CONFIGURATIONS

STATUS LEDS AND DEVICE MODES

CONTENTS

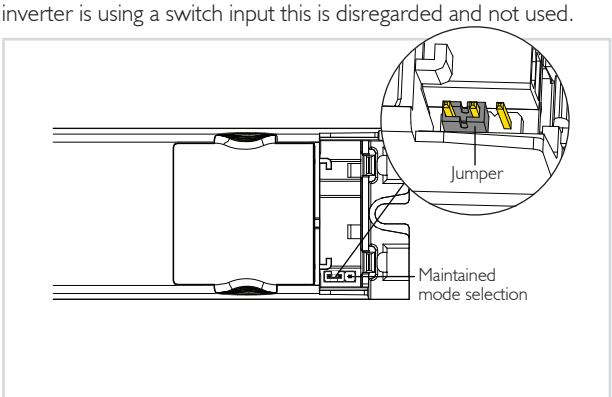
8. SUPPORTING INFORMATION

1. MODE SELECTION

Ektor devices have a series of configurations or modes which they can be set to, or that can be enabled depending on the services it needs to perform.

MAINTAINED MODE SELECTION

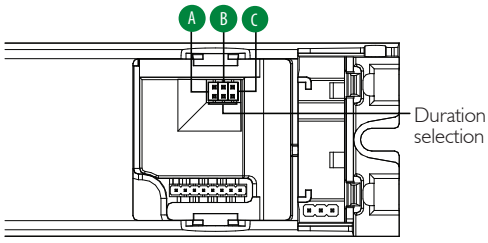
Users can select the mode of operation for the inverter. If the inverter is using a switch input this is disregarded and not used.



INDICATOR	STATUS	DESCRIPTION
NON MAINTAINED		Lamp is only ON in emergency
MAINTAINED MODE		Lamp is ON in normal and emergency operation

DISCHARGE SELECTION

The inverter supports a number of discharge ratings which can be selected by the user. The output from the LED scales based on the discharge rating.



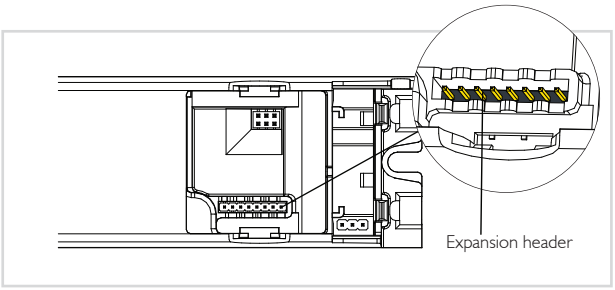
HOURS	A	B	C
1 hour	OFF	OFF	OFF
2 hours (default)	ON	ON	ON
3 hours	ON	ON	OFF
4 hours	ON	OFF	ON
8 hours	ON	OFF	OFF
Central battery operation	OFF	ON	OFF

If the discharge duration selection, or maintained mode set through the jumpers is not a supported mode of the device then it will revert to the factory default selection. This will be indicated on the charge LED.

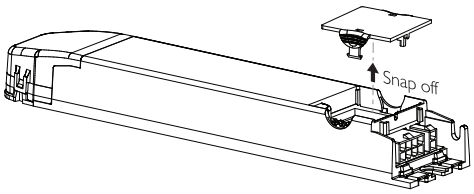
INDICATOR	DESCRIPTION
GREEN 9 X FLASH	Invalid discharge duration or maintained mode not supported

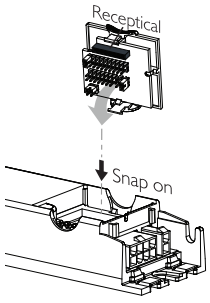
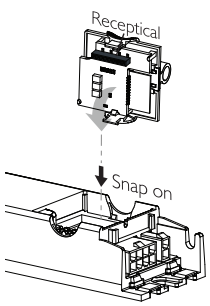
EXPANSION HEADER

Generation III products also include an expansion header which allows for smart devices such as a Wi-Fi daughterboard, sensors, easy commissioning modules and diagnostic tools to be installed.



Depending on the device the installation will be somewhat different. The images below illustrate how two of these modules can be installed. The inverter can be bought with and without a cover.

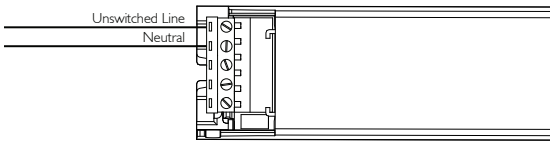


EASY COMMISSIONING MODULE	WI-FI DAUGHTERBOARD MODULE
	

2. SINGLE POINT UNIT MODE

Single point unit(SPU) mode is configured as the default mode from the factory. In this mode the device will perform as a stand alone emergency product. As a single point unit the emergency device can be used with the switched active input.

