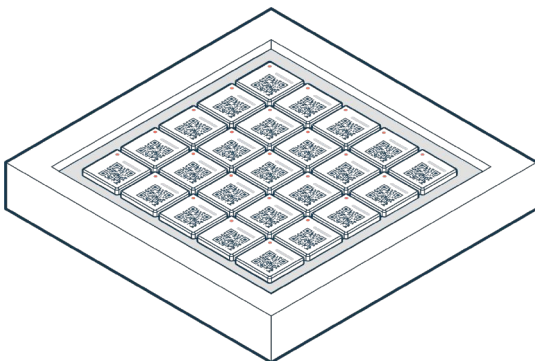**DISRUPTIVE**
TECHNOLOGIES

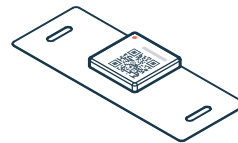Installation Guide
Wireless Proximity Sensor

What is in the box

25 Wireless Proximity Sensors

What you will need

- A laptop or smartphone running the DT Studio web application studio.d21s.com.

    - If your company does not a DT Studio organization yet, get started at d21s.com/start.

- One or more Cloud Connectors (gateway) to forward sensor data to the DT Cloud.

- Optional: Range Extender accessory.

Planning the installation

Number of Proximity Sensors

One sensor per door or window.
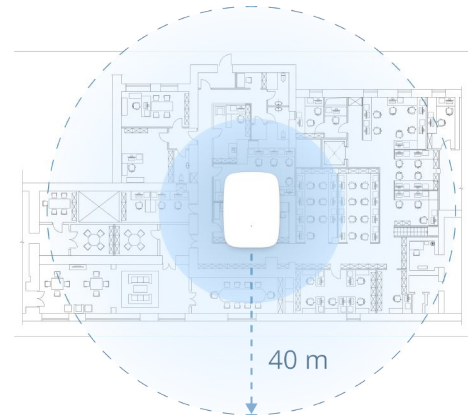
Number of Cloud Connectors

The number of Cloud Connectors needed to cover a typical office space depends on the size of the space as well as the material the walls in the space are made up of.

For example, concrete will reduce the coverage area more than thin drywall.

See the following sections for how to plan Cloud Connectors for different types of installation sites.
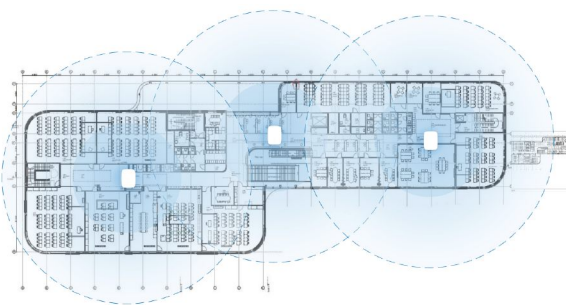
Cloud Connector
Small site

40 m

One Cloud Connector is often enough to cover a smaller site.

To estimate if a single Cloud Connector can cover your entire installation site, we recommend approximating a circle with a radius of 40 m (131 ft) on the floor plan to mark the expected coverage for the Cloud Connector (2nd Gen).
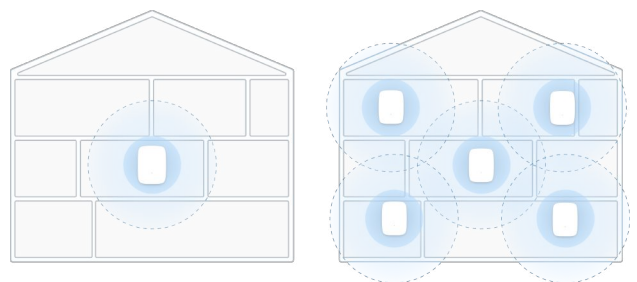
Cloud Connectors
Large site

A large site with many sensors requires multiple Cloud Connectors to provide good coverage.

Estimate by approximating a circle with a 40 m (131 ft) radius on the floor plan.

Place subsequent circles with approximately 50 m (164 ft) spacing.

Cloud Connectors
Multiple floors

Consider that Cloud Connectors can provide coverage on the floor above and below for multi-floor installations.

The range will depend on the construction of the building, especially the material of the floor separators.

If possible, plan for Cloud Connectors on each floor shifted horizontally to maximize the signal coverage, as seen in the image.

On the installation day

1. Install the Cloud Connectors in the locations found during planning.

   Visit support.d21s.com to see best practices for Cloud Connector installations.

2. Claim the sensors in Studio by scanning the QR code found on the sensor packaing.

   If only a few sensors are needed, they can also be claimed individually in Studio.

Sensor name

Meeting room door #42

3. Give the sensor a name or label in Studio for identification.

4. When performing the installation, check the connectivity status in Studio to see if the sensor is reporting in **High Power Boost Mode** or **not reporting data.**

   When the sensor is installed, new connectivity statuses can be triggered by open and closing the door.

