



EMITTER ELECTRONICS

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DIGITALY CONTROLLED FOAM PROPORTIONING SYSTEMS



PRODUCT CATALOG 2022

DIGIFOAM

XX XX

FOAMJET

WE DELIVER EXPERIENCE AND QUALITY SINCE 1990

EMITTER electronics is a technically driven design and manufacturing company dedicated to helping customers to solve their toughest electronics, automation, sensing and measurement problems.

A flexible manufacturing system allows us quick responsiveness as well as efficient handling of large blanket orders. Our products can easily be integrated into already existing systems or can be specially designed for different applications.

Emitter engineering team can help you to design an advanced control system, custom device or modify existing products to save your labour and assembly costs to be more competitive on the market. We have maintained a competitive advantage in this area by being always available to all our customers and potential clients.

Quality, responsibility and innovation have been the fundamental mottos of our operations since the very establishment of the company.



04



FOAMJET 12E/12EH

06



FOAMJET 25E

08



FOAMJET 45E

10



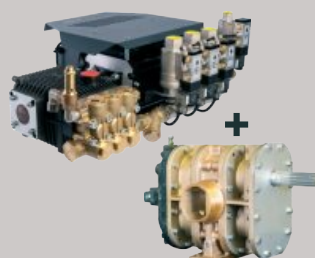
DIGIFOAM DG/DGL

12



FOAMJET xxxT SERIES

16



FOAMJET TWIN

FOAMJET 12E/12EH



FEATURES AND BENEFITS

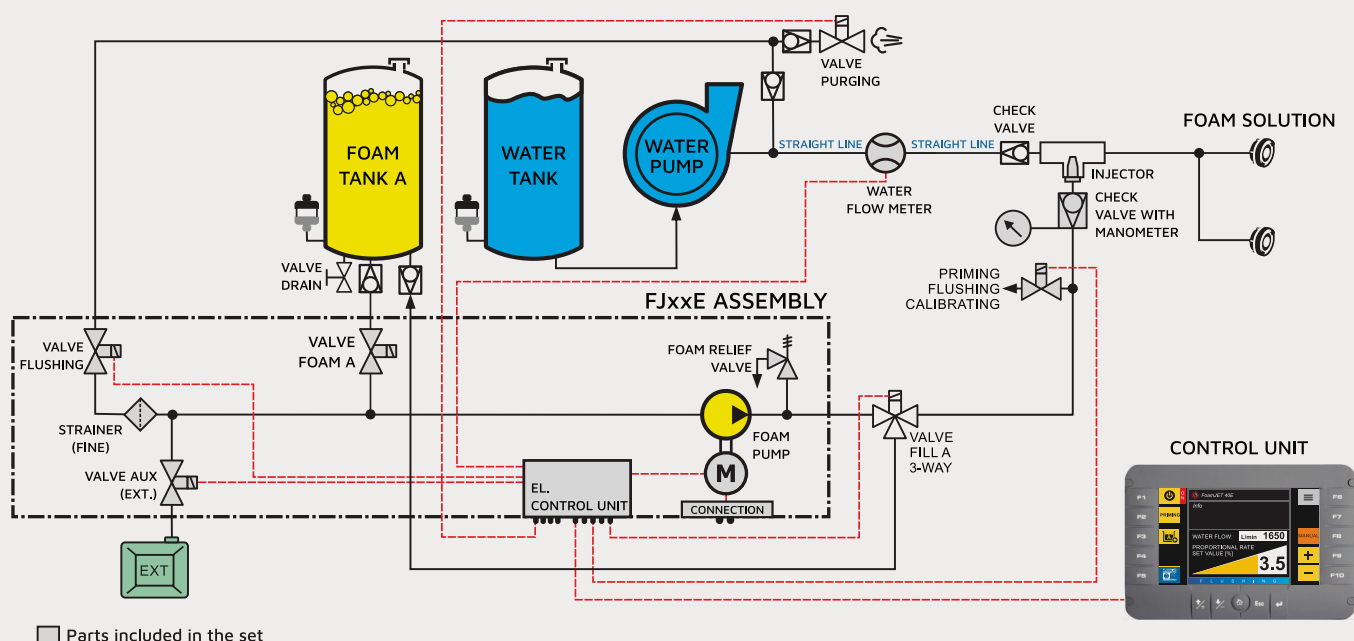
- 1 Automatic foam dosing system in the range of 0.1 % to 8 %
- 2 Precision control with steps of 0.1 %
- 3 Top performance on extreme low injections – from 0.1 LPM
- 4 Large intensive bright 7" LCD for easy readability of process data
- 5 Magnetic-Inductive Flow sensors and BLCD motor
- 6 Injection 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.

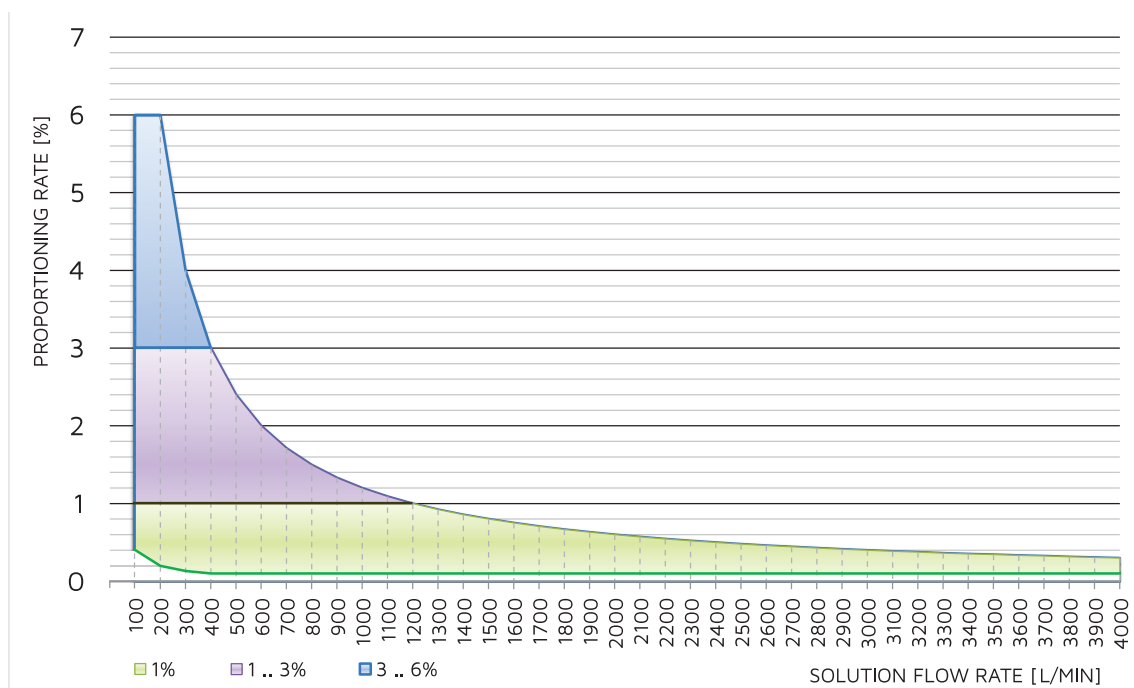
The system accurately delivers foam concentrate from 0.1 % to 8 % through a check valve/injector fitting, directly into the water discharge stream of the fire pump.