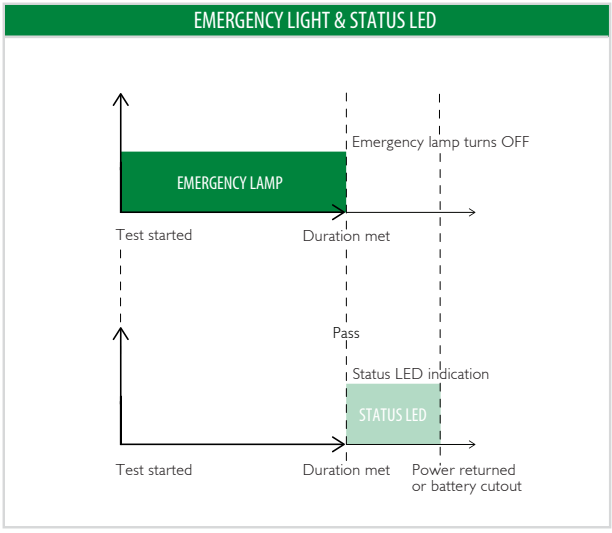
SPU WIRING



DISCHARGE METHOD

When the selected duration has been met the emergency lamp is extinguished and a pass is indicated on the status LED. In SPU mode, devices set to 90/120m duration will always discharge to 120 minutes

It is important to check the status LEDs when checking the result of duration test to determine if a pass result has been obtained.



STATUS INDICATION

INDICATOR	DESCRIPTION
YELLOW 4sec ON / 1sec OFF	Device is in emergency mode and has met selected duration
YELLOW 2sec ON / 2sec OFF	Device is performing a duration test
GREEN 3x FLASH	Battery failure
GREEN 2x FLASH	Lamp failure

3. SMART TEST/SELF TEST MODE

When the device performs a duration test it's considered to be a smart test, with the exception of the manually initiated test. If the battery is not sufficiently charged the device will not be allowed to discharge and will wait until the battery is charged before commencing a test.

If a duration test ends early due to mains loss, the device will test again when the battery is sufficiently charged. This occurs only if the mains interruption is short enough to not completely deplete the battery.

Emergency devices will retest the units repeatedly when the interval time is set. The interval time can be set to 26 weeks.

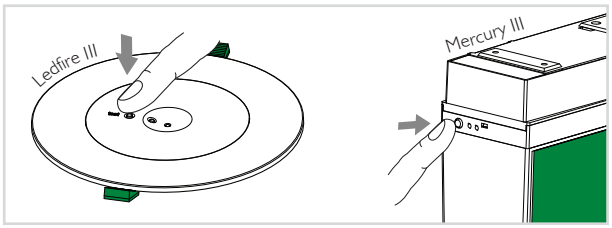
The emergency lamp will automatically turn off when duration is met and the flash sequence marking test result will show on the status LED. The smart test flash sequences, indicating test results, are listed below.

INDICATOR	DESCRIPTION
YELLOW 2sec ON / 2sec OFF	Device is performing a duration test
YELLOW 4sec ON / 1sec OFF	Last duration test passed. The duration was met when last run and test ran less than five days ago
YELLOW 0.5sec ON / 0.5sec OFF	Last duration test failed. It failed to meet duration. The device is not currently running a new test. Mains is on
GREEN 1x FLASH	A duration test is pending. The device is not in any self test and set to normal mode

TEST SWITCH LOCATION

All features, such as tests and mode activation, are controlled either by the circuit breaker or a test switch. The location of the test switch, as well as the indicator LEDs, can be found in different places depending on the fitting.

As an example for the Mercury III emergency luminaire the test switch/button, is located on the top area on its side. On the Ledfire III dish the test switch is close to the center of the fitting.



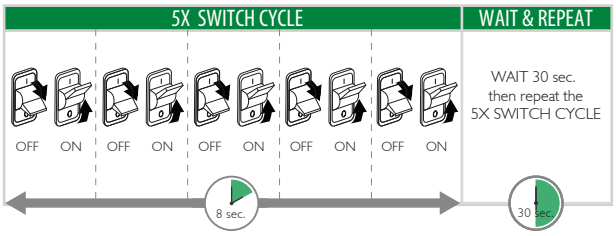
WI-FI SELF TESTING

Wi-Fi features can be utilised with the use of the Ektor Wi-Fi module and smartphone application. Some features include detailed test reports, easier commissioning and staggered testing.

SELECTING SELF TEST MODE

The self test mode must first be enabled to perform tests. This is done by switching the breaker in the correct sequence as illustrated below. The same sequence can also be used with the test switch/button on a single device.

