EMITTER ELECTRONICS

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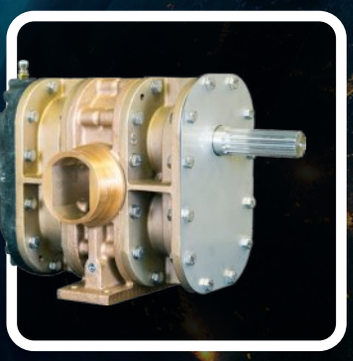

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We design and build advanced electronic control systems for applications where reliability is critical.

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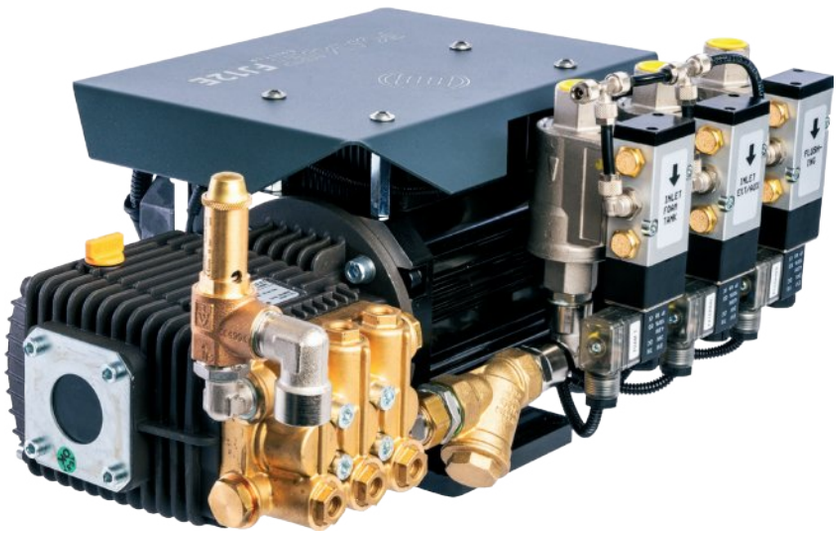
From standard products to fully custom solutions — we turn engineering into real-world performance.

Roman Majer
CEO, Emitter Electronics

CONTENT

FOAMJET 12E/10EH

DIRECT INJECTION FOAM SYSTEM



KEY FEATURES

- Automatic foam dosing system in the range of 0.1 % to 6% (8 %), max. 12 L/min
- Precision control with steps of 0.1 %
- Top performance on extreme low injections – from 0.1 LPM
- Large intensive bright 7” LCD for easy readability of process data
- Magnetic-Inductive Flow sensors and BLCD motor
- High Pressure (HP) version – up to 10 L/min at 50 bar

FOAMJET 12E/10EH is positive pressure proportioning system (EN 16327-PPPS) with digital control used to maintain selected constant foam-water proportion regardless of water flow fluctuations.

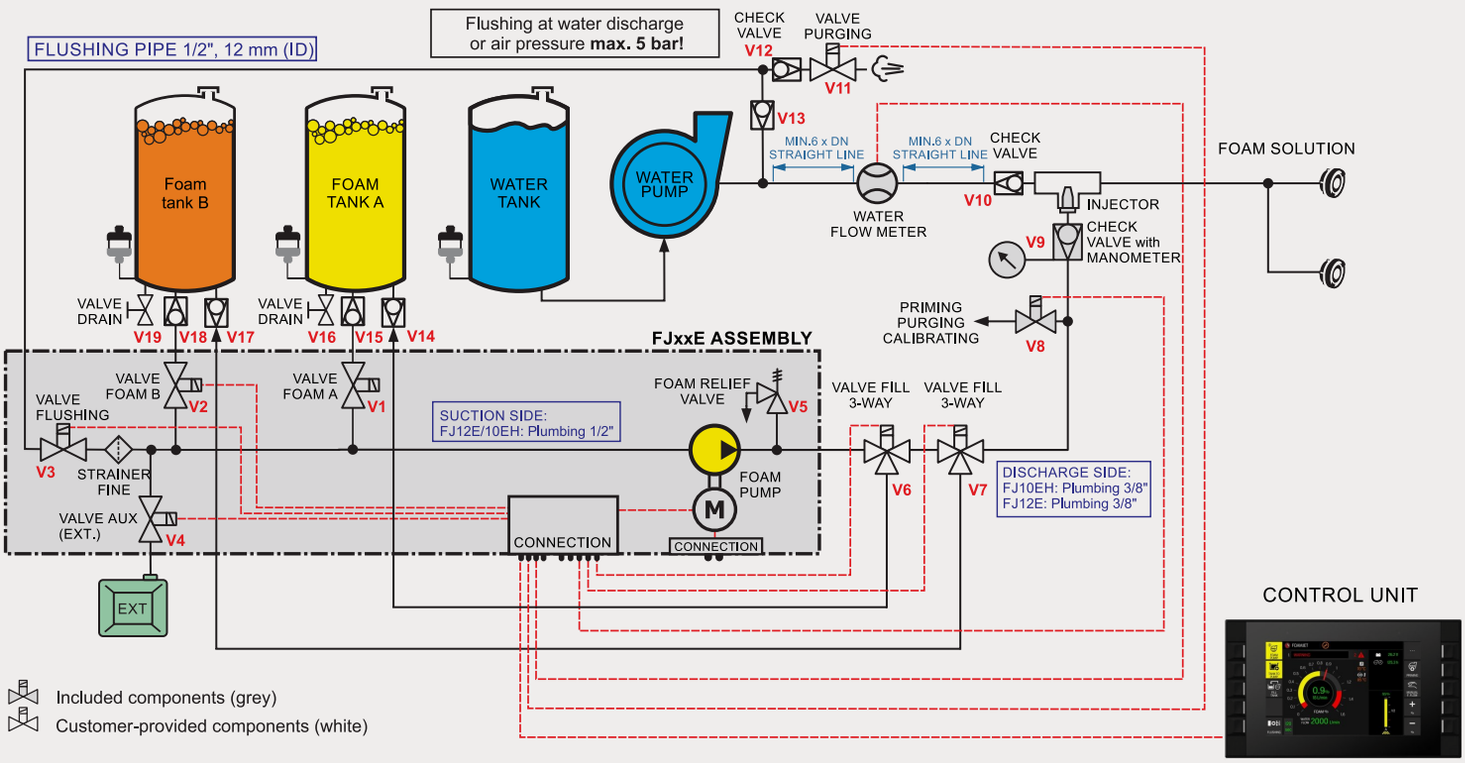
The system accurately delivers foam concentrate from 0.1 % to 6 % through a check valve/injector fitting, directly into the water discharge stream of the fire pump. The system can be setup also as a high-pressure unit allowing an injection pressure even up to 50 bars. In this case safety relief valve and flow meter enclosed are raated for PN50.

The proportioning system uses electrically driven foam pump. The pump and motor drive are designed for long-term load with over-temperature and current protection. High quality industrial components as well maintenance-free brushless motor (BLDC) ensure top performance of the injection system.

