

VFD INDUSTRIAL MULTI USER SYSTEMS



E2S1225EAVFD3-460W w/2 VFD Drives Cascaded
2X12gpm@2500psi w/Dual VFD drives



ES1618ASVFD3 – 16gpm at 1800 psig
With CAT pump & Vertical Mount

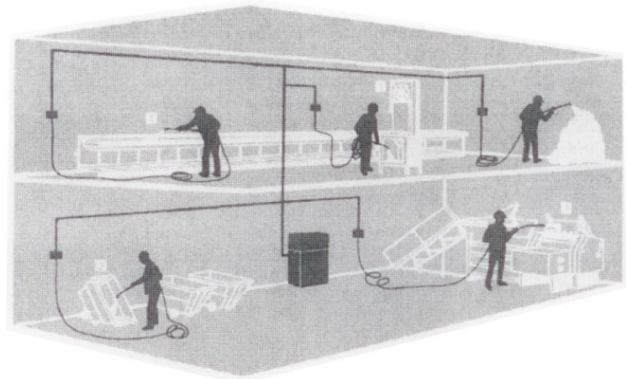


ES1220EAVFD3 –12 gpm at 2000 psig
with VFD drive & optional PCO100gal tank

A PSC VFD Cleaning System provides the versatility and reliability demanded for today’s toughest cleaning applications. Designed for multi-user environments, a VFD-series system can be built to meet specific design and performance requirements, ensuring maximum productivity and cost-effective cleaning time and again!

VFD savings and benefits:

- VFD's mitigate peak demand penalties for **ENERGY SAVINGS**
VFDs are the best way to mitigate demand penalties in your electric bill. VFD's control the inrush current peaks 80% better than cross the line motor starters and 50% better than soft start motor starters.
- VFD's reduce wear, tear and repair resulting in **REDUCED MAINTENANCE**
- Starting a motor using an across the line starter increases stress on the mechanical system. Belts slip and squeal, chains jump, and high pressures develop in pipes. VFD motor control inherently offers soft starts and soft stops which reduce mechanical stress on systems **RESULTING IN EXTENDED PUMP, MOTOR AND SYSTEMS COMPONENTS LIFE.**
- VFDs usually qualify for government and/or utility incentives and rebates for **OVERALL OPERATIONAL SAVINGS**



FUNCTIONAL DESIGN:

- Real-time system monitoring and control (wash station duty cycle/activity, low inlet water supply and system pressure loss shutdown, and high water temperature shutdown)
- Compact and versatile design allows for installation in virtually any location/environment
- Systems designed/built to application requirements - provides for increased productivity
- Optional water quality (total displaced solids) and temperature monitoring available
- VFD increases or decreases pump/motor speed to meet the demands of single and or multiple users

The VFD display makes is simple to trouble shoot. The VFD display shows various input signals which can be used to visually display and indicate system faults. The system will only utilize the power (speed of motor and pump) to match the output demands. For example: A 12 gpm system, set up for 3 users at 4 gpm each. If there is only one user on the system outputting 4 gpm, the motor/pump will only turn at 1/3” speed to meet that demand. The VFD system shows a savings in energy costs to run the system, it only uses what it needs. On system start-ups, a VFD controlled system slowly ramps up speed to the minimal required rpm to meet the initial demand. This eliminates the huge inductive amperage load a system with standard controls requires when starting. A VFD system does not require the use of motor contactors, overloads, and fusing.

