Power is knowledge.™

LifeSafety Power ®

HELIX ATS
Power Distribution Unit / Automatic Transfer Switch

HAC-8R

c UL us

Table of Contents

Notes and Warnings

Symbol Definitions

The following symbols are used throughout this manual

This symbol is intended to alert the installer of shock hazards within the enclosure. Service should only be performed by qualified service personnel

This symbol is intended to alert the installer of important information intended to help the installer avoid personal injury or property damage

Warnings

Installation and service should be performed only by qualified service personnel and should conform to all local codes

To reduce the risk of electric shock or fire, do not expose this equipment to rain or moisture

This equipment shall be installed in a manner which prevents unintentional operation by employees, cleaning personnel, or others working in the premises, by falling objects, customers, building vibration, or similar causes

This equipment is not intended for use within the patient care areas of a Health Care Facility

Replace fuses only with the same type and rating as indicated in the specifications section of this manual.

To prevent impaired operation, ensure that all wiring is routed and secured to prevent accidental open or short circuit conditions

The system and any batteries (if used) should be tested at least once per year to ensure proper operation

Equipment is intended for installation in Restricted Access Area" (Instruction)/"Les matériels sont destinés à être installés dans des EMPLACEMENTS A ACCES RESTREINT

Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips)."

Regulatory Information

The equipment discussed within this manual has been tested to the following standards:

- UL294, UL62368

FCC Information

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.*

Conventions Used Within this Manual

Positional information (e.g. top, bottom, up, down, left, right, etc.) is referenced with the board or enclosure in the orientation shown in the illustrations in this manual

Introduction

Product Description

The Helix ATS HAC-8R combines an Automatic Transfer Switch (ATS) with a network managed Power Distribution Unit (PDU). Dual AC inputs allow the ATS to use a backup AC power source in the event of compromise of the primary source. If a secondary AC source is not available, this connection may be left unused and the HAC-8R will operate without the ATS function.

Network management features allow the user to access the Helix ATS remotely using a standard web browser. Power outputs may be individually reset remotely, and voltage, current, and power of each output can be monitored. Additionally, output status is visible through the network interface and any trouble condition is reported through email or SNMP. Helix ATS is compatible with MSM Enterprise for a single screen overview of the entire access control power management system.

Specifications

Input voltage range	90 – 265 VAC
Input frequency	47 – 63 Hz
Total Output Current	15A
Number of Outputs	8
Max Power per output	10A

Aux Voltage Inputs	Four (9-30VDC Range)
Switch Inputs	Four Dry contact inputs
Sensor Inputs	One
Operating Temperature	-22^0 to 165^0F (-30^0 to 74^0C)
Relative Humidity	5-95% non-condensing
Operating Elevation	0 to 10,000ft (0 to 3,000m)
Input Plug Type	(2) IEC-C20
Output Plug Type	(8) C13

Section 1 – Installation

The following pages cover the installation of the HAC-8R rack-mountable PDU.

1.1 Mounting the HAC-8R into a Standard 19" Rack

Use the following procedure when mounting an HAC-8R PDU into a standard EIA 19" equipment rack.

1. If not already, securely mount the included ears to the enclosure sides using the eight included countersunk screws (four per ear). Note that the ears may be installed so that either face may face the front of the rack.

2. Locate the rack-mounting holes in the ears of the enclosure. (Figure 1)

3. Slide the enclosure into an open 1U location in the rack

4. Center the enclosure in the rack and secure with the four 10-32 x 3/4" screws provided.

NOTE: *Use rails or other appropriate support for heavy enclosures. Keep heavier components near the bottom of the rack to reduce the risk of toppling of a top-heavy rack.*
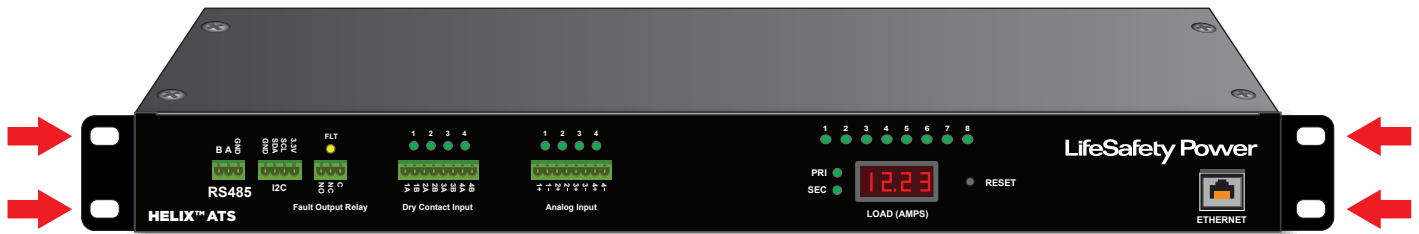

