upstream DATA

EVERPRIME™

Artificial Lift Drivers

Optimizing oil production is a balance between maximizing productivity (pump-off) while keeping the pump primed for safe operation.

Our EverPrime™ variable speed drive (VSD) packages for artificial lift systems provide enhanced motor speed and torque control to optimize well productivity. We offer VSDs in standard modular enclosures for single VSD applications as well as customized motor control centers (MCC) for multi-pump applications such as multi-well production batteries.

Our modular VSD systems are designed with cost, ease of installation, and field operator convenience in mind. The base unit is user-friendly and features a clean interface for efficient setup and operation. The user interface consists of a simple local keypad and display for managing setpoints, with an RPM dial for speed control. Additionally, an optional full-color touchscreen HMI is available for a more intuitive user experience.

We also offer customizable modular MCC building packages designed for multi-well pads that are compatible for utility-fed power, single or parallel generator packages. Our modular MCCs include up to 8x VSDs to drive up to 8x wells, StarLink internet, common bus for auxiliarrly loads, as well as integrate site controller for an all-in-one operator control center.

OPTIONAL ACCESSORIES

- 7” Colour HMI w/Upstream Data PCP application
- 2-5 kVA heat trace with ground fault
- 3% line and load filters
- Chemical pump option (power and plug) • PRESCO bypass test system
- SCADA integration package
- 120-volt convenience receptacle • Powder-coated VFD site stand
- Heating and cooling systems

BASE UNIT

- 480-volt, 3-phase standard system
- NEMA-3R rated enclosure system
- Local keypad/display
- Hand/Off/Auto selector
- Speed Potentiometer
- Advanced Torque control

Maximize reliability, slash lifting costs, and monetize every molecule with our innovative oil and gas production services.

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EVERPRIME™ TECHNICAL SPECIFICATIONS

