

Constant Pressure Controller for Submersible Well Pumps



SubCon[®]

Variable Frequency Drive



SJE-Rhombus

www.sjerrhombus.com

SubCon[®] VFD DRIVE

The **SubCon[®] controller** provides a state-of-the-art solution for **water well** applications. The water pressure is monitored continuously and the **SubCon[®] variable frequency drive** will automatically adjust the pump speed to **maintain a constant discharge pressure**.

- **Uses a 0-145 PSI pressure transducer for continuous pressure monitoring and control.**
- **The set pressure is easily adjusted via the keypad, no tools required.**
- **Alpha-numerical display:**
 - Displays current pressure in PSI
 - Target pressure setting
 - Pump speed in Hz
 - Pump Amps
 - Pump run time
- **Advanced protection features:**
 - Adjustable electronic motor overload protection
 - Under voltage
 - Over temperature
 - Low discharge pressure alarm
 - High discharge pressure alarm
 - Pressure transducer fault (open/short)

- **Dry Well Protection**

The drive can be set up to stop on low pressure and fault, or automatically re-start after a programmable set time without generating a fault.

- **Programmable Start Pressure Differential**

The pressure differential between the **set pressure** and the **start pressure** features can significantly reduce pump cycling resulting in **energy savings** and **longer pump life**.

- **Digital Input**

A digital input is available in the **SubCon[®]** for monitoring a potential free contact. A pressure switch or float switch could be used to stop the drive's operation.


- **Relay Output**

1 relay output is available for pump run status or alarm status.

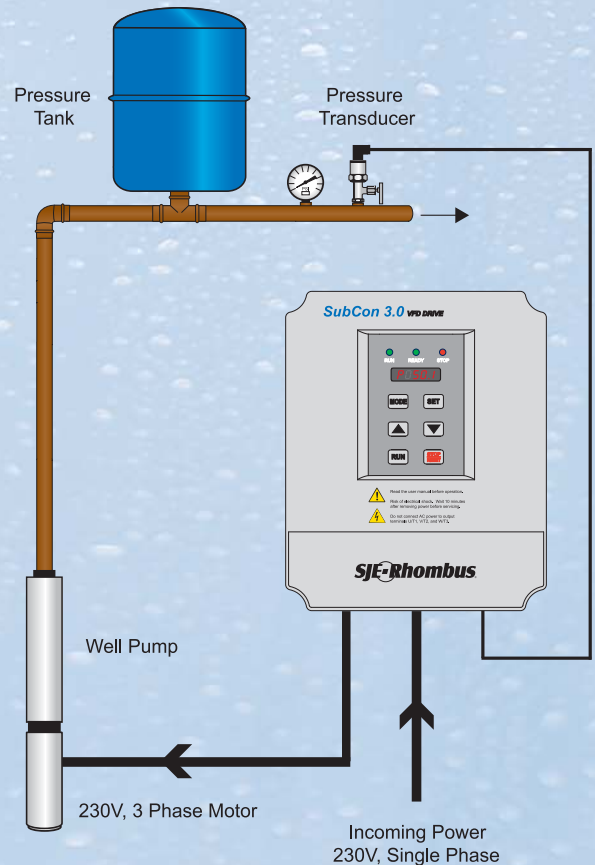
- **Error Log**

The **SubCon[®]** will record the last 20 error codes into memory.