Figure 1: The Enclosure Mounting Holes

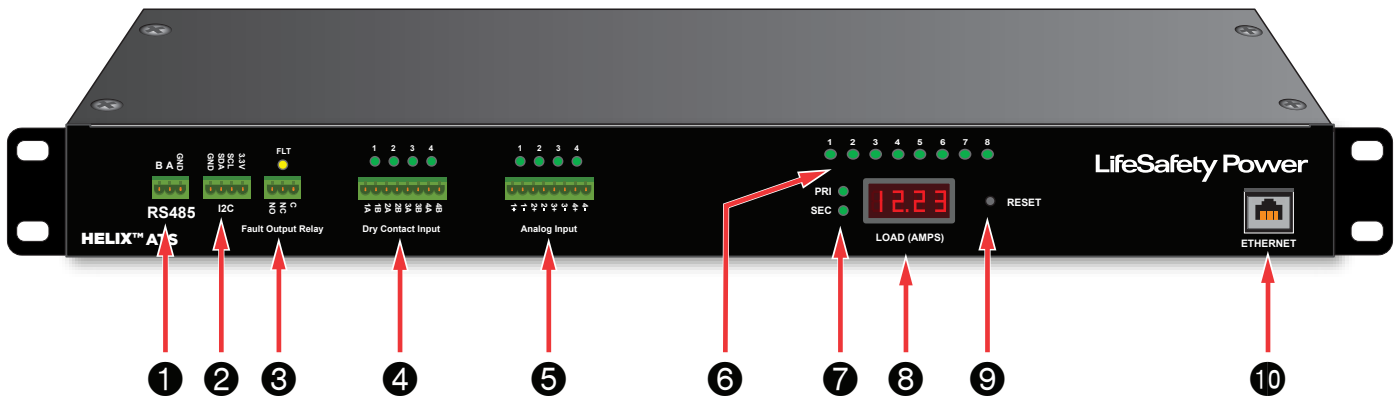## 1.2 HAC-8R Power Distribution Unit Overview

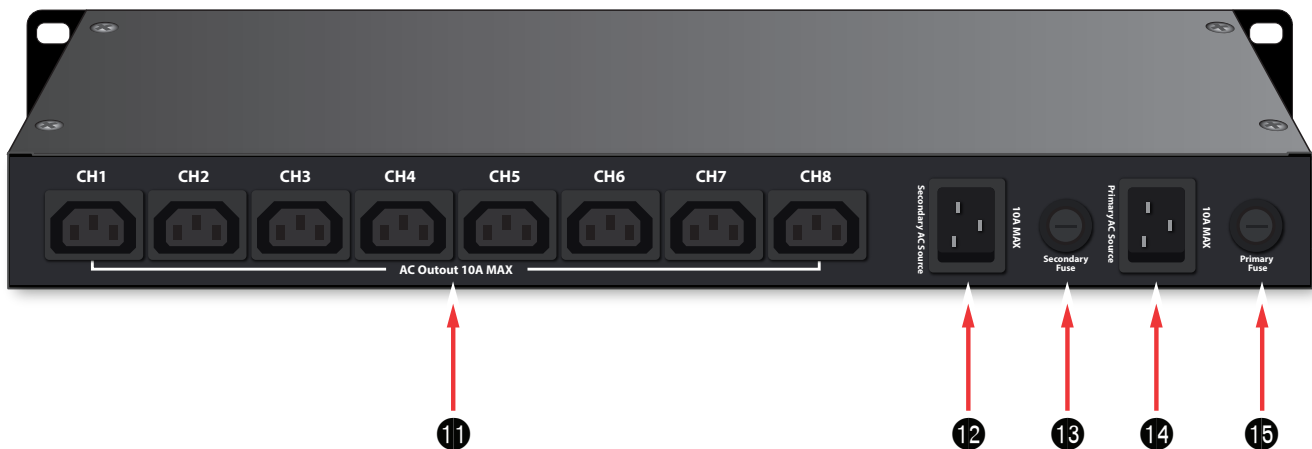*Figure 2: HAC-8R Front View*

Figure 3: HAC-8R Rear View

The following are basic descriptions. Refer to the appropriate section for more detailed information.

❶ RS485 Connection
The RS485 connection is reserved for future use.

❷ I2C Sensor Input
The I2C terminal accepts LifeSafety Power temperature or temperature/humidity sensors.

