Relays. Besides the descriptions, the only other settings possible for relays are their Mode (Any, Pulse Only or Latch) and the Pulse Width (in 0.1 sec increments with a 0.2 sec minimum). The maximum pulse width is 9999 seconds (=166.65 minutes, = 2.7 hours)



4.4. SYSTEM

4.4.1. Administration / General

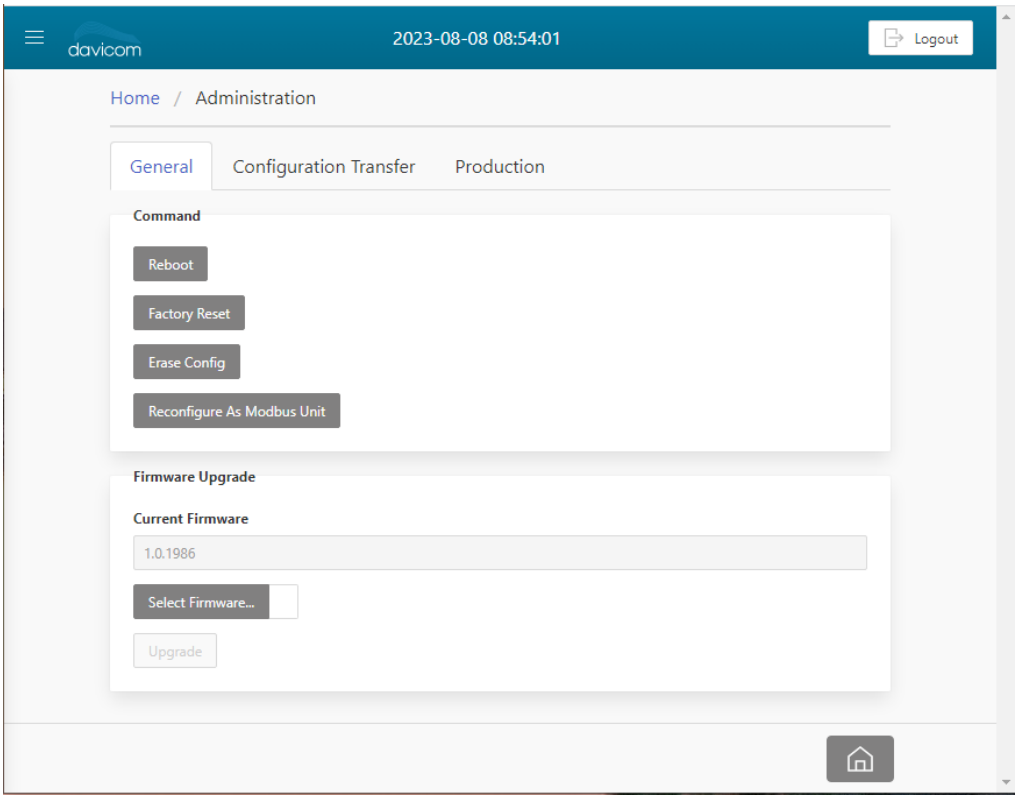
4.4.1.1. Factory Reset, Reboot and Erase Configuration

There are 2 ways to perform a factory reset on the AXON.

1-By using a pen or paper clip to push the recessed **Factory Reset** button on the unit's front panel. Maintain the press until all the front panel LEDs flash;

Or

2-By clicking on the **Factory Reset** button on the Administration/General menu.



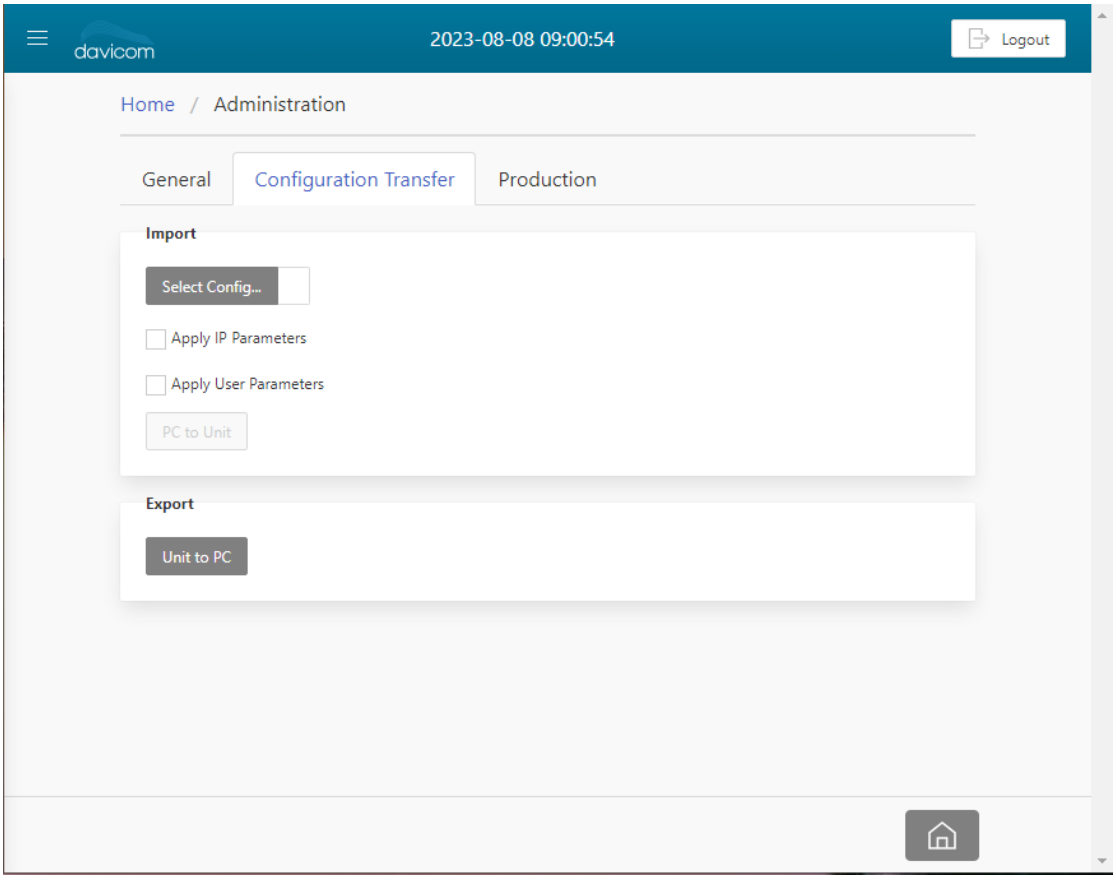
Note that a factory reset will erase all the settings including passwords, usernames IP settings and addresses.

Other options are available to restart or reconfigure the unit:

- **Reboot** –Will only restart the unit while conserving all the configuration, login and IP settings.
- **Erase Config** –Will only erase the unit's general settings without affecting the IP Address and login credentials.
- The **Reconfigure as Modbus Unit** stores all Standalone settings in case a return to Standalone mode is desired at a future time. Note that in MODBUS slave mode, most settings are controlled by the MODBUS Master. See MODBUS settings section 7 for more details.
- The **Firmware Upgrade** function is also available in this menu. When updating the Firmware, IP settings and login credentials are retained.

