	
<b>AXON units</b>	Version 1.0.2 <b>2023-11-30</b>
Quick Start Guide	MAN1035



## 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.

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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

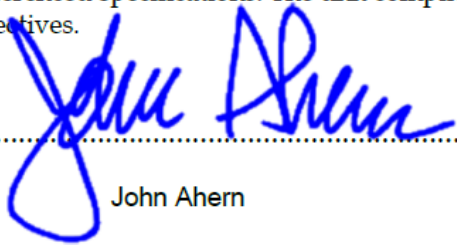
in accordance with the following Directive(s):

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



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

<b>1.</b>	<b>INTRODUCTION: WHAT IS AN AXON? .....</b>	<b>8</b>
<b>2.</b>	<b>CONNECTIONS AND SWITCH CONFIGURATIONS .....</b>	<b>9</b>
2.1.	AXON-8A CONNECTIONS AND SWITCH SETTINGS .....	9
2.2.	AXON-8D CONNECTIONS AND SWITCH SETTINGS .....	10
2.3.	AXON-5R CONNECTIONS .....	10
2.4.	MENUS AND GENERAL NAVIGATION GUIDELINES .....	11
2.4.1.	Menus .....	11
2.4.2.	Button identification and functions .....	14
<b>3.</b>	<b>INITIAL LOG-IN AND NETWORK SETUP .....</b>	<b>15</b>
3.1.	DEFAULT IP ADDRESS (192.168.1.210) .....	15
3.2.	MANDATORY INITIAL LOGIN CREDENTIAL CHANGE .....	15
3.3.	NETWORK SETUP .....	16
3.3.1.	General IP settings .....	17
<b>4.</b>	<b>THE AXON AS A STANDALONE UNIT .....</b>	<b>18</b>
4.1.	HOME PAGE .....	18
4.2.	INPUTS .....	20
4.2.1.	Activity Monitoring .....	20
4.2.2.	Configuring the Analog Inputs (AXON-8A only) .....	21
4.2.3.	Counters .....	24
4.2.4.	Configuring the Digital Inputs (AXON-8D only) .....	25
4.2.5.	Flags .....	26
4.2.6.	Math Functions .....	26
4.2.7.	Ping .....	27
4.2.8.	Schedulers .....	27
4.3.	OUTPUTS .....	28
4.3.1.	AXON/NEURO Commands .....	28
4.3.2.	Cortex/DV200 Commands .....	29
4.3.3.	Configuring the Relay Outputs (AXON-5R only) .....	30
4.4.	SYSTEM .....	31
4.4.1.	Administration / General .....	31
4.4.2.	Configuring the Alarm Calls .....	33
4.4.3.	Configuring Date, Time and Location .....	34
4.4.4.	More IP Settings .....	39
4.4.5.	Site ID .....	43
4.4.6.	Users .....	44
<b>5.</b>	<b>LOGS .....</b>	<b>46</b>
<b>6.</b>	<b>JOBS .....</b>	<b>47</b>
<b>7.</b>	<b>THE AXON AS A MODBUS UNIT .....</b>	<b>48</b>
<b>8.</b>	<b>SPECIFICATIONS .....</b>	<b>51</b>
<b>9.</b>	<b>CUSTOMER SUPPORT .....</b>	<b>51</b>

# 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 ( $\pm 0.5$ ,  $\pm 2.5$ ,  $\pm 5$ ,  $\pm 10$ ,  $\pm 20$  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.

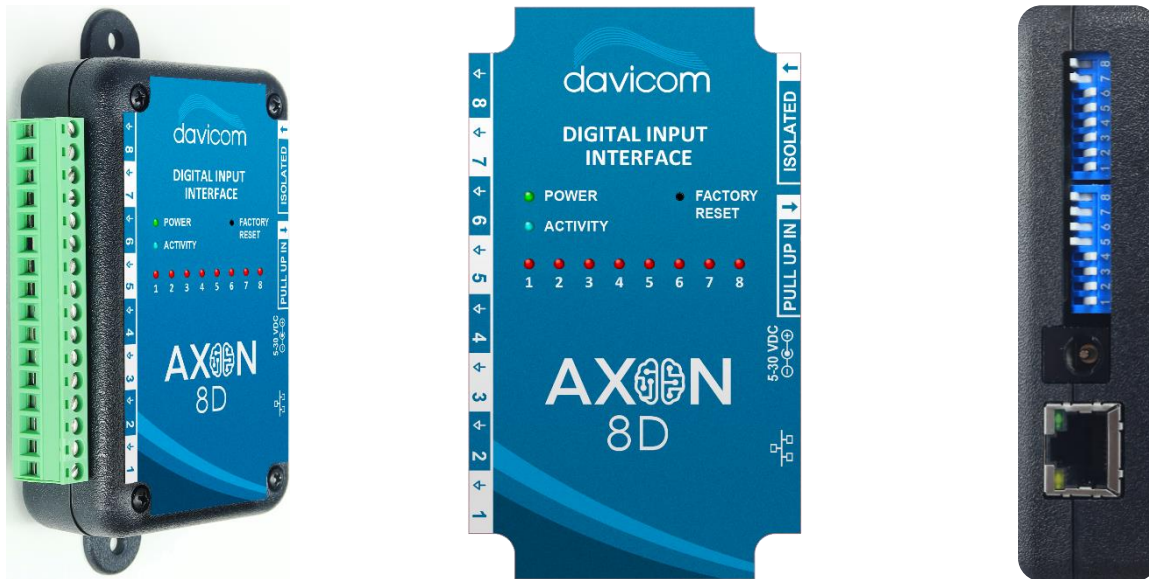


DIP switches are used to select whether the input (on an individual basis) operates in bipolar/differential mode (switch up) or in 4-20 mA mode (switch down).

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 (10k $\Omega$  to internal +3.3V, diode protected against reverse or over-voltage).

## 2.3. AXON-5R Connections

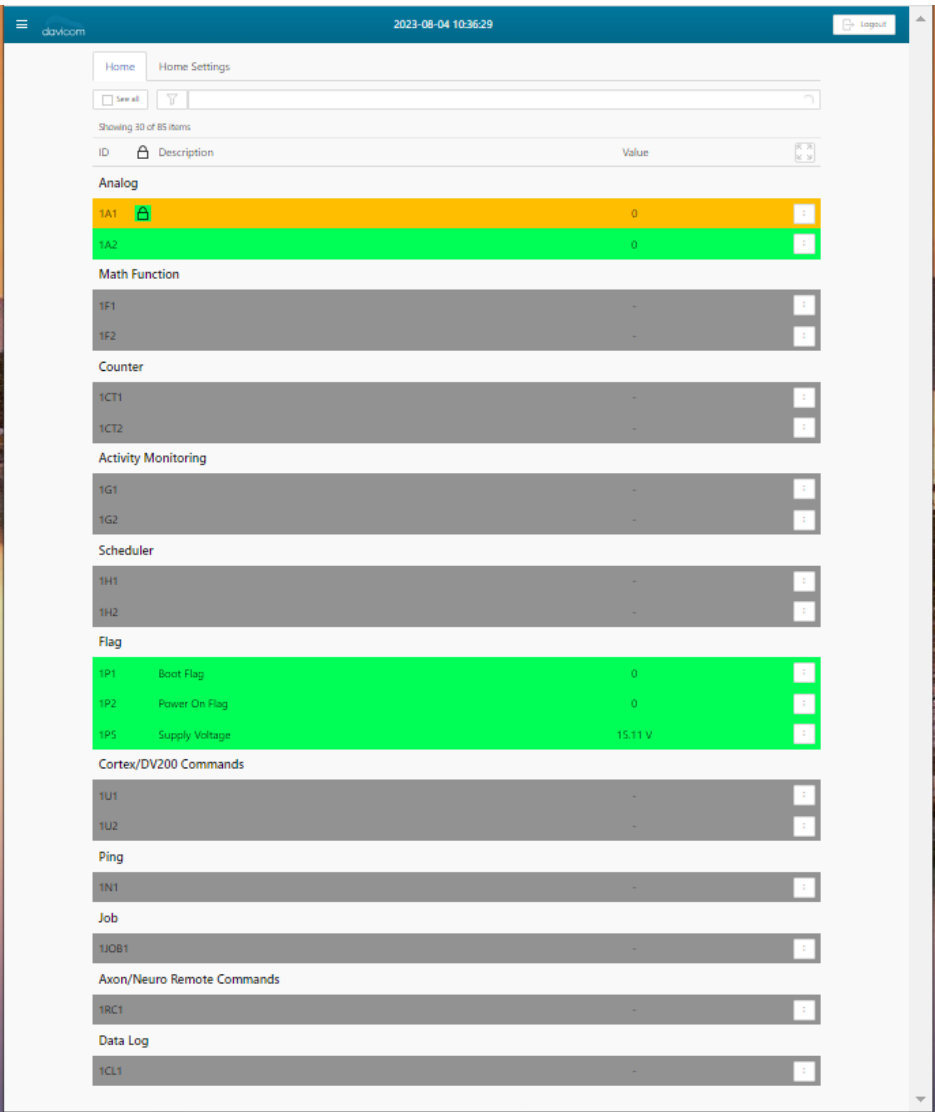
The AXON-5R's relay outputs can control other devices. From remotely switching off a faulty device to automatically power-cycling network elements, the AXON-5R can take smart decisions to keep your operations humming along. The AXON 5R does not have any configuration switches.



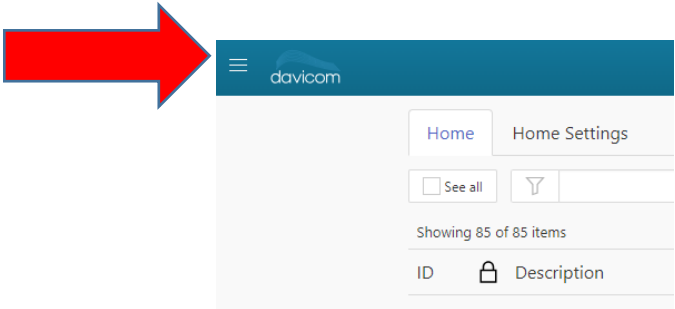
## 2.4. Menus and General Navigation Guidelines

### 2.4.1. Menus

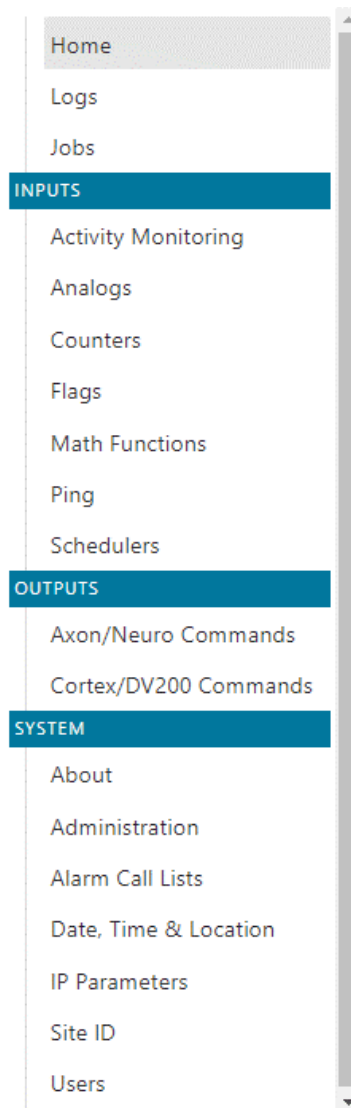
Home page—shows I/O readings and gives access to the configuration menu.