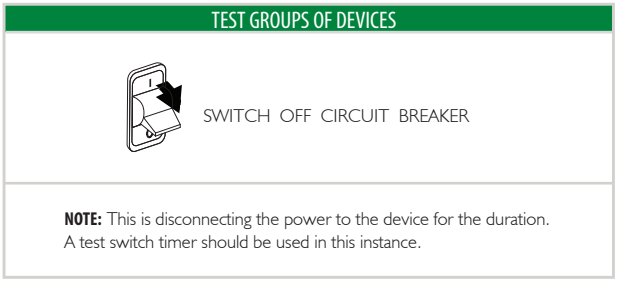
The test interval is fixed and set to 26 weeks/ 182 days. The LEDs indicate the status of the device and which functions are being performed.



PERFORM A MANUAL DURATION TEST (FOR 90/120 MIN)

The below sequence will immediately perform a manual duration test. If devices have already performed a duration test, they will turn the emergency lamp off at 90 minutes and show pass as long as possible, while running on batteries.

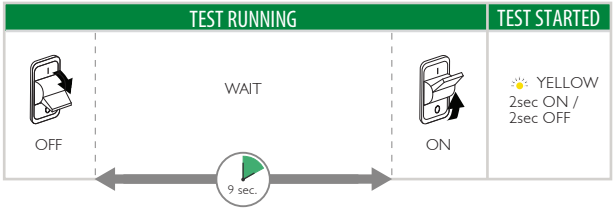
If it is the first test then the device will go to 120m duration. If the interval is not set then units will always perform 120m duration test.



IMMEDIATELY TEST WITHOUT CHANGING TEST INTERVAL

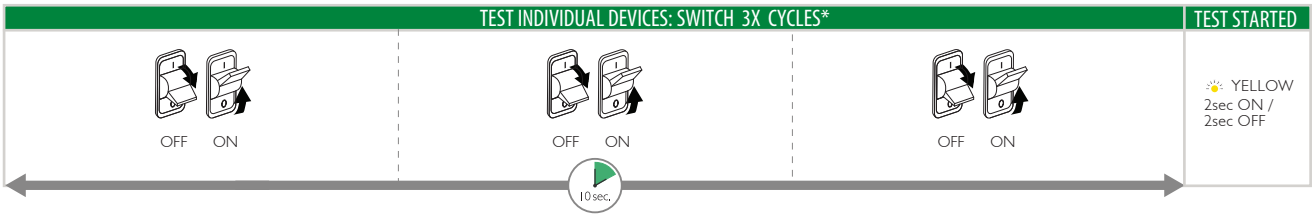
This will initiate a duration test on all the emergency devices connected to the circuit breaker. It will not affect the test interval unless no interval is set. If no interval is set then it will be set to 26 weeks starting from the test.

If the battery is not charged, the unit will display “Duration pending” and will perform the discharge test after the battery is charged.



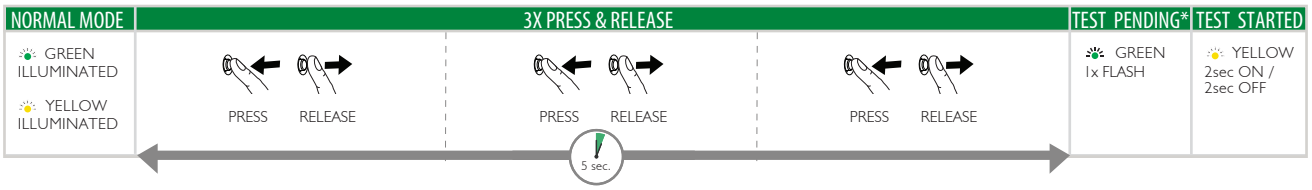
IMMEDIATELY TEST AND RESET INTERVAL

The interval will be set or reset to 26 weeks from when triggered, regardless of when the test actually starts. If a 24 hour delayed test has been initialized, the interval will be set to 26 weeks after the scheduled duration test is initiated by the circuit breaker switch sequence below.



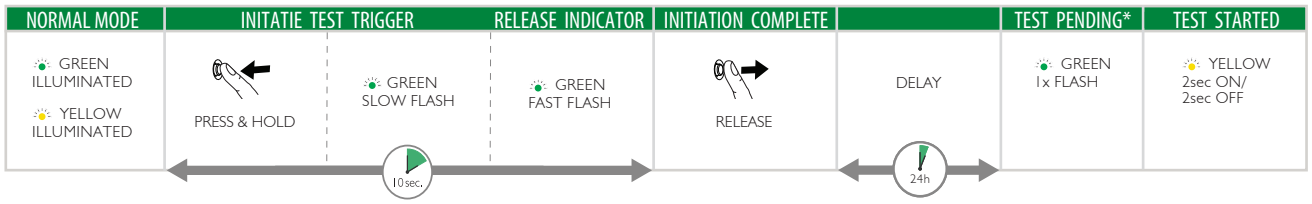
IMMEDIATELY INITIATE A DURATION TEST (INDIVIDUAL UNITS)

This will test the devices without disturbing the test interval. If no interval is set then it will start interval (26 weeks) from when triggered by the test switch, regardless of when test actually starts.