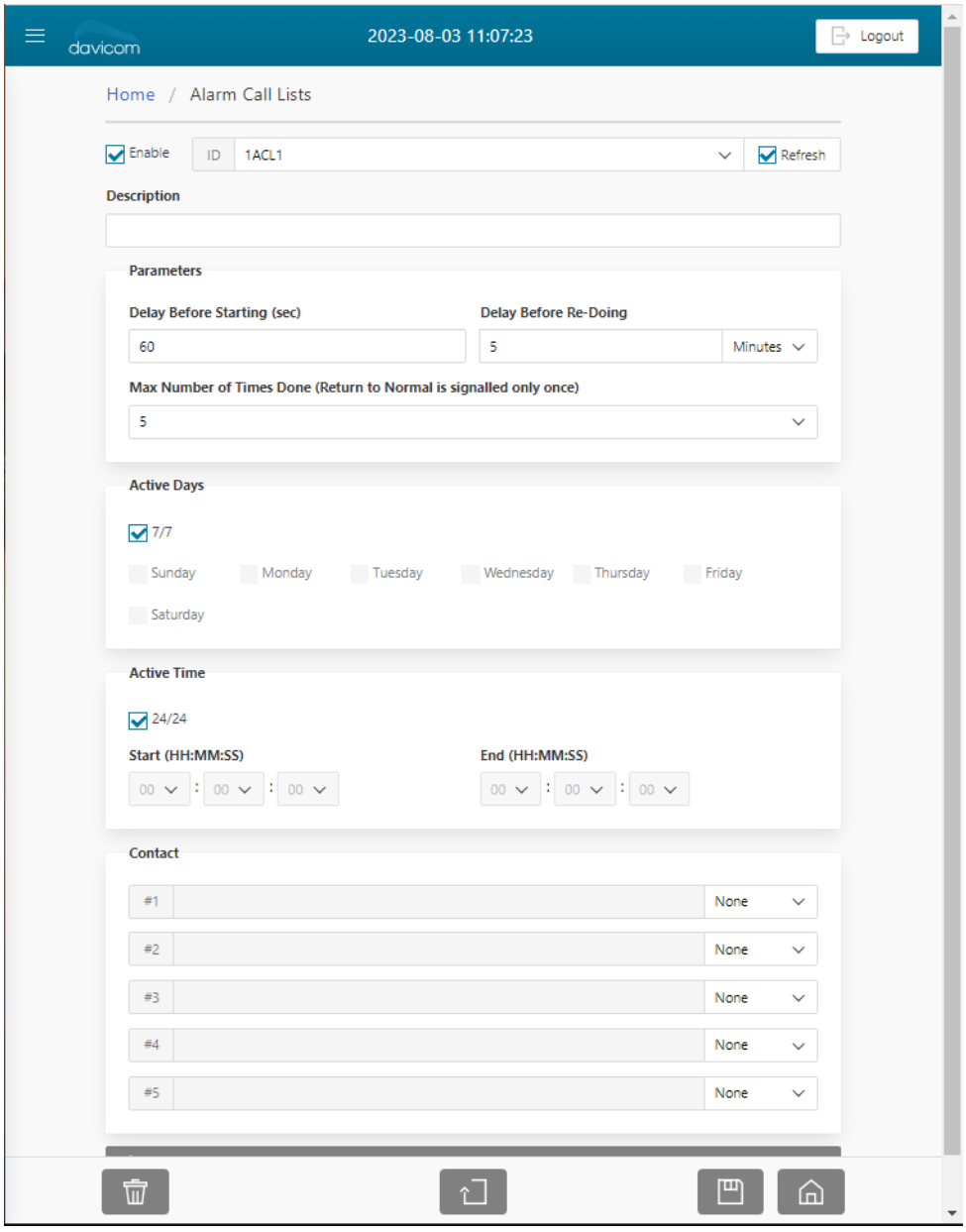
4.4.1.2. Configuration Transfer

This screen allows Configuration files to be imported to the AXON, or exported from the AXON (for safekeeping, or for cloning other AXONS).



4.4.2. Configuring the Alarm Calls

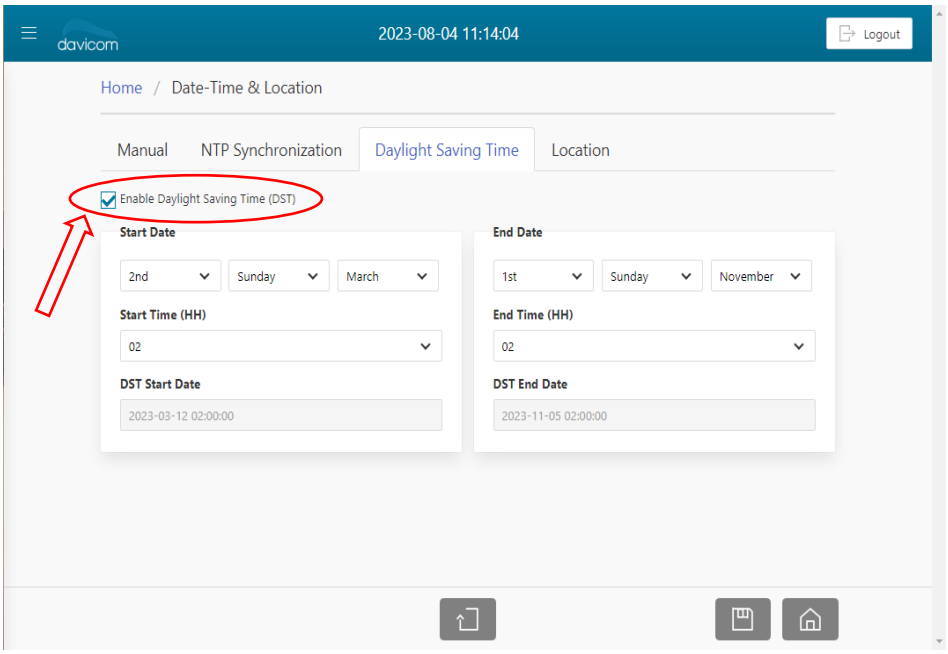
This screen allows the 5 Alarm-Call Lists (ACL) to be configured. An important feature is the ability to render the alarms inactive during certain periods of time or days of the week. 5 different targets (or recipients) can be set for each ACL.

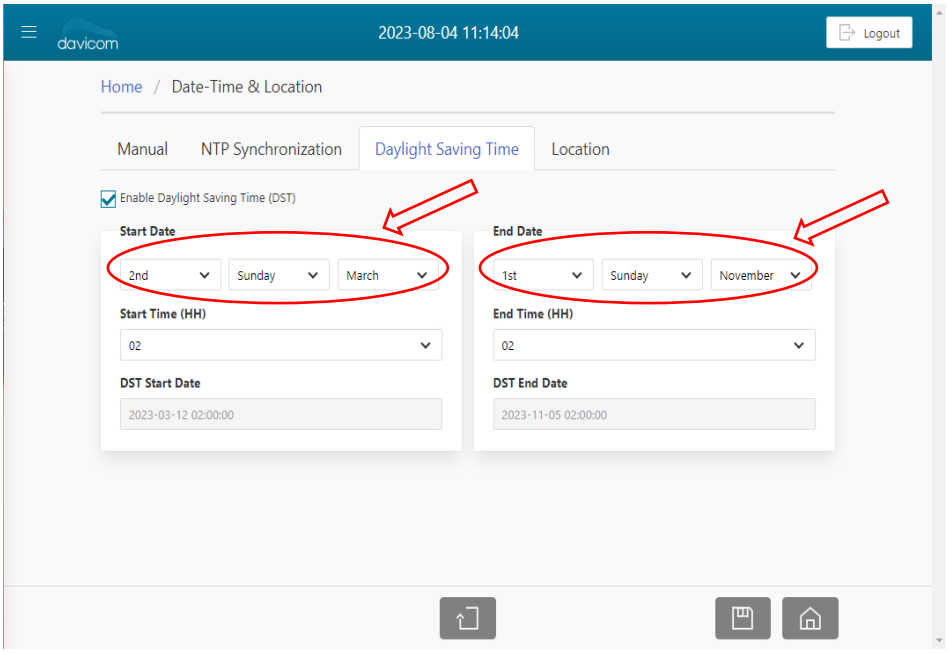


4.4.3. Configuring Date, Time and Location

AUTOMATIC DST ADJUSTMENT:

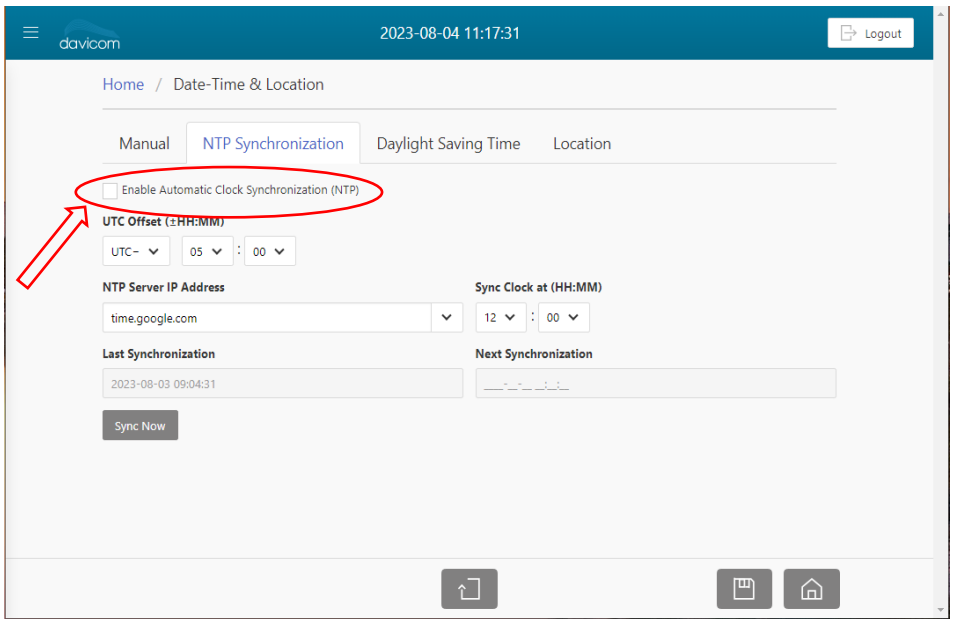
Activate the Automatic Daylight Saving Time Adjustment if applicable.



