



Overview

The **Allure™ ECW-Sensor** series are wireless and battery-less room temperature sensors specifically designed to communicate with Distech Controls' Open-to-Wireless™ controllers via radio telegrams in accordance with the EnOcean® standard. All Allure ECW-Sensor models possess an integrated temperature sensor for precision local temperature sensing. In addition, some models feature a rotary knob for setpoint adjustment, fan speed setting, and a push button for occupancy override. All models are powered by solar energy, providing maintenance-free operation and are part of Distech Controls' Open-to-Wireless solution.

All models are available in two options for 315MHz or 868MHz frequency bands, making them compliant for use in most countries.

The alluring, slim profile enclosure is suitable for classrooms, hotels, executive areas, office spaces and commercial areas. A separate sub-base allows it to be mounted on any surface with double-sided adhesive tape.

Applications

- Precise temperature monitoring
- Facilitates the mounting of sensors and switches on hard materials, such as brick and stone
- Ideally suited for spaces that undergo frequent layout changes
- Allows occupant setpoint adjustment, fan speed selection, and system override initiation and status indication
- Perfect for all sites that run automated building control systems such as hospitals, hotel rooms, offices, and retail outlets

Features & Benefits

- Wireless communication, allowing you to:
 - Eliminate expenses for wiring plans, wire and conduit installations, and electrician fees
 - Optimize sensor placement to get the most accurate reading and achieve improved temperature control and occupant comfort
 - Easily relocate sensors and switches when room configurations or floor plans change
 - Preserve architecture and materials, avoiding drilling and opening walls
 - Adhere to project deadlines and budget
 - Avoid disturbances to tenants caused by noise and dust associated with installation work
- Energy harvesting, allowing you to:
 - Eliminate the use of batteries, thus eliminating maintenance
 - Reduce cable and wiring materials including copper and plastics
 - Preserve building envelope
- Slim, compact style and clean lines are well received by architects and building owners
- For people working outside of core hours, an occupancy control extends normal system operating hours for continued comfort while saving energy when possible
- Fan speed selection for improved personal comfort with ECW-Sensor-SOF model.
- Accurate temperature monitoring while some models have setpoint override for increased individual comfort
- Supports various mounting scenarios for flexibility: Install the Allure ECW-Sensor to any hard surface with double-sided adhesive tape, or attach it in place with screws
- Optional battery available for installations where there is insufficient ambient light (such as in a plenum)

Wireless Battery-less Allure ECW-Sensor Models



These wireless battery-less sensors are part of Distech Controls' Open-to-Wireless solution that reduces the cost of installation, and minimizes the impact on existing partition walls, when they are used with a compatible controller and Wireless Receiver shown below.



| Model | Allure ECW-Sensor | Allure ECW-Sensor-O | Allure ECW-Sensor-S | Allure ECW-Sensor-SO | Allure ECW-Sensor-SOF |
|---------------------------|-------------------|---------------------|---------------------|----------------------|-----------------------|
| Solar powered | ■ | ■ | ■ | ■ | ■ |
| Monitor space temperature | ■ | ■ | ■ | ■ | ■ |
| Occupancy override | | ■ | | ■ | ■ |
| Setpoint adjustment | | | ■ | ■ | ■ |
| Fan speed selector | | | | ■ | ■ |
| Optional battery | ■ | ■ | ■ | ■ | ■ |
| Product Number (315MHz) | PDITE-WSEN315X0 | PDITE-WSENO315X0 | PDITE-WSENS315X0 | PDITE-WSENSO315X0 | PDITE-WSENSOF315X0 |
| Product Number (868MHz) | PDITE-WSEN868X0 | PDITE-WSENO868X0 | PDITE-WSENS868X0 | PDITE-WSENSO868X0 | PDITE-WSENSOF868X0 |

Related Products

Wireless Receiver Models



| Model | Wireless Receiver (315) | Wireless Receiver (868) |
|------------------------|-------------------------|-------------------------|
| Frequency | 315MHz | 868.3MHz |
| Communication protocol | EnOcean | EnOcean |
| Product Number | PDITE-WIRE315X1 | PDITE-WIMRE868X1 |

For more information on these or other Distech Controls products please refer to our web site.

Optional Battery



07BAT-ER14250

For installations where there is insufficient ambient light or where the sensor is in prolonged darkness, an optional battery can be installed to provide energy for continued operation.
Type LS14250; 1/2AA, Lithium 3.6V/1.1Ah; Operational lifespan: Approximately 5-10 years depending on ambient conditions.

