OpenMovement

AX3v2 Datasheet

3-Axis logging movement sensor

AX3v2

3-Axis Logging Accelerometer

Description

The AX3v2 is a low cost logging 3-axis accelerometer. At the heart of the sensor is a non-volatile flash memory chip linked by a USB enabled microcontroller. A temperature sensor, ambient light sensor, real time clock (RTC) and lithium polymer battery are also integrated into the sealed polycarbonate puck. The charge time is approximately 90 minutes and the sensor will record for up to 21 days of continuous data. The device is suitable for use in a variety of environments, is water resistant up to 1.5 meters and is CE safety mark approved.

The AX3v2 is functionally identical to the AX3 and all the integrated sensor positions and orientations are unchanged. The newer design uses an improved enclosure, the USB connector position has been moved.

Applications

- Human movement science
- Sports research
- Instrumented environments
- Digital interaction
- Activity recognition

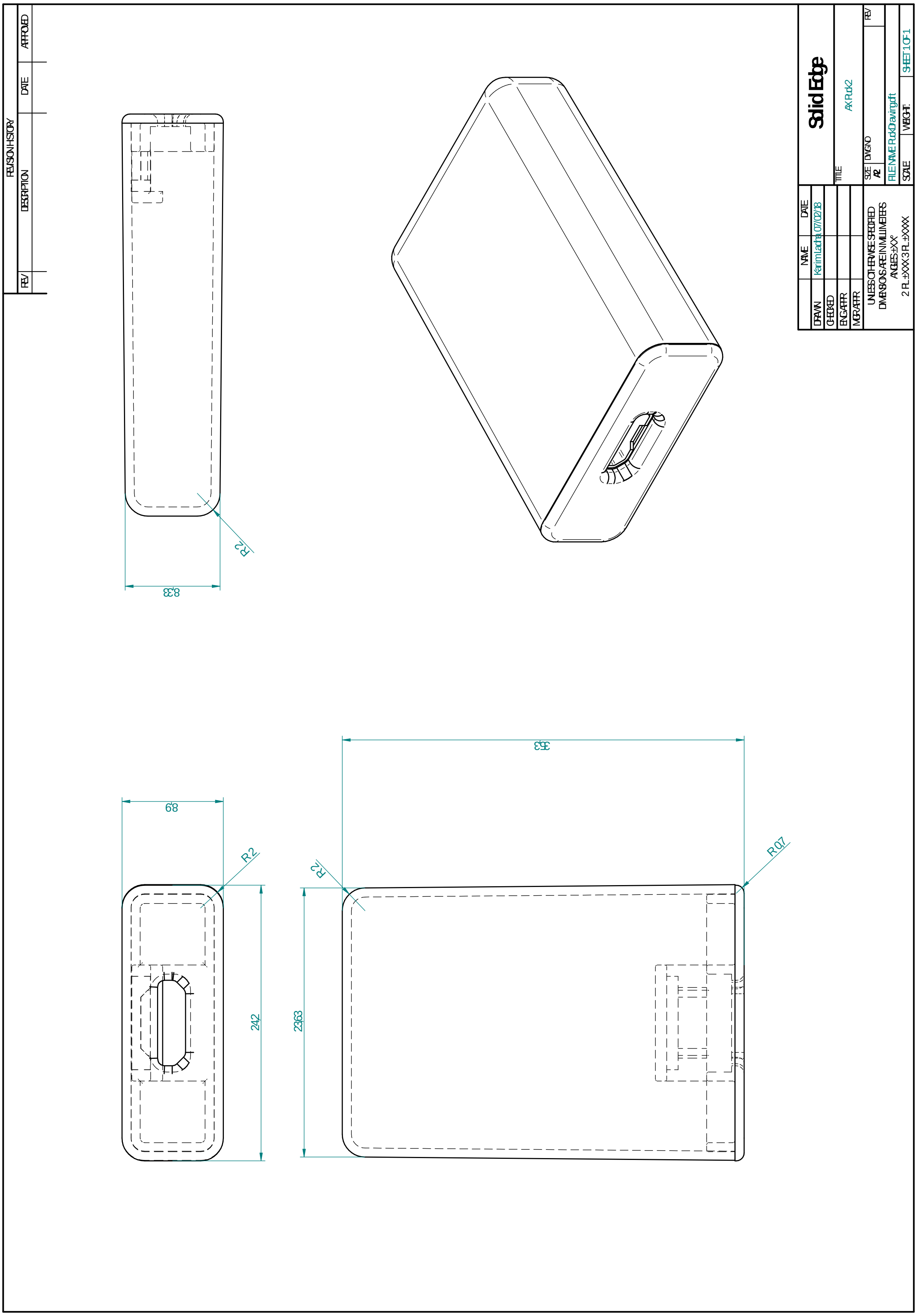
Summary

- 3-axis accelerometer
- Light sensor
- Temperature sensor
- 512MB memory
- 14 days recording at 100Hz
- Rechargeable lithium battery
- Water resistant
- Configurable logging options

Specification: AX3v2

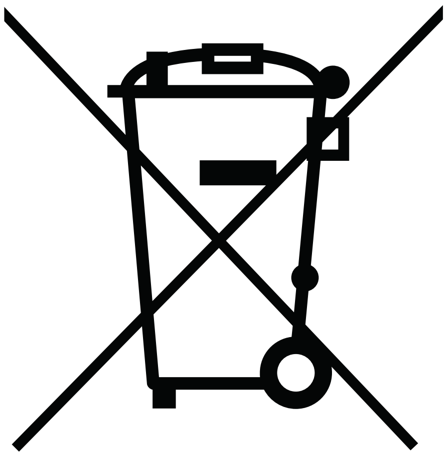
PARAMETER	VALUE	NOTES
Puck Size	23x32.5x8.9 mm	
Puck Weight	11g	
Enclosure Material	Polycarbonate	
Battery Capacity	150mAh	Rechargeable lithium polymer
Battery Charge Current	150mA	
Connectivity	Micro USB	
ENVIRONMENTAL		
Moisture Ingress	Water-resistant to 1.5m	IPx8
Dust Ingress	Dust tight	IP6x
Operating Temperature	0 - 65˚C (not charging)	40˚C if charging
TYPICAL CAPABILITIES		
Memory	512MB NAND fl ash non-volatile	
Logging Frequencies	Configurable 12.5Hz - 3200Hz	
Maximum Logging Periods	30 days at 12.5 Hz or 14 days at 100Hz	
REAL TIME CLOCK		
Type	Quartz real time clock	
Frequency	32.768KHz	
Precision	± 50ppm (typical)	
ACCELEROMETER		
Sensor Type	MEMS	ADXL345