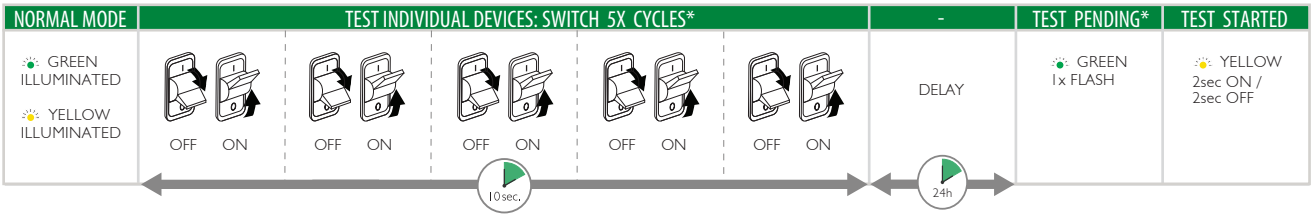
24 HOUR DELAYED DURATION TEST

A duration test can be triggered to occur 24 hours after activation. This allows the battery to charge fully before commencing a test without re-attendance of service personnel. Inputting the below sequence, using the test switch, triggers the test for individual devices. If the switch is not released after 10 sec, as shown below, the test will not be initiated.



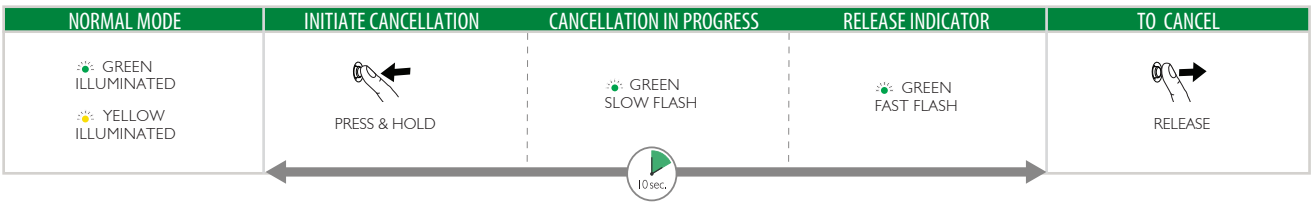
24 HOUR DELAYED TEST AND RESETTING OF THE INTERVAL

This may be useful when a device has been replaced due to a bad device found after an interval test. After initiating test using the circuit breaker all devices will wait 24 hours before initiating a smart duration test, and set/reset the interval to 26 weeks.



CANCEL INDIVIDUAL DURATION TEST

When a duration test is in progress it can be cancelled by holding the test switch for longer than 10 seconds. In this case the interval was set when the test was first triggered, if applicable.

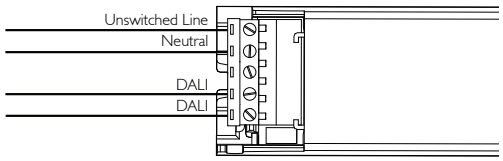


***NOTE:** If the battery is not charged, the unit will display "Duration pending" and will perform the discharge test after the battery is charged.

4.DALI MODE

Ektor Generation III products can be enabled to support DALI. DALI mode is automatically enabled if either a powered DALI line has been connected for more than twenty seconds or a valid DALI command has been received.

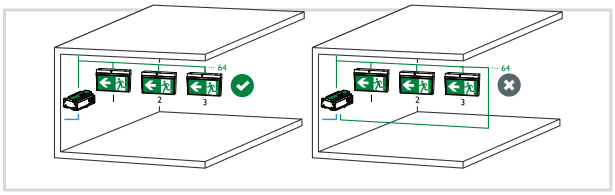
DALI WIRING / CENTRAL BATTERY SYSTEM



A. CABLING SIZES

RECOMMENDED CABLE SIZE	MAXIMUM CABLE LENGHT
1.5mm²	300m
2.5mm²	500m
4.0mm²	800m

B. WIRING TOPOLOGY



STATUS INDICATORS

Below are the DALI model LED indicators.