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.

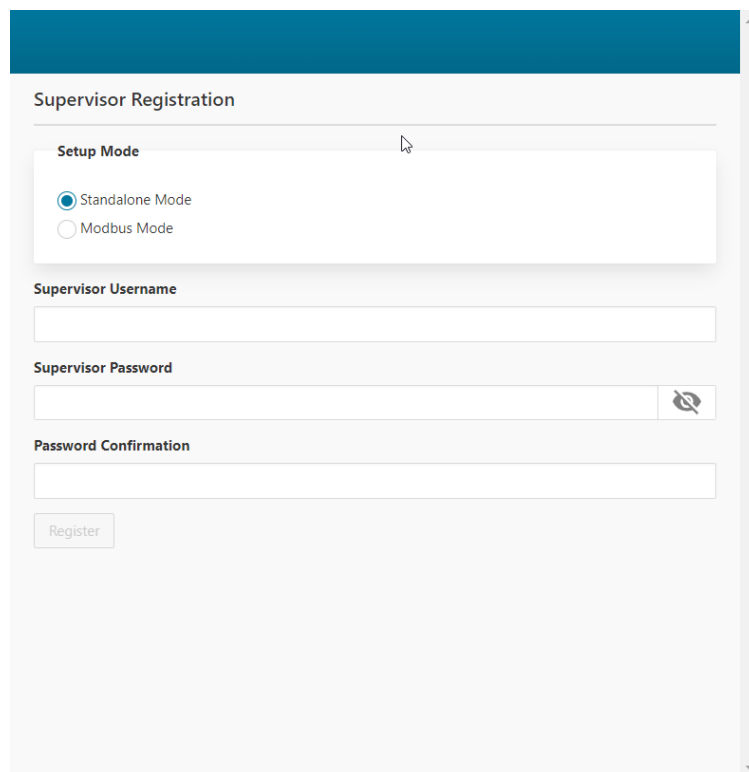
#### 3.2. Mandatory initial login credential change

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.

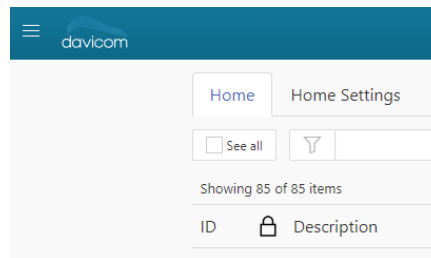


The screenshot shows a web browser window displaying the 'Supervisor Registration' page. The page has a blue header bar. Below the header, the title 'Supervisor Registration' is centered. Underneath, there is a 'Setup Mode' section with two radio button options: 'Standalone Mode' (which is selected) and 'Modbus Mode'. Below this, there are three input fields: 'Supervisor Username', 'Supervisor Password' (with a toggle icon to the right), and 'Password Confirmation'. At the bottom of the form is a 'Register' button.

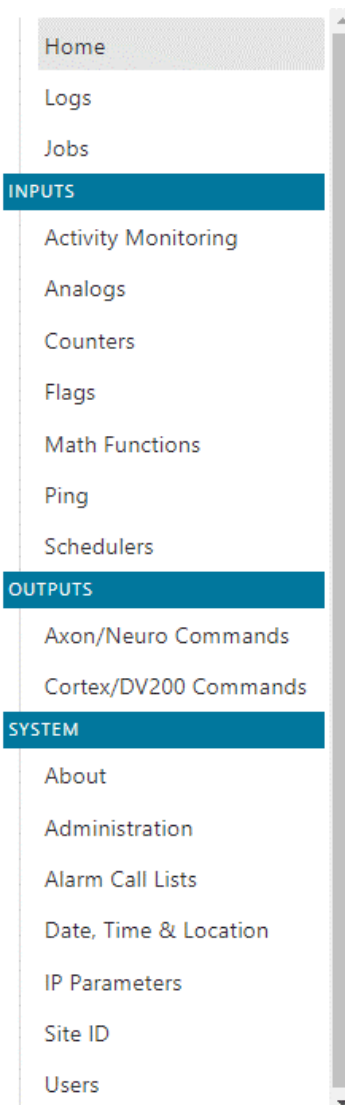
After this initial step, the first Login process can take up to 30 seconds while the system configures its setup and web page views.

### 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.*

Home / IP Parameters

General Email Web SNMP Axon/Neuro Command Server SSL Certificate

IP Address: 172.16.203.191 Netmask: 255.255.0.0

Gateway: 172.16.201.2 DNS: 8.8.8.8

Home / IP Parameters

General Email Web SNMP Axon/Neuro Command Server SSL Certificate

IP Address: 172.16.203.191 Netmask: 255.255.0.0

Gateway: 172.16.201.2 DNS: 8.8.8.8

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

Home / IP Parameters

General Email Web SNMP Axon/Neuro Command Server SSL Certificate

IP Address: 172.16.203.191 Netmask: 255.255.0.0

Gateway: 172.16.201.2 DNS: 8.8.8.8

Home / IP Parameters

General Email Web SNMP Axon/Neuro Command Server SSL Certificate

IP Address: 172.16.203.191 Netmask: 255.255.0.0

Gateway: 172.16.201.2 DNS: 8.8.8.8

Save the IP settings.

Home / IP Parameters

General Email Web SNMP Axon/Neuro Command Server SSL Certificate


IP Address: 172.16.203.191 Netmask: 255.255.0.0

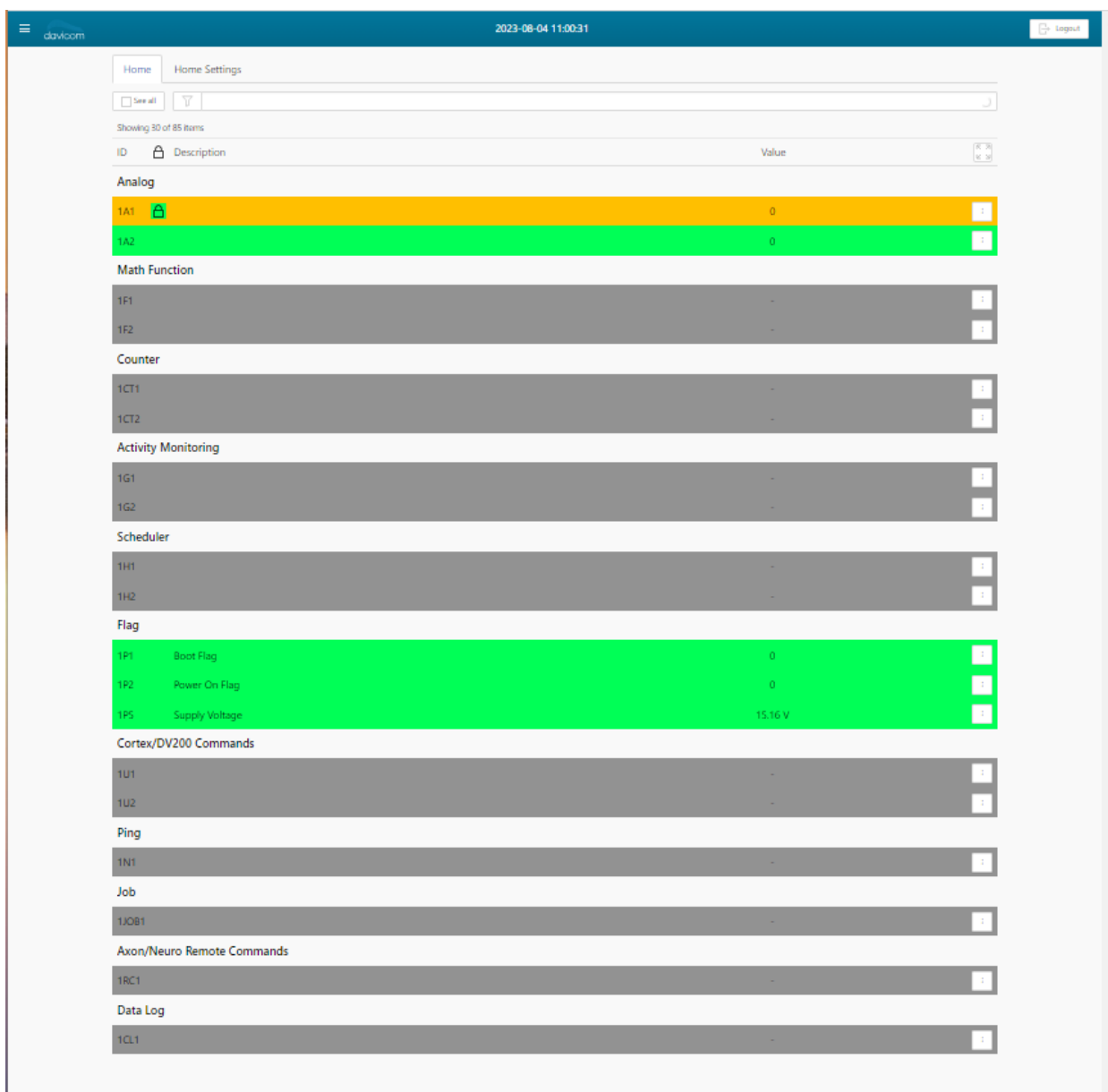
Gateway: 172.16.201.2 DNS: 8.8.8.8

## 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.

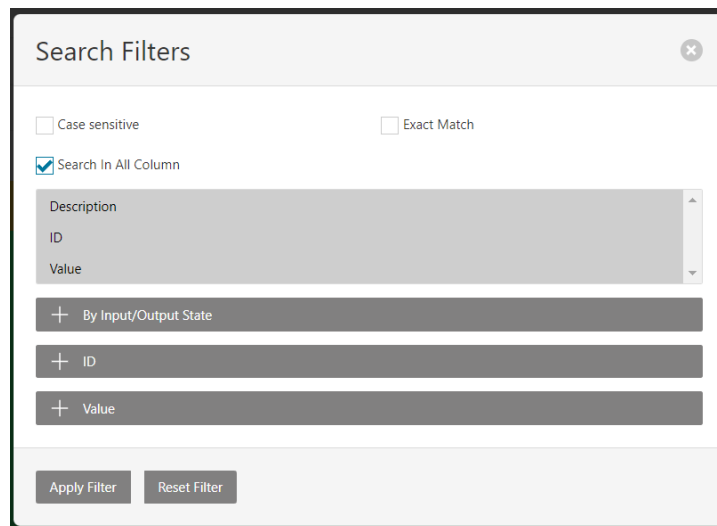
The  box at the very right of each element allows direct access to configure, and (depending on the type of input) to reset or control the element. You can also right-click on the element with the mouse