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MODEL PERFORMANCE/DESIGN DATA for 60hz (Avail from 12gpm-200gpm/ 750psi-7000psi, 208v-575v/ 50hz or 60hz)								
MODEL NO.	Flow GPM	Pressure PSIG	Motor H.P.	Voltage		Full Load Amps		Dimensions L" x W" x H"
				~1 PHASE	~3 PHASE	~1 PHASE	~3 PHASE	
ES1210EAVFD	12	1000	10	208/230	208/230/575/480	44	29/25/10/12.5	30/20/16
ES1215EAVFD	12	1500	15	--	208/230/575/480	--	46/42/17/21	38/28/19
ES1218EAVFD	12	1800	20	--	208/230/575/480	--	59/54/22/27	38/28/19
ES1220EAVFD	12	2000	20	--	208/230/575/480	--	59/54/22/27	38/28/19
ES1410EAVFD	14	1000	15	--	208/230/575/480	--	46/42/17/21	38/28/19
ES1415EAVFD	14	1500	20	--	208/230/575/480	--	59/54/22/27	38/28/19
ES1420EAVFD	14	2000	25	--	208/230/575/480	--	74/68/27/34	48/38/36
ES1430EAVFD	14	2800	30	--	208/230/575/480	--	88/80/32/40	48/38/36
ES1615EAVFD	16	1500	20	--	208/230/575/480	--	59/54/22/27	38/28/19
ES1620EAVFD	16	1800	25	--	208/230/575/480	--	74/68/27/34	48/38/36
ES2012EAVFD	20	1200	20	--	208/230/575/480	--	59/54/22/27	38/28/19
ES2015EAVFD	20	1500	25	--	208/230/575/480	--	74/68/27/34	48/38/36
ES2020EAVFD	20	1800	30	--	208/230/575/480	--	88/80/32/40	48/38/36
ES2520EAVFD	25	2000	40	--	208/230/575/480	--	114/104/41/52	54/42/42

STANDARD FEATURES INCLUDE:

Pump: Positive displacement Belt-driven ceramic plunger pump
Motor: Premium-efficiency, inverter-duty motor (IP55, Class B temp. rise, Class F insulation, 40° C ambient temp. design)

Pump base/frame is Heavy duty welded carbon steel construction with Mounting feet and Powder coat paint

Controls and Plumbing

- **Automatic start/stop pump control**
- **Automatic high temperature system shut down** (automatically shuts system down if inlet water temperature reaches 145°F)
- **Automatic low water supply system shut down and automatic reset** (float switch in water supply tank)
- **Automatic low pressure output system shut down**
- Pressure regulator/ with over-sized bypass hose (used as overpressure relief valve)
- Discharge pressure gauge

Testing and inspection:

- System will be fully tested and inspected an PSC
- Factory set VFD parameters to ensure simple on-site installation and start-up
- Component and wiring tests (ensure all fittings and wires are secure)

VFD : C-UL-US approved VFD (specify Nema1 or Nema4X prices vary)

- drive to control high pressure pump with 10' of electrical cable to allow the VFD to be wall mounted.
- **Functionality:** the drive will control the pump to maintain a constant pressure setpoint.
- Pump protective devices (high temp, low water etc.) connected directly into the drive to stop the pump and send out an alarm.
- The pressure transmitter analog output (4 – 20 mA) would be connected directly to the drive, the drive will run the pump through a closed loop "PI" to maintain set pressure.
- The drive has a "Sleep Mode" feature.
- If the pressure stays at setpoint the drive will reduce the motor speed until it gets to a preselected frequency (Sleep Frequency), when at that frequency the drive will shut down the motor but will continue to monitor the pressure.
- When the pressure drops the drive will calculate the frequency the motor should be running at and at a preset frequency (Wake up Frequency) the drive will start the motor and ramp it up to speed to get to pressure set point.

Additional accessories and options:

- 6' x 1" steel braid, high pressure jumper hose
- Discharge pressure gauge
- Pumping system mounted on a heavy duty base with vibration isolation pads, belt guard

COMMON FACTORY OPTIONS:

PCO	PCO TANK (50GAL TO 500GAL)
SLG	SINGLE LANCE/GUN ASSEMBLY
HOSES	High Pressure hoses, Any length, black, yellow non-marking/ food grade/ double braided
REELS	HOSE REELS / spring rewind/ manual rewind/ portable cart for mounting/ wall mount kits
HEATER	All ELECTRIC heat exchanger (Dual coil 24Kw to 144kw)/ OR GAS/PROPANE fired heaters
SA	Nitrogen charged pump pulsation surge arrestor
CLS	Cleaning Station assembly with high-pressure shutoff valve and hose quick connect
CS-1	Chemical Injection Station with adjustable chemical injector, wash/rinse control valve and swivel connection
CS1-SSB	Chemical injection Station (as above) housed in lockable stainless steel panel box
PUMP	PUMP Upgrade (Hi temperature, Stainless Steel, CAT)
CUSTOM	Custom designed systems up to 200 gpm and up to 7000 psi available/Multi pump/ Multi VFD cascade systems avail.