

## Product Specification

# Leak Sensor - Probe

## WNS2-9-W2-WS-WD-L03

Nexa™ Leak Sensor - Probe is a water detection device with two stainless steel prongs that immediately sense water and routinely report the presence or absence of water. Various lead length options are available:

- 3 ft (0.9 m) Standard
- 10 ft (3 m)
- 25 ft (7.5 m)
- 50 ft (15 m)
- 100 ft (30 m)

### Principle of Operation

The sensor identifies when water is present by completing a circuit between the two contacts at the end of the lead. When the detection state of the sensor changes, wireless communication is immediately sent to the gateway.

### Primary Applications

- Domestic hot water pipes, risers, and branches
- Cold water lines
- Boiler and chiller supply and return
- Ambient temperature

### Features

- Wireless range of 2,000+ feet through 18+ walls<sup>1</sup>
- Frequency-hopping Spread Spectrum (FHSS)
- Best-in-class interference immunity
- Best-in-class power management for longer battery life<sup>2</sup>
- Encrypt-RF® Security (Diffie-Hellman Key Exchange + Advanced Encryption Standard (AES)-128 Cipher Block Chaining (CBC) for sensor data messages)
- Sensor logging of 2,000 to 4,000 readings if the gateway connection is lost (nonvolatile flash, persists through power cycling):
  - 10-minute heartbeats = ~22 days
  - 2-hour heartbeats = ~266 days
- Over-the-air (OTA) firmware updates (future-proof)

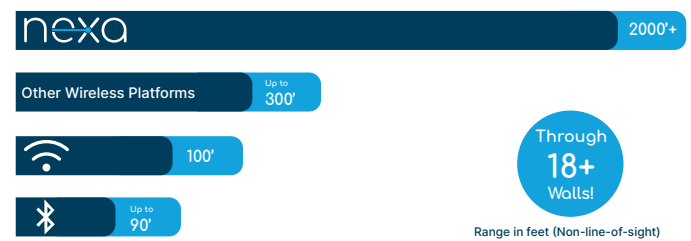
<sup>1</sup> Actual range may vary depending on the environment and gateway.

<sup>2</sup> Battery life is determined by the sensor reporting frequency and other variables. Other power options are also available.



Battery-powered wireless leak sensor with two-prong probe monitors when water is present

### Wireless Range Comparison



#### NOTICE

Watts is not responsible for the failure of alerts due to connectivity issues, expired batteries, or improper installation.


#### NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

Inquire with governing authorities for local installation requirements.

# Technical Specification

Call customer service if you need assistance with technical details.

Detection Requirements	Input impedance	2.5 MΩ
	Maximum medium impedance	900.0 kΩ (Clean water has a typical impedance of 50 to 200 kΩ) <sup>1</sup>
Probe	Electrode Composition	Stainless Steel 304
	Probe Casing	ABS Plastic
Nexa Wireless	Data logging	Sensor logs 2,000 to 4,000 readings if gateway connection is lost (nonvolatile flash, persists through power cycling): 10-minute heartbeats = ~22 days 2-hour heartbeats = ~266 days
	Wireless protocol	Next Proprietary Frequency-hopping Spread Spectrum (FHSS)
	Wireless transmission power	(EIRP) 50 mW (900MHz), 25 mW (868 MHz), 10 mW (433 MHz)
	Wireless range	2,000+ ft through 18+ walls with Nexa gateway
	Security	Encrypt-RF® (256-bit key exchange and AES-128 CTR)
General	Battery voltage range	2.0 to 3.8 VDC
	Operating altitude (non-pressurized) <sup>2</sup>	-15.2 to 1,982 m (-50 to 6,500 ft)
	Storage altitude (non-pressurized environments) <sup>2</sup>	-15.2 to 3,048 m (-50 to 10,000 ft)
	Operating humidity	5% to 85% RH (non-condensing)
	Certifications	900 MHz sensors: FCC ID: ZTL-G2SC1 and IC: 9794A-G2SC1. 868 and 433 MHz sensors tested and comply with: EN 55032: 2015/A11:2020; EN 55035:2017/A11:2020; ETSI EN 300 220 V3.2.1 (2018-06); ETSI EN 301 489-3 V2.2.0. (2021-11); and ETSI EN 303 645. All sensors tested and comply with: EN 61010-1 and EN 60950 and meet RoHS 2015/863 and REACH 224 (June 2022), according to IEC 63000:2016/AMD1:2022.  

<sup>1</sup> The resistance between the conductive probe ends must be less than this to ensure water detection.