The screenshot displays the AXON Home page interface. At the top, there is a navigation bar with a hamburger menu, the text 'axon.com', the date and time '2023-08-04 11:00:31', and a 'Logout' button. Below the navigation bar, there are tabs for 'Home' and 'Home Settings'. A search bar with a 'Show all' button and a filter icon is present. The main content area shows a list of 85 items, with the first 30 displayed. The items are organized into several categories, each with a header and a list of items. Each item has a status icon, a description, a value, and a three-dot menu icon.

ID	Description	Value	Actions
<b>Analog</b>			
1A1		0	
1A2		0	
<b>Math Function</b>			
1F1		-	
1F2		-	
<b>Counter</b>			
1CT1		-	
1CT2		-	
<b>Activity Monitoring</b>			
1G1		-	
1G2		-	
<b>Scheduler</b>			
1H1		-	
1H2		-	
<b>Flag</b>			
1P1	Boot Flag	0	
1P2	Power On Flag	0	
1P5	Supply Voltage	15.16 V	
<b>Cortex/DV200 Commands</b>			
1U1		-	
1U2		-	
<b>Ping</b>			
1N1		-	
<b>Job</b>			
1JOB1		-	
<b>Axon/Neuro Remote Commands</b>			
1RC1		-	
<b>Data Log</b>			
1CL1		-	

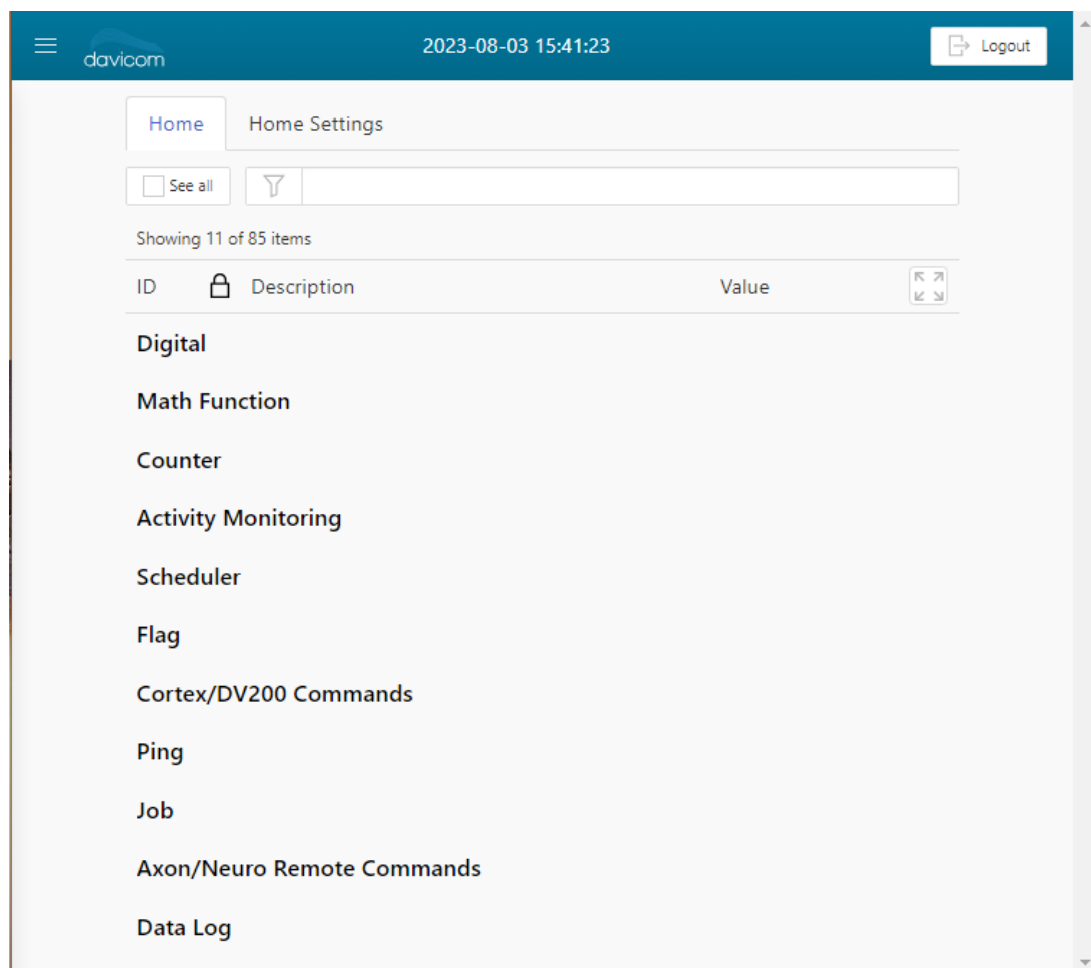
Filtered views are available through the Filter icon.



The 'Search Filters' dialog box contains the following elements:

- Close button (X) in the top right corner.
- Search options: ☐ Case sensitive, ☐ Exact Match, and ☒ Search In All Column.
- A list of search targets: Description, ID, and Value.
- Three expandable filter sections: '+ By Input/Output State', '+ ID', and '+ Value'.
- 'Apply Filter' and 'Reset Filter' buttons at the bottom.

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.



The AXON-8A Home Page interface includes:

- Header bar with the Davicom logo, the date and time '2023-08-03 15:41:23', and a 'Logout' button.
- Navigation tabs for 'Home' and 'Home Settings'.
- A 'See all' button with a funnel icon and a search input field.
- A status message: 'Showing 11 of 85 items'.
- A table with columns: ID (with a lock icon), Description, and Value (with a refresh icon).
- A list of device sections: Digital, Math Function, Counter, Activity Monitoring, Scheduler, Flag, Cortex/DV200 Commands, Ping, Job, Axon/Neuro Remote Commands, and Data Log.

## 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.

The screenshot shows the 'Activity Monitoring' configuration page in the Davicom system. The page has a blue header with the Davicom logo, the date and time '2023-07-31 16:39:20', and a 'Logout' button. The main content area is titled 'Home / Activity Monitoring' and contains several configuration sections.

**Enable Section:** A checkbox labeled 'Enable' is present. To its right is a dropdown menu showing 'ID' and '1G1'. Further right is a 'Refresh' button with a checkmark icon.

**Descriptions/Colors Section:** This section allows for defining colors for 'Active' and 'Normal' states. The 'Active' state is currently set to a red color with the hex code '#FF2800'. The 'Normal' state is currently set to a green color with the hex code '#00FF56'.

**Monitoring Section:** This section contains several configuration options:

- Source ID:** A dropdown menu showing '1D6'.
- Mode:** A dropdown menu showing 'Cumulative'.
- Maximum Activity Time (min):** A text input field containing '0'.
- Reset Trigger:** A dropdown menu.
- Log Daily Active Time:** A checkbox.
- Reset at Midnight:** A checkbox.
- Reset:** A button.

**Expandable Sections:** Below the Monitoring section are four expandable sections, each with a plus icon and a title:

- Conditionally Locked State
- Alarm Configuration
- Action
- Linked To

**Footer:** The footer contains four icons: a trash can, a document with an arrow, a document with a star, and a home icon.

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

The following window allows complete configuration of the Analog Inputs:

Home / Analog

ID 1A1 ☐ Refresh

☒ Enable

Descriptions/Colors

Active Normal

Color #FF2800 ● Color #00FF56 ●

Sensor Coefficients

$y = Ax^2 + Bx + C$  for  $D = 0$ , or  $y = D \log(Ax^2 + Bx + C)$

A 0

B 1

C 0

D 0

Measurement Unit Voltage Range (V)

☐ Display positive values only

Low Limit High Limit

0 ☐ 0 ☐

Delay

Before Action (sec)

0

Before Return To Normal (sec)

0

+ Conditionally Locked State

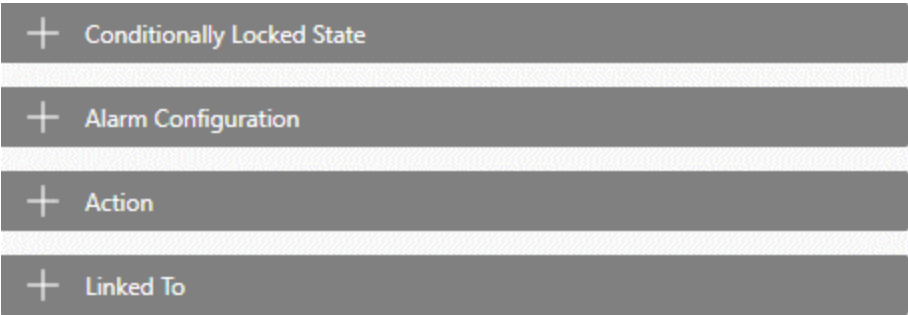
+ Alarm Configuration

+ Action

+ Linked To

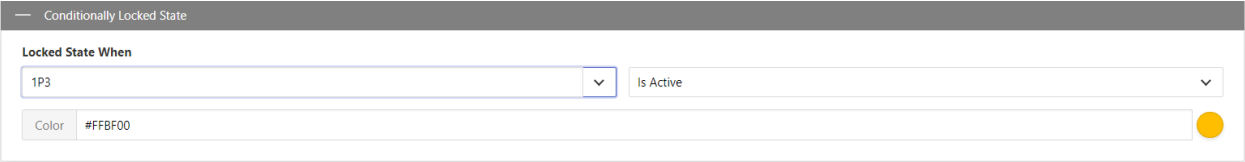
The A, B and C parameters allow sensor linearity, gain and offset to be fine-tuned, respectively. The corresponding equation is shown in the View window. The D parameter is used for logarithms as also shown in the equation.

