

Important Information For Installers

Select A Suitable Location For Your Dynalite Energy Management Controller

The device is designed for indoor use only. If installing in an external location, the dimmer must be housed in a suitable well-ventilated enclosure. Choose a dry location that will be accessible after the installation is complete. To ensure the cooling system functions correctly, the dimmer should only be mounted *vertically, the right way up*. The dimmer will generate heat when operating, approximately 2 Watts per Amp of load, and requires an air gap of 200mm on each side and at the top and bottom of the device. This air gap is also required to ensure serviceability of the dimmer without complete removal from the mounting surface. This device may emit some mechanical noise. Take this into account when deciding the mounting location.

Fixing The Device

The dimmer has integral mounting brackets attached to the enclosure. The brackets are designed to accommodate 4 fixing screws up to 8mm diameter. The dimmer can be fixed to the wall without opening the cabinet or removing covers. Make sure no dust or other debris enters the device during installation. Do not leave the front cover off for any length of time. Excessive dust and dirt can degrade the cooling of internal components.

Allow For Cable Entry

Supply and load cables enter the enclosure at the top. If these cables are fed from below the mounting position, they should be routed around the enclosure to enter at the top. An alternative method is to stand the enclosure off from the mounting surface by mounting it on a cable tray or a Unistrut style product. The cables can then be routed between the enclosure and the mounting surface, and enter the enclosure via the cutout provided on the mounting face*. The control cables enter at the bottom of the enclosure. Control cables should never be run in the mains voltage sections of the enclosure**.

* A cut out may not be present on the mounting surface - you may have to cut your own.

** This does not include 0- 10/DSI cable. They should be 240V rated.

Data Cable Type

The recommended cable type for connections to the serial ports is shielded, stranded, 3 twisted pairs, RS485 type cable. Recommended cable types include:

Belden 9503
Hartland HCK603
Garland MCP3S
M+M Cable B2003CS
M+M Cable B9503CS
RS Components 368 687

If anticipated cable runs are over 600 meters, consult your distributor for advice.

Suggested Cable And Connection Methods

The data cable is to be connected to all load controllers, PE/PIR Sensors, and control panels in a “daisy chain” arrangement. Start at the first device, and then loop in then out of devices with a single cable terminating at the last device. There should not be any spurs or stubs (X, Y, or T joins). The first and last device should terminate one cable; all other devices should terminate two cables. Devices maybe wired in any order. It is also advisable to document your daisy chain run.

Physical constraints may dictate that data cable spurs are necessary. In these cases, DTK932 Network Bridges should be used. Consult Network Lighting for details

All Data cables shall be run at a minimum spacing of 300mm from all other mains cables and not in the same duct. Where the cables cross, they should do so at right angles.

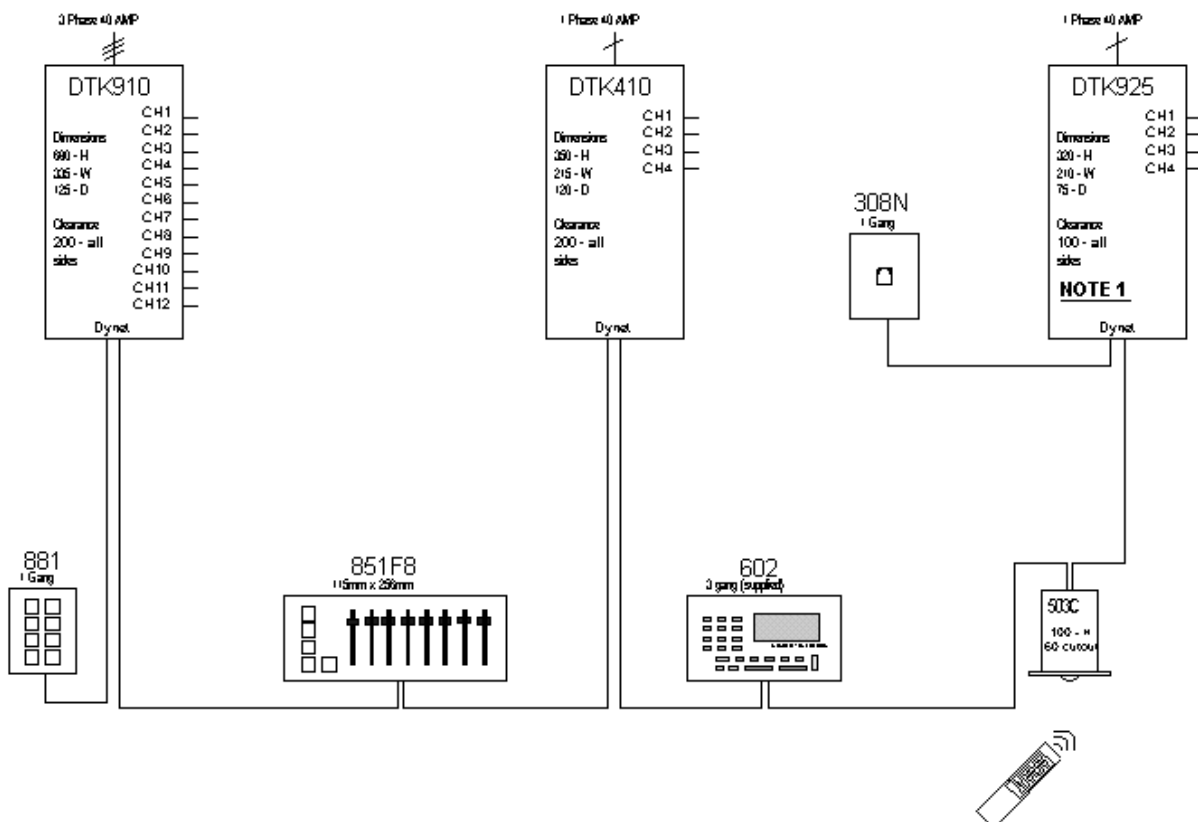
Control Cables should be installed and terminated as follows (suggested colour code)