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.

PLUMBING DIAGRAM



OPERATING RANGE



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 classification	EN16327-PPPS 800/0.1-0.8
Pump Type	3-plunger pump, 50 bar max.
El. Motor	high performance BLDC motor, 1200 W, thermal protected
Foam Injection Range	0.1 - 12 L/min @ 16 bars 0.1 - 10 L/min @ 50 bars
Fine Adjustment	0.1%
HMI - Control Panel	LCD TFT 7", sunlight readable, anti-reflective glass, 10+5 soft keys

ENVIRONMENT	
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) operating 5° to +85°C (+41° to 185°F) for electronic units operating -30° to +85°C (-22° to 185°F)
SIZE AND WEIGHT	
W x H x D [mm]	48 x 33 x 23 cm
Weight	25 kg

ORDERING CODE

FoamJet, electric motor driven

Ordering code example:

F	J	1	2	E	H	-	1	E	F	2	0
FJ TYPE 12: 0.1 .. 12 LPM 25: 0.1 .. 25 LPM 45: 0.1 .. 45 LPM				H: HIGH PRESSURE VERSION 50 BARS		1: ONE PRODUCT 2: TWO PRODUCTS		E: EXTERNAL SUCTION	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



FEATURES AND BENEFITS

- 1 Automatic foam dosing system in the range of 0.1 % to 8 %
- 2 Precision control with steps of 0.1 %
- 3 Top performance on extreme low injections – from 0.1 LPM
- 4 Large intensive bright 7" LCD for easy readability of process data
- 5 Magnetic-Inductive Flow sensors and BLCD motor
- 6 Injection of foam concentrate at the discharge side of the fire pump

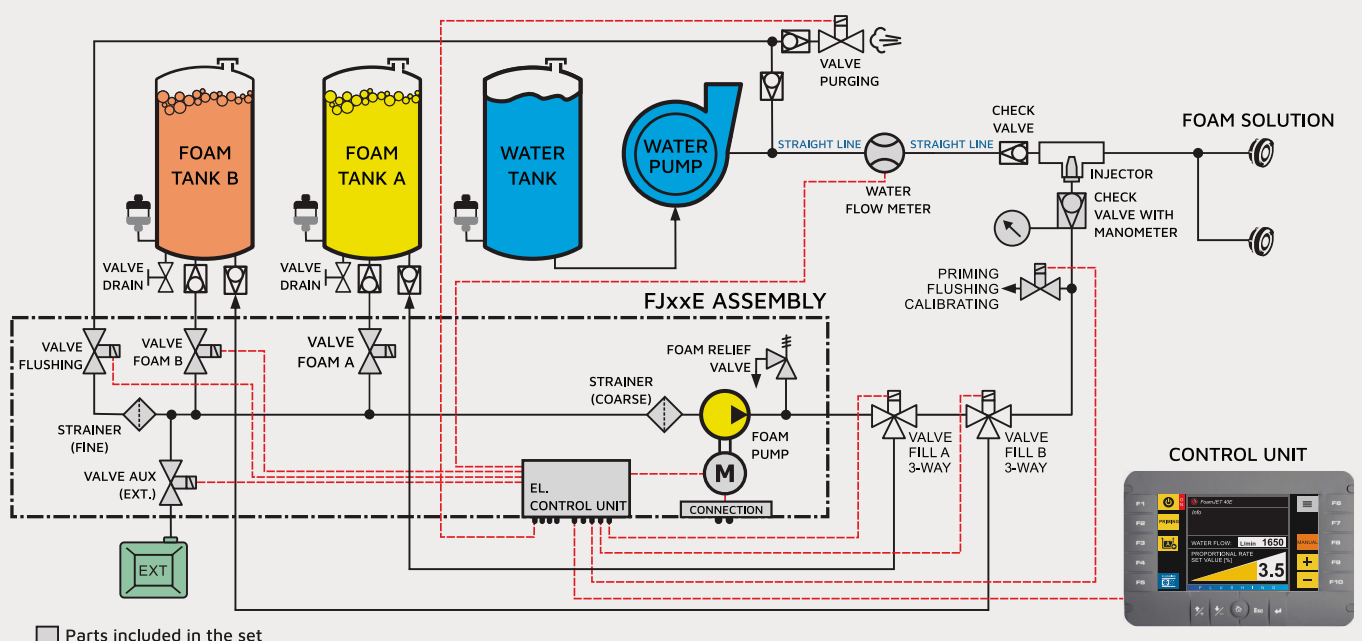
FOAMJET 12E/12EH is positive pressure proportioning system (EN 16327-PPPS) with digital control used to maintain selected constant foam-water proportion regardless of water flow fluctuations.