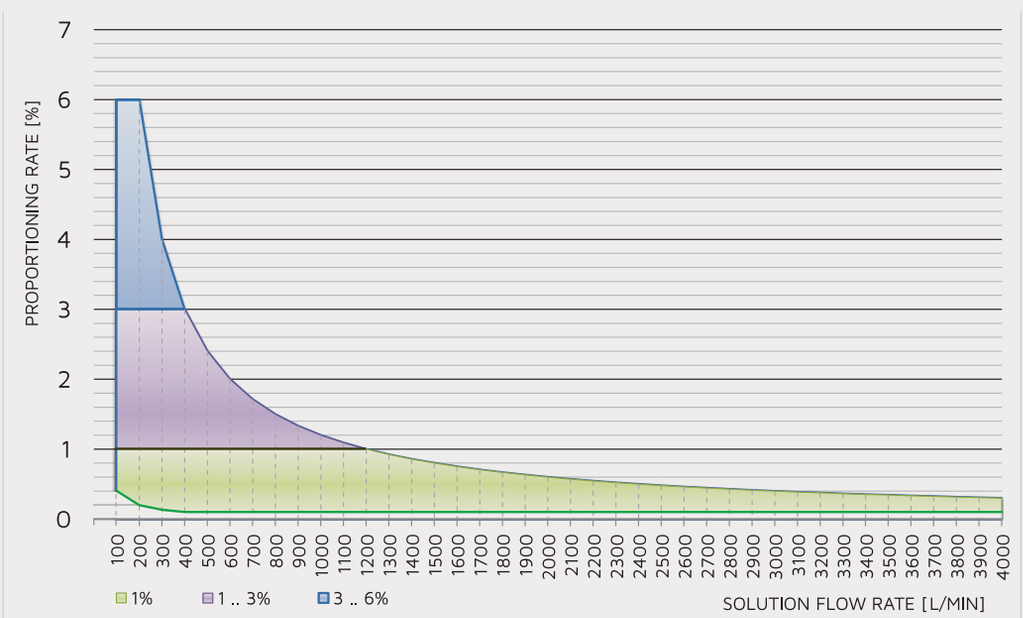
SPECIFICATIONS

POWER	
Supply Voltage	22 -30 V DC
Current	30 A max., standard version (16 bar) 50 A max., high pressure version (50 bar)
Electrical Protection	overvoltage, transients, reverse polarity, load dump
INTERFACES	
CAN	CAN, ISO 11898 2.0 A/B up to 1 Mbps, protocols
CAN link	1x T-connection, configurable termination 120 ohm via DIP switch, node ID definition via software
USB	1x USB 2.0, for firmware update
FOAM PUMP AND COMPONENTS	
EN16327 clasification	EN16327-PPPS 800/0.1-0.8w
Pump Type	3-plunger pump, 50 bar max.
El. Motor	high performance BLDC motor, 1200 W, thermal protected
Foam Injection Range	
FJ12E	0.1 - 12 L/min @ 16 bars
FJ10EH	0.1 - 10 L/min @ 50 bars
Fine Adjustment	0.1%
HMI – Control Panel	LCD TFT 7”, sunlight readable, anti-reflective glass, 10 soft keys + touch
ENVIROMENT	
IP Class (IEC529)	IP65 pump assembly (pump, motor, controller, connectors), LCD, Flowmeter
EMC Conformity	EN61000-6-2 noise immunity EN61000-6·4 radiation of interference
Temperature Range	storage -40° to +85°C (-40° to 185°F)
for pump	operating 5° to +85°C (+41° to 185°F)
for electronic units	operating -30° to +85°C (-22° to 185°F)
SIZE & WEIGHT	
W x H x D	48 x 33 x 23 cm
Weight	25 kg

PLUMBING DIAGRAM



OPERATING RANGE



PRODUCT CODE

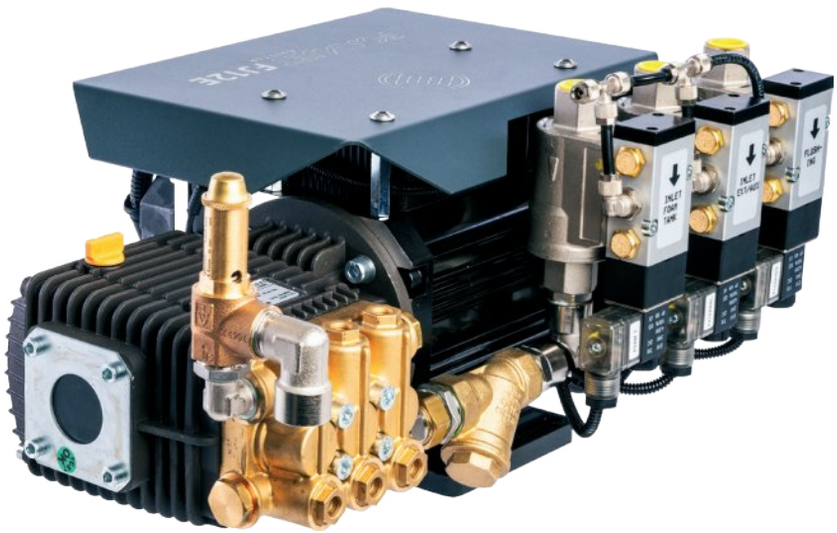
FoamJet, electric motor driven

Ordering code example:

F	J	1	2	E	H	-	1	E	F	2	0
		FJ TYPE **10:** 0.1 .. 10 LPM **12:** 0.1 .. 12 LPM **25:** 0.1 .. 25 LPM **45:** 0.1 .. 45 LPM			**H**: HIGH PRESSURE VERSION 50 BAR		**1**: ONE PRODUCT **2**: TWO PRODUCTS	**E**: EXTERNAL SUCCTION	**F**: FILL FUNCTION	WATER FLOW METER DIMENSION-INCH **20**: DN50 = 2.0” **25**: DN65 = 2.5” **30**: DN80 = 3.0” **40**: DN100 = 4.0” **T**: TWIN SYSTEM	

FOAMJET 25E

DIRECT INJECTION FOAM SYSTEM



KEY FEATURES

- Automatic foam dosing system in the range of 0.1 % to 6 % (8%), max. 25 L/min
- Precision control with steps of 0.1 %
- Top performance on extreme low injections – from 0.1 LPM
- Large intensive bright 7” LCD for easy readability of process data
- Magnetic-Inductive Flow sensors and BLCD motor
- Injection of foam concentrate at the discharge side of the fire pump

FOAMJET 25E is positive pressure proportioning system (EN 16327-PPPS) with digital control used to maintain selected constant foam-water proportion regardless of water flow fluctuations.

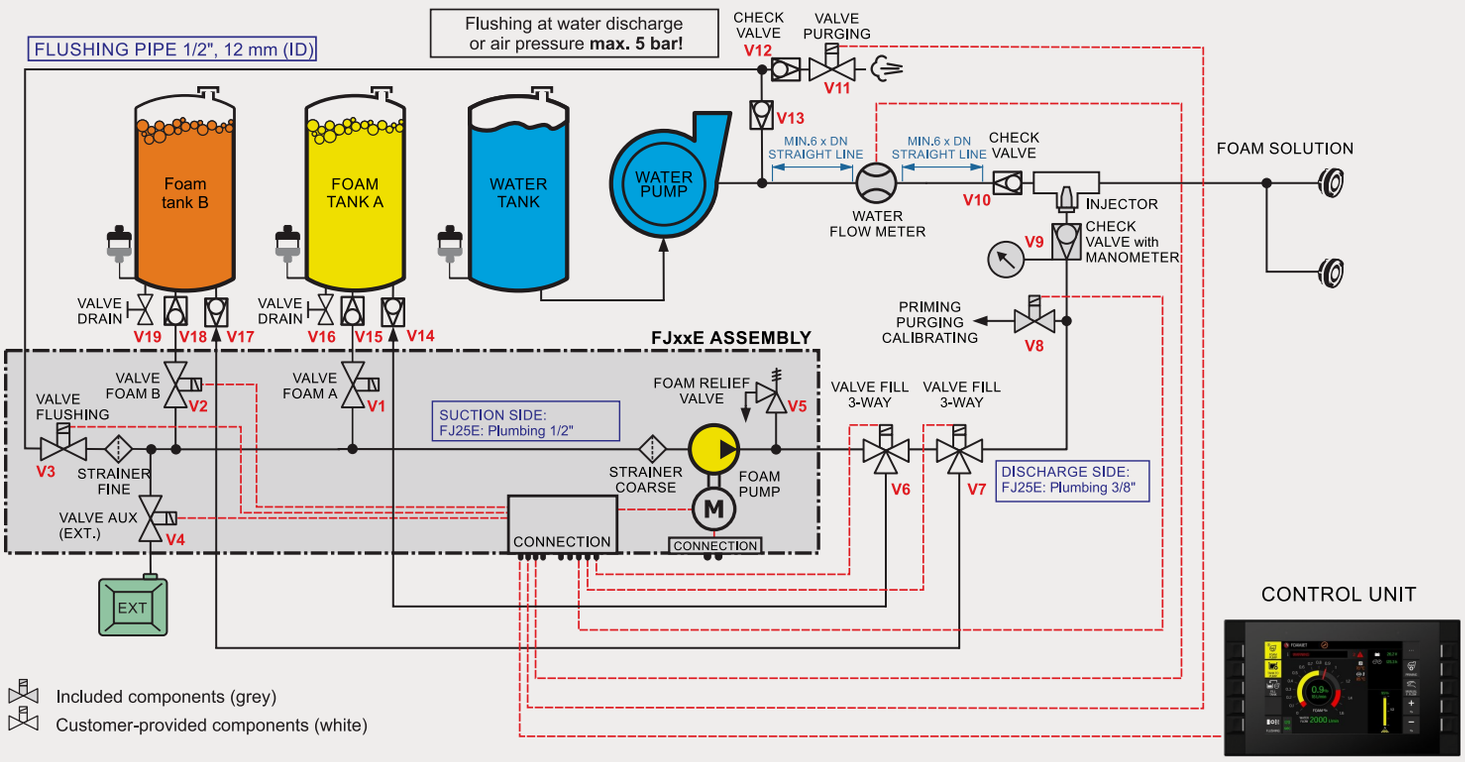
The system accurately delivers foam concentrate from 0.1 % to 8 % through a check valve/injector fitting, directly into the water discharge stream of the fire pump.

The proportioning system uses electrically driven foam pump. The pump and motor drive are designed for long-term load with over-temperature and current protection. High quality industrial components as well maintenance-free brushless motor (BLDC) ensure top performance of the injection system.

