

The Vertex Downhole Pulsar— Superior by Design

Electrical Specifications

Operating voltage: 15 – 28 VDC
 Connector: 8-Conductor Rotary (Isys/GE Pilot) or Kintec (Tensor)
 Flow sensor is vibration controlled and user-configurable
 Advanced power supply; minimizes motor impact on battery voltage fluctuation and line noise to external tools

Environmental Specifications

Max operating pressure: 20,000 PSI
 Max operating temp: 177° C / 350° F (200° C in development)
 Survival temp electronics: 185° C, Motor 200° C, Mechanical 200° C
 Vibration: 20 gRMS (15 - 1,000 Hz)
 Shock: 1000 g, .5 ms, ½ Sine
 LCM: High Tolerant

Advanced Software Features

- Advanced fail-safe mode allows pulsar to continue operating in the event of one or more motor hall sensors failing. Motor switches to hybrid sensed/sensorless mode or to full sensorless in the event of failure of all three hall sensors.
- Advanced memory logging stores information regarding all environmental conditions experienced, all communications received, and diagnostic information for each pulse executed by the motor.
- Advanced motor driver algorithm delivers only the power required to move pilot valve poppet at desired rate. Up to 50% power reduction under normal operating conditions. Quick response (< 200 µs) to LCM blockage and pressure events allows motor to deliver up to 100% percent of rated power quickly when needed.
- Advanced motor driver starts motor in a way that minimizes impact on battery by limiting battery current in a controlled manner.
- Easy to use Windows software and rugged USB interface box to configure, test and download/view logs.

Advanced Mechanical Features

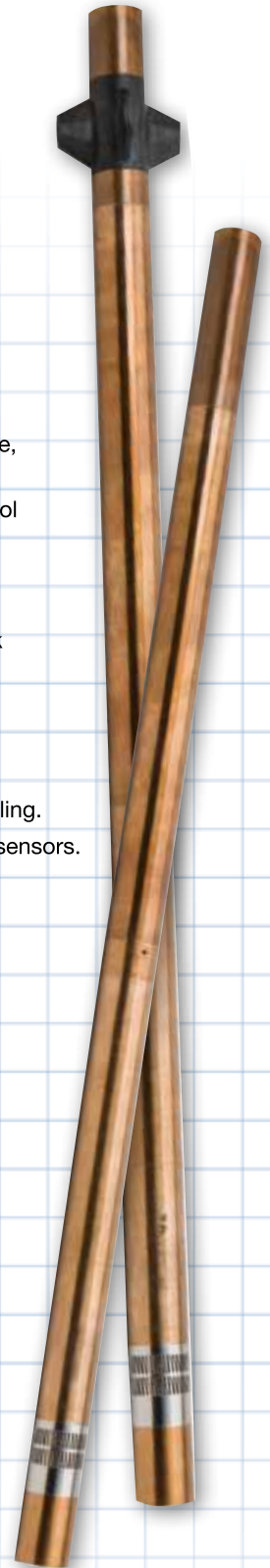
- Rugged construction; designed for high vibration environment
- Reduced number of parts
- Self adjusting poppet
- Self-aligning connectors; no more bent pins
- Twin-start threads, modular design for quicker assembly
- Can be assembled with minimum set of tools
- Designed to minimize wash
- Piston-compensated; tool only uses 5 cubic inches of oil and fills in less than 90 minutes
- Servo poppet, screen and orifice can be changed without removing oil
- Retrievable

Physical Specifications

Pulse transmission: positive
 Outer Diameter (Housing): 1.875"
 Length: 44.1" – 46.5"

Compatibility

Tensor: externally controlled pulse line, pulsar controls flow switch
 BlueStar: CAN Bus commands control pulsing, external flow switch
 Isys Tool String: supports advanced functions
 Other: can be easily adapted to work with other third-party tools



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DOWNHOLE