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.



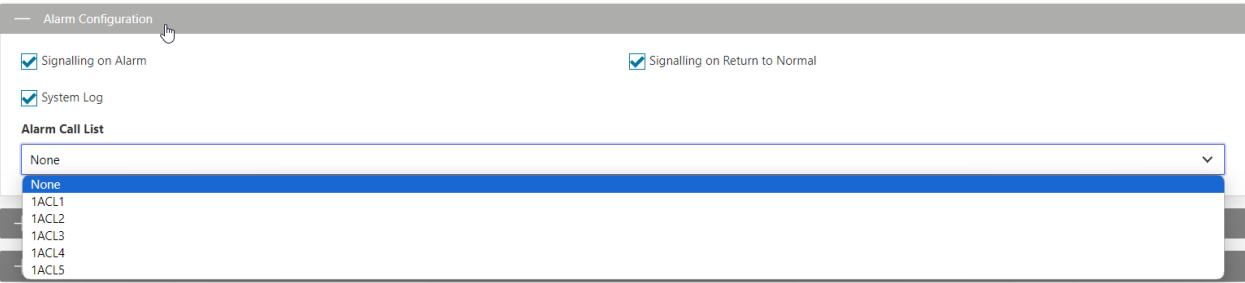
**4.2.2.1. Conditionally Locked State**

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.

— Action

**On Active**

Do Nothing ▼

Do Nothing ▼

**On Return to Normal**

Do Nothing ▼

Do Nothing ▼

These actions can be:

Do Nothing

Log Data

Force On

Force Off

Release

Pulse

Count Up

Count Down

Reset Count

- 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.

— Linked To

ID 1D4 - [Conditionally Locked]

### 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.

Home / Counter

☐ Enable ID 1CT1 ☒ Refresh

**Descriptions/Colors**

Active Normal

Color #FF2800 Color #00FF56

Minimum Value Maximum Value

0 0

Initial Value

0 Reset

**Triggers**

Count Up

Count Down

Count Reset

**Action Limits**

Low Limit High Limit

0 0

+ Conditionally Locked State

+ Alarm Configuration

+ Action

+ Linked To



## 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.



The screenshot displays the 'Digital' configuration page for a device. At the top, a blue header bar contains a menu icon, the 'davicom' logo, the timestamp '2023-08-03 17:24:00', and a 'Logout' button. Below the header, the breadcrumb 'Home / Digital' is shown. The main configuration area includes an 'ID' field set to '1D1' with a dropdown arrow and a 'Refresh' checkbox. An 'Enable' checkbox is checked. The 'Descriptions/Colors' section has two columns: 'Active' and 'Normal'. Each column has a text input field and a color selection area. The 'Active' color is set to '#FF2800' with a red circular indicator, and the 'Normal' color is set to '#00FF56' with a green circular indicator. The 'Active Level' section features a dropdown menu currently set to 'Low'. Below this, the 'Delay' section contains two input fields: 'Before Action (sec)' and 'Before Return to Normal (sec)', both set to '0'. At the bottom of the configuration area, there are four expandable sections: 'Conditionally Locked State', 'Alarm Configuration', 'Action', and 'Linked To', each with a plus icon. The footer bar contains four icons: a trash can, a refresh icon, a save icon, and a home icon.

Home / Digital

ID 1D1 Refresh

☒ Enable

Descriptions/Colors

Active	Normal
<input type="text"/>	<input type="text"/>
Color #FF2800 	Color #00FF56 

Active Level

Low

Delay

Before Action (sec)

0

Before Return to Normal (sec)





0

+ Conditionally Locked State

+ Alarm Configuration

+ Action

+ Linked To

## 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).

Operands

Operator

+

A + B + C + D

A 1P5 B C D

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.

+  
-  
/  
\*  
Log10  
X^y  
SWR  
Sqrt  
Average  
AND  
NAND  
OR  
NOR  
XOR  
XNOR

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.

The screenshot displays the Schedulers configuration interface, which is divided into three main sections: Active Month, Active Days, and Active Time.

- Active Month:** This section allows selecting the frequency and specific months for the event. The ☒ **Yearly** option is selected. Below it, a grid of month buttons (January through December) is shown, all of which are currently unselected. A horizontal line separates this section from the next.
- Active Days:** This section allows selecting the frequency and specific days of the week. The ☒ **7/7** option is selected. Below it, a grid of day buttons (Sunday through Saturday) is shown, all of which are currently unselected.
- Active Time:** This section allows selecting the frequency and specific time range. The ☒ **24/24** option is selected. Below it, there are two time selection fields: **Start (HH:MM:SS)** and **End (HH:MM:SS)**. Each field consists of three dropdown menus for hours, minutes, and seconds, all currently set to 00.

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 2<sup>nd</sup> Monday, select days 8 to 14,  
For the 3<sup>rd</sup> Monday, select days 15 to 21,  
For 4<sup>th</sup> Monday, select days 22 to 28,  
For the 5<sup>th</sup> 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.

The screenshot shows the 'Axon/Neuro Remote Commands' configuration page in the Davicom web interface. The page has a teal header with the Davicom logo, a timestamp '2023-08-03 16:21:33', and a 'Logout' button. The breadcrumb trail is 'Home / Axon/Neuro Remote Commands'. The main configuration area includes: an 'Enable' checkbox; an 'ID' dropdown menu set to '1RC1' with a 'Refresh' button; a 'Description' text input field; 'Target IP' and 'Target UDP Port' (set to 5684) input fields; a 'Target Pre-Shared Key (PSK)' text input field; a 'Request Target Output' button; a 'Target Output ID or Click Request Target Output' dropdown menu; 'Maximum Number Of Retries' (set to 0) and 'Delay Between Retries (sec)' (set to 1) dropdown menus; a checked 'System Log' checkbox; an 'Alarm Call List' dropdown menu set to 'None'; a 'Command Test' section with a 'Command' dropdown set to 'Force On' and a 'Send Command' button; and a '+ Linked To' button at the bottom. A bottom navigation bar contains icons for a trash can, a refresh/copy icon, a save icon, and a home icon.

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.

The screenshot shows the 'Cortex/DV200 Commands' configuration page in the Davicom web interface. The top header bar is blue with the Davicom logo, the date and time '2023-08-03 16:24:47', and a 'Logout' button. Below the header, the breadcrumb 'Home / Cortex/DV200 Commands' is visible. The main configuration area includes several sections: an 'Enable' checkbox and an 'ID' dropdown menu set to '1U1' with a 'Refresh' button; a 'Descriptions/Colors' section with 'Active' and 'Normal' labels, each followed by a text input field and a 'Color' dropdown menu (set to '#FF2800' and '#00FF56' respectively, with corresponding color swatches); a 'Trigger' dropdown menu and a 'Mode' dropdown menu set to 'IP'; a 'Target Unit' section with an 'IP Address' text input, a 'Command Flag' dropdown menu set to '1C001', and a 'Community' text input; and a 'Retries' section with 'Maximum Number Of Retries' set to '2' and 'Delay Between Retries (sec)' set to '5'. At the bottom, there are four expandable sections: 'Conditionally Locked State', 'Alarm Configuration', 'Action', and 'Linked To', each with a plus icon. The bottom navigation bar contains icons for a trash can, a refresh/copy icon, a document icon, and a home icon.

Home / Cortex/DV200 Commands

☐ Enable ID 1U1 ☒ Refresh

**Descriptions/Colors**

Active Normal

Color #FF2800 Color #00FF56

Trigger Mode

Target Unit

IP Address Command Flag

Community

Retries

Maximum Number Of Retries Delay Between Retries (sec)

2 5

+ Conditionally Locked State

+ Alarm Configuration

+ Action

+ Linked To

### 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)



The screenshot shows the Davicom web interface for configuring relay 1R1. The top header includes the Davicom logo, the date and time (2023-05-11 14:18:19), and a Logout button. The breadcrumb trail shows 'Home / Relay'. The main configuration area for relay 1R1 includes an 'ID' field with the value '1R1' and a 'Refresh' checkbox. Below this is an 'Enable' checkbox. The 'Descriptions/Colors' section contains two columns: 'Active' and 'Normal'. Each column has a text input field and a color selection area with a 'Color' label, a hex color code, and a corresponding colored circle (red for Active, green for Normal). The 'Mode' section features a dropdown menu currently set to 'Any'. The 'Pulse Width (0.2 second minimum)' section has a text input field set to '1'. There are checkboxes for 'Automatic Only' and 'System Log'. At the bottom, there are two expandable sections: '+ Action' and '+ Linked To'.

Home / Relay

ID 1R1 ☒ Refresh

☒ Enable

**Descriptions/Colors**

Active	Normal
<input type="text"/>	<input type="text"/>
Color #FF2800 	Color #00FF56 

**Mode**

Any

**Pulse Width (0.2 second minimum)**

1

☐ Automatic Only

☒ System Log

+ Action

+ Linked To

## 4.4. SYSTEM

### 4.4.1. Administration / General

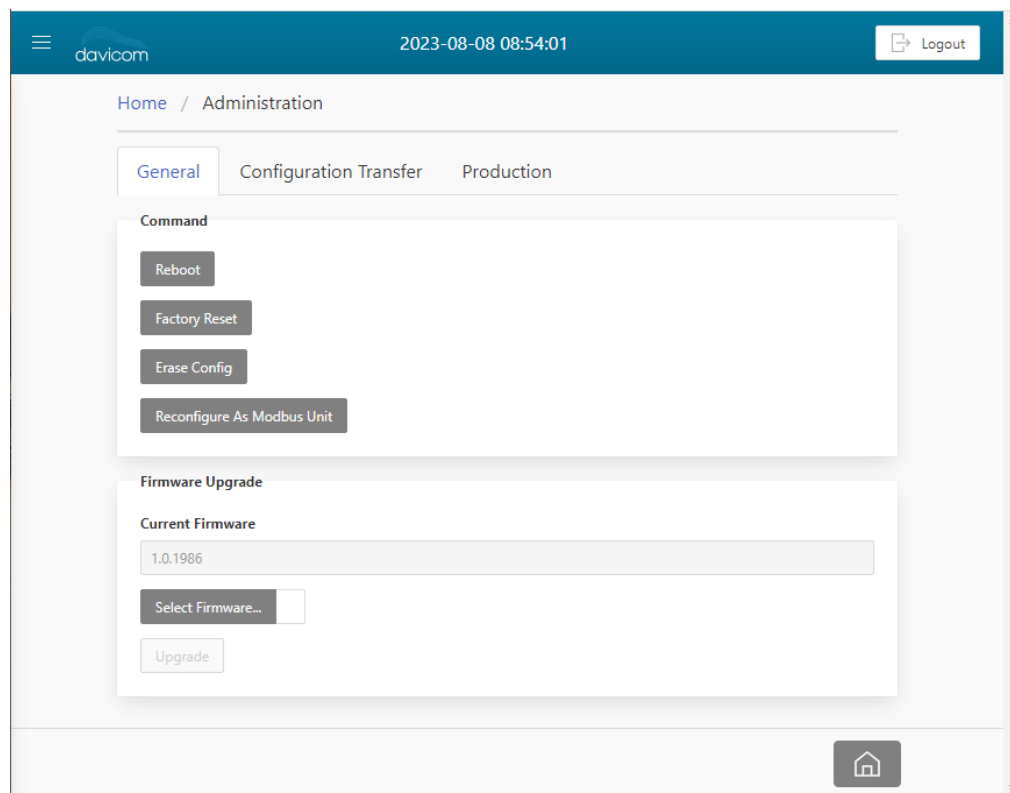
#### 4.4.1.1. Factory Reset, Reboot and Erase Configuration

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).

