

INSTRUCT 10 Series VSD

Variable Speed Drive Systems

Applications

- + **INSTRUCT S10 VSD** Sucker Rod pump (SRP) installations
- + **INSTRUCT P10 VSD** Progressing Cavity pump (PCP) installations
- + Easily convertible from PCP to SRP – or SRP to PCP
- + Up to 400HP

Benefits

- + Simplifies speed changes – SPM for SRP installations or RPM for PCP installations
- + Incorporates the reliability and proven excellence of Rockwell™ inverters
- + Helps maximize oil & gas production
- + Improves equipment uptime and run life
- + Reduces failure frequency and minimizes workovers

Features

- + Stand-alone NEMA Type 3R or 4 rated enclosure options
- + Easy to use display and keypad
- + Capability for radio, cellular, and satellite communication
- + Safe torque and safe speed monitor options
- + The drives have a slot-based hardware architecture that provides the flexibility to select up to five option cards to meet your application and expand your drive for future requirements
- + Option cards for safety, feedback, communications, I/O and auxiliary 24V DC power can be easily added, without the need to make any other hardware changes

The INSTRUCT 10 Series Variable Speed Drive (VSD) packages are available in the S10 model for Sucker Rod Pump (SRP) applications and in the P10 model for Progressing Cavity Pump applications.

Instruct 10 series VSD's are cost-effective and easy to use for the most common forms of artificial lift.

Safe Torque Off and Safe Speed Monitor options help to protect personnel and assets while minimizing downtime.

The 10 series have embedded I/O along with three option slots for safety, feedback, communications, 24V power or additional I/O. This flexibility makes the 10 series drive a flexible, cost-effective solution.

Designed to meet your application requirements for speed or torque control.

Systems are available for all major voltage levels and both 50 Hz and 60 Hz. Enclosed in a NEMA Type 3R or NEMA 4 enclosure, the VSD system can be configured in accordance with local compliance standards worldwide.

Improved reliability

The INSTRUCT 10 Series VSD's help your optimization team improve uptime and reliability through ease of modifying your pumping speed to meet the dynamic inflow of your wells – whether this be due to rapid decline rates or improved production from waterflood response.



Specifications

Motor Control	All types of control algorithms, including: + Sensorless Vector Torque Control + Volts per Hertz + Permanent Magnet Motor Control (Interior)
Digital Inputs	Capable up to 21 total (Qty. 21 - 24V DC or Qty. 19 - 115V AC)
Analog Inputs and Outputs	Up to 7 total inputs & 7 outputs (bipolar voltage or current)
Relay Outputs	Capable Up to 7 total (form C)
Transistor Outputs	Up to 7 total
Internal Brake Transistor	Standard (frames 1-5) Optional (frame 6-7)
DC Link Choke	Standard on all sizes from 5HP and larger
Safety	+ Safe Torque Off SIL3, PLe, Cat 3 with option card + Safe Speed Monitor SIL3, PLe, Cat 4 with option card
Application	+ Open Loop Speed Regulation + Closed Loop Speed Regulation + Precise Torque and Speed Regulation + Indexer Positioning + Single-phase Input w/Derate
Ratings	480V: 5 - 400 HP: 8 - 477 A 600V: 5-300 HP: 9 - 289 A 690V: 5 - 200 HP: 12 - 263 A
Overload Capability	110% - 60 s 150% - 3 s
Output Frequency Range	0 - 325 Hz @ 2 kHz PWM 0 - 590 Hz @ 4 kHz PWM
Communications Options	+ Single or Dual-port Ethernet/IP options + ControlNet (Coax or Fiber) + DeviceNet + Remote I/O + RS485 DFI + PROFIBUS DP + BACnet/IP + Modbus/TCP + HVAC (Modbus RTU, FLN PI, Metasys N2) + ProfiNet 10 + LonWorks + CANopen
PTC Inputs	Up to 3 total