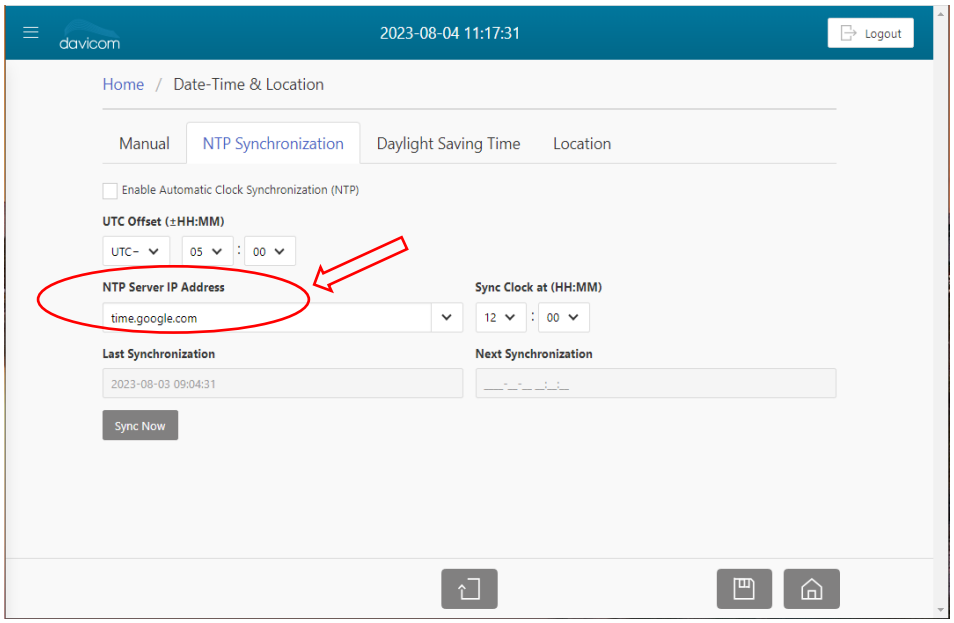


The default values are from the second Sunday in March at 2 AM, until the first Sunday in November, at 2AM. *NOTE: DST time (also known as summer time) is not necessarily used worldwide and some countries may use different DST values*.

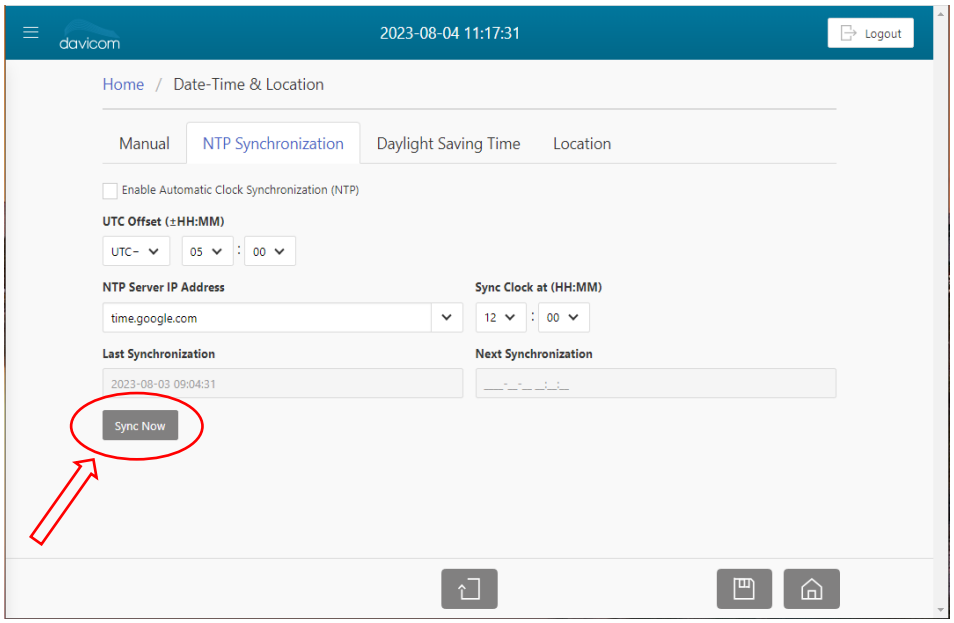
AUTOMATIC CLOCK SYNCHRONIZATION: If you wish, activate the Automatic Clock Synchronization (NTP service).



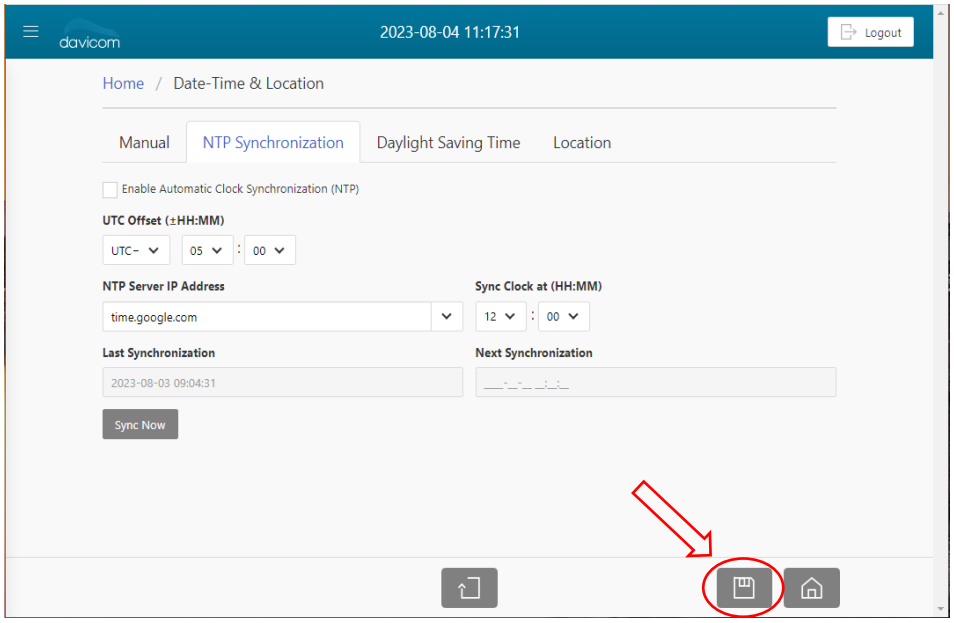
The clock will synchronize automatically to an external time synchronization service that you can select. Google's time server at ***time.google.com*** is the default value.



SYNC NOW: Perform a manual clock synchronization with the NTP server entered in the box.

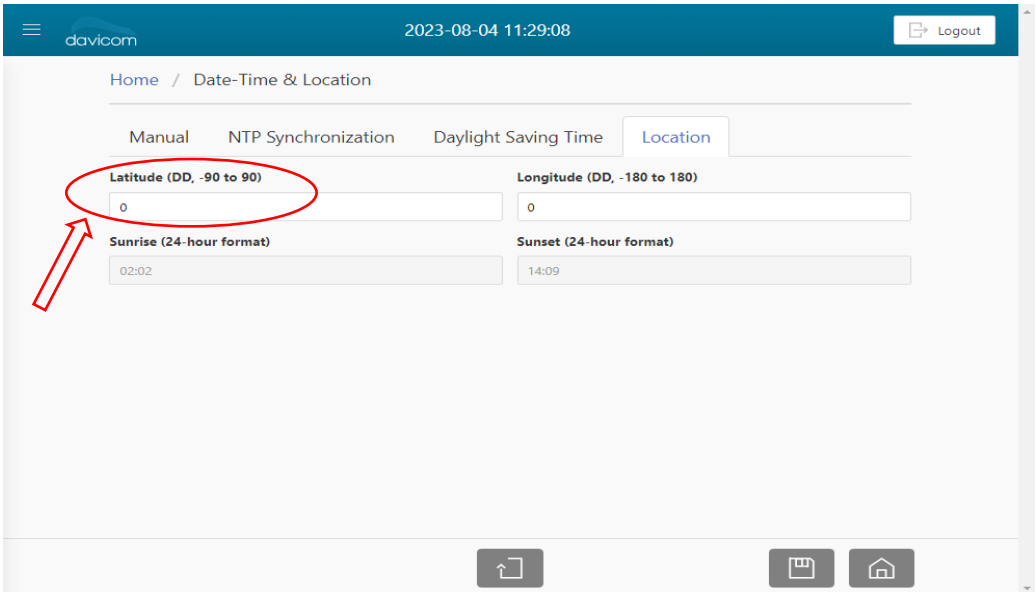


APPLY CHANGES (SAVE): Save the screen contents.