Transmission Ranges

The main factors that influence the system transmission range are type and location of the antennas of the receiver and the transmitter, type of terrain and degree of obstruction of the link path, sources of interference (screening) affecting the receiver, and "Dead" spots caused by signal reflections from nearby conductive objects. Since the expected transmission range strongly depends on the system conditions, range tests should categorically be performed before notification of a particular range that will be attainable by a certain application.

In the best conditions, where there are no obstructions creating screening, a radio signal is transmitted in a 65 ft (20 m) range for the 868.3MHz and a maximum 32 ft (10 m) range for the 315MHz, between an Allure ECW-Sensor (Transmitter - Tx) and Open-to-Wireless controller with a wireless receiver (Rx). In certain cases where there are obstructions, the range could be decreased. Here are some examples of different types of wireless range reducers:

| Material | Range Reduction vs. LoS |
|--|-------------------------|
| Wood, drywall, glass (uncoated, without metal) | 0 – 10% |
| Brick, particle board | 5 – 35% |
| Metal, ferro concrete, mirrors | 10 – 90% |

Metallic obstructions such as wall reinforcements, machinery, metal office furniture (large filing cabinets), etc. are major sources of field strength reduction, but small metal studs on a gypsum dry wall do not show a recognizable screening. Furthermore, fire-safety walls, elevator shafts, stairwells, and supply areas should be considered as complete transmission screens. In addition, the angle with which the transmission travels through the obstructions has a major influence on the field strength. The steeper the angle through an obstruction the more the field strength dampens. Therefore it is preferable that the transmission should be arranged so that it travels straight and perpendicularly through the obstruction. Wall niches should be avoided as well. Other factors that restrict transmission range include:

Important objects and factors that decrease or constrain coverage:

- Metal separation walls or hollow lightweight walls filled with insulating wool on metal foil
- Inserted ceiling with panels made of metal or carbon fiber
- Steel furniture, glass with metal coating (typically not used indoor)

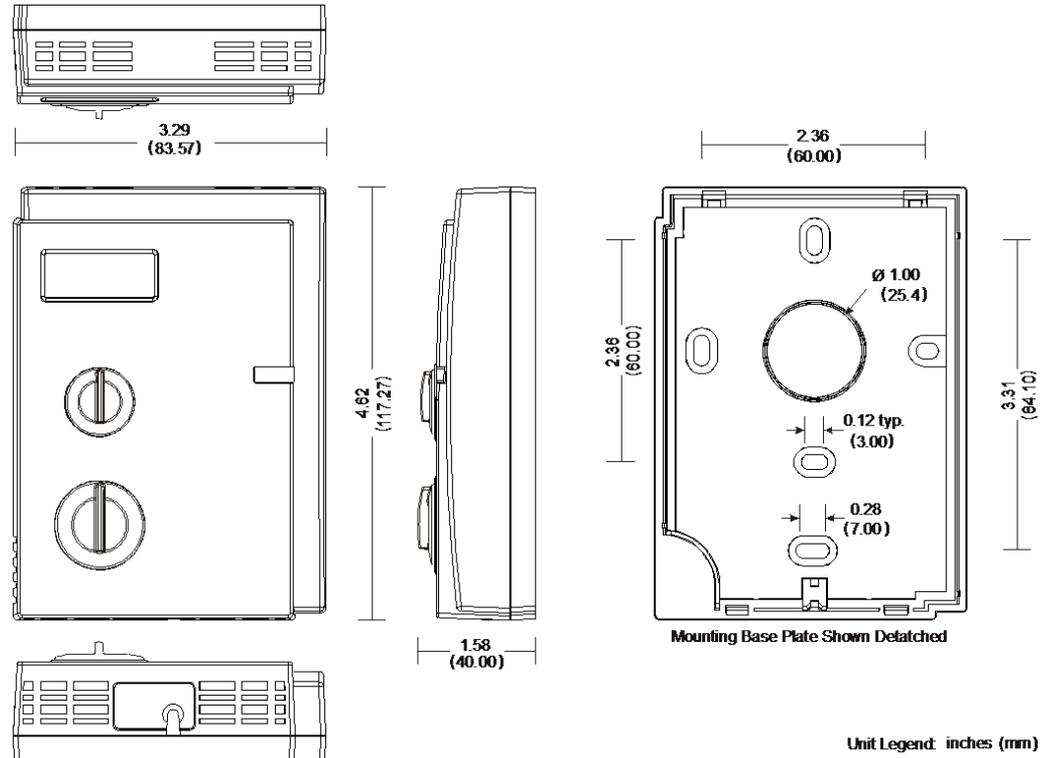
Transmission Ranges (continued)

- Switch mounted on metal surfaces (typically 30% loss of range)
- Metallic switch frames (typically 30% loss of range)

The distance between EnOcean receivers and other transmitting devices such as computers, audio and video equipment that also emit high-frequency signals should be at least 1.6 ft (0.5 m).

