



WITTENSTEIN

high performance

high efficiency

high reliability

Radiation Hardened Brushless Servo Motors

Flexible solutions for extreme environments



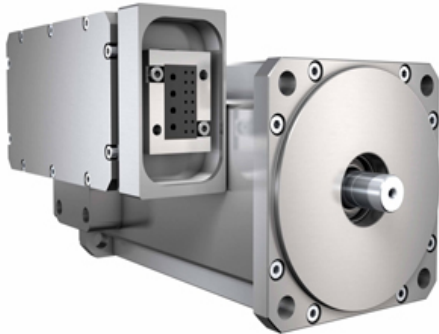
Rad-hard Motors

Superior motor technology . . . no matter the environment.



Standard motors are unsuitable for use in a radioactive environment, as they are manufactured with materials which will quickly deteriorate under gamma ray bombardment.

Radiation-hardened Cyber Motors offer the quality and performance you expect of WITTENSTEIN cyber motors at ambient temperatures up to 200 °C and at total absorbed radiation dose up to 10^7 Gy (10^9 rad).



The quality of velocity and position control meets or exceeds that of premium servo motors for industry applications under normal ambient conditions.

Features

- High air gap flux density with special rare-earth magnet material
- High pole count construction for maximum torque output
- Highest dynamic performance with minimized inertia
- High overload capability leads to high productivity
- Best thermal integrity of the winding for highest continuous power
- Highest efficiency up to 90%, in special designs up to 96%
- Best heat resistance up to 200 °C ambient temperature
- Radiation resistance under radiation dose of up to 10^7 Gy
- Highest reliability by use of special materials
- Maintenance free lifetime limited only by the bearings
- Complete available with resolver and brake
- Lowest cogging torque for smoothest rotation
- Precision and mounting stability by small mechanical tolerances
- Special lubricants for the radiation environment



Construction and Technology

Only highly radiation-hardened materials and no active semiconductors are used, ensuring reliability and performance of the motor at high radiation dose and high ambient temperatures.

- Used of specialized materials and processes
- Execution of particular processes
- No paint on the motor
- Brakes with specialized friction pad
- Specialized bearing grease
- Resolver feedback without rotor winding

Typical Applications

- Nuclear fuel handling machines and robots
- Motors in the Hot Cell in nuclear power stations
- Gripper arms of robots
- Decommissioning of nuclear power stations
- Medical equipment with radioactive materials
- Scientific laboratory applications
- Control rod drive mechanisms
- Valve actuation in containment

Availability

The motors are available in frame sizes from 009 to 270mm. Please consult our team regarding other specific requirements.