



# Iris Power EVAII™ Endwinding Vibration Accelerometer

## KITS FOR AIR-COOLED MACHINES OR HYDROGEN-COOLED GENERATORS

Motor and generator stator endwinding vibration can lead to machine failure if it is not caught at an early stage. Non-metallic accelerometers are required to measure and trend this endwinding vibration due to the high voltages and high magnetic fields in the endwindings. Iris Power supplies reliable endwinding accelerometers based on fiber optic technology. These sensors are permanently installed and can be used with the Iris Power GuardII+ endwinding vibration module or spectrum analyzers. Sensors can be of the single axis or the dual axis type. Dual axis sensors can simultaneously measure vibration in the radial and tangential directions. Kits are available for use with air-cooled machines or hydrogen-cooled generators.

Each air-cooled machine kit includes EVAII sensors with 10 m of fiber optic cable, a machine frame junction box, 10 m of fiber optic extension cable used between the junction box and a box containing electro-optical drivers, plus an installation guide. Kits can include one additional single axis type EVAII for installation on the stator core to quantify the effect of core vibration on the endwinding structure. A sensor install kit (with lashing materials and resins) is also included. The hydrogen-cooled kit also contains a feedthrough to bring the fiber optic cables outside the generator frame.

SENSOR SPECIFICATIONS	
Sensitivity	100 mV/g
Frequency Range	5-1000 Hz (+/- 1 dB)
Dynamic Range	0-50 g
Transverse Sensitivity	< 4 %
Residual Noise	< 1 mV rms
Operating Temperature	-50 °C to +180 °C (-58 °F to +356 °F)
Resolution	< 0.007 g pk < 0.24 µm pk-pk at 120 Hz
Minimum Cable Bending Radius	5 cm (2")

ELECTRO OPTICAL DRIVER SPECIFICATIONS	
Operating Temperature	-20 °C to +60 °C (-4 °F to +140 °F)
Quantity	1 per sensor axis
Power and Consumption	+12 VDC, 110 mA per driver



**ELECTRICAL OPTICAL DRIVERS (EOD)**

HYDROGEN PENETRATION SPECIFICATIONS	
Number of connectors	Multichannel feedthrough consists of 8 or 16 fiber connectors on each side of the penetration
Self-reinforcing Seal	Embedded in a cured resin providing a unique self-reinforcing seal
Frame hole diameter	Frame hole diameter required is 25 mm (1")
Pressure tested	Hydrostatic pressure tested to 2750 kPa (400 psi)



**MULTICHANNEL FEEDTHROUGH FOR HYDROGEN COOLED GENERATORS**

SENSOR SPECIFICATIONS	
<ul style="list-style-type: none"> <li>• Single or dual axis sensing directions</li> <li>• Single optical fiber for each sensing axis</li> <li>• Flexible optical cables</li> <li>• Dual axis sensor has low cross sensitivity increasing accuracy</li> <li>• Safe in high voltage and high magnetic fields</li> <li>• EValI maximum continuous operation to 180° C (356 °F)</li> <li>• Low sensitivity to cable vibration</li> <li>• Accelerometer reliability extensively evaluated using accelerated life testing at high temperature and high vibration levels</li> <li>• Meets all the requirements of IEC 60034-32</li> <li>• Electro-Optical Drivers are not mounted on the motor or generator frame, ensuring a longer life and easier maintenance</li> <li>• Optical Fiber from sensor to Electro- Optical Driver ensuring no RF interference</li> <li>• Electro-Optical Driver test point enables calibration verification with fine adjust buttons</li> <li>• Calibrated using Back-to-Back comparison based on ISO 16063-21</li> <li>• Standard 100 mV/g electrical output compatible with any standard vibration monitoring instrument</li> </ul>	

## GET IN TOUCH

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