



SAM™ SMART NOZZLE N₂P

INSTALLATION, OPERATING, AND MAINTENANCE INSTRUCTIONS

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1. INTRODUCTION

The following is intended to provide the basic instructions for installation, operation and maintenance of the Akron Brass SAM™ SMART NOZZLE with N₂P Technology, and to assist in attaining the best possible performance from the unit. **IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY, NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS, AND CAUTIONS. USE THIS PRODUCT CORRECTLY, AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY!**

2. PRODUCT WARNINGS



- Indicates a hazardous situation which, if not avoided, **WILL** result in death or serious injury.



- Indicates a hazardous situation which, if not avoided, **COULD** result in death or serious injury.



- Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE

- Addresses practices not related to personal injury.

3. PRODUCT RATINGS



This product is not intended for environments that contain explosive gases and has not been certified for these environments.

- Input Power Requirements: 3.7 V via Akron Brass Batteries P/N 803435. Unit has space for two batteries, but only one battery is needed to power the SAM™ SMART NOZZLE. Maximum useful life between battery changes will be obtained with the use of two installed batteries.
- Controller Power Consumption
 - Standby State: 0.6 mW
 - On Receive: 210 mW
 - On Transmit: 1.2 W¹
- Nominal Battery Life: 5 continuous hours per battery, or 10 hours total, when operating at the factory default power settings.
- RF Radio
 - Output Power: 30 dBm (1 W)
 - Operating Frequency: 915 MHz
 - FCC ID: 2A679-XBPSX6065
 - Operational range: 300 feet (91.44 m)
- Wi-Fi Radio
 - Output Power: 20 dBm (100 mW)
 - Operating Frequency: 2.4 – 2.5 GHz
 - FCC ID: 2AC7Z-ESPWROOM02D
 - Protocol 802.11 b/g/n
 - Operational range: 10 feet (3.048 m)
- Dimensions less Akron Brass nozzle and inlet: 5" (12.7 cm) L x 2-1/2" (6.4 cm) W x 4-5/32" (10.7 cm) H

¹ Transmission at this power level is for less than 20 ms for each SAM nozzle poll response.



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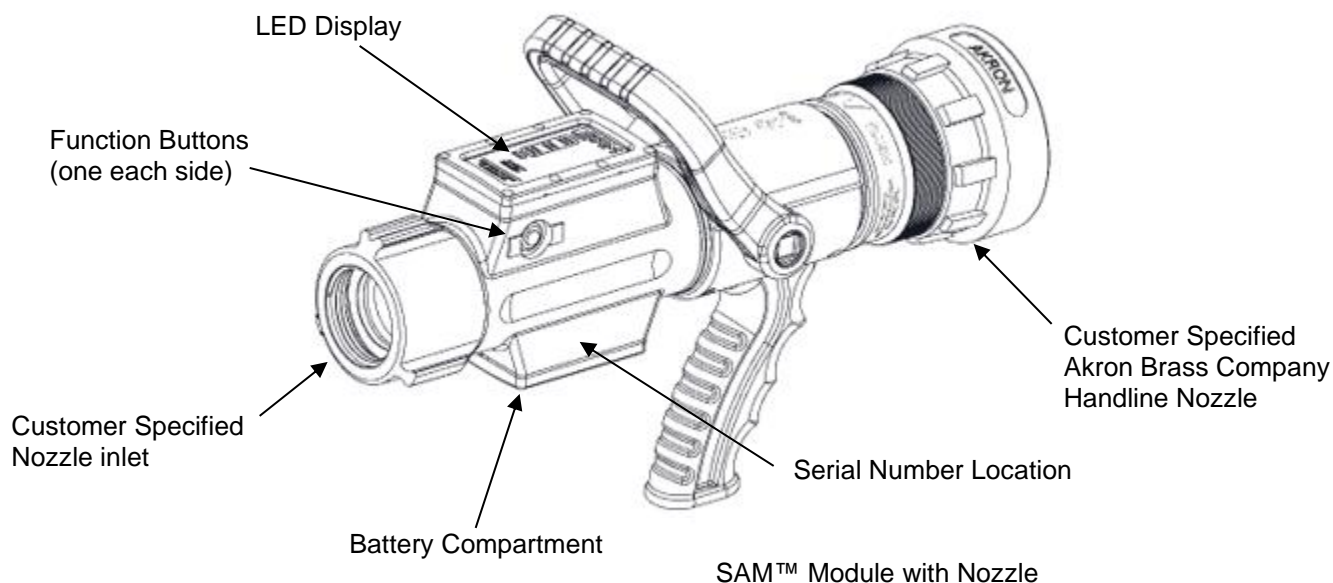
- Weight less Akron Brass nozzle: 2.4 lbs (1.1 kg) with batteries
- Environmental Conditions:
 - Operating Temperature: -20 °C (-4 °F) to 60 °C (140 °F).
 - Storage Temperature: -10 °C (14 °F) to 30 °C (86 °F) Batteries; -20 °C (-4 °F) to 60 °C (140 °F) SAM™ SMART NOZZLE
 - Power management: Automatic shutdown and sleep mode
 - Ingress protection: IP67 equivalent

4. WHAT'S INCLUDED

- SAM™ SMART NOZZLE (customer specified, Turbojet™, Assault™, etc. at required operating pressure)
- Four batteries-Tenergy 750 mAh Li-ion rechargeable RCR123A (hereby referenced as Akron Brass P/N 803435)
- Battery charger P/N 60470010

5. OVERVIEW

The SAM™ SMART NOZZLE module is an integrated unit mounted to the inlet of Akron Brass Company handline nozzles. The nozzles which the SAM™ SMART NOZZLE module can be mounted to include the Turbojet™, Assault™, and Pyrolite shutoffs. The specified operating pressure can be 50, 75, or 100 psi depending on the nozzle and customer requirements. The SAM™ SMART NOZZLE module and customer specified nozzle come completely assembled, ready to use with the properly configured SAM™ SMART NOZZLE system in the truck. The SAM™ SMART NOZZLE system in the truck requires the 60370025 transmitter/receiver to communicate with the SAM™ system in the truck. When properly configured, the SAM™ system will support up to two (2) separate nozzles equipped with the SAM™ SMART NOZZLE module at the same time.



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6. BATTERIES AND CHARGER

The SAM™ SMART NOZZLE comes with Akron Brass P/N 803435 Lithium-ion rechargeable batteries. The batteries must be fully charged prior to first use. Akron Brass recommends using the Tenergy TN471U battery charger. Akron Brass internal P/N for this charger is 60470010.

⚠ WARNING

Using any battery other than Akron Brass P/N 803435 can potentially damage your SAM™ SMART NOZZLE. Failure to use the specified battery increases the chance of fire and will void your warranty.

6.1 Charging Batteries

Lithium-ion batteries do not have a charge memory, so deep discharging is not required. It is better to use partial discharge cycles. After 30 charges, you should completely discharge batteries prior to charging. The battery is considered completely discharged when it measures less than 3.2 V.

6.2 Installing Batteries

⚠ DANGER

To prevent ignition of a hazardous atmosphere, batteries must only be changed in an area known to be nonhazardous.

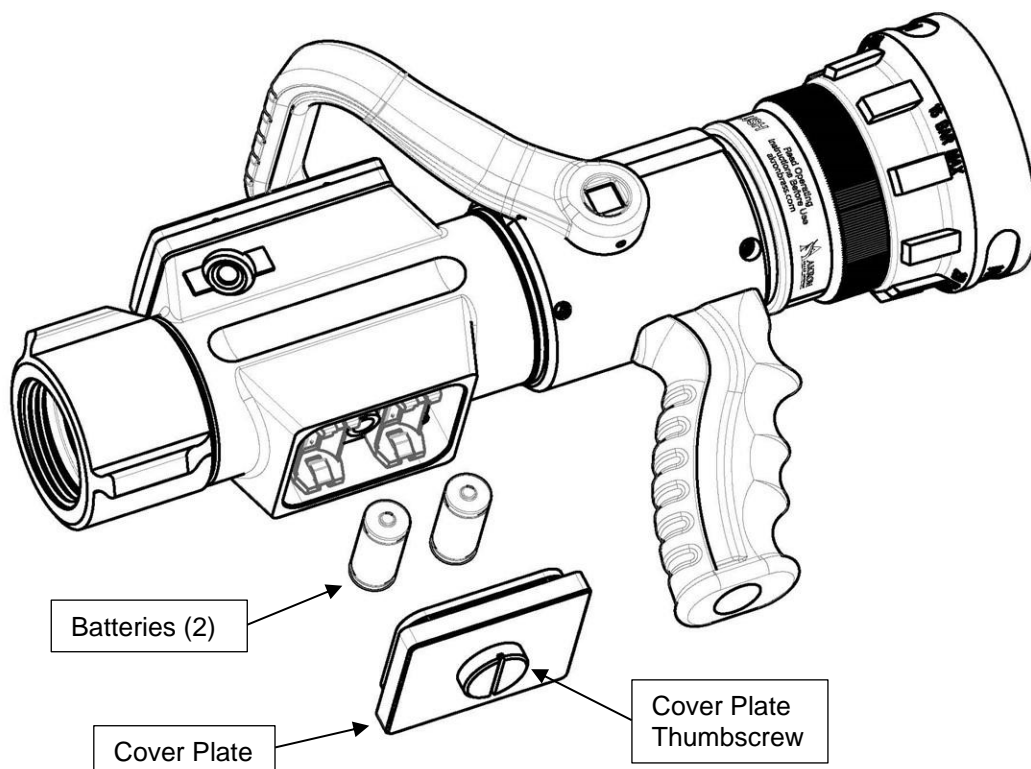
NOTICE

Change batteries in a clean dry area to avoid internal electrical contamination.

