



Driving IoT Innovation

ASSET/IOT



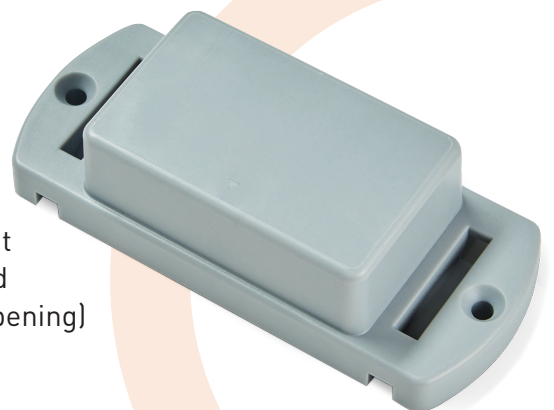
# ***CelloSense***

## ***Smart, Rugged & Low Maintenance Multi-Sensor***

Do you need complete visibility of what is happening across your business at any given moment? Or perhaps you're struggling with the challenge of effectively monitoring and managing your supply chain? Welcome to the CelloSense!

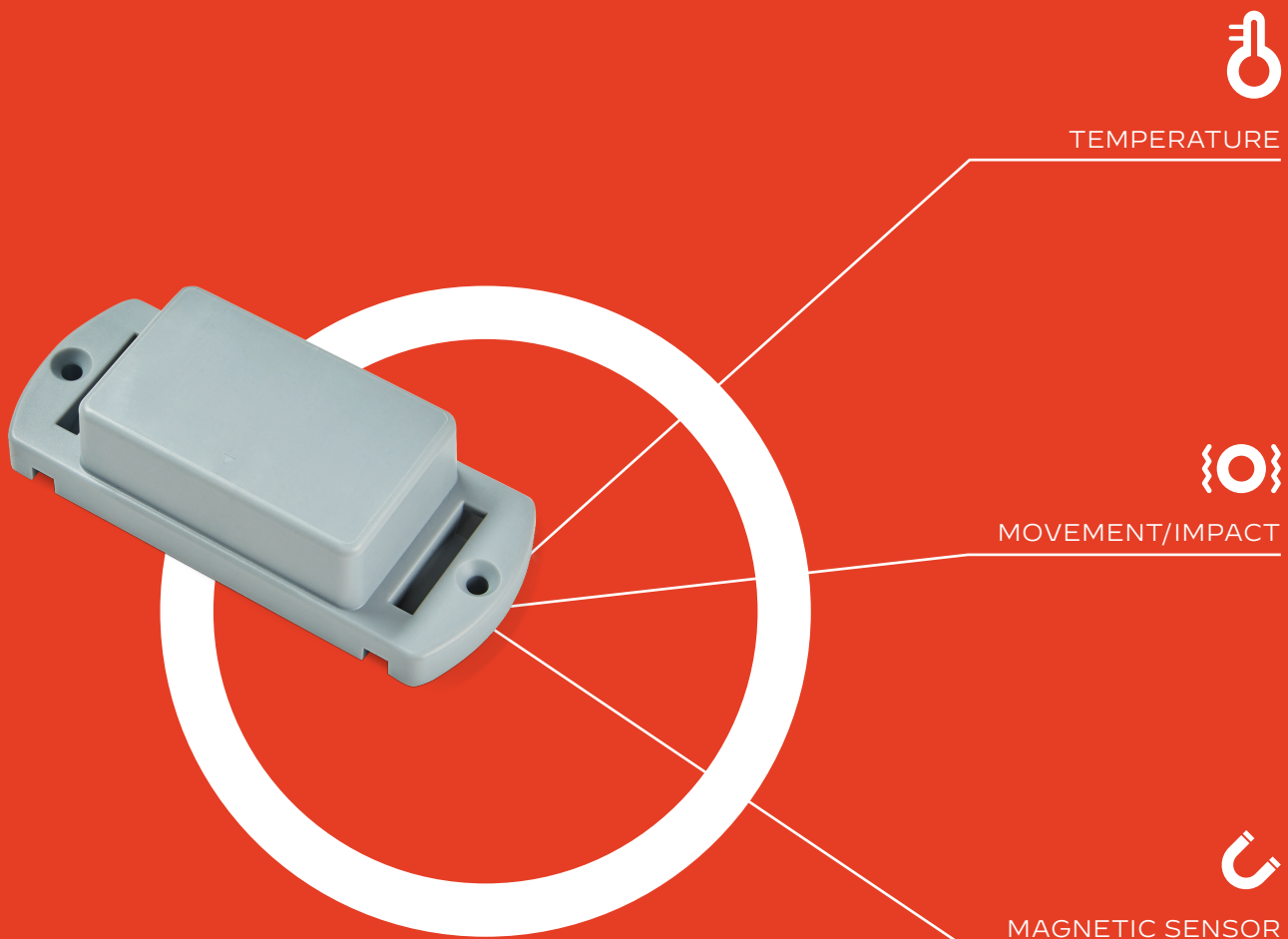
The CelloSense, as part of a sensor network, can greatly enhance your supply chain management and reduce costs, especially within high impact environments.

The CelloSense is a smart, low maintenance monitoring device featuring an extended range, and a rugged IP69K enclosure for outdoor durability and long operating life in harsh conditions. It utilizes BLE technology to communicate with Cellocator's line of asset products, or any other hub that supports BLE communication (smartphones, tablets, and OEM hubs). The device not only tracks assets, but also monitors the environment and conditions in which the asset is currently located or handled via temperature, accelerometer, and magnetic (doors closing/opening) internal sensors.



