

## **AccuMax 3300 Multi-Point Detailed Specifications**

A FoamPro AccuMax, part number S110-3300A electronic/hydraulic foam proportioning system shall be provided. The system shall be demand based, fully automatic and shall be compatible with all current foam concentrates. All of the electronics shall be EMI/RFI compliant. The foam proportioning operation shall be based on direct measurement of water flow and shall remain consistent within the specified flows and pressures. The system shall be capable of accurately delivering foam solution as required by applicable sections of NFPA standards. The system shall be capable of accurately delivering foam solution to within 5% of calibrated settings over the advertised operation range when installed in the apparatus. The foam system shall be able to control up to ten (10) different foam capable discharges. Each foam capable discharge shall allow the choice of plain water, 1%, 3%, or 6% foam solution; with the percentage chosen by the operator. Each discharge shall be equipped with:

1. Individual line controller
2. Foam flowmeter
3. Automatic foam control valve
4. Water flowmeter
5. Check valves

A main waterway check valve shall be available as an option. The individual line controller manages concentrate injection, continuously monitoring performance and feeds the master control with information and requirements. The master control totals concentrate requirements and directs the rotary gear pump to perform accordingly. All electronic control modules shall be suitable for mounting on a fire truck operator panel. A diagnostic self-check will be run each time the system is powered up. Water flow measurement of each foam capable discharge is accomplished by a non-restricting flowmeter. Devices placed in the discharge piping that restrict water flow and reduce nozzle performance are not acceptable. Depending on piping size, the flowmeter shall be of paddlewheel or magnetic meter design. All system components are to be constructed of non-corrosive materials. To prevent waste of costly foam concentrate, the system shall allow calibration and performance testing without mixing concentrate with water.

### **Individual Line Controllers**

A microprocessor equipped individual line controller shall be provided for each foam capable discharge. Each controller shall include an ultra bright LED digital display for maximum readability. The display shall allow the pump operator to perform the following control and operation functions for each discharge:

1. Chose between plain water or foam solution
2. Provide push-button control of foam proportioning rates
3. Display current flow-per-minute of water
4. Display total volume of water discharged during and after foam operations are completed
5. Display total amount of foam concentrate consumed
6. Display injection percentage
7. Simulate flow rates for manual operation
8. Perform setup and diagnostic functions for the computer control microprocessor
9. Allow three injection percentage defaults to be stored

### **Master Controller**

A microprocessor equipped master controller shall be provided for each proportioning system. It includes an ultra bright LED digital display for maximum readability. The display shall allow the pump operator to perform the following control and operation functions for the total foam proportioning system:

1. Activate the proportioning system at the push of a button
2. Display total current flow-per-minute of water
3. Display total volume of water discharged during and after foam operations are completed
4. Show total amount of foam concentrate consumed
5. Perform setup and diagnostic functions for the computer control microprocessor
6. Flash a “low concentrate” warning when the foam concentrate tank runs low
7. Flash a “no concentrate” warning and shut the foam concentrate pump off, preventing damage to the pump, should the foam tank empty

### **Hydraulic System**

The hydraulic piston pump shall be variable displacement to provide longer life and reduce service. Hydraulic gear pumps shall not be acceptable. The hydraulic system must comply with all applicable SAE and DOT standards. The hydraulic system shall have an oil cooler and an appropriately sized hydraulic reservoir to maintain the temperature of the hydraulic oil at or below 220°F (104°C).

### **Concentrate Pump**

The all bronze rotary gear concentrate pump shall be produced and supplied by Edwards Manufacturing. The construction of the pump shall include the use of bearings to extend pump life. The use of a pump designed with bushings shall not be acceptable. The timing gears shall reduce rotor wear with direct rotor contact not acceptable. The unit shall have solid stainless steel shafts and shall be capable of running dry without causing pump damage. A hydraulic motor driven positive displacement foam concentrate pump shall be provided and installed in an accessible location. The pump capacity range shall be 12 GPM (45 L/min) to 300 GPM (1136 L/min) with maximum operating pressure of 250 PSI (17.2 BAR). An electronically-operated valve shall receive signals from the computer control display to monitor the flow of hydraulic oil to the hydraulic motor coupled to the concentrate pump. The concentrate pump turns at a variable speed to ensure that the correct proportion of concentrate selected by the pump operator is injected into the fire pump discharge stream.