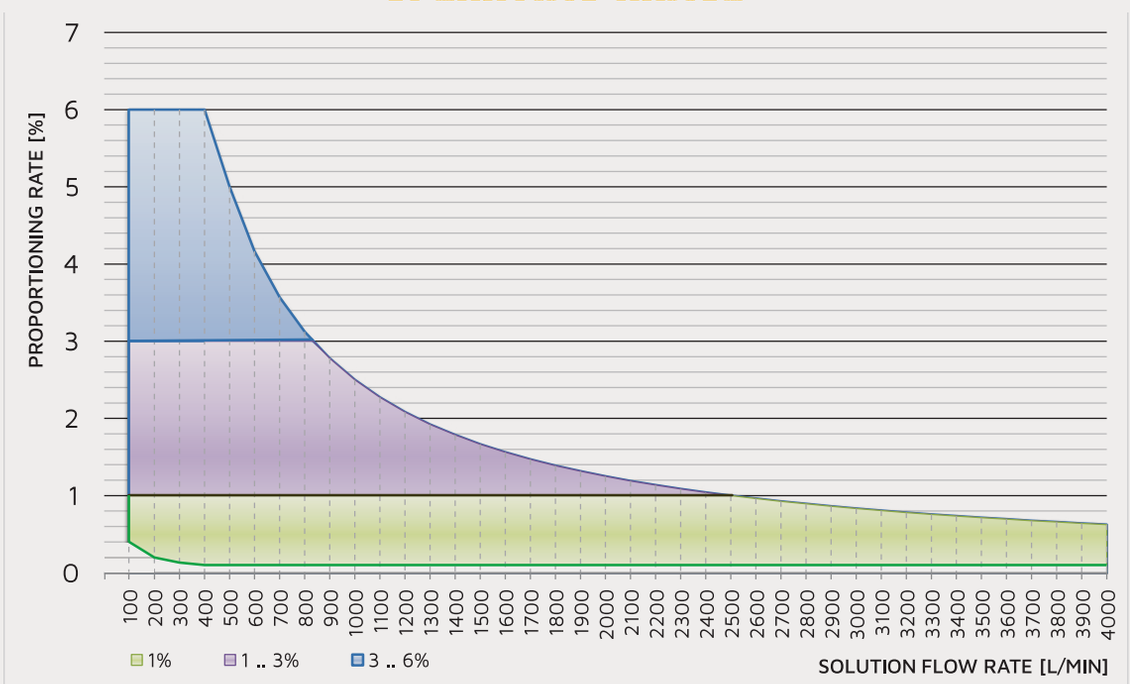
SPECIFICATIONS

POWER	
Supply Voltage	22 -30 V DC
Current	55 A max., standard version (16 bar)
Electrical Protection	overvoltage, transients, reverse polarity, load dump
INTERFACES	
CAN	CAN, ISO 11898 2.0 A/B up to 1 Mbps, protocols
CAN link	1x T-connection, configurable termination 120 ohm via DIP switch, node ID definition via software
USB	1x USB 2.0, for firmware update
FOAM PUMP AND COMPONENTS	
EN16327 clasification	EN16327-PPPS 1600/0.1-1.5
Pump Type	3-plunger pump, 50 bar max.
El. Motor	high performance BLDC motor, 1200 W, thermal protected
Foam Injection Range	0.1 - 25 L/min @ 16 bars
Fine Adjustment	0.1%
HMI – Control Panel	LCD TFT 7”, sunlight readable, anti-reflective glass, 10 soft keys + touch
ENVIROMENT	
IP Class (IEC529)	IP65 pump assembly (pump, motor, controller, connectors), LCD, Flowmeter
EMC Conformity	EN61000-6-2 noise immunity EN61000-6·4 radiation of interference
Temperature Range for pump for electronic units	storage -40° to +85°C (-40° to 185°F) operating 5° to +85°C (+41° to 185°F) operating -30° to +85°C (-22° to 185°F)
SIZE & WEIGHT	
W x H x D	61 x 36 x 28 cm
Weight	34 kg

PLUMBING DIAGRAM



OPERATING RANGE



PRODUCT CODE

FoamJet, electric motor driven

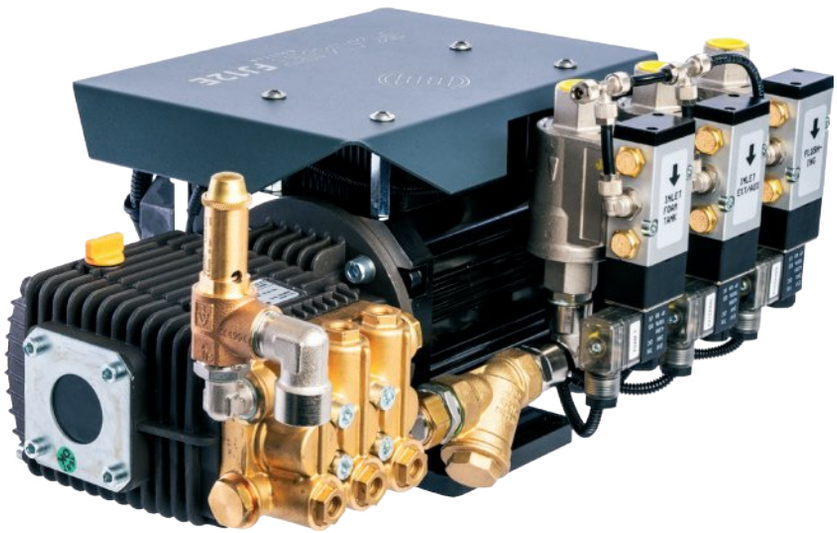
Ordering code example:

F	J	2	5	E		-	1	E	F	2	0

FJ TYPE **12:** 0.1 .. 12 LPM **25:** 0.1 .. 25 LPM **45:** 0.1 .. 45 LPM		**1**: ONE PRODUCT **2**: TWO PRODUCTS	**E**: EXTERNAL SUCCTION	**F**: FILL FUNCTION	WATER FLOW METER DIMENSION-INCH **20**: DN50 = 2.0” **25**: DN65 = 2.5” **30**: DN80 = 3.0” **40**: DN100 = 4.0” **T**: TWIN SYSTEM

FOAMJET 45E

DIRECT INJECTION FOAM SYSTEM



KEY FEATURES

- Automatic foam dosing system in the range of 0.1 % to 8 %, max. 45 L/min
- Precision control with steps of 0.1 %
- Top performance on extreme low injections – from 0.1 LPM
- Large intensive bright 7” LCD for easy readability of process data
- Magnetic-Inductive Flow sensors and BLCD motor
- Injection of foam concentrate at the discharge side of the fire pump

FOAMJET 25E is positive pressure proportioning system (EN 16327-PPPS) with digital control used to maintain selected constant foam-water proportion regardless of water flow fluctuations.

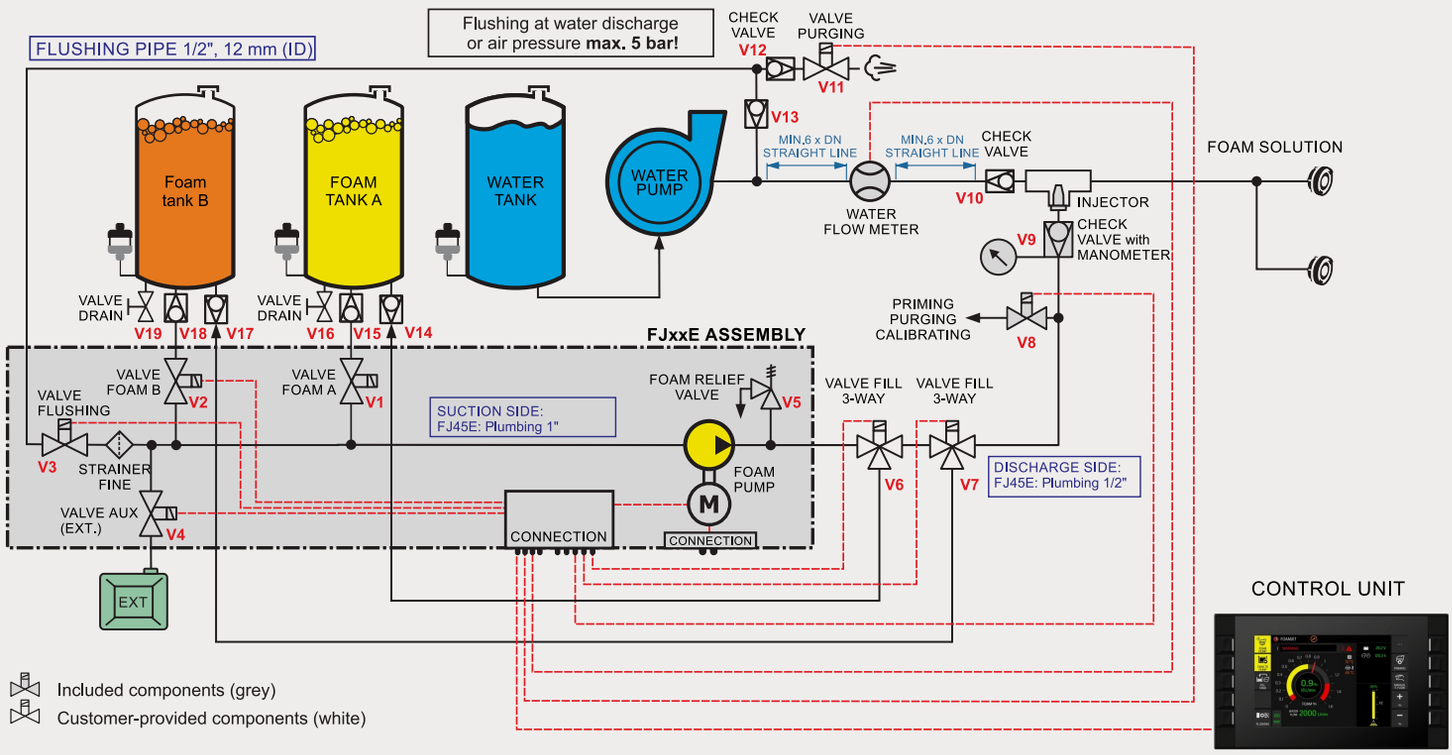
The system accurately delivers foam concentrate from 0.1 % to 8 % through a check valve/injector fitting, directly into the water discharge stream of the fire pump.

