

Guardian™ Variable Frequency Drive (VFD) PC Pump Controller



We offer a complete line of innovative products and supportive services to monitor, communicate and control progressing cavity pump (PCP) artificial lift systems accurately and cost-effectively.

Artificial lift applications can be very dynamic and change in a manner of minutes. Our Guardian VFD has been built by utilizing the vast pumping and control experience of field operators and production engineers. Our automation systems provide safe operating conditions with lower downtime while optimizing the well production.

To maintain and/or optimize well production, our suite of hardware and software services allow quick assessment of well conditions and pump performance.

Guardian VFD

- Ensures operational efficiency and control of progressing cavity pump (PCP) artificial lift systems
- Protects rod string during high torque conditions
- Easy-to-use operator interfaces
- Effortless integration into existing SCADA networks
- Minimizes downtime using our integrated control methods and proprietary software suite
- Simultaneously monitor pump performance and control pump off

Control Methods (GII Plus Model)

- Automatically changes speed of the pump to optimize well performance through remove control methods
- Setup primary and secondary control methods to operate simultaneously
- Downhole pressure sensors
- Fluid over pump
- High-torque control
- Production flow
- Flowline and casing pressure
- Tank level

Features

- Versatile application and outstanding performance in the hardest conditions
- Simple installation and startup
- User friendly interface
- Flowline and casing pressure inputs
- Maximizes energy efficiency
- Counterbalances weight adjustment reporting
- Real-time position and torque display
- Support for extreme climate conditions
- Multispeed options for customizing up and downstroke speeds

- Automatic pump fill detection on each stroke
- Belt slippage prevention and detection
- Detailed fault history with real date timestamp
- Energy meter reports kWh consumption
- ON/OFF timer control

Benefits

- Remote pump monitoring and control capabilities
- Interactive communication between the operator and the well
- Real time well diagnostic and control functionality

Accessories

- Harmonic filters
- Surface pressure sensors (flowline/casing)
- Downhole pressure sensors and position sensors
- Load cells and braking resistors
- Communications (satellite/cellular/radio)
- Running/fault lights
- Power line in/motor/Presco connectors
- Motors
 - Totally enclosed fan cooled (TEFC) or TEXP

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Guardian OnSite™ Software

- Retains central depository of information
- Acquires real time performance data
- Maintains two-way communication between operator and pump

Standard Configurations

- Main line circuit breaker
- Lightning arrester
- 5% line reactor
- Control transformer
- Accessible terminal connections
- Low maintenance

Security

- Restricts access based upon user roles
- Detailed change log tracks configuration changes and updates

Safety and Performance

- Simple and easy to use operator interfaces
- Automatic, non-moving A/C motor tuning
- cULu Listed enclosure
- Local graphing / plotting of performance information
- Safe access to data and diagnostic interface ports

Services

- Highest level of support and training at preferred locations

Technical Specifications

Ratings

Power Supply Voltage		380 - 480 V (-15% / +10%)
Power Supply Frequency		47 - 63 Hz
HP	kW	AMPS
10	7.5	17.6
15	11	27.7
20	15	33
25	18.5	41
30	22	48
40	30	66
50	37	79
60	45	94
75	55	116
100	75	160
125	90	179
150	110	215

Other power options and sizing available upon request

Input/Output Configuration

	Standard + PLC	Extended I/O	
		Basic	Extended
Analog In	4		2
Analog Out	3		2
Digital In	16	4	4
Digital Out	6	2	2
Relay Out	2	1	1

Communications

Modbus	1 (RS422/RS485)
TCP/IP (Optional)	1
CanOpen (Optional)	1
Ethernet (Optional)	1
Bluetooth (Optional)	1

Protections (Internal to the VFD)

Thermal Protection	Yes, 12t motor thermal protection depending on the Thermal protection motor frequency
Memorization When Power Off	
Electronic / PTC	Yes, dedicated input on option cards
Short circuit between phase	Yes
Ground fault	Yes
Output phase loss	Yes
Input phase loss	Yes
Overload	Yes
Overvoltage	Yes
Undervoltage	Yes
Drive thermal protection	Yes
Locked motor protection	Yes
Stall prevention	Yes
Others	
Options and Accessories	
Braking resistors	