



## FoamLogix® Electronic Foam Proportioning System

Accurate, variable concentrate injection rates — Precise foam concentrate injection rates from 0.1% to 10.0% are easily operator selectable with the panel mounted control unit. This lets the operator adjust foam consistency under changing conditions.

Discharge side injection — When installed with proper check valves, foam concentrate will not contaminate the fire pump and water tank.

Push button automatic foam proportioning — Foam proportioning is fully automatic and water flow compensating.

Standard nozzle, aspirating nozzle, and CAFS — Fully compatible and recommended with these foam generating systems.

The Hale FoamLogix® provides an optimum solution for your foam proportioning needs. Hale provides rugged hardware to furnish high dependability and foam injection accuracy.

The Hale FoamLogix Series is a flow based foam concentrate proportioning system that uses a field-proven flowsensor assembly to measure actual water flow from the fire pump discharge without causing the restriction or pressure drop associated with other systems. The digital input of the flowsensor is constantly monitored along with the actual output of the positive displacement rotary gear foam concentrate pump. The two values are constantly compared and updated by the computer control with the desired foam concentrate rate automatically injected into the discharge.

With all of Hale FoamLogix innovations and features, the system is incredibly easy to operate. The Hale FoamLogix is activated by the simple push of a button. Foam concentration rate is maintained by computer control.

Whether you are fighting a wildland or structure fire with Class A foam, or fighting a flammable liquid fire with Class B foam, the Hale FoamLogix is up to the task.



**Easiest to use Foam Proportioning System  
in the industry!**

# FoamLogix® Electronic Foam Proportioning System

## FEATURES

**Flow based proportioning** — The Hale FoamLogix System directly measures water and foam concentrate flow and automatically adjusts to deliver a consistent foam concentrate injection rate based on that flow. Operation is unaffected by various GPM nozzles, hose lengths, intake or discharge pressures.

### Handles Class A and Class B type fire hazards

The Hale FoamLogix proportions both Class A and most high viscosity normal hydrocarbon and polar solvent Class B foam agents for maximum flexibility and effectiveness. A list of compatible foam concentrates that have been tested by Hale is available on the Hale Product's website. An optional integral Air Operated Dual Tank Valve (ADT) provides automatic selection of foam concentrate type via a toggle switch located on the pump operator's panel. Concentrate injection rate is automatically changed to match the foam concentrate tank selected.

### Exclusive system monitoring

A simple push of a button on the control unit turns the Hale FoamLogix System on to start foam concentrate injection. The control unit's display lets the pump operator monitor current water flow rate, concentrate percentage injection rate, total water flowed, and total amount of foam concentrate used depending on the mode selected. A bar graph of individual LED's indicates the system capacity when running.

Model 3.3		System Capacity	
System Specifications		Foam Concentration	Water Flow
Foam Pump.....	Rotary Gear	0.1%.....	3300 GPM (12491 LPM)
Foam Output.....	3.3 GPM (12.5 LPM)	0.2%.....	1650 GPM (6245 LPM)
System Operating Pressure.....	50 PSIG (10 Bar)	0.3%.....	1100 GPM (4164 LPM)
Max Operating Pressure.....	400 PSIG (28 BAR)	0.5%.....	660 GPM (2498 LPM)
Max Operating Temperature.....	160°F (71°C)	1%.....	330 GPM (1249 LPM)
Pump Motor.....	3/4 HP (.5 Kw) 12 Volt DC	3%.....	110 GPM (416 LPM)
Operating AMP Draw.....	20 AMPS	6%.....	55 GPM (208 LPM)
Max AMP Draw.....	60 AMPS		
Model 5.0		System Capacity	
System Specifications		Foam Concentration	Water Flow
Foam Pump.....	Rotary Gear	0.1%.....	5000 GPM (18927 LPM)
Foam Output.....	5.0 GPM (19 LPM)	0.2%.....	2500 GPM (9463 LPM)
System Operating Pressure.....	150 PSIG (10 Bar)	0.3%.....	1667 GPM (6310 LPM)
Max Operating Pressure.....	250 PSIG (17 BAR)	0.5%.....	1000 GPM (3785 LPM)
Max Operating Temperature.....	160°F (71°C)	1%.....	500 GPM (1893 LPM)
Pump Motor.....	3/4 HP (.5 Kw) 12 Volt DC	3%.....	167 GPM (632 LPM)
Operating AMP Draw.....	20 AMPS	6%.....	83 GPM (314 LPM)
Max AMP Draw.....	60 AMPS		



