

FOAMPRO®

SAFE  FLEET
Driving Safety Forward™

INDUSTRIAL DIRECT INJECTION FOAM PROPORTIONING SYSTEMS



 AccuMax® Fury

 AccuMax® Fusion



AccuMAX[®]Fury

AccuMAX[®]Fusion

ACCUMAX[®] FURY & FUSION

The new fully automatic AccuMax direct injection proportioning systems bring the most advanced technology and innovation to the industry's easiest to use Big Water foam system for industrial applications-all with pinpoint accuracy. Two models are available; the Fury for standard proportioning control and the Fusion for those wishing to save even more panel space by incorporating Elkhart Brass electric discharge valve control into one operator interface.

THE ACCUMAX ADVANTAGE

Big water flow requires dependable, accurate and easy to use foam proportioning. By incorporating the most advanced microprocessor-driven control and measurement technologies, the AccuMax series of proportioners sets the industry standard by delivering unmatched accuracy with extreme ease of use. At the push of a button, these hydraulically-powered systems measure water flow and automatically inject the desired amount of foam concentrate; all with pinpoint precision.

In addition, greater performance is achieved at the nozzle as flow sensor technology does not restrict flow like eductors and ratio controllers. The true flow-based operation allows unlimited placement of the apparatus, meaning increased safety with positioning further from the incident. All AccuMax systems utilize industry-proven and dependable rotary gear foam pumps. High drafting capabilities allow off-board pickup for foam operations or tank refill, which is crucial for higher flow demands or when changing concentrates.

Calibration and tests can be performed without mixing concentrate with water, saving thousands of dollars in wasted concentrate over the life of the vehicle. It's also environmentally green as reclamation of foam solution is not required.

A simple push of the line control "ON" button activates the system's electronics and engages the hydraulically-driven concentrate pump. The Hydraulic Controller manages overall performance as it receives information based on water flow and foam requirements, via CAN bus network, from each discharge and orchestrates foam delivery automatically to each. A compact control module for each outlet allows the operator to choose between plain water or solution. If foam is required, proportioning is automatic, based on programmable default injection percentage. Injection rates are easily changed at the push of a button.

Available in either single or multi-point injection and with capacities to 300 gpm (1,136 LPM), AccuMax delivers extreme foam concentrate for any "Big Flow" application.

System features and benefits:

- Fully automatic-on demand
- Up to fifteen individual discharge controls
- Choice of percentage at each discharge
- Multi-point, discharge side injection
- No in-line restrictions, greater flow
- Unmatched accuracy over the widest range of flow
- Leading the industry in proven reliability
- Calibrate and test without mixing concentrate
- Increased safety Unlimited apparatus placement
- Delivers up to 300 gpm (1,136 LPM)
- Injection pressure to 300 psi (20 BAR)
- Achieves full pump capacity with all known Class B concentrates
- Excellent draft capability for off-board supply
- The system communicates using Safe Fleet's SafeLink™ CAN bus network
- 2-year limited warranty

Control Module Features:

- Crisp Vivid Impact™ LCD readout
- Injection percentage from 0.1% to 25.0%
- Diagnostic modes
- Compact and space saving
- Discharge valve control – AccuMax Fusion
- Displays real-time information:
 - Concentrate Level
 - Water flow rate
 - Foam flow rate
 - Total water used
 - Injection percentage
 - Total concentrate used
 - Individual pressure readings – AccuMax Fusion
 - Discharge valve position – AccuMax Fusion



