# SET-DAC - DAYLUX AREA CONTROLLER

## INSTALLATION INSTRUCTIONS

**WARNING.** This product works at mains potential. Be sure to take care when working with electricity. This product should only be installed by a qualified electrician in accordance with the latest edition of the IET wiring regulations and this instruction leaflet.
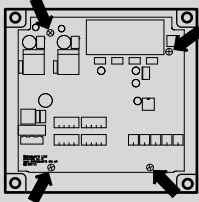
Mount the back box in a suitable location. Please note that the module will need to be accessed easily after installation for commissioning/setup purposes and future maintenance.
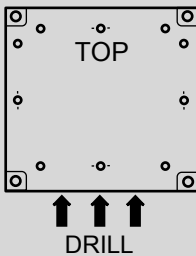
STEP 1.
Remove the front cover by undoing the four screws.

STEP 2.
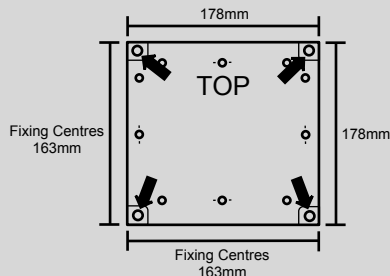Remove the four screws securing the PCB to the back box (arrowed below). Remove the PCB and keep it in a safe place.



STEP 3.
Carefully drill the required amount of holes in the bottom of the back box to enable fitting of the required size and number of cable glands (arrowed below).



TOP

DRILL

STEP 4.
Fit the back box to a suitable surface using the correct fixings (max screw diameter = 4mm). The four fixing holes (arrowed below) serve as channels (max screw head = 8mm diameter) for the fixing screws, using these will preserve the IP rating of the product.



178mm

TOP

Fixing Centres
163mm

178mm

Fixing Centres
163mm

STEP 5.
Refit the PCB using the four screws which were removed in STEP 2.

STEP 6.
Wire the mains supply, the required input/output devices and switches to the controller according to the 'Connection Diagram' on page 2. Also refer to the 'Connection Details' on page 3. Please also see the relevant individual product installation instructions.

STEP 7.
Set network termination - It is necessary to terminate each end of an 'Area' network if they have devices connected to them.
This is achieved by operating four pairs of PCB mounted switches. Switch 1 & 2 on will terminate 'Area Network 1', switch 3 & 4 on will terminate 'Area Network 2', switch 5 & 6 on will terminate 'Area Network 4' and switch 7 & 8 on will terminate 'Area Network 3'. (See 'Connection Diagram' on page 2 for switch detail). Note: Only terminate the first and last device on each network.
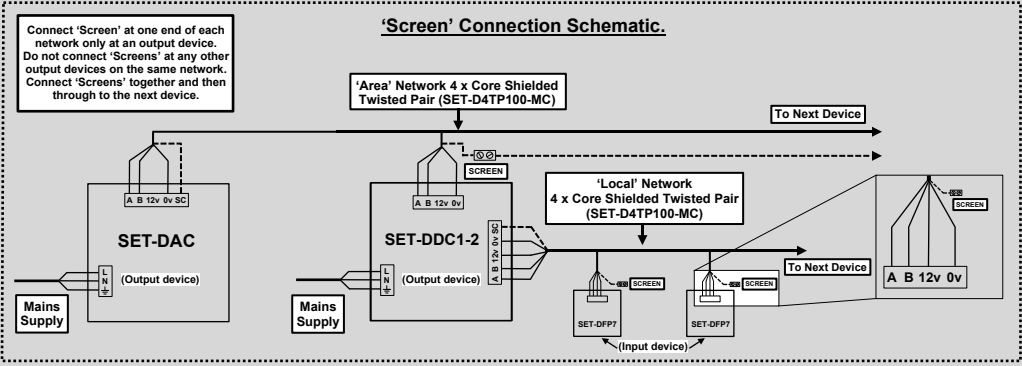
Power on the controller and observe that the LCD screen shows 'Setsquare' followed by the version number of the firmware within the SET-DAC.

The controller will need to be programmed to enable it to interact with the devices connected to it. For further information refer to the 'Daylux DLCS SET-DAC User Guide'.

STEP 8.
If a visit from Setsquare engineers has not already been arranged, you will need to arrange for one to attend and program/commission the system before it will function, refit front cover.

# CONNECTION DIAGRAM.

**RS485-2**  **RS485-1**

A B +12v 0v SCREEN    A B +12v 0v SCREEN

**SWITCHES**

Sw1 0v Sw2 0v Sw3 0v Sw4 0v Sw5 0v

**MAINS**

A B +12v 0v SCREEN    A B +12v 0v SCREEN

**RS485-4**    **RS485-3**

L

CIRCUIT
PROTECTIVE
DEVICE

NETWORK
TERMINATIONS

⏚
N

A B +12v 0v SCREEN    A B +12v 0v SCREEN    A B +12v 0v SCREEN    A B +12v 0v SCREEN

**AREA BUS 2**    **AREA BUS 4**    **AREA BUS 3**    **AREA BUS 1**

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## 'Screen' Connection Schematic.