INDICATOR	DESCRIPTION
GREEN 4x FLASH	Interface failure
GREEN 5x FLASH	No DALI address
GREEN 7x FLASH	Device performing function test. The test was triggered by a DALI command or function test interval

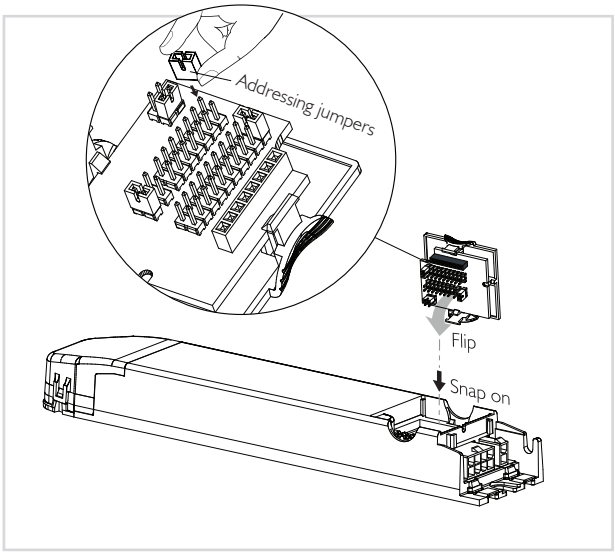
SYSTEM FAILURE SETUP

Should the unit be installed onto a DALI network and the system fails (DALI comms failure) the unit will continue to perform a duration test and function test as if it had been installed as a self test unit. This will occur as long as the unit has been commissioned with the desired test interval.

DALI EASY COMMISSIONING MODULE (ECM)

An ECM can be purchased for each emergency device allowing the installer to pre-set the commissioned address manually, removing the need to address the devices during the commissioning stage.

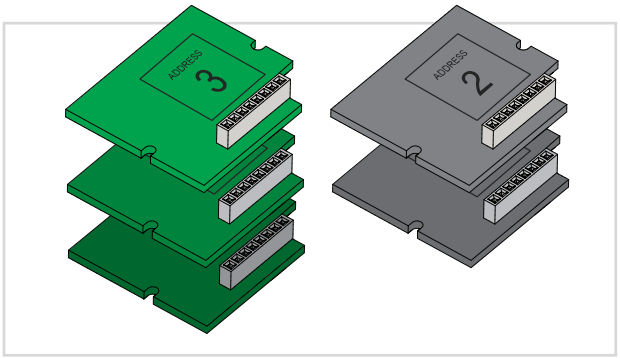
Should the emergency product need replacing, the addressing module can be placed into the new device removing the need to re-address. The ECM needs to be set, installed and recorded when installing the emergency fittings.



NOTE: The ECM allows for 16 DALI groups and 64 addresses.

ECM KIT

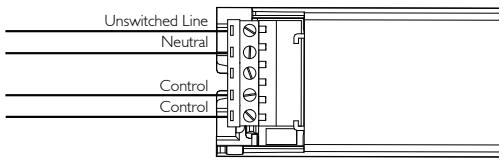
Sets of coloured pre-configured ECMs, 64 units, can be purchased to make the installation faster and easier.



5.EKTOR MODE

Ektor Generation III products support the Ektor wired emergency system which allows up to 100 emergency devices to be connected on the same bus.

WIRING / CENTRAL BATTERY SYSTEM



STATUS INDICATORS

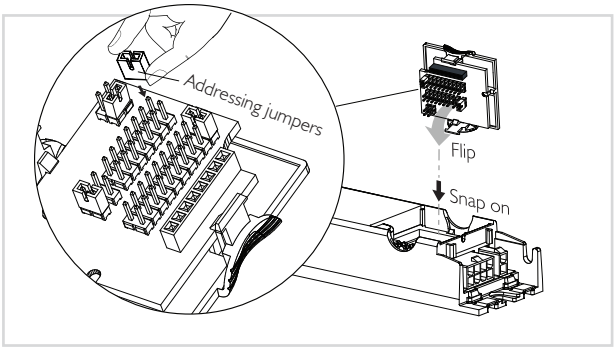
Below are the Ektor mode LED indicators.

INDICATOR	DESCRIPTION
GREEN 4x FLASH	Interface failure
GREEN 5x FLASH	No Ektor address
GREEN 7x FLASH	Device performing function test. The test was triggered by a Ektor command or function test interval

EASY COMMISSIONING MODULE (ECM)

An ECM can be purchased for each emergency device allowing the installer to pre-set the commissioned address manually, removing the need to address the devices during the commissioning stage.