❸ Fault Relay Output
The fault relay will transfer upon a detected fault condition. These conditions include input or output AC voltage out of range, output overcurrent, blown AC input fuse, or a parameter outside of the user set limits.

NOTE - *The Fault Output Relay is labeled in the powered down (fault) state. When no fault is present, there will be continuity between C and NO.*

❹ Dry Contact Inputs
These inputs accept a dry contact and can be used to report a change of state of a relay, switch, door contact, or other dry contact. Four inputs are available.

❺ Analog Inputs
These inputs accept a voltage input and can be used to monitor and alert if the voltage goes outside of a user programmable range. Four analog inputs are available and accept voltage between 9 and 30VDC.

❻ Output Status LEDs (Green/Yellow)
These LEDs indicate the status for each of the eight outputs. Outputs in a normal state will show a green LED. Outputs which are detecting a fault condition will light as yellow.

❼ AC Input Status LEDs (Green)
These two LEDs indicate the status of the primary and secondary AC inputs. This LED, when lit, indicates that the AC input is connected and within range. The LED of the source currently being used will flash approximately once per second.

NOTE - *If the secondary AC source is not being used, the SEC LED will be extinguished.*

❽ Output Current Meter
This LED meter display shows the total combined current draw across all eight outputs. The maximum total output current must remain below 15A.

❾ Reset Button (Reset)
Pressing the recessed reset button with a pin for a length of time will reset the HAC-8R as follows:

10 Seconds User Name & Password Only
20 Seconds User Name, Password, and IP Settings

NOTE - *The user name and password will both reset to "admin". If pressed for 20 seconds, the IP address will reset to 192.168.1.9 and the other IP settings will return to default.*

❿ Ethernet Connection
This is the connection which allows programming and network monitoring of the HAC-8R. Connect this port to a network using a standard CAT5 or higher cable. Do not connect PoE power to this port.

⓫ AC Outputs
These are the AC outputs from the Helix ATS. Each output is rated for 10A maximum and uses a C13 style cord.

⓬ Secondary AC Input
This is the optional backup AC power connection to the Helix ATS. If connected to a second AC branch circuit, the Helix ATS will use this secondary AC input to power the outputs in the event of a failure of the primary AC connection. This input uses a C19 style cord.

⓭ Secondary AC Fuse
This fuse protects the secondary AC input. Replace only with the same type and rating.

⓮ Primary AC Input
This is the primary AC input to the Helix ATS. This input normally supplies the AC outputs. This input uses a C19 style cord.

⓯ Primary AC Fuse
This fuse protects the primary AC input. Replace only with the same type and rating.

Section 2 – Initial Configuration

The Helix ATX management interface allows users to configure, monitor, and control each output port of the HAC-8R power distribution unit. The Helix ATS uses an embedded web browser based interface and does not require the installation of any dedicated software on the user's PC. Any device with a network connection and a web browser may be used to access the Helix ATS.

2.1 Preparing to configure the HAC-8R

In order to perform the initial configuration of the HAC-8R, you will need the following:

- A computer (PC or Mac) set to a static IP address in the subnet 192.168.1.xxx, where xxx is a subnet address (0 to 255) not being used by any other device on the network. Do not use 192.168.1.9 or the final IP address you will be using for the HAC-8R. (See Figure 5.)

- A CAT5 or higher Ethernet cable long enough to reach between the computer and the HAC-8R's ethernet port.

- The HAC-8R must be powered. After powering, wait approximately 2 minutes for the HAC-8R to initialize.

After the HAC-8R is powered and initialized, connect the ethernet cable between the ethernet port of the HAC-8R and computer.

2.2 Logging into the Helix ATS for the first time

From the factory, the HAC-8R is preset with the following settings:

- IP Address: 192.168.1.9
- Username: admin
- Password: admin

Open a browser on the computer and enter "192.168.1.9" into the address bar. The login screen will appear (See Figure 6). Enter "admin" for both the user name and password.

⚠ If the wrong password is entered three consecutive times, the user will be locked out of the device for 24 hours. Enter the password carefully to avoid lockout.

