



Wireless Motion Sensor

Product Datasheet

Description

The Wireless Motion Sensor uses Passive Infrared Sensor (PIR) technology to detect the presence of people by measuring changes in infrared light intensity coming from people moving into the sensor's field-of-view. Detection events are wirelessly transmitted to nearby Cloud Connectors (gateways) via SecureDataShot™ protocol. Cloud Connectors relay sensor data to the DT cloud infrastructure. From here, data can be integrated into other services using our REST APIs, or viewed directly in DT Studio (web application).

Features

- 360° field of view - up to 14 m (46 ft) detection zone
- Up to 10-year battery life with 2xAA batteries
- Long wireless range - up to 100 meters (328 ft) indoors

Applications

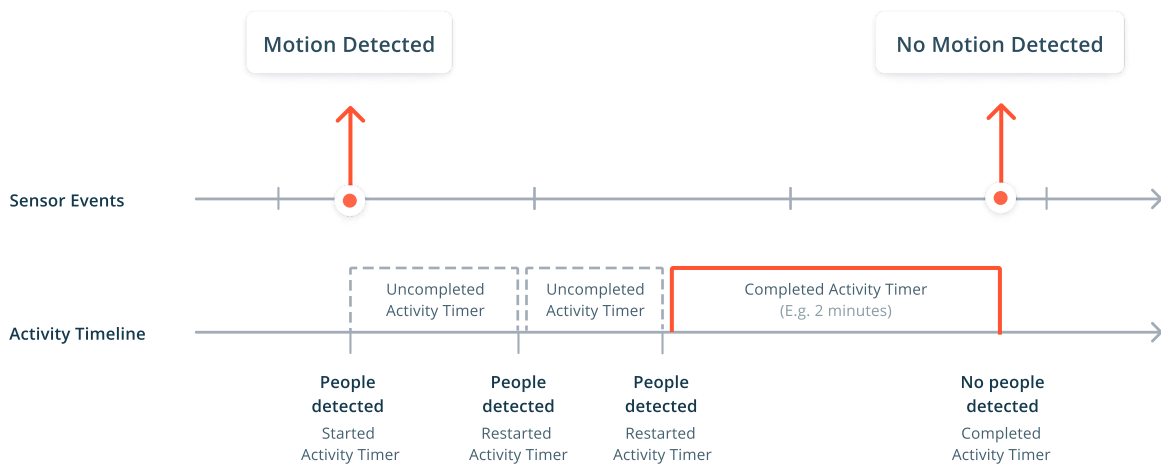
- Room occupancy detection

How it works

Default Operation

The Wireless Motion Sensor uses Passive Infrared Sensor (PIR) technology to detect the presence of people in a room by measuring changes in infrared light intensity coming from people moving into the sensor's field-of-view. When the sensor detects presence it will send a **MOTION_DETECTED** event to the cloud and start a pre-set Activity Timer. If the sensor continues to detect the presence of people before the Activity Timer expires, the timer will restart. When the Activity Timer expires, the sensor will send a **NO_MOTION_DETECTED** event to the cloud.

Independent of occupancy events, the sensor will periodically transmit Network Status Events to the cloud containing connectivity information, so that the system can know that the sensor is online and functional.



User Configurable Settings

Sensitivity

Determines how close a person have to be to the sensor, as well as the how long the person has to stay within a zone before a detection event is triggered. In the highest sensitivity mode, the sensor will trigger if people quickly grace the edge of the detection zone.

Activity Timer

How long (in minutes) a zone is considered occupied after the most recent "People detected" event.

Technical Specification

Pattern / Lens

Detection Pattern: 360°

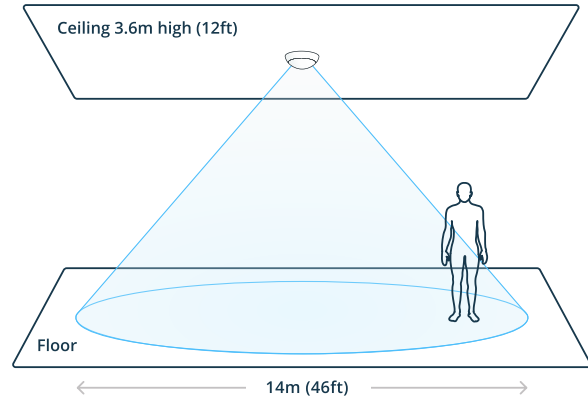
Lens: Fresnel

Network Status Event Interval

30 minutes

Installation Height	Detection Diameter
2.4 meters (8ft)	9.5 meters (31ft)
3 meters (10ft)	12 meters (40ft)
3.6 meters (12ft)	14 meters (45.9ft)

