



# Compass Directional Guidance, Inc.

*Your Source for Reliable & Modular MWD Technology Systems*

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TECHNICAL DATA SHEET

## Compass Stepper Pulser

The Compass Positive Stepper Pulser generates a sequence of pressure increment pulses in the circulating system, enabling the transmission of MWD data recorded downhole to surface.

The tool is fully retrievable and replaceable, which saves rig time by eliminating pipe trips for directional equipment.

### Features

- Simple to operate under a wide range of flow rates
- Operable in lost circulation material concentrations of 30-50 lb/bbl medium nut plug
- Servo technology for faster data rates, stronger signal, and superior ant jamming capabilities for reliable data transmission in difficult drilling
- Exceptionally power-efficient with battery life of up to 420 hours



Compass Stepper Pulser Specifications	
Min Flow Rate	35 gpm (8 L/sec) in water
Max Flow Rate	1100 gpm (67 L/sec) in water
Max Operating Temp	175° C (350° F)
Max Hydrostatic Pressure	20,000 PSI (137.9 MPa)
Operating Voltage	20-29V
Nominal Current	12mA
Shock	1000 g / 0.5 millisecond
Vibration	25g RMS 30-500 Hz Random
	30g 50-300 Hz Sine
Mud Sand Content	Less than 1% recommended
Poppet Push Force	> 100 lbs



### Description

The Compass Pulser Module consists of 3 main sections: Pulser Driver, Oil Fill, and Helix End.

The pulser allows mud flow to be restricted, creating a pressure differential by way of a main orifice poppet/orifice assembly. The movement of the main poppet in and out of the orifice creates an increase in pressure. The two factors that greatly affect poppet movement are the operation of the electrical section of the module and the fluid pressure on the compensation membrane.