

Installation Guide for Anytronics DP1602 CB Packs vD16-1

These notes are intended only for guidance. This equipment should only be installed by competent and qualified electricians. The responsibility for safe and correct installation of the system rests with the installer.

Any insulation or isolation testing must be completed before installing the dimming pack. **DO NOT use a Megger or similar high voltage testing equipment on any part of a circuit or equipment connected to a dimming pack.** The electronics in the pack will not withstand the voltages associated with such equipment.

Step 1 Fix pack to wall - First remove pack lid to access the fixing holes. Fixing dimensions shown overleaf.

Install the pack in a well ventilated area with the ventilation slots uppermost, leaving at least 125mm gap round the top and sides of the dimmer to promote cooling.

Step 2 Connect output circuits

Normally an earth busbar and a common neutral busbar are provided for output connections together with sixteen dimmed/switched live outputs from the circuit breakers. Output circuits can be wired either

A. as for a single appliance with independent earth and neutral connections and dimmed/switched live connections from the circuit breaker outputs, or

B. as lighting circuits with common neutral and earth connections and independent dimmed/switched live connections to each circuit. Any such common neutral or earth connections must be adequately rated.

It is possible to use a mixture of these two circuit connection techniques from a single pack.

For safety and to provide correct supply isolation it is **essential** that the neutral connections to controlled equipment be derived from the common neutral output busbar and not from other external neutral connections which do not pass through the dimming pack's internal double pole isolator.

If neutral disconnection breakers have been ordered, then the neutral connections will be available on these breakers rather than on a neutral busbar, and each load should have its own live, neutral and earth connections.

Note that the two types of circuit breakers used in these Anytronics CB packs require total loop impedances of less than 8.8 ohms (C4) or 17.7 ohms (C2) in order to achieve a 5 second disconnection time. For disconnection times <0.2 s the loop impedances should be less than 5.8 ohms (C4) and 11.5 ohms (C2). To avoid damage to the dimmer such impedances should be checked by calculation, or else measured with the dimmer taken out of circuit.

Step 3 Select dimming / switching operation per output channel

It is possible to set each channel independently for either dimming or switching operation using the two 8-way Dimming/Switching selection DIL switches located just to the left of the DMX address bcd switches. Ensure that any equipment that cannot be dimmed (such as AV equipment, LED fixtures etc) is fed from a switched circuit. Switching operation is selected by setting the relevant DIL switch Off, dimming by setting it On.

If electronic transformers are to be used on dimmed outputs to drive low voltage halogen lamps or LED lighting, **check now** that they are dimmable and that they are compatible with leading edge (ie triac controlled) dimming systems.

Step 4 Connect control inputs

It is good installation practice to route the (preferably screened) Cat 5 DMX wiring separately from all other electrical cables. Screw terminal, XLR and RJ45 connectors are available for DMX in/through connections (connection diagrams on pack lid). The RJ45 connectors are provided for ease of connection to Anyscene controllers and other Anytronics DMX control products. The correct DMX start address should be set on the three internal bcd address switches.

A termination resistor can be connected across the DMX data lines by switching the lower position of the two way DIL switch (marked TERM) to ON. This should only be used if the pack is the very last pack in the DMX line.

Step 5 Connect enable / disable input

Usually an external **enable input** is not required. In this case ensure that switch 4 of the four way DIL switch marked ENABLE/DISABLE is off (ENABLE) that the ENABLE SELECT jumper behind the DMX RJ45 sockets is securely in the 'NORMALLY ON' position.

The enable/disable control input is provided together with a reference 0V connection on the internal screw terminals to the right of the PCB above the four way DIL switch. The action associated with this input depends on the state of switch 4 of the four way DIL switch, the ENABLE SELECT jumper and the external input as follows :-



Switch 4	Jumper	Operation	Input voltage	Dimmer Pack Status
Off	NORMALLY ON	Pull input low to disable	Unconnected	enabled
Off	NORMALLY ON		0 V	disabled
Off	NORMALLY ON		+5 V	enabled
Off	NORMALLY OFF	Pull input high to enable	Unconnected	disabled
Off	NORMALLY OFF		0 V	disabled
Off	NORMALLY OFF		+5 V	enabled
On	NORMALLY ON	Pull input low to enable	Unconnected	disabled
On	NORMALLY ON		0 V	enabled
On	NORMALLY ON		+5 V	disabled
On	NORMALLY OFF	Pull input high to disable	Unconnected	enabled
On	NORMALLY OFF		0 V	enabled
On	NORMALLY OFF		+5 V	disabled

Note that the jumper is labelled correctly for operation with switch 4 in the OFF or ENABLED position. When the switch is in the ON or DISABLED position, the jumper labelling logic is reversed.

Step 6 Connect mains supply

The current rating of both the supply and of its connection circuit must be adequate for the total pack rating. Supplies should contain independent live, neutral and earth connections. The incoming supply live and neutral connections should be made to the correct terminals of the double pole isolator or RCD isolator.

DO NOT connect the incoming neutral supply to the common neutral output busbar.

The earth connection should be made directly to the clearly labelled earth busbar in the connection chamber.

Step 7 Check operation of output circuits and connections

With the power connected it is possible to test the correct connection of the system without using the control inputs by using the dimmer's local control facility, but **NOTE that with a mains supply connected most of the exposed circuitry will be at mains voltages, so exercise caution.**

First ensure that the pack is enabled (see step 5 above). To test the output circuits, set the DMX address switches to address 900 and then apply the supply power. Individual output circuits can be brought full on by changing the units and tens address switches to bring on each channel in turn (901-916). By starting from address 800 (801-816), the channels will be brought on at 50% (unless set for switching operation). A DMX address of 950 will bring all channels full on.

Set the correct DMX start address and test for correct DMX operation. The yellow DMX data LED will illuminate whilst data is being received at the set DMX start address.

If preheat is required, set the appropriate level (dimming channels only) using the preheat potentiometer.

Options

The 4 way DIL switch on the pack can be used to select various switching options :-

1. The DMX input to this pack is normally filtered to produce a controlled rate of change at the pack outputs. This filter can be removed to speed up the DMX response by setting DIL switch 1 ON.
2. The normal switching action of this pack includes hysteresis so that it will switch on at DMX input level 160 and go off at level 96. When DIL switch 2 is on, these thresholds are changed so that the Channels come on above DMX input 24 and off below 13 (for use when switching the power to 1-10V fluorescent ballasts on and off).
3. With DIL switch 2 off, but DIL switch 3 on, these 'fluorescent' thresholds can be shifted to higher values using the unlabelled variable potentiometer to the left of the option DIL switch.

Step 8 Electronic loads

In checking the correct operation of the dimmer from these control inputs it is important to investigate any anomalies in dimming operation. For example, poorer quality electronic ballasts can give problems dimming towards the bottom of the dimming range. Typically the lamp will flash on when the dimming level is being reduced below 10%. Problems like this caused by poor quality ballasts can usually be overcome by setting switch 1 of the two way DIL switch (marked EB) to On for better compatibility with electronic ballasts.

Step 9 Replace lid, fasten down and recheck for correct operation.

Tidy up cable runs etc. Label lid near circuit breakers with details of load circuits.