On first login, the HAC-8R will require a password change. Enter a new password and submit. The Helix ATS Home Page should appear (See Figure 7).
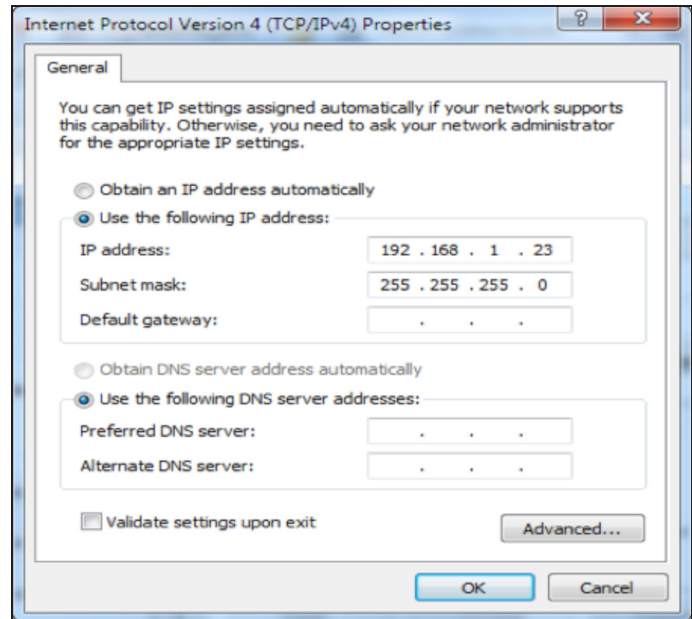

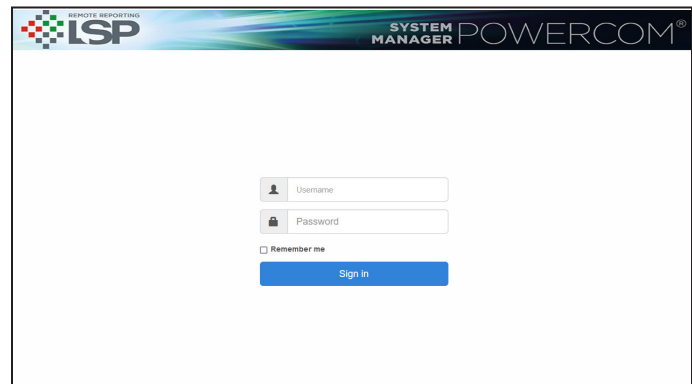*Figure 5: Example of a PC Ethernet port setting window*

Figure 6: Helix ATS user login screen

Figure 7: HAC-8R Home Page

2.3 Configuring the TCP/IP Settings

In the menu bar at the top of the browser screen, click the "Configure" link. Figure 8 shows the top section of the HAC-8R Configure page.

At the top left of the Configure page is the "TCP/IP Settings" area. The settings in this area include:

IP Address
The factory default IP address is set to 192.168.1.9. This address may be changed to any valid IP address. In the event the IP address is later forgotten, press the "Reset" button on the front panel of the HAC-8R for 20 seconds and the IP address, default user name, and default password will be reset to factory default values.

Net Mask
Should typically be set to 255.255.255.0 - consult with your IT department for more information.

MAC Address
The MAC Address is factory set and is not programmable by the user.

Gateway IP Address
The default gateway is 192.168.1.1. This value may be changed by the user - consult with your IT department for more information.

DNS0, DNS1 Addresses
The default value for DNS0 and DNS1 are 192.168.1.1. These values may be changed by the user - consult with your IT department for more information.

HTTPS Port
Enter the port used for the HTTPS connection - consult with your IT department for more information.

Enable DHCP
Normally, this option is left unchecked, however in some cases you may want to allow the network to assign an IP address to the HAC-8R. However, please note that **once you select this option, you will need a network scanning tool to find the HAC-8R's IP address before you will be able to log in and that the IP address may change periodically.**

You must click the "Submit" button at the bottom right of this area to save the changes in this section. The new settings will take effect after the HAC-8R is power cycled, or rebooted.

IPV6 Settings
Below the TCP/IP settings are the IPV6 settings. If required, enter these settings as appropriate. Consult with your IT department for more information. Click submit once the settings are entered. The new settings will take effect after the HAC-8R

is power cycled, or rebooted.

2.4 Configuring the Time Settings

The Time Settings block (See Figure 8) is where the time and date are programmed into the HAC-8R. First, select the correct time zone from the drop down list and click Submit. After the time zone is set, the time and date can be set one of three ways:

Manual Entry
Enter the correct time and date in the following format and click the "Submit" button:

For Date: **YYYY MM DD**

For Time: **HH MM SS**

⚠ ALWAYS enter two digits in time field.. ie., 7AM = 07, not 7

The new date and time will take effect immediately.

Sync Date/Time With Computer
The "Sync Date/Time with computer" button will set the date and time of the HAC-8R to match the computer currently being used to access the HAC-8R. The new date and time will take effect immediately.

Sync With NTP Server
To sync the HAC-8R's time and date with an NTP server, enter one or two NTP server addresses into the NTP Server fields. Click the Get GMT Time button to get the time and date from the NTP server. The HAC-8R will periodically update the date and time from the NTP server.