The AccuMax System

The SafeLink CAN bus Network

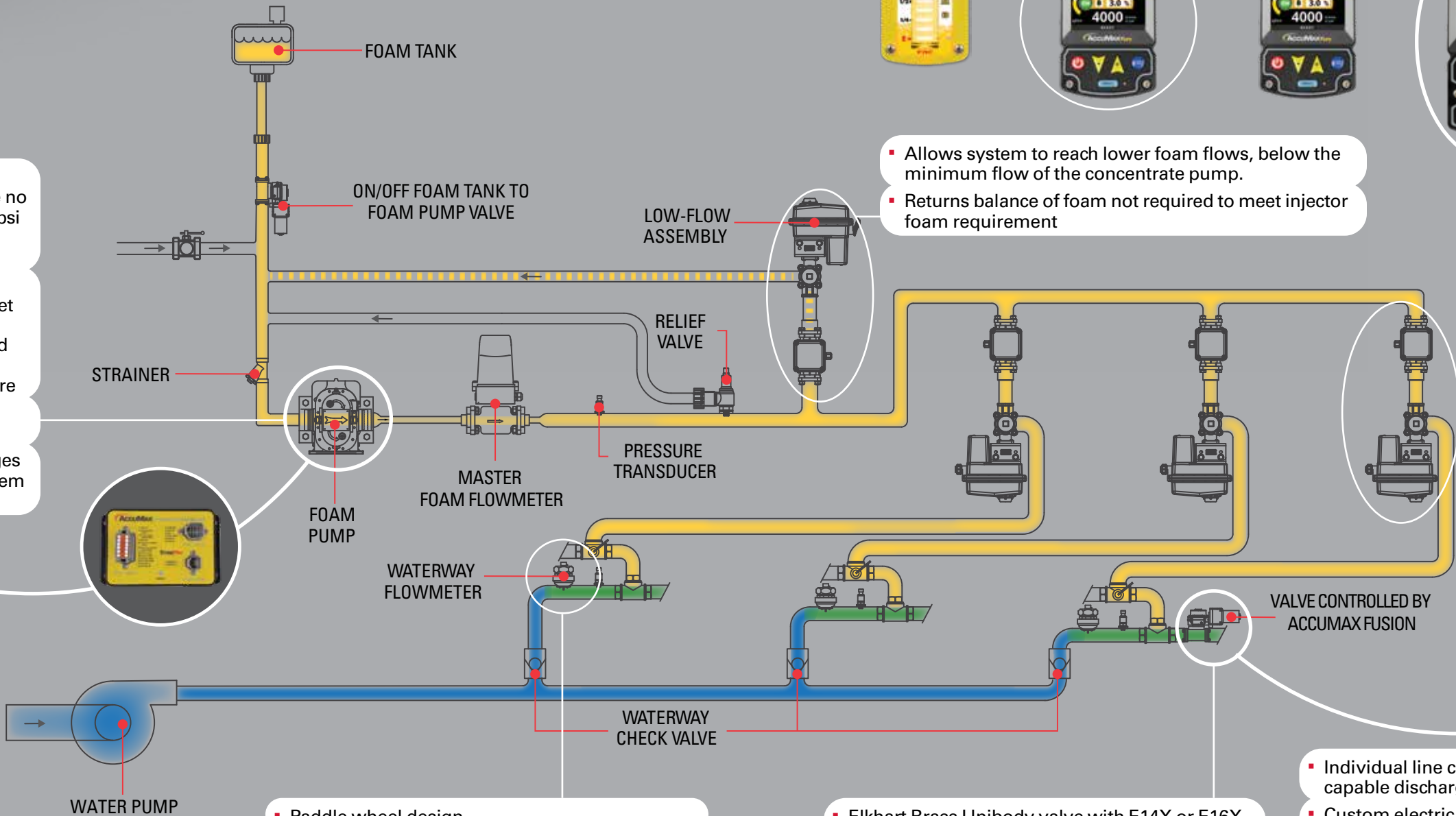
- This extremely robust CAN bus network connects all electronic modules for a simpler and safer control system
- New features and enhanced functionality possible through this digital communication
- System accuracy, speed, and flexibility are greatly increased through the CAN bus network
- Built-in error detection and diagnostic capability
- Data can be stored and shared with other devices

- The desired foam solution, by percentage, is entered into the control head
- Injection rate is easily chosen from a programmable preset or incrementally (0.1% to 25.0%)
- Water and Foam Flow information is displayed in GPM or LPM
- Critical real-time information is provided at each display control



- Allows system to reach lower foam flows, below the minimum flow of the concentrate pump.
- Returns balance of foam not required to meet injector foam requirement

- Being completely flow based, changes in water pressure have no effect up to the capacity and 300 psi (20 BAR) pressure rating of the foam concentrate pump
- If the individual line control injector needs more flow to meet requirements, the concentrate pump is automatically regulated to deliver pressure needed to overcome discharge line pressure
- Hydraulically driven, hydraulic package included
- The Hydraulic Controller manages the foam pump and overall system performance



- Paddle wheel design
- Feed water flow information to control head; tracking any change from shut-off to full flow
- Changes in water pressure have no effect up to system capacity and 300 psi (20 BAR)

- Elkhart Brass Unibody valve with E14X or E16X actuators
- Local water pressure sensor included
- Available 1.5", 2.0", 2.5", 3.0", 3.5", 4.0", 5.0", 6.0", and 8.0"

- Individual line control injector is supplied for each foam capable discharge
- Custom electric ball valve and magnetic flow-meter are used to precisely measure and control the amount of foam being injected into the discharge
- Individual line control electric valve will be gated automatically to maintain the correct foam flow
- Four sizes are available, 0.5", 1.0", 1.5", and 2.0"
- Electronic driver is built into the line control injector



Control Heads

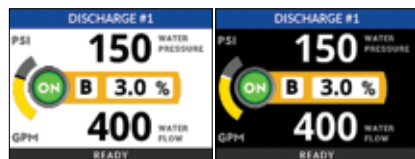


Fusion adds the advanced features of an Elkhart Brass electric valve control to the Fury.