The proportioning system uses electrically driven foam pump. The pump and motor drive are designed for long-term load with over-temperature and current protection. High quality industrial components as well maintenance-free brushless motor (BLDC) ensure top performance of the injection system.

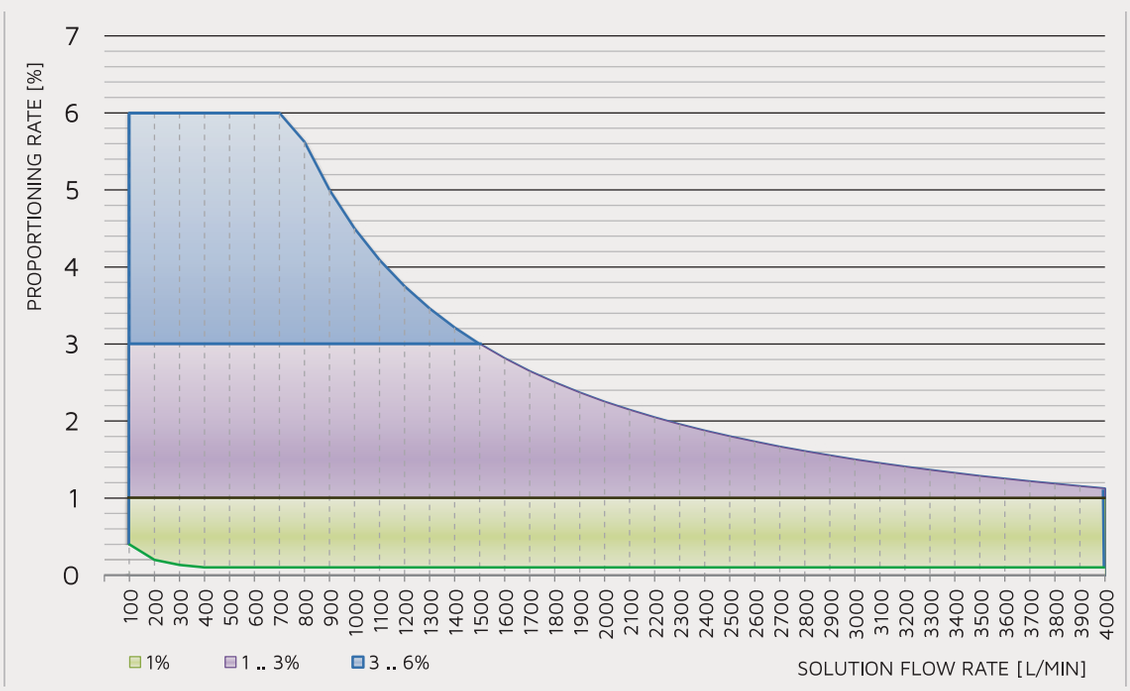
SPECIFICATIONS

POWER	
Supply Voltage	22 -30 V DC
Current	60 A max., standard version (16 bar)
Electrical Protection	overvoltage, transients, reverse polarity, load dump
INTERFACES	
CAN	CAN, ISO 11898 2.0 A/B up to 1 Mbps, protocols
CAN link	1x T-connection, configurable termination 120 ohm via DIP switch, node ID definition via software
USB	1x USB 2.0, for firmware update
FOAM PUMP AND COMPONENTS	
EN16327 clasification	EN16327-PPPS 1600/0.1-1.5
Pump Type	3-plunger pump, 50 bar max.
El. Motor	high performance BLDC motor, 1200 W, thermal protected
Foam Injection Range	0.1 - 45 L/min @ 16 bars
Fine Adjustment	0.1%
HMI – Control Panel	LCD TFT 7”, sunlight readable, anti-reflective glass, 10 soft keys + touch
ENVIROMENT	
IP Class (IEC529)	IP65 pump assembly (pump, motor, controller, connectors), LCD, Flowmeter
EMC Conformity	EN61000-6-2 noise immunity EN61000-6-4 radiation of interference
Temperature Range	storage -40° to +85°C (-40° to 185°F)
for pump	operating 5° to +85°C (+41° to 185°F)
for electronic units	operating -30° to +85°C (-22° to 185°F)
SIZE & WEIGHT	
W x H x D	64 x 49 x 28 cm
Weight	52 kg

PLUMBING DIAGRAM



OPERATING RANGE



PRODUCT CODE

FoamJet, electric motor driven

Ordering code example:

F	J	4	5	E		-	1	E	F	2	0
		FJ TYPE **12:** 0.1 .. 12 LPM **25:** 0.1 .. 25 LPM **45:** 0.1 .. 45 LPM					**1**: ONE PRODUCT **2**: TWO PRODUCTS	**E**: EXTERNAL SUCCTION	**F**: FILL FUNCTION	WATER FLOW METER DIMENSION-INCH **20**: DN50 = 2.0” **25**: DN65 = 2.5” **30**: DN80 = 3.0” **40**: DN100 = 4.0” **T**: TWIN SYSTEM	

DIGIFOAM™ DF

AROUND-THE-PUMP FOAM PROPORTIONING

OR

KEY FEATURES

- Automatic foam dosing system in the range of 0.1 % to 8 %
- Precision control with steps of 0.1 %
- Wide range of eductor capacity, up to 500 L/min
- Compatible with any type of foam concent.
- Manual or automatic operation mode
- LCD 7” Display or PCU HMI
- Magnetic-inductive flow-meter for maximum life and less maintenance
- Easy operation

Digifoam is a digitally controlled, fully automatic Around-the-Pump foam proportioning system designed to maintain a constant and accurate foam-water ratio, regardless of water flow or pressure fluctuations

Using the proven Around-the-Pump principle, Digifoam makes the foam solution available through the complete discharge system, ensuring reliable foam performance at every outlet.

The Digifoam DF system is typically operated through a large 7” LCD HMI, providing clear and intuitive control of all system functions. The display gives the operator an easy overview of key process data, including water flow, foam flow, proportioning rate, warnings and error messages.

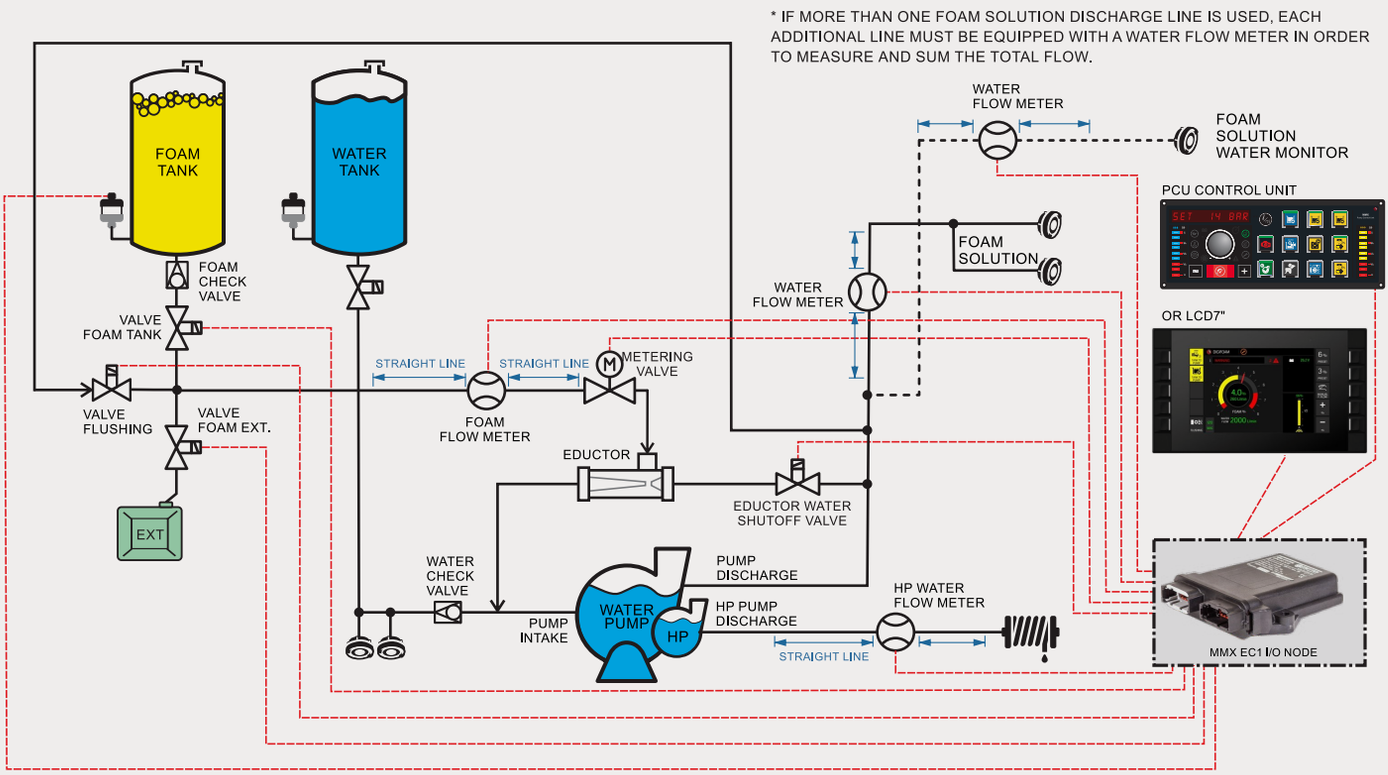
Alternatively, the DIGIFOAM function can be integrated directly into the PCU Pump Control Unit with built-in foam management, eliminating the need for a separate HMI in certain system configurations.

