

EC-Multi-Sensor-BLE

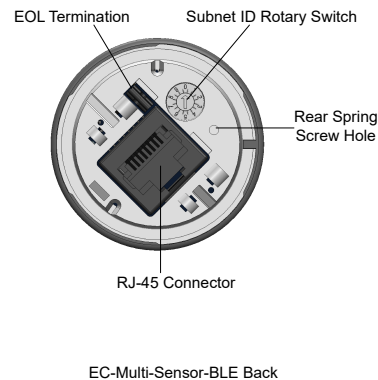
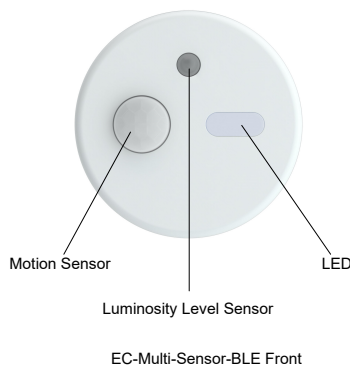
Ceiling mounted multi-sensor with *Bluetooth®* low energy technology



Product Description

The EC-Multi-Sensor-BLE combines a motion detector, a light sensor, a temperature sensor, and a Bluetooth transceiver in a single compact device. This allows to receive input signals from a mobile application and to acquire presence, light level and temperature information to control all comfort parameters in a room according to the occupancy status.

The sensor can be directly connected to an ECLYPSE controller or an expansion module with a digital RJ-45 link, or daisy-chained using an ECx-Subnet-Adapter. It can be used alone, or with a mobile application. An LED light provides a visual feedback during the commissioning process and mobile app use.



General Installation Requirements

For proper installation and subsequent operation of this product, pay special attention to the following recommendations:

- ☐ Keep this product at room temperature for at least 24 hours before installation to allow any condensation that may have accumulated due to low temperature during shipping/storage to evaporate.
- ☐ Upon unpacking the product, inspect the contents of the carton for shipping damages. **Do not install damaged modules.**
- ☐ Avoid areas where corroding, deteriorating, or explosive vapors, fumes or gases may be present.
- ☐ Do not install onto a direct sunlight source.
- ☐ Do not install close to airflow (fan coil unit, ceiling air diffuser, etc.).
- ☐ The product's spec sheet specifies the power consumption (amount of heat generated), the operating temperature range, and other environmental conditions the product is designed to operate under.
- ☐ Do not drop the product or subject it to physical shock.

 Operating, handling, or servicing this product should be ensured by a qualified operator. Turn off the power before any kind of servicing.

 Any type of modification to any Distech Controls product will void the product's warranty

 If the sensor is used and/or installed in a manner not specified by Distech Controls, the functionality and the protection provided by the sensor may be impaired.

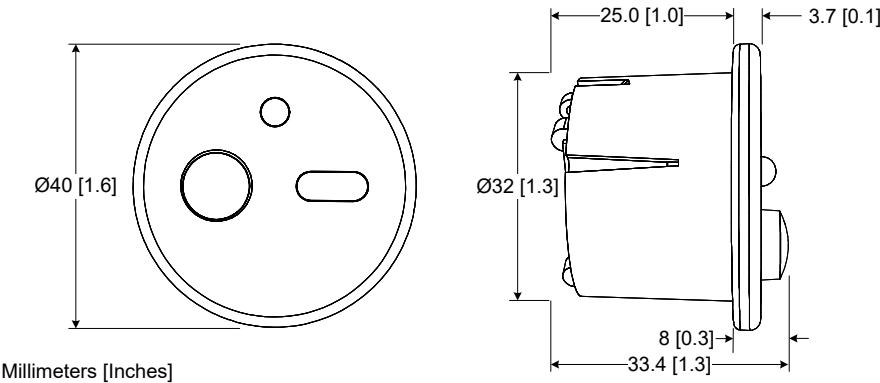
 Take reasonable precautions to prevent electrostatic discharges to the product when installing, servicing, or operating it. Discharge any accumulated static electricity by touching a grounded object with your hand before handling the product.