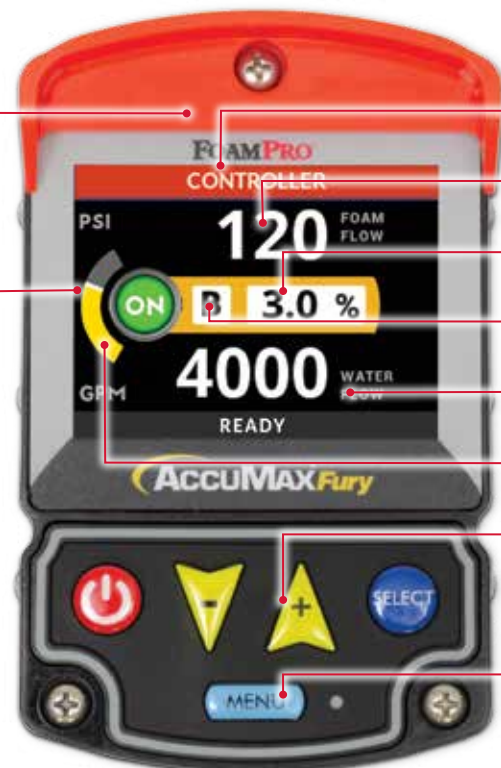
For increased safety on the fireground, fuse your controls together with the AccuMax Fusion. Featuring the same components and benefits as the AccuMax Fury while adding Elkhart Brass electric valve control, the Fusion provides foam proportioning and discharge valve control at your fingertips in one control. The Fusion saves valuable space on the pump panel by combining foam, pressure, flow, and valve control all in one unit.

AccuMAX[®]Fury

- Customize the visor color, screen ribbon and text to match the color and name of the discharge
- Large, impact resistant 3.5" (89 mm) LCD screen for unmatched durability and high resolution Vivid Impact™ display
- Discharge ID name
- Foam flow
- Injection percentage
- Foam type
- Water flow
- Foam tank level
- High tactile keypad buttons make gloved operation easy
- Menu for setup, calibration and diagnostics
- Space-saving design at only 3.75" (95 mm) wide



Automatic daytime and nighttime modes for ease of reading



Features:

- Integration with the FRC TankVision Pro for real time foam tank level and empty tank warning
- Provides time remaining warning until tank is empty when used with TankVision Pro
- Simple push button operation controls
- Preset injection rates – up to 5 programmable and 5 temporary (cleared at power off)
- Intuitive MENU feature for setup, calibration, and diagnostics
- Display current flow-per minute of water
- Provides total volume of water discharged during and after foam operations
- Provides total amount of foam concentrate consumed during operations
- USB port for field upgradeable, download usage log, download/upload configurations
- From 1 to 15 independent foam capable discharges
- Dimensions 3.75" W X 5.75" H (95 mm X 146 mm)

AccuMAX[®]Fusion



- Discharge water pressure
- Valve position display
- User programmable preset for one-touch valve positioning

Combined controls save valuable panel space

Features:

- All Fury features (list on previous page)
- Discharge pressure display
- On-screen valve position indicators
- User programmable valve position preset
- On screen valve position preset marker
- Dimensions 3.75" W X 6.75" H (95 mm X 171 mm)

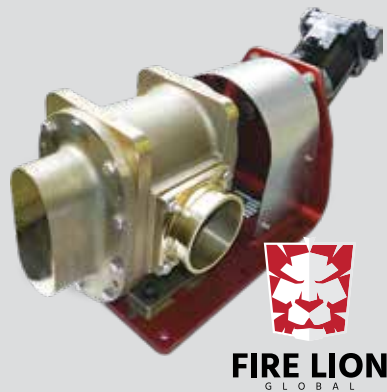
Choose your visor color from ten NFPA color options



Components

FOAM PUMP

Fire Lion and Trident rotary gear pumps available in all offered capacities. All pump options are capable of drafting for off board pick-up and are constructed with corrosive resistant bronze, stainless and composite. All pumps meet NFPA and are UL listed.