Maximum installation height is 3.6 meters (12 ft)



Operating & Storage Conditions

Operating Conditions

Temperature: 0 to 50°C (32 - 122°F)

Humidity: 0 to 90% RH (non condensing)

Recommended Storage Conditions

Cool and dry, near normal room temperature

Battery Specification

Battery / Lifetime

Type: 2x AA

Lifetime: Up to 10 years

Wireless Communication

Radio Protocol

SecureDataShot™

Radio Frequency

EU: 868 MHz ISM band

US: 915 MHz ISM band

Radio Range¹

Indoor: 100 m (328 ft)

Free Space: 2 km (6500 ft)

Certification & Compliance

Certification

EU: CE, UKCA

US/Canada: FCC, ISED

IC: 25087-102518

FCC ID: 2ATFX-102518

(1): Based on standard ITU-R P.1238 (indoor) and ITU-R P.525 (free-space).

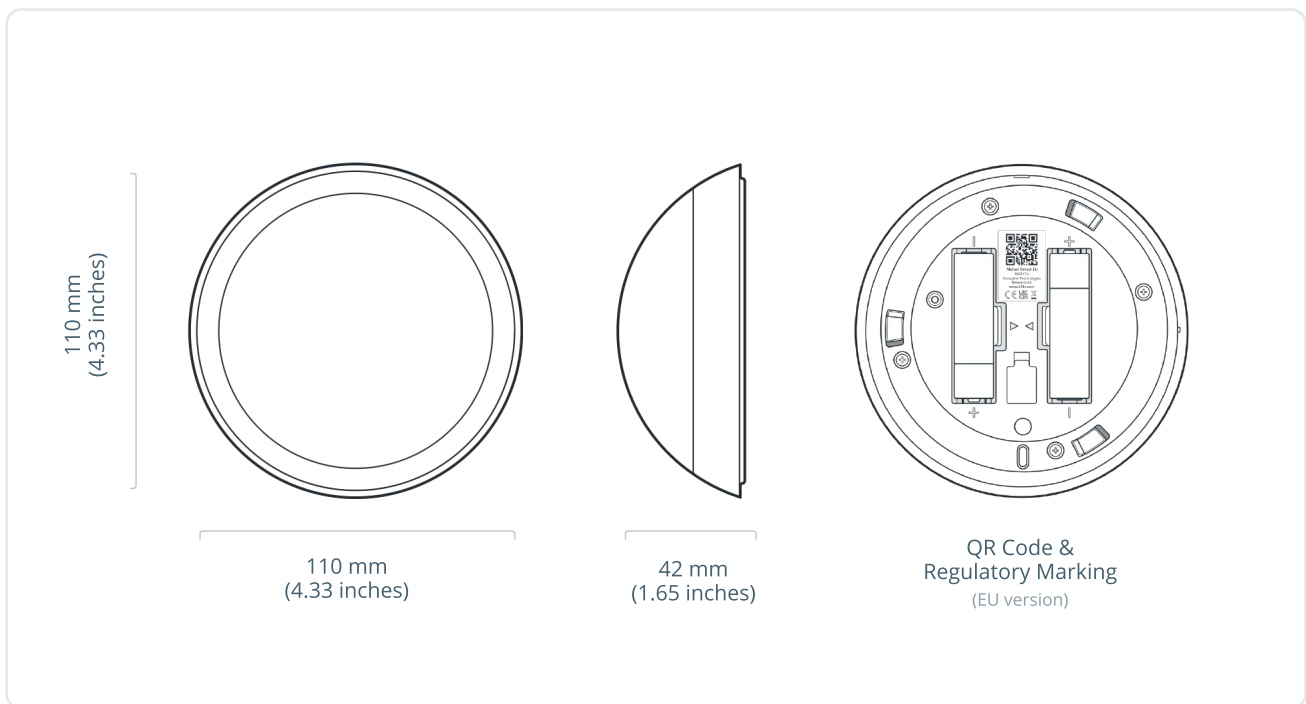
Mechanical Properties

Size 110 x 42 mm

Weight 123 grams (4.34 oz)