NOTICE

Only one battery is required to power the SAM™ SMART NOZZLE. For maximum life, install two batteries.

Unscrew the battery cap thumbscrew by turning it counterclockwise and remove the battery cover. Remove the depleted batteries and place in the battery charger for recharging. Insert freshly charged batteries. Observe polarity for proper (+) and (-) placement. Before replacing the battery cover, inspect and remove any dust or dirt on the mating surfaces of the battery cover and housing. Replace battery cap and tighten the thumbscrew until it will not turn.



6.3 Storing Batteries

When batteries won't be used for longer than one month, they should be stored in a cool, dry place and at 40% charge. Make sure you fully charge batteries when removing them from storage prior to use.

6.4 Disposing of Batteries

Do not dispose of the batteries in your regular trash pickup. They must be taken to a location that will properly recycle them.

6.5 Safety

⚠ WARNING

- Keep batteries in a battery safe container when not installed in a SAM™ SMART NOZZLE.
- Do not expose batteries to high temperature.
- Do not charge batteries unattended.
- Do not disassemble or modify battery.
- Do not short circuit battery.
- Do not dispose of batteries in a fire.



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- Using any battery other than Akron Brass P/N 803435 can potentially damage your SAM™ SMART NOZZLE. Failure to do this increases the chance of fire and will void your warranty.

7. INTEGRATED PRESSURE TRANSDUCER

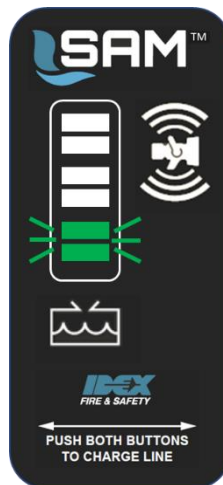
Unique to the SAM™ SMART NOZZLE is an integrated pressure transducer. The transducer is used to feed the nozzle inlet pressure (nozzle calibration pressure) back to the SAM™ truck on a continuous closed loop setup. The SAM™ truck valve controlling the specific nozzle modulates to maintain a factory set nozzle calibration that is stored in the SAM™ SMART NOZZLE and is downloaded during the pairing process of the SAM™ SMART NOZZLE with the SAM™ truck. The closed loop system maintains the proper nozzle calibration pressure automatically. The SAM™ SMART NOZZLE will maintain a constant pressure at the nozzle inlet during elevation changes of up to six (6) floors above and two (2) floors below grade.

8. SYNCING THE SAM™ SMART NOZZLE TO THE SAM™ TRUCK

NOTICE

The truck pump must be in the disengaged mode (road mode) to synchronize the SAM™ SMART NOZZLE with the SAM™ truck. Failure to do so may cause unintentional activation of discharge valves on the truck.

After battery installation, the SAM™ SMART NOZZLE is ready to be synced with a properly configured SAM™ truck. The bottom green LED as shown below will flash for approximately 4 seconds then the nozzle will go dark.



Pre-SYNC
State

To initiate the sync process first turn on the SAM™ system at the truck. Push and hold both function buttons on the SAM™ SMART NOZZLE simultaneously for 2 seconds then release to initiate the sync

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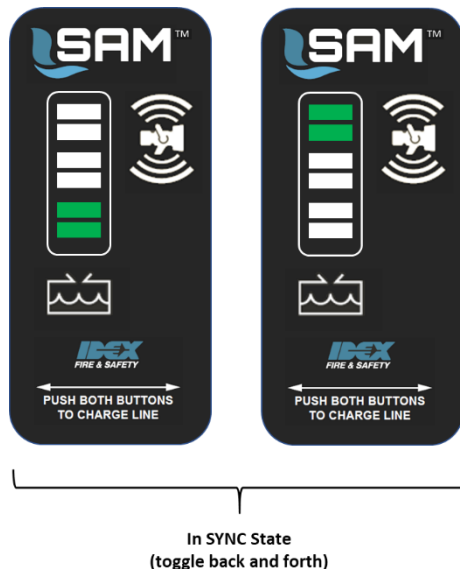
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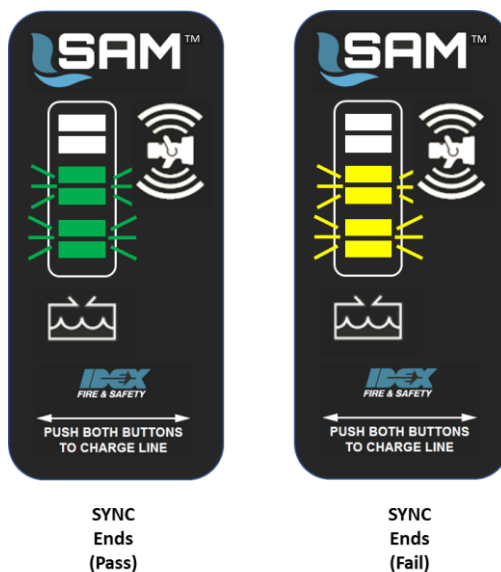
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process. Upon detecting the SAM™ SMART NOZZLE radio in the truck the SAM™ SMART NOZZLE will begin the process of synchronization between the two devices. The LEDs on the SAM™ SMART NOZZLE will toggle while displaying the color green as shown below.



At the completion of the sync process the LEDs will display a successful sync or a failed sync attempt. Two green flashing LEDs denote a successful sync process and the SAM™ SMART NOZZLE is now in communication with the radio on the SAM™ truck. Two yellow flashing LEDs denote a failed sync process. If the sync process fails, after the flashing yellow LEDs, the display will revert back to the pre-sync state when the battery was first installed. Repeat the sync process again if needed to complete a successful sync. **If a passing sync process cannot be completed contact Hale Technical Service (1-800-533-3569)(Halettechnicalservice@idexcorp.com) for assistance.**

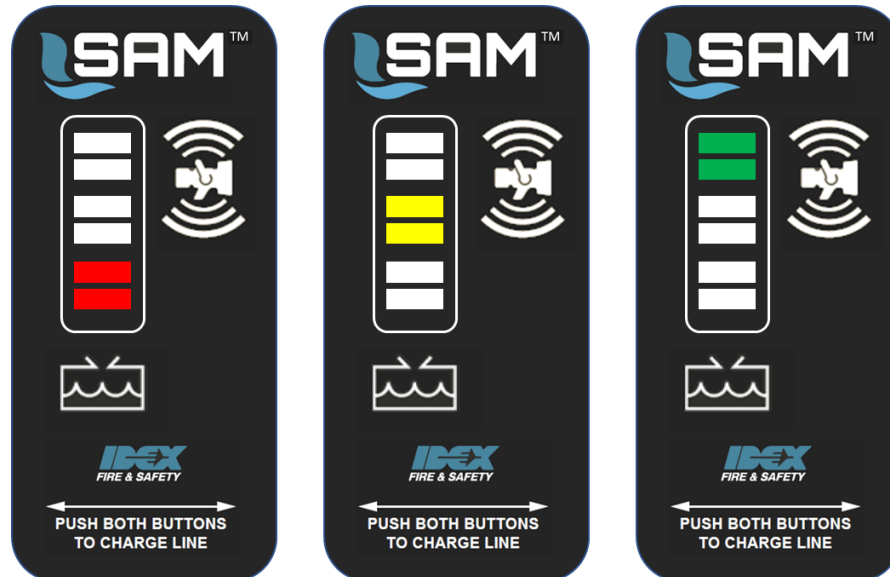


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If for any reason a SAM™ SMART NOZZLE that has been sync'd with the SAM™ truck cannot locate the truck radio, the LED display of the SAM™ SMART NOZZLE will indicate as shown below in a red, yellow, green sequence.



