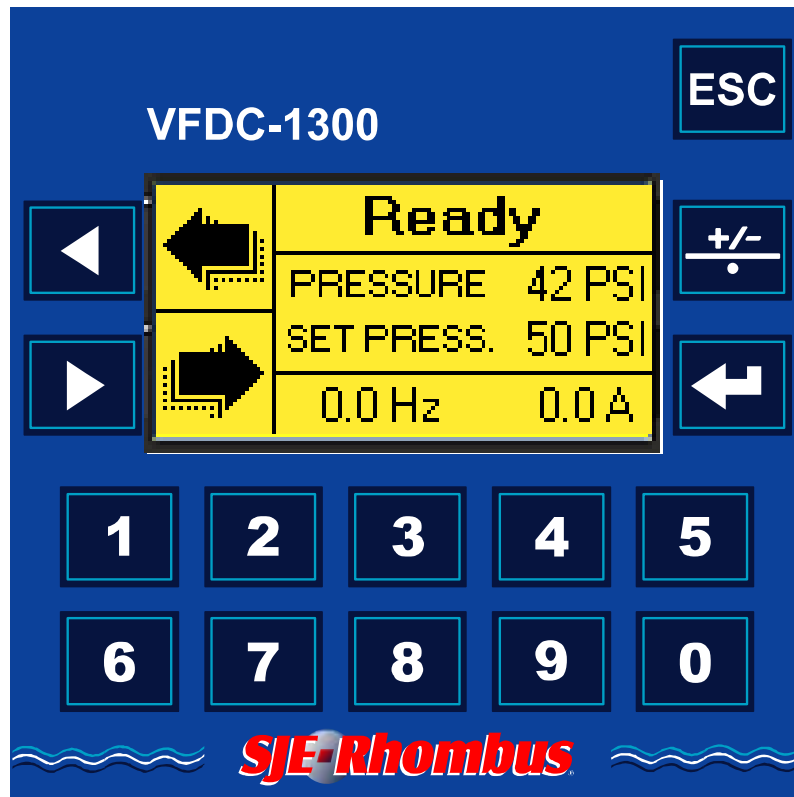


VFDC-1300 Controller

Variable Frequency Drive Controller
User Manual – (Simplex)







This manual explains the features and operations of the VFDC-1300 controller which is specifically designed for pressure control applications using a pump and a variable frequency drive.



www.sjerhombus.com

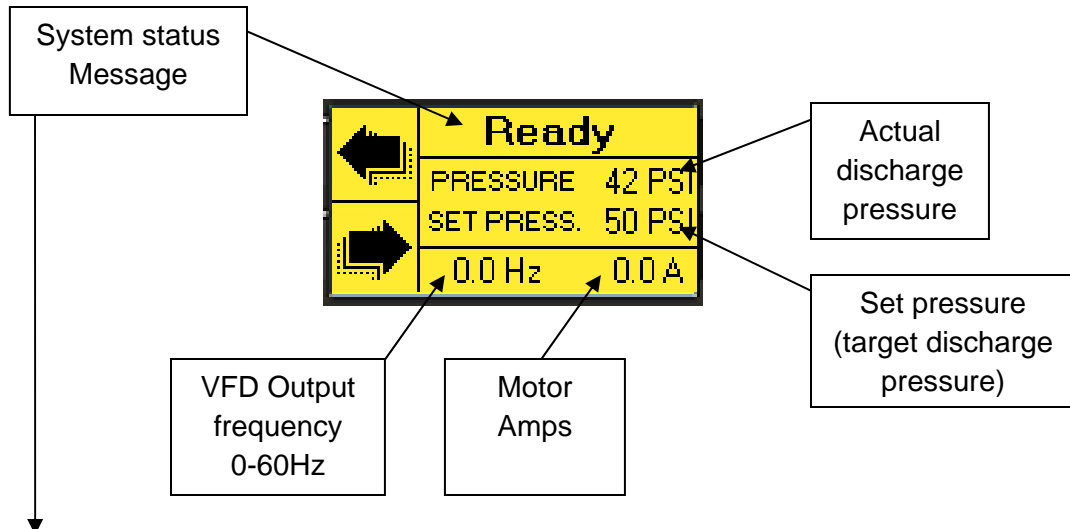
WARNINGS

Failure to read and understand the information provided in this manual may result in personal injury or death, damage to the product or product failure. Please read each section in its entirety and be sure you understand the information provided in the section and related sections before attempting any of the procedures or operations given.