## Highlights

- Used as a Wireless Sensor Network via extended range BLE communication with the Cellocator hubs, providing real-time awareness of a variety of objects and on-the-fly alert notifications.
- Environment-sensing capabilities, including temperature, movement/impact, orientation, and door/window status.
- Robust and rugged plastic enclosure, for high impact environments, protecting with protection against sunlight and chemicals.
- Compliance with IP69K (protected against close-range high pressure, high temperature spray downs).
- Integral Data Logger with the ability to store around 3,000 logged data samples and events.
- ~ 7 years of operational time (at 25°C room temperature), based on 90% of the time stationary with 4 transmissions/day and 10% of the time moving and transmitting every 30 seconds.
- Supports two operating zones with different configurations for each zone.
- Install and forget - no maintenance and no battery replacement required.
- Easy to install in harsh environments (using two metal tie-wraps or two supplied screws).
- Integration with Cellocator's line of asset products as a hub (CelloTrack Nano, CelloTrack LTE, CelloTrack Solar, CelloTrack 10Y); it can also integrate with any other hub that supports BLE communication (smartphones, tablets, and OEM hubs).



## Specifications

Communication							
Short Range RF	BLE 4.1 - 2.4GHz wireless communication						
Power Output	8mW						
Interfaces							
Accelerometer	3D, $\pm 2g/\pm 8g$ range, 12 Bit representation, 1mg/4mg resolution <ul style="list-style-type: none"> <li>• Vibration sensing with programmable threshold</li> <li>• Free-fall sensing with programmable threshold</li> <li>• Impact sensing with threshold up to 8g</li> </ul>						
Power							
Current Consumption	Transmission pulse: 23mA Active connection with hub (Avg): <250uA All sensors active and logging: <60uA Hibernation: <10uA						
Internal Battery	ER14505 primary battery, 3.6V Lithium-Thionyl Chloride, AA size, 2500mAh						
Sensors							
Temperature	Typical accuracy: <table> <tr> <td>0°C to 85°C:</td><td><math>\pm 0.5^{\circ}\text{C}</math></td></tr> <tr> <td>-25°C to 0°C:</td><td><math>\pm 1.0^{\circ}\text{C}</math></td></tr> <tr> <td>-30°C to -25°C:</td><td><math>\pm 2.0^{\circ}\text{C}</math></td></tr> </table> Resolution: 0.1°C	0°C to 85°C:	$\pm 0.5^{\circ}\text{C}$	-25°C to 0°C:	$\pm 1.0^{\circ}\text{C}$	-30°C to -25°C:	$\pm 2.0^{\circ}\text{C}$
0°C to 85°C:	$\pm 0.5^{\circ}\text{C}$						
-25°C to 0°C:	$\pm 1.0^{\circ}\text{C}$						
-30°C to -25°C:	$\pm 2.0^{\circ}\text{C}$						
Magnetic Sensor (for open/close door or window detection etc.)	10-20mm range from the defined permanent magnet						
Free Fall / Impact / Motion	Free fall detection with programmable threshold Impact with threshold up to 8g Motion detection with programmable threshold						
Environment							
Temp, Operation	-30°C to +85°C						
Temp, Storage	-40°C to +85°C						
Ingress Protection	IP69K						
Vibration, Impact	Shock resistance according to EN 60068-2-27 Vibration according to EN 12830						
Mounting	Nylon/metal tie-wraps, 2 screws and/or two-sided adhesive						
Certifications							
CE	CE (EMC, Safety, R&TTE)						
FCC	Upon commercial need						
IEC 60529 – IP69K	Unit passes all relevant IEC 60529 – IP69K regulation tests						
Environmental	Unit passes all relevant environmental regulation tests						
Dimensions & Weight							
Dimensions	111 x 46.3 x 28.6 mm						
Weight	90 gr						

## Use Cases

### Heavy Duty Rented Assets Management

The logistics and maintenance of heavy duty rented equipment is often challenging, primarily because rental companies have no information about how their rented equipment or assets are treated once they leave their premises and are in the hands of their customers. The remote monitoring of rented assets, such as storage containers, construction machines, generators, and even toilets, ensures you have real-time information on an asset's location, displacement, operation hours, and more. CelloSense brings the logistics management of heavy-duty assets into the IoT age by enabling real-time awareness of a variety of objects in harsh environments and on-the-fly alert notifications, ensuring global visibility.

### Crane Rental Companies

Ever wonder how those giant cranes suddenly popup and start building your city's next stunning tower block? Well, not surprisingly, there are many large and unique pieces that must come together perfectly. Crane rental companies/operators use the CelloSense unit as part of our unique asset tracking solutions to track the various components to ensure the puzzle can be completed. And all in real-time - you can see each and every crane across your city or state. Once the job is done, the crane gets disassembled and shipped back to the warehouse with every piece tracked.

### Garbage Cans Management

The remote management of garbage cans enables municipality authorities to streamline waste collection services by monitoring waste pickup, improving trash collection times and providing automatic service verification. In addition, it records all waste assets and identifies lost or misplaced cans. Every time a garbage can with the CelloSense device attached to it is moved and is near a truck with the Cellocator Hub installed on it, it will be registered in the server, while notifying the municipality it has been emptied. This enables municipality authorities to know exactly which cans were emptied and when.



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for Crane Connectivity