Device Markings (Symbols)

Certain markings (symbols) can be found on the product and are defined as follows:

Symbol	Description
	CE marking: the device conforms to the requirements of applicable EC directives.
	UKCA marking: the device conforms to the requirements of applicable Great Britain regulations.
	Products must be disposed of at the end of their useful life according to local regulations.
	UL marking: conforms to the requirements of the UL certification.
	FCC marking: This device complies with FCC rules part 15, class B.
	For indoor use only
	Class III electrical appliance
	Lead-free

Dimensions

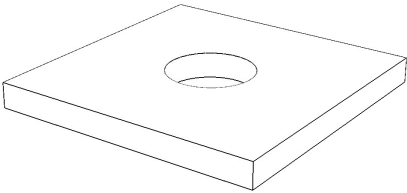


Mounting Instructions

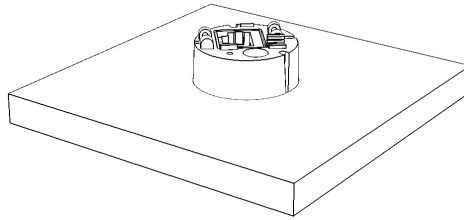
This product can be mounted directly into suspended ceiling, fixed by a supplied rear spring.

 The EOL Termination and Subnet ID must be set before this product is installed. To do so, see [Subnetwork Bus Topology and EOL Terminations \[pg. 4\]](#) and [Device Addressing \[pg. 4\]](#).

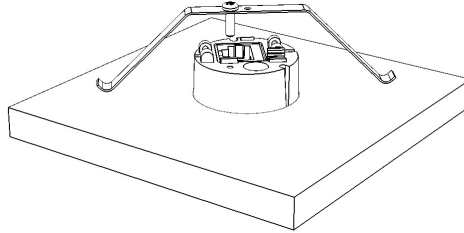
1. Drill a Ø 1.3" (32 mm) hole into the suspended ceiling.



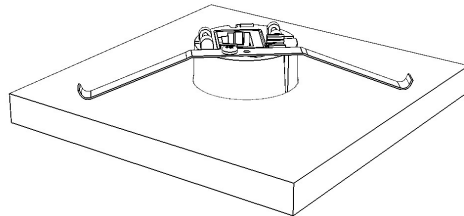
2. Introduce the product through the hole (recessed part first).



3. Screw the rear spring to the product.



4. The product is now fixed into the suspended ceiling.



Another installation method is also available. Please contact us for more information.

Subnet Communications Wiring

The EC-Multi-Sensor-BLE operates off of a separate sub-bus linked to the RJ-45 Subnet connector of the compatible ECx Subnetwork device with an RJ45-RJ45 link.

The EC-Multi-Sensor-BLE can be freely combined (refer to the master controller's datasheet for more specification) in a daisy chain configuration, in which case an optional ECx Subnet Adapter is required to establish a pass-through connection.

The total maximum length of the Subnetwork bus is 100 m (328 ft) and the maximum number of supported EC-Multi-Sensor-BLE devices is 4.

The ECLYPSE User Guide provides extensive information and requirements to implement this subnetwork. It contains information about network length, cable type, addressing, etc. It can be downloaded from the Distech Controls website.

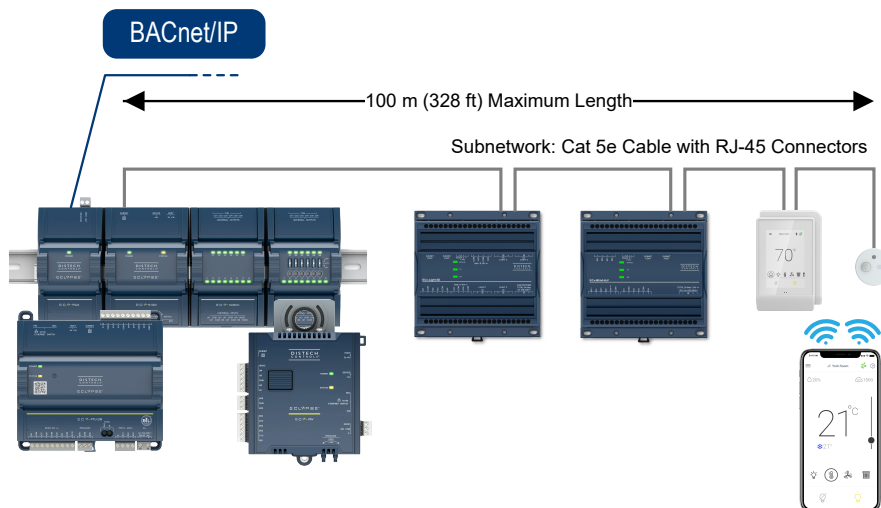


Figure 1: ECx subnetwork Bluetooth low energy architecture



A mixed architecture with standard room devices and Bluetooth low energy enabled devices is not recommended.