The screenshot shows the 'Configuration Transfer' screen within the Davicom AXON interface. The top header bar is dark blue and contains a menu icon, the 'davicom' logo, the date and time '2023-08-08 09:00:54', and a 'Logout' button. Below the header, the breadcrumb 'Home / Administration' is visible. The main content area has three tabs: 'General', 'Configuration Transfer' (which is active), and 'Production'. Under the 'Configuration Transfer' tab, there are two sections: 'Import' and 'Export'. The 'Import' section contains a 'Select Config...' button, two checkboxes for 'Apply IP Parameters' and 'Apply User Parameters', and a 'PC to Unit' button. The 'Export' section contains a 'Unit to PC' button. A home icon is located in the bottom right corner of the interface.



## 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.

The screenshot shows the 'Alarm Call Lists' configuration interface. At the top, there is a header bar with the Davicom logo, the date and time '2023-08-03 11:07:23', and a 'Logout' button. Below the header, the breadcrumb 'Home / Alarm Call Lists' is visible. The main configuration area includes several sections: 'Enable' with a checked checkbox and a dropdown for 'ID' set to '1ACL1', and a 'Refresh' button; a 'Description' text field; a 'Parameters' section with 'Delay Before Starting (sec)' set to 60, 'Delay Before Re-Doing' set to 5 minutes, and 'Max Number of Times Done (Return to Normal is signalled only once)' set to 5; an 'Active Days' section with a checked '7/7' option and individual day checkboxes for Sunday through Saturday; an 'Active Time' section with a checked '24/24' option and time pickers for 'Start (HH:MM:SS)' and 'End (HH:MM:SS)'; and a 'Contact' section with five rows, each containing a label (#1 to #5), a text input field, and a dropdown menu currently set to 'None'. At the bottom, there is a navigation bar with icons for delete, back, save, and home.

Home / Alarm Call Lists

☒ Enable ID 1ACL1 ☒ Refresh

Description

Parameters

Delay Before Starting (sec) 60 Delay Before Re-Doing 5 Minutes

Max Number of Times Done (Return to Normal is signalled only once) 5

Active Days

☒ 7/7

Sunday Monday Tuesday Wednesday Thursday Friday

Saturday

Active Time

☒ 24/24

Start (HH:MM:SS) 00 : 00 : 00 End (HH:MM:SS) 00 : 00 : 00

Contact

#1		None
#2		None
#3		None
#4		None
#5		None

### 4.4.3. Configuring Date, Time and Location

#### AUTOMATIC DST ADJUSTMENT:

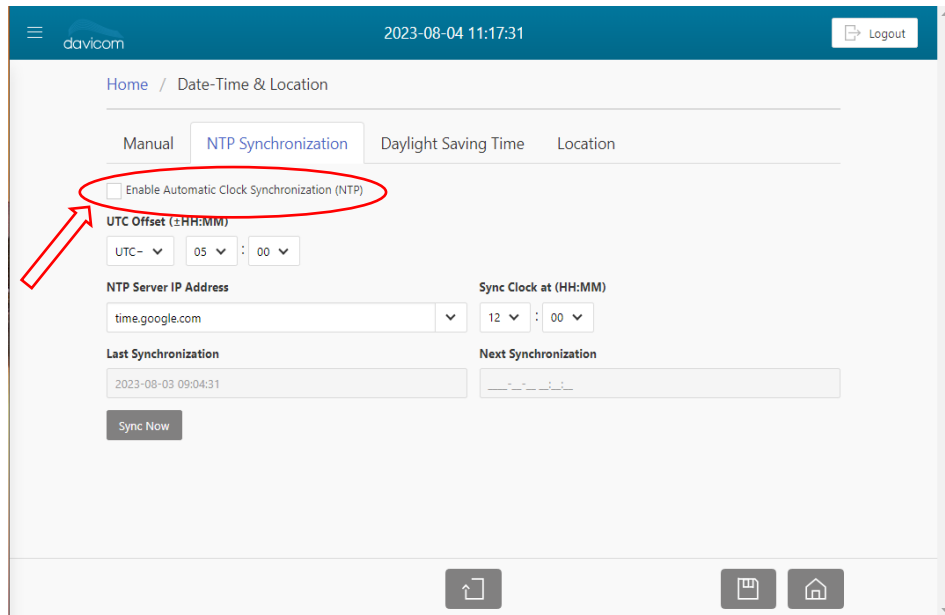
Activate the Automatic Daylight Saving Time Adjustment if applicable.

The screenshot shows the 'Date-Time & Location' configuration page in the Davicom web interface. The 'Daylight Saving Time' tab is selected. The 'Enable Daylight Saving Time (DST)' checkbox is checked and circled in red. The 'Start Date' is configured as 2nd Sunday of March at 02:00, and the 'End Date' is configured as 1st Sunday of November at 02:00. The 'DST Start Date' and 'DST End Date' fields show the corresponding ISO timestamps: 2023-03-12 02:00:00 and 2023-11-05 02:00:00 respectively.

This screenshot is similar to the one above, but with additional red annotations. The 'Enable Daylight Saving Time (DST)' checkbox is checked. The 'Start Date' (2nd Sunday of March) and 'End Date' (1st Sunday of November) are circled in red, with red arrows pointing to them from the right. The 'DST Start Date' and 'DST End Date' fields show the corresponding ISO timestamps: 2023-03-12 02:00:00 and 2023-11-05 02:00:00 respectively.

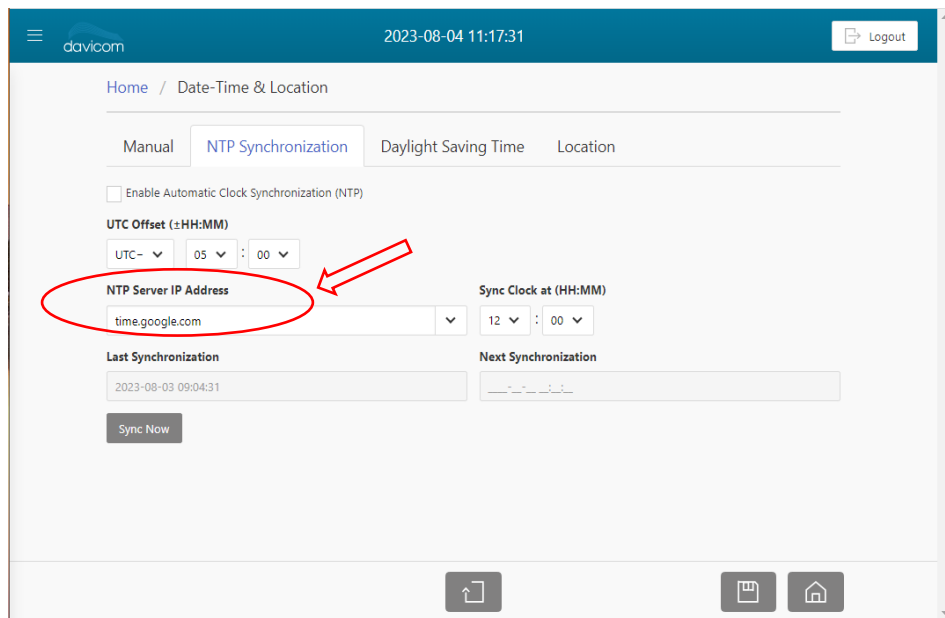
The default values are from the second Sunday in March at 2 AM, until the first Sunday in November, at 2AM. *NOTE: DST time (also known as summer time) is not necessarily used worldwide and some countries may use different DST values.*

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



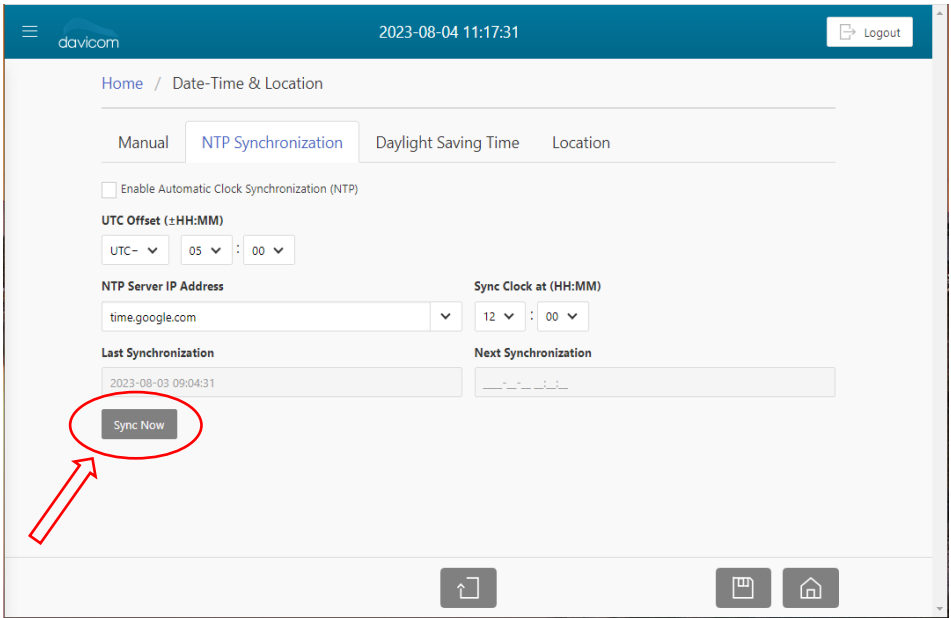
The screenshot shows the 'Date-Time & Location' configuration page in the Davicom web interface. The 'NTP Synchronization' tab is selected. A red circle highlights the checkbox labeled 'Enable Automatic Clock Synchronization (NTP)', with a red arrow pointing to it. Below this, the 'UTC Offset (±HH:MM)' is set to UTC-05:00. The 'NTP Server IP Address' is set to 'time.google.com'. The 'Sync Clock at (HH:MM)' is set to 12:00. The 'Last Synchronization' timestamp is '2023-08-03 09:04:31'. A 'Sync Now' button is visible at the bottom of the form.