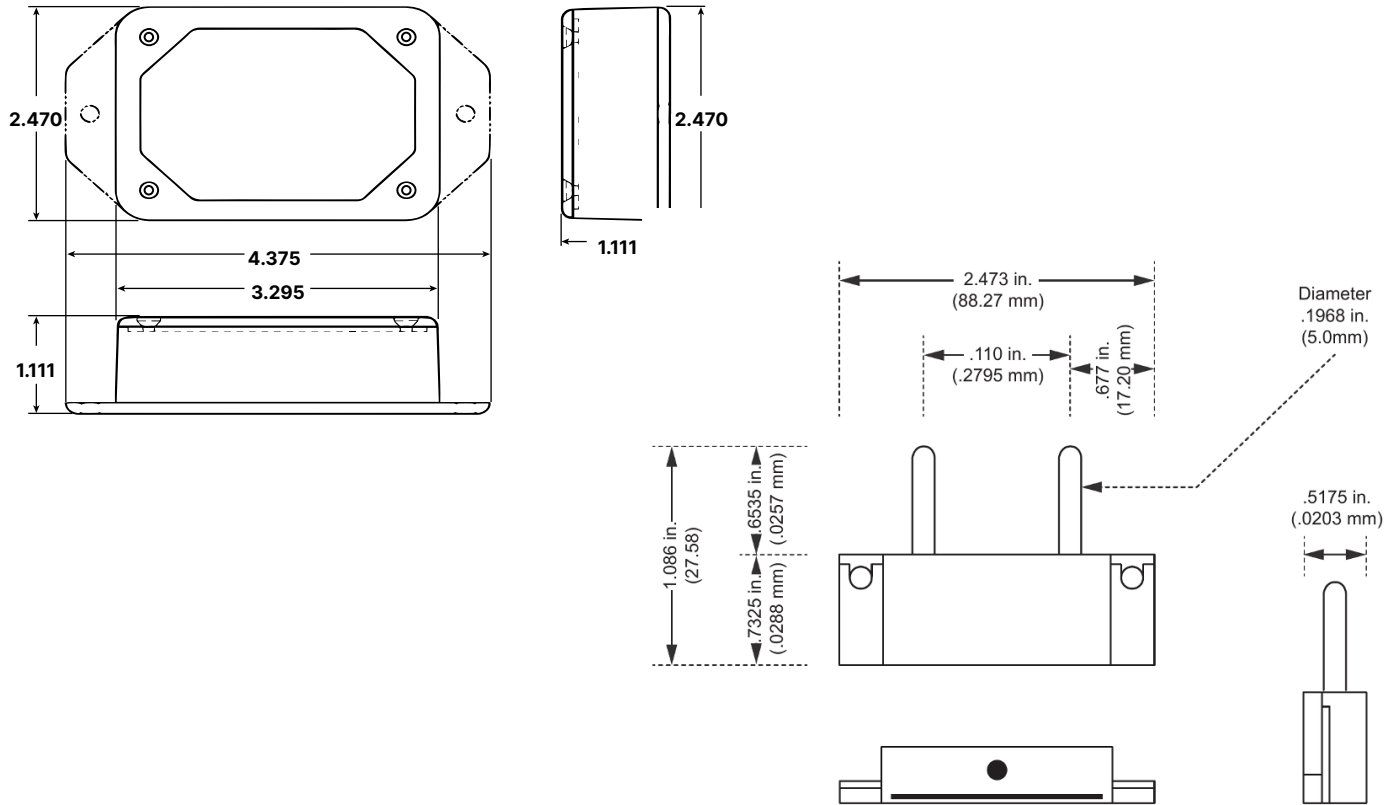
<sup>2</sup> Operating and storage altitude without DC power supply is -30.48 to 9144 m (-100 to 30000 ft).

Battery <sup>1</sup>	2× 1.5V AA alkaline, 1500 mAh
Battery Life	10+ years expected
Operating temperature range (sensor body) <sup>2</sup>	0°F to 130°F (-18°C to 55°C)
Wireless antenna type	1/4-wave, 20 gauge wire whip, 3.5 in. (900/868 MHz)
Weight	3.7 oz (105 g) with 3 ft (0.9 m) lead

<sup>1</sup> Hardware cannot withstand negative voltage. Take care when inserting and removing batteries.

<sup>2</sup> Operating below 32°F (0°C) reduces battery life.

## Dimensions



## Operating Conditions

Nexa sensors are designed for applications in ordinary environments (normal room temperature, humidity, and atmospheric pressure). Do not use these sensors under the following conditions, as these factors can deteriorate the product characteristics and cause failures and burnout.

- Corrosive gas or deoxidizing gas such as chlorine gas, hydrogen sulfide gas, ammonia gas, sulfuric acid gas, nitric oxide gas
- Volatile or flammable gas
- Dusty conditions
- Low-pressure or high-pressure environments
- Wet or excessively humid locations
- Places with salt water, oils, chemical liquids, or organic solvents
- Where there are excessively strong vibrations
- Other places where similar hazardous conditions exist

Use these products within the Nexa specified temperature range. Higher temperatures may cause deterioration of the characteristics or the material quality.