If the EC-Multi-Sensor-BLE is not the last device on the ECx subnetwork, it must be daisy chained using an ECx Subnet Adapter. To do so, simply clip the ECx Subnet Adapter male connector into the EC-Multi-Sensor-BLE, and connect the next and previous devices to the ECx-Subnet Adapter female connectors, one in each plug.

If you make your own patch cable, use Category 5e cable crimped with RJ-45 connectors either as T568A or T568B.



Do not crimp one connector as T568A and crimp the other connector as T568B on the same cable.

Subnetwork Bus Topology and EOL Terminations

When ECx subnetwork devices are installed with a PTU Series or VAV controller, only the last device (expansion module or room device) EOL termination is set to ON. All other devices must have their EOL terminations set to OFF.

The EC-Multi-Sensor-BLE's EOL termination is defined by the absence or the presence of the EOL jumper:

- ☐ Absence of EOL jumper: EOL termination OFF
- ☐ Presence of EOL jumper: EOL termination ON

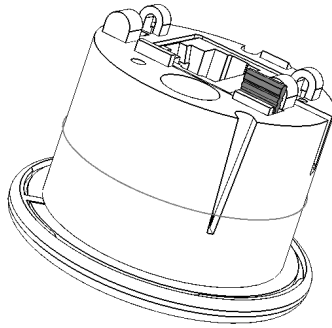


Figure 2: EOL termination ON

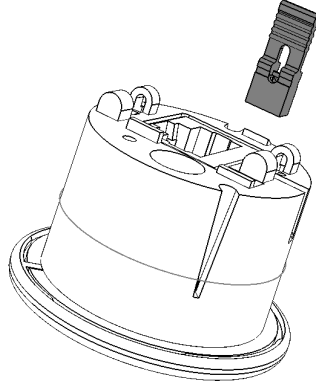


Figure 3: EOL termination OFF

Device Addressing

Each EC-Multi-Sensor-BLE on the ECx Subnetwork must be set to a unique subnet ID address. The address is set with the rotary switch located at the rear of the sensor using a small screwdriver (≤ 2.5 mm - 0.1").



The Subnet ID address must be set before installing the sensor, as the rotary switch might not be accessible once the rear spring is installed.

5 different Subnet ID codifications are used on the ECx Subnetwork :

- ☐ 1 for Allure UNITOUCH™ sensors and EC-Multi-Sensor-BLE sensors
- ☐ 1 for Allure EC-Smart-Vue sensors
- ☐ 1 for Allure EC-Smart-Comfort and Allure EC-Smart-Air sensors
- ☐ 1 for EC-Multi-Sensors
- ☐ 1 for ECx-Light/Blind expansion modules

Consequently, for example, the same Subnet ID can be assigned to an ECx-Light/Blind module, to an EC-Multi-Sensor and to an Allure EC-Smart-Vue sensor without any addressing issue.

The Subnet IDs that can be allocated to EC-Multi-Sensors are 0 (factory default), 1, 2, 3, and 4. All other addresses are not used.



Automatic addressing shall only be used if only one EC-Multi-Sensor-BLE is connected to the ECx Subnetwork.

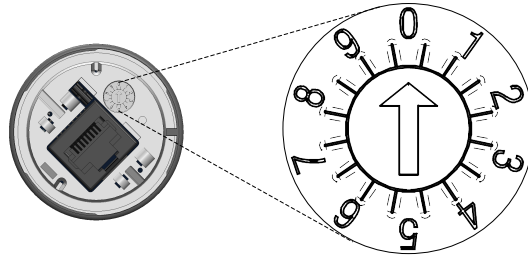


Figure 4: EC-Multi-Sensor-BLE Rotary Switch

Set the desired Subnet ID by pointing the matching number with the rotary switch arrow.

