



# Elephanta® Active Magnetic Bearing Controller

800(D) x 2000(W) x 2100(H) mm

The Elephanta controller is the most powerful magnetic bearing controller in the industry (four times more powerful than proven competition) and the basis for the largest, most critical turbomachinery applications, including subsea. It is recommended for machinery in the power range of **15 MW to 80 MW**.

- Simple and fail-safe integration of the control cabinet with the machine station via the digital output/input from the digital cabinet
- An optimised, automated commissioning and tuning process available to the OEM/end user
- Remote monitoring and adjustment capabilities
- Built-in condition monitoring system provides comprehensive diagnostics
- High processing performance which allows for more complex algorithms that provide higher dynamic efficiency, improved usability and ergonomics, and noise immunity
- The integrity of functional testing, verification and development of new features performed on the world's biggest super-critical test rig is far superior to simulation testing methods used by others

## CONFIGURATION

- 5 axis controller (option for 4, 6, or 7 axis control)

## INTERFACES

- Door mounted operator panel
- Hardwired discrete DCS interface
- Analogue diagnostic outputs
- PROFIBUS DP slave (option)
- MODBUS RTU or TCP slave (option)
- SOAP slave (option)

## CONTROL LAW CAPABILITY

- SISO/MIMO controller with tracking filters
- Multi-coordinate control (MCC)
- Automatic balancing algorithm (ABA)
- Runout compensation
- Synchronous open loop feed forward
- Advanced amplifier algorithm (for canned bearings, software flux feedback)

## SENSOR SUPPORT

- Magnetic displacement
- Inductive, eddy current
- Capacitive
- Dual position sensor ring option
- Redundancy
- Flux feedback

## DIAGNOSTIC CAPABILITIES

- Web server interface
- High speed capture buffer
- Trend logging
- Event logging
- Automatic clearance check
- Integrated transfer function measurement
- Integrated spectra capability
- Integrated harmonic capture
- 3rd level trip
- Built-in tools show compliance with ISO sensitivity performance criteria

## OTHER

- Support for purge protected bearings

## AT A GLANCE

**Machinery power range:** 15 to 80 MW

**For critical applications requiring the highest availability:**

- Oil & gas transportation, storage and production
- Petrochemical and process equipment
- Large-scale power generation, including nuclear
- Subsea and sour gas with canned or sealed bearings

## Benefits:

- Proven availability exceeds 99.9%
- Reduced maintenance cost with planned and predictive maintenance programmes
- Lower total cost of ownership due to higher reliability and lower maintenance costs
- Automated Commissioning can eliminate OEM/end user dependence on the supplier
- Capability of retrofit to magnetic bearings supplied by others

## Certification:

- CE and CB

## Support:

- 24-7 on-call service (reply within 1 hour)
- Spares service and extended warranty option
- Comprehensive training programme

## SPECIFICATION

### ELEPHANTA BEARING CONTROL CABINET E0270200



<b>Cabinet Size &amp; Rating</b>	800(D) x 2000(W) x 2100(H) mm; plinth (100mm). Cable entry from bottom. IP44. Forced air and liquid cooling (6+ Litre capacity filled with 50/50 Distilled Water / Propylene Glycol)	
<b>Access</b>	Front full length door (lock optional)	
<b>Maximum Case Weight</b>	1200 kg	
<b>Input Voltage: Mains Options</b>	230VAC (50/60Hz) (180VAC to 254VAC) 1kW <sup>1</sup>	
<b>Input Voltage: DC Options</b>	<b>48VDC input (42VDC to 57VDC)</b>	<b>96VDC input (88VDC to 106VDC)</b>
<b>4 axes</b>	D027-48/4 10kW <sup>1</sup>	D027-96/4 20kW <sup>1</sup>
<b>5 axes</b>	D027-48/5 12kW <sup>1</sup>	D027-96/5 24kW <sup>1</sup>
<b>6 axes</b>	D027-48/6 15kW <sup>1</sup>	D027-96/6 29kW <sup>1</sup>
<b>7 axes</b>	D027-48/7 17kW <sup>1</sup>	D027-96/7 34kW <sup>1</sup>
<b>Output Power</b>	600V @ 60A per magnet (continuous)	
<b>Operating Temperature Range</b>	5°C to 40°C ambient temperature (when levitated) 5°C to 50°C (de-levitated)	
<b>Relative Humidity Range</b>	80% max non-condensing	
<b>Transport &amp; Storage Temperature Range</b>	-40°C to +45°C, humidity 80% max non-condensing	
<b>Area Classification</b>	Non-hazardous	
<b>Maximum Cable Length Between Cabinet &amp; Bearings</b>	150m; consult for extended cable lengths to 500+m	
<b>Certification</b>	CE and CB; contact Waukesha Magnetic Bearings for certificate numbers	

<sup>1</sup>Heat Load: Refer to customer specific manual for heat load in a particular application