<p>Failure to follow these precautions could result in serious injury or death. Keep these instructions with warranty after installation. This product must be installed in accordance with National Electrical Code, ANSI/NFPA 70 so as to prevent moisture from entering or accumulating within the controller housing.</p>	
 WARNING	ELECTRICAL SHOCK HAZARD Disconnect power before installing or servicing this product. A qualified service person must install and service this product according to applicable electrical codes and electrical schematics.
	<ul style="list-style-type: none">• Do not install in area with: excessive or conductive dust, corrosive or flammable gas, moisture or rain, excessive heat, regular impact shocks or excessive vibration.• Do not place in water or let water leak onto the controller.• Do not allow debris to fall inside the unit during installation.• Double-check all the wiring before turning on the power supply.• Do not touch live wires.• Stay as far as possible from high-voltage cables and power equipment.• Leave a minimum of 10 mm space for ventilation between the top and bottom edges of the controller and enclosure walls.
 WARNING	EXPLOSION OR FIRE HAZARD Do not use this product with flammable liquids. Do not install in hazardous locations as defined by National Electrical Code, ANSI/NFPA 70.
	

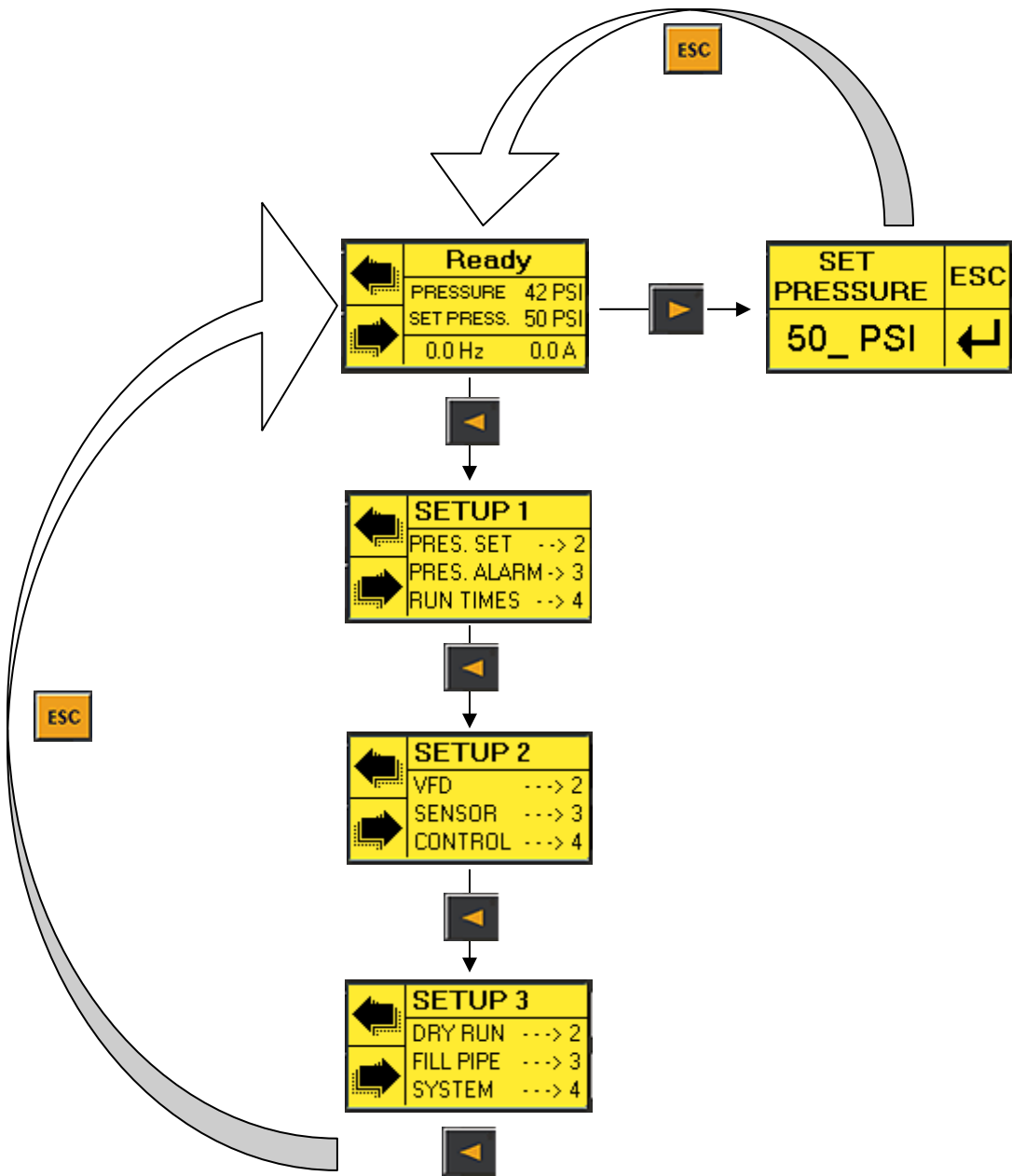
For assistance call SJE-Rhombus 800-746-6287
(Engineered Custom Panel Department)