Technology	Input - 6 Pulse Diode Rectifier, Output - Insulated Gate Bipolar Transistor (IGBT)
Applications for Oil Wells	Progressive Cavity Pump, Sucker Rod Pump, Electric Submersible Pump, Jet Pump
Control Methods	·U/f (Volts/Hz) ·Voltage Vector Control ·Flux Sensorless ·Flux w/ Motor Feedback
Harmonic distortion @ Full Load Amps / Mitigation of Harmonics Method	·Optional Line Reactor; (30 - 40 % THDI at full load) ·Optional input harmonic filter (L-C-L TYPE) - Comply with IEEE-519; (5-8% THID at full load)
Harmonic distortion @ Full Load Amps / Mitigation of Harmonics Method	·Optional Line Reactor; (30 - 40 % THDI at full load) ·Optional input harmonic filter (L-C-L TYPE) - Comply with IEEE-519; (5-8% THID at full load)
Displacement Power Factor	>= 0.98 at Rated Load
Efficiency at Full Load	> = 98% at rated current and frequency
Torque Instant Overload	150% Rated Torque
Maximum Operating Torque from 0-60 Hz	100% Rated Torque
Programmable Acceleration / Decelaration Time	0 - 3600.00s
Non-Condensing at Ambient Humidity	5% - 93%
Stop Types	COAST TO STOP - Full stop required prior to restarting. Optional Fail-safe brake system for Induction and PMM applications
Ambient temperature	·Max. 50°C (24-hour average maximum 45°C) ·Optional forced air fan for cooling (228 CFM /850 CFM based on Enclosure size)
Enclosure Cooling Methods	NEMA 3R air cooled
Input Protection	Thermomagnetic adjustable input breaker with mechanical handle, door lock system
Input Varistors	Type II Surge protective device. Protection capability 50kA, modular replacement with failure indicators. DIN Rail mounted
Input/Output	Terminal Connection Outputs to Motor
Motor Protection	Via calculation (ETR = Electronic Thermal Relay) of the thermal load, based on the actual load and time
Re-Starting	Programmable restart: Programmable time between re-start 0.00 - 3600.00 seconds
HMI Display Options	Manufacturers Standard Display/Keypad included- Optional 7" Touch Screen Display, VFD Well Parameters - Rod Torque, Motor Torque, Rod Speed, Motor Speed, DC Bus Voltage, Input Voltage, Output Motor Voltage
Communication Protoco	Protocol-Modbus RTU/Connection type /RS485
Moisture Protection	Conformal coating on all control boards
Installation (Mounting Type	Flange mount standard, mounting legs or custom stand optional - lifting anchors attached to the roof on 50 HP+
Number of Analog Inputs	1 Free Analog Input standard (1used for Speed Control on door), expandable to 3 Analog Inputs with optional expansion board
Number of Analog Outputs	1 Analog Output Programmable by default, expanded able to 2 Analog Outputs with optional expansion board.
Number of Digital Inputs	1 Dedicated Digital Input available for PRESCO input
Number of Digital Outputs	2 Digital Outputs, Expandable to 5 Digital Outputs with optional expansion board.
Fault record and Alarms from VFD	Last ten are logged with "0" as the most recent one.
Enclosure Dimensions	10 HP - 20 HP Model - 24" x 20" x 12" / 25 HP - 60 HP Model - 36" x 24" x 16" (L x W x D) - White Powder Coated
Wiring Size	1000 VAC insulation, multi-stranded.
Compliance Standards	CSA, UL Certifications
Standard Keypad/displayed variables	Rod Torque (Nm / %) and RPM, DC bus, input voltage, output voltage, current consumption, power consumption
Optional 7" HMI/displayed variables	Rod Torque in FtLbs and polished rod speed in PRS/SPM, DC bus voltage, input voltage, output voltage, current consumption, power consumption
Optional HMI details	Touch Screen Color 7" Display connects via RS-485 serial communications using Modbus RTU protocol
Data/Downloads	No data download from standard keypad/display. Optional HMI is available with datalogging capability of up to 4 variables
Inverter Input/Output Protection	Standard use of protection is Thermomagnetic breaker circuit breaker with operating handle on the door. Fusing can be installed in addition to the circuit breaker for increased SCCR up to 100kA. Input voltage is rated to 480VAC.
Enclosure	NEMA 3R enclosure, with ground connections to door and back panel. Lifting eyes on 40-60 HP models
Cable Entry	Cable connections require knock outs through bottom of cabinet (to be provided by installer)
PCP Application Software	·Torque control and protection of rod string (Torque control through torque limiting on forward direction). ·Programmable torque limit with automatic speed adjustment to work within torque limit. System can be configured to trip if torque cannot be reduced below torque limit. (Adjustable between 1-59 seconds) ·Under load limit - programmable under load limit that is bypassed during startup. Trips if drive operates below underload limit for programmed time delay. ·Torque limit adjustment while drive is operating. ·Low speed alarm - configurable low speed alarm setpoint with delay time. Torque limit adjustment while drive is operating. ·Voltage sag/drop capability up to 25%. ·PCP speed is set manually through speed potentiometer. ·Automatic Restart - Selectable number of automatic restarts after power loss or VFD fault. ·Includes automatic restart delay time to prevent restarts during back spinning. Up to 3600.00s delay time. ·Standard drive keypad interface is included on cabinet door. Optional HMI has PCP specific variable - can be customized to display client specific information. ·Last ten (10) faults available
Pump Jack Software	· Voltage vector control principle VVC+ ·Pump Jack Specific Alarms : "PRESCO Fault", "Load Loss Fault", "DBR Fault", "Under speed Fault" with adjustable setpoints. ·Speed control via door mounted speed potentiometer ·Automatic Restart - Selectable number of automatic restarts after power loss or VFD fault. ·Includes automatic restart delay time to prevent restarts during back spinning. Up to 3600.00s delay time. ·Standard drive keypad interface is included on cabinet door. ·Precise speed control ·Flying start feature ·Over-voltage control feature ·Optional Dynamic Braking Resistor

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