9. PAIRING THE SAM™ SMART NOZZLE TO A DISCHARGE VALVE

NOTICE

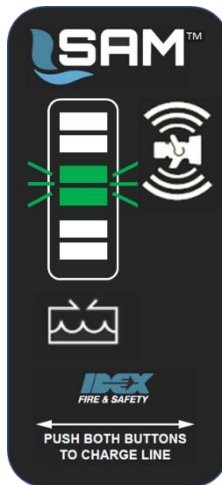
The truck pump must be in the disengaged mode (road mode) to pair the SAM™ SMART NOZZLE with a discharge valve on the SAM™ truck. Failure to do so may cause unintentional activation of discharge valves on the truck.

NOTICE

Pairing a SAM™ SMART NOZZLE to a discharge on the SAM™ truck is a password protected process. Refer to the UV1100 operating instructions provided with the SAM™ truck on using password protected functions and screens.



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Pre-PAIR
State

When ready to pair the SAM™ SMART NOZZLE with a discharge valve, **SIMULTANEOUSLY** press and hold the two function buttons located on either side of the SAM™ SMART NOZZLE module for a minimum time of 2 seconds. Release after the 2 second period. The LED display on the SAM™ SMART NOZZLE will illuminate in a blue wig-wag sequence as shown below indicating the signal to pair with a valve has occurred.

Now, look at the SAM UV1100 display. It should show a passcode entry screen. Enter the appropriate passcode to gain access to the SAM Nozzle and valve pairing menu.

Once entry is gained to the pairing menu, confirm that the Serial Number (SN) indicated on the menu screen matches the SN on the left side of the SAM™ SMART NOZZLE being paired. Then select the row for the appropriate discharge valve and click the “pair” button.



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At the completion of the pairing process, the LEDs will display a successful pair or a failed pair attempt, as shown below. Two blue flashing LEDs denote a successful pair process and the SAM™ SMART NOZZLE is now paired with a specific discharge valve on the SAM™ truck. Navigate back to the home screen on the UV1100 display to end the pairing process. Two red flashing LEDs denote a failed pair process. If the pair process fails, the SAM™ SMART NOZZLE display will revert back to the pre-pair state (flashing middle green LED). Attempt the pair process several times if needed to complete a successful pair. **If a passing pair process cannot be completed contact Product Support (1-800-533-3569) (Haletechnicalservice@idexcorp.com) for assistance.**

WARNING

Do not switch SAM™ SMART NOZZLES between discharges after the pairing process. Doing so can result in the opening of discharges other than the discharge connected to the paired SAM™ SMART NOZZLE which may cause bodily injury.



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10. UN-PAIRING THE SAM™ SMART NOZZLE FROM A DISCHARGE VALVE

NOTICE

The truck pump must be in the disengaged mode (road mode) to unpair the SAM™ SMART NOZZLE from a discharge valve on the SAM™ truck. Failure to do so may cause unintentional activation of discharge valves on the truck.

NOTICE

Unpairing a SAM™ SMART NOZZLE from a discharge on the SAM™ truck is a password protected process. Refer to the UV1100 operating instructions provided with the SAM™ truck on using password protected functions and screens.

Via the SAM UV1100 display, enter the appropriate passcode to gain access to the SAM™ SMART NOZZLE and valve pairing menu.

Once entry is gained to the pairing menu, chose the line with the Serial Number (SN) that matches the SAM™ SMART NOZZLE being unpaired. Highlight that valve/nozzle combination. Go to the SAM™ SMART NOZZLE and press one of its two buttons to make sure that it is powered on (i.e., not in sleep mode), then return to the UV1100 display and, at the top of the screen, press “Unpair”.

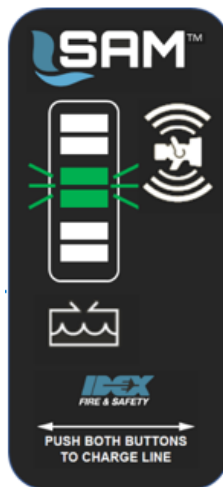
[NOTE: if prompted to force the removal of the SAM™ SMART NOZZLE from the paired menu list on the UV1100, click the “X” button. Verify that the SAM™ SMART NOZZLE is powered on and is located near the fire truck, then attempt the unpairing process again. Do not initiate a forced unpair without the guidance of technical support.]

Upon unpairing the SAM™ SMART NOZZLE, the display will revert to the Pre-PAIR state indicating the SAM™ SMART NOZZLE is still synced to the transmitter/receiver, but not paired with any discharge valve. To pair the SAM™ SMART NOZZLE with a different discharge valve, repeat step 9.

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Pre-PAIR
State

Upon seeing that the SAM nozzle has successfully unpaired, press the “SEND BAM” button at the bottom of the pairing screen on the UV1100. A pop-up window will appear, asking if you wish to continue. Click the check mark button to proceed. The UV1100 will reboot.

11. CHARGING THE HOSE FROM THE SAM™ SMART NOZZLE

NOTICE

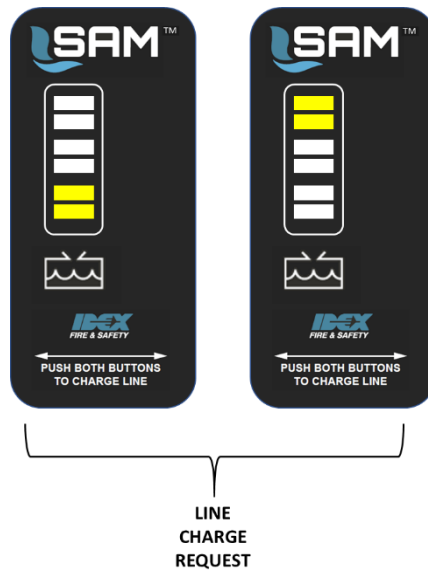
A paired valve with the SAM™ SMART NOZZLE can only be activated in pump mode.

WARNING

Do not activate a paired valve while hose is still packed in the hose bed, cross-lay or speed-lay. Doing so will result in damage to the hose and surrounding structure of the truck and may cause bodily injury due to rapid hose expansion and movement.

When ready to activate a paired SAM™ SMART NOZZLE and valve, **SIMULTANEOUSLY** press and hold the two function buttons located on either side of the SAM™ SMART NOZZLE module for a minimum time of 2 seconds. Release after the 2 second period. The LED display on the SAM™ SMART NOZZLE will illuminate in a yellow wig-wag sequence as shown below indicating the signal to open the valve has occurred. The wig-wag sequence will continue for approximately four (4) seconds and will then switch to the tank level display discussed in section 11 of this manual. The valve at the truck will commence to open and provide water to the SAM™ SMART NOZZLE.

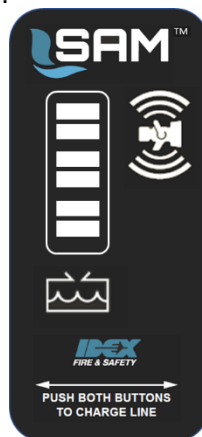
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12. LOSS OF SIGNAL

The SAM™ SMART NOZZLE uses a wireless communication method to remain in contact with the SAM™ system on the truck. If for any reason that communication is lost while in pump mode, the LED display on the SAM™ SMART NOZZLE is designed to turn off (go dark) as shown below. This does not affect the general operation of the nozzle, which will still function as a normal handline nozzle without a SAM™ SMART NOZZLE system. The SAM™ system on the truck is designed to account for this situation and will adjust as needed to maintain water flow and nozzle pressure.

When wireless communication is re-established between the SAM™ SMART NOZZLE and the SAM™ system on the truck the display will illuminate.



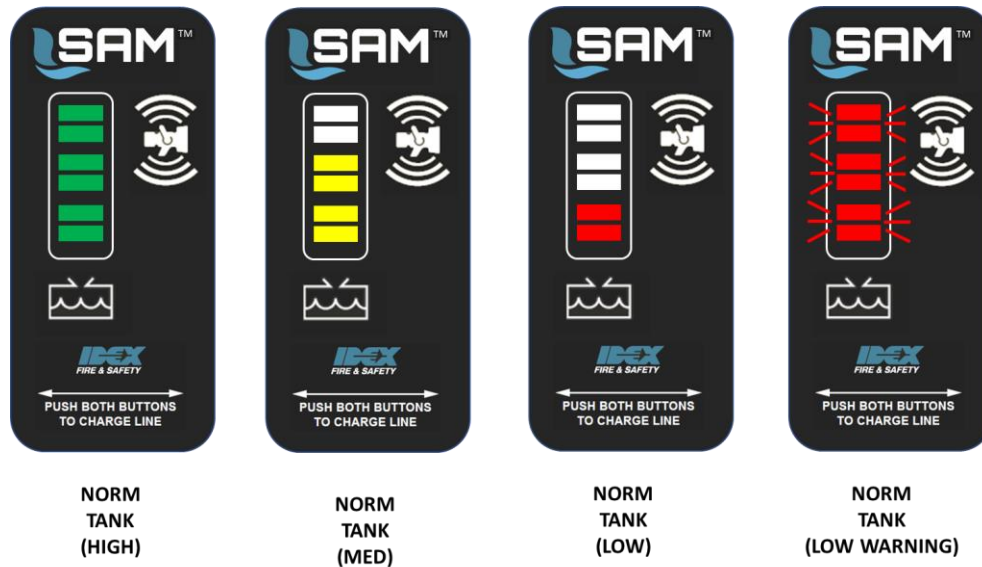
Loss of
RF Signal
Standard
(Goes dark)

13. TANK LEVEL INDICATION AND PERMANENT WATER SUPPLY (HYDRANT)

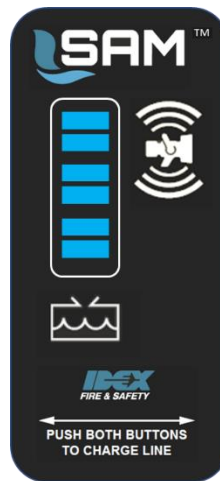
NOTICE

Tank level indication on the SAM™ SMART NOZZLE are visible only when the pump is engaged (pump mode).

