

General Description

OIAC7 is a +/-3g tri-axial accelerometer with buffered voltage outputs. The self-test input line can be used to check the accelerometer's correct functionality.

OIAC7 accelerometers are available in three variants. Each variant has a different internal filter bandwidth to match application needs for sensors frequency response.

OIAC7 internal temperature sensor provides information about operative environment conditions. The voltage output voltage varies linearly with temperature.

The compact sturdy anodized metal enclosure can withstand shocks and vibrations, while the filling resin makes OIAC7 accelerometers waterproof and dustproof.

The internal protection circuits make these accelerometers electrically robust to withstand overvoltage and outputs lines overload.



Images are for illustration purpose only and may not represent exactly the product in all the details






Applications

Wind turbine monitoring
Machine vibration monitor
Shock monitoring
Industry 4.0

Pin Functions

The OIAC7 connection cable is 1.5 meters long. It has 6 conductors plus shield. Cable length or conductors termination customizable on request.

Cable color	Name	Function
Yellow-Green	AGND	Ground
Black 1	V+	Power supply
Black 2	X	X-axis output
Black 3	Y	Y-axis output
Black 4	Z	Z-axis output
Black 5	TMP	Temperature output
Shield	SH	Shield

					AGND
1	1	1	1	1	V+
2	2	2	2	2	X-axis output
3	3	3	3	3	Y-axis output
4	4	4	4	4	Z-axis output
5	5	5	5	5	Temperature output

Features

- Three axes
- Internal temperature sensor
- Buffered outputs
- Rugged device: fully metal case filled with protective resin
- Resistant to electrical disturbs and transients
- Power supply inversion internal protection
- Operating temperature -40°C to +85°C
- IP67 protection grade

Ordering information

OIAC7-1500

Tri-axial accelerometer with
internal temperature sensor
BW_{xy}=1500Hz; BW_z=500Hz

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Min	Max	Unit
T _S	Storage Temperature	-40	85	°C
T _A	Operating Temperature Range	-40	85	°C
V _{CC}	Supply Voltage Range (DC voltage)	6	28	V

Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rated conditions for extended periods may affect device reliability.

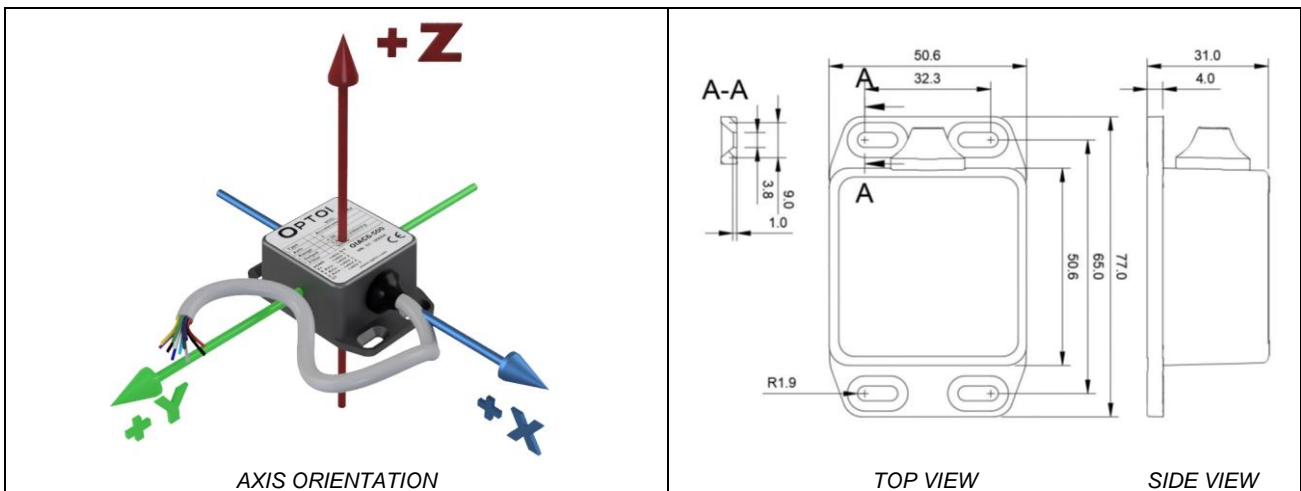
ELECTRICAL CHARACTERISTICS

T_A = 25°C unless otherwise noted.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V _{CC}	Supply voltage range		7	12	24	V
I _{CC}	Current consumption	average value V _{CC} = 12V; R _{Lxyz} = 100kΩ		2		mA
N _{AX}	Axis number			3		-
R	Range			±3		g
S _S	Sensitivity		290	330	360	mV/g
Z _B	Zero BIAS (0g offset)	X-axis and Y-axis acceleration = 0g	1,35	1,5	1,65	V
		Z-axis acceleration = 0g	1,2	1,5	1,8	V
BW	Internal filter bandwidth	X-axis and Y-axis		1500		Hz
		Z-axis		500		Hz
R _{LACC}	Voltage outputs load resistor	X-axis, Y-Axis, Z-Axis output lines	20	100		kΩ
T _{Rg}	Temp. measurement range		-20		+85	°C
TMP _{ACY}	Temp. accuracy	T _A = 25°C, T _A = 80°C	-2	±0.5	+2	°C
		T _A = -20°C		±1.0		

MECHANICAL CHARACTERISTICS AND DIMENSIONS

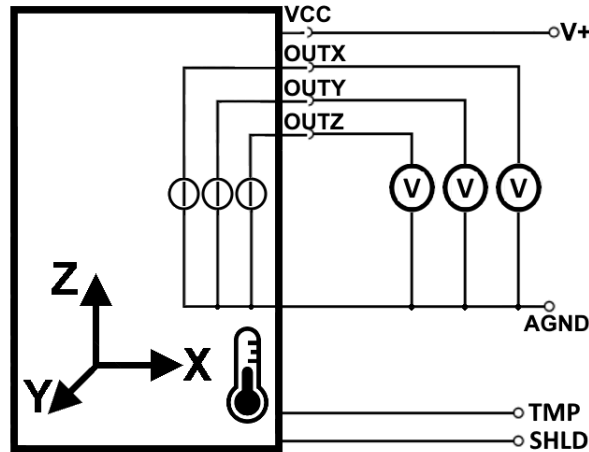
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Wdt	Width			50.6		mm
Lgt	Length			77.0		mm
Hgt	Height			31.0		mm
Wgt	Weight			200		g
C _L	Cable standard length			8		m
C _∅	Cable outer diameter			7.6		mm
C _S	Cable connection styles			6 conductors + shield		-



Mount the OIAC7 accelerometer using 4 flat head countersunk screws with a maximum thread diameter of 4mm, externally centered in the 4 slot-holes.

Electrical Connections

CONNECTIONS



The diagram above is for illustration purposes only. Internal drawings of the device are schematized as logic functions and may not represent the physical implementation

TEMPERATURE OUTPUT

To acquire accurately the temperature output signal it's recommended to use a high impedance analog to digital converter or voltmeter.

