



## Remote Monitoring for Business

### Wireless Water Detection Puck Sensors

#### General Description

The [ALTA Wireless Water Detection Puck Sensor](#) detects the presence and absence of water. The convenient water tight puck design allows the sensor to be placed anywhere it's dry or wet. Note: water levels must be ~ 1.6mm high to trigger detection.

#### Water Detection

- Waterproof and fully submersible
- Immediately detects water presence

#### Principle of Operation

The ALTA Wireless Water Detection Puck Sensor detects when water is present by completing the circuit between the two probe points (exposed stainless steel metal screw heads) on the bottom of the sensor. When detection state changes (water present or absent), the sensor will immediately turn on the radio and transmit the data to the wireless gateway and the iMonnit Online Sensor Monitoring and Notification System. Once data is received in iMonnit, the user-configurable notification system can send emails, text messages, and automated phone calls to alert you of any changes to the sensor. The sensor detects both the presence and absence of water.

#### Applications

- Water heater tank leak monitoring
- Plumbing leak detection
- Data center subfloor water detection
- Water intrusion / flood detection
- Crawl space water intrusion monitoring
- Reservoir / tank-level monitoring

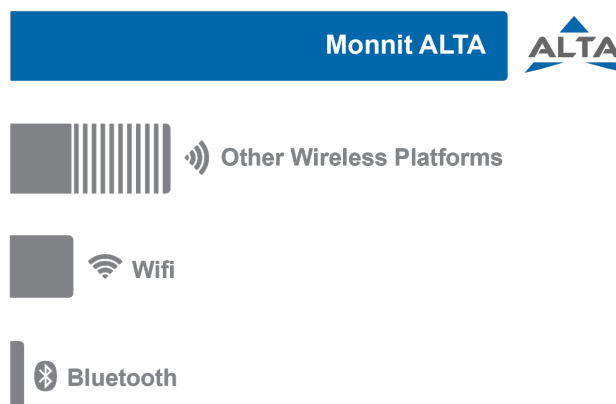
#### Features of Monnit ALTA Sensors

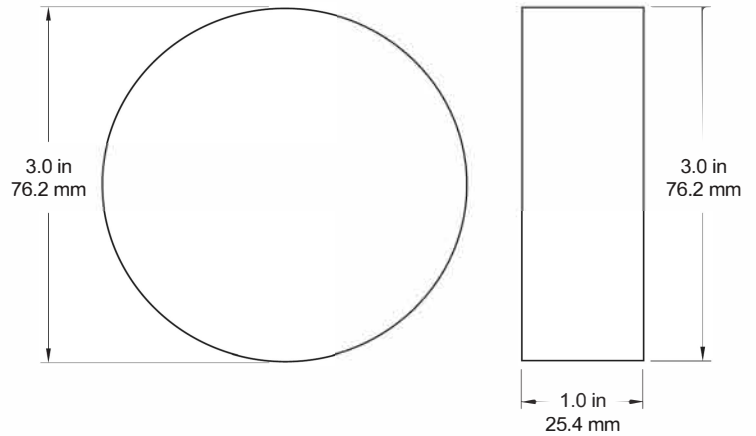
- Wireless range of 1,200+ feet through 12+ walls<sup>1</sup>
- Frequency-Hopping Spread Spectrum (FHSS)
- Best-in-class interference immunity
- Best-in-class power management for longer battery life<sup>2</sup>
- Encrypt-RF<sup>®</sup> Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- Data logs 2000 to 4000 readings if the gateway connection is lost (non-volatile flash, persists through the power cycle):
  - 10-minute heartbeats = ~ 22 days
  - 2-hour heartbeats = ~ 266 days
- Over-the-air updates (future-proof)
- Free iMonnit Basic Online Wireless Sensor Monitoring and Notification System to configure sensors, view data, and set alerts to be sent via SMS text and email
- Response time to iMonnit: ~ three seconds.