HYDRAULIC CONTROLLER

All the injection logic comes from the hydraulic controller and the hydraulic pump is directly connected to it. The rest of the system is controlled via CAN bus. This single system controller receives real time data from all system components and manages automatic supply to all foam capable outlets.



- Controls speed of hydraulic pump
- Tells each line control injector what position to move the foam metering valve based on system demand
- Receives water flow and foam flow information from each line control injector in the system
- Calculates foam flow for each line control injector based on operators request
- Total all water and foam flow broadcast on the network
- Controls speed of foam pump RPM
- Overpressure protection, system will reduce pump speed when foam manifold pressure exceeds 300 psi (20 BAR)
- No foam shut down; system will shut down when no foam flow is detected for over 40 seconds

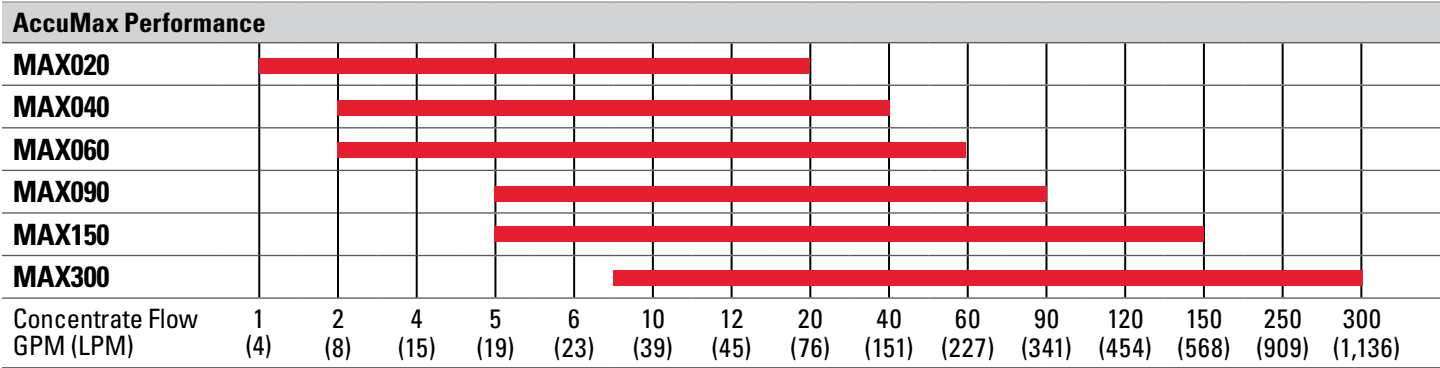
OPTIONAL BACKUP/WATCHDOG

The AccuMax system has an automatic hydraulic backup system in the event something happens to the main control during operation. The system incorporates a second full microprocessor board installed within the hydraulic controller as an automatic backup I/O module. This ensures continuous operation in the unlikelihood of a catastrophic event of the main processor. Upon startup, the system runs through full electronic and component check.

AccuMax Systems						
Model	MAX020	MAX040	MAX060	MAX090	MAX150	MAX300
Minimum Foam Output GPM (LPM)*	1.0 (3.8)	2.0 (7.6)	2.0 (7.6)	5.0 (19)	5.0 (19)	8.0 (31)
Maximum Foam Output GPM (LPM)	20 (76)	40 (151)	60 (227)	90 (341)	150 (568)	300 (1,136)
Maximum Operating Pressure PSI (BAR)	300 (20)	300 (20)	300 (20)	300 (20)	300 (20)	300 (20)
Maximum Hydraulic Oil Pressure PSI (BAR)	1,734 (119.6)	2,649 (182.6)	3,484 (240.2)	4,479 (308.8)	4,378 (301.9)	5,873 (404.9)
Maximum Hydraulic Oil Flow GPM (LPM)	16.8 (63.6)	16.3 (61.7)	22.9 (86.7)	23.7 (89.7)	29.5 (111.7)	47.4 (179.4)

*Minimum foam output shown is based on a **single-point** injection system. For single Line Control Injector used see chart Single Point System Line Control Injector size.

