Allure™ EC-Smart-Vue Sensor Series

Line of communicating sensors with backlit display and graphical menus

Overview

The Allure EC-Smart-Vue Series is designed to interface with Distech Controls' ECL series LonWorks® Controllers, ECB series BACnet® Controllers and ECLYPSE™ series BACnet/IP and Wi-Fi Controllers.

This line of communicating sensors with backlit display consists of eight models that provide precise environmental zone control. Models are available with any combination of the following: temperature, humidity, CO_2, and motion sensor.

Applications

Offers temperature, humidity, CO_2, and motion sensing for the following applications:

- VAV controllers
- Fan coil units
- Roof top units
- Heat pumps
- Unit ventilators

Features & Benefits

ABC Logic Self-Calibration System

The patented ABC Logic self-calibration system eliminates the need for manual CO_2 calibration in most applications. ABC Logic guarantees lifetime CO_2 calibration.

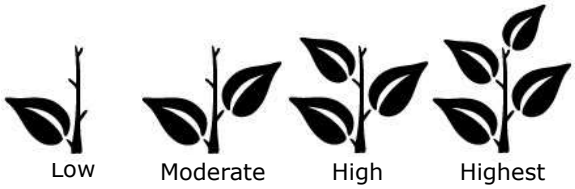
"4-in-1" Communicating Sensors

Multi-sensing capabilities (temperature, humidity, CO_2, and motion) using one wire and one connection.

ECO-Vue Leaf Pattern

The innovative ECO-Vue Leaf Pattern graphically indicates energy consumption in real time to promote an occupant's energy-conscious behavior. Occupants are encouraged to have greener habits with the ECO-Vue Leaf Pattern while reducing energy costs. As more leaves appear, greater energy efficiency is being achieved, while fewer leaves will encourage the occupant to take corrective action to optimize the system's environmental performance.

Energy efficiency levels:



Enhanced User Experience

Occupants can view and adjust environmental settings to their liking, for example, view the space temperature, adjust the setpoint, control lighting through occupancy detection, set the fan speed, and apply occupancy overrides.

Occupants can override the HVAC mode and view and adjust the setpoint and fan speed for improved personal comfort.

Appealing User Interface and Design

Slim, compact style, and clean lines are well received by architects and building owners. Furthermore, the clear and bright LCD display provides real-time access to temperature and other system information such as setpoint, occupancy status, HVAC mode, etc.

Commissioning and Troubleshooting

A password protected technician mode allows an installer to perform commissioning and troubleshooting. When connected to a controller that embeds preloaded applications, commissioning can start immediately after installation, as the Allure EC-Smart-Vue Series sensors can be used as a hand-held tool to select the appropriate controller application for the type of HVAC equipment to be controlled, and to troubleshoot the system.

When associated to VAV controllers, the Allure EC-Smart-Vue Series sensors also allows to perform air balancing of the system without requiring an onsite controls engineer.

Furthermore, when the controller uses wireless sensors, a technician in the field can use the Allure EC-Smart-Vue Series sensors to make the controller learn each wireless sensor's ID on the fly, in order to commission the wireless sensors.

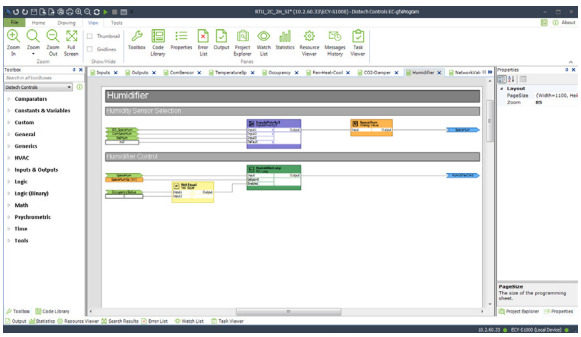
Increased Energy Efficiency

Achieve energy efficiency through occupancy-based control with:

- ☐ Motion sensor to readjust the space temperature setpoint and manage lighting
- ☐ CO_2 sensor as part of the demand-controlled ventilation strategy that adjusts the amount of outdoor air intake according to the number of occupants

Programmability

Supports Distech Controls' EC-*gfx*Program, which makes Building Automation System (BAS) programming effortless, by allowing you to visually assemble building blocks to create a custom control sequence for any HVAC , lighting, or building automation application.