The SAM™ SMART NOZZLE LED display provides information on the amount of water in the tank on the truck. This is done via wireless communication between the SAM™ SMART NOZZLE and the SAM™ truck. Below are the colors and levels for various tank conditions. Green is a full tank, yellow is partially filled tank, red is a low tank and all flashing red is an extremely low tank and running out of water is imminent.



When a permanent supply of water, such as a hydrant, is established at the SAM™ truck, the SAM™ SMART NOZZLE will automatically switch to a full blue display to indicate this condition. Below is the LED display of the SAM™ SMART NOZZLE after the connection to the permanent supply.



**NORM
(HYDRANT)**

14.DISPLAY LED INTENSITY LEVELS AND RESETTING

The SAM™ SMART NOZZLE LED display is adjustable from LOW-MEDIUM-HIGH LED intensity levels. The nozzle comes from the factory preset at LOW intensity.

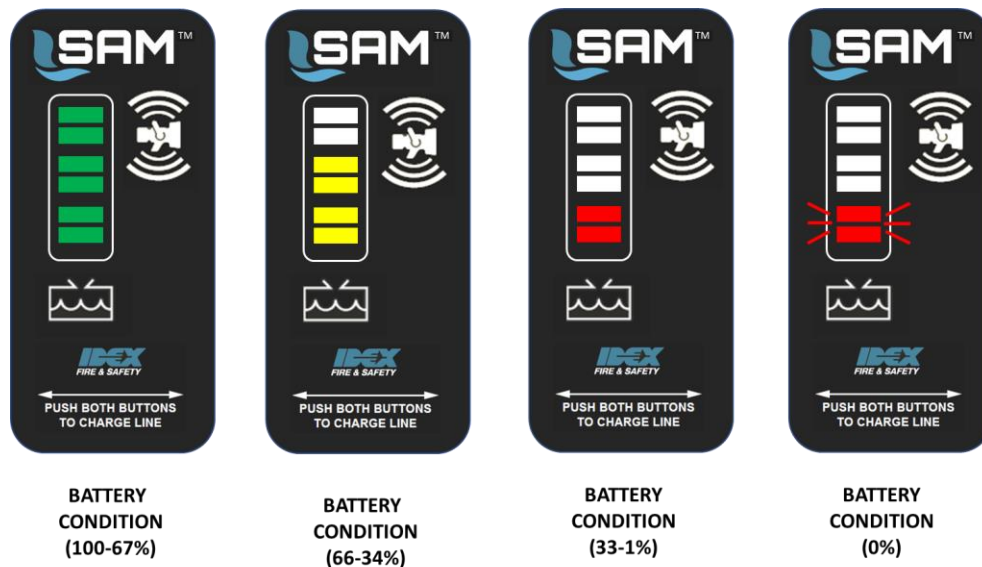
LED intensity level is adjusted at the UV1100 screen. To change the intensity setting reference the UV1100 instructions.

15.CHECKING BATTERY CHARGE LEVEL

NOTICE

Battery charge level can only be displayed on the SAM™ SMART NOZZLE when the SAM™ truck is in road mode. When the SAM™ truck is in pump mode, the battery charge level can still be viewed from the UV1100 screen.

From the UV1100 screen on the SAM™ truck display, navigate to the “check battery” option and click the applicable button. Each synced and paired SAM™ SMART NOZZLE will then indicate its remaining battery charge level via its LED display, as shown below. Battery level can also be viewed while in pump mode by pressing the info button on the active discharge.



16. UPDATING THE SAM™ SMART NOZZLE FIRMWARE

The SAM™ SMART NOZZLE is equipped with an internal Wi-Fi radio to allow wireless firmware updates when they are needed or become available during firmware upgrades.

16.1 Equipment needed

1. SAM™ SMART NOZZLE with batteries
2. Wi-Fi capable computer with supported browser. **Note:** this computer should contain any firmware (FM) that the user wishes to upload to the SAM™ SMART NOZZLE.

16.2 Setup and Test Procedure


1. Power on the SAM™ SMART NOZZLE.
2. If the SAM™ SMART NOZZLE has not been synchronized:
 - a. Power on the 6037 CAN bus wireless interface device.
 - b. Press both buttons on the SAM™ SMART NOZZLE for approximately two seconds to initiate the syncing process.
3. Once the SAM™ SMART NOZZLE has been successfully synchronized with a 6037 device:
 - a. Press and hold the left button (light source side) of the SAM™ SMART NOZZLE for approximately 10 seconds to enable the Wi-Fi access point.
 - b. On the Wi-Fi enabled computer, search for the “akronbrass” access point and connect to it.
 - c. Open your web browser and enter the URL “akronbrass.net”.

16.3 Using the Web Browser

The subsequent steps will depend upon your objectives.

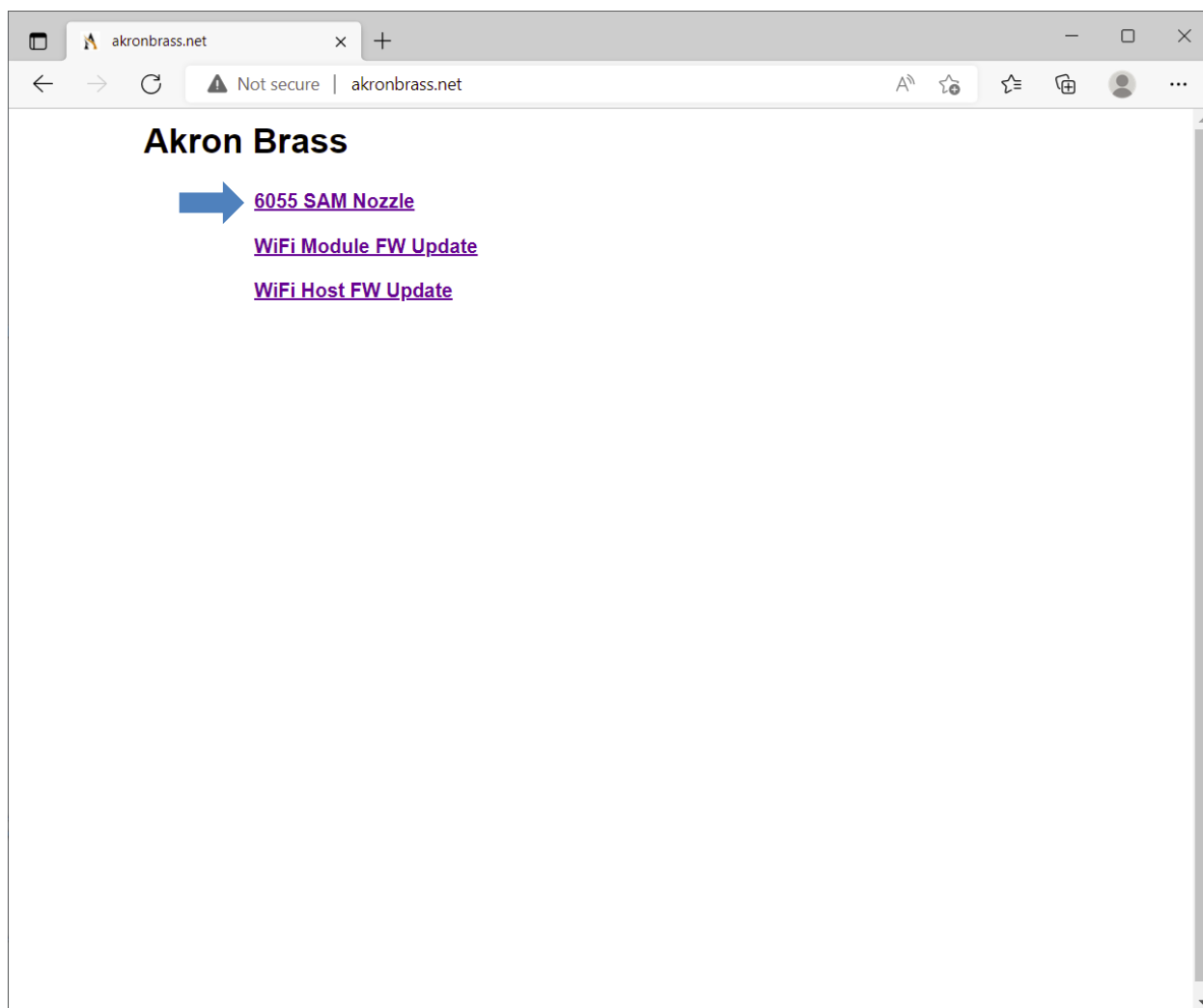


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To configure adaptable parameters or to observe available diagnostic conditions, select the link to “6055 SAM Nozzle” from the akronbrass.net home page. The arrow () indicates what hyperlink text or button to select at each step, for the given examples, or points out a key difference(s) in a given step.