Once set, you must click the "Submit" button to save the time and date settings.

2.5 MSM Settings

These settings are used when connecting the HAC-8R to an MSM Enterprise server. Enter the IP address of the MSM Server in the "IP Address" field. Set the Port number as appropriate (typically 9888). Click Submit when done to save the settings. Consult the MSM Enterprise manual for more information.

2.6 Configuring the SNMP Settings

In the SNMP Settings block, under the "Basic" heading, set Read and Write Community to "public" and set Location to a meaningful name of your choice. This entry will help you identify the specific HAC-8R when multiple HAC-8Rs are installed on the same subnet. This entry will be read by an SNMP system as "syslocation", OID .1.3.6.1.2.1.1.6. The port used for SNMP may also be changed in this section (161 Default). Be sure to open the SNMP port if accessing SNMP outside your firewall. Below the port number setting, select the trap type (Trap or In-

form). Click the "Submit" button at the bottom of the "Basic" section to save the settings, otherwise you will lose the settings. These settings will take effect after a reboot of the HAC-8R.

The "Security Name" section of the SNMP Settings block allows you to grant only specified computers (by IP address) SNMP v1 and v2 access. Since v1 and v2 do not have password protection, the Security Name settings add security to v1 and v2 access. The web server is password protected and a user must have the web server password in order to setup a computer in the Security Name settings and gain

v1 and v2 access. Multiple source networks can be added to the Security Name Settings block. Be sure to click the "Submit" button to save the settings. The settings will take effect after a reboot of the HAC-8R.

The "V3 User" section of the SNMP Settings block allows for a user to set up an SNMP v3 user name and password. With a user name and password, the HAC-8R may be accessed from anywhere via the internet by using the SNMP v3 protocol. No security name setup is required for v3 users and multiple v3 users may be set up in the same table. Click the

Figure 8: Top section of the HAC-8R Configure page

"Submit" button to save the settings, which will take effect after rebooting the HAC-8R.

The SNMP Trap Receiver IP and Port settings should be set to the proper address for the SNMP Trap receiver. Click the "Submit" button and reboot the HAC-8R for the settings to take effect. The SNMP Trap Version may be selected using "Select Trap Version".

2.7 Configuring the Email Settings

The HAC-8R can be configured to send email alerts on user-specified conditions and periodic status reports. Underneath the SNMP Settings block on the Configure page is the Email Settings block (See Figure 9).

Under "Receive Addresses", the email address or addresses to receive the alerts and reports should be entered. Up to four recipient email addresses may be entered.

Under "Sender", the settings of the account to send the emails should be entered. These settings include:

Sender SMTP Server	This is the address of the SMTP server for the email provider. Consult with your email provider for this address.
Sender Email	This is the email address which the HAC-8R will use to send emails.
Email Password	This is the password associated with the Sender's Email account
SMTP Port #	Enter the port number required by your email provider for sending email.
TLS	Check this box if your email provider requires TLS or SSL encryption
Authentication	Choose the proper authentication method for your email provider from the drop-down list. Usually, this is "login". Select "off" to completely disable authentication.
Send Period	Selects how often the HAC-8R sends a regular email status report. The period can vary from 1 hour to 6 months or, if you do not want the HAC-8R to send periodic reports, select "Never". Note that the "Period" setting does not affect the sending of email alerts generated on faults or events selected by the user, only the periodic status report.

⚠ **Note:** *Regarding Microsoft Exchange – By Default, Microsoft Exchange will not accept SMTP connections. To use the HAC-8R's email functions through Microsoft Exchange, the Exchange service must be configured to allow SMTP connections. Consult with the administrator of your Microsoft Exchange Server.*

⚠ **Note: Click the "Submit" button to save the settings.**

TIP: *Most mobile phone providers have an email address available which will convert an email into an SMS text message. This email address is usually in the form of: (the mobile phone number)@xxxxxx. Consult with your mobile provider for more information. The CSV attachment will be removed, since SMS text messages are not compatible with attachments. Because of this, it is recommended that the SMS email be entered as an ADDITIONAL "Receive Address" on the HAC-8R, so that the CSV file will still be available via regular email.*

Email Test

Below the Email Settings section is the Email Test section. After configuring the email settings, the Email Test button will send a test email to all Email Receive addresses. Please note that it could take an hour or more to receive the email, depending on the speed of your email server. Clicking the Show Email Log button will show the feedback from the email server. This can be useful for diagnosing email problems.