Quick and Easy Installation

Both power and communications pass through a single Cat 5e cable for reduced installation costs and for easier installation.

Two RJ-45 ports facilitate the daisy-chain connections of room devices.

CO_2 Sensing

Achieve energy efficiency with a CO_2 sensor as a part of the demand-controlled ventilation strategy that adjusts the amount of outdoor air intake.

Automatic Calibration of CO_2 Sensors

ABC Logic (Automatic Calibration Logic) is a patented self-calibration technique that eliminates the need for manual calibration in most applications. The sensor is designed to work in environments where CO_2 concentrations will drop to outdoor ambient conditions (400 ppm) at least three times in a 14-day period, typically during unoccupied periods. For example, in a typical office, school, theater, etc., people are the main source of CO_2 in a building. When people go home at night, the indoor CO_2 level will drop to the outdoor CO_2 level, which is typically 380 to 400 ppm. The ABC Logic system records the lowest reading every 24-hour period for analysis. If there is a statistical difference in the baseline readings, then a calibration factor is applied to all subsequent sensor readings. The ABC Logic system typically takes three weeks of continuous run-time before making corrections. Lifetime CO_2 calibration is guaranteed with ABC Logic.

The sensor will typically reach its operational accuracy after 25 hours of continuous operation on condition that it was exposed to ambient air reference levels of 400 ppm ±10 ppm CO_2.

Model Selection

Model	Temperature	Humidity	Motion	CO_2[1]
Allure EC-Smart-Vue	■			
Allure EC-Smart-Vue-C	■			■
Allure EC-Smart-Vue-H	■	■		
Allure EC-Smart-Vue-M	■		■	
Allure EC-Smart-Vue-CH	■	■		■
Allure EC-Smart-Vue-CM	■		■	■
Allure EC-Smart-Vue-HM	■	■	■	
Allure EC-Smart-Vue-CHM	■	■	■	■

1. The Allure EC-Smart-Vue CO_2 models must be used in spaces that are periodically unoccupied (e.g. during evening or nighttime hours). A controller can support a maximum of two communicating sensors equipped with a CO_2 sensor. Any remaining connected communicating sensors must be without a CO_2 sensor.

Product Specifications

Power Supply Input

Voltage — 16 VDC maximum, Class 2

Power Consumption — At the connected controller, an additional 5.25 VA per CO_2 sensor model and 1.0 VA per non-CO_2 sensor model.

Communications

Rate — 38 400 bps

Communications — RS-485

Wiring — Cable length: 600 ft (180 m) maximum

Cable Type — T568B Cat 5e network cable, 4 twisted pairs

Connectors:

- IN — RJ-45
- OUT — RJ-45 (pass-through for daisy chain connection to other room devices)
- Network Access Jack — ⅛" (3.5 mm) stereo plug connector

For ECL & ECB series controllers only (excluding PTU Series controllers)

See the controller's hardware installation guide

Daisy-chaining — Up to 12 Allure EC-Smart-Vue sensors or room devices depending on the controller model – see the controller's datasheet

Temperature Sensor

Type — 10 kΩ NTC Thermistor

Range — 41°F to 104°F (5°C to 40°C)

Accuracy — ± 0.9°F (± 0.5°C)

Resolution — 0.18°F (0.1°C)

Humidity Sensor

Accuracy — ±3%

Resolution — 1%

CO_2 Sensor

Measurement Range — 0 to 2000 ppm

Operating Elevation — 0 to 16000 ft (0 to 4877 m)

Warm-up Time — < 2 minutes (operational), 10 minutes (maximum accuracy)

CO_2 Accuracy — 400-1250 ppm ± 30 ppm or 3% of reading, whichever is greater[1]

1250-2000 ppm ±5% of reading + 30ppm[1]

Temperature Dependence — ±0.11% FS per°F (0.2% FS per °C)

Stability — <2% of FS over life of sensor (15 years)

Pressure Dependence — 0.135% of reading per mm Hg; software adjustable

Sensing Method — Non-dispersive infrared (NDIR) absorption

Gold-plated optics

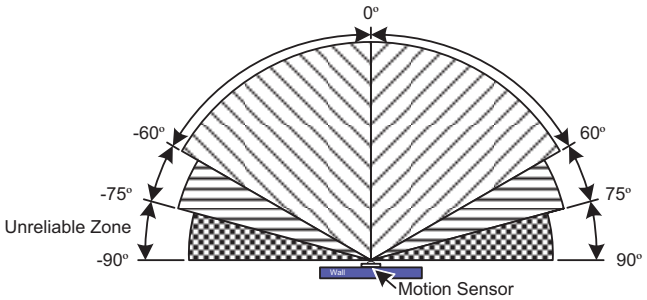
Calibration Method — Patented ABC Logic self-calibration algorithm

