

KAIROS™

NOAH Multifunction Leak Sensor



Noah Multifunction Leak Sensor Module

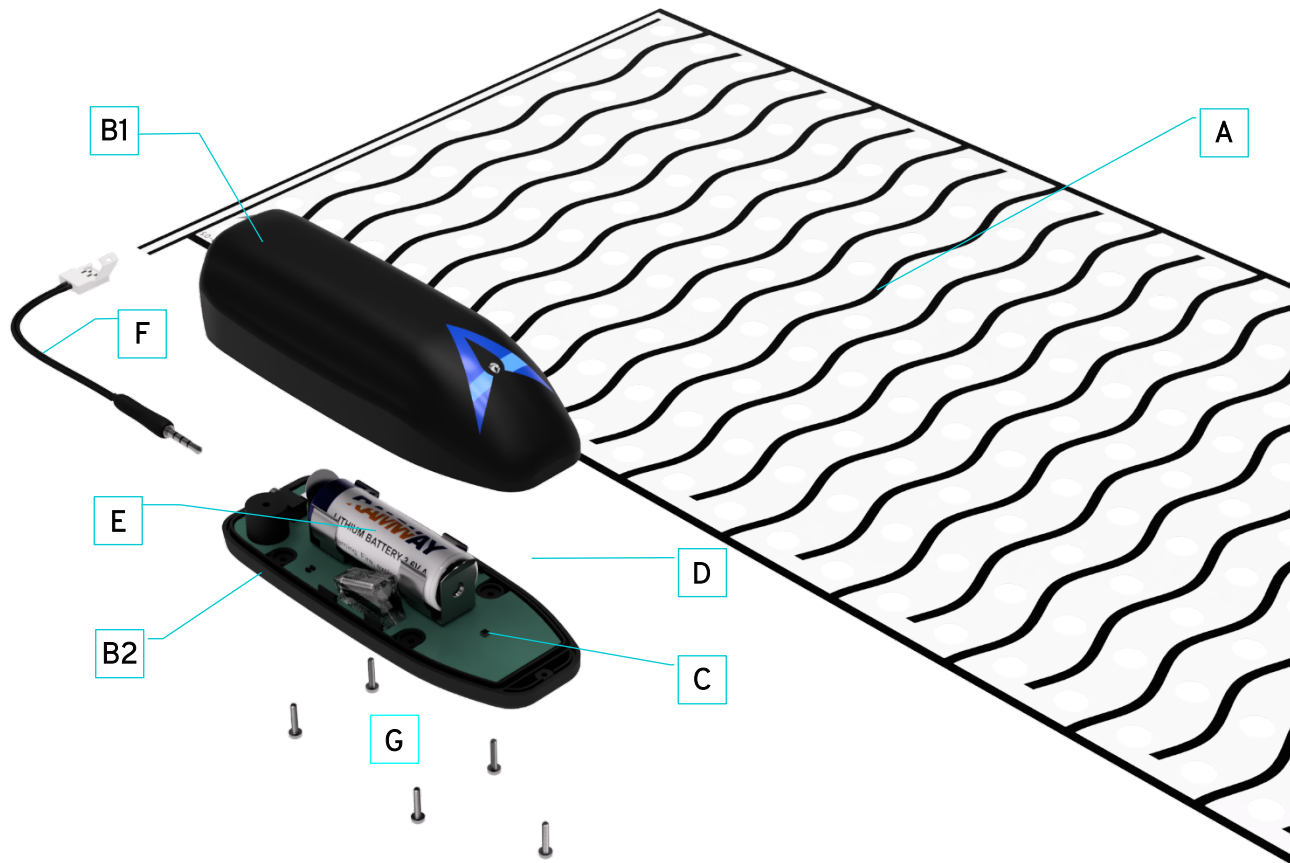
Datasheet

2021-09-23

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Components



A	KAIROS Leak Sensing Membrane	Thin plastic with carbon ink traces for detecting conductive liquids
B1	IPX5-rated Enclosure (<i>upper</i>)	Waterproof for 30 minutes in 3 feet of water
B2	IPX5-rated Enclosure (<i>lower</i>)	
C	LED indicator	<ul style="list-style-type: none">• “Blue” indicates leak detected• “Green” indicates tamper detected• “Red” indicates temperature max or min detected
D	Function Key	Used in the pairing process to a K1 Gateway
E	ER18505 3.6V Battery	
F	Connector cable	
G	5 x screws	

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General Description

When water is present on a KAIROS' Leak Sensing Membrane attached to a NOAH Multifunction Leak Sensor, an alarm message is sent to any K1 Gateways within range. When the attached membrane has no water present on it, a message is sent to remove the alarm. NOAH operates in LoRaWAN™ Class A mode.

