

ForeSite® EDGE Variable-Speed RPCs

Applications

- Reciprocating rod-lift wells

Features and Benefits

- Inherent soft start reduces inrush current
- Operating motor at optimal levels reduces power consumption
- Adjustable speed eliminates need for sheave changes
- Capability of fine-tuning speed throughout each stroke improves pump operation
- Power regeneration can reduce input-power requirements (regenerative model)
- Advanced rod-load control improves performance in heavy oil or highly deviated boreholes
- Advanced multispeed control for long-stroke pumping units to increase production
- Sand-settling functionality
- Onsite and remote pumping-unit balance check

Tool Description

ForeSite EDGE 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. In conditions like these, ForeSite EDGE 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). The difference is the unique capability of integrating the MEJ pump-fillage and fluid-level calculations. This provides added certainty that surface units and downhole pumps are communicating, coordinated, and operating at optimal performance and reliability.




ForeSite EDGE variable-speed RPCs deliver all the features and benefits offered by the ForeSite EDGE RPC, plus give continuous speed control and other functionalities to further optimize production. This comprehensive package provides optimal results for all rod-pump applications.



ForeSite® EDGE 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 style="list-style-type: none">• 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		<ul style="list-style-type: none">• Door interlocked with main disconnect• Available sizes to accommodate specific equipment packages• Leg kits available upon request
Built-In Electronics Protection		
<ul style="list-style-type: none">• Analog input loss• External fault• Motor thermal protection• Underload• Motor phase loss• Communications fault• Overcurrent• Short circuit	<ul style="list-style-type: none">• Drive overload• Undervoltage• Input phase loss• Ambient temperature• Drive overtemperature• Internal fault• Overspeed	


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