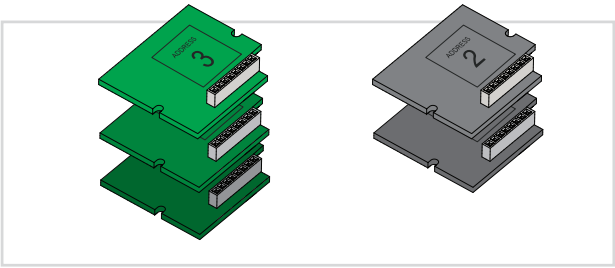
Should the emergency product need replacing, the addressing module can be placed into the new device removing the need to re-address. The ECM needs to be set, installed and recorded when installing the emergency fittings.



NOTE: The ECM allows for a 100 addresses.

ECM KIT

Sets of coloured pre-configured ECMs, 100 units can be purchased to make the installation faster and easier.



6.WI-FI MODE

With the use of the Ektor Wi-Fi module the emergency devices can be commissioned to connect to the following:

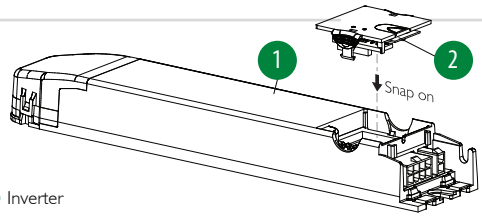
- Directly to a smartphone
- Onto a Wi-Fi network
- To the Ektor Cloud

ENABLING WI-FI

The Wi-Fi module can be plugged into the Ektor emergency driver by firstly removing the existing cover and then snapping the Wi-Fi device onto the body.

Installing a wireless daughterboard will automatically configure the product to wireless mode. However the radio will be disabled until enabled using the test switch. To commission the wireless product the Ektor smartphone application is required.

NOTE: The setting won't take effect until the unit is fully restarted. Power needs to be turned off and the battery needs to be disconnected when inserting the Wi-Fi daughterboard.



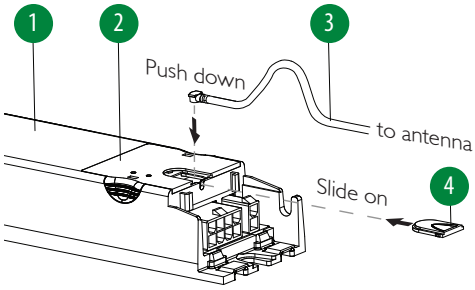
1 Inverter

2 Wireless daughterboard and daughterboard cover (6118)

ANTENNA

An antenna is not required on most emergency products, however if one is required to increase range then one can be installed by connecting to the Wi-Fi connection found on the Wi-Fi daughterboard.

NOTE: The antenna needs to be enabled using the smartphone app. What type of antenna, and complimentary wiring, that is needed depends on the product.



1 Inverter

2 Wireless daughterboard and daughterboard cover (6118)

3 Antenna extension (6125)

4 Slideable daughterboard cover piece

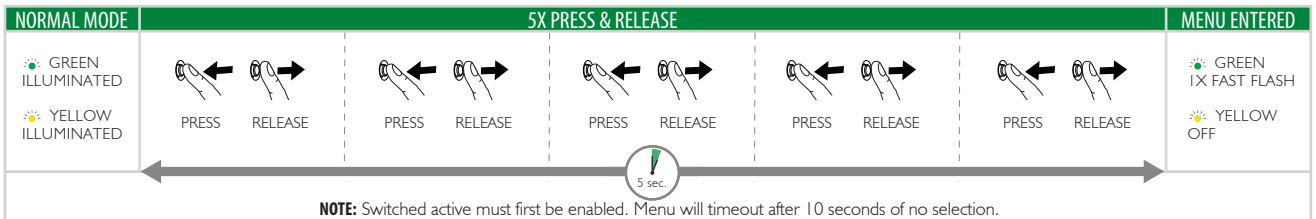
COMMISSIONING WI-FI

By default the Wi-Fi radio is disabled on the Wi-Fi module and must be enabled by the installer or commissioning agent before commissioning. To enter soft AP mode the below sequence must be performed using the test switch.The soft AP status and WLAN status LEDs are on the module itself. These will glow through the translucent plastic of the daughterboard cover. Other Wi-Fi commissioning can be found in the Wi-Fi Commissioning Guide.

NORMAL MODE	3X PRESS & RELEASE			SOFT AP MODE ENTERED
GREEN ILLUMINATED YELLOW ILLUMINATED	PRESS RELEASE	PRESS RELEASE	PRESS RELEASE	COLOUR SOFT AP STATUS LED FLASHING

7. SWITCHED ACTIVE

A mains ON/OFF sensor or switch can be wired to the switched active input to trigger functions on the device, depending on the selected switched active mode. Switched active mode is automatically enabled and set to ON/OFF mode when mains has been detected on the input for 5 continous sec. Different modes can be selected using the configuration menu, triggered by the test switch being pressed in the below sequence:



NOTE: Switched active must first be enabled. Menu will timeout after 10 seconds of no selection.