Remote HMI units can be added for control from multiple locations, including the driver’s cabin.

SPECIFICATIONS

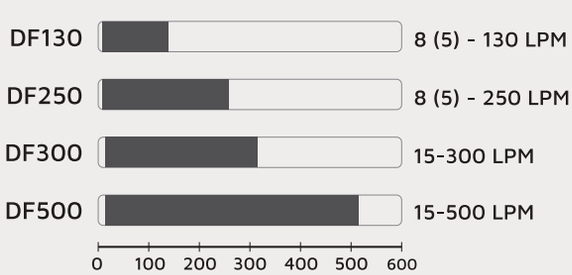
POWER	
Supply Voltage	20-30 V DC electronic components
Current	max. 0.1 A @ 24 V – controller without loads connected max. 1.8 A metering valve
Electrical Protection	Main controller EC1: overvoltage, transients, reverse polarity, load dump
HMI - CONTROL PANEL	
Digifoam - DF	LCD TFT 7”, sunlight readable, anti-reflective glass, 10+5 soft keys
Digifoam Lite -DFL	PCU-pump control unit with foam management system
ENVIROMENT	
IP Class (IEC529)	MMXEC1 controller: P67 HMI07: IP65 MAGFLOW: IP65 El. metering valve: IP67
EMC	designed to EN 61000-6-2, noise immunity designed to EN 61000-6-4, radiation immunity
Temperature Range for electronic parts	operating from -40°C to +85°C storage from -40 to +85°C
MISCELLANEOUS	
Connectors	Deutsch DTM and AMP automotive connectors

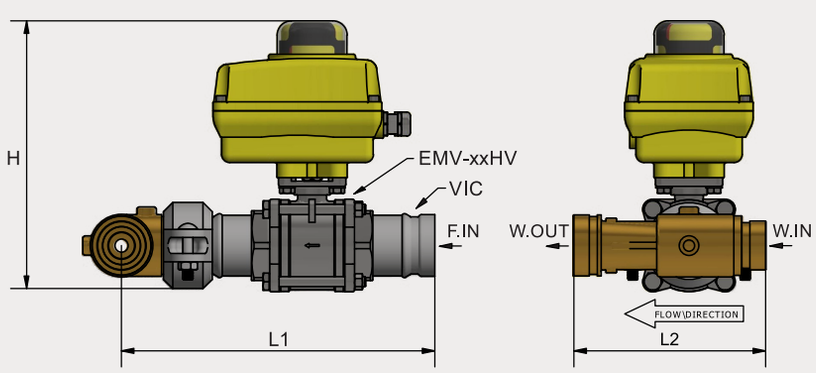
PLUMBING DIAGRAM



OPERATING RANGE AND DIMENSIONS

DF OPERATING RANGES





	L1* [mm]	L2* [mm]	H [mm]	W.IN [victaulic]	W.OUT [victaulic]	F.IN [victaulic]
DF130	380	152	257	1”	1 1/2”	1”
DF250	380	190	257	1 1/2”	2”	1 1/2”
DF300	310	190	257	1 1/2”	2”	2”
DF500	310	254	268	2”	3”	2”

**Dimensions L1 and H are indicative and may vary*

PRODUCT CODE

Use characters in **bold** to create order code

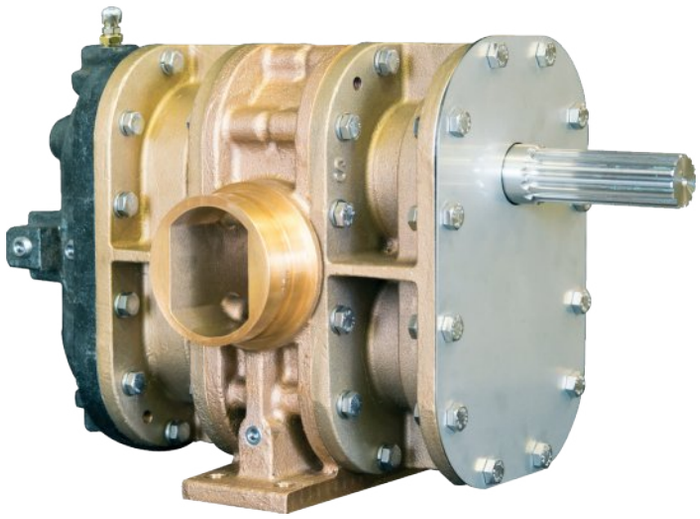
Ordering code example:

D	F	2	0	0	W	4	0	F	1	5	H	1	-	0	0

FOAM SYSTEM	EDUCTOR TYPE	WATER FLOW METER DIMENSION-INCH:	FOAM FLOW METER DIMENSION-INCH:	FOAM HP FLOW METER		PRODUCT VERSION
DF: DIGIFOAM	**130**: .. 130 LPM max. **250**: .. 250 LPM max. **300**: .. 300 LPM max. **500**: .. 500 LPM max. **000**: .. WITHOUT EDUCTOR	**15**: DN40 = 1.5” **20**: DN50 = 2.0” **25**: DN65 = 2.5” **30**: DN80 = 3.0” **40**: DN100 = 4.0” ... ETC	**10**: DN25 = 1.0” **15**: DN40 = 1.5” **20**: DN50 = 2.0” **25**: DN65 = 2.5”	DIMENSION-INCH: **1**: DN25 = 1”		

FOAMJET XXT SERIES

DIGITAL BALANCE PRESSURE FOAM PROPORTIONING SYSTEM



KEY FEATURES

- Automatic foam dosing system in the range of 0.1 % to 8 %
- Precision control with steps of 0.1 %
- Wide range of system capacity, up to 1800 L/min
- High Performance, Self-priming Rotary Gear Foam Pump with Timing Gear
- The max. dynamic viscosity of foam concentrates 5300 cP
- Magnetic-inductive flow meter for long-lasting low-maintenance operation
- Manual or automatic operation mode
- Intensive bright LCD for easy readability of process data

FoamJet FJ xxxT series is a digitally controlled direct injection balance pressure (BP) foam proportioning system used to maintain selected constant foam-water proportion regardless of water flow and pressure fluctuations.

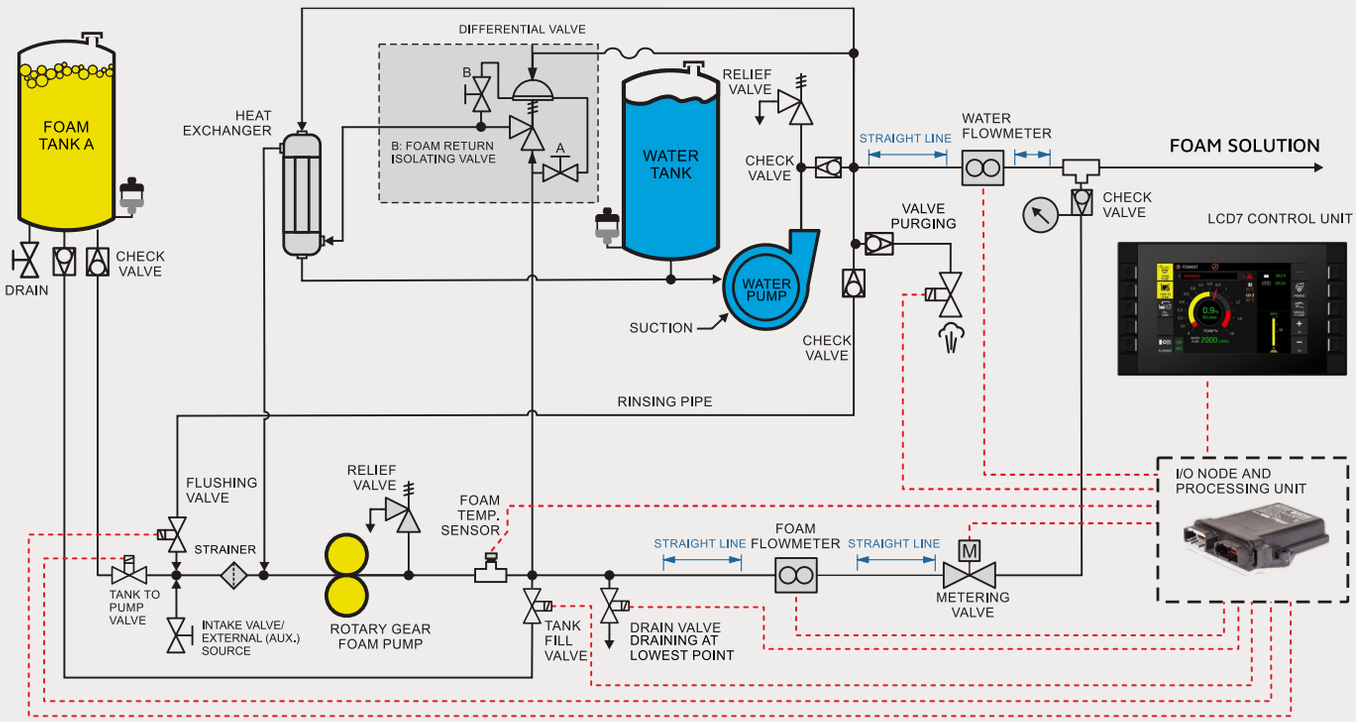
The system accurately delivers foam concentrate from 1 % to 8 % through the flow meter, el. metering valve and check valve, directly into the water discharge stream.