Figure 9: Middle Section of the HAC-8R *Configure page*

2.8 PDU Network Module Settings

There are many settings in the PDU Network Module Settings section (See figure 9):

Client ID Enter any meaningful name to help identify the site or customer. The Client ID will appear at the top of the home page.

Site ID Enter any meaningful name to identify the HAC-8R switch unit. This name will be displayed at the top of each page and in email alerts.

Data Buffer Interval This setting selects how often the HAC-8R takes a "snapshot" of the data for the report. Settings range from 5 minutes to 24 hours.

PWD Lockout Delay Selects the length of time to lock out a user after three consecutive incorrect password attempts. Selections range from 5 minutes to 24 hours.

Event*X* Name Enter a name related to the usage of each of the four dry contact inputs.

Fault Data Only Check this box to have only the fault data sent in the CSV report that is emailed.

View Number This field sets how many datapoints are shown when the View Data button on the home page is selected

Report Number This setting selects how many datapoints are in the CSV file when the HAC-8R sends an email. For example, setting this to 100 will show the last 100 events recorded. Settings can be from 1 to 1000.

Password Lockout Delay This sets the lockout time after an incorrect password is entered three times. Settings range from 5 minutes to 24 hours.

Temp Lower Limit Enter a lower temperature limit for the external temperature sensor. If the temperature measured by the sensor goes BELOW this value, an alert will be triggered.

Temp Upper Limit Enter an upper temperature limit for the external temperature sensor. If the temperature measured by the sensor goes ABOVE this value, an alert will be triggered.

Humidity Lower Limit Enter a lower humidity limit for the external humidity sensor. If the humidity measured by the sensor goes BELOW this value, an alert will be triggered.

Humidity Upper Limit Enter an upper humidity limit for the external humidity sensor. If the humidity measured by the sensor goes ABOVE this value, an alert will be triggered.

ADC*X* Name Enter a name related to the usage of each of the four analog voltage inputs.

ADC*X* Lower Limit Enter a lower voltage limit for each analog voltage input. If the voltage measured goes BELOW this value, an alert will be triggered.

ADC*X* Upper Limit Enter an upper voltage limit for each analog voltage input. If the voltage measured goes ABOVE this value, an alert will be triggered.

Next Service Due Enter a date indicating the next service due date. If "Service Due" is selected as an email alert condition, an alert email will be sent out to the specified email recipient(s) when the system time matches the due date time.

Reminder Message Enter a brief message to indicate the type of service which is due in the email alert. This message will appear in the Subject line of the alert email.

2.9 User Settings

In the User Settings block of the Configure screen (Figure 10), you can enter the user names, passwords, access levels, and set the password complexity requirements for the HAC-8R.

The default user is "admin" and the default password for this account is also "admin". On first login, the HAC-8R will force the user to change the default password. Click Submit after making any changes in the User Settings section. Note that there must ALWAYS be at least one admin-level user.

Adding a New User

To add another user, first select the Authorization level desired for the user. Three authorization levels are available:

- **Admin** - Admin-level users have full control over the HAC-8R. There are no restrictions.
- **Manager** - Manager-level users have access to all areas of the HAC-8R except for the Configure page.
- **Guest** - Guest-level users may only view information on the HAC-8R screens. No changes can be made and none of the control features are available.

After selecting the Authorization level, enter the new user name in the User Name column and enter the password into the Password column. Passwords must meet the complexity level setting requirements. Re-enter the password into the Verify Password column.

After clicking Submit, the new user will be active and another blank row will appear for entering the next user name.

Figure 10: Bottom Section of the HAC-8R Configure Page

2.10 Certificate Settings

The HAC-8R allows a user-supplied certificate to be used. Click the "Upload Certificate" button (Figure 10) to enter the Certificate screen. Contact your IT department for more information.

Click the Choose File button to select the certificate to be used, then click Download, then Confirm to download the certificate.

Click the Submit and Test buttons to use and test the certificate.

2.11 Certificate Log

Click Show Certificate Log to view the certificate activity log. Click Hide Certificate Log to hide the window. See Figure 10

2.12 SSL Protocol and CipherSuite Settings

This section allows the user to select which SSL protocol to use. The default setting is Normal. See Figure 10

2.13 Import and Export Configuration File

Clicking the Export Configuration File button will save the configuration information of the Helix ATS to a file. This file can later be imported into this or another Helix ATS using the Import Configuration File button.

2.14 User Login Record / User Activity Record

Click the Show User Login Record button to show the history of login information for the HAC-8R. The Show User Activity Record shows the log of activity for each user. See Figure 10

2.15 The Programming Page

Clicking the Programming button on the home page brings up the output configuration screen. Figure 11 shows the Programming page of the HAC-8R.