Material Polycarbonate (PC)

Mounting method Screws



Product Variants

EU Version

Product number: 102517

Region : Europe

US Version

Product number: 102518

Region: North America

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Installation Guidelines

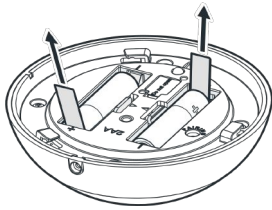
Placement

Designed to be mounted in the ceiling. For maximum range, place in the middle of the room, or at least 10m from the nearest walls.

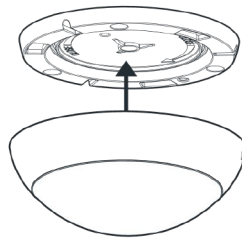
Installation Height

See “Technical Specification” to understand how height affects the diameter of the detection zone.

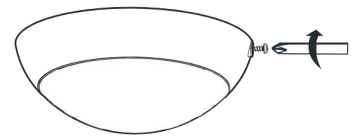
Installation Process



Remove the bracket by rotating it counter clockwise and remove the battery tabs to activate the sensor.

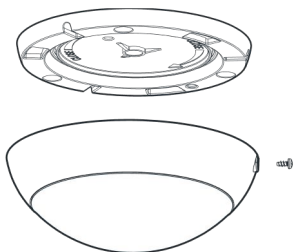


Mount the bracket to the ceiling using screws. Lock the sensor in place by turning it clockwise.

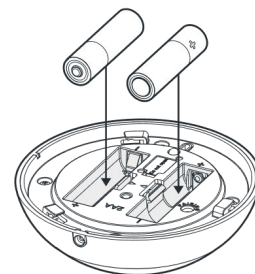


Fasten the safety screw using a philips screw driver.

Battery Replacement

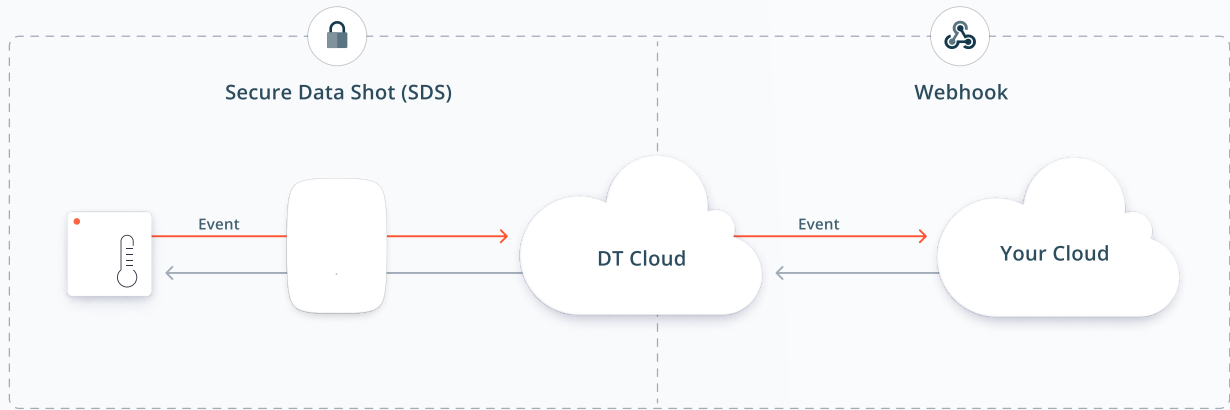


Remove the safety screw and turn the sensor counter-clockwise to remove it from the mounting bracket.



Replace the batteries with two new AA type batteries. Pay attention to the polarity.

Solution Overview



Wireless Sensors

Wireless sensors instantly connects and send data to the cloud via SecureDataShot™

Cloud Connectors

Cloud Connectors automatically connect and relay data to the cloud service

Cloud Service

No servers, databases, or on-prem clients to manage - simply just install sensors and integrate the data into your own service.

Why use a cloud based sensor solution?

Zero-touch Connectivity

No pairing needed, sensors automatically communicate through all Cloud Connectors which results in a quick and easy installation process.