### **Base System Components**

1. Master controller
2. Individual line components
  - a. Foam concentrate flowmeter
  - b. Foam concentrate control valve
  - c. Check valve
3. Main waterway flowmeter
4. Edwards Manufacturing concentrate pump coupled to hydraulic motor
5. Variable displacement piston hydraulic pump
6. Strainer
7. Molded cables

The foam system shall be capable of calibration and test without mixing foam concentrate with water. The foam system shall be installed and calibrated to

manufacturer's requirements. In addition, the system shall be tested and certified by the apparatus manufacturer to applicable NFPA standards. The foam system design shall be tested and pass environmental testing in accordance to SAE standards. The system design shall be third party tested to certify compliance with RFI/EMI emissions per MIL-STD-416E. Two (2) installation and operation manuals shall be provided with the unit. The system shall have a one (1) year warranty by the foam system manufacturer.

Optional – Specify size and quantity

### **3/4" Foam Line Controller**

A FoamPro individual line controller with microprocessor shall be provided for each specified foam capable discharge below. Each controller shall include an ultra bright LED digital display for maximum readability. The foam line controllers shall have a connection to each foam flowmeter and provide concentrate flow from 6.0 GPM (22.7 L/min) to 60 GPM (227.2 L/min). The displays shall allow the pump operator to perform the following control and operation functions for each discharge:

1. Choose between plain water or foam solution
2. Provide push-button control of foam proportioning rates
3. Display current flow-per-minute of water
4. Display total volume of water discharged during and after foam operations are completed
5. Display total amount of foam concentrate consumed
6. Display injection percentage
7. Simulate flow rates for manual operation
8. Perform setup and diagnostic functions for the computer control microprocessor
9. Allow three injection percentage defaults to be stored

### **1" Ultra Wide Range Foam Line Controller** – \*Requires Low Flow Option

A FoamPro individual line controller with microprocessor shall be provided for each specified foam capable discharge below. Each controller shall include an ultra bright LED digital display for maximum readability. The foam line controllers shall have a connection to each foam flowmeter and provide concentrate flow from 1.8 GPM (6.8L/min) to 60 GPM (227.1 L/min). The displays shall allow the pump operator to perform the following control and operation functions for each discharge:

1. Choose between plain water or foam solution
2. Provide push-button control of foam proportioning rates
3. Display current flow-per-minute of water
4. Display total volume of water discharged during and after foam operations are completed
5. Display total amount of foam concentrate consumed
6. Display injection percentage
7. Simulate flow rates for manual operation
8. Perform setup and diagnostic functions for the computer control microprocessor
9. Allow three injection percentage defaults to be stored

### **1" Foam Line Controller**

A FoamPro individual line controller with microprocessor shall be provided for each specified foam capable discharge below. Each controller shall include an ultra bright LED digital display for maximum readability. The foam line controllers shall have a connection to each foam flowmeter and provide concentrate flow from 6.0 GPM (22.7

L/min) to 60 GPM (227.2 L/min). The displays shall allow the pump operator to perform the following control and operation functions for each discharge:

1. Choose between plain water or foam solution
2. Provide push-button control of foam proportioning rates
3. Display current flow-per-minute of water
4. Display total volume of water discharged during and after foam operations are completed
5. Display total amount of foam concentrate consumed
6. Display injection percentage
7. Simulate flow rates for manual operation
8. Perform setup and diagnostic functions for the computer control microprocessor
9. Allow three injection percentage defaults to be stored