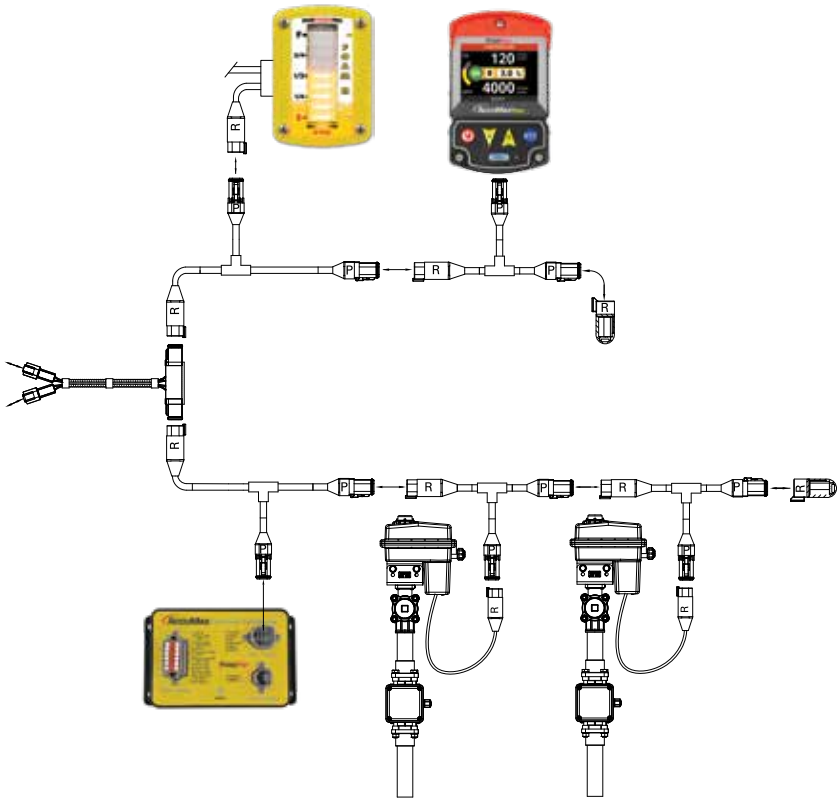
For **multi-point** system minimum foam flow is based on smallest line control injector in system configurator. See the Multi-Point System Available Line Control Injector Sizes chart on page 9.



Overall System Capacity						
Foam Concentration	Maximum Water Flow GPM (LPM)					
	MAX020	MAX040	MAX060	MAX090	MAX150	MAX300
1.0%	2,000 (7,571)	4,000 (15,140)	6,000 (22,700)	9,000 (34,069)	15,000 (56,781)	30,000 (113,563)
3.0%	666 (2,521)	1,333 (5,046)	2,000 (7,571)	3,000 (11,356)	5,000 (18,927)	10,000 (37,854)
6.0%	333 (1,261)	666 (2,521)	1,000 (3,785)	1,500 (5,678)	2,500 (9,464)	5,000 (18,927)

THE POWER OF THE SAFE FLEET PLATFORM

The AccuMax System communicates via CAN bus (Safe Fleet SafeLink network). This allows a greater level of apparatus integration with other Safe Fleet brand products (FRC, Elkhart Brass). This is physically connected on a custom CAN bus (Safe Fleet SafeLink network) and power harnessing system for greater network fidelity making the installation of each device a single connection. All wires are water tight, over-molded, and sealed.



Safe Fleet SafeLink CAN bus Network



Tee

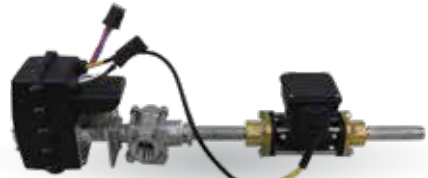


Extension Cable

Line Control Injector

The line control injector in the AccuMax system controls the foam injection rates based on the operator’s chosen injection percentage and the discharge water flow.

- Required on each foam capable discharge
 - High Flow Range - custom cut-ball foam metering valves deliver the widest range of foam flow for every size injector with pinpoint accuracy
 - System capable of 1-15 individual line controls
- 4 sizes to accommodate all flow requirements
 - Magnetic foam flowmeter and microprocessor-controlled foam metering valve
 - Water flowmeter is electrically connected locally at the foam metering valve for simplified installation



XE-MAX210LC-K05A – 1/2" Line Control Injector



XE-MAX210LC-K15A – 1 1/2" Line Control Injector



XE-MAX210LC-K10A – 1" Line Control Injector



XE-MAX210LC-K20A – 2" Line Control Injector

Line Controller Injector							
Single Point System Line Control Injector Size							
		Model					
Line Controller Injector		MAX020	MAX040	MAX060	MAX090	MAX150	MAX300
	0.5"						
	1"						
	1.5"						
	2"						
Multi-Point System Available Line Control Injector Sizes							
		Model					
Line Controller Injector		MAX020	MAX040	MAX060	MAX090	MAX150	MAX300
	0.5"						
	1"						
	1.5"						
	2 "						