24/7 Monitoring

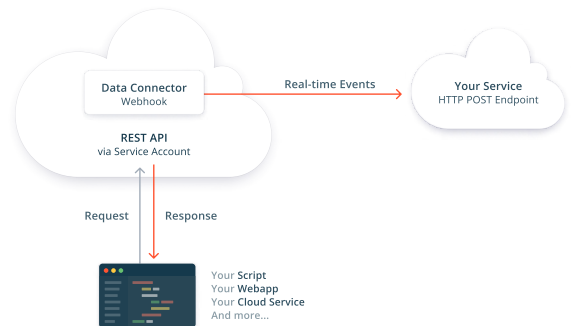
All Disruptive system components are instrumented and monitored 24 hours per day, 7 days per week. Anomalies trigger alarms and notifies our response team.

Easy to Scale

Cloud Connectors support thousands of sensors and the cloud service automatically scales for users with increasing number of sensors.

Centralized Management

No servers, databases, or on-prem clients to manage. A modern cloud platform enables secure access on any device from anywhere in the world.

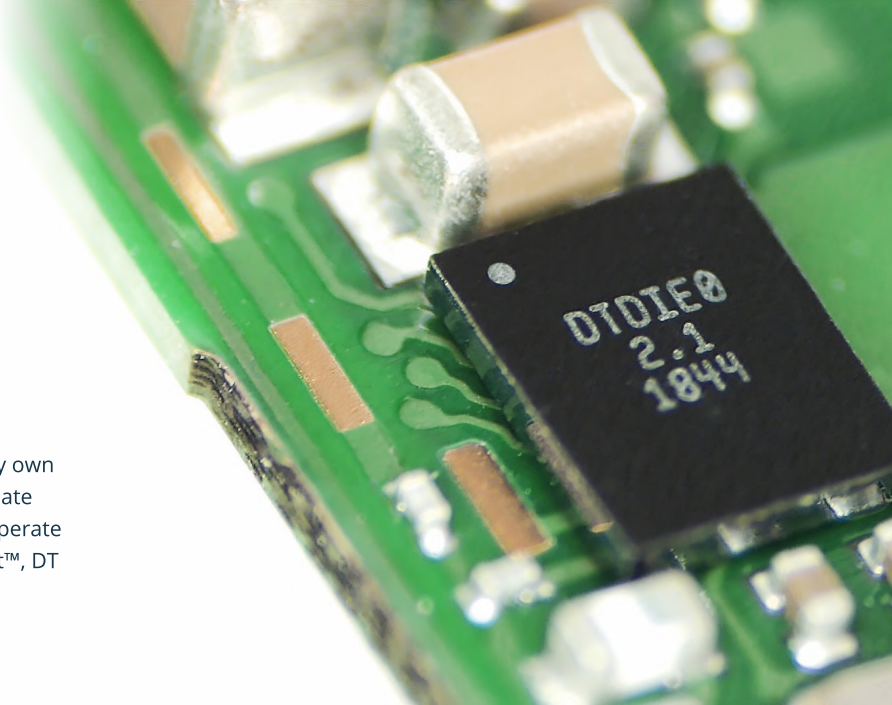


REST API & Webhooks

Easily integrate the sensor data into your own, or a third-party service, using our REST API or webhooks.

Take advantage of industry leading battery life with DT Silicon

DT Wireless Sensors are powered by DT Silicon - our very own proprietary chip technology that makes it possible to create sensors that use an order of magnitude less energy to operate than other wireless sensors. Paired with SecureDataShot™, DT sensors have superior battery life while maintaining the highest level of security and ease-of-use.

