

# Toplink Valve—Top Mount Design

## Latching Lower Valve—Bottom Mount Design

### Single Pulsar // Dual Versatility

#### Reduce Training · Reduce Inventory · Reduce Cost

Designed for simple serviceability and efficient on rig-site configuration, the Vertex Pulsar works interchangeably with both the Vertex Toplink Valve and the Vertex Latching Lower Valve. Top-mounted or bottom-landed, ideal for stand-alone or rotary steerable tools / LWD implementations. Both valves have robust, refined designs that are fully field serviceable. They can be resized in minutes and include extensive tungsten carbide cladding to maximize wear life. The dual versatility of the Vertex Pulsar product allows operators to efficiently deploy their pulsers with the right valve for the right job.

*// The new Toplink Valve requires minimal training — field personnel familiar with the Vertex ecosystem will be quickly up to speed!*

#### Features & Benefits

- Sizes: 4.75" / 6.5" / 8.0" / 9.5"
  - Simple valves with low part counts
  - Capable of very high pulse amplitudes
  - Durable under extreme drilling conditions
  - Robust design
- The **Toplink Valve** can be deployed in a top or bottom mounted configuration. This versatility enables integration with near-bit sensors, short hop transceivers, rotary steerable tools, LWD tools and dual telemetry transmitters.
  - The **Latching Lower Valve** enables MWD tool retrievability via wireline in the event of a stuck drill string; retrieve your valuable assets. No drilling assembly offset calculation required. Field changeable latching springs allow setting of unlatching and holding force to match drilling conditions and rig hoist capabilities.

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**VERTEX**  
DOWNHOLE

# The Vertex Downhole Pulser

## Superior by Design

### Physical Specifications

Pulse transmission: Positive  
Outer Diameter (housing): 1.875"  
Length: 44.1" – 46.5"

### Compatibility

Tensor: Externally controlled pulse line, pulser controls flow switch.  
BlueStar: CAN Bus commands control pulsing, external flow switch.  
Vertex Tool String: supports advanced functions.  
Other: Can be easily adapted to work with other third-party tools.

### Electrical Specifications

Operating voltage: 15 – 28 VDC  
Connector: 8-Conductor Rotary 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 temperature: 177°C / 350°F (200°C in development)  
Survival temperature electronics: 185° C, Motor 200°C, Mechanical 200°C  
Vibration: 20 gRMS (15 - 1,000 Hz)  
Shock: 1,000 g, .5 ms, ½ Sine  
LCM: High LCM tolerance

### Advanced Features

- Interchangeable between **Toplink Valve (top mount)** or **Latching Lower Valve (bottom mount)** on rig-site.
- Advanced fail-safe mode allows pulser to continue operating if one or more motor hall sensors fail.
- Advanced memory logging stores information regarding all environmental conditions experienced, all communications received, and diagnostic information for each pulse executed by the motor.
- Easy to use Windows software and rugged USB interface box to configure, test, view logs.
- Recommended with patented Vertex Muleshoe Locking System; maintains retrievability.
- Rugged construction – designed for high vibration environment.
- Lowest cost to maintain // Reduced number of parts // Can be assembled with minimum set of tools.
- Low cost to operate // Advanced power saving features and smart motor driving algorithms to use minimal battery power.
- Poppet position algorithm continuously compensates for debris, wear and thermal/pressure effects.
- Twin-start threads, modular design for quicker assembly.



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