QUICK GUIDE TO THE DIFFERENT MODES

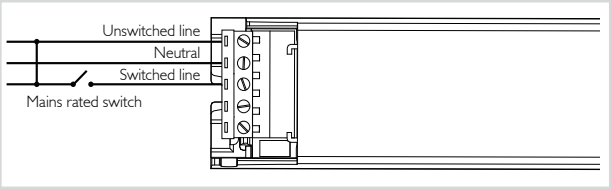
Advanced configuration is also available using Ektor software when the device is in DALI or Wi-Fi mode. Setting the mode via either of these methods will automatically enable switched active mode, so commissioning can be done without needing the switched active input to be wired and switched on.

MODE	PRESS BUTTON X TIMES
Disable switched active	6
ON/OFF mode	2
*Corridor mode A	4
*Corridor mode B	5
*Dimmer mode	3

***NOTE:** These modes are only available on certain models

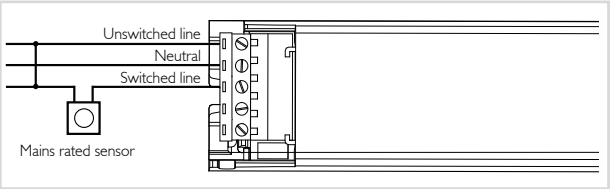
USING THE INVERTER WITH A SWITCH

A mains rated switch can be wired with this product to turn ON/OFF the non-emergency light in normal use. This does not affect operation in emergency mode.



USING THE INVERTER WITH A SENSOR

A mains rated sensor can be wired with this product to turn ON/OFF the light in normal use. This does not affect operation in emergency mode.



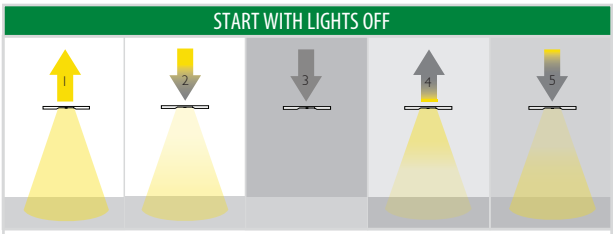
ON / OFF MODE

In ON/OFF mode the input is used to directly turn the light ON and OFF, similar to conventional lighting. This is only applicable to maintained devices and will have no affect on non-maintained devices.

DIMMER MODE

This mode is designed to be used with a momentary mains switch. The light can be dimmed using the button. A quick push and release will toggle the light output between on and off, depending on current light state.

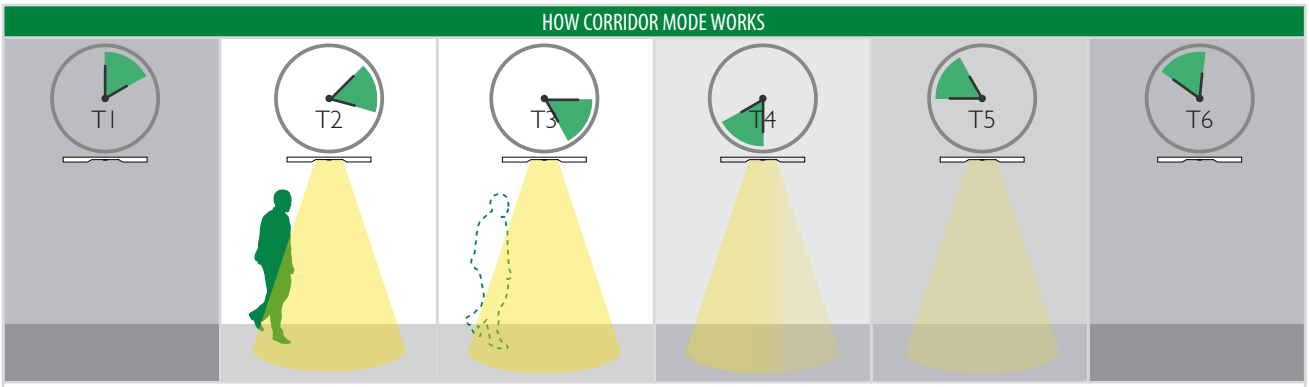
Pressing and holding the button will dim the light up or down using the DALI fade rate. Dim direction is determined by light state of the last dim. The button follows the functionality as described below.



1. QUICK PRESS & RELEASE
   Light turns right on to the maximum level possible without dimming.
2. PRESS & HOLD
   Light dims down until button is released or the minimum level is reached
3. QUICK PRESS & RELEASE
   Light turns off
4. PRESS & HOLD
   Light turns on to minimum and dims up until the button is released or the maximum level is reached
5. PRESS & HOLD
   Light dims down until the button is released or minimum level is reached

CORRIDOR MODES

The corridor modes are designed to be used with a presence detector (microwave, PIR, etc) to intelligently dim the light when it no longer detects presence, rather than turning the light off immediately. This mode is cost effective, easy to use, and saves energy.