[NOTE: To exit, or disable Wi-Fi mode, simply press one of the SAM™ SMART NOZZLE buttons. This will place the SAM™ SMART NOZZLE in a “sleep” state. Pressing one of the SAM™ SMART NOZZLE buttons again will wake it back up. Alternatively, the user can cycle power on the SAM™ SMART NOZZLE by removing and reinstalling its batteries.]

The AkronBrass.net home page is shown below.



16.4 SAM Nozzle Configuration (Standard Mode)

There are presently four (4) different tabs available in Standard mode. The images that follow step through the various configuration details and options pictorially. The end user should only ever operate the SAM™ SMART NOZZLE in Standard mode unless otherwise instructed by Product Support.

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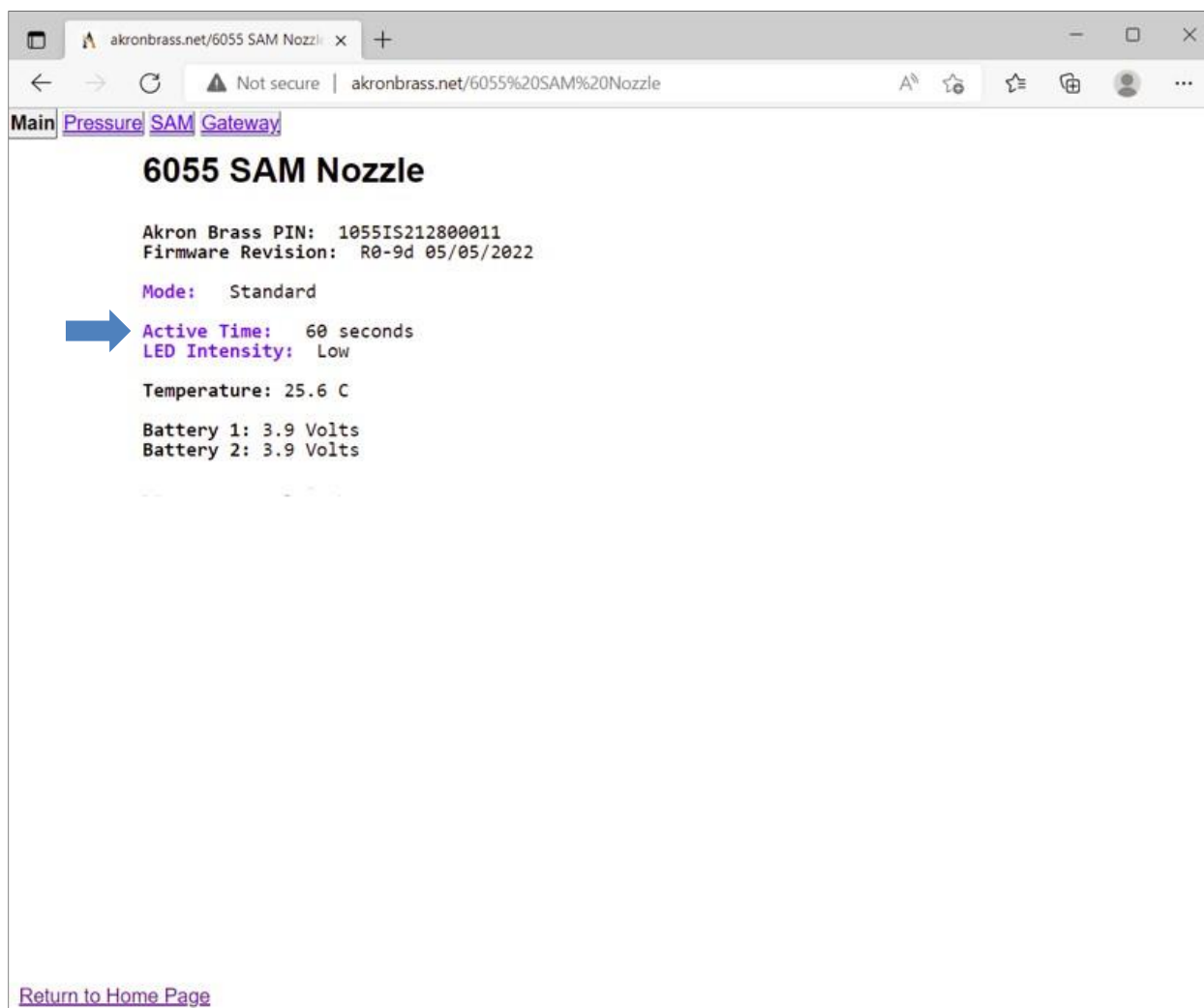
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16.4.1 Setting the Active Time

The Active Time parameter specifies the length of time the SAM™ SMART NOZZLE will stay awake (i.e., not enter its “sleep” state) between button presses under the following conditions:

- It is not being polled by a 6037 device, or
- Its Wi-Fi access point is enabled.

Follow the images below to modify the Active Time parameter (units: seconds; range: 15 – 120; default: 60).





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akronbrass.net/6055 SAM Nozzle x

Not secure | akronbrass.net/6055%20SAM%20Nozzle

[Main](#) [Pressure](#) [SAM](#) [Gateway](#)

6055 SAM Nozzle

Akron Brass PIN: 1055IS212800011
Firmware Revision: R0-9d 05/05/2022

Mode: Standard

Active Time: 60 seconds
LED Intensity: Low

Temperature: 25.9 C

Battery 1: 3.9 Volts
Battery 2: 3.9 Volts

Factory Default: No

Edit: Active Time:

Submit

Cancel

[Return to Home Page](#)



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The screenshot shows a web browser window with the URL `akronbrass.net/6055 SAM Nozzle`. The page title is **6055 SAM Nozzle**. The interface includes a navigation bar with links: [Main](#), [Pressure](#), [SAM](#), and [Gateway](#). The main content area displays the following configuration details:

- Akron Brass PIN: 1055IS212800011
- Firmware Revision: R0-9d 05/05/2022
- Mode: Standard
- Active Time: 60 seconds
- LED Intensity: Low
- Temperature: 25.9 C
- Battery 1: 3.9 Volts
- Battery 2: 3.9 Volts
- Factory Default: No

An 'Edit: Active Time' dialog box is open on the right side of the screen, featuring a text input field containing '60', a green 'Submit' button, and a red 'Cancel' button. A blue arrow points from the 'Active Time' field in the main configuration area to the dialog box.

[Return to Home Page](#)

16.4.2 Specifying the LED Intensity

The LED Intensity parameter sets the brightness level of the LEDs on the SAM™ SMART NOZZLE display. There are three options available—Low, Medium, High—with Low being the default value.

Follow the images below to see how to change the LED Intensity.



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akronbrass.net/6055 SAM Nozzle x

Not secure | akronbrass.net/6055%20SAM%20Nozzle

[Main](#) [Pressure](#) [SAM](#) [Gateway](#)

6055 SAM Nozzle

Akron Brass PIN: 1055IS212800011
Firmware Revision: R0-9d 05/05/2022

Mode: Standard

Active Time: 60 seconds
LED Intensity: Low

Temperature: 26.0 C

Battery 1: 3.9 Volts
Battery 2: 3.9 Volts

Factory Default: No

Edit: LED Intensity:

Low

Medium

High

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akronbrass.net/6055 SAM Nozzle x

Not secure | akronbrass.net/6055%20SAM%20Nozzle

[Main](#) [Pressure](#) [SAM](#) [Gateway](#)

6055 SAM Nozzle

Akron Brass PIN: 1055IS212800011
Firmware Revision: R0-9d 05/05/2022

Mode: Standard

Active Time: 60 seconds
LED Intensity: Low

Temperature: 26.2 C

Battery 1: 3.9 Volts
Battery 2: 3.8 Volts

Factory Default: No

Edit: LED Intensity:

Low ▼

Submit

Cancel

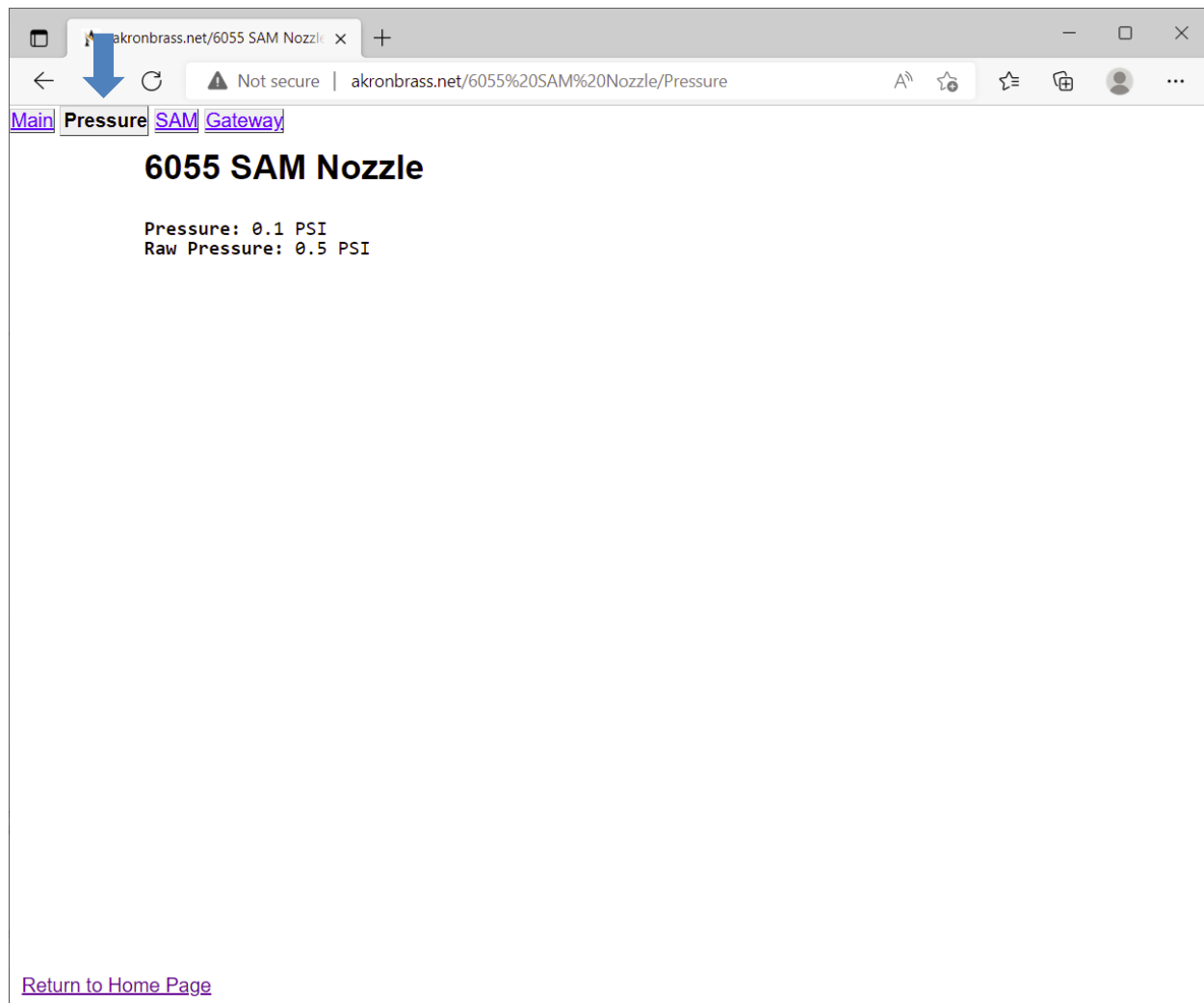
[Return to Home Page](#)



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16.4.3 Examining Other Configuration Details

The operator can click on the tabs to the right of the Main tab to view other details of the SAM™ SMART NOZZLE's configuration. This includes pressure, SAM-related, and wireless communication-related information. Examples of the contents under each tab are presented below.





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The screenshot shows a web browser window with the address bar displaying `akronbrass.net/6055 SAM Nozzle`. The page title is "6055 SAM Nozzle". The navigation menu includes links for [Main](#), [Pressure](#), [SAM](#), and [Gateway](#). The status information is as follows:

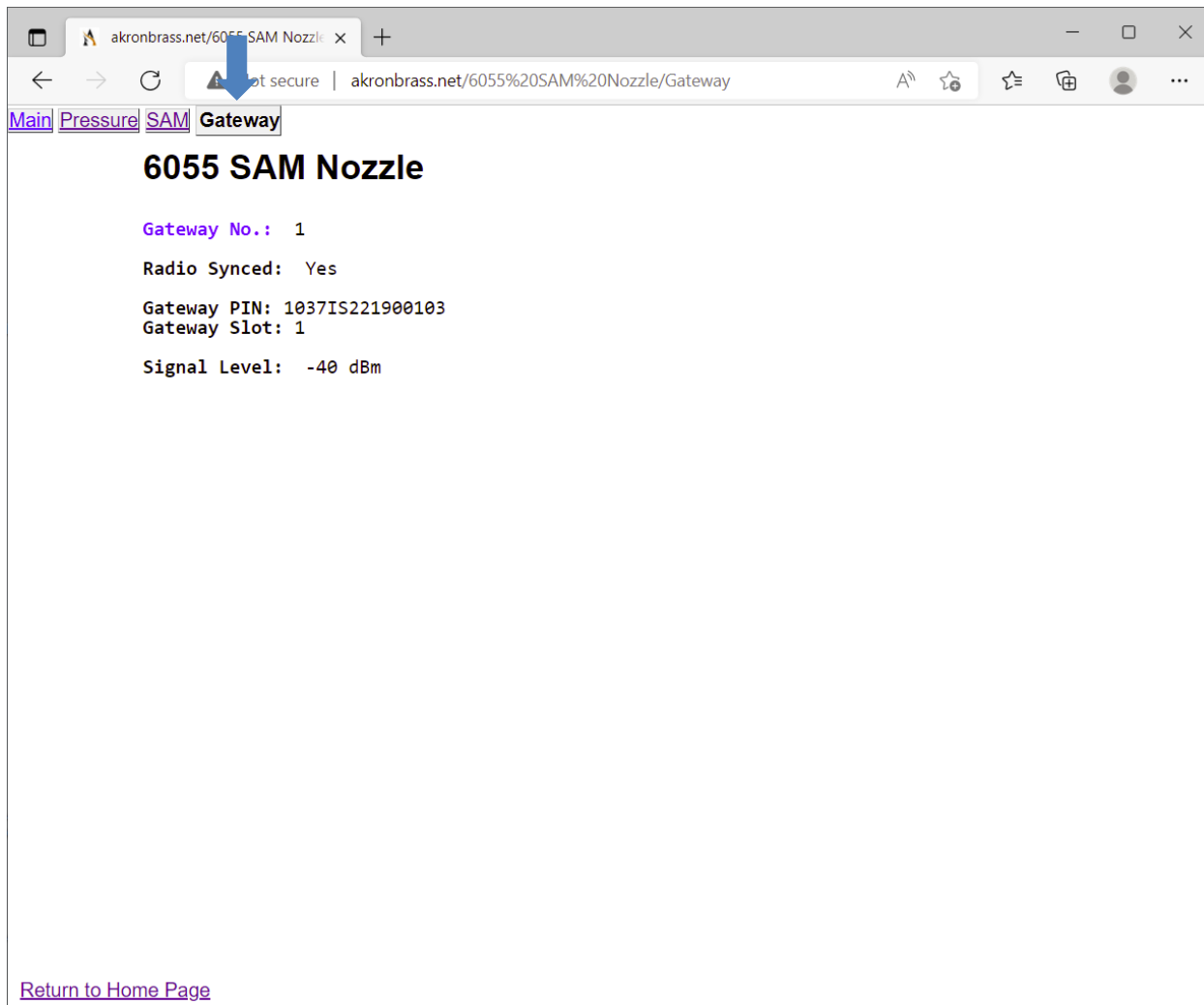
- SAM Paired: Yes
- CAN Address: 96
- Signal Quality: Excellent
- Pump Engaged: No
- Pressure Warning: None
- Tank Water Source: No

At the bottom left, there is a link [Return to Home Page](#).

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The screenshot shows a web browser window with the address bar displaying `akronbrass.net/6055%20SAM%20Nozzle/Gateway`. The page title is "6055 SAM Nozzle". The navigation bar includes links for [Main](#), [Pressure](#), [SAM](#), and [Gateway](#). The main content area displays the following information:

- Gateway No.: 1
- Radio Synced: Yes
- Gateway PIN: 1037IS221900103
- Gateway Slot: 1
- Signal Level: -40 dBm

At the bottom left, there is a link [Return to Home Page](#).