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

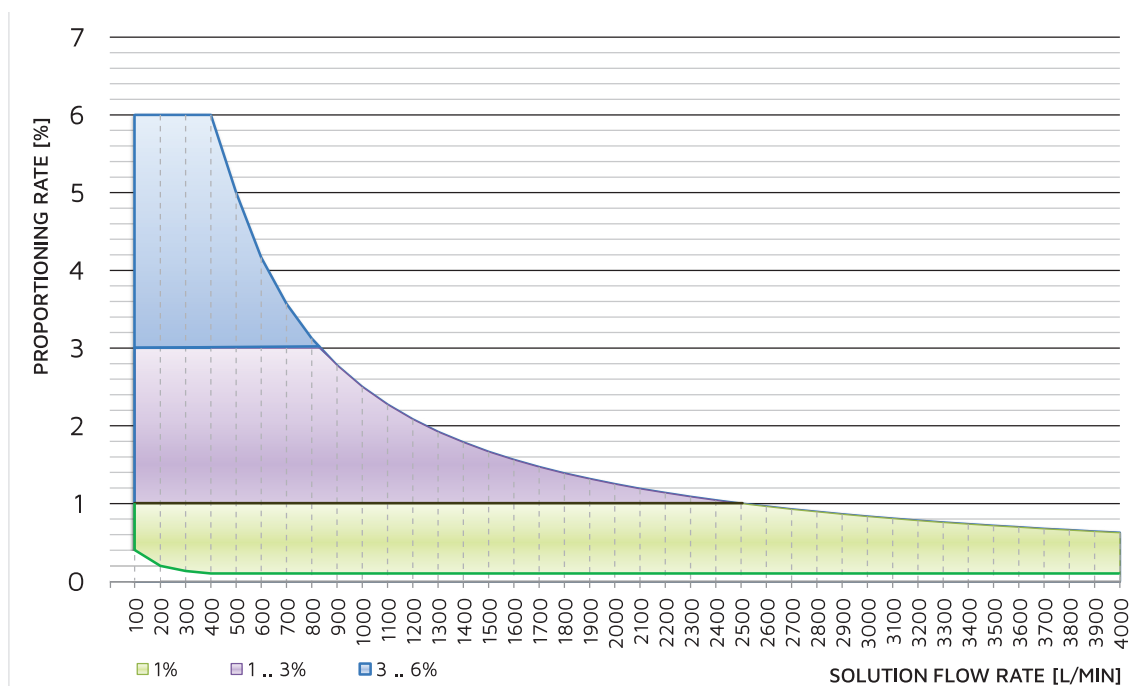
50 bars. In this case safety relief valve and flow meter enclosed are rated for PN50.

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.

PLUMBING DIAGRAM



OPERATING RANGE



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 classification	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+5 soft keys

ENVIRONMENT	
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 AND WEIGHT	
W x H x D [mm]	61 x 36 x 28 cm
Weight	34 kg

ORDERING 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



FEATURES AND BENEFITS

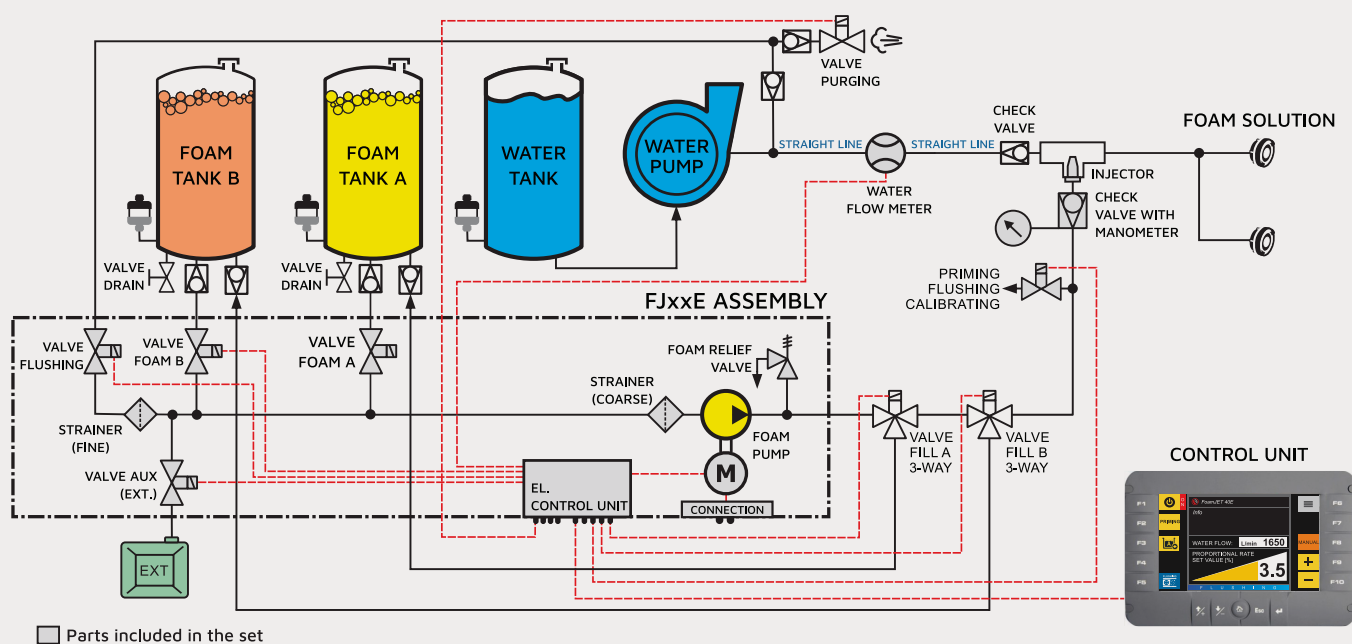
- 1 Automatic foam dosing system in the range of 0.1 % to 8 %
- 2 Precision control with steps of 0.1 %
- 3 Top performance on extremely low injections – from 0.1 LPM
- 4 Large intensive bright 7" LCD for easy readability of process data
- 5 Magnetic-Inductive Flow sensors and BLCD motor
- 6 Injection of foam concentrate at the discharge side of the fire pump

FOAMJET 45E is positive pressure proportioning system (EN 16327-PPPS) with digital control used to maintain selected constant foam-water proportion regardless of water flow fluctuations.