For more information about the EnOcean and Open-to-Wireless technologies, refer to the [Open-to-Wireless Solution Application Guide](#). For more information about the Wireless Receiver module, refer to the [Open-to-Wireless Solution Datasheet](#). These documents can be found on our web site.

Sensor Dimensions



Product Specifications

General

| | |
|------------------|---|
| Power Supply | Energy harvesting from ambient light |
| Optional Battery | Type ER14250; 1/2AA, Lithium 3.6V/1.1Ah |

Environmental

| | |
|-----------------------|------------------------------|
| Operating Temperature | 5°C to 40°C; 41°F to 104°F |
| Storage Temperature | -20°C to 57°C; -4°F to 135°F |
| Relative Humidity | 0 to 95% Non-condensing |

Enclosure

| | |
|----------------------|---|
| Material | ABS type PA-765A |
| Color | Off white |
| Dimensions (overall) | 4.62" x 3.29" x 1.58" (117mm x 84mm x 40mm) |
| Shipping Weight | TBD 0.4lbs (0.18kg) |
| Installation | Double-sided foam tape Wall mounting through mounting holes (see figure above for hole positions) |

Sensor Data

| | |
|------------------------|--------------------------------------|
| Temperature Sensor | |
| - Type | Pt1000 (1KΩ @ 0°C; 32°F) |
| - Sensor Range | 0°C to 40°C; 32°F to 104°F, linear |
| - Value Range | 255 to 0 |
| - Accuracy | ±0.5°C; ±0.9°F |
| - Resolution | 8 Bit; 0.15°C; 0.27°F |
| Occupant Controls Data | |
| - Occupancy override | 1 Bit |
| - Setpoint adjustment | 8 Bit; Linear Potentiometer, 0 - 255 |
| - Fan speed selection | 8 Bit; 5-positions: |
| Position: | Value Range: |
| - Auto | 210 to 255 |
| - Off | 190 to 209 |
| - Fan Speed 1 | 165 to 189 |
| - Fan Speed 2 | 145 to 164 |
| - Fan Speed 3 | 0 to 144 |

Product Specifications (continued)

Agency Approvals

| | |
|-----------------------|-----------------------------------|
| UL Listed (CDN & US) | UL916 Energy management equipment |
| Material ¹ | UL94V-1 |



Electromagnetic Compatibility

Allure ECW-Sensor 315MHz

- FCC This device complies with FCC rules part 15.231
- IC RSS-210

Allure ECW-Sensor 868MHz

- CE -Directives Electromagnetic Compatibility Directive 2004/108/EC
Radio and Telecommunications Terminal Equipment Directive R&TTE 1999/5/EC
- Standards Used ETSI EN 301 489-1: V1.6.1
ETSI EN 301 489-3: V1.4.1
ETSI EN 50 731 : 2002
ETSI EN 300 220-1: V2.1.1
ETSI EN 300 220-2 : V2.1.2
- Recommendation ERC Recommendation 70-03: 2009-02



Communications

| | |
|------------------------------------|---------------------------------------|
| Communication Protocol | EnOcean 4BS Telegram |
| Power Output | 10mW |
| Communication Frequency | |
| - Allure ECW-Sensor 315MHz | 315MHz |
| - Allure ECW-Sensor 868MHz | 868.3MHz |
| EnOcean Communication ² | |
| | EEP: |
| - Allure ECW-Sensor | 07-02-05 |
| - Allure ECW-Sensor-O | 07-10-0C |
| - Allure ECW-Sensor-S | 07-10-03 |
| - Allure ECW-Sensor-SO | 07-10-05 |
| - Allure ECW-Sensor-SOF | 07-10-01 |
| - Manufacturer ID | 0h009 |
| Transmit Interval Time | 1, 10, 100; Jumper selectable |
| - Default | 10 |
| Wake-Up Cycle Time | 1, 10, 100 seconds; Jumper selectable |
| - Default | 100 Seconds |

- All materials and manufacturing processes comply with the RoHS directive  and are marked according to the Waste Electrical and Electronic Equipment (WEEE) directive .
- From EnOcean Equipment Profiles (EEP) V2.0, EnOcean GmbH.

Total Quality Commitment

All Distech Controls product lines are built to meet rigorous quality standards. Distech Controls is an ISO 9001 registered company.

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