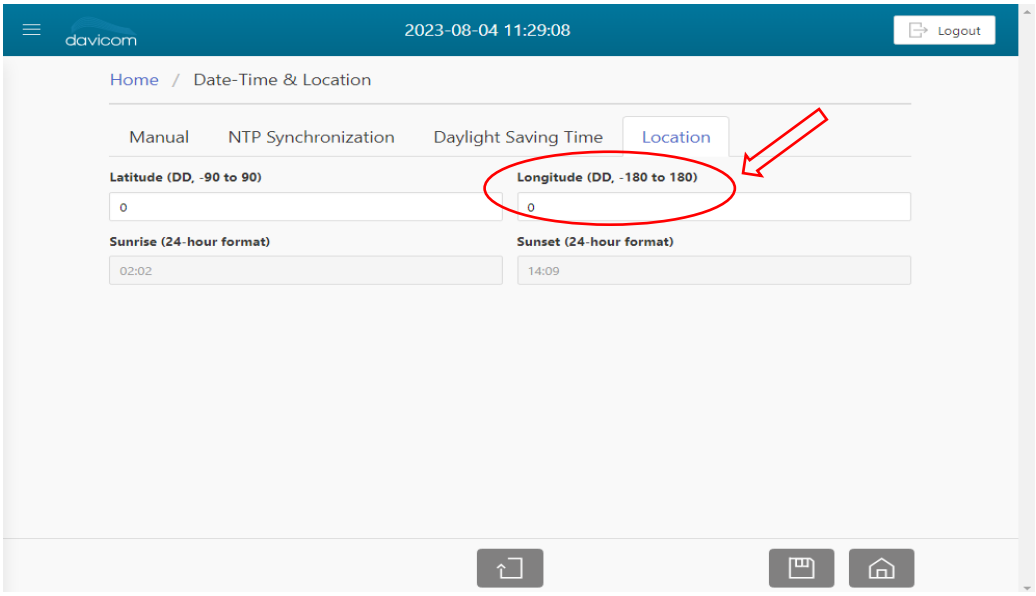


Location settings are required to allow the AXON to calculate the local time of sunrise and sunset for every day of the year. They are entered in the decimal degree format: DDD.dddddd and DD.dddddd for the Longitude and Latitude respectively. These settings are used to generate the Sunrise Flag in the unit, and in addition, they are also available for use by Network Management Software to show the exact location of the AXON on a map. The 6 digits after the decimal point give a potential resolution accuracy of about 100 cm on a world map. So it should even be possible to locate devices within a building.

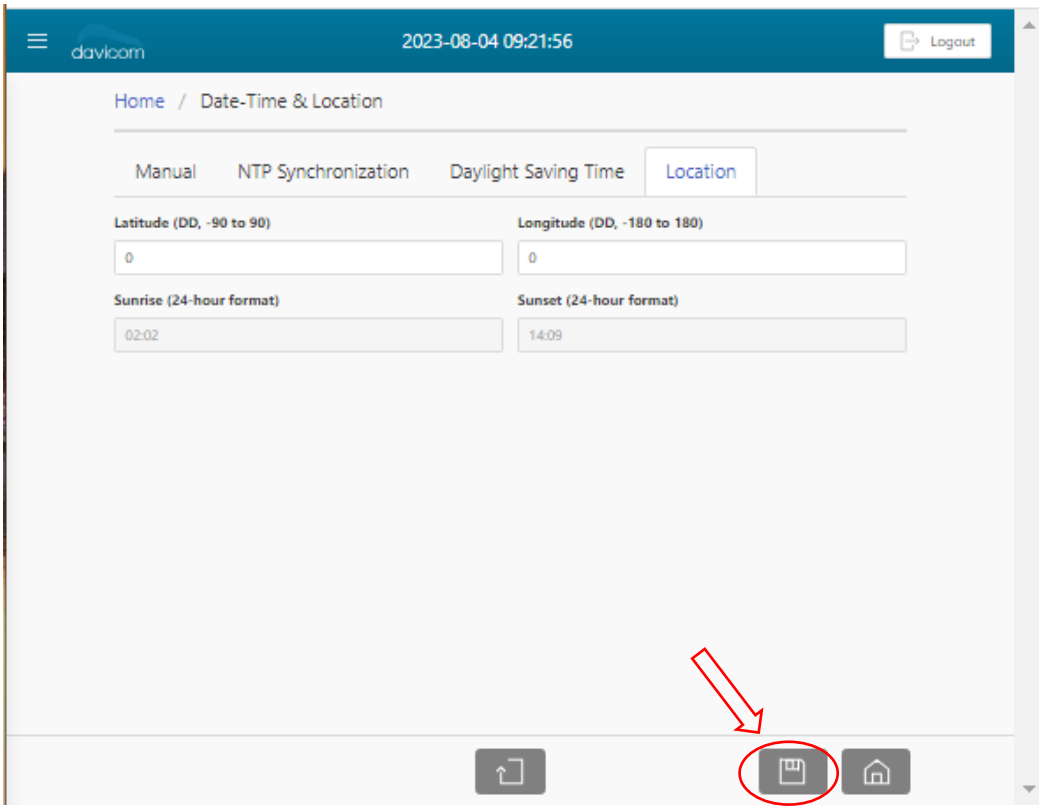
LATITUDE: Set the north or south latitude location of the unit, in decimal degrees.



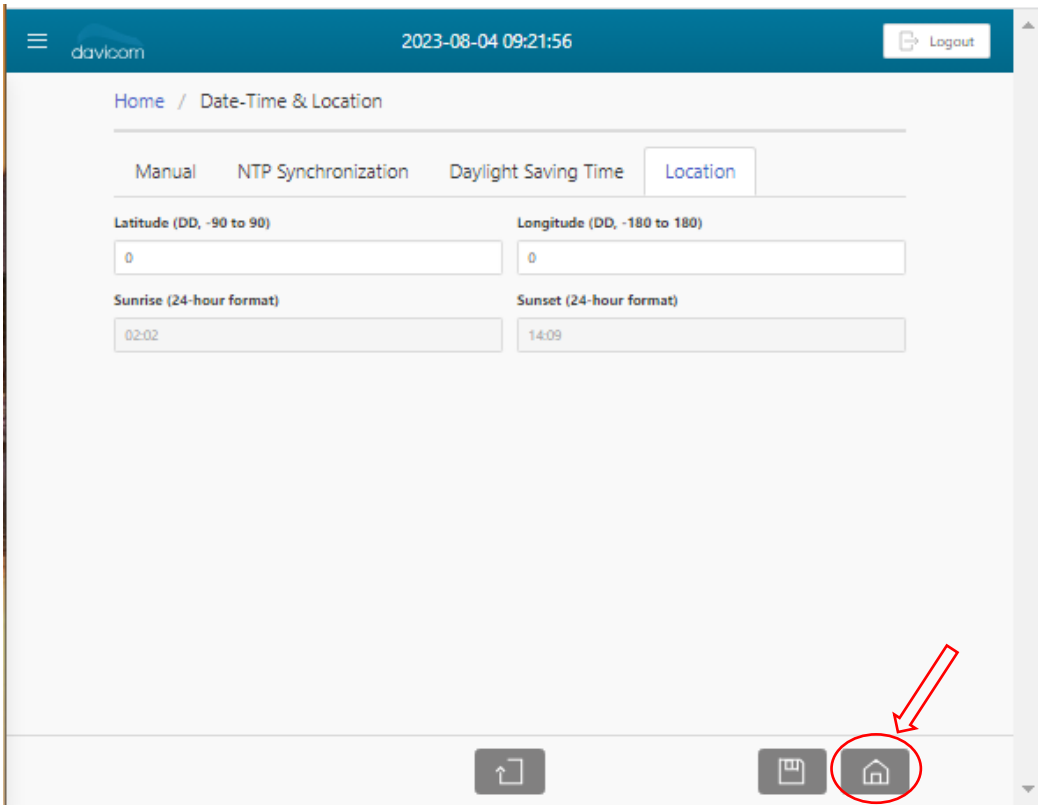
LONGITUDE: Set the east or west longitude location of the unit, in decimal degrees.



APPLY CHANGES (SAVE): Save the screen contents.



HOME: Return to Home page.