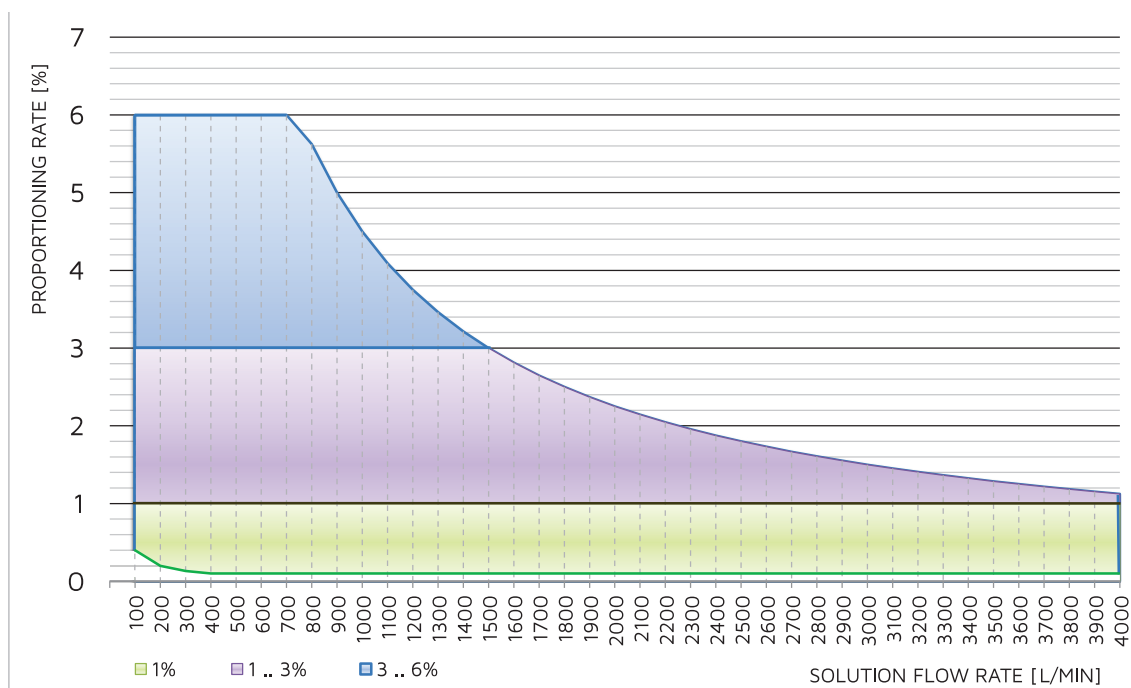
The system accurately delivers foam concentrate from 0.1 % to 8 % through a check valve/injector fitting, directly into the water discharge stream of the fire pump.

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.

PLUMBING DIAGRAM



OPERATING RANGE



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 classification	EN16327-PPPS 2400/0.1-1.9
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+5 soft keys

ENVIRONMENT	
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 AND WEIGHT	
W x H x D [mm]	64 x 49 x 28 cm
Weight	52 kg

ORDERING 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 SUCTION	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	

AROUND-THE-PUMP FOAM PROPORTIONING SYSTEM / DIGIFOAM DF/DFL



OR



FEATURES AND BENEFITS

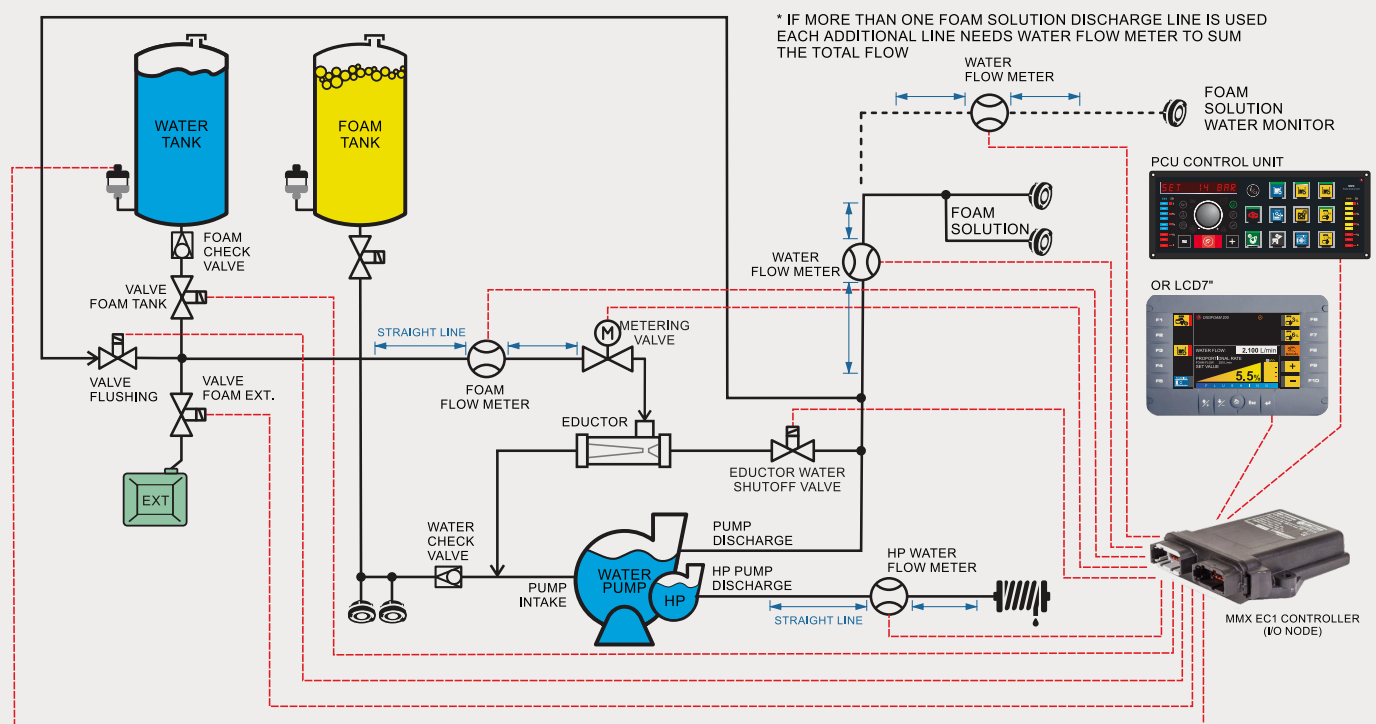
- 1 Automatic ATP foam system in the range of 1 % to 8 %
- 2 Precise control with steps of 0.1 %
- 3 Wide range of eductor capacity, up to 680 L/min
- 4 Compatible with any type of foam concentrate and foam making nozzle
- 5 Manual or automatic operation mode
- 6 LCD 7" or PCU HMI
- 7 Magnetic-inductive flow-meter for maximum life and less maintenance
- 8 Easy operation

Digifoam – Digitally controlled fully automatic Around-The-Pump foam proportioning system is 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%.

The backpressure - water pressure entering the pump should always be almost zero, any back pressure on the ATP proportioner could reduce the foam induction rate.