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# OPERATING INSTRUCTIONS

## SYSTEM OPERATION DESCRIPTION

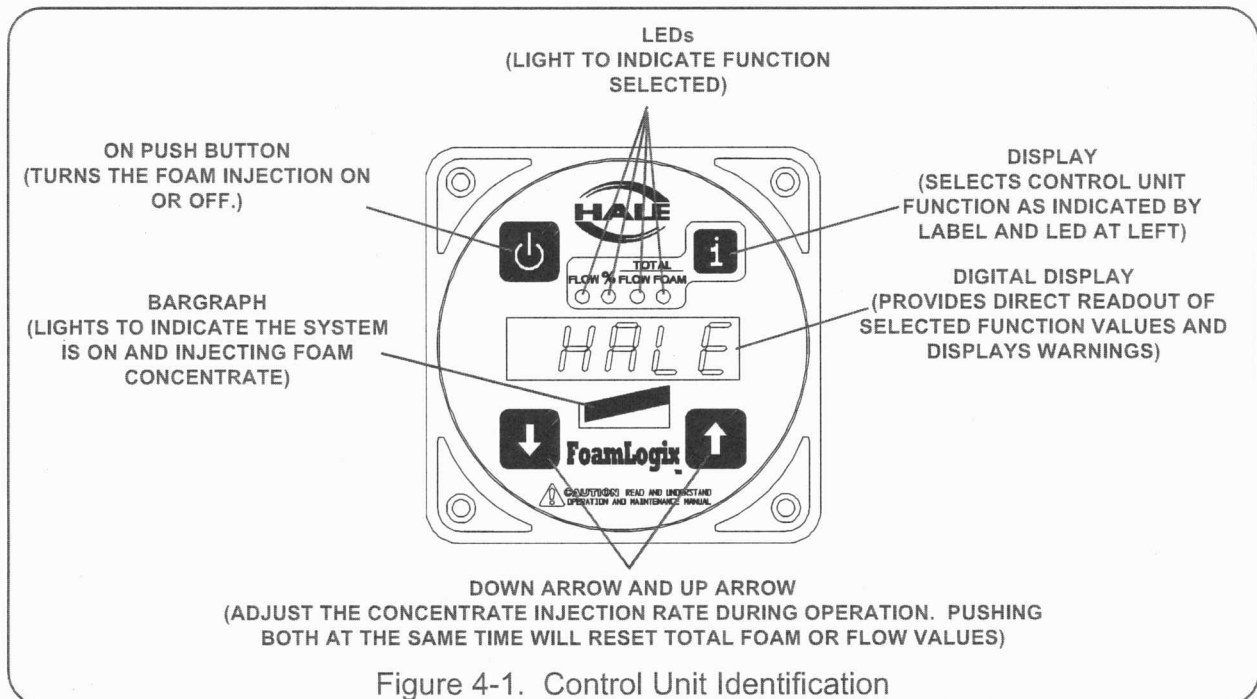
Operation of Hale FoamLogix systems is simple with all control provided by the push buttons on the control unit face (see figure 4-1).

Upon initial power up of the apparatus the Hale FoamLogix system will go to the standby mode upon completion of a self diagnostic routine. There are four different display functions on the control unit digital display. While in standby mode with the **FLOW** LED lit the digital readout will show the current water flow rate in the monitored discharge pipe. Pressing the **DISPLAY** button will change the function indicated by the LED that is lit under a particular label. **TOTAL WATER** and **TOTAL FOAM** values can be reset any time they are displayed. When the **% FOAM** LED is lit, or in any other function mode, the foam concentrate injection rate can be set to the desired value, if different from the default value,

prior to or during foam operations by pressing the **↑** and **↓** buttons.

When the red **ON** button is pressed, the leftmost LED will illuminate indicating that the system is ready. If water flow is present the foam pump will start and inject foam concentrate into the discharge stream. The bargraph will light when foam is being injected and indicate system capacity. The Hale FoamLogix system constantly monitors water and foam concentrate flow values maintaining foam injection at the specified concentrate injection rate. The system responds to variations in water flow by increasing or decreasing the speed of the foam pump.

When the **ON** button is again pressed, the LEDs will extinguish, indicating that the system is in Stand-By mode and the foam pump will stop, but other system monitoring functions will continue.