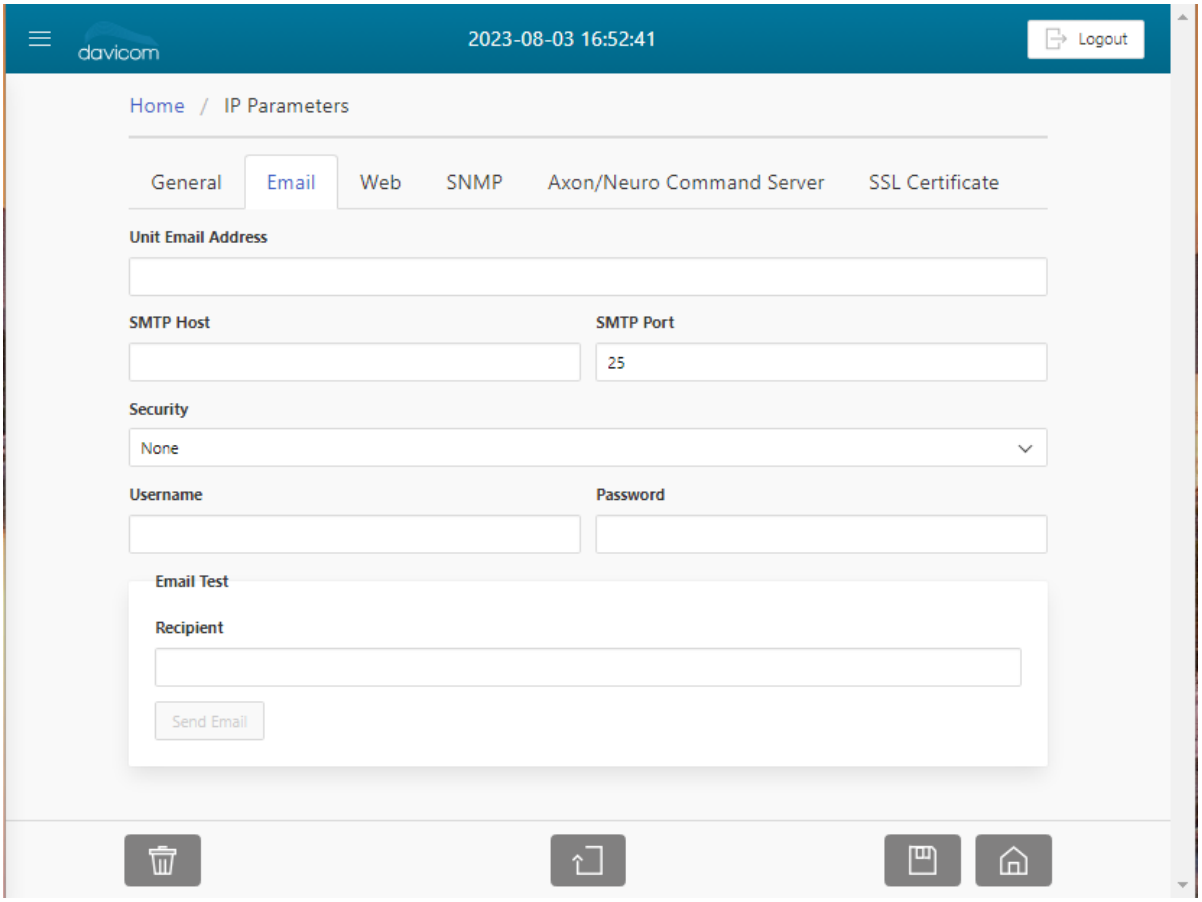


4.4.4. More IP Settings

You have previously set up the unit's IP address, Gateway, Netmask etc.

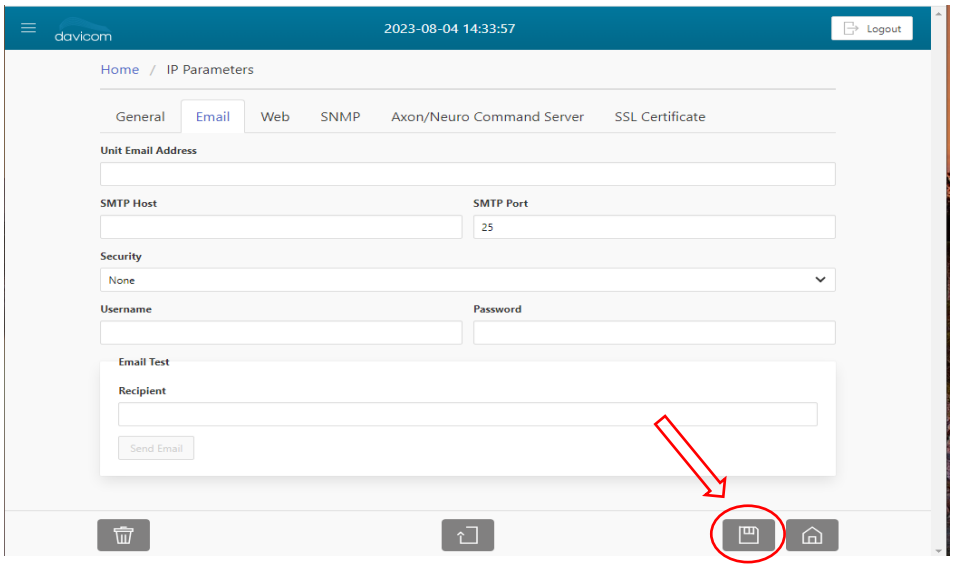
You can now set up the unit's Email client, Web Server, SNMP Agent, Axon/Neuro Remote Command Server and SSL Certificate.

4.4.4.1. Email client

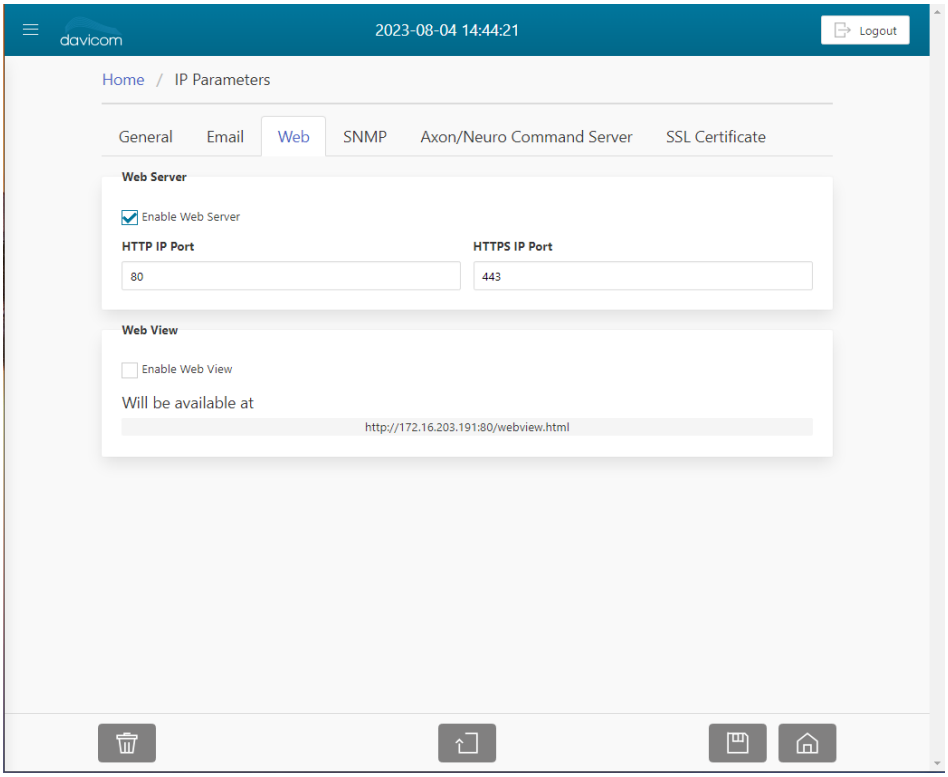


Enter the E-mail address that you wish to use with this AXON
Enter the SMTP Host's IP Address, or name.
Select the SMTP Port used by this server.
Select the type of Security (Authentication) required by the SMTP server from the drop-down list. You have a choice of TLS or SSL.
Enter the username and password used for this email account
You can even send a test Email to validate that all your settings work properly. Enter the recipient's Email address and click on the Send Email button.

Remember to SAVE your changes before exiting.