The system utilizes a brass eductor installed on the discharge side of the fire pump to send a small volume of water back to the suction side of the fire pump. The venturi action of the eductor creates a vacuum at the foam concentrate inlet allowing foam to be pulled through the metering valve, into the water stream.

PLUMBING DIAGRAM



The rich foam solution is discharged back to the suction side of the fire pump and sent through all the discharge piping – allowing foam solution of the required proportion to be available for each discharge outlet.

The DIGIFOAM DF type standardly uses a large 7" TFT LCD unit for overall control of all functions of the system and allows an easy overview of process data, such as water-flow, foam-flow, proportional rate, warning and error messages.

The DIGIFOAM DFL type on the other hand uses a

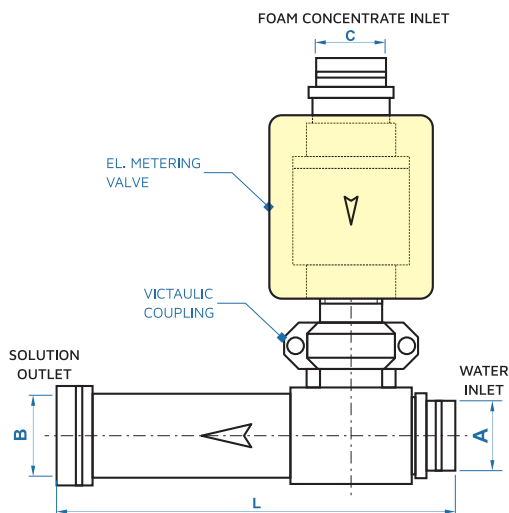
PCU (Pump Control Unit) with an integrated foam management system instead.

Digifoam 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 eductor assembly includes an eductor and a special electric metering valve. The eductor housing and valve are in brass.

DF OPERATING RANGE

DF60		3-60 LPM
DF220		5-220 LPM
DF340		40-340 LPM
DF450		40-450 LPM
DF560		80-560 LPM
DF680		80-680 LPM



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
OPERATING RANGE	
DF60	3 .. 60 L/ min @ 8 .. 17 bar
DF220	5 .. 220 L/ min @ 8 .. 17 bar
DF340	40 .. 340 L/ min @ 8 .. 17 bar
DF450	40 .. 450 L/ min @ 8 .. 17 bar
DF560	80 .. 560 L/ min @ 8 .. 17 bar
DF680	80 .. 680 L/ min @ 8 .. 17 bar

ENVIRONMENT	
Temperature Range	operating from -40°C to +85°C for electronic parts storage from -40 to +85°C
IP Class (IEC529)	MMXEC1 controller: P67 MMXLCD7: IP65 MAGFLOW: IP65 El. metering valve: IP67
EMC	designed to EN 61000-6-2, noise immunity designed to EN 61000-6-4, radiation immunity
DIMENSIONS	
DF60	A:1"VIC., B:1 ½" VIC., C:1" VIC., L:152 mm
DF220	A:1"VIC., B:1 ½" VIC., C:1" VIC., L:152 mm
DF340	A:1 ½" VIC., B:2" VIC., C:2" VIC., L:190.5
DF450	A:1 ½" VIC., B:2" VIC., C:2" VIC., L:190.5
DF560	A:2" VIC., B:3" VIC., C:3" VIC., L:254 mm
DF680	A:2" VIC., B:3" VIC., C:3" VIC., L:254 mm
MISCELLANEOUS	
Connectors	Deutsch DTM and AMP automotive connectors

ORDERING CODE

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

Ordering code example:

D	F	L	2	2	0	W	4	0	F	1	5	H	1
L: LIGHT VERSION (PCU CONTROL)		EDUCTOR TYPE		WATER FLOW METER DIMENSION-INCH:		FOAM FLOW METER DIMENSION-INCH:		FOAM HP FLOW METER DIMENSION-INCH:					
		60: .. 60LPM		15: DN40 = 1.5"		05: DN15 = 1/2"							
		220: .. 220 LPM		20: DN50 = 2.0"		07: DN20 = 3/4"							
		340: .. 340 LPM		25: DN65 = 2.5"		10: DN25 = 1.0"							
		450: .. 450 LPM		30: DN80 = 3.0"		15: DN40 = 1.5"							
		560: .. 560 LPM		40: DN100 = 4.0"		20: DN50 = 2.0"							
		680: .. 680 LPM		60: DN150 = 6.0"		25: DN65 = 2.5"							
		000: .. WITHOUT EDUCTOR				30: DN80 = 3.0"							