Line Control Solution Ranges							
		Minimum Water Flow			Maximum Water Flow		
Description	Foam Flow Range	1%	3%	6%	1%	3%	6%
0.5" Line Control Injector	1-26 gpm (3.8-98 LPM)	100 gpm (380 LPM)	33 gpm (126 LPM)	16 gpm (63 LPM)	2,600 gpm (9,800 LPM)	867 gpm (3,266 LPM)	433 gpm (1,633 LPM)
1.0" Line Control Injector	2.0-60 gpm (7.6-227 LPM)	200 gpm (760 LPM)	67 gpm (253 LPM)	33 gpm (126 LPM)	6,000 gpm (22,700 LPM)	2,000 gpm (7,566 LPM)	1,000 gpm (3,783 LPM)
1.5" Line Control Injector	5.0-150 gpm (19-567 LPM)	500 gpm (1,890 LPM)	167 gpm (630 LPM)	83 gpm (315 LPM)	15,000 gpm (56,700 LPM)	5,000 gpm (18,900 LPM)	2,500 gpm (9,450 LPM)
2.0" Line Control Injector	8.0-300 gpm (31-1,136 LPM)	800 gpm (3,030 LPM)	267 gpm (1,010 LPM)	133 gpm (505 LPM)	30,000 gpm (113,600 LPM)	10,000 gpm (37,866 LPM)	5,000 gpm (18,933 LPM)

FUSION SYSTEM DISCHARGE VALVE OPTIONS

Unibody valves from Elkhart Brass, offered in both ball and butterfly style, are the only valves in the industry completely engineered and designed with simple, trouble-free configuration, installation, operation, and service in mind.

The Unibody ball valves, built with a 316 stainless steel ball, corrosion resistant brass alloy body, and DuPont Hytrel self-adjusting seats, make the ball valve a strong, dependable choice for your fire apparatus. A standard working pressure of 250 PSI (17 BAR), sizes from 1.5" to 4", along with various endcaps and adapters makes the Unibody compatible with most fire apparatus plumbing designs.

The butterfly style valve, available in 3", 4", 5", 6", and 8" options, is designed utilizing industry standard flanges to meet your specific requirements. Butterfly valves are available in cast iron, carbon steel and 316 stainless steel and offer working pressures from 250-285 PSI (17-20 BAR).

All Unibody valves feature a 10 year limited warranty.



Unibody ball valve shown with E14X actuator



Butterfly valve



FOAMAUx™

FoamAux is a smart stand-alone foam/concentrate supply manager. It brings the latest technology in operating an industrial foam system. With a full integrated CAN bus network, the FoamAux knows the status of all the foam system components which allow it to control all foam movement and avoid unwanted or dangerous configuration.

With its own dedicated line control, it can fill the foam tank or off load foam from a single display and a few selections. Simply select the function desired and turn the system on and you are flowing foam.

FoamAux functions

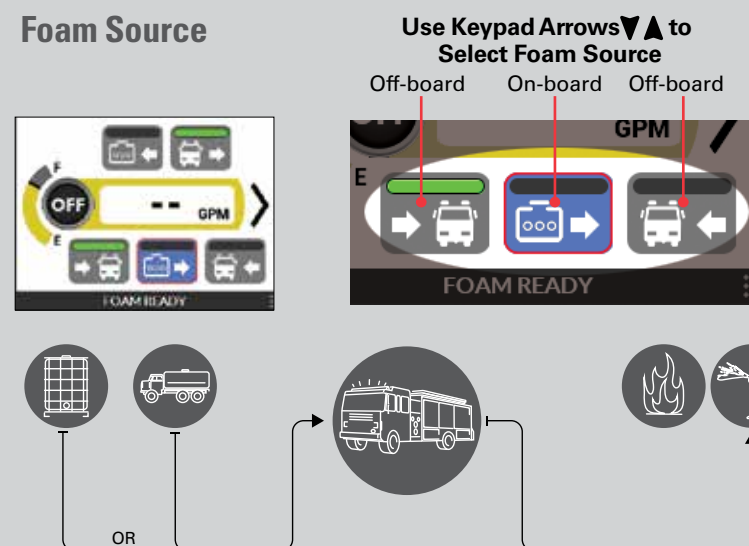
- On-board foam tank or off-board pickup
- Refill the on-board tank
- Off-load/tender foam
- Flush the foam system
- Foam recirculation

KITS/COMPONENTS:

300 GPM system

- FoamAux control
- 2" line control injector
- 2" diverter valve (fill and off-load functions)
- 3" or 4" foam tank to pump valve (Elkhart Brass valves)
- 3" off-board pickup valves (Elkhart Brass valves)
- 1" flush valve (to water pump)

