WellPilot® Variable-Speed RPCs

Applications

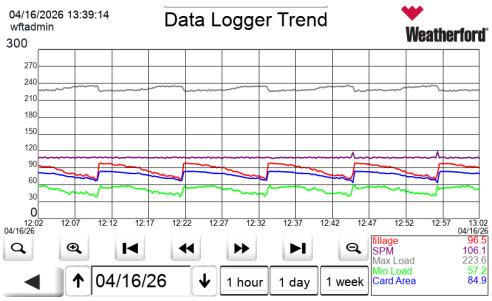
Reciprocating rod-lift wells

Features & Benefits

- Harmonically compliant with integrated passive filter or native design
- Induction motor and PMM compatible
- Delivers up to 20% energy savings with advanced power management technology
- Flexible Control Modes: Idle time, timer, injection timer, maintenance, override, and third-party speed control for adaptable operation across changing well conditions
- VSD Optimization and Efficiency: Pump fillage control, inter-stroke speed trim, and performance tracking to maximize production and reduce energy use
- Load, Speed, and Safety Control: Rod-load management for heavy or viscous fluids
- Surface and Downhole Monitoring: Card area control for downhole issues, and real-time monitoring of load violations, beam loading, gearbox torque, rod stress, WHP, and vibration to protect equipment and improve uptime
- Rod Rotator Integration: Intelligent monitoring and control when equipped to extend rod and tubing life
- Operational and Performance History: Up to 120 days runtime and production data, 60 days of PIP, fluid level, stroke data, polish-rod loads, plus VSD performance history to support optimization and decision-making
- Diagnostics and Troubleshooting: Event and alarm history records, surface and downhole cards, data logging of operational parameters with trending, and pump-valve analysis to accelerate issue identification and resolution
- Data Visualization and Advanced Capture: Trend viewer and per-stroke operational and card data with ForeSite® Edge IoT-enabled automation when equipped for deeper performance insights
- Autonomous Optimization: Built-in control algorithms with ForeSite Edge automation when equipped with self-optimizing performance for minimal intervention

Tool Description

WellPilot variable-speed rod-pump controllers (RPCs) provide reliable rod-pump control in wells with inconsistent reservoir flow, high gas content, sand infiltration, or wells with the potential for liquids to freeze or repeated stopping to control pump-off may not be an effective option. WellPilot variable-speed RPCs keep rod-pump systems running more efficiently and with less mechanical stress–a level of performance not possible from conventional variable-speed drives (VSDs).



Weatherford®

WellPilot® Variable-Speed RPCs

Specifications

	Variable-Speed Rod-Pump Controller	
	Standard	**Regenerative, Low-Harmonic**
Input Supply		
Three-phase voltage	230, 380, 480, or 600 Vac (-15%, +10%)	230 or 480 Vac (-15%, +10%)
Three-phase frequency	50 to 60 Hz (±5%)	50 to 60 Hz (±5%)
Single-phase voltage	230, 480 Vac (±10%)	N/A
Single-phase frequency	50 to 60 Hz (±5%)	N/A
Output Rating		
Voltage	0 to input voltage, three-phase	Proportional to input voltage
Frequency	0 to 400 Hz	0 to 400 Hz
Overload current	120% of rated output for one minute (normal duty) 150% of rated output for one minute (heavy duty)	
Technology		
Rectifier unit	6-diode, 3-phase (6-pulse) full-wave bridge	Matrix converter
Inverter unit	6-IGBT, 4-quadrant, trap or sinewave output	
Diode silicon-controlled rectifier	6-phase (12-pulse)	
Environmental		
Operating temperature	-40 to 122°F (-40 to 50°C)	
Relative humidity	5 to 95% noncondensing	
Available Inputs/Outputs (combined RPC and VSD ports)		
Analog inputs (5, expandable to 11)	-10 to 10 Vdc, 0 to 10 Vdc, 1 to 5 Vdc, or 4 to 20 mA	
Analog outputs (3)	-10 to 10 Vdc or 4 to 20 mA	
Pulse input	2	
Pulse output	1	
Digital inputs	10, expandable to 16	
Digital outputs	5 configurable, 2 fault; expandable to 11 configurable, 2 fault	
Communications	8500 protocol, Modbus ASCII, Modbus RTU, Modbus TCP/IP	
Modbus port	EIA RS232 and RS422/485, 1,200 to 115,000 kbps Modbus ASCII, Modbus RTU	

Enclosure

- UL listed
- Type 3R or optional IP55 enclosure
- Separate low- and high-voltage compartments
- Supports optimal operator and environmental safety
- Engineered for all weather conditions

- Door interlocked with main disconnect
- Available sizes to accommodate specific equipment packages
- Leg kits available upon request

Built-In Electronics Protection

- Analog input loss
- External fault
- Motor thermal protection
- Underload
- Motor phase loss
- Communications fault
- Overcurrent
- Short circuit

- Drive overload
- Undervoltage
- Input phase loss
- Ambient temperature
- Drive overtemperature
- Internal fault
- Overspeed