DIGITAL BALANCE PRESSURE FOAM PROPORTIONING SYSTEM / FOAMJET xxxT SERIES



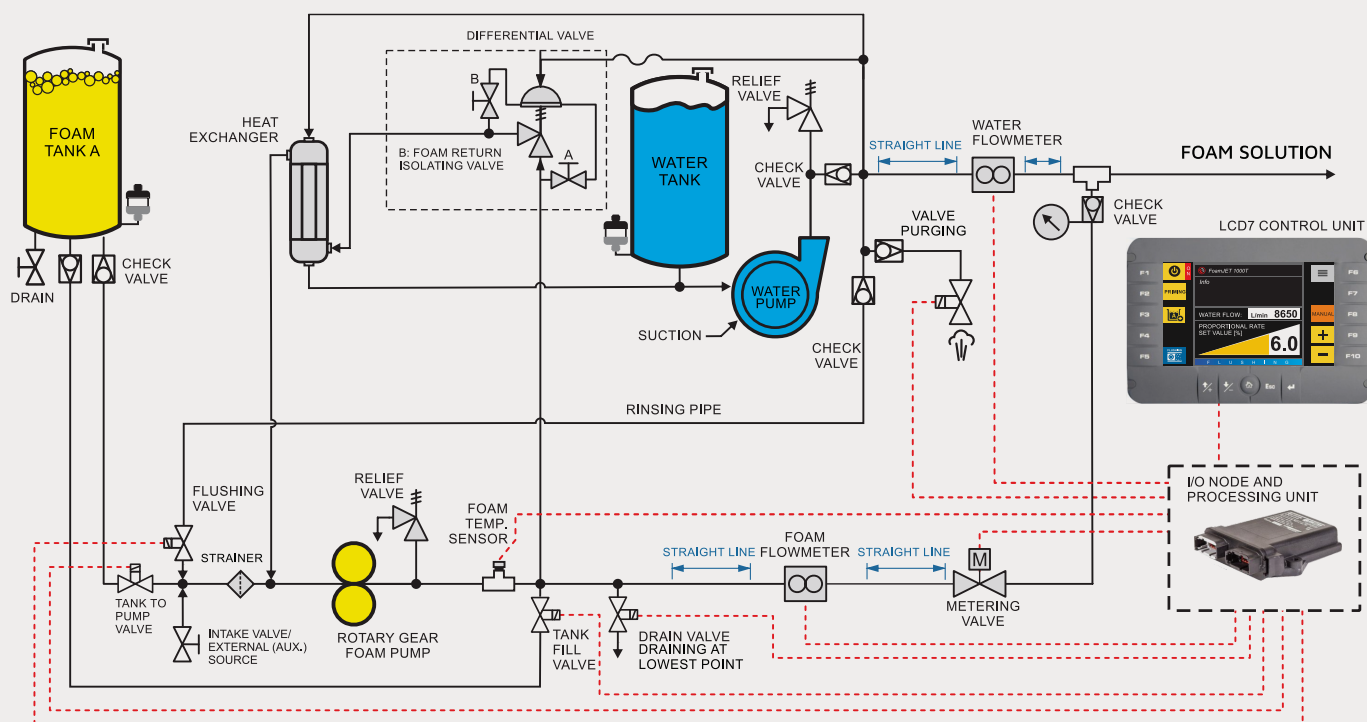
FEATURES AND BENEFITS

- 1 Automatic BP foam dosing system in the range of 1 % to 8 %
- 2 Precise control with steps of 0.1 %
- 3 Wide range of system capacity, up to 1800 L/min
- 4 High Performance, Self-priming Rotary Gear Foam Pump with Timing Gear
- 5 The max. dynamic viscosity of foam concentrates 5300 cP
- 6 Magnetic-inductive flow meter for long-lasting low-maintenance operation
- 7 Manual or automatic operation mode
- 8 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.

PLUMBING DIAGRAM



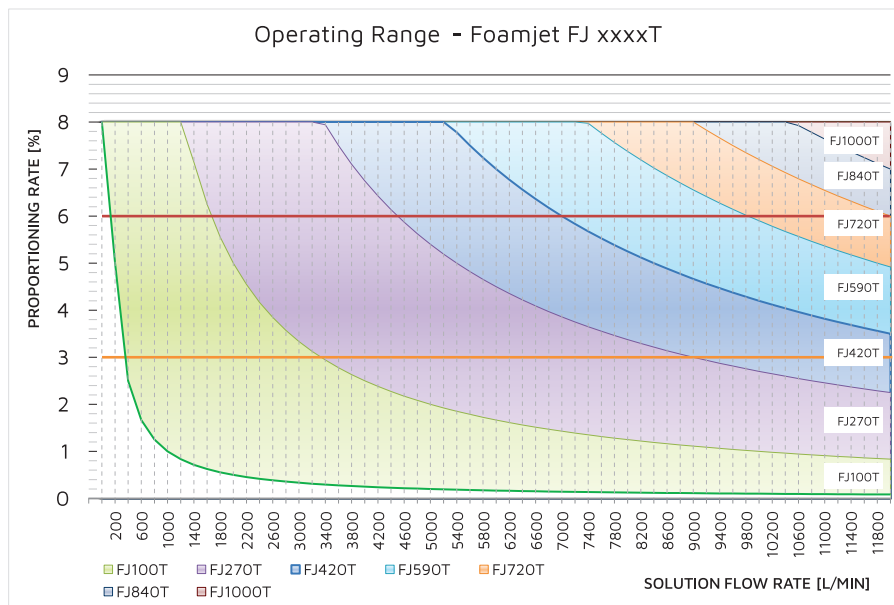
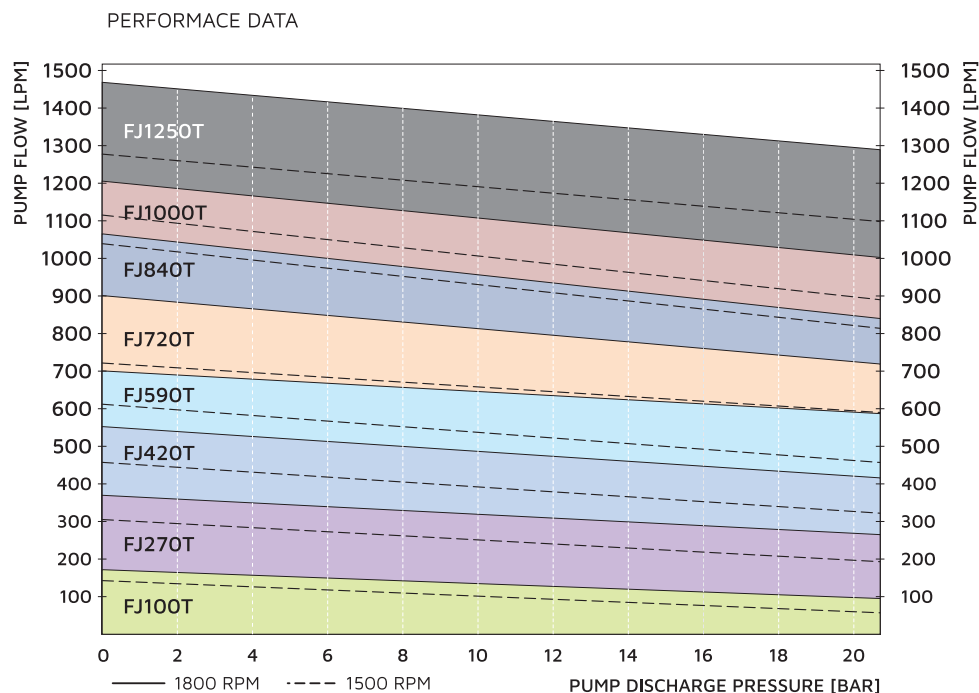
The system uses a High-Performance Rotary Gear Foam Pump with brass housing, bronze alloy rotors, oversized roller bearings - sealed for life, timing gear which allows dry-running without damage (no rotor contacts) and other high-quality industrial components. The pump is self-priming and can pump water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

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.