Range	±2/4/8/16g	Configurable
Resolution	Up to 13-bit	Configurable
LIGHT		
Sensor Type	APDS9007	Logarithmic light sensor
Wave Length	470-650 nm	Matched to human eye
Range	3-1000 LUX	At sensor
Digital format	10 bit	
TEMPERATURE		
Sensor Type	MCP9700	Linear thermistor
Range	0 - 40˚C	
Resolution	0.3˚C	
Accuracy	1˚C typical (4˚C max)	

Dimensions: AX3v2



Certification:

The AX3v2 is certified to the following:

Certification	Test
CE	The product is compliant with the Directive 2004/108/EC; the relevant Declaration of Conformity is available from "the device manufacturer" The product has been tested to BS EN 61000-6-1:2007 and BS EN 61000-6-3 :2007 (Electromagnetic compatibility (EMC), Generic standards, Immunity for residential, commercial and light-industrial environments).
IP68	The product has an ingress protection rating as defined in IEC 60529 to level 68. Due to the nature of the housing (potted enclosure) the device was passed on the basis that it was fully functional both before and after each testing criterion
	In accordance with the European Directive 2002/96/ EC on Waste Electrical and Electronic Equipment (WEEE), the product must not be disposed of in the normal unsorted municipal waste stream. Instead, it is the user's responsibility to dispose of this product by returning it to a collection point or directly to "the device manufacturer". Separate collection of this waste helps optimize the recovery and recycling of any reclaimable materials and also reduces the impact on human health and the environment. For more information concerning the correct disposal of this product, please contact your local authority or our issuing authority The lithium polymer cell has met the acceptance criterion for the UN Recommendations on the Transport or Dangerous Goods relating to lithium batteries, reference Para 38.3 of Manual tests and Criteria document No. ST/SG/AC.10.11/Rev.4:2003

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