The system uses a High-Performance Rotary Gear Foam Pump with brass housing, bronze alloy rotors, oversized roller bearings - sealed for life, timing gear which allows dry-running without damage (no rotor contacts) and other high-quality industrial components. The pump is self-priming and can pump water or different viscosities of Foam. The pump can be Hydraulic or PTO driven.

SPECIFICATIONS

POWER	
Supply Voltage	8-32 V DC for electronic components
Current	max. 5A @ 24 V - controller
Electrical Protection	overvoltage, transients, reverse polarity, load dump (not valid for embedded version)
HMI - CONTROL PANEL	
LCD Type	LCD TFT 7”, sunlight readable, anti-reflective glass, 10 soft keys + touch
ENVIROMENT	
IP Class (IEC529)	MMXEC1 controller: P67 MMXLCD7: IP65 MAGFLOW: IP65
EMC	designed to EN 61000-6-2, noise immunity designed to EN 61000-6-4, radiation immunity
Temperature Range for electronic parts	operating from -40°C to +70°C storage from -40 to +70°C
FOAM PUMP	
Type	Rotary Gear pump with Timing gears and Victaulic connections, self-priming with Victaulic connections, eight different pump models
Material	Brass housing with bronze alloy rotors, stainless steel shafts, oversized roller bearings, silicon carbide mechanical seals
Pressure	20.7 bar max.
RPM	1800 max.
Mounting Orientation	Any orientation
Max viscosity of the agent	dynamic viscosity of foam concentrate is 5300 cP what gives for foam concentrate density of 1.4 kg/m3 the kinematic viscosity of 3780 cS
Flange, pump weight	
FJ 100T	1.5” VIC, 27 kg
FJ 270T	2” VIC, 30 kg
FJ 420T	2” VIC, 62 kg
FJ 590T	3” VIC, 69, kg
FJ 720T	3” VIC, 79 kg
FJ 1000T	4” VIC, 82 Kg
FJ 1250T	4” VIC, 95 Kg
FJ 1800T	5” VIC, 195 Kg

PLUMBING DIAGRAM



A special el. metering valve precisely adjusts the amount of foam concentrate injected. All excess foam concentrate is returned back to the foam tank via the differential relief valve using a closed loop system. The heat exchanger alleviates the heat build-up while circulating foam concentrate around the foam pump from discharge back to suction.

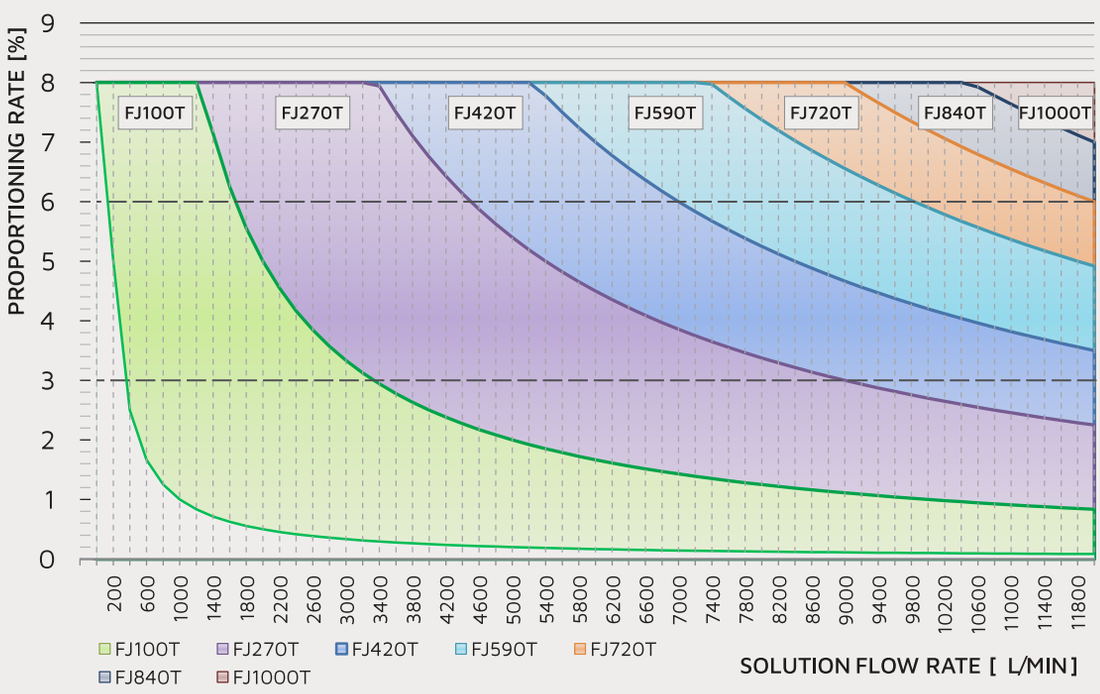
Using a heat exchanger eliminates the possibility of aerating of the foam that returned to the on-board foam tank, and allows usage of foam concentrates from an external source in the event when the on-board tank is depleted, or a dis-similar foam concentrate is required.

The unit standardly uses a large 7” TFT LCD unit for easy overview and control over all functions of the system.

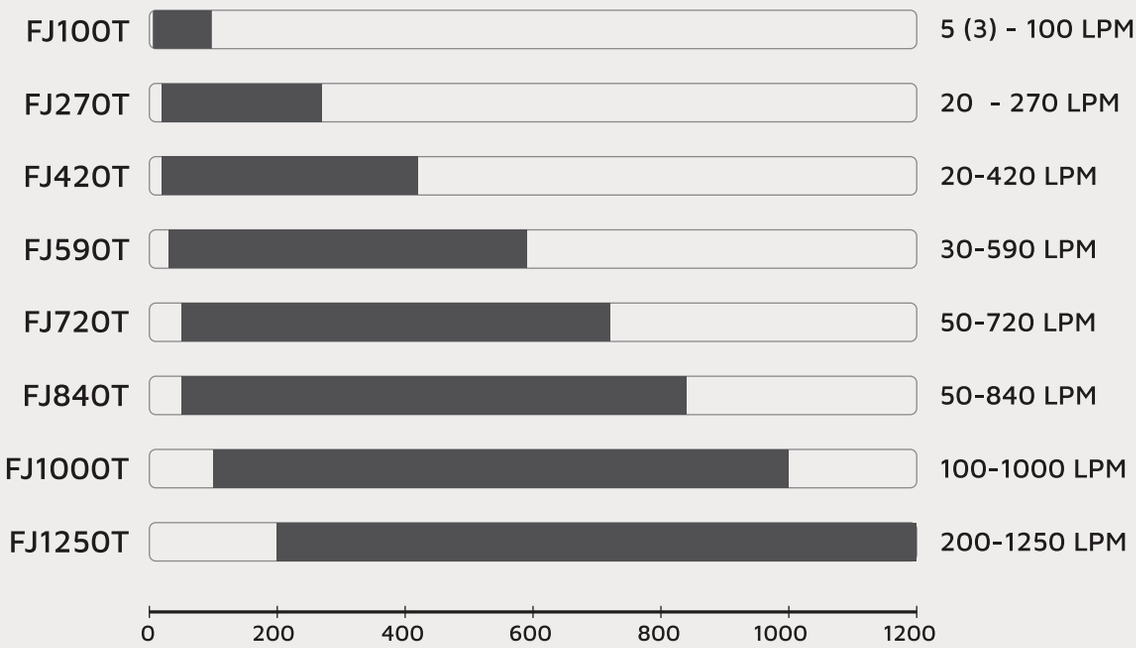
FoamJet xxxxT series can be used as a stand-alone system or as a part of the MMX system connected via CAN bus to the other MMX devices. Several remote LCD display control units can be connected to control the foam proportioning on different locations e.g., in the driver’s cabin.

The maximum foam concentrate delivery in L/min varies by the pump and configuration selected with models available ranging from a max. of 100 L/min up to max. 1800 L/min.

