

The **Bronze Craft Corporation**
presents
The Next Generation of Window Hardware
Smart Window Sensor



Solar Powered Wireless Communication for Remote Monitoring of Ambient Room Conditions, Window Security & Window Performance

**Reduce Expenses by Improving Energy Management
Maintain Human Thermal Comfort in All Micro Climates
Create a Multi Sensor Array to Help Prevent Sick Building Syndrome**

Made In America

- Maintenance free continuous operation
- Energy preserving intelligence maximizes product life in all lighting conditions
- Integratable with BACnet Building Automation and Management Systems
- ZigBee mesh networking protocol
- Remote network management
- Allows for energy conservation based on real time building environmental information
- Accurate sensor data to adjust HVAC & lighting for improved occupant comfort
- Rugged enclosure designed for Industrial/Commercial applications
- Designed for new and retrofit installations

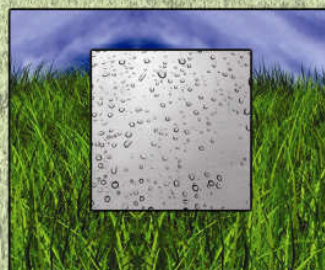
Features and Benefits

Solar energy harvesting eliminates the need for battery maintenance, replacement, and disposal. Ambient Light Sensor monitors lux levels for solar gain compensation and interior lighting control to reduce building energy consumption.

Temperature monitoring of the window reports solar gain and thermal loss data to allow the HVAC system to evenly adjust the room temperature across all micro climates, resulting in improved occupant comfort.

Monitoring humidity levels can aid in the prevention of unsafe mold levels. Relative humidity, combined with temperature data, can be used to monitor window seal integrity over the life cycle of the window, resulting in energy savings.

Quick connect terminals allow for easy installation of smart window hardware. Magnetic sensing provides real-time remote security monitoring and event logging for both opening/closing as well as locking/unlocking.



ZigBee Smart Window Sensor

Accurate Window Integrity & Performance Monitoring

Fully Calibrated & Integrated Precision Sensors



Ambient Light Sensor

± ~ 10% from 500 Lux to 50,000 Lux, Human Eye Response Corrected



Relative Humidity Sensor

±2% from 20% to 80%, 3% over the entire range, 0.4% resolution

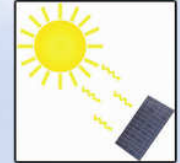


Temperature Sensor

±1°C from 0°C to +70°C (+32°F to +158°F), 0.2°C resolution

Solar Energy Harvesting

Built-in photovoltaic panels function even on overcast days
Up to 10 days of continuous operation in Zero Light conditions



Maintenance Free Operation

No batteries required

Real Time Remote Security Monitoring

Integrated Window Hardware - Window Status Reporting

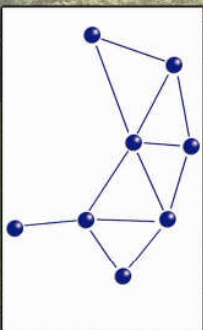
Immediately responds to both the locking/unlocking of the window handles and the opening/closing of the window. Smart Hardware mounting dimensions are designed for easy retrofit or new construction applications.



Dependable Continuous Operation

Intelligent power management automatically adjusts the broadcast interval depending on the energy storage level and ambient lighting conditions. Security Only Mode, in the case of low power, conserves energy by only broadcasting Window Status Reports as required.

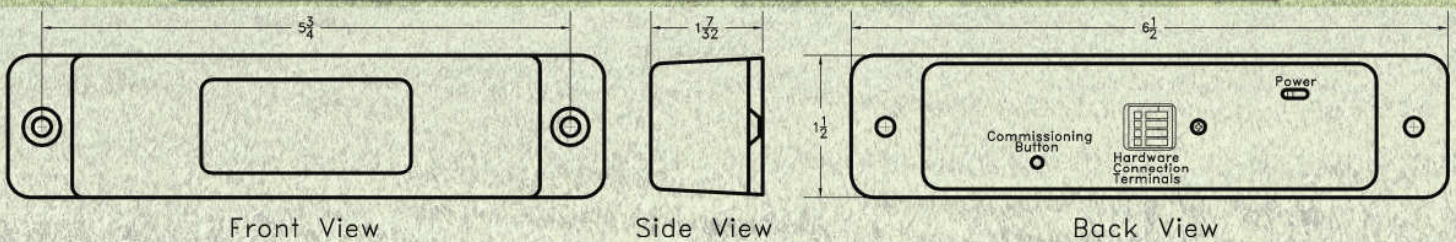
Wireless Communication



Mesh Network Technology
Operating Frequency
Range (Indoor/Outdoor)
Encryption
Interference Immunity
Reliable Packet Delivery
Smart Node Routing
IDs & Channels
EMC Compliance
Safety Approvals
Operating Temperature
Operating Humidity

ZigBee (802.11.15)
2.4 GHz, unlicensed ISM band
100 ft (30 m) / 300 ft (90 m)
128-bit AES
Direct Sequence Spread Spectrum (DSSS)
Retries/Acknowledgement
Auto discovery and self-healing networking
PAN ID, 64-bit IEEE MAC, & 16 Channels
FCC Part 15 Class B, IC and EU Certified
CE, ETL/cETL, ROHS compliant
-30°C to +65°C
10% to 90%, non-condensing

Dimensional Information



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