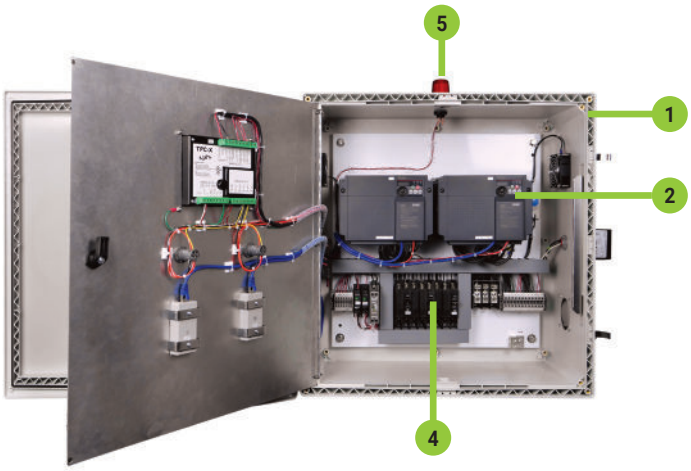
VARIOSPEED® GRINDER DUPLEX CONTROL PANEL

Variable Frequency Drives for Grinder Pumps



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5 YEAR LIMITED WARRANTY

The Duplex VARIOspeed® Grinder Control Panels are available for single-phase or for three-phase incoming power. Both versions are designed to control two three-phase sewage grinder pumps in level control applications. The TPC-X level controller is used with a transmitter to monitor the tank level and activate the Variable Frequency Drives (VFDs). The TPC-X controller provides automatic pump alternation, lead/lag operation, high and low level alarms, seal fail and thermal cutoff protection. If a high level alarm condition occurs, it activates the audible/visual alarm system. Each pump is controlled by a VARIOspeed® Grinder VFD and is able to reverse on a pump start and/or pump stop to clear any debris in the impeller. In addition, the panel can detect high-amp conditions during pump run, indicative of clogging, and automatically reverse the impeller. The process is momentary and repeated until the binding material has been shredded to a size that can easily pass through the pump. This control method reduces clogging and potential failure resulting from a locked rotor.

FEATURES

- TPC-X level controller
  - Level transmitter operation with backup high level float switch
  - Thermal cutout protection
  - Seal Fail protection
  - Automatic pump alternation
  - Lead / Lag operation
- VFD Graphic color display (LCD):
  - High Brightness / Direct sunlight readable
  - Removable/handheld for easy programming
  - Pump run indication (FWD or REV)
  - Pump speed (Hz)
  - Pump current (A)
  - Float switch status
  - Elapse time meter/cycle counter
  - Message bar (Status & Alarm)
  - Alarm history
  - Password protection
  - Rotary button for easy menu navigation
- Quick start wizard for easy setup:
  1. Enter motor amps (FLA)
  2. Enter motor horsepower (HP)
  3. Enter motor voltage (V)
  4. Perform motor auto-tuning
- Quick connect terminals for ease of troubleshooting and service
- Pump dry run alarm (low amps)
- Pump motor overload protection
- Pump run high level alarm
- Max pump cycle time limiter
- 3 auto-reverse modes available (multiple modes can be selected)
  - Auto-reverse on start (clears the pump before starting the pump cycle)
  - Auto-reverse on stop (clears the pump after the pump cycle)
  - Auto-reverse on High Amps Detection (during a run cycle)
- Web-based cellular remote monitoring using SJE Panel Link (optional)

COMPONENTS

1. Enclosure: NEMA 3R ultraviolet stabilized thermoplastic rated for outdoor use with mounting flanges, padlockable cover

   Note: See specifications on back side for sizing.
2. Variable Frequency Drives
3. LCD VFD displays
4. Circuit breakers
5. LED beacon
6. TPC-X level controller
7. Vents for VFD cooling (not shown)
8. Horn with Test/Silence button (not shown)

SJE RHOMBUS®

9500599C Rev 07/25

VARIOSPEED® GRINDER DUPLEX CONTROL PANEL - Variable Frequency Drives for grinder pumps.

Part #	Model	Input Voltage	Pump Rating	HP	Max Out Amps	Enclosure Size	Shipping Weight
1107909	VSGD-240-1-11	208-240V, 1 Phase	**208/230V, 3 Phase**	**2**	**11A**	24 x 24 x 10	45 lbs.
1107910	VSGD-240-1-17.8[1]	208-240V, 1 Phase	**208/230V, 3 Phase**	**3-5**	**17.8A**	24 x 24 x 10	62 lbs.
1114917	VSGD-240-1-28	208-240V, 1 Phase	**208/230V, 3 Phase**	**7.5-10**	**28A**	36 x 30 x 12	190 lbs.
1107911	VSGD-240-3-11	208-240V, 3 Phase	**208/230V, 3 Phase**	**2**	**11A**	24 x 24 x 10	45 lbs.
1107912	VSGD-240-3-16.5	208-240V, 3 Phase	**208/230V, 3 Phase**	**5**	**16.5A**	24 x 24 x 10	51 lbs.
1107913	VSGD-240-3-31.8	208-240V, 3 Phase	**208/230V, 3 Phase**	**7.5-10**	**31.8A**	24 x 24 x 10	62 lbs.

[1]Model not UL Listed

SELECTING THE CORRECT VFD

1. Determine the number of phase and voltage available on site. If three phase is available, use models rated for three phase incoming power.
2. Select a pump with the same voltage rating as the incoming power (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.

SPECIFICATIONS

CONTROL: VFD motor control (Sensorless Vector Control)
TPC-X Controller
- 1 x Transmitter Input
- 1 x Float Switch Input (High Level)
- 2 x Thermal Cutout Inputs
- 2 x Seal Fail Inputs
- 1 x Aux Alarm Relay Output

VFD LCD Display
- Pump run/direction indication (FWD or REV)
- Pump speed (Hz) and Amps (A) indication
- Pump motor overload protection
- Pump dry run alarm

ENCLOSURE: NEMA 3R ultraviolet stabilized thermoplastic rated for outdoor use with mounting flanges, padlockable cover

ENVIRONMENTAL: Surrounding air temperature: 14°F to 104°F (-10°C to 40°C)
Panel internal temperature: 14°F to 122°F (-10°C to 50°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

All conduits must be properly sealed to prevent sewer gas from entering the enclosure. Not rated for installation in hazardous locations.

ELECTRICAL: Input voltage: 240V nominal
208-240V 50Hz/60Hz, single phase for VSGD-240-1 models
208-240V 50Hz/60Hz, three phase for VSGD-240-3 models

Note: The output voltage cannot exceed the input voltage.

SJE Rhombus® recommends using the Sub-X™ Transmitter for level control. SJE Rhombus recommends using the SJE MilliAmpMAster™ Control Switch, SJE MegaMaster® Control Switch or the EZconnex® Float Switch Connection System for a high level backup float switch. For ordering information, please see our catalog pages at www.sjerhombus.com