Foam Source

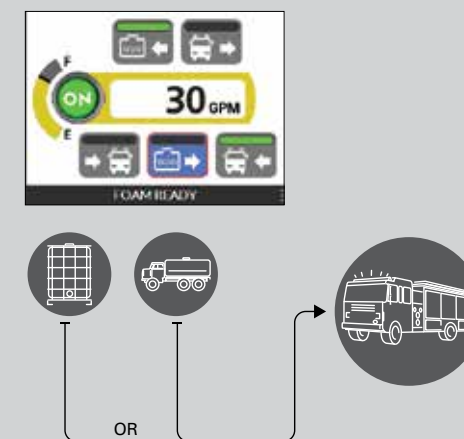


60/90/150 GPM systems

- FoamAux control
- 1.5" line control injector
- 1.5" diverter valve (fill and off-load functions)
- 2.5" or 3" foam tank to pump valve (Elkhart Brass valves)
- 2.5" off-board pickup valves (Elkhart Brass valves)
- 1" flush valve (to water pump)

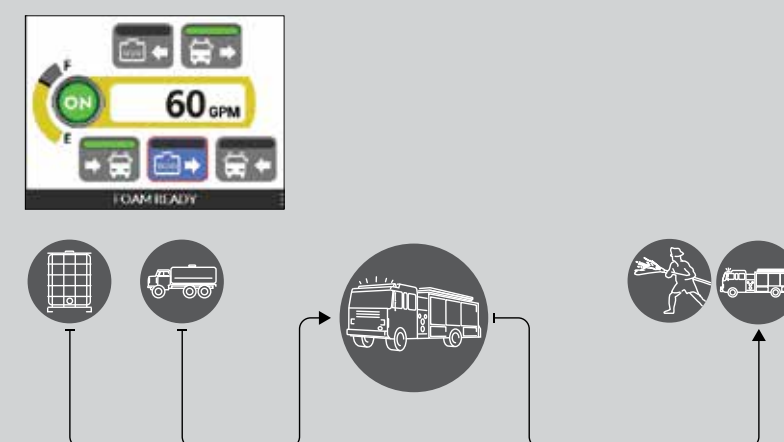
- Select your foam sources from On Board FoamTank or Off-Board pick-ups
- System automatically opens and closes valves based on source selection
- System defaults to On-Board Foam Tank on power up
- Tank to pump valve size options
 - 3" or 4" for Max300 system
 - 2.5" or 3" for Max 60/90/150 systems

Refill On-Board Foam Tank



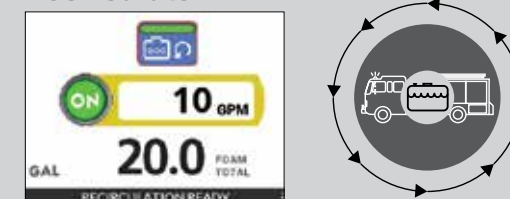
- Dedicated line control specifically for the transfer of foam concentrate
- Operator can increase and decrease foam fill rate
- System power-on at default fill rate (programmable)
- Auto shut-off when foam tank is full
- Independent operation from foam injection (no water or water simulation required)
- Foam fill operation can be performed during firefighting operations

Foam Off-Load



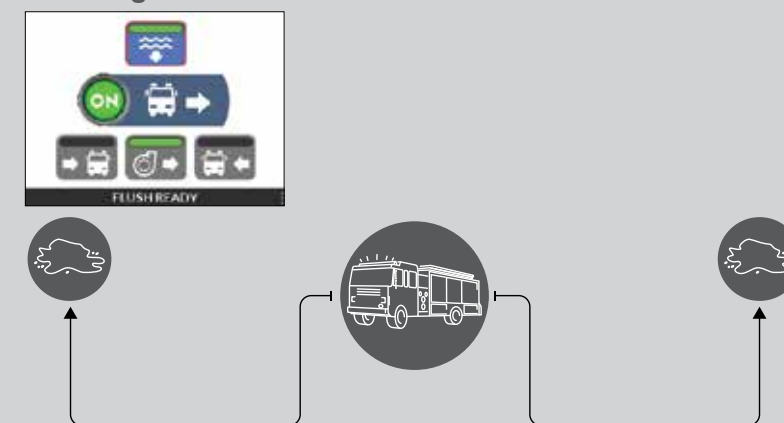
- Dedicated line control specifically for the transfer of foam concentrate
- Operator can increase and decrease foam off-load rate
- Overpressure protection, for foam relay operation, system will reduce flow rate automatically
- System power-on at default off-load rate (programmable)
- Independent operation from foam injection (no water or water simulation required)