**DISPLAY INFORMATION**

The five digit display on the control unit shows the value of the selected display function or provides warnings to the operator when the system is operating. A function is selected by pressing the grey **DISPLAY** button in the upper right hand corner of the control unit. Each time the button is pressed a new function mode is selected and displayed. LEDs above the digital display denote which function is being displayed. Pressing the **SELECT DISPLAY** button changes the control unit function but does not affect injection rate.

Control unit functions include:

**FLOW**

The display shows the current flow rate of water or foam solution per minute in Hale flowsensor monitored discharges. (See figure 4-2)

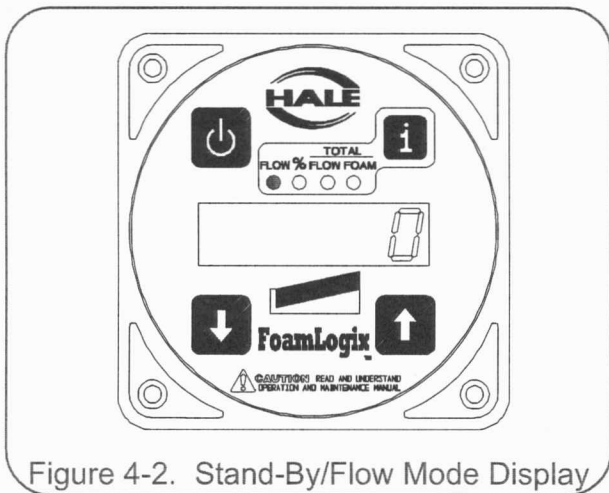
the selector is in the flush position the display reads "FLUSH".

**TOTAL FLOW**

The display shows the total amount of water or foam solution pumped through flowsensor monitored discharges. This totalized value may be reset using procedures outlined in the "Reset Functions" paragraph.

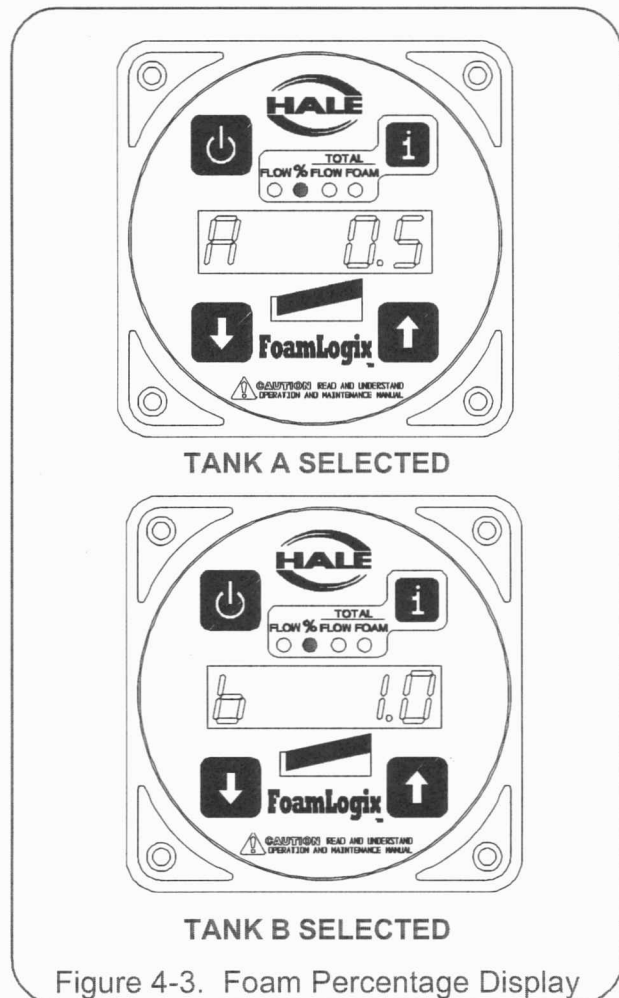
**TOTAL FOAM**

The display shows the total amount of foam concentrate pumped. The value will be in the same unit of measure as the water flow. This totalized value may be reset using procedures outlined in the "Reset Functions" paragraph. As an example the display may show "9.5" indicating 9.5 gallons of foam