The programming page allows users to set the optional upper and lower limits for the measured voltage and current of each port. If any of these limits are exceeded, and the "E-Mail Alert" box is checked for the port, an email will be sent to the address configured in Section 2.7 of this manual. This email includes an attached CSV file containing fault details as well as historical data. ***NOTE:*** *The email settings must be configured properly. See Section 2.7 of this manual.*

The **"Boot Up Priority"** column sets the order in which the Helix ATS will power the outputs. This allows devices such as servers to boot up before other devices. These fields may be set from 1-8. Setting more than one field to the same priority will allow them to power up simultaneously.

The **"Boot Up Delay"** column sets a delay for the output to power up. This can be used with the Boot Up Priority field to delay power up of a device by a set amount of time. This field accepts a value in seconds.

"Fill All" Button (top) - This button will take all settings from Output 1 and copy them to all other outputs.

"Fill All" Buttons (column) - Each column has a "Fill All" button. This button takes the setting from Output 1 of that column only and copies it to all other outputs.

"Import Settings" Button - This button opens a page allowing you to select an HAC-8R Configuration file to import. Click the Browse button to select the file, then click open. After selecting the file, click "Download" then "Confirm".

"Export Settings" Button - This button saves the configuration of the HAC-8R to a file, which may be imported to other HAC-8R units. If prompted after clicking, select "Save File".

NOTE: The upper and lower limits entered must be within the allowed range. For voltage limits, the range is 90 to 284V. For current limits, the range is 0 to 10A.

Alert Enable On - This section allows the user to select which events will trigger an email or SNMP alert to be sent from the HAC-8R.

PDU Report - This section selects which datapoints are included in the CSV report sent with an alert email. LifeSafety Power recommends typically selecting all fields.

Figure 11: Programming page of the HAC-8R

Section 3 – Using the Helix ATS

3.1 Viewing Parameters on the HAC-8R Home Page

The Home Page is shown in Figure 12. To access the Home Page, click "Home" in the menu bar at the top of the page.

The top of the home page shows general information:

Client ID
This field is a descriptive Client name for the HAC-8R unit being accessed and is set by the user on the Configure page.

Site ID
This field is a descriptive Site name for the HAC-8R unit being accessed and is set by the user on the Configure page.

Date and Time
This field shows the date and time as set by the user on the Configure page.

Event1 - Event4
These fields show the status of the four Dry Contact inputs. They will appear as the label set for the Event inputs on the configure page. These fields will show "Active" on a yellow background or "Inactive" on a green background to indicate the status of the Dry Contact inputs.

ADC1 Reading - ADC4 Reading
These fields show the voltage measured by the four Analog Inputs and will appear as the label you set for the ADC inputs on the Configure page. These measurements are shown as a positive or negative voltage in Volts DC

AC1 Status - AC2 Status
These fields display the status of the Primary and Secondary AC inputs. Possible status conditions include:
> **Used** - This indicates the input has power and is currently being used to power the outputs. The background of the field will be purple.
> **On** - This indicates the input currently has power, but is not being used to power the outputs. The background of the field will be green.

Figure 12: Home page of the HAC-8R

Off - This indicates the input currently has no power available. The background of the field will be gray.

Internal Temperature
Indicates the internal temperature of the HAC-8R enclosure.

External Temperature
Indicates the temperature measured if a temperature or temperature/humidity sensor is connected to the I2C input.

Humidity
Indicates the humidity measured if a temperature/humidity sensor is connected to the I2C input.

The middle sectionof the Home page is the output information and control area:

Port
This column lists the output port numbers with a checkbox to the left of each number. The port numbers in this column refer the port numbers on the rear panel of the HAC-8R. Click the checkboxes to select one or more ports for enabling or disabling. Click the checkboxes again to deselect the port.

Priority
This column allows users to set a priority for each output port. For each port there is a corresponding priority drop-down list where a priority between 0 and 3 can be selected (where "0" is the highest priority and "3" is the lowest priority). After the priorities are set, the "Save settings" button at the top of the page must be clicked to save the priority settings.

When the total current drawn from the HAC-8R exceeds the rated value (15A), the lowest priority ports will begin disabling to prevent the HAC-8R from overloading. **NOTE:** *Each port can supply a maximum of 10A of power provided that the total current drawn does not exceed 15A.*

NOTE: *If two or more ports have the same priority selected, the HAC-8R will disable the lowest number port first (i.e. Port 1 will disable, then Port 2 if both are set to the same priority).*

Device
This column allows the user to enter names for the devices connected to each output port of the HAC-8R. The maximum length of the entry is 30 characters. After entering the names, click the "Save settings" button at the top of the page.

