

Fiber Optic accelerometer | AC 1-ax 800 NT



Description

The AC 1-ax 800 NT is an FBG accelerometer with unprecedented sensitivity.

The sensor enables the detection of ultra-low-level, low-frequency vibrations specifically for monitoring large structures, bridges, archways, overpasses, foundations and detecting earth tremors.

KEY FEATURES

- Very high sensitivity
- Double ended
- Robust stainless steel design for outdoor use



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Performance	Parameter
Sensitivity	900 pm/g $\pm$ 100 pm/g
Frequency range	1 - 150 Hz
Sensitivity flatness 1 - 150Hz	<2 dB
Phase flatness 1-150Hz	< 10°
Resonance frequency	>350 Hz
Cross axis sensitivity (1-150Hz)	< -30 dB
Sensor Exposure	
Maximum Acceleration (1-150Hz)	2 g
Maximum Shock	5 g
Physical Properties	
Weight	730 grams
Material	Stainless steel
Environmental Properties	
Operational Temperature	-40 to +60 °C
Maximum short term exposure	+80 °C



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Sensor Calibration:

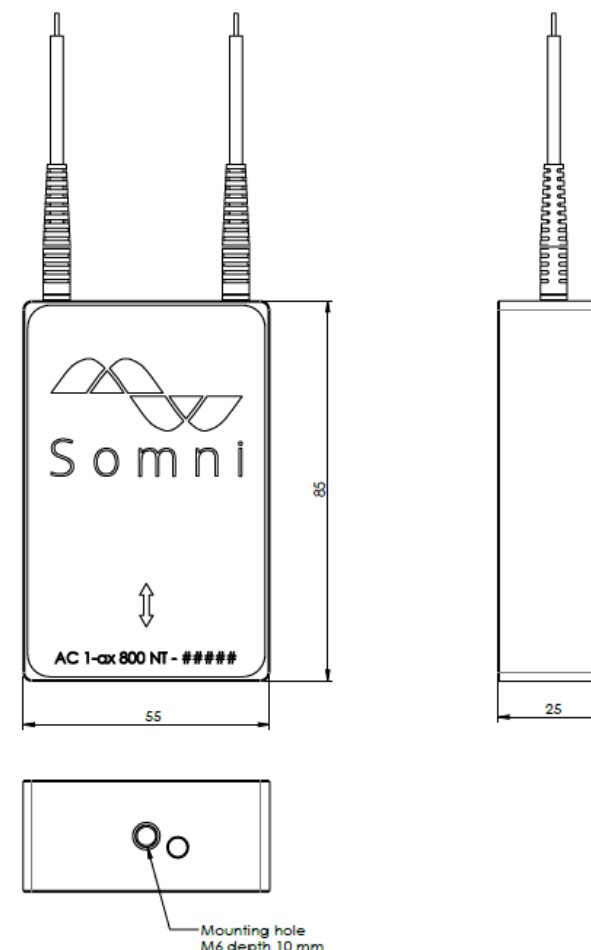
All sensors are individually tested and calibrated after manufacturing. The following calibration formula is used to convert the sensor wavelength output to a vibration reading

Measurand		Unit
$\lambda 1$	Wavelength FBG	nm
$\lambda 2$	Average wavelength ⁽¹⁾	nm
Calibration constants		Value
C1	Sensitivity	0.900 ± 0.10 nm/g
Calibration Formulas		
$A(g) = (\lambda 1 - \lambda 2)/C1$		

- 1) Recommended is to use the a moving average wavelength with a time window of 5 seconds. Alternatively a High-Pass filter can be used optimized to the application at hand.

Mounting instructions:

It is recommended to fasten the sensor on a flat surface using an M6 bolt as indicated. Maximum torque to apply is 8 Nm.



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product name

XXXX

wavelength

XX

connector
side A

XXX

cable length
side A

XX

connector
side B

XXX

cable length
side B

XX

cable type

wavelength (nm)

1520

1530

1540

1550

1560

1570

1580

xxxx (= custom)

accuracy ± 0.5 nm

connector type

FC

FC/APC

SC

SC/APC

E2

E2000

LC

LC/APC

NN

none

ZZ

other

cable length (m)

001

1 meter

003

3 meter

010

10 meter

xxx

custom

connector type

FC

FC/APC

SC

SC/APC

E2

E2000

LC

LC/APC

NN

none

ZZ

other

cable length (m)

001

1 meter

003

3 meter

010

10 meter

xxx

custom

cable type

01

3mm OD Kevlar
reinforced

02

3mm OD metal
armored

ZZ

custom