   If a sensor is in **High Power Boost Mode**, the battery life will be reduced because the sensor is using more energy to reach the Cloud Connector.
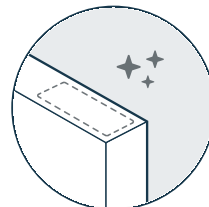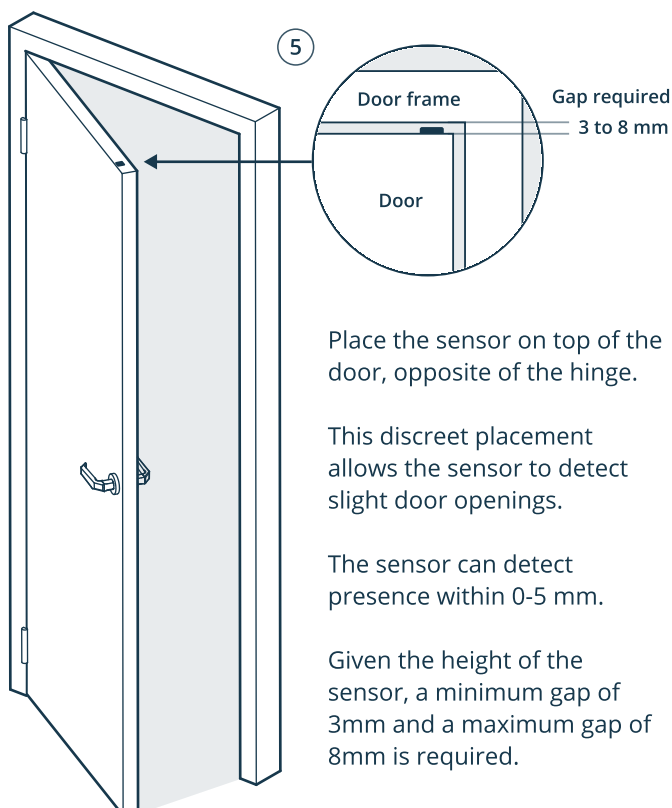
   Either move the Cloud Connector or consider using a Range extender accessory to amplify the sensor range.

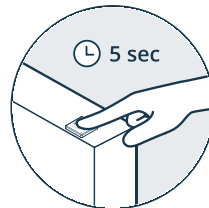   If the sensor is **not reporting data,** the sensor is outside the range of the Cloud Connector.

   Install a second Cloud Connector to extend the coverage.
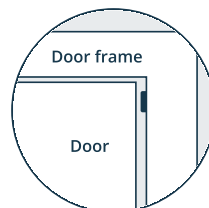
Sensor placement

Door frame

Gap required
3 to 8 mm

Door

Place the sensor on top of the door, opposite of the hinge.

This discreet placement allows the sensor to detect slight door openings.

The sensor can detect presence within 0-5 mm.

Given the height of the sensor, a minimum gap of 3mm and a maximum gap of 8mm is required.

Clean and smooth surface
A dirty or uneven surface can prevent proper sensor adhesion, causing the sensor to detach.
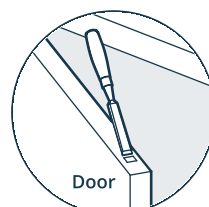
Pressure-sensitive adhesive
Ensure proper adhesive bonding by applying pressure to the sensor for 5 seconds.

Top gap less then 3 mm?
Try moving the sensor to side of the door frame if possible.

Wooden door with no gaps?
A chisel can be used to create a small square of 20 x 20 mm on top of the door. The placement ensures discreetness during normal use.

Points of Consideration

❌ **Avoid placing sensors on metal surfaces**

Try to not place sensors directly on a metal surface as it will affect the wireless range of the sensor. Opt for non-metallic locations when possible.

⚠️ **Metal and glass doors**

Installing Proximity Sensors can be challenging on certain door types, due to difficulty finding a location that maintains good Cloud Connector connectivity and accurately detects door status.

It is recommended to conduct a test for these door types before larger installations.
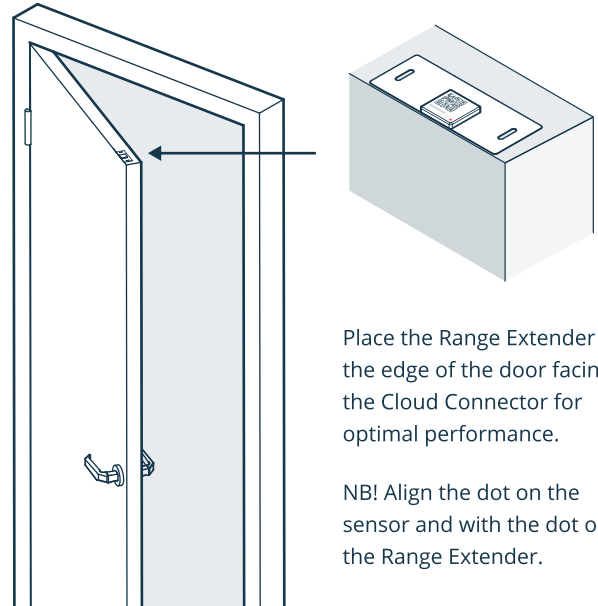
ⓘ **Doors with high usage?**
More than 100 openings per day?

For high-usage doors, we recommend setting sensors to *Counting mode*. This aggregates opening and closing events, improving battery life by sending periodic counts instead of individual messages.

Contact support@disruptive-technologies.com and we'll assist you in enabling Counting mode.

Improving connectivity with Range Extenders

In cases with poor sensor connectivity, Range Extenders can be used to improve the connection to Cloud Connectors. See mounting below.

❌ **Range Extenders placed directly on a metal surface will not improve the connection.** Try repositioning the Cloud Connector closer to the sensors, ensuring a stronger and more stable connection.

Place the Range Extender at the edge of the door facing the Cloud Connector for optimal performance.

NB! Align the dot on the sensor and with the dot on the Range Extender.

Support

If any problem should occur during installation, or if you have any questions, please reach out to us.

We thank you for choosing sensors from Disruptive Technologies.

d21s.com/support

support@disruptive-technologies.com

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(08:00 – 16:00 CET/CEST)   (8 am – 5 pm EST)