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.

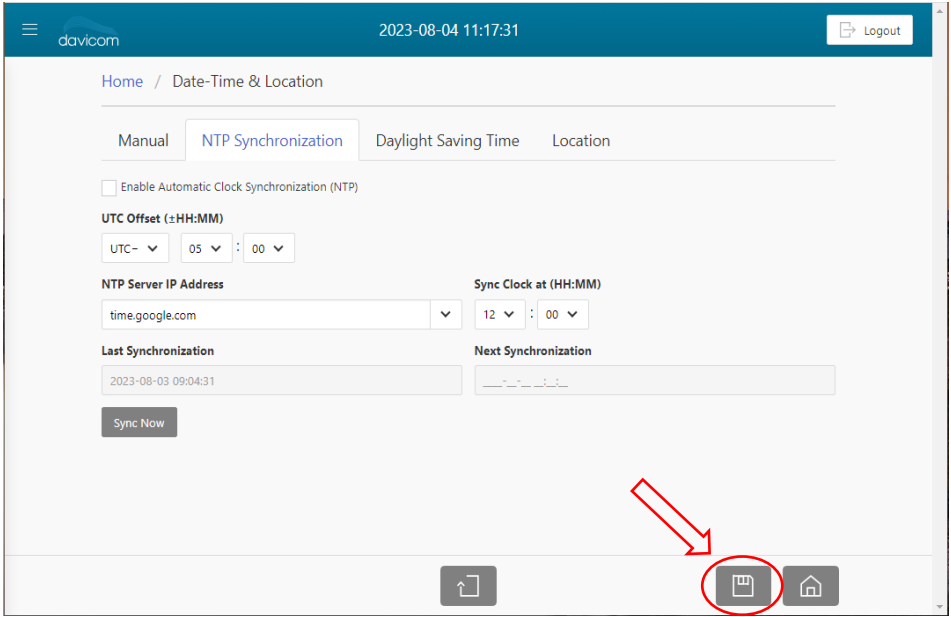


This screenshot shows the same 'Date-Time & Location' configuration page. In this view, the 'NTP Server IP Address' field, which contains the default value 'time.google.com', is highlighted with a red circle. A red arrow points to this field. All other settings, including the 'Enable Automatic Clock Synchronization (NTP)' checkbox and the 'UTC Offset', remain the same as in the previous screenshot.

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

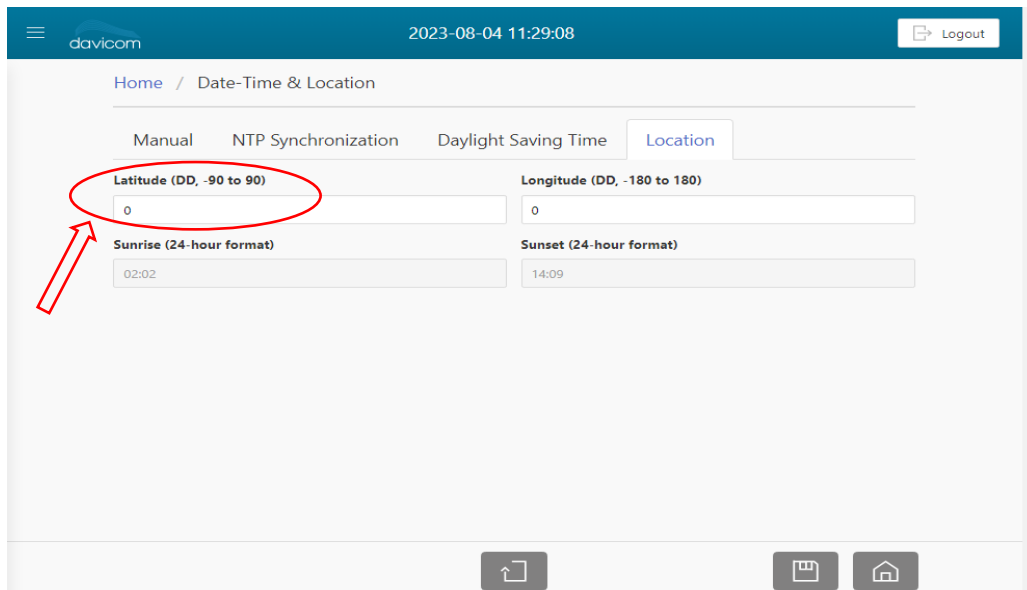


**APPLY CHANGES (SAVE):** Save the screen contents.



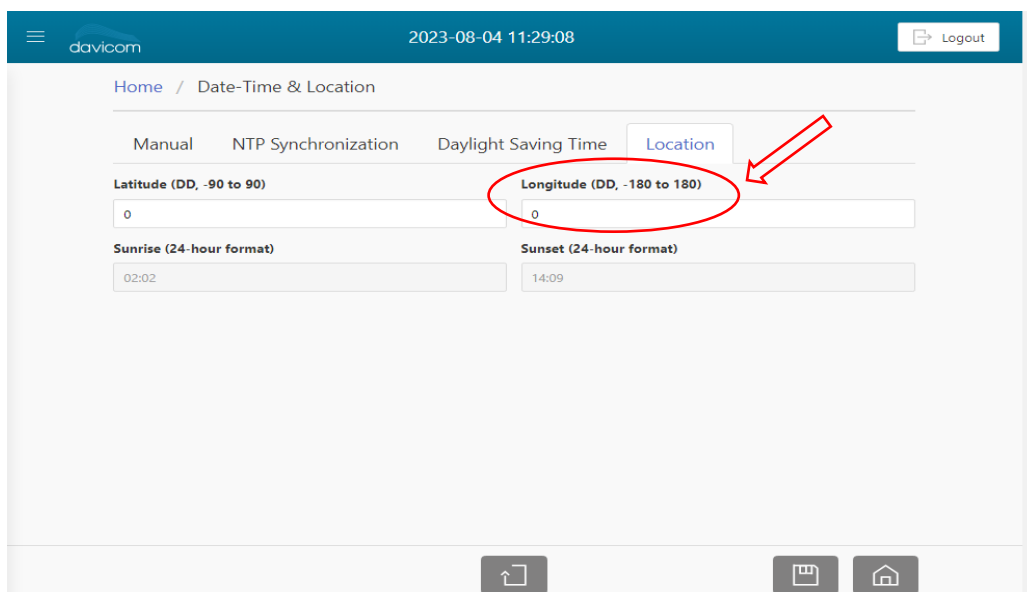
Location settings are required to allow the AXON to calculate the local time of sunrise and sunset for every day of the year. They are entered in the decimal degree format: DDD.dddddd and DD.dddddd for the Longitude and Latitude respectively. These settings are used to generate the Sunrise Flag in the 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.



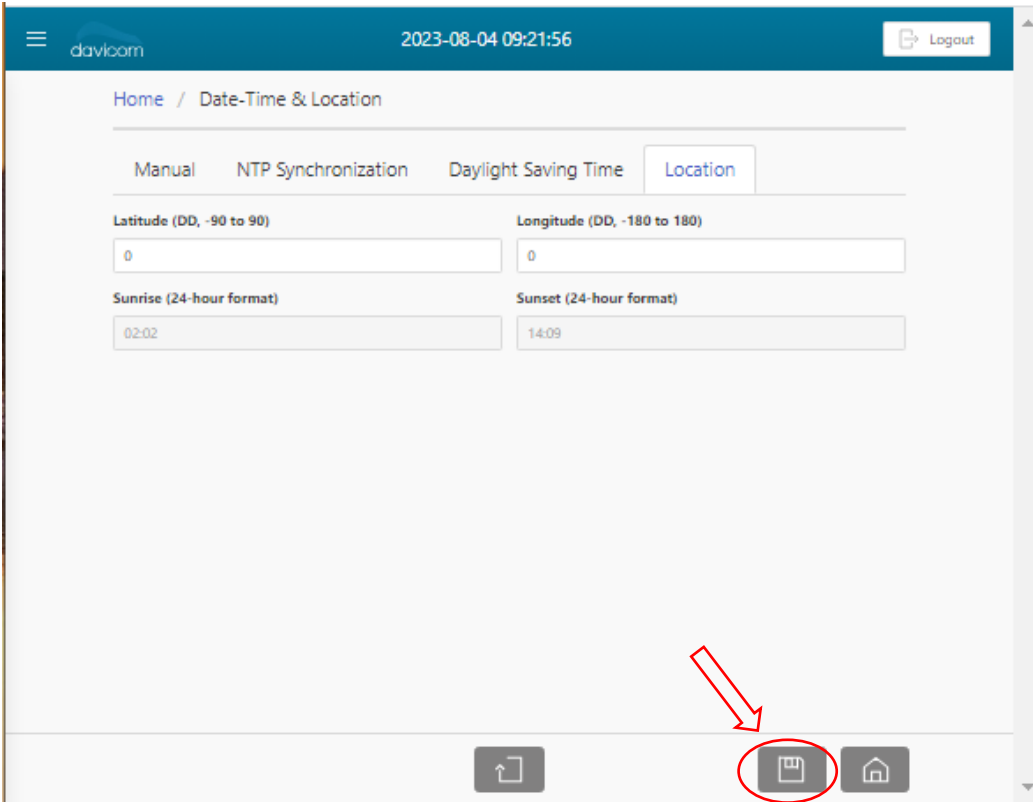
The screenshot shows the Davicom web interface for the 'Date-Time & Location' settings. The 'Location' tab is selected. The 'Latitude (DD, -90 to 90)' field is circled in red, and a red arrow points to it. The 'Longitude (DD, -180 to 180)' field is also visible. The 'Sunrise (24-hour format)' and 'Sunset (24-hour format)' fields are set to 02:02 and 14:09 respectively. The interface includes a top navigation bar with the Davicom logo, a date and time display (2023-08-04 11:29:08), and a Logout button. The bottom of the interface has three icons: a refresh button, a save button, and a home button.