**% FOAM**

The display shows the foam concentrate injection rate setting in the % FOAM mode. For example, with a single tank system or when the dual tank system selector is in the **TANK A** position the display will show "A 0.5". When the dual tank system selector is in the **TANK B** position the display will show "b 1.0". (See figure 4-3) When the system is equipped with MST, MDT II or ADT and





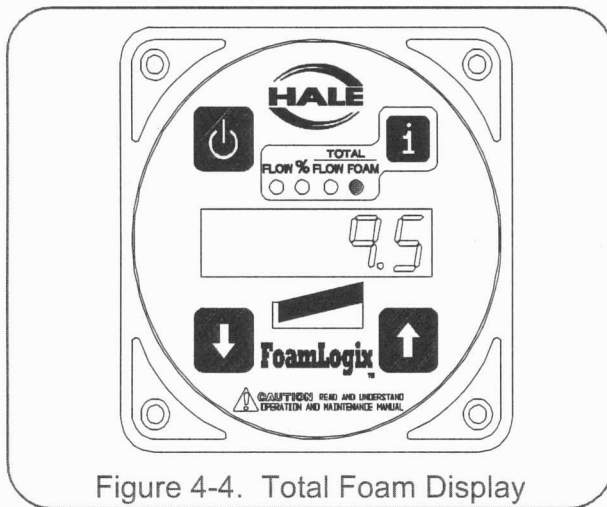


Figure 4-4. Total Foam Display

concentrate have been used. (See figure 4-4)

### BARGRAPH

The bargraph (refer to figure 4-1) consists of 10 LEDs. When the ON button is pressed the leftmost LED will light to indicate the system is on and ready to inject foam concentrate. When water is flowing LEDs to the right on the bargraph will light indicating foam concentrate is being injected. The amount of LEDs lighted provides an indication of the approximate pump capacity being used.

If water flow requirements exceed the capacity of the pump to deliver foam concentrate, the pump will run at maximum rate. All bargraph LEDs light and the rightmost LED flashes warning the operator that the system capacity is being exceeded and is running "lean" on foam concentrate percentage.

If the flow decreases such that the required injection rate is less than the lowest rating of the pump, the pump will run at its minimum rate and the first bargraph LED to the right flashes so the operator will know the system is running "rich" on foam percentage.

### RESET FUNCTIONS

The totalized values for water and foam concentrate pumped can be cleared from memory by performing a RESET function.

Using the **DISPLAY** button, select either **TOTAL WATER** or **TOTAL FOAM**. By pressing and holding both the **↑** and **↓** buttons at the same time, the value shown is cleared and displayed as zero. Additionally the totalized values for water and foam concentrate reset to zero automatically when the apparatus power is turned off.

### FOAM CONCENTRATE INJECTION RATE

When **% FOAM** is selected, the **↑** and **↓** buttons will respectively increase or decrease foam concentrate percentage.

While operating in any function, with the exception of **FLOW** during simulated flow operation, whenever the **↑** or **↓** buttons are momentarily pressed, the display will switch to the **% FOAM** display and show the current injection rate for 2 seconds. In any display mode, if either the **↑** or **↓** button is held down for a period of 2 seconds or more, the injection rate value will increase or decrease accordingly. Once released, the display will return to the last selected display after 2 seconds. When a reset (pressing both the **↑** and **↓** buttons at the same time) is performed in the **% FOAM** display mode the foam concentrate injection rate is returned to the default value.

### WARNING MESSAGES

Several safety features are incorporated into the Hale FoamLogix system to protect the foam concentrate pump, electric motor and apparatus wiring while maintaining personnel safety. Messages appearing on the display alert the operator to adverse conditions that could cause damage to Hale FoamLogix system components, the apparatus and cause personnel injury.

### FLUSH

If the Hale FoamLogix system is equipped with ADT, MDT II or MST and the operating controls for these selectors are in the **FLUSH** position the foam pump motor will increase to approximately 80% capacity. The system will operate for 20 seconds when water is

flowing then go to standby mode.

When in **FLOW** or **TOTAL FLOW** mode the display will alternate between "FLUSH" (see figure 4-5) and the value of the selected function. These modes function normally when in FLUSH mode.

When in **% FOAM** or **TOTAL FOAM** mode "FLUSH" will show steady on the display. These modes will not function while in FLUSH mode.