- T1 The light is turned off as the sensor is not detecting any precense within its range
- T2 The sensor detects a presence and the light is immediately turned on to the activation level
- T3 Once the sensor no longer detects presence and turns off, the extended activation time commences. This keeps the light at the preset activation level and starts the activation timer
- T4 When the extended activation time elapses, the light fades to the comfort level
- T5 The light stays at the comfort level and starts the comfort time. The comfort time can be set to be unlimited
- T6 When the comfort time elapses, the light is turned off without fading

Corridor modes A and B differ only in their default settings, as described below:

PARAMETER	RANGE OF VALIDITY	CORRIDOR A DEFAULT	CORRIDOR B DEFAULT	UNIT OF MEASUREMENT
ACTIVATION LEVEL	0-254	254	254	DALI level
EXTENDED ACTIVATION TIME	0-65535	0	0	15 second resolution IE: 1 min = 4 0 = disabled
FADE TIME	0-15	12(32s)	12 (32s)	DALI fade time
COMFORT LEVEL	0-254	85(1%)	170 (10%)	DALI level
COMFORT TIME	0-65534	120(30m)	65535 (infinite)	15 second resolution IE: 1 min = 4 0 = disabled 65535 = infinite

8. SUPPORTING INFORMATION

TESTING CONDITIONS

Device will only perform a duration test when prescribed conditions are met. If the device shows no sign of initiating the test one or more conditions have not been met. To perform an immediate duration test the device must:

- Not be in a function test
- Have a fully charged battery
- Not be inhibited
- Have self test mode enabled
- Not be in any smart self test
- Have mains on

90 M / 120M DURATION

In DALI mode, devices will report rated duration as 90m, but do a 120m discharge test. Below is a summary of the tests duration.

It is the responsibility of the control system to determine whether or not 90m or 120m duration is considered adequate depending on the situation. This will only occur when devices have the physical jumpers set to two hour discharge, and otherwise will set pass at the selected discharge time.

Compatible control systems are able to specifically trigger a custom time duration test (two minute resolution) that is less than the selected discharge time. In the case of a 120m selected discharge, custom discharge times between 90m and 120m will set pass only when the custom duration has been reached.

	90M	120M
DALI/Wi-Fi mode*		✔
SYNC TESTING (Immediate & 24h delayed) - Last test passed	✔	
SYNC TESTING (Immediate & 24h delayed) - First/last test failed		✔
IMMEDIATE TEST - SELF TEST (ST)		✔
SINGLE UNIT 24 hour delayed test - ST		✔
MANUAL DISCHARGE - Single point unit (SPU)		✔
MANUAL DISCHARGE - ST Last test passed	✔	
MANUAL DISCHARGE -ST First duration test not run or last test failed		✔

***NOTE:** Pass set at 90m but continue testing to 120m

TEST SWITCH LOCATION

All features, such as tests and mode activation, are controlled either by the circuit breaker or a test switch. The location of the test switch, as well as the indicator LEDs, can be found in different places depending on the fitting.

SUMMARY OF STATUS LEDS

The status of each exit and emergency devices can be seen through the status indicator. The single, 2 colour LED indicator displays whether testing was successful, currently undergoing, or awaiting the next test in compliance with AS/NZS2293.

INDICATOR	DESCRIPTION
GREEN ILLUMINATED	Indicates that the device is in normal mode
GREEN SLOW FLASH	Indicates that the test switch button has been pressed/held for any amount of time, and is not in any self tests
GREEN 1x FLASH	A duration test is pending, the device is not in any self test but set to normal mode
GREEN 2x FLASH	Lamp failure
GREEN 3x FLASH	Battery failure
GREEN 4x FLASH	Interface failure, DALI/Wi-Fi failure
GREEN 5x FLASH	No DALI address
GREEN 7x FLASH	Device performing function test. The test was triggered by a DALI command or function test interval
GREEN 9x FLASH	Indicates that the device either doesnt support maintaned mode or doesnt support the selected duration setting
YELLOW ILLUMINATED	Indicates that the device is in normal mode
YELLOW 0.5sec ON / 0.5sec OFF	Last duration test failed, failed to meet duration. The device is not currently running a new test. Mains is on
YELLOW 2sec ON / 2sec OFF	Device is performing a duration test
YELLOW 4sec ON / 1sec OFF	Last duration test passed, the duration was met when last run. Test ran less than five days ago
YELLOW 4sec ON / 1sec OFF GREEN 1x FAST FLASH	Configuration menu entered

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