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

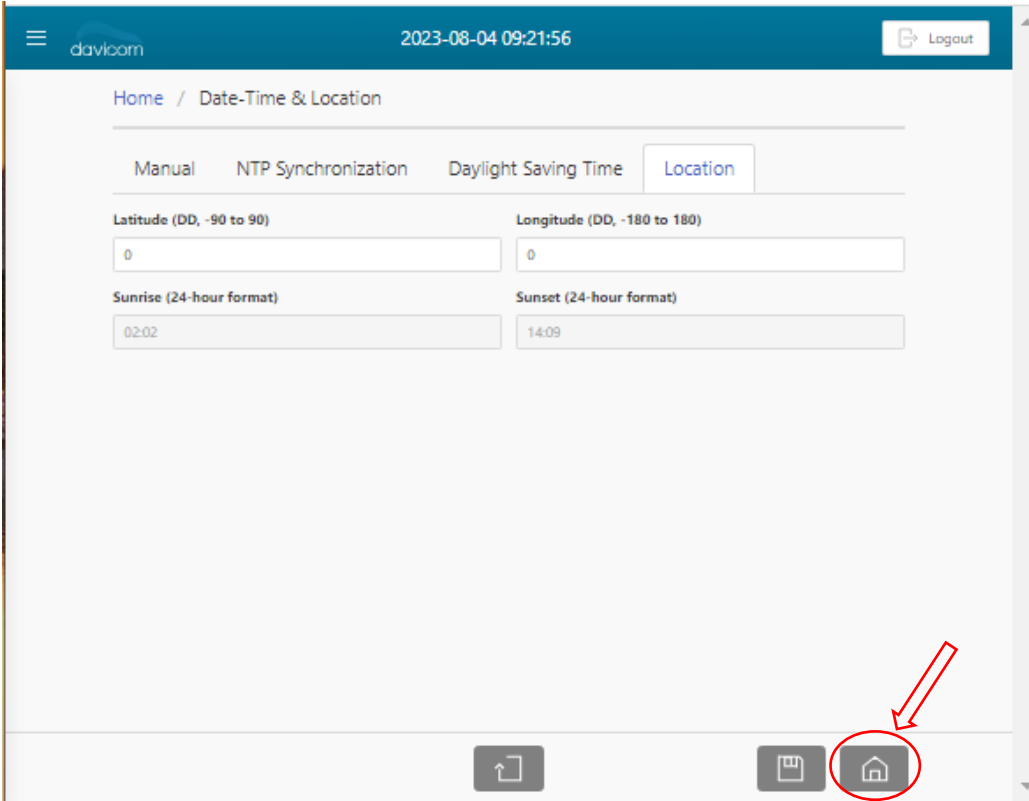


The screenshot shows the Davicom web interface for the 'Date-Time & Location' settings. The 'Location' tab is selected. The 'Longitude (DD, -180 to 180)' field is circled in red, and a red arrow points to it. The 'Latitude (DD, -90 to 90)' field is also visible. The 'Sunrise (24-hour format)' and 'Sunset (24-hour format)' fields are set to 02:02 and 14:09 respectively. The interface includes a top navigation bar with the Davicom logo, a date and time display (2023-08-04 11:29:08), and a Logout button. The bottom of the interface has three icons: a refresh button, a save button, and a home button.

**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

The screenshot shows the Davicom web interface for configuring the Email client. The top header bar is blue with the Davicom logo, the date and time '2023-08-03 16:52:41', and a 'Logout' button. Below the header, the breadcrumb 'Home / IP Parameters' is visible. The main content area has tabs for 'General', 'Email' (selected), 'Web', 'SNMP', 'Axon/Neuro Command Server', and 'SSL Certificate'. The 'Email' tab contains the following fields: 'Unit Email Address' (text input), 'SMTP Host' (text input), 'SMTP Port' (text input with '25' entered), 'Security' (drop-down menu with 'None' selected), 'Username' (text input), and 'Password' (text input). Below these fields is an 'Email Test' section with a 'Recipient' text input and a 'Send Email' button. At the bottom of the interface, there are four icons: a trash can, a refresh/circular arrow, a save/disk, and a home icon.

Enter the E-mail address that you wish to use with this AXON

Enter the SMTP Host's IP Address, or name.

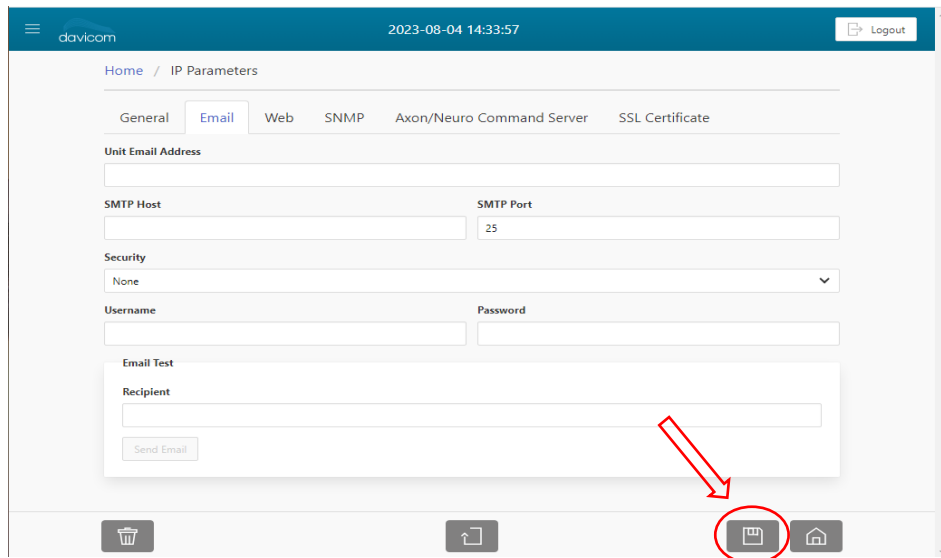
Select the SMTP Port used by this server.

Select the type of Security (Authentication) required by the SMTP server from the drop-down list. You have a choice of TLS or SSL.

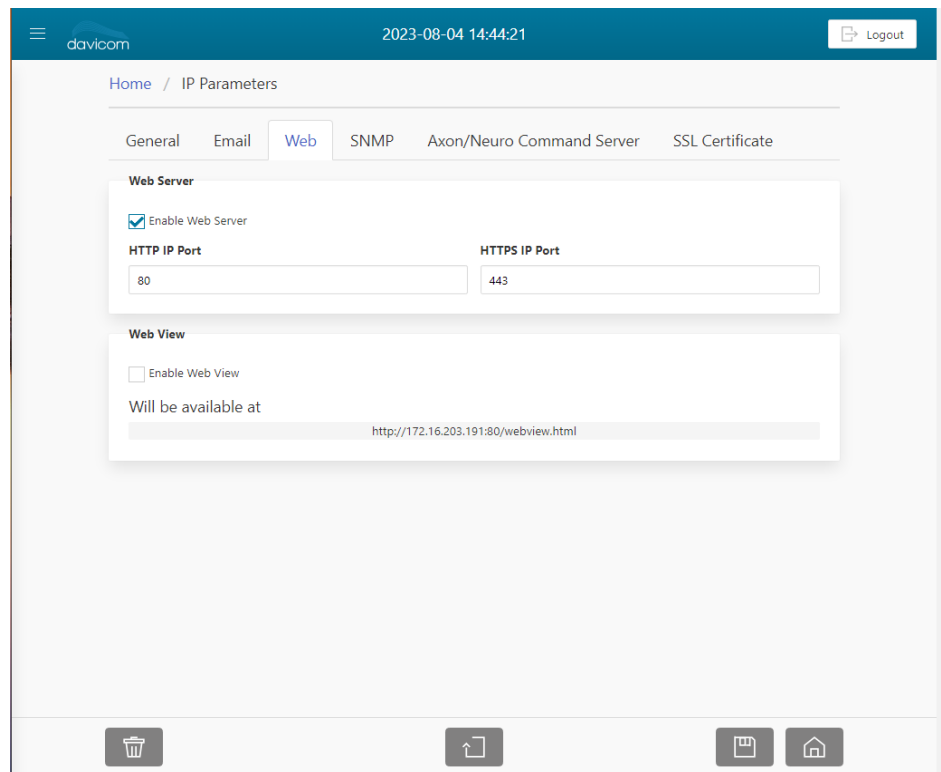
Enter the username and password used for this email account

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.

The screenshot shows the 'SNMP' configuration page within a web application. The header bar is dark blue with the 'davicom' logo on the left, the date and time '2023-08-04 14:54:48' in the center, and a 'Logout' button on the right. Below the header, a breadcrumb trail reads 'Home / IP Parameters'. A horizontal tab bar contains 'General', 'Email', 'Web', 'SNMP' (which is highlighted), 'Axon/Neuro Command Server', and 'SSL Certificate'. The main content area is divided into several sections: 1. 'SNMP Mode' with a dropdown menu set to 'Send Trap'. 2. 'SNMP Port (Default 161)' with a text input field containing '161'. 3. 'Community (GET)' with a text input field containing 'public'. 4. 'Community (GET/SET)' with a text input field containing 'private'. 5. 'Alarm Trap Parameters' section, which includes: - 'Type' dropdown menu set to 'V1'. - 'Port (Default 162)' text input field containing '162'. - 'Community' text input field (empty). 6. 'SNMP V3 Agent' section, which includes: - A checkbox labeled 'SNMP V3 Only (GET/SET)' which is unchecked. - 'Username' text input field (empty). - 'Engine ID' text input field containing '80003949038CDE99003731'. - An 'Authentication' sub-section with a 'Protocol' dropdown menu set to 'None' and an empty 'Password' text input field. - A 'Privacy' sub-section with a 'Protocol' dropdown menu set to 'None' and an empty 'Password' text input field. At the bottom of the page, there is a dark grey bar with four icons: a trash can, a document with an upward arrow, a document with a downward arrow, and a house icon.

#### 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.

The screenshot shows the 'Axon/Neuro Command Server' configuration page. The header bar is dark blue with the 'davicom' logo, the date and time '2023-08-08 16:10:49', and a 'Logout' button. The breadcrumb trail is 'Home / IP Parameters'. The main content area has a title bar 'Axon/Neuro Command Server' with a menu icon. Below it is a checkbox 'Enable Command Server'. The 'UDP Port (Default 5684)' is set to '5684'. The 'Unit Pre-Shared Key (PSK)' is '52E682B4D3A1C8CD9FC0D614C1A8CDF3', with a 'Generate PSK' button. The bottom navigation bar contains three icons: a square with an arrow, a document, and a house.