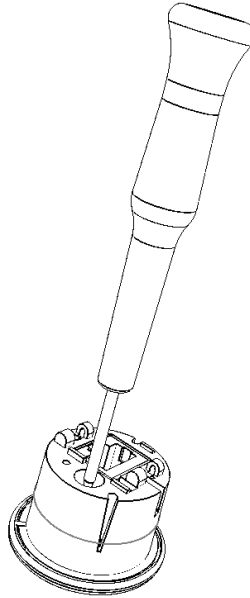


Figure 5: Setting the EC-Multi-Sensor-BLE Subnet ID Address

Signal Transmission and UNIWAVE Connection Guidelines

Transmission range can vary according to building and office setup, therefore it is highly recommended that you always test the signal strength regardless of the range distance. To verify the signal strength in any installation, use the RSSI feature directly on the Remote UNIWAVE, Allure UNIWAVE device or with EC-gfxProgram.

We recommend having a signal between **-50 (good signal quality)** and **-75 (bad signal quality)** dBm to ensure a proper connection between UNIWAVE and EC-Multi-Sensor-BLE.



The RSSI value is available only after the UNIWAVE device has been paired with the corresponding EC-Multi-Sensor-BLE.

For more detailed information on the RSSI feature, refer to the [UNIWAVE Series Installation Guide](#).

Settings

Luminosity level measurement calibration

As the luminosity level in a room is not homogeneous but depends on the measurement position and on the room layout (colors, desk position, light sources...), the luminosity level acquired by the EC-Multi-Sensor-BLE might not be the luminosity level at the workplace.

To precisely measure the luminosity level at the desired position, a calibration must be achieved.



Please note that the luminosity level calibration must be achieved at the approximate desired luminosity level.

To achieve luminosity level measurement calibration:

1. Position the luxmeter at the exact position the user operates (typically on a desk).
2. Note the luminosity level value.
3. Luminosity level calibration can then be achieved by entering this value using the dedicated EC-*gfx*Program custom block.

Temperature sensing

As the measured temperature is at ceiling height, it must be necessary to apply an offset to this measure to represent the room temperature at standard level. Please refer to [EC-*gfx*Program User Guide](#) for more information.

Bluetooth connection modes

The EC-Multi-Sensor-BLE supports several Bluetooth communication modes. Please refer to the [XpressNetwork Utility](#) or [ECLYPSE user guide](#) for more details on how to change this mode.

Mode	Description
Commissioning	Bluetooth connection is used for commissioning the device. This option is the factory default mode (default PIN code 999995) and has short range for commissioning purposes only.
Disabled	Bluetooth connection is disabled and does not allow any wireless connections to the device.
Open	Bluetooth connection is open and is not authenticated with a PIN code. We recommend for this option rooms or areas that are accessible to anyone.
Private	Bluetooth connection is authenticated with a six (6) digit PIN code. When this mode is selected, you will be prompted to change the PIN code as the default PIN code is not allowed while using Private mode. We recommend this option for private rooms and areas.

Disposal

The Waste Electrical and Electronic Equipment (WEEE) Directive sets out regulations for the recycling and disposal of products. The WEEE2002/96/EG Directive applies to standalone products, for example, products that can function entirely on their own and are not a part of another system or piece of equipment.

For this reason Distech Controls products are exempt from the WEEE Directive. Nevertheless, Distech Controls products are marked with the WEEE



symbol  indicating devices are not to be thrown away in municipal waste.

Products must be disposed of at the end of their useful life according to local regulations and the WEEE Directive.

FCC Statement



Changes or modifications not expressly approved by Distech Controls could void the user's authority to operate the equipment.



This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ☐ Reorient or relocate the receiving antenna.
- ☐ Increase the separation between the equipment and receiver.
- ☐ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ☐ Consult the dealer or an experienced radio/TV technician for help.



This device complies with Part 15 of the FCC rules and with Industry Canada's license exempt RSS. Operation is subject to the following two conditions:

- ☐ This device may not cause harmful interference, and
- ☐ This device must accept any interference received, including interference that may cause undesired operation of the device.

Specifications subject to change without notice.

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