Main Screen display

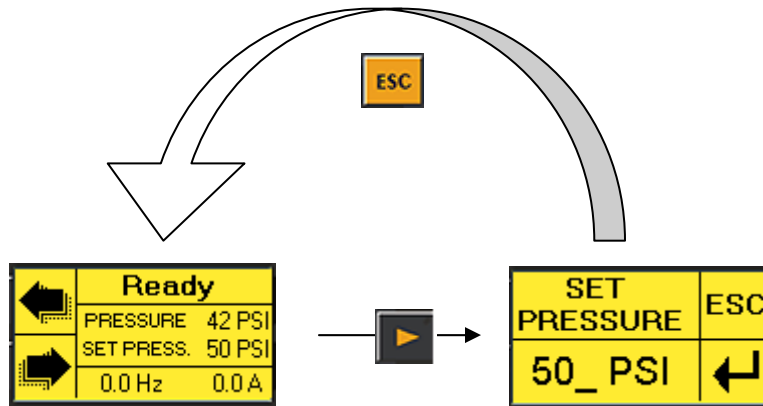




Messages	Description
Ready	The system is ready, no faults are present. The Selector switch is the OFF position
Auto	The system is ready for operation. The Selector switch is the AUTO position
Auto Run	The Selector switch is the AUTO position and the pump is running
Manual Run	The Selector switch is the MAN position and the pump is running
Low Pressure	The Selector switch is the AUTO position and the pressure has dropped below the “ LOW PRESSURE ” alarm setting for longer than the “ LOW PRE. TIMER ” alarm timer (p. 6). Place the selector switch in OFF to RESET the fault.
High Press.	The Selector switch is the AUTO position and the pressure has risen above the “ HIGH PRESSURE ” alarm setting (p. 6). This fault RESETs automatically when the pressure drops below the alarm level.
Low Water	The Selector switch is the AUTO position and the low suction pressure switch (optional) in closed (controller digital input 9). Place the selector switch in OFF to RESET the fault.
VFD Fault	The VFD has faulted. Place the selector switch in the OFF position and pressure the “ VFD RESET ” button to clear the fault.
Sensor Fault	The pressure transducer has failed or is not connected properly or the cable is broken.
DRY RUN COND.	The pump is pulling less Amps at 60Hz than the “ DRY RUN AMPS ” setting for longer than the “ DRY RUN TIMER ”. Place the selector switch in OFF to RESET the fault or set the “ RESET TMR ” to a value other than zero for automatic reset.
COMM. FLT	The communication between the VFDC-1300 controller and the VFD has faulted. Please check that the communication cable firmly plugged in the controller and VFD. Call the factory for assistance.

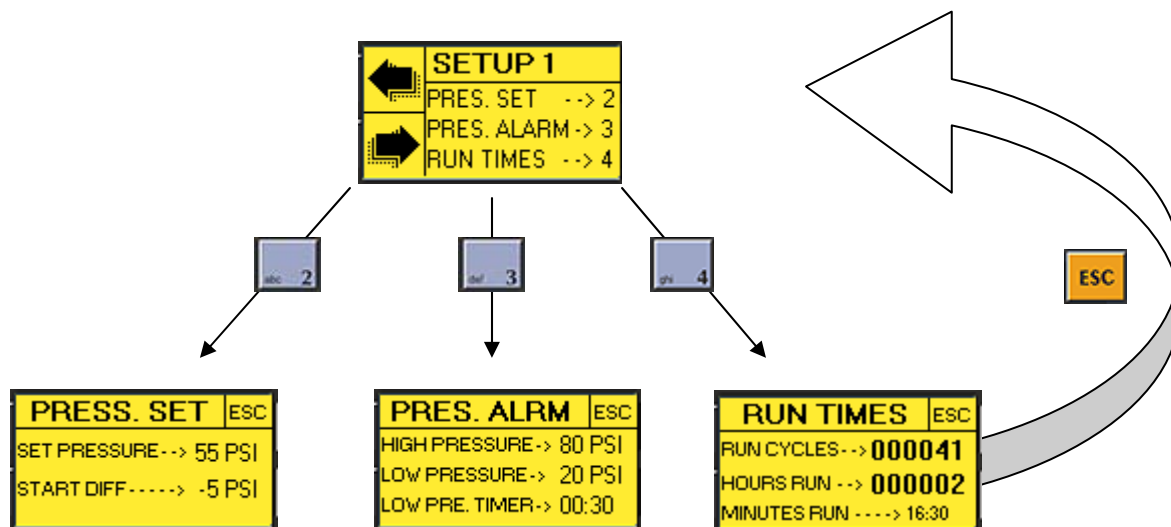
Navigating through the various screens



Changing the Set Pressure (Quick set)