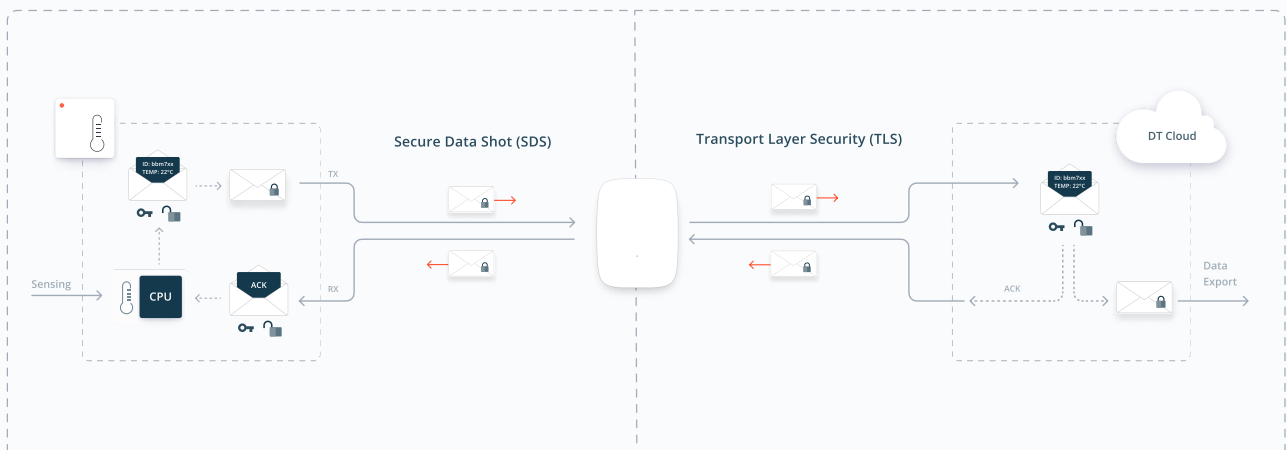


- Enables tiny sensors with long battery life
- Tailor made for the SecureDataShot™ protocol

Secure by default with SecureDataShot™

SecureDataShot™ creates a secure communication channel between the sensor and the cloud instead of between the sensor and the gateway. This reduces the potential for a manipulator-in-the-middle attack by exploiting vulnerabilities in the security architecture of gateways. Cloud Connectors can forward data to and from sensors but cannot decrypt the sensor data.

- During manufacturing, each sensor is assigned a unique 256 bit asymmetric encryption key, generated by a tamper-proof 140-2 Level 3 certified hardware security module.
- Cloud Connector includes a Secure Element (SE) for hardware Root of Trust.
- The public part of the asymmetric key is exchanged with Disruptive Technologies cloud via encrypted channels.
- In addition to the keys assigned during manufacturing, the sensor and cloud also hold a unique SecureDataShot™ session key.
- Sensor data is encrypted using symmetric AES-128 encryption/decryption in CCM-mode.
- Cloud Connectors are provisioned with Transport Layer Security (TLS) certificates to establish a secure connection between the Cloud Connector and the cloud.



Fleetmanagement & Data Insights with Studio



Device Overview

Sort devices into projects for easy access and get an overview over data, health status and radio coverage

Flexible Dashboards

Get a quick overview of sensors and compare data with easy-to-use drag-and-drop dashboard cards

Access Control

Create role-based user accounts for people and services that need access to sensor data

Notifications

Set up simple rules for sensors and receive automatic sensor triggered notifications

Data Forwarding & API Integrations made simple

Data Connectors / Webhooks

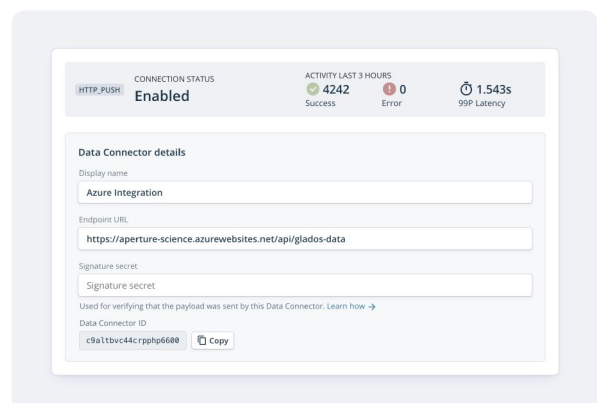
Easily configure secure webhooks to forward the data to your own service.

Service Accounts

Create and manage role-based service accounts to let your own cloud service authenticate with the REST API.

