Product Specification

Pressure Sensor

WNS2-9-W2-PS-300

Nexa™ Pressure Sensor measures pressure in a gas, liquid or vapor supply line and transmits the pressure measurement to the Nexa cloud platform. This solution combines a standard pressure transducer interfaced to a wireless radio.

- Measure pressure with a 300 PSIG transducer
- Measure non-caustic liquid or vapor pressures

Principle of Operation

By connecting the pressure sensor to a pressurized gas, liquid or vapor supply line, it can measure the pressure within the line and send data to the cloud platform. The data is stored in Nexa where it can be reviewed by authorized personnel. User customization allows you to set notifications and alerts from the system so you can know immediately if pressure is above or below an optimal range.

Primary Applications

- Domestic hot water pipes, risers, and branches
- Boiler and chiller supply and return
- Cold water lines, including monitoring PRVs and backflow assemblies

Features

- Wireless range of 2,000+ feet through 18+ walls[1]
- Frequency-hopping Spread Spectrum (FHSS)
- Best in class interference immunity
- Best in class power management for longer battery life[2]
- Encrypt-RF® Security (Diffie-Hellman Key Exchange + AES-128 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)

Battery-powered, wireless pressure sensor monitors pressure in gas, liquid, or vapor supply lines

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.

[1] Actual range may vary depending on environment.

[2] Battery life is determined by sensor reporting frequency and other variables. Other power options are also available.

Technical Specification

Call customer service if you need assistance with technical details.

Pressure Transducer	Measurement range	300 PSIG
	Operating temperature	0°F to 175°F (-18°C to 79°C)
	Thermal effect on reading	±0.02% FS/°F (includes zero and span)
	Media	Gas, Liquid, or Vapor
	Response time	300 ms
	Stability	1.0% FS/year (Typ.)
	Wire length	3 ft (0.91 m)
	Resolution	0.1 PSI
	Pressure measurement accuracy	± (2% of reading + 1.05% FS)
	User-calibrated pressure accuracy	± (0.5% of reading + 0.5% FS)[1]
	Process connection	¼ in. NPT-Male standard
	Process connection material	Wetted Type 316 stainless steel
Wireless Sensor	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	Nexa Proprietary Frequency-hopping Spread Spectrum (FHSS)
	Wireless transmission power (EIRP)	50 mW 900 MHz, 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 environments)[2]	-50 ft to 6,500 ft (-15.2 m to 1,982 m)
	Storage altitude (non-pressurized environments)[2]	-50 ft to 10,000 ft (-15.2 m to 3,048 m)
	Operating humidity	5% to 85% RH (non-condensing)
	Certifications FC Industry Canada CE UK CA	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

[1] For best results, first zero the sensor then calibrate at greater than at 20% of the maximum pressure of the transducer.

[2] Operating and storage altitude without DC power adapter is -100 ft to 30,000 ft (-30.48 m to 9,144 m).

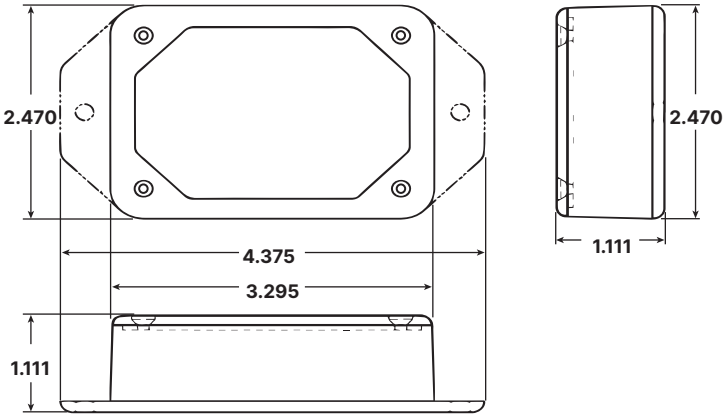
Technical Specification, cont.

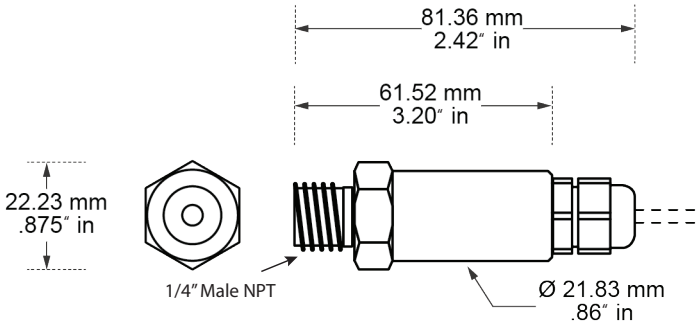
Battery[1]	2× 1.5V AA Alkaline, 1500 mAh
Battery Life	5+ years expected
Operating temperature range with given power sources[2]	0°F to 130°F (-18°C to 55°C)
Operating humidity	5% to 85% RH (non-condensing)
Wireless antenna type	¼-wave, 20 gauge wire whip, 3.5 in. (900/868 MHz)
Weight	8 oz (226.7 g)

[1] Hardware cannot withstand negative voltage. Take care when inserting and removing batteries.

[2] 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.

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