GND:	1 pair	(Green/White Pair paralleled together)
12 Volt:	1 pair	(Orange/White Pair paralleled together)
D- and D+:	1 pair	(D+ = Blue, D- = White)

The shield should be connected to the shield terminal on the control panels. If there is no shield terminal, the shield should be twisted together and taped back to cable sheath to maintain continuity. Connect shield to earth bar at start of daisy chain only. Please note that there is no shield terminal at the dimmer.

A data cable that is connected to an energized dimmer is live - do not cut or terminate live data cables.

Typical Dynet Network:



Dimmable Lamps Chart

INCANDESCENT LAMPS	Incandescent lamps are easily dimmed using all Dynalite controllers. The soft start and voltage limit features will extend lamp life. Lamp life can be further extended using the voltage limit adjustment.
TUNGSTEN HALOGEN LAMPS	Tungsten halogen and other transformer loads are easily dimmed using all Dynalite controllers. The soft start, cleanup and surge limiting features will protect lamps against premature failure. Lamp life can be extended using the voltage limit adjustment.
FLUORESCENT LAMPS (38mm)	38mm rapid start lamps can be successfully dimmed to 40% using an inexpensive filament driver transformer. For better performance, an electronic HF dimming transformer is recommended. The power factor capacitors need to be wired to the supply side of the dimmer. Some Dynalite controllers include a supplementary relay contact for control of power factor capacitors. If electronic ballasts are not used, cabling and controllers should be de-rated by approx. 60% to allow for reactive current. Contact Network Lighting dealer for more information.
FLUORESCENT LAMPS (26mm)	26mm slimline tubes can be dimmed to as low as 5% using a dimmable full electronic ballast or electronic dimming transformer. No de-rating is necessary with electronic ballasts. Contact Network Lighting for more information.
COMPACT FLUORESCENT LAMPs	Only some types of 4 pin PL lamps can be successfully dimmed using dimmable electronic ballasts. Best results are achieved with DC controlled HF ballasts
NEON	Only argon filled neon lamps can be reliably dimmed. The power factor capacitors need to be wired to the supply side of the dimmer. Cabling and controllers should be de-rated by approx. 60% to allow for reactive current. Any open circuit monitoring on the neon transformer must be suitable for dimming.
HID SOURCES	Mercury vapour and sodium lamps can be dimmed to approx. 45%. For successful dimming to low levels, the fade time should be set to very slow speeds (> 30sec) to avoid "cut out" problems. The power factor capacitors need to be wired to the supply side of each dimmer. Some Dynalite controllers include a supplementary relay contact for control of power factor capacitors. Cabling and controllers should be de-rated by approx. 60% to allow for reactive current. Contact Network Lighting dealer for more information.
METAL HALIDE	Metal halide lamps give similar dimming performance to other HID sources. However, the colour of the light tends to change in an unpredictable way in most lamps when dimmed (often permanently). Most lamp manufacturers do not recommend dimming of metal halide lamps. Contact Network Lighting for more information.

