

Fusion™ Magnetic Bearings General Specifications

General Description

The Fusion™ magnetic bearing is a major milestone in the evolution of magnetic bearing technology. For the first time, an active magnetic bearing is available that fully integrates the associated electronics, including digital processing, sensing, amplification, and communications, into the magnetic bearing structure, eliminating the external cables for the coils and sensors. The bearing may be operated with as few as two wires for electrical power. Other unique features include continuous health monitoring of all power devices and coils in the bearing, network communications, and integrated touchdown surfaces.

Fusion™ bearings will be available in a number of frame sizes. The first frame size, designated 3570, is suitable for shafts that weigh between 80 and 600 lb (36 and 270 kg). Future frame sizes will extend this range. A matching thrust bearing for the 3570 radial bearing will be available in late 2007.

Technical Specifications for Frame Size 3570

Stator OD: 7.0"
 Axial length: 3.6" to 5.3"
 Shaft Diameter: 2.0" max
 Rotor OD: 3.5"
 Load capacity¹: 300 lb (3.6" L), 600 lb (5.3" L)
 Max force²: 424 lb (3.6" L), 849 lb (5.3" L)
 Force slew rate: 300,000 lb/s
 Rotational speed: 25,000 rpm max
 Power: 48 VDC @ 2 A
 Temperature: 140°F (60°C) at stator OD
 Communications: Ethernet
 MTBF: 80,000 hr

¹ Minimum force capability in any direction

² Maximum force capability in preferred direction