4.4.4.2. Web Server



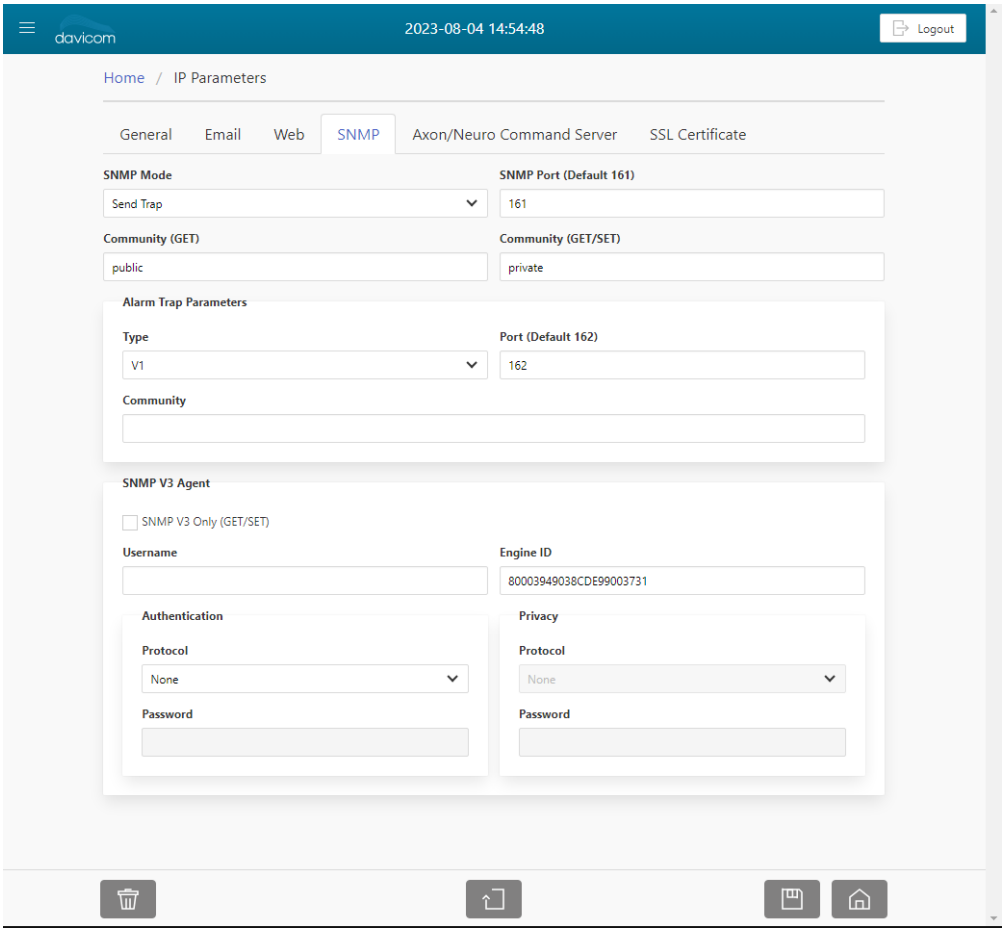
The AXON's Web Server is enabled by selecting the checkbox. ***CAUTION:*** ***Unchecking the checkbox will prevent future connections via web browser to the AXON, and will require a FACTORY RESET, or a special SNMP command to re-enable this capability.***

Enter the HTTP and HTTPS Port addresses you wish to use. The default values are 80 and 443, respectively.

If activated, the Web View checkbox allows direct viewing of the AXON's Home Page without requiring a log-in to the unit. NOTE that this access is limited to viewing only, and no control or admin privileges are provided. The URL address for this special access is shown in the box.

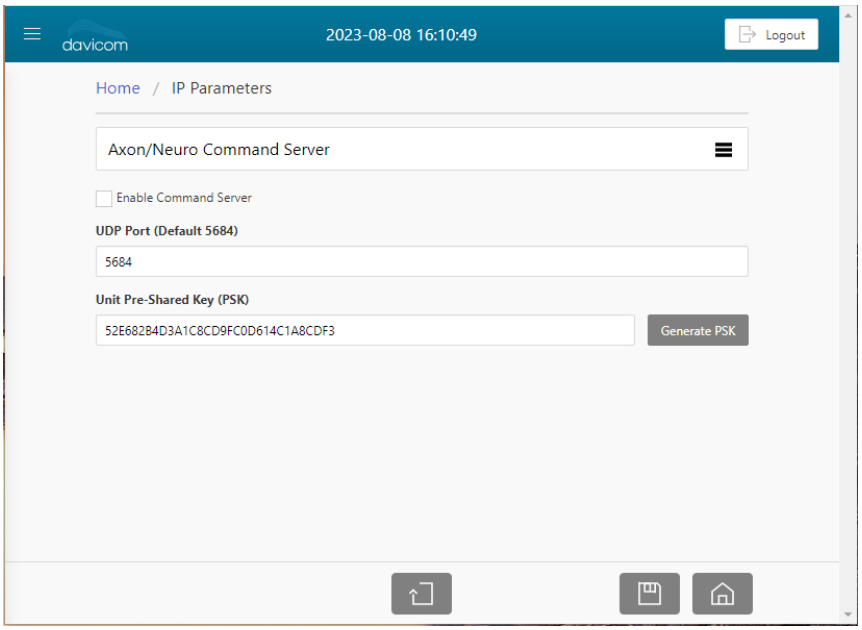
4.4.4.3. SNMP

This Screen allows the various SNMP parameters to be set. Consult your IT department for more information.



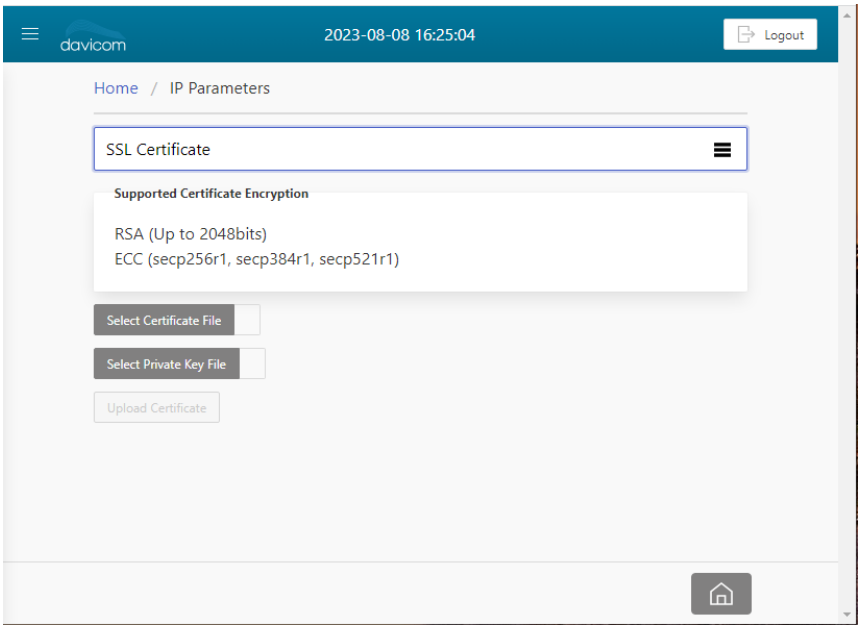
4.4.4.4. Axon/Neuro Command Server

The Axon/Neuro Command Server screen is used to configure the UDP port and PSK parameters for inter-AXON/NEURO commands. It allows one AXON device to send commands to another AXON via the IP Network by using the CoAP protocol.



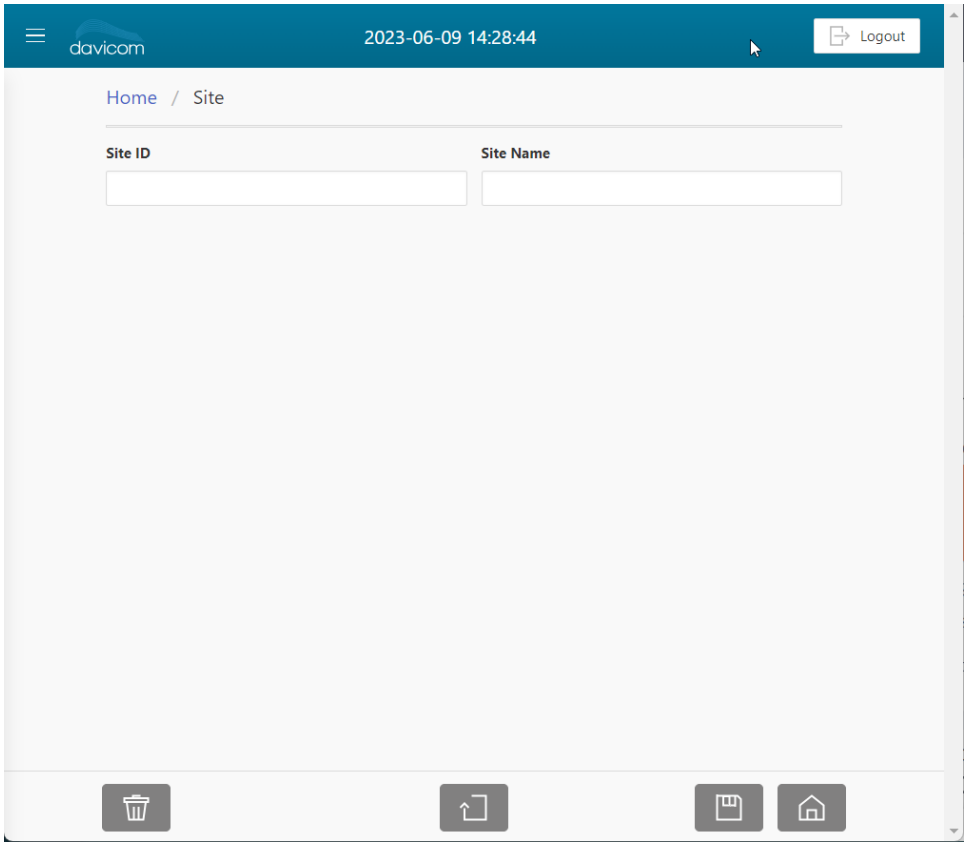
4.4.4.5. SSL Certificate

This screen allows configuration and loading/installing an SSL certificate that will permit secure & encrypted communications over an IP Network.