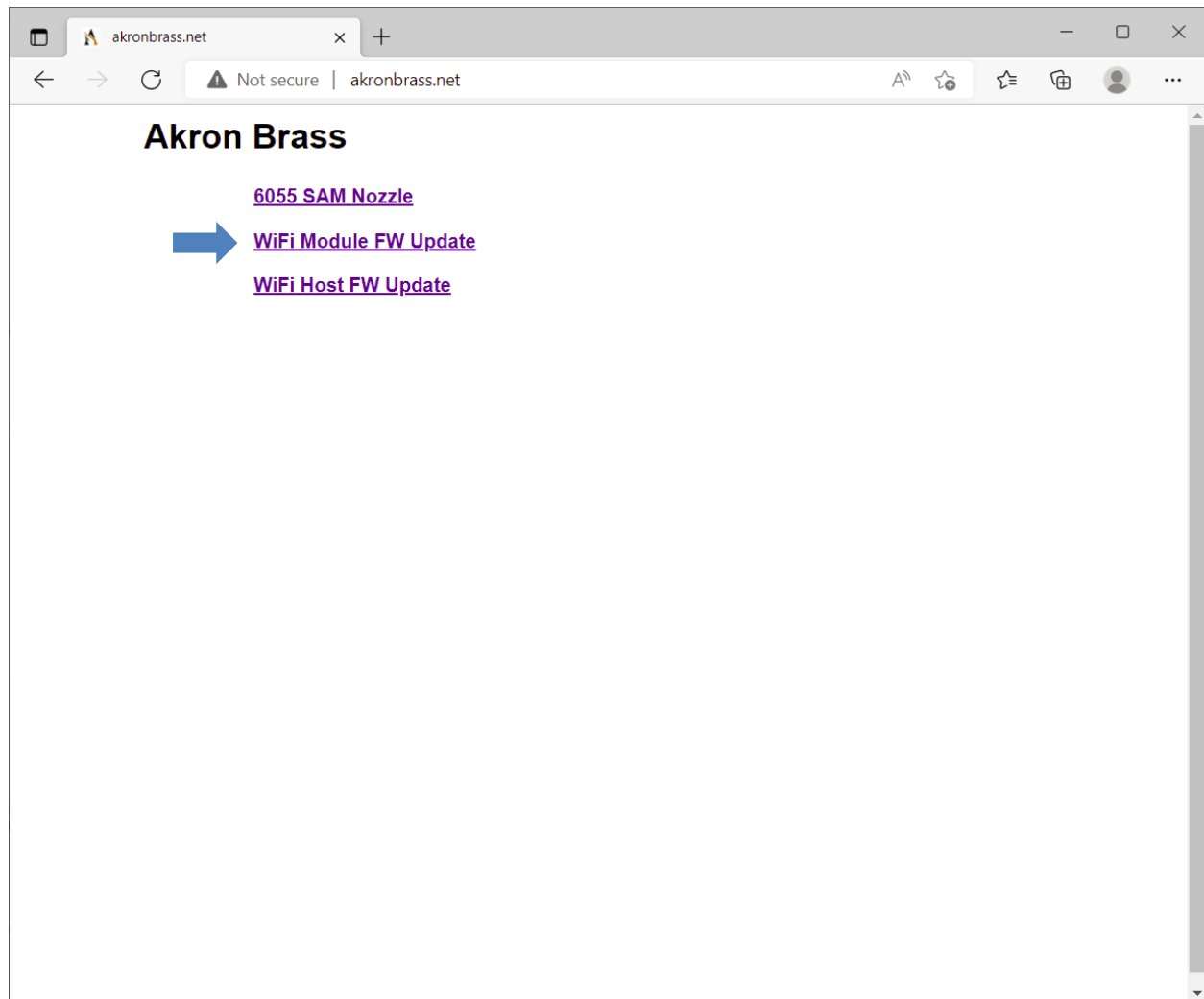
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16.5 Updating the Wi-Fi Firmware

To update the firmware in the Wi-Fi module on the SAM™ SMART NOZZLE board, click on the hyperlink named “Wi-Fi Module FW Update” on the akronbrass.net home page.