Recirculate



- Recirculate by volume - displays amount of foam recirculated
- Recirculate by time - displays amount of time foam has been recirculating
- Operator can increase and decrease foam recirculation rate
- Total foam recirculated is displayed on screen
- System will only allow recirculation when foam system is off
- Auto shut-off - system will shut-off after preset foam volume is recirculated (programmable)
- System power-on at default recirculation rate (programmable)

Flushing



- System will only allow flush when foam system is off
- System Flush Mode - each line control can run flush locally (turn flush on at line control display)
- Complete flush quicker, line control will open to 50% automatically in flush mode
- Foam tank is not accessible (tank valves closed) during flush, to prevent foam contamination
- Selectable water source - water pump or off-board water (default water pump)

Components

REQUIRED COMPONENTS (1 per Line Control Injector)

Weldments (Default)
Stainless Steel Weldment fitting is the standard water flowmeter mounting.

Standard sizes available are: (also available in aluminum and steel)



Standard Base
1.5", 2.0", 2.5", and 3.0"



Flow Conditioner Base
3.5", 4.0", and 5.0"



Shallow Throat Base
6.0", 8.0", and 10.0"

Optional Flowmeter Mounts



Saddle Clamp
Available in 2", 2.5", 3.0", 3.5", 4.0", 5.0", 6.0", and 8.0"



Manifold
Prevents backflow to fire pump. Stainless steel, brass components and construction. Includes flow sensor mount, water way check valve, check valve injector port, and a drain. Available in 1.5", 2.0", 2.5", 3", and 4" victaulic.

STANDARD COMPONENTS

Water Flowmeter

Paddlewheel Flow Sensor is mounted in the pipe so that only the paddles extend into the flow. The paddlewheel is free spinning, resistant to damage from debris in the water and presents no impedance to flow. The sensor generates electrical pulses that are proportional to the rate of flow. This flow sensor is dependable and virtually maintenance-free.



Pressure Transducer

Each system comes with one 600 psi (40 BAR) transducer (master pressure) for foam manifold. Provides primary system over-pressure protection.



Each individual line control injector is also equipped with a 600 psi (40 BAR) transducer to provide the system with injection pressure.

Thread size: 1/4 -18 NPT
Pressure range: 600 psi (40 BAR)
Proof pressure: 1,200 psi (83 BAR)

Harnesses

Flow and Pressure Cable

Each Line Control come with a 10' (3 m) flow and pressure cable. Also available in 3' (.9 m), 20' (6 m) length.

Hydraulic Control Cable

Hydraulic Controller Module comes with a 10' (3 m) cable. Also available in 3' (.9 m), 20' (6 m), and 25' (7.6 m) lengths.

Network Tees

A custom network and power tee come with each electrical component (line control, display, TankvisioPro... etc.). Elkhart Brass discharge valves will require a separate power supply and comes with a network tee only.

All network and power management connections will be provided for each system based on configuration, power taps, power isolators and terminators.

Placard

Specification, instruction, and schematic placard come standard with each AccuMax system.



Tank Level Indicator

TankVision Pro

- Provides accurate monitoring of foam tank volume
- Displays low foam tank warning
- Supplies tank empty information
- Allows for display of time remaining for operation at current concentrate usage



OPTIONAL COMPONENTS



Main Waterway Check Valve

Prevents backflow to fire pump. Stainless Steel components and construction, rated for 450 psi (31 BAR) with NPT thread size or victaulic grooves for 1.5", 2", 2.5", 3", and 4". Includes tapped injection and drain ports.



Network Cable extensions

6 pin AccuMax network (CAN bus and power) extension cable are available in 1' (.3 m), 2' (.6 m), 5' (1.5 m), and 10' (3 m) lengths.



Low-Level Tank Sensor

Provides signal to display, notifying operator of low concentrate condition in foam cell. Side mount.



Hydraulic Cooler Kits

A modular hydraulic cooler/reservoir combination designed for proper storage, filtering, and cooling of AccuMax hydraulic systems. MAX150 and smaller models only require power hookup and hydraulic hose hookup to system. MAX300 option has a cooler-reservoir kit that includes the valves, cooler, reservoir, and hydraulic pump for proper storage, filtering, and cooling. Available in 12V and 24V for all system models.



Solid State Contactor

Electronically-controlled DC power switch superior to mechanical solenoids. Longer life and remote start/stop capability.



Secondary Line Control Display

Provides operator with remote line control capability.



Active Member and Supporter

FOAMPRO®

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