

Installation Guide for Anytronics DP404/804/410 CB Dimming Packs vBB8-2

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.

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

NOTE that it is only necessary to loosen, not to remove the lid fixing screws to remove the lids.

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.

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 2 Connect output circuits

An earth busbar and a common neutral busbar is provided for output connections together with eight (or four) dimmed/switched live outputs from the circuit breakers. Output circuits can be wired either

1. as for a single appliance with independent earth and neutral connections and dimmed/switched live connections from the circuit breaker outputs, or
2. 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.

Note that the two types of circuit breakers used in Anytronics CB packs require total loop impedances of less than 8.8 ohms (C4) or 3.5 ohms (C10) in order to achieve a 5 second disconnection time. To avoid damage to the dimmer such impedances should be checked by calculation, or 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 eight (or four) way dimming/switching selection DIL switch located near 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 always to route the control wires separately from all other electrical cables.

Analogue and DMX control inputs are both provided, and the control information is combined inside the dimmer so that either one of these inputs can be used, or so that they can both be used together, the highest input level on each channel taking control.

Connect 0-10V **analogue inputs** to the internal screw terminals or via the DIN sockets provided (the connections are shown on the dimming pack lid). A 0V and +10V reference supply connection is available internally on screw terminals for connection to control switches or potentiometers, Anytronics AMD panels or similar external controls.

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.

Step 5 Connect enable / disable / all on inputs

Usually an external **enable input** is not required. In this case ensure that switch 1 of the two way DIL switch is off and the jumper below the Preheat potentiometer securely in position 'N on'.

The enable/disable/all on control input is provided both on the internal screw terminals below the jumper and on the analogue DIN sockets (see lid for diagram). The action associated with this input depends on the state of switch 1 of the two way DIL switch, the jumper and the external input as follows :-



Switch 1	Jumper	Operation	Input voltage	Dimming Pack Status
Off	N on	Pull input low to disable	Unconnected	enabled
Off	N on		0 V	disabled
Off	N on		+10 V	enabled
Off	N off	Pull input high to enable	Unconnected	disabled
Off	N off		0 V	disabled
Off	N off		+10 V	enabled
On	N on	Pull input low for normal operation	Unconnected	All channels full on
On	N on		0 V	enabled
On	N on		+10 V	All channels full on
On	N off	Pull input high for all channels full on	Unconnected	enabled
On	N off		0 V	enabled
On	N off		+10 V	All channels full on

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.

Once output and input supply connections are completed, the left hand metal cover over the connection bay should be refitted to the pack and the fixing screws tightened.

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 much of the circuitry still exposed in the right hand section of the dimmer 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 address switch to bring on each channel in turn (901-908). By starting from address 800, the channels will be brought on at 50% (unless set for switching operation). A DMX address of 950 will bring all channels full on.

If analogue inputs are fitted, they can be tested now with the DMX address set to 000 to disable the DMX input. The full scale analogue control range is factory set to 0 to +10V and may require adjustment using the scaling or maximum level control potentiometer which is provided for each channel (full range adjustment +5V to +25V). With the full scale analogue control range set to 0 to +10V, channel switching should normally occur around +5V. With the variable or fluorescent thresholds selected (see below) these thresholds will change.

Set the correct DMX start address and test for correct DMX operation. The yellow DMX data LED will illuminate whilst data with start code zero 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 8 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. The analogue inputs (if fitted) have a hardware filter to reduce the effects of noise or pickup, so this option has minimal effect on these inputs.
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.

Both the above threshold changes (2 and 3 above) also apply to voltages at the analogue inputs, but the levels are moderated by the setting of the maximum level control on each analogue input.

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 2 of the two way DIL switch to On for better compatibility with electronic ballasts.

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

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