- **Three-Year Limited Warranty**

- **UL/cUL Listed** 

Simplex Operation

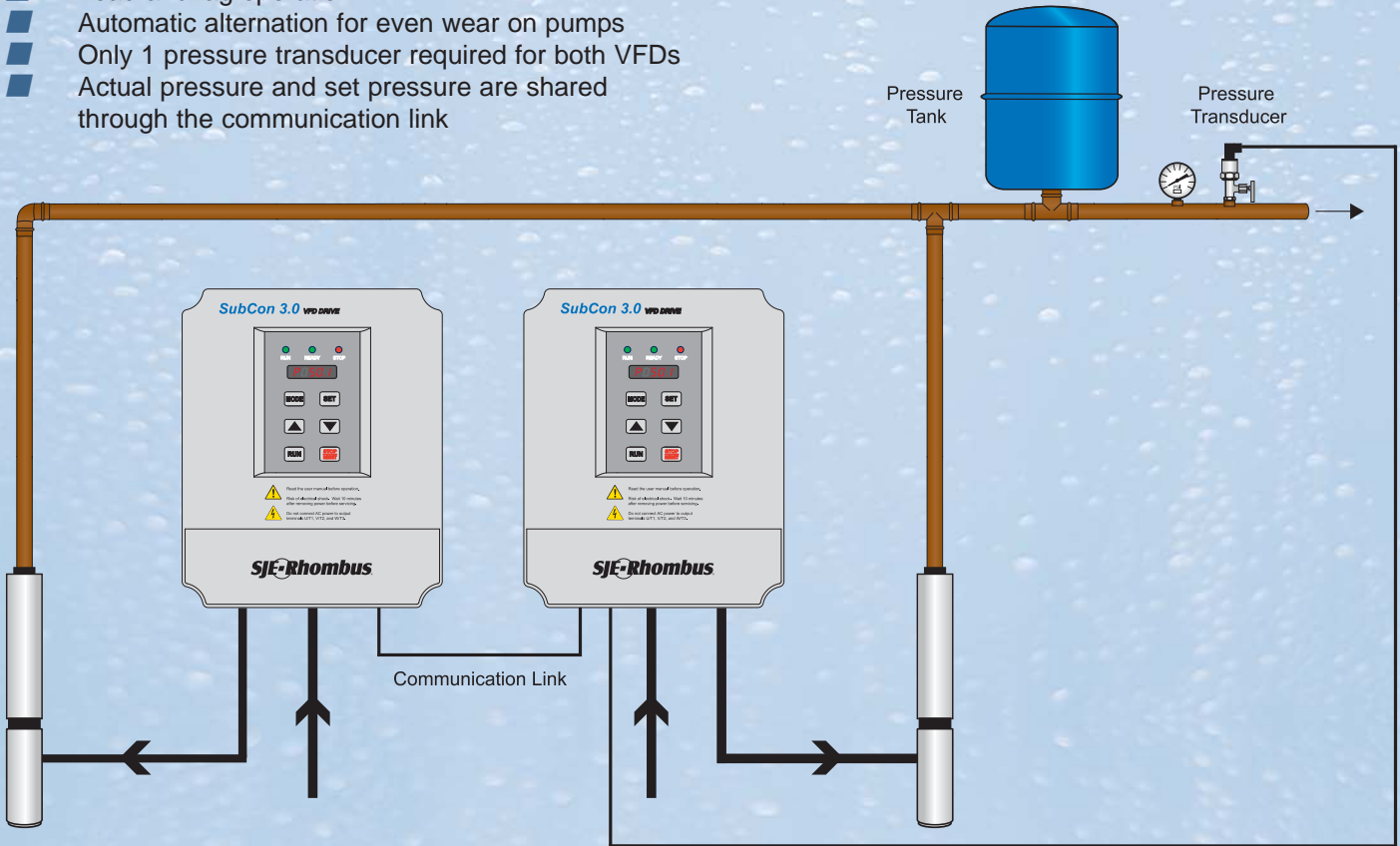


SubCon[®] Display

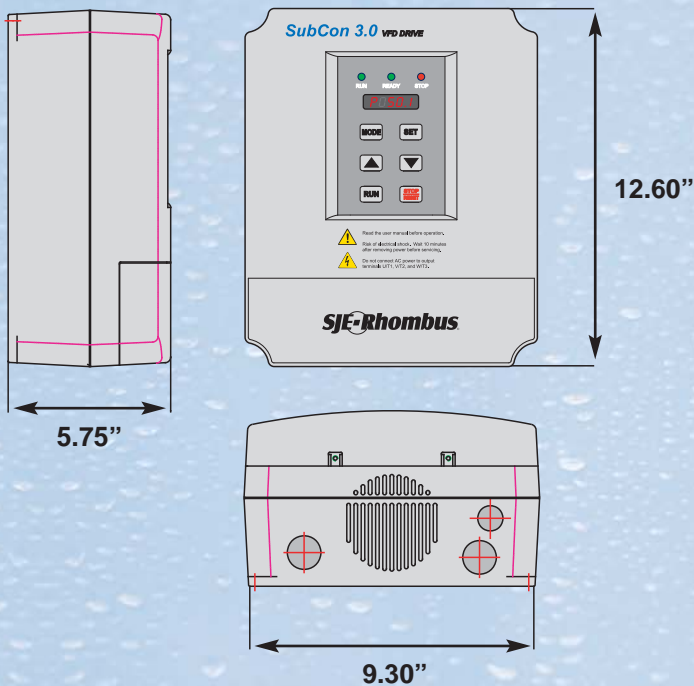
Constant Pressure Controller

Duplex Operation: For applications with two pumps connected to a common discharge.

- Lead and lag operation
- Automatic alternation for even wear on pumps
- Only 1 pressure transducer required for both VFDs
- Actual pressure and set pressure are shared through the communication link



SubCon® 1.5 / SubCon® 3.0 Dimensions



SubCon® 1.5 / SubCon® 3.0 Weights

- Weight: 13 lbs. (5.9 kg)
- Shipping weight: 17.0 lbs. (7.75 kg)

1-800-RHOMBUS
(1-800-746-6287)

1-888-DIAL-SJE
(1-888-342-5756)

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SubCon [®] Specifications	SUBCON [®] 1.5	SUBCON [®] 3.0
Output Rating		
Maximum Applicable Motor Output (HP)	1.5 HP	3 HP
Rated Output Current (A)	5.9 A	11.0 A
Output Voltage	0 - 240 VAC Three Phase	
Output Frequency (Hz)	30 - 60 Hz (default) - adjustable	
Carrier Frequency (kHz)	2.5 - 8 kHz	
Input Rating		
Rated Input Current (A)	11 A	23 A
Rated Input Voltage (V)	200 - 240 VAC Single Phase	
Rated Input Power (kW)	2.4 kW	4.6 kW
Frequency Tolerance (Hz)	50/60 Hz	
Control Characteristics		
Control	Pulse Width Modulation (PWM) V/F control	
