

## Installer Do's and Don't's

### Communication and Technology

The most important emphasis is for the contractor to understand that the Casambi lighting control system works by Bluetooth low energy mesh or BLE for short, in the Casambi installation environment each Casambi node will speak to up to 7 other Casambi points at any given time. This makes up the core or backbone of consideration when installing the different pieces of Casambi and its ecosystem hardware.

One point to be aware of, you cannot put all Casambi drivers or control devices together in one area, then expect a switch to be able to communicate from the other side of the building, we refer to this as distributed intelligence so the devices that control the various Light sources (including sensors, relays and mains powered switches) need to be spread across the building space to create the mesh effectively.

BLE (Bluetooth) speaks using an Radio Frequency (RF), this frequency is 2.4 GHz so when installing the control system hardware, ensure that the radio communication between devices is maintained (the best way of explaining this is to imagine taking your Bluetooth headphones and your mobile phone, if you put your mobile phone into a metal box and put it in a safe, behind a metal door then you will not be able to hear your music playing through your headphones. If you simply put your mobile phone in the car and close the door with you listening to your music outside of the vehicle, you will notice that your range of broadcast from the phone is significantly reduced in comparison to having your mobile phone in your pocket next to you) this is no different to how the Casambi Bluetooth system operates so consider where and how you place the nodes within the building space, ceiling voids etc. to ensure that you have the best and strongest signal between the different points of the mesh. If in the worst case scenario you do end up with areas that are more challenging to maintain a signal with the hardware allocated for the lighting alone, you may take any Casambi mains powered device (with or without connected load) and install them to act as a repeater of the mesh within the building space.

When installing the Casambi system please ensure that there is no switching available between the distribution board and the lighting control system circuit devices (we do not want mains forms of isolation where an occupier or user of the space can unknowingly or unwittingly isolate the power from the Casambi control device installation) we need a consistent 230 V feed to all devices at all times.

If you are utilising battery powered devices or kinetic devices such as an Enocean switch, please be acutely aware that these devices do not create repeating points for communication through the mesh, they are called passive devices and are only active when a button is pressed and even then, only send the signal not receive nor repeat. This is how the battery based devices have such a long battery lifespans.

When installing new Casambi devices, particularly The CBU range from Casambi directly (generally the white modules). Be aware that these devices offer different functionality (even from the same single piece of hardware) so for example the CBU-ASD is generally used as the market standard for Dali lighting, one module per driver. However, it can also be used to control a 0/1 – 10v system, act as a push button switch input, act as a virtual PIR sensor, or be used as an interface for fire alarm control panels. Given this flexibility of hardware, you should ensure that you have familiarised yourself based on the design of the system you are installing to

ensure the following; 1) You are using the correct wiring diagram for that device given its use case in this instance, so, when you power up the device you installed, 'change profile' to ensure the software standard within the device suits the functionality it is expected to offer. When using devices that directly carry the load, for example mains phase dimming (CBU-TED, Vadsbo LD220, the Tred from Eulum) or low-voltage product for controlling tapes and ribbons (CBU-PWM4 etc.) consideration should be given to the amount of load you are demanding from the device and therefore putting directly through it. Mains phase devices have two characteristics which must be adhered to; 1) the loading, for example a CBU-TED has a maximum loading of 100w and 2) the inrush current associated with the device (the CBU-TED has an inrush current of 10a for 100ms). If either one of these parameters are exceeded you are likely to blow the unit and then purchase a higher rated model to suit the application. It is imperative that you are verifying that the load you apply to the product does not exceed either one of these parameters. Casambi ecosystem partners offer a wide range of products increasing in loading and inrush capacity, so just ensure you check this prior to energising the circuit.

## Switches

Casambi offers three different types of technologies for switching in general purposes; 1) a mains powered switch, do not mis-interpret this as a switching point that breaks the powerline to the lighting circuit, it is simply a switch that needs a permanent feed to operate but in terms of wiring its just a power feed not a return switch live. 2) a battery powered switch, by a simple definition there is no cabling consideration for switching required in this instance at all, the battery powered pad will simply affix to a wall or remain loose on something like a desktop or table. There is no installation of electrical consideration required for this device and finally; 3) a kinetic switch otherwise referred to as an Enocean, these just like the battery power switches also require No electrical installation in terms of cabling or power demand they are simply switch plates that stick to a surface or are screwed and operate purely by the action of pressing the button interface there is no electrical power or batteries required.