From the Main screen, press the  button to access the “SET PRESSURE” screen. Using the numerical keypad, enter the target discharge pressure you wish to maintain and press  to store the new value.

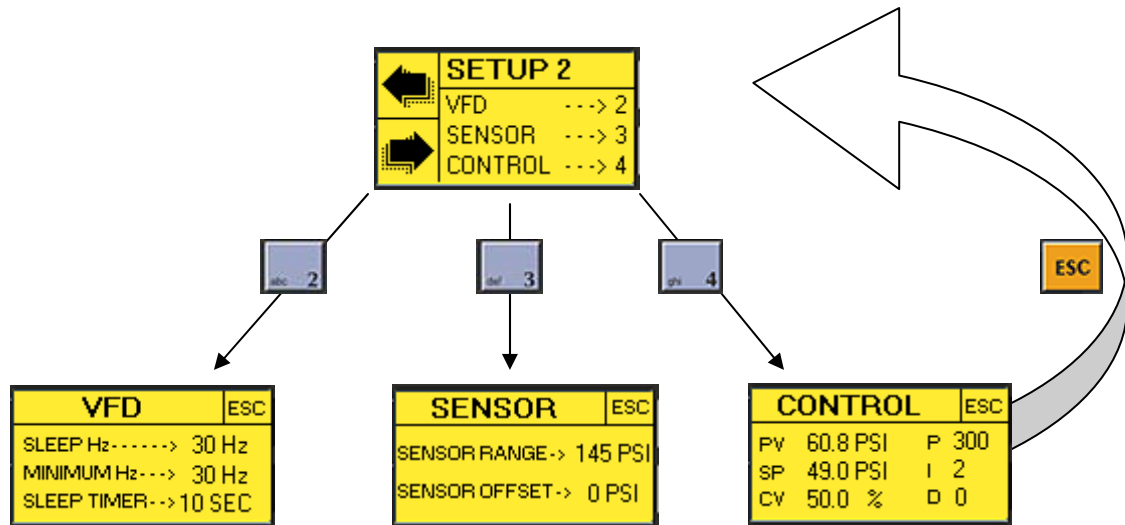


PRESS. SET	Description	Range	Default value
SET PRESSURE	Discharge pressure you wish to maintain (target pressure). It is the same value as in 'Quick set" on page 5	0-SENSOR range	55 PSI
START DIFF (-)	This is the pressure drop from the set point before starting the pump. If SET PRESSURE = 55 and START DIFF = -5 , the pump will start when the pressure drops below 50PSI	-99.9 to 0	-5.0 PSI

PRESS. ALRM	Description	Range	Default value
HIGH PRESSURE	High pressure alarm setting. The pump will shut off when the discharge pressure exceeds this value. The alarm is automatically reset when the pressure returns to normal.	0-SENSOR range	80 PSI
LOW PRESSURE	Low pressure alarm setting. The pump will shut off when the discharge pressure is lower than this value and the LOW PRE. TIMER is done. The alarm will NOT automatically reset when the pressure returns to normal. Manual RESET is required.	0-SENSOR range	20 PSI
LOW PRE. TIMER	Low pressure timer as describe above. (MM:SS)	59:59	00:30 secs

RUN TIMES	Description	Range	Default value
RUN CYCLES	Accumulated cycle run commands.	0-999999	Read only
HOURS RUN	Accumulated hours of run time of the pump.	0-999999	Read only
MINUTES RUN	Accumulated minutes and seconds run time.	00:00-59:59	Read only

