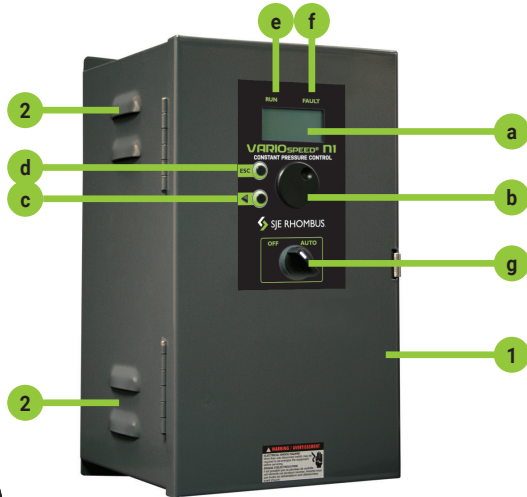


VARIOSPEED® N1 CONTROL PANEL

Variable Frequency Drive Controller in a NEMA 1 Enclosure

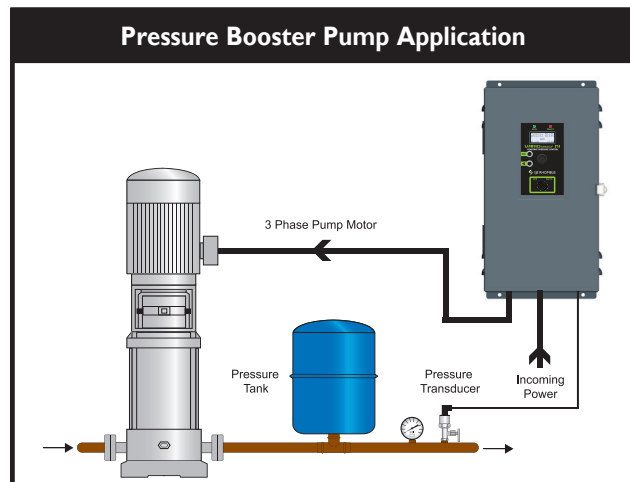


The VARIOspeed® N1 control panel is designed to control a three phase pump in constant pressure control applications including booster pump, deep well submersible pump, and irrigation pump applications.

As flow and head conditions change in the pumping system, the VFD is able to automatically control the pump speed and maintain a constant discharge pressure. The desired set pressure is entered on the door mounted display. The pressure transducer measures the pump discharge pressure. Not for use with sewage pumps.

FEATURES

- Run dry protection (pipe burst or low pressure alarm)
- High pressure protection
- System fault Log
- Standard package includes a 0-200 PSI pressure transducer (one-year limited warranty on pressure transducer)



COMPONENTS

1. Enclosure (up to 5 HP) measures 14 x 8 x 8 inches (35.56 x 20.32 x 20.32 cm) steel NEMA 1 for indoor use with locking latch
Enclosure (above 5 HP) measures 18 x 10 x 10 inches (45.72 x 25.40 x 25.40 cm) steel NEMA 1 for indoor use with locking latch

Note: Voltage and amp range selected may change component layout in enclosure.

2. Vents for VFD cooling
3. Variable Frequency Drive
4. VFD display
 - a. 4 Line/20 character display
 - b. Rotary/push button for menu navigation and editing
 - c. Left arrow button
 - d. ESC button
 - e. Run indicator LED
 - f. Fault indicator LED
 - g. Off/Auto selector switch



VARIOSPEED® N1 CONTROL PANEL - Variable Frequency Drive control panel in a NEMA 1 enclosure.

Part #	Description	Model	Output Amp	HP	Input Phase	Output Phase	Shipping Weight
1041350	VARIOSpeed® N1, 240V	VS21-7.0-N1	7.0	1.5	1	3	21 lbs.
1041351	VARIOSpeed® N1, 240V	VS21-10.0-N1	10.0	3	1	3	22 lbs.
1041352	VARIOSpeed® N1, 240V	VS23-16.5-N1	16.5	5	3	3	21 lbs.
1041353	VARIOSpeed® N1, 240V	VS23-31.8-N1	31.8	7.5 - 10	3	3	31 lbs.
1041354	VARIOSpeed® N1, 240V	VS23-45.0-N1	45.0	15	3	3	38 lbs.
1041355	VARIOSpeed® N1, 240V	VS23-58.0-N1	58.0	20	3	3	38 lbs.
1060916	VARIOSpeed® N1, 480V	VS43-8.0-N1	8.0	3 - 5	3	3	31 lbs.
1041356	VARIOSpeed® N1, 480V	VS43-16.0-N1	16.0	7.5 - 10	3	3	31 lbs.
1041357	VARIOSpeed® N1, 480V	VS43-29.5-N1	29.5	15 - 20	3	3	38 lbs.

NOTE: HP rating is based on standard NEMA B 4-pole motor (used for indication only, use nameplate FLA for sizing). The output voltage of the VFD cannot exceed the incoming voltage. Example: 208V in, 208V out (max).

SELECTING THE CORRECT VFD

1. Determine the voltage available on site.
2. Select a pump with the same voltage (motor must be three phase).
3. Check pump motor nameplate Full Load Amps (FLA) for proper VFD sizing.
4. Select a VFD with an output amp rating higher than motor FLA.
5. Use motor Service Factor Amps (SFA) for submersible well pump applications for VFD sizing.

PHASE CONVERSION**

It is possible to supply single phase 240V input power to VS23 models. The VFD output amp must be derated by 50%.

Example: The VS23-45.0-N1 will be derated to 22.5A output (max).

**Use three phase input power if available. VS23 VFD's are not UL listed with single phase supply. Always use a three phase motor.

MAXIMUM MOTOR CABLE LENGTHS

For 208V-240V pumps: 400 ft. For cable lengths greater than 400 ft., use a load reactor. Do not exceed 800 ft.

For 480V pumps: 50 ft. For cable lengths greater than 50 ft., use a load reactor. Do not exceed 300 ft.

SPECIFICATIONS

POWER: Available HP range
(208V-240V) 1.5HP - 20HP
(480V) 3HP - 20HP

CONTROL: PID control
Adjustable electronic overload
Auto Start on pressure drop (adjustable)
Auto Stop on low Hz (No-Flow - sleep mode)

PRESSURE TRANSDUCER: 0-200 PSI (included) 1/4" NPT Male, NEMA 4X rated with 20 ft cable. One-year limited warranty on pressure transducer.

ENVIRONMENTAL: Operating temperature: 14°F to 104°F (-10°C to 40°C)
Storage temperature: -4°F to 131°F (-20°C to 55°C)
Altitude: Maximum of 3,280 ft (1,000 m) above sea level