



The first and only fire hose nozzle that gives the nozzle team control of the water flow

SAM Smart Nozzle FAQs

WHAT IS N₂P TECHNOLOGY?

With N₂P Technology, the nozzle system communicates with the pump through SAM, providing the nozzle operator unprecedented information and control.

HOW TO ORDER

SAM Smart Nozzles require the apparatus to include a SAM™ system with the following considerations:

- Determine the number of SAM Smart Nozzles that you would like to include.
- Select the Akron Brass Turbojet™, Assault™ or Smooth Bore tips configuration for each nozzle.
- Place the configuration and which preconnected discharge that will be paired to the nozzle in your specification or provide it to your Dealer or OEM at the time of purchase of your apparatus.
- Apparatus OEM will order the SAM Smart Nozzles when purchasing the SAM system from Hale Products.
- SAM Smart Nozzles will be paired with the appropriate preconnect at Hale's factory before shipment of the pump flow solution to the OEM.

Can I buy it now?

- Taking orders beginning January, 2022.

INSTALLATION DETAILS

- The OEM may be responsible for installing the radio, providing a CAN communication line from the radio to the installed SAM system, installing an antenna and connecting the RF line from the antenna to the radio. If the OEM performs the installation, they will determine the best location for the radio and the antenna. During delivery training, the fire department will lay out hose (up to 300 feet) and connect the SAM Smart Nozzle and will flow discharge to auto calibrate the line.





SAM NOZZLE FAQs

How does the SAM Smart Nozzle work with SAM?

- The SAM Smart Nozzle tells the SAM system the pressure setting needed on the discharge valve. SAM takes the pressure information from the SAM Smart Nozzle and increases/decreases the valve opening and the pump pressure/engine speed to meet the required nozzle pressure. The SAM Smart Nozzle sends pressure updates to SAM so adjustments can be made.

How does the SAM Smart Nozzle read discharge pressure?

- The SAM Smart Nozzle utilizes a pressure transducer installed in the nozzle at the point of usage to read the pressure, which removes the need to account for elevation change, within limits--five floor up and two floor below grade.

What comes with the base SAM Smart Nozzle with two nozzles?

- Two Akron Brass Turbojet™, Assault™ or Smooth Bore tips with SAM Smart Nozzle paired to the SAM system
- Two chargers capable of charging two batteries
- Eight batteries
- One radio and antenna with RF cable

How many SAM Smart Nozzles can be used on each apparatus?

- Each radio and antenna combination can support two SAM Smart Nozzles. Additional radios and antennas can be installed on the apparatus to support more than two SAM Smart Nozzles. For example, if the apparatus needs five SAM Smart Nozzles, three radios and antennas would be required.

How many SAM Smart Nozzle can be operated simultaneously from the same apparatus?

- Currently six, but will be limited to the number of preconnected discharges on the apparatus.

Can other nozzles other than Akron Brass Turbojet, Assault and Smooth Bore be used?

- Only Akron Brass Turbojet, Assault, and Smooth Bore can be used with the SAM Smart Nozzle.

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, NFPA-compliant nozzle currently offered by Akron Brass Company with common controls for controlling flow such as on-off, volume control and pattern changes.



Can the SAM Smart Nozzle connect to any discharge?

- The SAM Smart Nozzle can only be paired to one valve. It is not recommended that the SAM Smart Nozzle be used manually on a discharge on which it is not paired.

What size valve can be used with SAM Smart Nozzles?

- The 2" valve is the only one currently supported.

How tall is the antenna?

- The antenna is 15" tall.

How long can the CAN backbone be that connects the radio and the SAM system?

- The CAN line can be up to 30'.

Does SAM Smart Nozzle work with the SAM tablet?

- SAM Smart Nozzle and SAM tablet are incompatible and the system can only be configured to include the Nozzle or the Tablet.

How does the SAM Smart Nozzle detect a kink?

- If pressure is low at the SAM Smart Nozzle, the system increases the pressure at the valve and nozzle pressure does not increase.

What does the SAM Smart Nozzle do when a kink is detected?