#### **1-1/4" Foam Line Controller**

A FoamPro individual line controller with microprocessor shall be provided for each specified foam capable discharge below. Each controller shall include an ultra bright LED digital display for maximum readability. The foam line controllers shall have a connection to each foam flowmeter and provide concentrate flow from 10.0 GPM (37.8 L/min) to 100 GPM (378.5 L/min). The displays shall allow the pump operator to perform the following control and operation functions for each discharge:

1. Choose between plain water or foam solution
2. Provide push-button control of foam proportioning rates
3. Display current flow-per-minute of water
4. Display total volume of water discharged during and after foam operations are completed
5. Display total amount of foam concentrate consumed
6. Display injection percentage
7. Simulate flow rates for manual operation
8. Perform setup and diagnostic functions for the computer control microprocessor
9. Allow three injection percentage defaults to be stored

#### **1-1/2" Foam Line Controller**

A FoamPro individual line controller with microprocessor shall be provided for each specified foam capable discharge. Each controller shall include an ultra bright LED digital display for maximum readability. The foam line controllers shall have a connection to each foam flowmeter and provide concentrate flow from 16 GPM (60.5 L/min) to 150 GPM (567.6 L/min). The displays shall allow the pump operator to perform the following control and operation functions for each discharge:

1. Choose between plain water or foam solution
2. Provide push-button control of foam proportioning rates
3. Display current flow-per-minute of water
4. Display total volume of water discharged during and after foam operations are completed
5. Display total amount of foam concentrate consumed
6. Display injection percentage
7. Simulate flow rates for manual operation
8. Perform setup and diagnostic functions for the computer control microprocessor
9. Allow three injection percentage defaults to be stored

## **2" Foam Line Controller**

A FoamPro individual line controller with microprocessor shall be provided for each specified foam capable discharge. Each controller shall include an ultra bright LED digital display for maximum readability. The foam line controllers shall have a connection to each foam flowmeter and provide concentrate flow from 20 GPM (75.7 L/min) to 300 GPM (1135.6 L/min). The displays shall allow the pump operator to perform the following control and operation functions for each discharge:

10. Choose between plain water or foam solution
11. Provide push-button control of foam proportioning rates
12. Display current flow-per-minute of water
13. Display total volume of water discharged during and after foam operations are completed
14. Display total amount of foam concentrate consumed
15. Display injection percentage
16. Simulate flow rates for manual operation
17. Perform setup and diagnostic functions for the computer control microprocessor
18. Allow three injection percentage defaults to be stored

## **Low Flow Option**

A FoamPro Low-Flow option shall be provided to deliver precision proportioning for low flow applications as specified. Operation will be integrated into system microprocessor control and deliver seamless, automatic adjustments to flow conditions without operator interface.

## **Manual Override Option**

The AccuMax system shall include manual override capabilities allowing the operator to switch from fully automatic mode. It shall be demand based, semi-automatic system and function using the AccuMax components already installed on the apparatus. Electronics shall be EMI/RFI compliant. The override proportioning operation shall be based on automatically maintaining a set foam pressure in the foam manifold with manual operation of the individual foam control valves to allow injection into the water stream.

During override operation, the AccuMax automatic control system will be deactivated automatically when switching from normal to manual override operations. Performance must not be affected by hose length or size, nozzle, incoming water pressure or nozzle elevation. The system shall be capable of controlling all foam capable discharges associated with the AccuMax system.

## **Override Controller**

A microprocessor equipped master override controller shall be provided for each proportioning system. It includes a panel mount placard and switch, wiring harness, and a microprocessor pump control. The panel switch shall enable the pump operator to perform the following control and operation functions for the total foam proportioning system:

Deactivate the AccuMax fully automatic proportioning controls.

Engage the hydraulic system and foam pump to provide a set pressure of foam in the foam manifold

Automatically maintain set pressure in the manifold as foam is discharged.

**FoamPro Supplied Items:**

Panel Switch and Placard

Microprocessor control box

Control Harness

FoamPro cannot assume responsibility for product failure resulting from improper maintenance or operation. FoamPro is responsible only to the limits stated in the product warranty. Product specifications contained in this material are subject to change without notice.