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




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

#### Wireless Range Comparison





## ALTA Commercial Wireless Water Detection Puck Sensor | Technical Specifications

|                                |  |
|--------------------------------|--|
| Electronics supply voltage     | 2.0–3.8 VDC  |
| Current consumption            | 0.2 $\mu$ A (sleep mode), 0.7 $\mu$ A (RTC sleep), 570 $\mu$ A (MCU idle), 2.5 mA (MCU active), 5.5 mA (radio RX mode), 22.6 mA (radio TX mode)  |
| Operating temperature range    | -40°C to 85°C (-40°F to 185°F) <sup>1</sup>  |
| Dimensions                     | 75mm (diameter), 25mm (height), 30mm (height with rubber feet)   |
| Water Protection               | Completely sealed, waterproof, fully submersible   |
| Battery                        | 3.6V 1200 mAh Lithium (non-replaceable)  |
| Typical battery life           | 10 years at a 10 minute heartbeat <sup>2</sup>   |
| Data-logged Memory             | 56 kBytes, 2000 - 4000 messages, persists through power cycle or device reset <sup>3</sup>   |
| Wireless range                 | 1,200+ ft non-line-of-sight  |
| Enclosure                      | Vulcanized rubber  |
| Security                       | Encrypt-RF® (256-bit key exchange and AES-128 CTR)   |
| Weight                         | 7.6 ounces   |
| Water detection minimum height | 1.6mm (1/16")  |
| Certifications                 | <div>    Industry Canada </div> 900 MHz product; FCC ID: ZTL-G2SC1 and IC: 9794A-G2SC1. 868 and 433 MHz product tested and found to comply with: EN 300 220-2 V3.1.1 (2017-02), EN 300 220-2 V3.1.1 (2017-02), and EN 60950 |

<sup>1</sup> At temperatures above 100°C, it is possible for the board circuitry to lose programmed memory. Effective capacity of the battery can be reduced by up to 50% when operating below 0°C.

<sup>2</sup> Battery life is determined by the sensor reporting frequency and other variables.

<sup>3</sup> Sensors are configured to data log by default. When not configured, sensors will log two kBytes and the log will not persist through a power cycle or reset of the sensor.

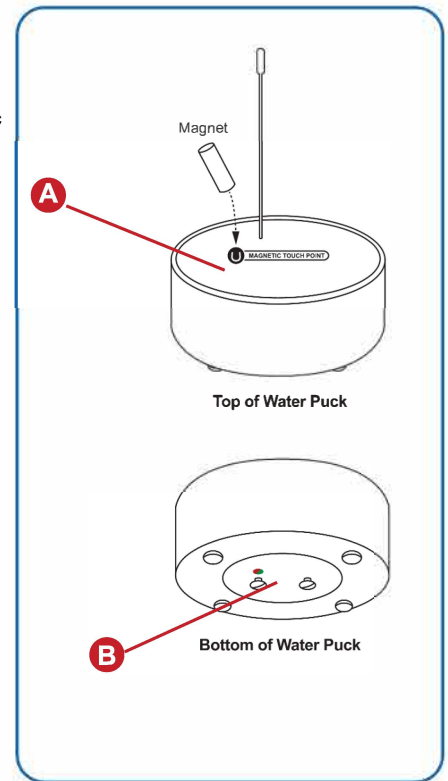
## Magnetic Reed Switch and LED Behavior

When your Water Puck Sensor is shipped to you, it comes with a small but powerful magnet. This is used to control the power state of the puck.

Using the magnet will trigger the following reactions from the embedded LED, visible from the underside of the puck (B).

The area marked by the label on the top of the water puck indicates the hot spot location for effective use of the magnetic power control (A).

- Bring the magnet in range of (A) and the LED will illuminate indicating the power state.
  - Solid **Green**: Powered ON, connected to the gateway
  - Flash **Red**, then Solid **Green**: Powered ON, not connected to the gateway
  - Solid **Red**: Powered OFF, not connected to the gateway
- If the magnet is still held in place for two seconds after the LED illuminates, then the LED will flash rapidly.
  - Flash **Green**: Will turn ON after the magnet is removed
  - Flash **Red**: Will turn OFF after the magnet is removed
- If the magnet is removed after holding it on the hot spot location for over two seconds, then the sensor will change its power state.
  - Single, Slow **Green** Flash: Turning ON or powered ON
  - Single, Slow **Red** Flash: Turning OFF



## Commercial-Grade Sensors

Monnit commercial-grade 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: chlorine gas, hydrogen sulfide gas, ammonia gas, sulfuric acid gas, nitric oxide gas, etc.
- 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 specified temperature range. Higher temperature may cause deterioration of the characteristics or the material quality.