Sensor Emulators

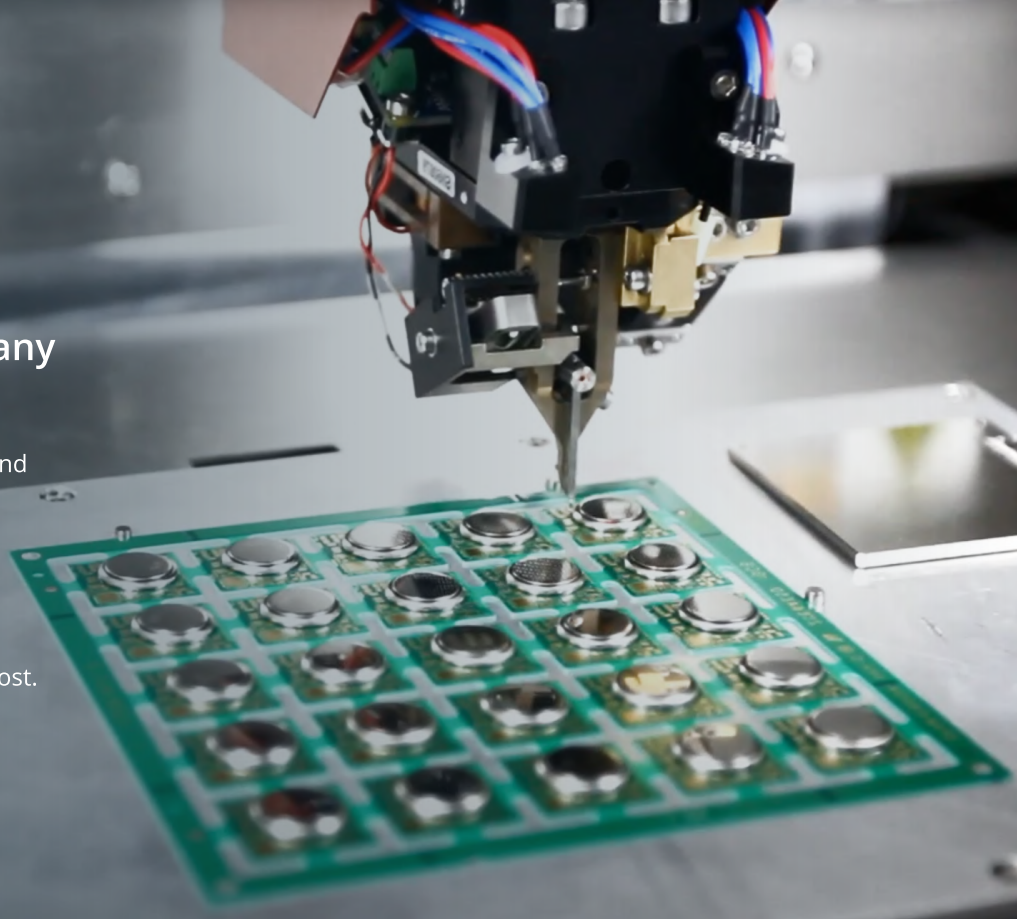
Create emulated sensors to test your API integrations without access to physical hardware.



Designed in Norway, Manufactured in Germany

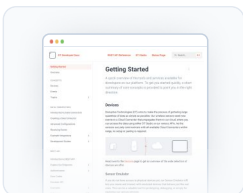
All our Wireless Sensors and Cloud Connectors are designed in Norway and manufactured in Germany.

We have created a tailor made, high volume manufacturing method that enables our ultra small size and low cost.



Ready to learn more?

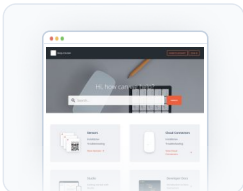
To learn more about DT's wireless sensor solution and how you can benefit from it, visit our website or schedule a demo with a member of our sales team at <https://www.disruptive-technologies.com/contact-us> or contact us directly via email at sales@disruptive-technologies.com



Developer Docs

Browse our developer documentation to find everything you need to know about the system, tutorials, integration guides, and API references.

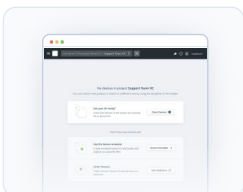
[Learn more](#)



Support Center

Browse our support center to find details about our products, technology, installation guidelines, and answers to frequently asked questions.

[Learn more](#)



Sign Up for Studio

Create a Studio account and test our software and API integrations using emulated sensor events.

[Learn more](#)

Revision History

Revision 1.0

Change: Initial release.

Date: Mach 8th, 2022

Revision 1.1

Change: Updated document design

Date: November 11th, 2022

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