OPERATING RANGES

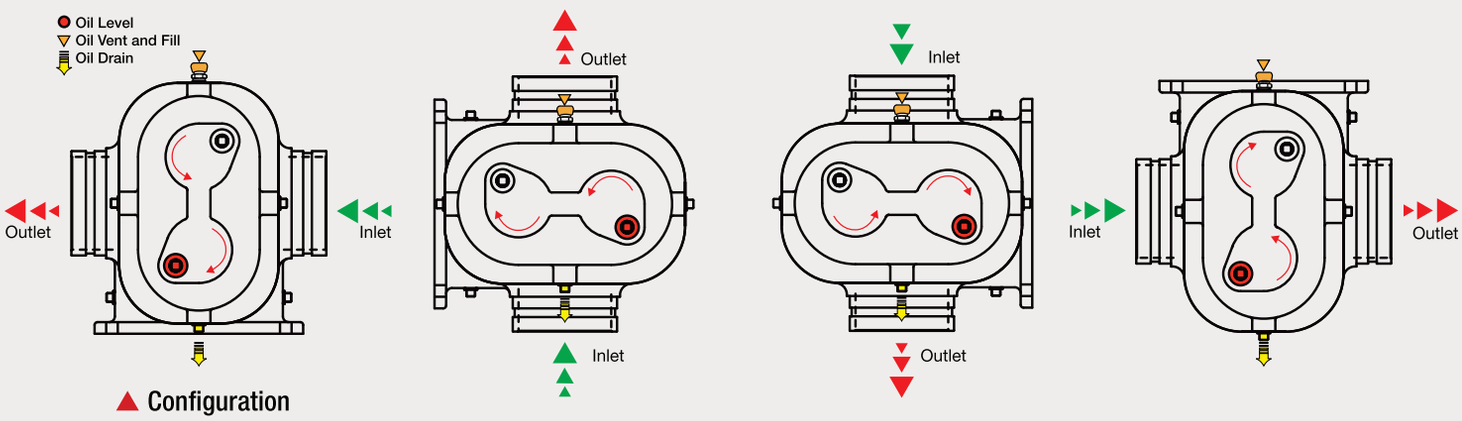


FJ DELIVERY RANGES at 1800 RPM



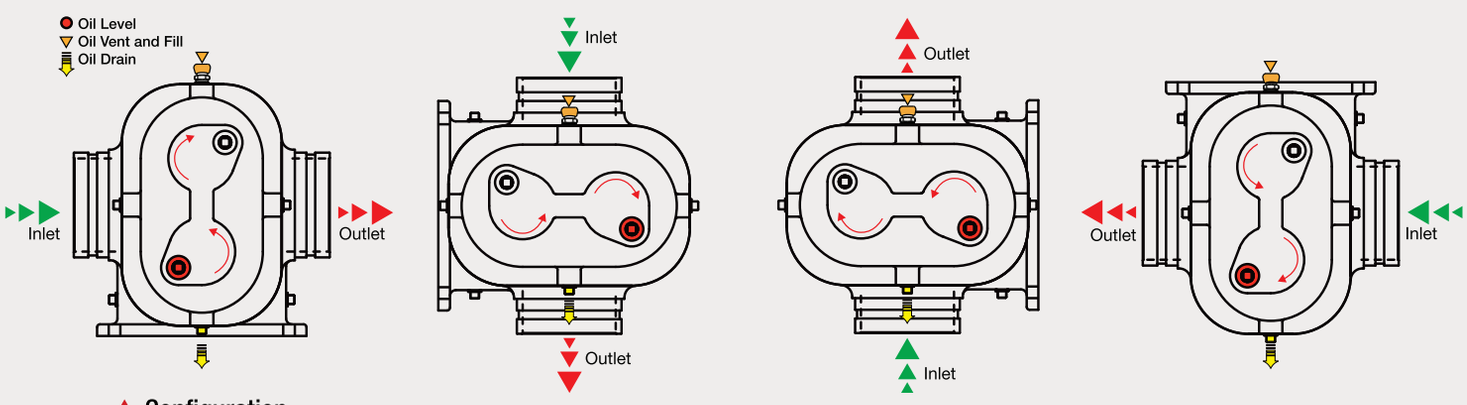
Foam pump can be mounted in any of the positions shown

Standard Flow Direction



▲ Configuration

Reverse Flow Direction

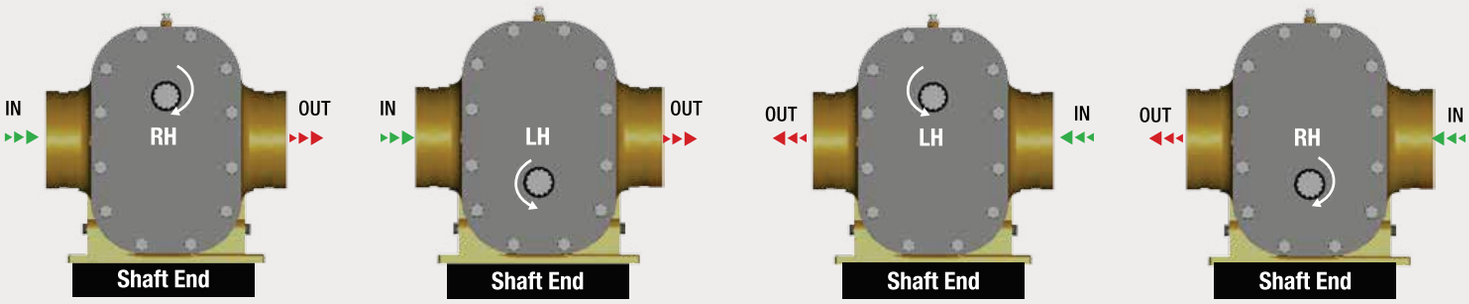


▲ Configuration as Shipped

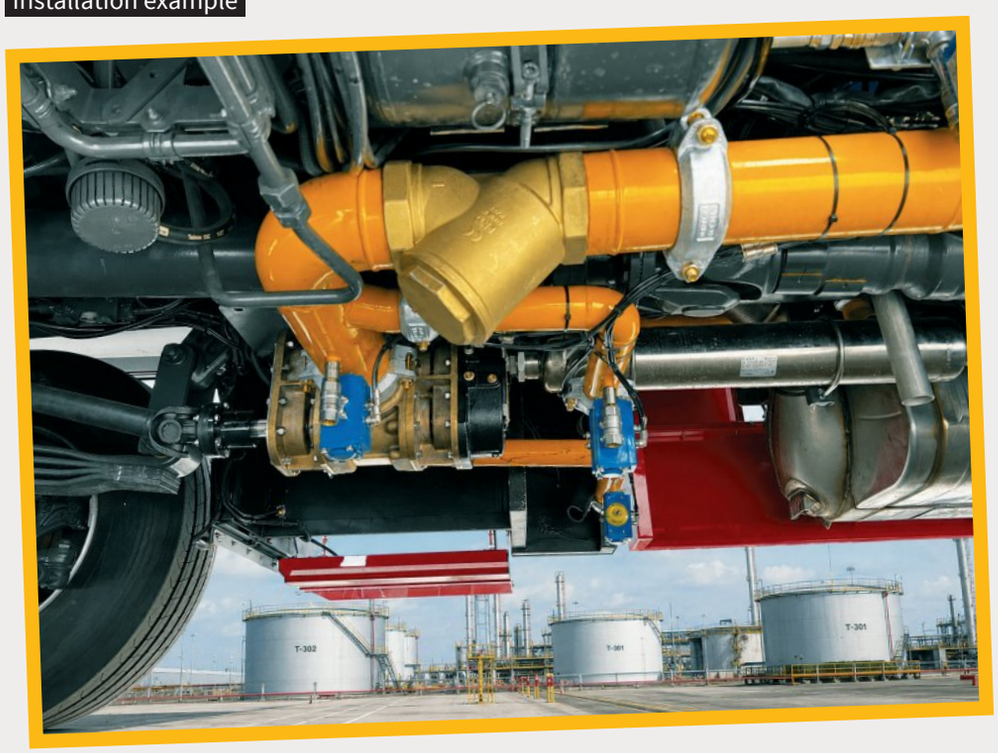
Position and rotation direction

There are four configurations that can be selected before ordering the system

No.	Position	Rotation direction
#1	Top (Upper) Shaft Position	Right Hand (Clockwise) Rotation
#2	Bottom (Lower) Shaft Position	Left Hand (Counter Clockwise) Rotation
#3	Top (Upper) Shaft Position	Left Hand (Counter Clockwise) Rotation
#4	Bottom (Lower) Shaft Position	Right Hand (Clockwise) Rotation



Installation example



PRODUCT CODE

Use characters in **bold** to create order code

Ordering code example:

F	J	0	7	2	0	T	-	1	E	F	2	5
								2	0	0		

FJ TYPE **100, 270, 420, 590, 840, 1000, 1250, 1800** LPM, (PTO OR HYDRAULIC DRIVEN VESRSION)	GEAR PUMP TYPE

1: ONE PRODUCT **2:** TWO PRODUCTS	**E:** EXTERNAL SUCCTION	**F:** FILL FUNCTION	WATER FLOW METER DIMENSION: **20**: DN50 (2.0”) **25**: DN65 (2.5”) **30**: DN80 (3.0”) **40**: DN100 (4.0”) **60**: DN150 (6.0”) **80**: DN200 (8.0”)