**Low Foam Tank Level**

The Hale FoamLogix foam pump is interlocked with the foam concentrate tank level switch(es). If the tank is empty, the pump will run for 1 minute. Low foam concentrate tank level is denoted by "Lo A" or "Lo b" (see figure 4-6) alternating with the normal selected function on the display. If one minute of low concentrate level is

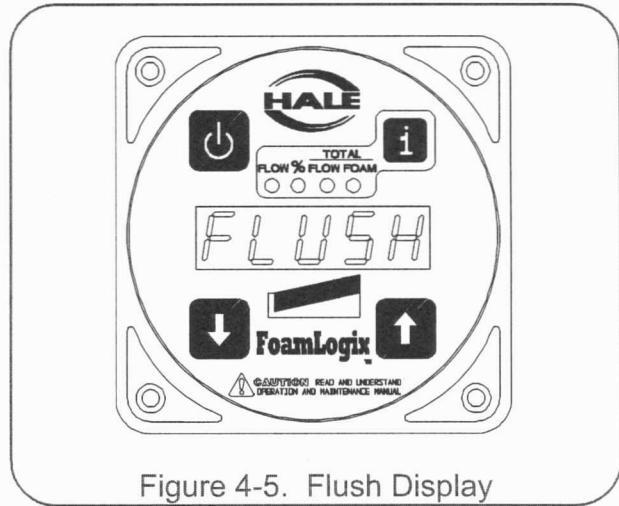


Figure 4-5. Flush Display

detected the display will show "no A" or "no b", the pump will stop, and the leftmost LED will go out until the foam level is restored and the **ON** button is depressed. If the **ON** button is pressed before refilling the foam tank the system will run for 30 seconds