- SAM Control Center displays a pop-up box warning and the system automatically increases pressure, up to 25 PSI, to recover pressure lost in the kink.

How does the SAM Smart Nozzle detect a burst hose?

- If the SAM system records near zero pressure at the nozzle with pressure at the valve.

What does the SAM Smart Nozzle do when a burst hose is detected?

- The SAM Control Center displays a pop-up box warning and no action is taken by the system.





What alerts will I get when adding a SAM Smart Nozzle to the SAM system?

- Icon showing which discharge has SAM Smart Nozzle
- Screen indication when SAM Smart Nozzle is in use
- Screen indication when SAM Smart Nozzle is no longer in use
- Burst hose
- Hose kink
- Low battery
- Low signal strength

How does the Sam Smart Nozzle connect to SAM?

- The SAM Smart Nozzle utilizes a long-range, low-power spread-spectrum wireless radio frequency platform that connects the SAM system to the SAM Smart Nozzle. The SAM Smart Nozzle utilizes 902-928 MHz.

What SAM Smart Nozzle information is shown on the SAM Control Center when the nozzle is charged?

- Signal condition
- Battery condition
- Valve pressure

What SAM Smart Nozzle information can be found on the SAM Control Center?

- Signal strength %
- Battery strength %
- Hose loss
- Nozzle pressure
- Valve pressure
- Rated nozzle pressure

What does SAM Smart Nozzle do if it loses communication with SAM?

- The SAM Smart Nozzle will function as a normal NFPA-compliant handline and the SAM system discontinues auto adjustments.





What kind of batteries does the SAM Smart Nozzle utilize?

- The SAM Smart Nozzle uses lithium-ion rechargeable batteries. Hale part # 200-00173-000.

What is the battery life of the SAM Smart Nozzle?

- With both batteries installed, you can expect 10 hours of operating battery life.

How much hose can be used with a SAM Smart Nozzle?

- Preconnected handlines up to 300 feet.

What is the performance envelope for elevation difference that the SAM Smart nozzle can attain?

- Up to five floors above and two floors below grade.

Can I add SAM Smart Nozzle to an existing SAM-enabled truck?

- Yes, you can retrofit a SAM-enabled apparatus built after June 2020 that does not include the SAM tablet.

Should the fire department take any steps when taking delivery of a SAM Smart Nozzle?

- The fire department should make arrangements to train all firefighters on the operation of the SAM Smart Nozzle.
- The fire department will lay out the hose (up to 300 feet), connect the SAM Smart Nozzle, and flow discharge to auto-calibrate the line.

Why does the fire department need to auto-calibrate the line if the nozzle provides pressure feedback to the SAM system?

- The auto-calibrate function allows quick charging of the nozzle to the preset pressure. After charging, the SAM system will factor in the actual nozzle pressure and make auto adjustments to keep the nozzle at its preset pressure. No additional tools or flowmeters are required to auto-calibrate the Smart Nozzle line.



RELIABILITY AND DURABILITY

What is involved in the NFPA nozzle certification?

- NFPA requires every nozzle to meet flow requirements, pressure requirements, hydrostatic test, and rough handling test. SAM Smart Nozzle completed the same test that every manual nozzle undergoes before release to the market and NFPA compliance.

What tests were performed when developing SAM Smart Nozzle?

- In addition to testing required to NFPA compliance, the nozzle successfully completed the following tests:
 - Rated for IP67
 - Rated for IP66
 - Vibration testing
 - High and low-temperature testing
 - Communication testing in various situations
 - Used in a training environment at a fire training facility

What type of buildings were used in the testing of the SAM Smart Nozzle?

- Residential (wood construction) - 3,000 square feet
- Commercial (brick) – 6,000 square feet
- Church (brick) – 65,000 square feet
- Manufacturing (metal) – 50,000 square feet
- Commercial (metal) – 10,800 square feet
- Fire Training Facility (metal shipping containers)
- Fire Training Facility (concrete block) – 2,500 square feet
- Underground Culvert (concrete with steel pipe)

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