Network Lighting will not accept warranty claims if these instructions have not been followed.

Note: If you wish to dim a transformer or ballast that does not appear on these notes refer to your Network Lighting representative.

Frequently Asked Questions:

Can CAT 5 Cable Be Used?

Generally CAT 5 is a non-shielded cable and we require a shield. Also, as our data terminations are screw terminal, it is preferable to use a stranded cable rather than solid as CAT 5 tends to be. Refer to page three following for acceptable cable types.

Can I Power Up The Dimmer Before Commissioning?

Yes the dimmers are factory defaulted to come on at full when first powered up. All dimmers and panels will work together at first. Therefore if there are several rooms, several panels and several dimmers, every panel will control all dimmers. The factory presets are High, Medium, Low and Off. This is also a way of checking if the data cable is installed correctly. If the panels do not control the dimmers, there is a problem

Can The Dimmers Control Electronic ELV Transformers?

There are 4 types of electronic transformers – 1) Non Dim, 2) Trailing Edge compatible, 3) Leading Edge compatible & 4) Universal (Trailing and Leading). The majority of Dynalite dimmers are suited to the Leading Edge and Universal transformers only. If Trailing or Non Dim transformers are connected, damage to the transformer will result. There is no problem with normal iron core transformers.

Can Lamp Types Other Than Incandescent Be Dimmed?

The answer is dependant on the dimmer selected and the lamp and ballast type. Refer to Network Lighting for detailed information.

How Do I Book Commissioning?

Network Lighting requires at least 5 working days notice to attend site and commission the dimmers (occasionally it may be possible to attend site on shorter notice). It is preferable that the commissioning be performed some days prior to hand over to allow time for fault rectification.

Before Network Lighting can commission the dimming equipment, the contractor must have completely finished major works on the equipment. All 240 volt and data connections must be made and the majority of light fittings should have been installed.

If the project demands it, it is possible to commission part of a system when a building is partially handed over – talk to Network Lighting to ascertain the best method.

The contractor must have a clearly legible list of circuit terminations into the dimmers.

Fault Finding

Please note that all Dynalite energy management controllers come with a detailed instruction manual. We recommend that you read this instruction manual prior to commencing installation. If you find a fault, check the following list. If you are still unable to rectify the situation, contact Network Lighting Ltd.

Please ensure that you have completed the following prior to calling for technical support.

- Check all symptoms in the Fault finding List below.
- Check for any deviations between the installation and the installation instructions
- Make a list of the model numbers of all devices used in the system

SYMPTOM	PROBABLE CAUSE	ACTION
Dimmer does not operate at all. No Service LED activity. Power supply indicator LED on PCB not lit.	Incorrect connection of Mains supply, or no power available.	Check power supply to dimmer. Check Line and Neutral input connections.
Power supply indicator LED lit, but no Service LED activity.	Supply voltage too low, short circuit on network or short circuit on analogue inputs. Control PCB faulty.	Check supply voltage is at least 75% of rated voltage. Check 5V & 12V terminal voltages, 5V supply must be present. Disconnect network bus and restore power. Replace control PCB.
Dimmer appears to be operating but all channels at full output.	Incorrect wiring on analogue inputs. Incorrect Dip Switch settings. PANIC function activated.	Check analogue wiring, verify Dip Switch settings. Check wiring of panic switch.
Dimmer will not respond to control panel push buttons.	Control panel incorrectly wired or "Buttons" Dip Switch turned off. Incorrect configuration.	Check operation of LEDs on control panel. Check Dip Switch settings. Push button on panel and study response of service LED.
Dimmer will not respond to analogue inputs.	Incorrect wiring on analogue inputs. Incorrect Dip Switch settings.	Check analogue wiring, verify Dip Switch settings.
Dimmer operates properly but circuit breakers keep tripping.	Instant tripping: - short circuit on load. Delayed tripping: - Dimmer overloaded.	Check load wiring for short circuits. Verify dimmer loading with current tester (don't forget to de-rate for low power-factor loads and transformer losses). Check that the breaker terminals are tight.
Fluorescent lights won't dim.	Wrong type of ballast or ballast incorrectly wired	Check ballast type. Check actual wiring against ballast manufacturer's diagram.
Controllers "snap off" at high level	"Fluor" Dip switch turned on when controlling normal lamps	Switch off power, adjust Dip Switch settings, restore power.

Caution: Do not use a megger as it will cause damage to equipment on the Dynet network.

For further information please contact Simon Willis – Engineering Manager on 09 362 0940 or 021 677 164



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