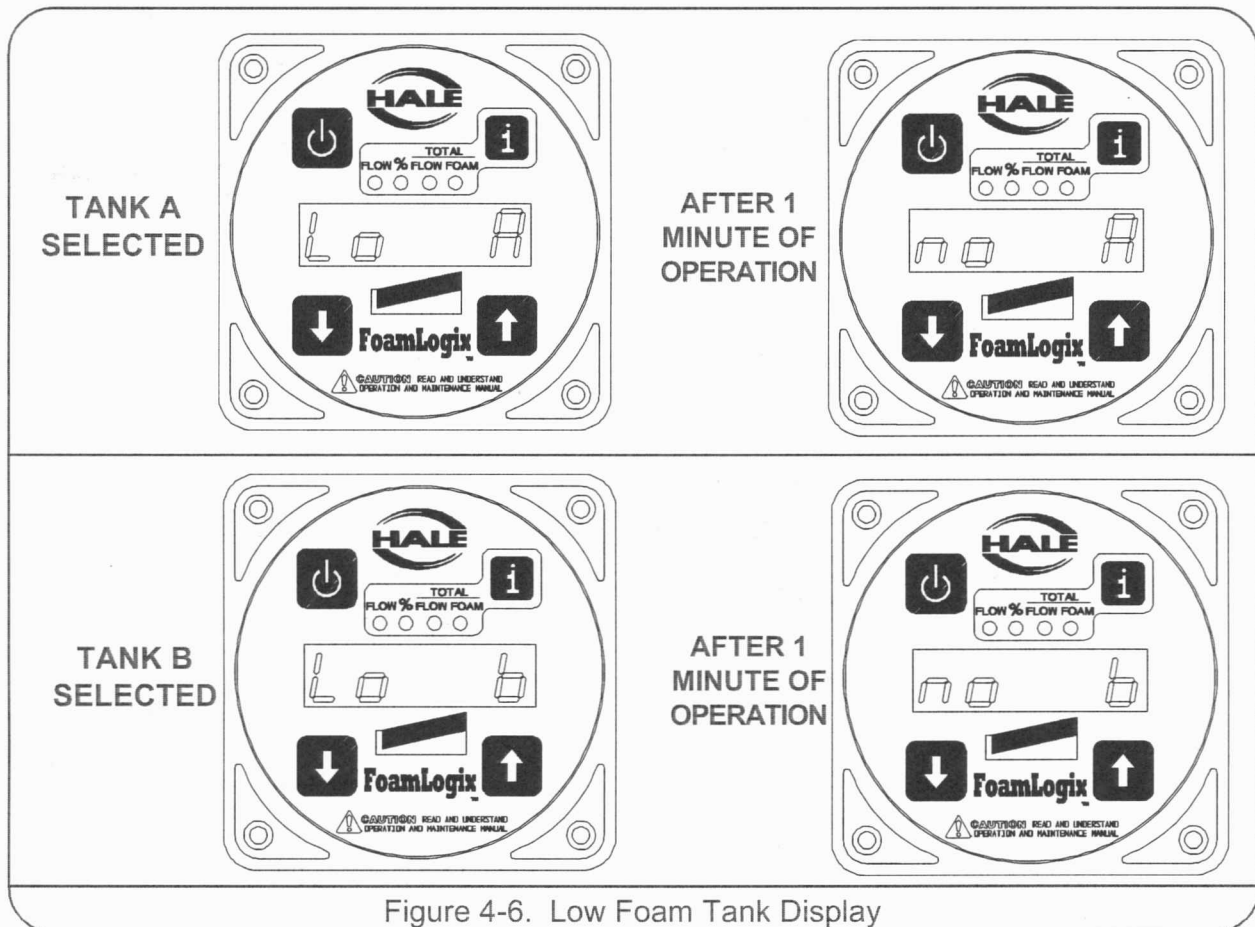


Figure 4-6. Low Foam Tank Display

before shutting down again.

**Priming Error**

In the event there is no feedback signal being received when the foam pump is started, indicating a lack of foam concentrate flow, the foam pump motor will run at full speed to attempt to establish foam concentrate flow. If the system operates for a period of 30 seconds without a feedback signal the system will go to the standby mode and the display will flash "noPri" (no prime) indicating there is no foam concentrate flow. (See figure 4-7)

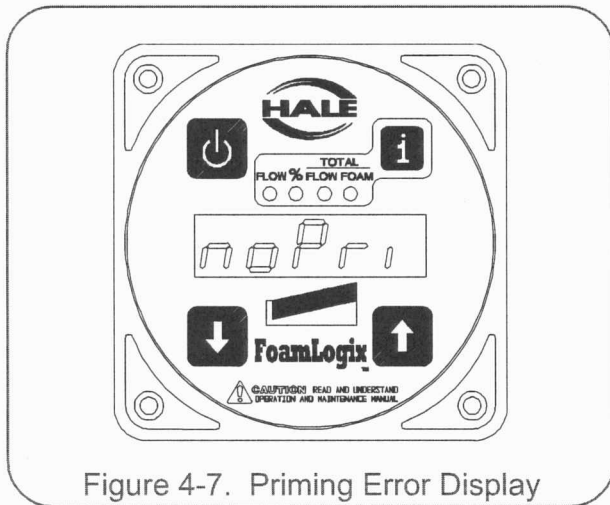


Figure 4-7. Priming Error Display

**High Ambient Temperature**

In the event the Hale FoamLogix system is operating in an environment of excessive ambient temperature the display will show "hiGh" to indicate this situation (see figure 4-8). If the circuitry in the Hale FoamLogix system is being affected by a drop in power supply voltage the display will show "Lo SP" to indicate this situation.

**NOTE:** This is not necessarily an indication of apparatus battery level or condition. This is only an indication of adverse operating conditions. For instance a bad battery cable can cause the system to see low power even though the batteries are fully charged.

In either case the system will continue to run with these adverse conditions. If conditions deteriorate to the point of potential system damage due to heat or low power the system will return to the standby and error message will remain until **ON** is pushed again.