1. Tolerance based on span gas of ±2% and ABC Logic enabled.

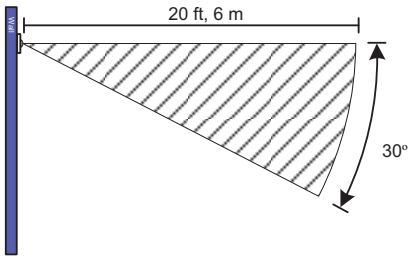
Motion Sensor

Type — Passive Infrared (PIR) sensor with Fresnel lens

Horizontal Angle, Typical



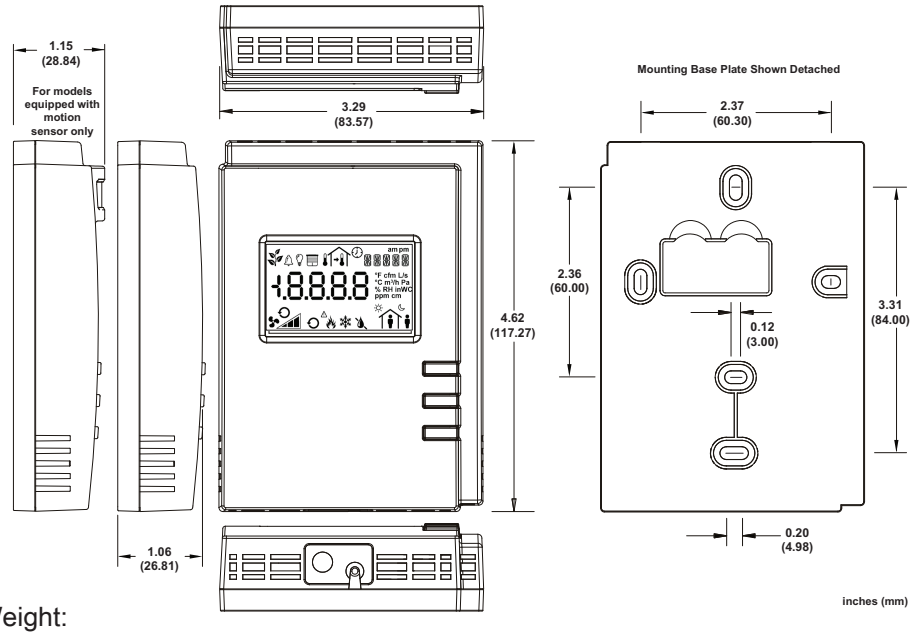
Vertical Angle, Typical



Mechanical

Dimensions (H × W × D):

- ☐ Model without motion sensor — 4.62 × 3.29 × 1.06" (117.27 × 83.57 × 26.81 mm)
- ☐ Model with motion sensor — 4.62 × 3.29 × 1.15" (117.27 × 83.57 × 28.84 mm)



Shipping Weight:

- ☐ Model without motion sensor — 0.18 kg (0.40lbs)
- ☐ Model with motion sensor — 0.20 kg (0.44lbs)

Enclosure Material — ABS

Enclosure Rating — Plastic housing, UL94-V1

Color — white

Installation — wall mounting through mounting holes (see figure above for hole positions)

Environmental

Operating Temperature — 32°F to 122°F (0°C to 50°C)

Storage Temperature — -4°F to 122°F (-20°C to 50°C)

Relative Humidity — 0 to 90% Non-condensing

Standards and Regulation

CE

- Emission — EN 61000-6-3: 2007 + A1: ed.2011; Generic standards for residential, commercial and light-industrial environments
- Immunity — EN 61000-6-1: 2007; Generic standards for residential, commercial and light-industrial environments

FCC — This device complies with FCC rules part 15, subpart B class B

UL Listed (CDN & US) — UL916 Energy management equipment

WEEE — All products are marked according to the Waste Electrical and Electronic Equipment (WEEE) directive.

RoHS — All materials and manufacturing processes comply with the RoHS directive.