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ABM Wi-Fi Module Update

FW Rev 1.0.0100

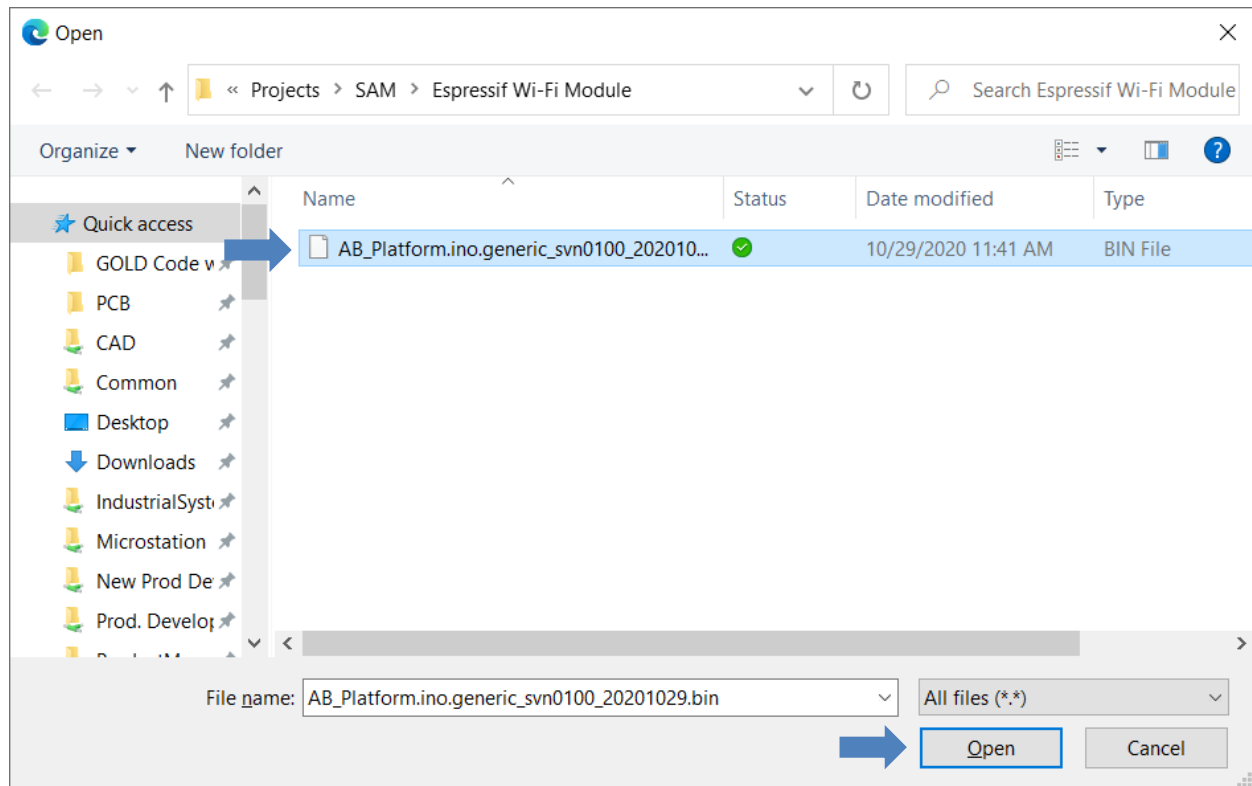
Select File to Upload

 No file chosen

This may take several minutes



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ABM Wi-Fi Module Update

FW Rev 1.0.0100

Select File to Upload

AB_Platform.ino.generic_svn0100_20201029.bin

Name: AB_Platform.ino.generic_svn0100_20201029.bin
Size: 491.88KB



This may take several minutes



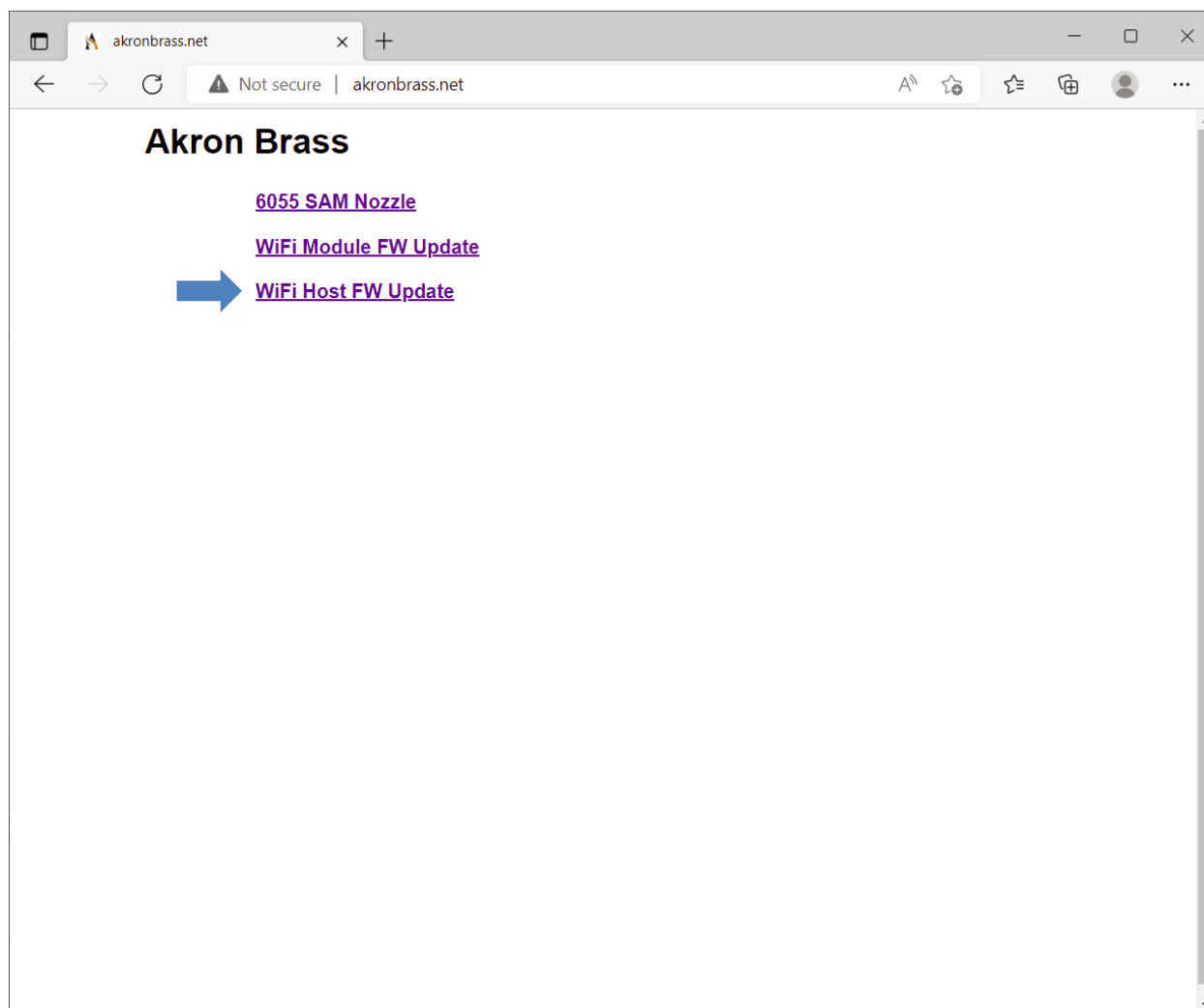
SAM™ SMART NOZZLE N2P INSTALLATION, OPERATING, AND MAINTENANCE INSTRUCTIONS



Upon updating the firmware, cycle power on the SAM™ SMART NOZZLE. (The Wi-Fi connection will be terminated.)

16.6 Updating the Host Processor Firmware

To update the firmware in the main processor on the SAM™ SMART NOZZLE board, click on the hyperlink named “Wi-Fi Host FW Update” on the akronbrass.net home page.




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ABM Device Update

Select File to Upload

 No file chosen

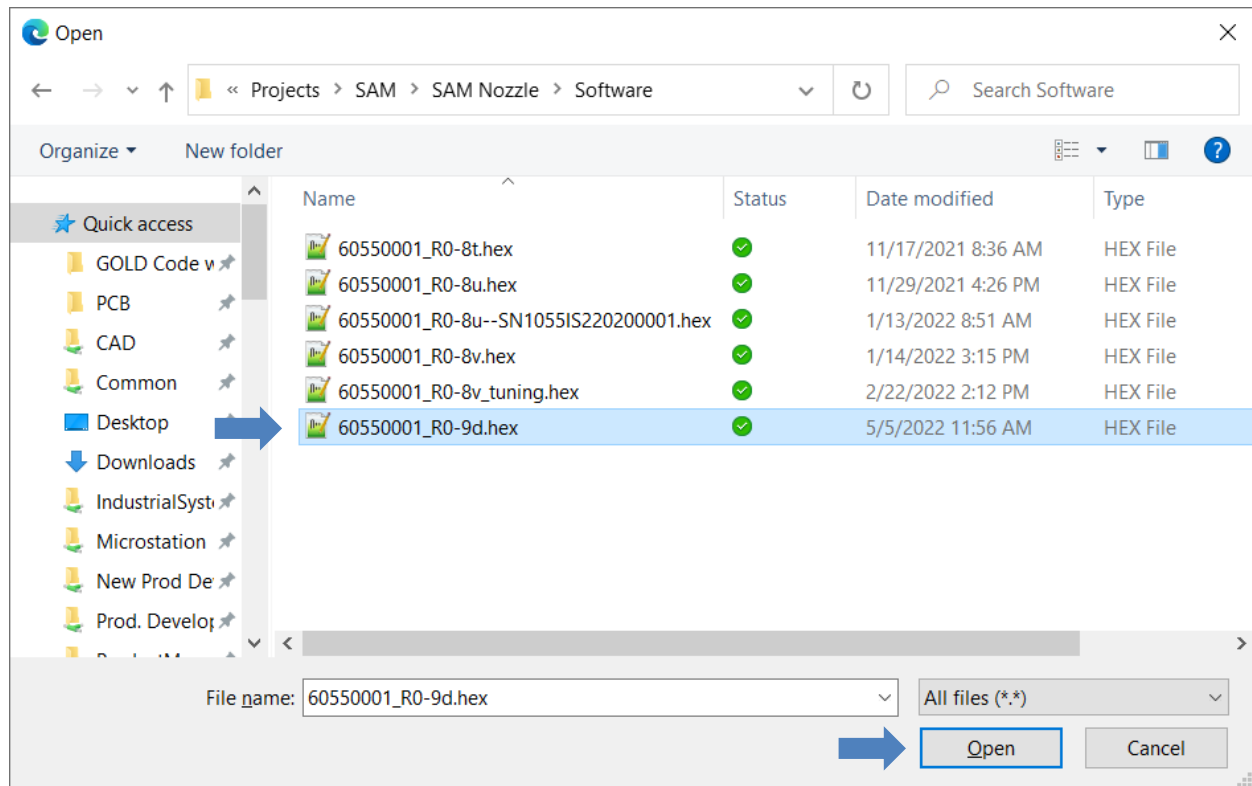
This may take several minutes

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ABM Device Update

Select File to Upload

Choose File 60550001_R0-9d.hex

Name: 60550001_R0-9d.hex

Size: 273.5KB

 **Upload**

This may take several minutes

akronbrass.net says

Upload Success, Rebooting Device ...

 **OK**

Upon updating the firmware, cycle power on the SAM™ SMART NOZZLE. (The Wi-Fi connection will be terminated.)

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17. FREQUENTLY ASKED QUESTIONS

What kind of battery life does it have? With both batteries installed, you can expect 10 hours of continuous run time.

What kind of batteries does it take? The SAM™ SMART NOZZLE uses lithium-ion rechargeable batteries Akron Brass P/N 803435.

Can the SAM™ SMART NOZZLE operate like current nozzles in the market today that don't use SAM? Yes. The nozzle portion on the SAM nozzle is a standard type of nozzle currently offered by Akron Brass Company with common controls for controlling flow such as on-off, volume control and pattern changes.

How do I sync the SAM™ SMART NOZZLE to the SAM™ truck? See section 8 of this manual.

How do I pair the SAM™ SMART NOZZLE to a specific discharge on the SAM™ truck? See section 9 of this manual.

How do I control a valve with the SAM™ SMART NOZZLE? After properly syncing and pairing the SAM nozzle with a particular SAM™ truck discharge, follow the steps in section 9 of this manual.

18. REPLACEMENT PARTS

Part Number	Description
803435	2-Pack of Li-ion batteries
60470010	Tenergy TN471U 2-bay Universal Battery Charger

19. WARRANTY STATEMENT

WARRANTY AND DISCLAIMER*: We warrant Akron Brass products for a period of one (1) year after purchase against defects in materials or workmanship. Akron Brass will repair or replace product which fails to satisfy this warranty. Repair or replacement shall be at the discretion of Akron Brass. Products must be promptly returned to Akron Brass for warranty service. We will not be responsible for: wear and tear; a failure due to having used any battery in the SAM™ SMART NOZZLE other than Akron Brass P/N 803435, any improper installation, use, maintenance or storage; negligence of the owner or user; repair or modification after delivery; failure to follow our instructions or recommendations; or anything else beyond our control. WE MAKE NO WARRANTIES, EXPRESS OR IMPLIED, OTHER THAN THOSE INCLUDED IN THIS WARRANTY STATEMENT, AND WE DISCLAIM ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. Further, we will not be responsible for any consequential, incidental or indirect damages (including, but not limited to, any loss of profits) from any cause whatsoever. No person has authority to change this warranty.

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