Enabled
This column shows the enable/disable state of each port. If a port is enabled, the display shows "Yes". If a port is disabled, the display will show "No". See the Enable, Disable, and Reset button descriptions in this section for more information.

Active Energy (W/h)
This column shows the power draw of each output in Watts per Hour.

Voltage
This column displays the measured port output voltage for each port in volts AC.

Current
This column displays the measured port output current for each port in amps.

Power
This column displays the calculated power output of each port in watts.

Power Factor
This column displays the calculated power factor of each output device.

Output Status
This column displays the status of each output port. When a port is normal (output power is available and parameters are within limits), the corresponding status will display "Normal" with a green background. If there are any fault conditions, the corresponding status will display "Fault" with a yellow background. If a port is disabled by the browser interface, the corresponding status will display "Disabled" with a grey background.

The bottom section has eleven buttons. Their functions are described below:

Enable Selected Outputs
Clicking this button enables any ports whose checkbox in the "Port" column is checked. After the button is clicked, any ports selected in the "Port" column will be deselected.

Enable All Outputs
Clicking this button will enable all output ports of the HAC-8R.

Disable selected ports
Clicking this button disables any ports whose checkbox in the "Port" column is checked. After the button is clicked, any ports selected in the "Port" column will be deselected. This function is useful for disabling unused outputs.

Disable all ports
Clicking this button will disable all output ports of the HAC-8R.

Reset Selected Ports
Clicking this button will disable for 10 seconds any ports

whose checkbox in the "Port" column is checked. After 10 seconds, the ports will be reenabled. This is useful for rebooting one or more devices connected to the HAC-8R.

Reset All Ports

Clicking this button will disable power on all outputs for 10 seconds. After 10 seconds, the ports will be reenabled. This is useful to reboot all devices connected to the HAC-8R

Reset Selected Cycle Count

Clicking this button will reset the cycle count of any ports whose checkbox in the "Port" column is checked.

Reset All Cycle Counts

Clicking this button will reset the cycle count of all ports.

Save settings

Clicking this button will save the settings on the page.

View Data

Clicking this button will show the history data buffer. Up to 1000 datapoints may be displayed. This data can be manually exported to a CSV file.

Programming

This button brings the user to the Programming page. See section 2.17

3.3 The Tools page

Upgrading Firmware

The Upgrade Firmware section is at the top left of the Tools page (See Figure 14). To upgrade the firmware, use the following steps:

1. Ensure that the new firmware file is available on your computer. The latest firmware file is available from the LifeSafety Power website.

2. Click the "Upgrade" button. The Upgrade window will appear.

3. Click "Browse..." and locate the new firmware file with the file extension ".bin" on your computer.

4. Once the file is selected, click "Open".

5. Click the "Download" button to temporarily download the new firmware into the RAM of the HAC-8R. This process will take from 30 seconds to one minute, depending on network speed and traffic. The message box will display "Downloading...".

6. Once the firmware is loaded into the HAC-8R's RAM, verify the correct file name and click the "Confirm" button to confirm the upgrade.

7. Click "Burn" to begin burning the firmware to the HAC-8R's processor. This process may take up to 12 minutes - DO NOT REMOVE POWER TO THE HAC-8R DURING THIS PROCESS or it will be rendered nonfunctional.

Once the update is complete, a message will appear in the message box indicating "Update Finished". The HAC-8R must be rebooted in order to start the new firmware.

Rebooting the HAC-8R

The "Reboot" section is on the top right of the Tools page (See Figure 14). To reboot the HAC-8R, click the "Reboot System" button.

A message will appear asking if you are sure you want to reboot. Click YES to Confirm the reboot. The rebooting process will take approximately 1 minute, during which time you will lose communication with the HAC-8R.

User Notes

The bottom of the Tools page contains a User Notes section where important information about the installation, service history, etc can be saved. Up to 1000 characters can be entered. After entering the notes, click "Submit" to save them. The "Clear" button will remove the notes.

Home	Configure	Tools		admin	Firmware: 1.0.8S

Client ID LSP

Site ID PDU

Date Wed 15 Feb 2023   **Time** 02:33:32

Upgrade Firmware   **Reboot**

Upgrade Firmware   Reboot System

User Notes(up to 1000 characters)

Save   Clear

Figure 14: The Tools page of the HAC-8R

Appendix 1 – Software Agreement

LIFESAFETY POWER SOFTWARE LICENSE AGREEMENT AND WARRANTY STATE-MENT

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Appendix 1 – Software Agreement - continued

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