NOAH uses LoRa radio technology for long range, low power, high penetration, low data rate applications. The unit transmits to the KAIROS web and mobile dashboard, which can be set-up to send alerts to any number of users (e.g. building engineers, front desks, residents, owners, security, etc) who should be alerted to the presence of water wherever the sensor is located. The low power characteristics of this new technology allow for up to ten years of battery-powered monitoring. NOAH's small form-factor make it easy to be installed discretely and out of the way.

Applications

NOAH Leak Detectors is suitable for monitoring water intrusions in leak prone areas. KAIROS Leak Sensing Membranes are available in a variety of formats to suit any application. It is possible to print and cut custom membranes when necessary. A few recommended locations include:

- Water heaters
- Sinks
- HVAC/PTAC systems
- Skylights, Roof Vents
- Toilet bases
- Ice Machines
- Dishwashers
- Refrigerators
- Clothes Washers

Features

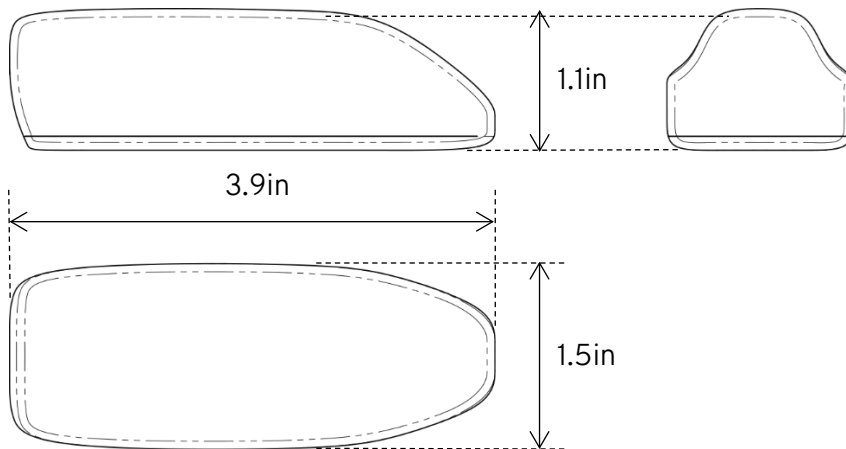
- LoRaWAN™ Class A compatible
- Frequency Hopping Spread Spectrum (FHSS)
- Improved interference immunity
- Improved power management for longer battery life¹
- Encrypt-RFTM Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)

¹ Battery life is determined by sensor reporting frequency and other variables

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Module



Electrical

Input Power	3.6V AA battery (4.0Ah capacity with the supplied ER18505 battery)
Operation Voltage	DC ~3.6V
Standby Current	10uA/3.6V
Transmitting Current (max)	100mA/3.6V
Receiving Current (max)	10mA @3.6V
Low Voltage Threshold	3.0V
Battery Voltage Measurement	±0.1V

Frequency

TX Power	19dBm±1dBm
Rx Sensitivity	-136dBm (LoRa, Spreading Factor=12, Bit Rate=293bps) -121dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)
Antenna Type	Built-in antenna
Communication Range	Up to 10 km, the actual transmission distance depends on the environment
Data Transfer Rate	0.3kbps~50kbps
Spread Technique	LoRa/FSK
Available Frequency	US902-928 , using FSB2
Activation Methods	OTAA & ABP

Physical

Module Dimensions	3.9" x 1.5" x 1.1"
Weight	6oz
Operating Temperature	-4°F to 131°F

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Storage Temperature	-40°F to 185°F
IP Rating	IPX5

Contact

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