



GE Oil & Gas

M4Equipment
Quality Pumping Systems

Vector™ Plus Variable Speed Drive

The Vector Plus Variable Speed Drive (VSD) provides enhanced control capability and superior reliability to maximize production in a variety of oil-field pumping applications. Vector Plus was specifically designed for use with Electrical Submersible Pumps (ESP) and horizontal Surface Pumping Systems (SPS).

Advanced software and an easy to use Human Machine Interface (HMI) combine to simplify equipment operation and maximize run time under changing and challenging well conditions.

GE ARTIFICIAL LIFT

PLUS Line

Performance - Longevity - Unsurpassed Service = PLUS

Features & Benefits:

- Nema 4 rated outdoor enclosure – suitable for any climate
- Motor friendly Sine Wave Output – extends motor life
- Easy to use Human Machine Interface
- Continuous operation through power line dips and swells
- Highest Operating Efficiency – reduced power consumption
- High Input Power Factor - no utility company power factor penalties and better utilization of the existing power grid
- Extensive Data Collection and Event Logging – gives you a better understanding of equipment operating issues
- Intelligent Control Capability – maximize fluid drawdown, minimize gas locking, maximize efficiency
- Built in Serial and Ethernet Communications – easily connect to customer SCADA systems, cellular networks, wireless routers, radio networks, and satellite communication systems
- Fully Compatible with the GE Field Vantage solution
- Directly interface with our Zenith downhole gauge and other manufacturer's downhole gauges
- USB Port for quick data retrieval
- UL Listed / CSA Approved / CE Compliant

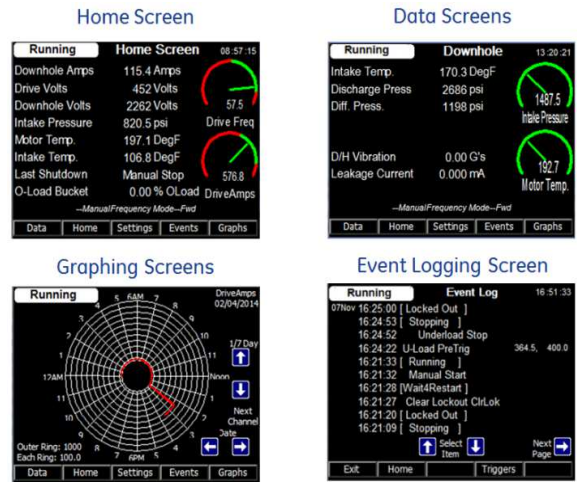


geoilandgas.com

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SIMPLE OPERATION, BETTER DATA

- Easy to Use Human Machine Interface
- Multiple Modes of Operation
 - Frequency, Pressure, Current
- Application Specific Control Capability
 - Minimize Gas Locking
 - Maximize Draw Down
 - Maximize Motor Efficiency
- Event Logging and Data Archiving
 - 4096 Events, Up to 99 Drive & Well Parameters



Additional / Outstanding Features:

- Nema 4 Outdoor Enclosure – Temperatures to 50°C (122°F)
- VSG® Technology – Sine Wave Output for ESP Applications
- Full Color Graphical Display – Easily Visible in Direct Sunlight
- High Input Power Factor – 0.95 or better (all speeds/all loads)
- High Speed Fault Tracing File
- Multi-Level Password Protection
- Selective Auto Restart and Alarm capability
- Rock Start / Hard Start feature to free stuck pumps

Pre-Engineered options:

- E Stop
- Surge Protective Devices
- Downhole Sensor Interface
- I/O Expansion (Apollo I/O Board)
- Heater Package
- Circuit Breaker Shunt Trip / OV Protection
- CE EMC Compliance Package
- Wireless Router (Wi-Fi)

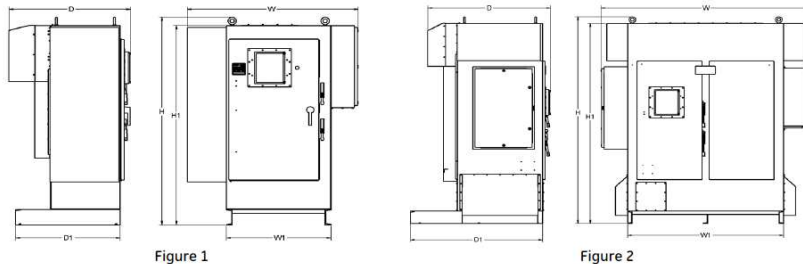


Figure 1

Figure 2

Vector Plus Dimensions - ESP Drives with VSG									
Figure	KVA @ 480V	Amps	Height (in/mm)		Width (in/mm)		Depth (in/mm)		Weight (lbs/kg)
			H	H1	W	W1	D	D1	
1	173	208	81.4 / 2067	78.1 / 1984	53.9 / 1369	36.0 / 914	41.6 / 1057	36.0 / 914	1275/580
	208	250			58.5 / 1486				1375/625
	301	362			1525/693				
1	344	414	100.3 / 2547	97.0 / 2464	67.8 / 1722	48.0 / 1219	46.0 / 1168	48.0 / 1219	2275/1034
	428	515			2425/1103				
	561	675			2600/1182				
2	773	930	100.3 / 2547	97.0 / 2464	88.0 / 2235	66.0 / 1676	51.7 / 1313	56.0 / 1422	3950/1762
	998	1200							4450/2018

Vector Plus Dimensions - SPS Drives without VSG									
Figure	KVA @ 480V	Amps	Height (in/mm)		Width (in/mm)		Depth (in/mm)		Weight (lbs/kg)
			H	H1	W	W1	D	D1	
1	173	208	81.4 / 2067	78.1/1984	51.9 / 1318	36.0 / 914	41.6 / 1057	36.0 / 914	1025/466
	208	250							1125/512
	301	362							1275/580
1	344	414	86.4 / 2194	83.1 / 2111	67.8 / 1722	48.0 / 1219	46.0 / 1168	48.0 / 1219	1625/739
	428	515							1775/807
	561	675							1875/853
2	773	930	100.3 / 2547	97.0 / 2464	88.0 / 2235	66.0 / 1676	51.7 / 1313	56.0 / 1422	3250/1474
	998	1200							3550/1610

Vector Plus ratings:

- 173 KVA – 208 A
- 208 KVA – 250 A
- 301 KVA – 362 A
- 344 KVA – 414 A
- 428 KVA – 515 A
- 561 KVA – 675 A
- 773 KVA – 930 A
- 998 KVA – 1200 A

Vector Plus Input / Output:

- 380 to 480 Volt Input
- 50 Hz or 60 Hz Input
- 6 Pulse or 12 Pulse Input
- VSG (Sine Wave) Output for ESP Applications
- PWM Output for SPS Applications
- Power Junction Box included as standard

To learn more about Vector Plus Drives contact your GE sales representative.

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