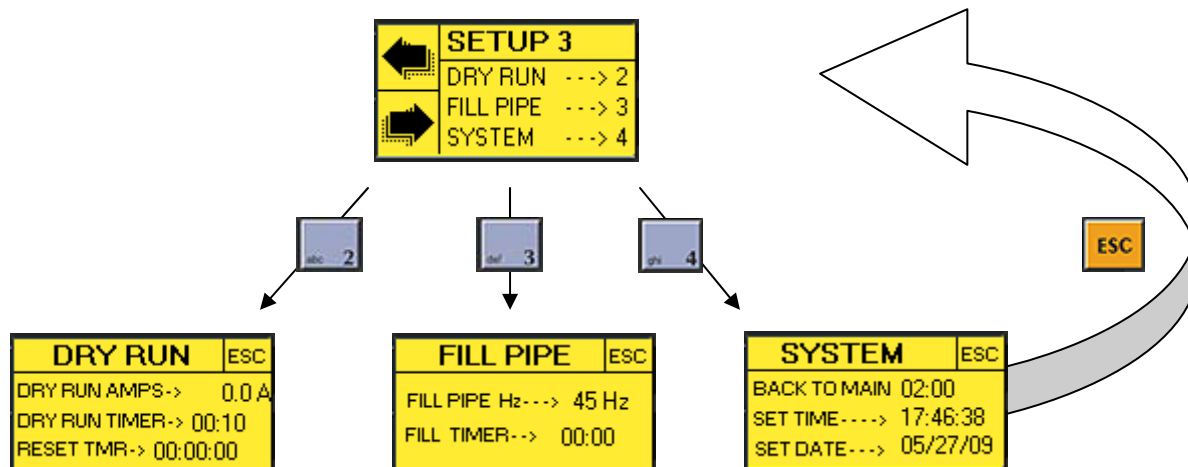
To reset the counter and timers, press and hold the "8" button for 5 seconds. You must be on the 'RUN TIMES" screen for the reset to operate.



VFD	Description	Range	Default value
SLEEP Hz	If The VFD output frequency drops below the “SLEEP Hz” for longer than the “SLEEP TIMER” the VFD will shut down the pump and enter a sleep mode. The pump will automatically re-start when the pressure drops below the “SET PRESSURE – START DIFF”	0-60Hz	35Hz
MINIMUM Hz	This the minimum frequency at which the pump is allowed to run. Consult the pump and motor manufacturer if you wish to operated below 30Hz	0-55Hz	30Hz
SLEEP TIMER	This timer starts when the frequency drops below the “SLEEP Hz” level. VFD will shut down the pump and enter a sleep mode when the timer is done.	0-999 sec	10Sec

SENSOR	Description	Range	Default value
SENSOR RANGE	The pressure transmitter range. If a 0-200PSI transducer is used, then 200 must be entered. Always confirm that the pressure reading on the controller matches the pressure reading on your gauge.	0-500	50 PSI
SENSOR OFFSET	Small adjustments can be made to the pressure reading by adding or subtracting (-) a small value.	(-10) - 10	0 PSI

CONTROL	Description	Range	Default value
P	Proportional band. (Advance users only)	0-999	300
I	Integral time. (Advance users only)	0-999	2
D	Derivative. (Advance users only)	0-10	8



DRY RUN	Description	Range	Default value
DRY RUN AMPS	The value is used to detect abnormally low Amps level at 60Hz indicative of dry run conditions or broken shaft condition. You need to record the Amps when the pump is running at 60Hz during normal operating conditions and multiply by 0.75 to obtain the "DRY RUN AMPS" value. The pump will shut down if the Amps drop below this value for longer than "DRY RUN TIMER". Place the selector switch in OFF to reset the fault or set the "RESET TMR" to a value other than zero for automatic reset. This function is disabled if set to 0.0A	0.0A = disabled 0.1A to 999.9A	0.0A
DRY RUN TIMER	Time delay before stopping the pump on "DRY RUN COND". (MM:SS)	00:00 59:59	00:10
RESET TIMER	It is possible to have the controller automatically reset the "DRY RUN COND" alarm condition. If this timer is not set to 0, the alarm will be reset when the timer is done. (HH:MM:SS)	00:00:00 = disabled 23:59:59	00:00:00

FILL PIPE	Description	Range	Default value
FILL PIPE Hz	This function is used for filling a pipe at a lower speed to reduce water hammer. The pump will run at a fixed frequency "FILL PIPE Hz" till the "FILL TIMER" is done or the pressure reaches the "SET PRESSURE".	Min Freq - 60Hz	40Hz
FILL TIMER	Low pressure alarm setting. The pump will shut off when the discharge pressure is lower than this value and the LOW PRE. TIMER is done. This function is disabled if set to 00:00. (MM:SS)	00:00 = disabled 59:59	00:00

SYSTEM	Description	Range	Default value
BACK TO MAIN	Time delay before automatically returning to the main screen. (MM:SS)	02:00	N/A
SET TIME	Set time of day (HH:MM:SS)	HH:MM:SS	N/A
SET DATE	Set date (MM:DD:YY)	MM:DD:YY	N/A