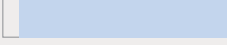
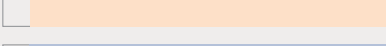
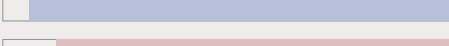
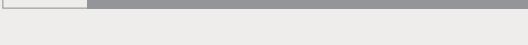
The unit standardly uses a large 7" TFT LCD unit for easy overview and control over all functions of the system.

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.

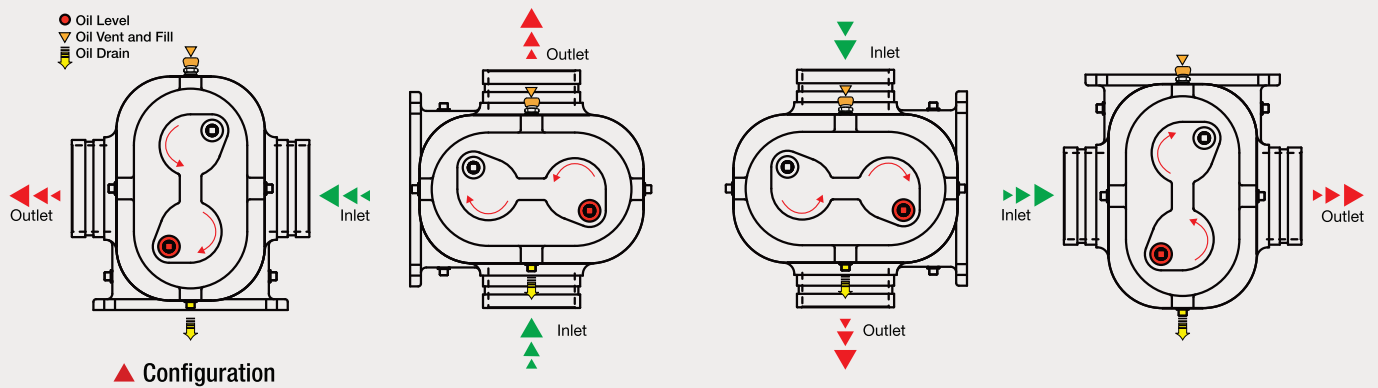


FJ delivering range at 1800 RPM

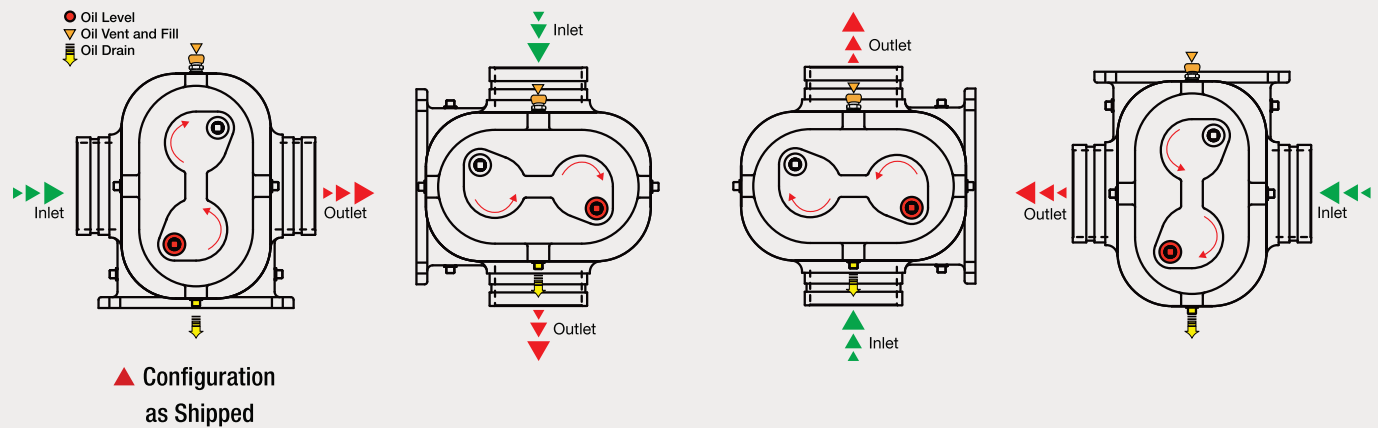
FJ100T		20-100 LPM
FJ270T		20-270 LPM
FJ420T		30-420 LPM
FJ590T		30-590 LPM
FJ720T		50-590 LPM
FJ840T		50-840 LPM
FJ1000T		100-1000 LPM
FJ1250T		200-1250 LPM

Foam pump can be mounted in any of the positions shown

Standard Flow Direction



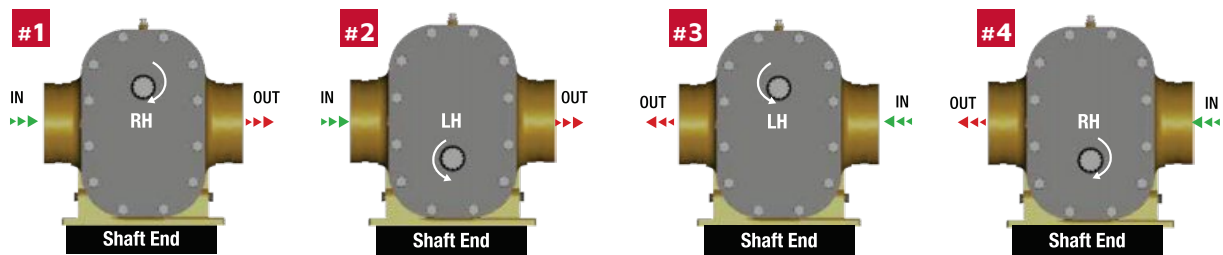
Reverse Flow Direction



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



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+5 soft keys
ENVIRONMENT	
Temperature Range for electronic parts	operating from -40°C to +70°C storage from -40 to +70°C
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

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/m ³ 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