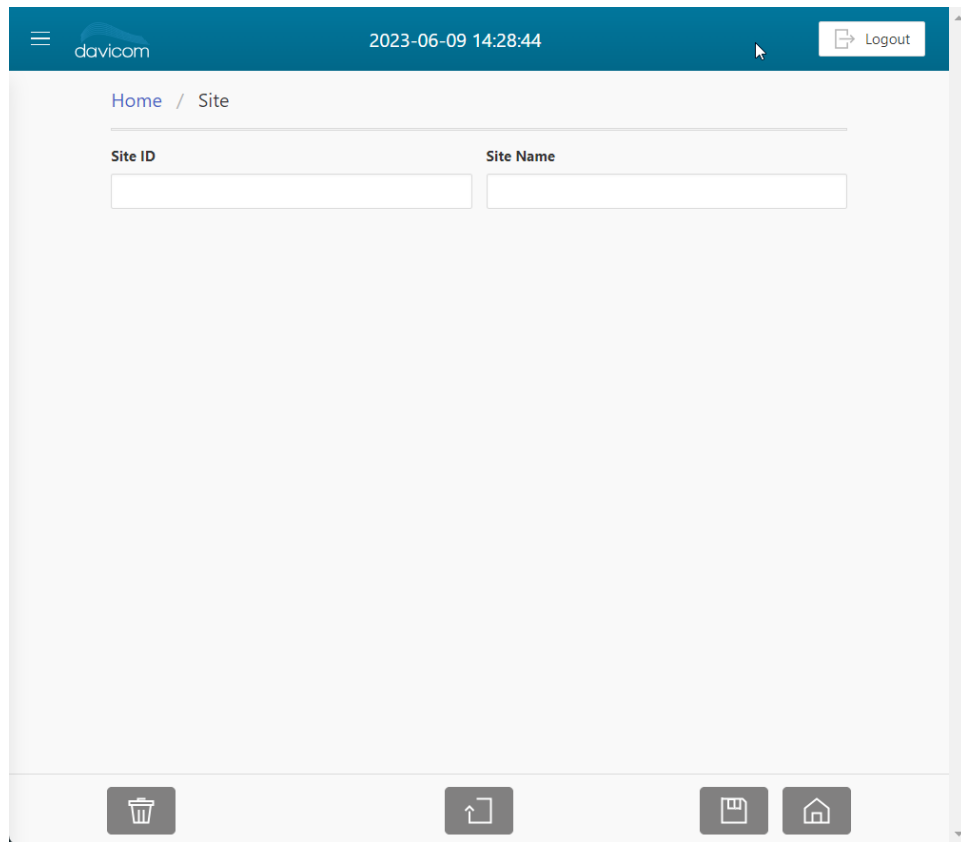
#### 4.4.4.5. SSL Certificate

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

The screenshot shows the 'SSL Certificate' configuration page. The header bar is dark blue with the 'davicom' logo, the date and time '2023-08-08 16:25:04', and a 'Logout' button. The breadcrumb trail is 'Home / IP Parameters'. The main content area has a title bar 'SSL Certificate' with a menu icon. Below it is a section 'Supported Certificate Encryption' with a list: 'RSA (Up to 2048bits)' and 'ECC (secp256r1, secp384r1, secp521r1)'. There are three buttons: 'Select Certificate File', 'Select Private Key File', and 'Upload Certificate'. The bottom navigation bar contains a single house icon.

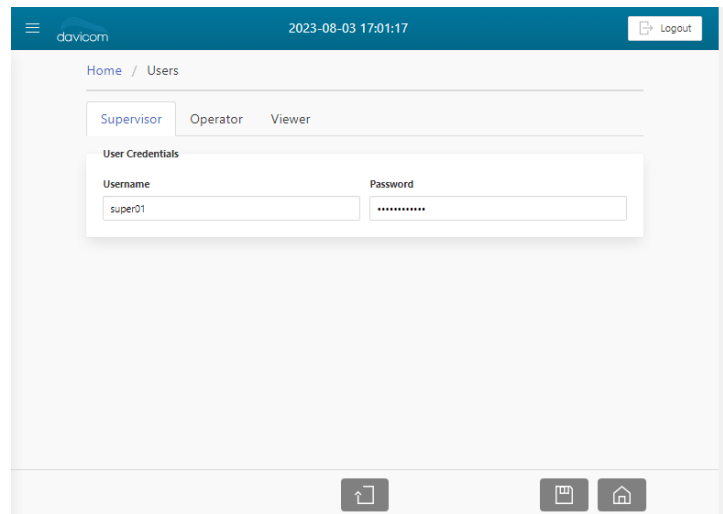
## 4.4.5. Site ID

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.



The screenshot shows the 'Site ID' screen in the Davicom system. The top header is dark blue with the Davicom logo on the left, the date and time '2023-06-09 14:28:44' in the center, and a 'Logout' button on the right. Below the header, the breadcrumb 'Home / Site' is displayed. The main content area contains two input fields: 'Site ID' and 'Site Name'. At the bottom of the screen, there is a dark blue bar with four icons: a trash can, a document with an arrow, a floppy disk, and a house icon.

## 4.4.6.Users



The screenshot shows the 'daviocom' web interface for user management. At the top, there is a blue header bar with a menu icon, the text 'daviocom', the date and time '2023-08-03 17:01:17', and a 'Logout' button. Below the header, the breadcrumb 'Home / Users' is visible. The main content area has three tabs: 'Supervisor' (selected), 'Operator', and 'Viewer'. Under the 'Supervisor' tab, there is a 'User Credentials' section with two input fields: 'Username' (containing 'super01') and 'Password' (containing masked characters). At the bottom of the interface, there are three icons: a document with an arrow, a document, and a house icon.

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.

Home / Log

System Log

Data Log

Data Log Config

Transfer Parameters

Send

Export

Showing 34 of 34 most recent

#	Date Time	ID	Description	Event	Value
#1	2023-07-28 14:11:56	super01	WEB	CONNECTED	
#2	2023-07-28 13:01:05	super01	WEB	DISCONNECTED	
#3	2023-07-28 11:36:49	super01	WEB	CONNECTED	
#4	2023-07-28 11:35:45	1P1	Boot Flag	NORMAL	
#5	2023-07-28 11:35:45	1P1	Boot Flag	ACTIVE	
#6	2023-07-28 11:35:45	System		SYSTEM START	
#7	2023-07-28 11:34:05	super01	WEB	TIMEOUT	
#8	2023-07-28 11:33:46	super01	WEB	CONNECTED	
#9	2023-07-28 11:12:20	super01	WEB	CONNECTED	
#10	2023-07-28 11:10:53	1P2	Power On Flag	NORMAL	
#11	2023-07-28 11:10:53	1P1	Boot Flag	NORMAL	

Fetch All (up to 1024)

## 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.

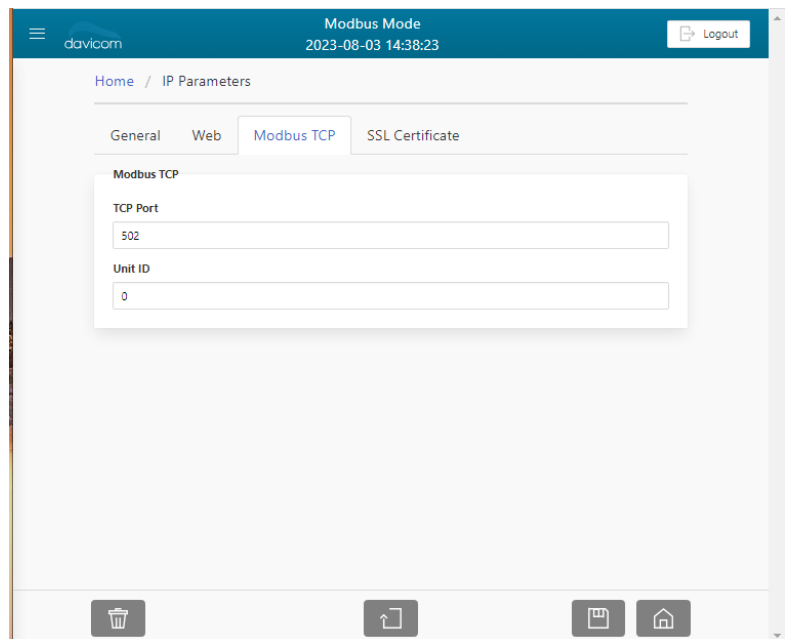
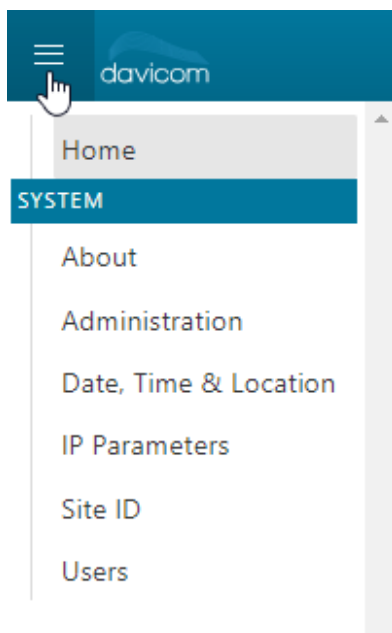
More detail on how to use JOBS will be provided in a separate document that will be posted on Davicom's DEX Tech Support site (<https://dex.davicom.com>)

## 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.

<b>AXON-8A</b>		
<b><u>Address</u></b>	<b><u>Description</u></b>	<b><u>Attribute</u></b>
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

<b>AXON-8D</b>		
<b><u>Address</u></b>	<b><u>Description</u></b>	<b><u>Attribute</u></b>
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

<b>AXON-5R</b>		
<b><u>Address</u></b>	<b><u>Description</u></b>	<b><u>Attribute</u></b>
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, $\pm 0.5$ , $\pm 2.5$ , $\pm 5$ , $\pm 10$ , $\pm 20$ , $\pm 40$ or $-40$ V, 1 M $\Omega$ , 4-20 mA mode.
Status (Digital) Inputs AXON-8D:	8 with separate internal or external grounds. Max input : $\pm 65$ V, 10 k $\Omega$ .
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](mailto:dvsupport@davicom.com) or call 1-877-282-3380 in Canada and the US, or +1-418-682-3380 from elsewhere.