Overload Capacity (%)	115% of rated output current for 10 seconds	
Over Current Capacity (%)	150% of rated output current	
Acceleration / Deceleration Time (s)	2 - 60 Seconds	
V/F Pattern	Adjustable V/F pattern	
Operating Characteristics		
Pressure Setting	50 PSI (default) - adjustable	
Pump Speed	30 - 60 Hz (default) - adjustable	
Control Method	Proportional+Integral+Derivative (PID)	
Start Method	Auto-start on pressure drop below setpoint + differential	
Stop Method	Auto-stop on motor min. speed + timer	
Pressure Signal	0 - 145 PSI transducer, 4-20 mA signal	
Digital Input (1)	Dry contact closure for remote stop drive	
Digital Output (1)	Relay output 2A, 250V (Run/Alarm)	
Environment		
NEMA Enclosure Rating	Type 1 (indoor)	
Installation Location	Altitude less than 9,842 feet (3,000 m)	
Pollution Degree	2	
Corrosion	Keep away from corrosive gases, liquids and dust	
Explosion	Not suitable for installation in hazardous locations	
Operating temperature	14°F to 104°F (-10°C to 40°C)	
Storage Temperature	4°F to 122°F (-20°C to 50°C)	
Ambient Humidity	Less than 95% Non Condensing	
Cooling Method	Forced Fan-cooled	
Approvals	UL/cUL Listed (USA and Canada)	
Warranty	Three-Year Limited Warranty	



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