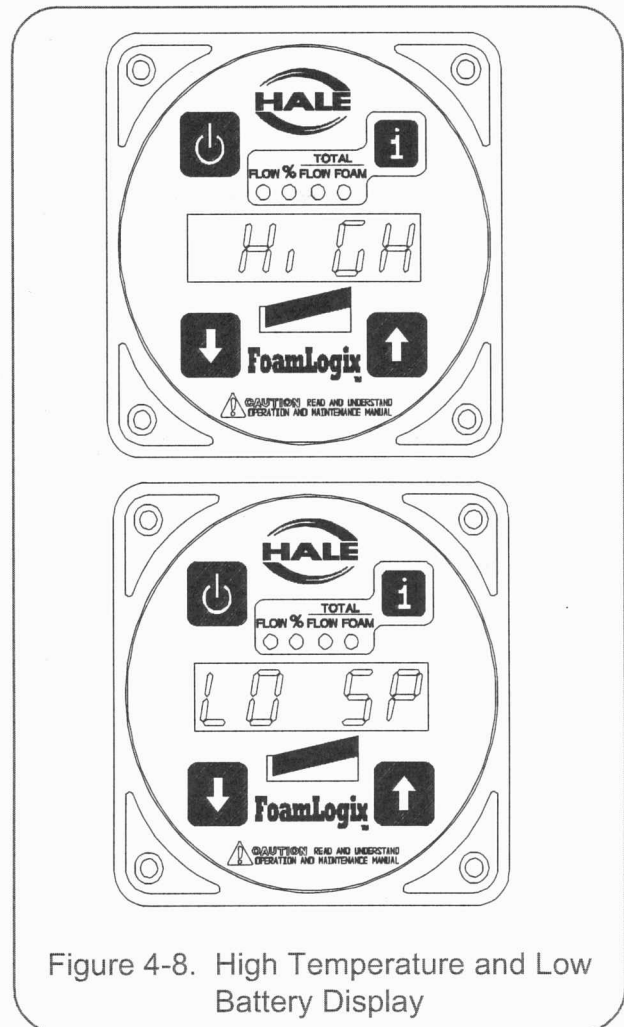
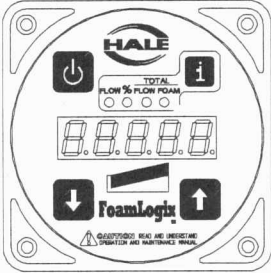
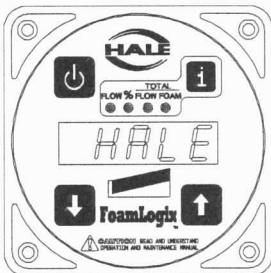
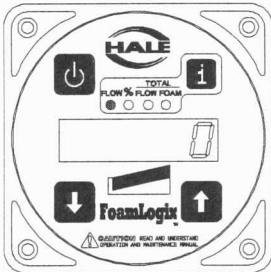







Figure 4-8. High Temperature and Low Battery Display

## NORMAL OPERATION SUMMARY

OPERATION	ACTION	DISPLAY
Energize System	Energize apparatus and turn FoamLogix power switch to <b>ON</b> .	 <p>INITIAL STARTUP</p>  <p>SELF DIAGNOSTICS</p>  <p>STANDBY DISPLAY SINGLE FLOWSENSOR: FLOW MULTIPLE FLOWSENSORS: % FOAM</p>
Begin Foam Injection	Establish water flow and depress <b>ON</b> button.	 <p>WATER FLOW ESTABLISHED, ON BUTTON PRESSED</p>



OPERATION	ACTION	DISPLAY
<p>Change injection rate</p> <p>Read injection rate</p>	<p>Press <b>↑</b> or <b>↓</b> and hold for 2 seconds. Release once desired rate is set.</p> <p>Press and release <b>↑</b> or <b>↓</b>. Display will show injection rate and return to selected function after 2 seconds.</p>	 <p style="text-align: center;"><b>FOAM CONCENTRATE INJECTION RATE DISPLAY</b></p>
<p>Read total water or foam solution</p>	<p>Press <b>DISPLAY</b> until LED below <b>TOTAL FLOW</b> is lit.</p>	 <p style="text-align: center;"><b>TOTAL FLOW DISPLAY</b></p>
<p>Read total foam concentrate</p>	<p>Press <b>DISPLAY</b> until LED below <b>TOTAL FOAM</b> is lit.</p>	 <p style="text-align: center;"><b>TOTAL FOAM DISPLAY</b></p>
<p>Reset Totalized values</p>	<p>While in <b>TOTAL FLOW</b> or <b>TOTAL FOAM</b> press and release <b>↑</b> and <b>↓</b>.</p>	
<p>End foam injection</p>	<p>Depress <b>ON</b> button.</p>	 <p style="text-align: center;"><b>STANDBY DISPLAY</b> SINGLE FLOWSENSOR: FLOW MULTIPLE FLOWSENSORS: % FOAM</p>



# MAINTENANCE

## MAINTENANCE PROCEDURES

1. **After each use:** Flush Hale FoamLogix foam pump if Class B foam concentrate was used and return to Class A.
2. **After each use:** Inspect wiring, hoses, flowsensors, and connections for tightness, corrosion, leaks and/or damage. Refer to installation drawings.
3. **After each use:** Remove and clean the foam strainer screen(s). Flush as required.
4. **Monthly:** Verify water flow calibration.
5. **Monthly:** Verify foam feedback calibration.