ORDERING 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



FEATURES AND BENEFITS

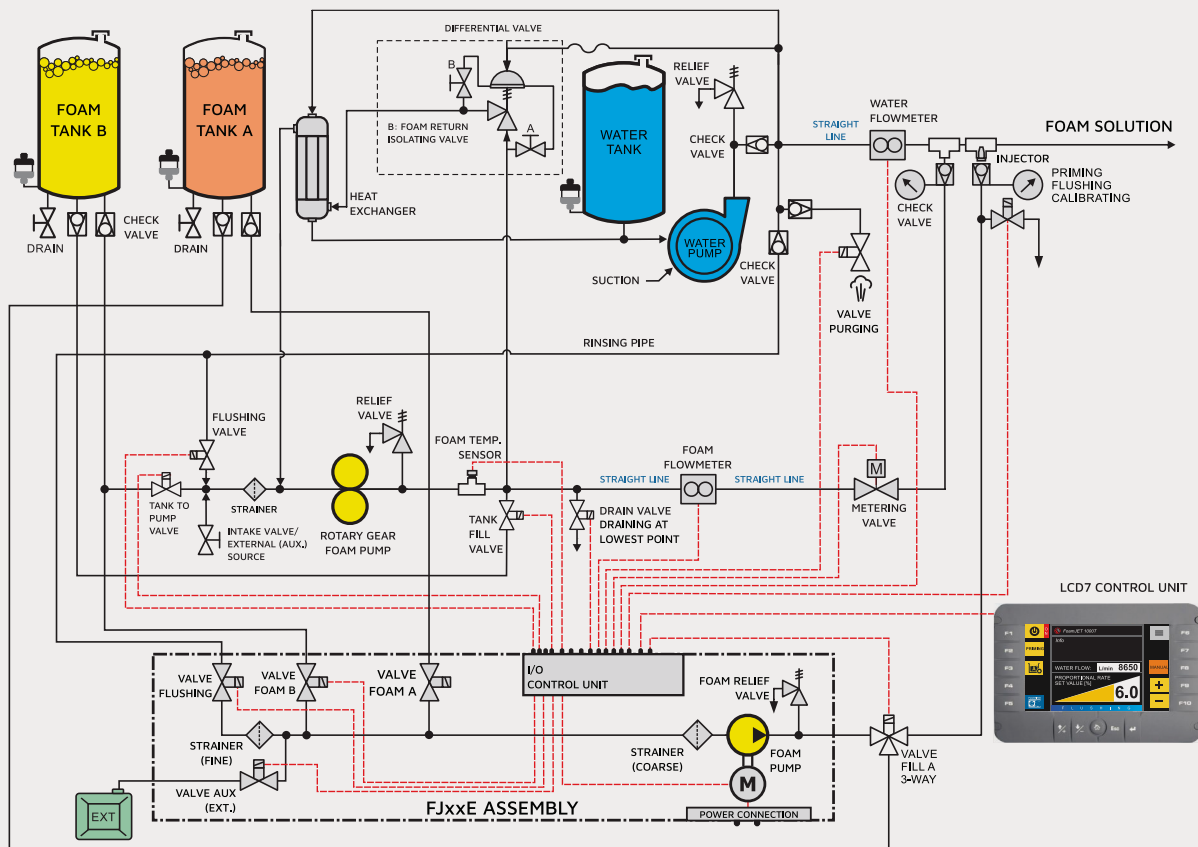
- 1 Combining High-Performance Rotary Gear Foam Pump and Electrically Driven Plunger Pump
- 2 Top performance on extremely low injections – from 0.1 LPM
- 3 Automatic foam dosing system in the range of 0.1 % to 8 %
- 4 Precise control with steps of 0.1 %
- 5 Wide range of system capacity combination
- 6 Manual or automatic operation mode
- 7 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

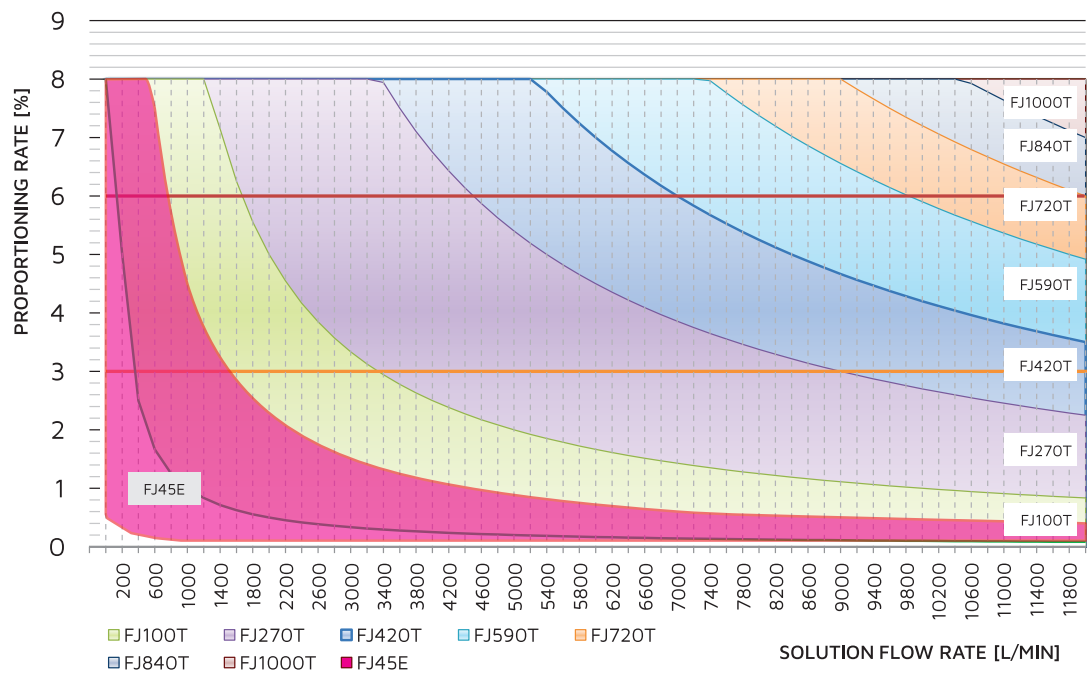
chosen foam pump). Both units use a common 7" LCD control panel.

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.

PLUMBING DIAGRAM



OPERATING RANGE



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.

FJ TWIN delivering range at 1800 RPM

FJ100T		0.1-100 LPM
FJ270T		0.1-270 LPM
FJ420T		0.1-420 LPM
FJ590T		0.1-590 LPM
FJ720T		0.1-590 LPM
FJ840T		0.1-840 LPM
FJ1000T		0.1-45 & 100-1000 LPM
FJ1250T		0.1-45 & 200-1250 LPM

ORDERING 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							ELECTRICAL PLUNGER PUMP TYPE			

NOTES

[illegible]

NOTES

[illegible]



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