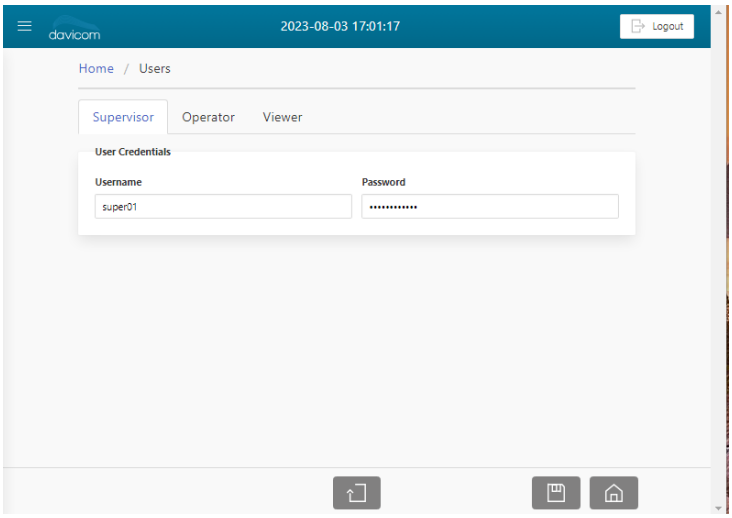


4.4.5. Site ID

The Site ID screen is used to enter a site's numerical ID and name. These can be your site location, call letters or any other identifier required by your operations.



4.4.6. Users



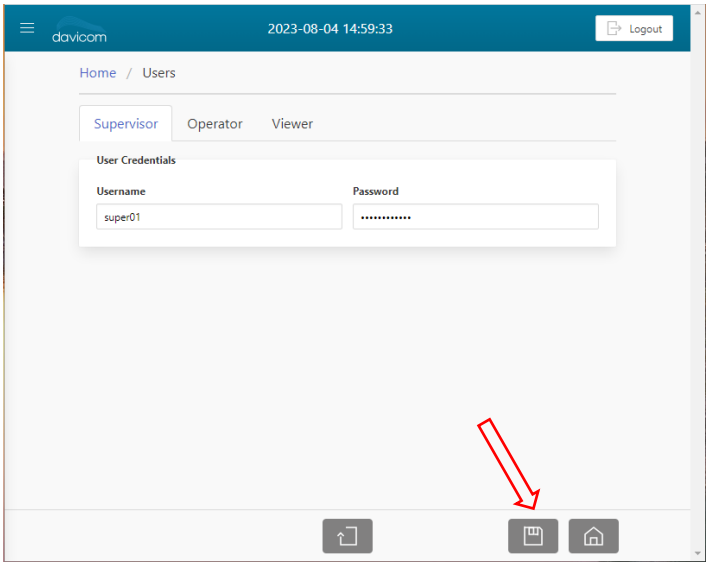
AXON units can accept 3 different users, one for each role. There is a Supervisor user, an Operator user and a Viewer user. Note that you must be a Supervisor user to enable and configure the lower-level users.

A Supervisor-level user can view, control and configure everything in the AXON. The only user enabled by default is the Supervisor, and this user cannot be disabled. To change the username or password, go to the Supervisor tab.

An Operator-level user can view readings and view configuration settings, but they cannot make any changes to the unit's configuration. They can however re-boot the unit in the Administrator Menu and also issue relay commands.

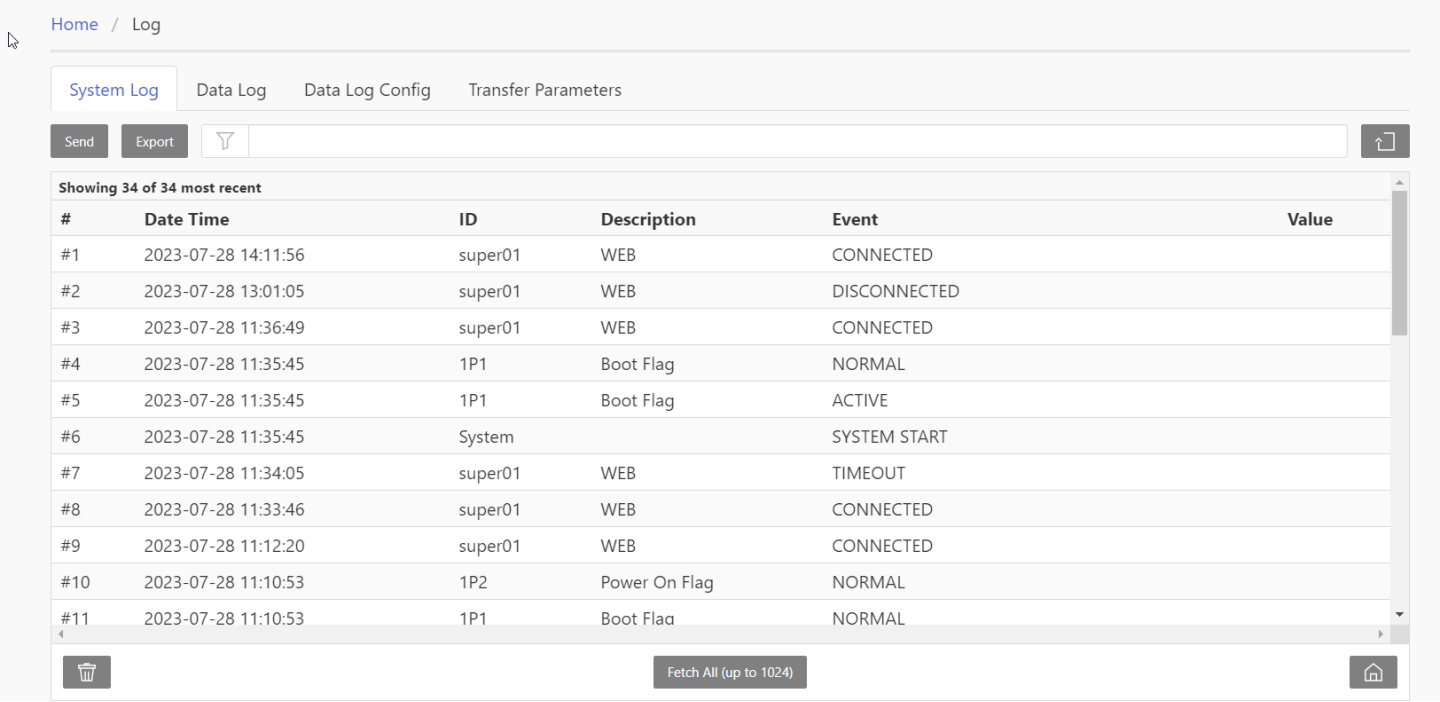
A Viewer user can only view levels and readings in the AXON, they cannot change or control anything, nor can they view any configuration information. To enable this user, go to the Viewer tab, enable the user and enter a username and password.

Remember to SAVE your settings before exiting


davicom
2023-08-04 14:59:33
Logout
Home / Users
Supervisor
Operator
Viewer
User Credentials
Username
super01
Password

5. LOGS

The LOGS screen is used to view and configure the System Log and Data Logs. Logs can be Sent by email (to the pre-set email address) or Exported directly to your PC (Browser Download). Log transfers can also set to occur whenever a Log buffer reaches a certain % of total capacity.



6. JOBS

Jobs in AXON units are used to execute up to 16 different steps that occur on certain conditions (IF/THEN/ELSE). Also known as State Machines, these JOBs can perform complex logic depending on the values of any Input or ID point in an AXON. There are 4 possible JOBs in each AXON.