FOAMJET TWIN

COMBINED DIGITAL BALANCE PRESSURE SYSTEM WITH ELECTRICAL FOAM PUMP

KEY FEATURES

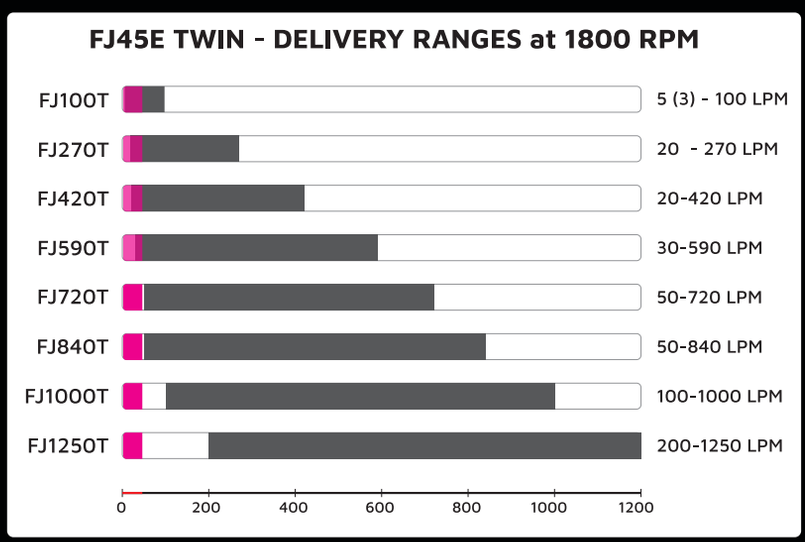
- Combining High-Performance Rotary Gear Foam Pump and Electrically Driven Plunger Pump
- Top performance on extremely low injections – from 0.1 LPM
- Automatic foam dosing system in the range of 0.1 % to 8 %
- Precise control with steps of 0.1 %
- Wide range of system capacity combination
- Manual or automatic operation mode
- Intensive bright LCD for easy readability of process data

FOAMJET TWIN is a digitally controlled direct injection foam proportioning system consisting of two functional units - foam pumps. One unit employs an electrically driven foam pump to precisely inject foam in the range of 0.1 to 45 liters per minute (depends on the chosen foam pump). The other unit is PTO or hydraulically driven rotary gear foam pump for injecting foam in the range of 10 to 1800 litres per minute (depends on the chosen foam pump). Both units use a common 7''LCD control panel.

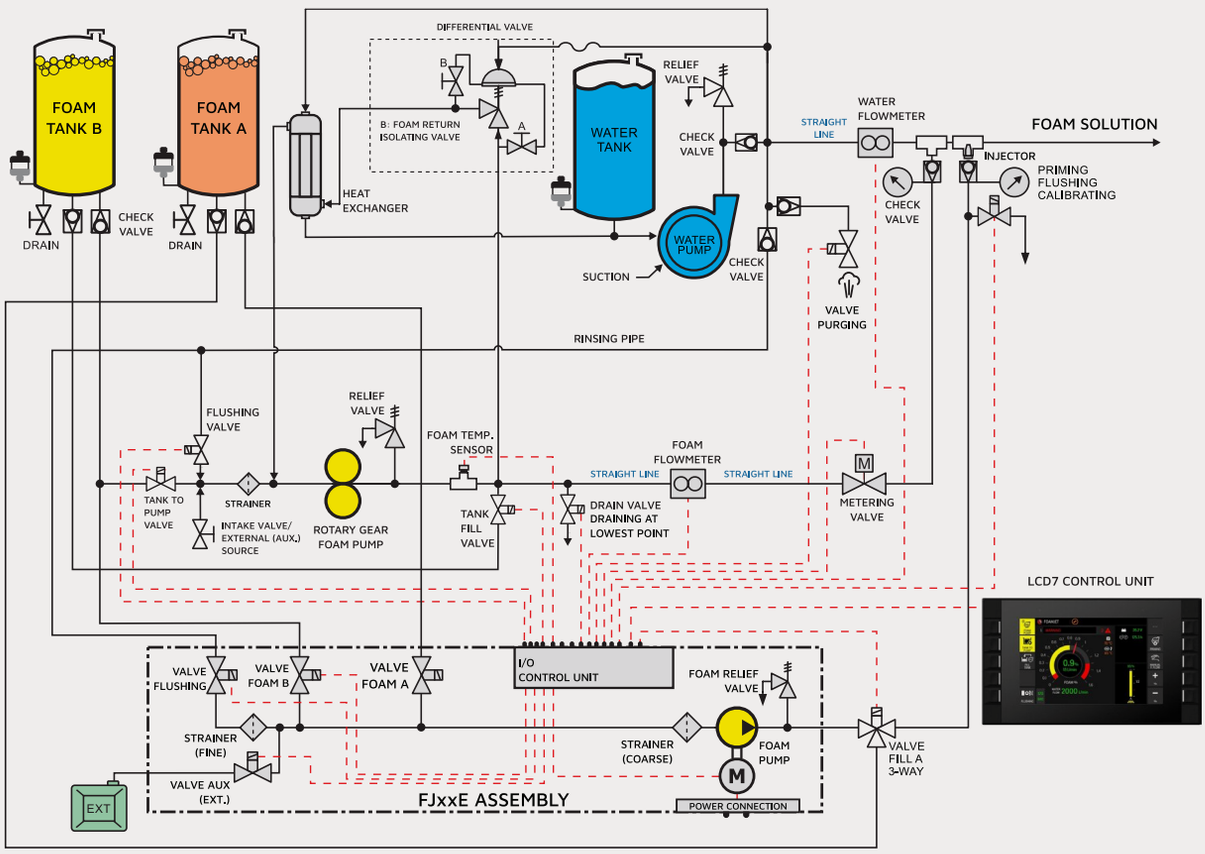
The system accurately delivers foam concentrate from 0.1 % to 8 % through a check valve/injector fitting, directly into the water discharge stream and maintains selected constant foam-water proportion regardless of water flow and pressure fluctuations.

DELIVERY RANGES

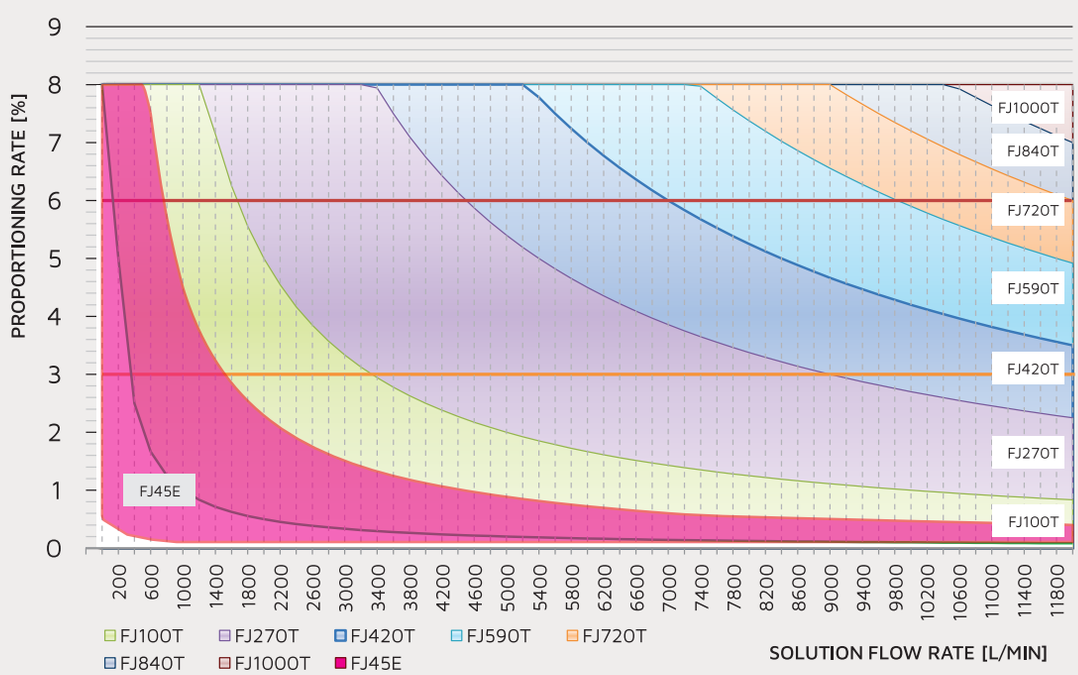
The maximum foam concentrate delivery in L/min varies by the pump and configuration selected with models available ranging from a max. of 100 L/min up to max. 1800 L/min.



PLUMBING DIAGRAM



OPERATING RANGES



PRODUCT CODE

Use characters in **bold** to create order code

Ordering code example:

F	J	T	0	7	2	0	T	4	5	E
			ROTARY GEAR PUMP TYPE				ELECTRTICAL PLUNGER PUMP TYPE			

NOTES

NOTES

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