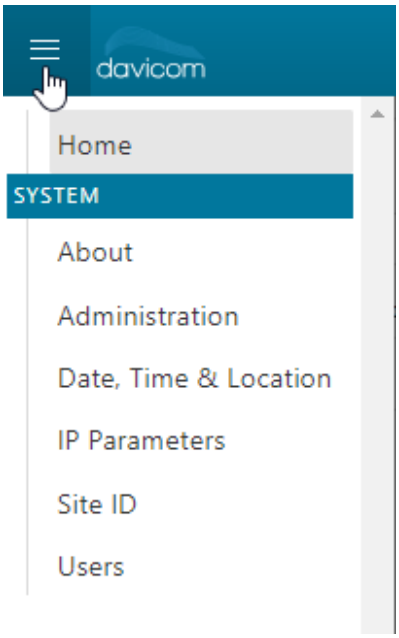
More detail on how to use JOBS will be provided in a separate document that will be posted on Davicom's DEX Tech Support site (https://dex.davicom.com)

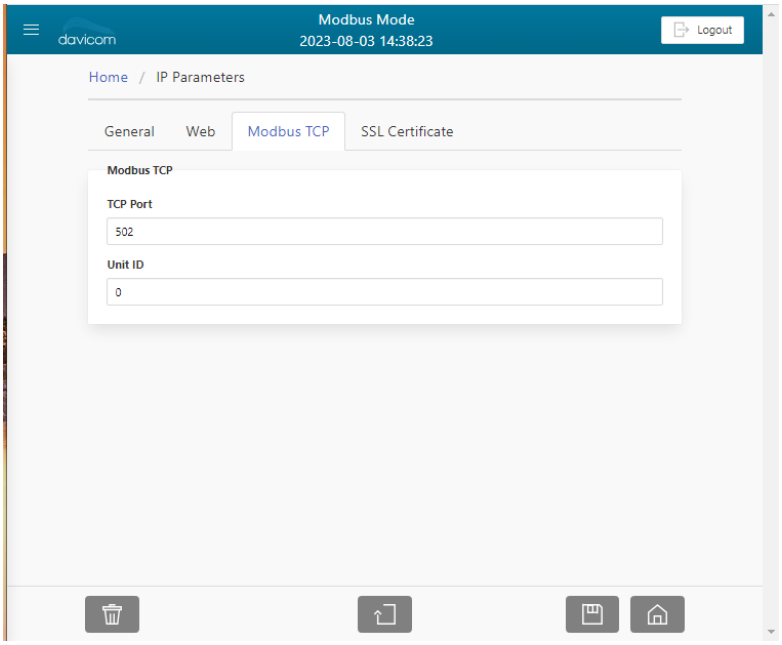
7. The AXON as a Modbus Unit

AXON units can be used to provide simple I/O expansion for Davicom's Cortex units, or for any other MODBUS master device. In MODBUS Mode, the hamburger menu is as shown below: Most System settings are the same as for Standalone Mode, except that the Home / IP Parameters section will be different. The SNMP tab is replaced by the Modbus TCP tab and there are no Email or Axon/Neuro Command server tabs.

When a new, non-configured AXON is connected to the same network as a Cortex it will be detected automatically and added as a Modbus expansion unit. Similar to adding a MEXM expansion device to the Cortex, users may also click the **Detect** button in the Cortex menu under **Devices/Axon & Neuro.**

More details on this mode of operation will be provided in a separate document that will be posted on Davicom's DEX Tech Support site. (https://dex.davicom.com)





The tables below show the different MODBUS register addresses for the 3 types of AXON units.

AXON-8A		
Address	***Description***	***Attribute***
30001	Analog input #1 (0-4095 : Offset binary)	Read
30002	Analog input #2 (0-4095 : Offset binary)	Read
30003	Analog input #3 (0-4095 : Offset binary)	Read
30004	Analog input #4 (0-4095 : Offset binary)	Read
30005	Analog input #5 (0-4095 : Offset binary)	Read
30006	Analog input #6 (0-4095 : Offset binary)	Read
30007	Analog input #7 (0-4095 : Offset binary)	Read
30008	Analog input #8 (0-4095 : Offset binary)	Read
31001-31002	Analog input #1 (Float)	Read
31003-31004	Analog input #2 (Float)	Read
31005-31006	Analog input #3 (Float)	Read
31007-31008	Analog input #4 (Float)	Read
31009-31010	Analog input #5 (Float)	Read
31011-31012	Analog input #6 (Float)	Read
31013-31014	Analog input #7 (Float)	Read
31015-31016	Analog input #8 (Float)	Read
40001	Analog input #1 voltage range (x10)	Read/Write
40002	Analog input #2 voltage range (x10)	Read/Write
40003	Analog input #3 voltage range (x10)	Read/Write
40004	Analog input #4 voltage range (x10)	Read/Write
40005	Analog input #5 voltage range (x10)	Read/Write
40006	Analog input #6 voltage range (x10)	Read/Write
40007	Analog input #7 voltage range (x10)	Read/Write
40008	Analog input #8 voltage range (x10)	Read/Write
42001	IP Address - Most significant (HEX)	Read/Write
42002	IP Address - Least significant (HEX)	Read/Write
42003	Netmask - Most significant (HEX)	Read/Write
42004	Netmask - Least significant (HEX)	Read/Write
42005	Reserved	Read/Write
42006	Modbus TCP port	Read/Write
42007	Modbus Unit ID	Read/Write
42008	Apply changes (write 1 to apply changes)	Read/Write

AXON-8D		
Address	***Description***	***Attribute***
10001	Digital input #1 (1=High, 0=Low)	Read
10002	Digital input #2 (1=High, 0=Low)	Read
10003	Digital input #3 (1=High, 0=Low)	Read
10004	Digital input #4 (1=High, 0=Low)	Read
10005	Digital input #5 (1=High, 0=Low)	Read
10006	Digital input #6 (1=High, 0=Low)	Read
10007	Digital input #7 (1=High, 0=Low)	Read
10008	Digital input #8 (1=High, 0=Low)	Read
42001	IP Address - Most significant (HEX)	Read/Write
42002	IP Address - Least significant (HEX)	Read/Write
42003	Netmask - Most significant (HEX)	Read/Write
42004	Netmask - Least significant (HEX)	Read/Write
42005	Reserved	Read/Write
42006	Modbus TCP port	Read/Write
42007	Modbus Unit ID	Read/Write
42008	Apply changes (write 1 to apply changes)	Read/Write

AXON-5R		
Address	***Description***	***Attribute***
00001	Relay #1 (1=Energized, 0=Released)	Read/Write
00002	Relay #2 (1=Energized, 0=Released)	Read/Write
00003	Relay #3 (1=Energized, 0=Released)	Read/Write
00004	Relay #4 (1=Energized, 0=Released)	Read/Write
00005	Relay #5 (1=Energized, 0=Released)	Read/Write
42001	IP Address - Most significant (HEX)	Read/Write
42002	IP Address – Least significant (HEX)	Read/Write
42003	Netmask - Most significant (HEX)	Read/Write
42004	Netmask - Least significant (HEX)	Read/Write
42005	Reserved	Read/Write
42006	Modbus TCP port	Read/Write
42007	Modbus Unit ID	Read/Write
42008	Apply changes (write 1 to apply changes)	Read/Write

8. Specifications

Metering (Analog) Inputs AXON-8A:	8, bipolar, differential, 12 bit resolution, ±0.5. ±2.5. ±5, ±10, ±20, +40 or -40 V, 1 MΩ, 4-20 mA mode.
Status (Digital) Inputs AXON-8D:	8 with separate internal or external grounds. Max input : ±65 V, 10 kΩ.
Outputs (Command Relays) AXON-5R:	5, Form C. 70 VAC @ 0.4 A, 30 Vdc @ 2A
Alarms:	Email, SNMP TRAP/INFORM
Alarm Call Lists:	5
Protocols (OSI Layers)	1 : 10BASE-T, 100BASE-T 2 : Ethernet, MAC 3 : ARP, ICMP, IPv4 4 : TCP, UDP 5 : Raw Socket 6 : DTLS, TLS 1.2, TLS 1.3, SSL 7 : CoAP over DTLS, DNS, HTTP, HTTPS, Modbus/TCP, SMTP over SSL/TLS, SNMP Agent v1/v2c/v3, SNTP
Jobs:	4
Event Schedulers:	8
Math Functions:	8
Remote Commands (Outbound):	8
Counters:	8
SNMP Agent:	Yes (v1/V2c/V3)
Modbus Slave Mode:	Yes
Ethernet Ports:	1
Power Supply:	5-30 Vdc. Typ 110 mA @ 12 Vdc. Max 190 mA with 5 relays energized @ 12 Vdc.
Operating Temperature:	-40° to +70°C
Dimensions:	3” x 5 3/8” x 1 1/4”
Mounting:	Direct wall mount or DIN rail
Weight:	1 lbs

9. Customer Support

Davicom is pleased to provide technical support by the means that is easiest for you.

You can consult our complete Davicom EXchange (DEX) portal for hundreds of articles and explanations on how to use and troubleshoot our products. See https://dex.davicom.com

You can also email us at dvsupport@davicom.com or call 1-877-282-3380 in Canada and the US, or +1-418-682-3380 from elsewhere.