Connect 'Screen' at one end of each
network only at an output device.
Do not connect 'Screens' at any other
output devices on the same network.
Connect 'Screens' together and then
through to the next device.

'Area' Network 4 x Core Shielded
Twisted Pair (SET-D4TP100-MC)

To Next Device

SCREEN

A B 12v 0v SC

**SET-DAC**

(Output device)

A B 12v 0v

SCREEN

'Local' Network
4 x Core Shielded Twisted Pair
(SET-D4TP100-MC)

SCREEN

**SET-DDC1-2**

(Output device)

A B 12v 0v SC
A B 12v 0v

SCREEN

A B 12v 0v

**Mains
Supply**

L
N
⏚

**Mains
Supply**

L
N
⏚

SCREEN    SCREEN

**SET-DFP7**    **SET-DFP7**

(Input device)

To Next Device

## CONNECTION DETAILS.

Connections should be made to the relevant connectors based on the requirements of the system's design/specification i.e. If the system is going to be used for local/area control.

### MAINS
***Mains input connector.***
Supply to controller. L (Line) = Brown, N (Neutral) = Blue and Earth = Green/Yellow sleeved. The circuit should be protected with the correct rated fuse/circuit breaker.

### RS485-1
***Network bus connector 1 (Area 1).***
Area Bus connection. For connection of 'Area 1' networked output devices such as other SET-DAC's, SET-DDC's, SET-DLCM's etc. **Note: Do not connect +12v DC (red) between this and other devices. Please refer to the 'Screen Connection Schematic' on page 2 for the correct termination of 'Screens'. Make sure that continuity is preserved by connecting the 'screens' together in a terminal block.**
**Ensure that all 'screens' are connected to 'Earth' at one end of the network only.**

### RS485-2
***Network bus connector 2 (Area 2).***
Area Bus connection. For connection of 'Area 2' networked output devices such as other SET-DAC's, SET-DDC's, SET-DLCM's etc. **Note: Do not connect +12v DC (red) between this and other devices. Please refer to the 'Screen Connection Schematic' on page 2 for the correct termination of 'Screens'. Make sure that continuity is preserved by connecting the 'screens' together in a terminal block.**
**Ensure that all 'screens' are connected to 'Earth' at one end of the network only.**

### RS485-3
***Network bus connector 3 (Area 3).***
Area Bus connection. For connection of 'Area 3' networked output devices such as other SET-DAC's, SET-DDC's, SET-DLCM's etc. **Note: Do not connect +12v DC (red) between this and other devices. Please refer to the 'Screen Connection Schematic' on page 2 for the correct termination of 'Screens'. Make sure that continuity is preserved by connecting the 'screens' together in a terminal block.**
**Ensure that all 'screens' are connected to 'Earth' at one end of the network only.**

### RS485-4
***Network bus connector 4 (Area 4).***
Area Bus connection. For connection of 'Area 4' networked output devices such as other SET-DAC's, SET-DDC's, SET-DLCM's etc. **Note: Do not connect +12v DC (red) between this and other devices. Please refer to the 'Screen Connection Schematic' on page 2 for the correct termination of 'Screens'. Make sure that continuity is preserved by connecting the 'screens' together in a terminal block.**
**Ensure that all 'screens' are connected to 'Earth' at one end of the network only.**

### SET-DAC Area Networks
For clarity all SET-DAC networks have been shown as 'Area' networks, but can be designated as 'Floor', 'Building' or 'Local' networks during commissioning, please contact Setsquare for further advice.

### SWITCHES
***Switch input connector.*** Wire any volt-free single pole momentary or SPDT centre off switch(es) here for various manual control options. See the 'SET-DAC Basic User Guide' and the 'SET-DAC Basic Programming Guide' for more details.

**Technical Data.**

**Supply Voltage:** 110 to 230v A.C. 50hz/60hz.

**Total Power consumption:** Standby = 2.8 Watts.

**Switch Inputs:** 5 x Inputs to accept volt-free switches, relays etc switching to 0v DC.

**Area Network 1,2,3 & 4:** RS485. Max. 127 x Output Devices per network. (SET-DAC's, SET-DDC1's or SET-DDC2's, SET-DLCM's etc).

**Network Cable Specification:** 4 x core shielded twisted pair such as Setsquare SET-D4TP100-MC, Belden 8723 or equivalent. Please Note: SET-D4TP100-MC cable can be run in the same containment as mains wiring carrying 600v and is also LS0H.

**Terminal Specifications:** Mains input terminal capacity = Maximum 1 x 2.5mm$^2$ or 2 x 1.5mm$^2$

**Dimensions:** L=178mm x W=178mm x D=78mm.

**Material:** Grey Polycarbonate with transparent smoked cover.

**Weight:** 700 grams.

**I.P. Rating:** 65 (If correct cable glands are used).

**Operating Temperature:** 0-40$^o$C.

**Protection:** Internal Fuse (500mA Anti-Surge). Automatic shutdown during fault condition, self recovering when fault condition removed.

**Real Time Clock:** In the event power to the SET-DAC is lost, clock settings (time/date) will be retained for approximately 2.5 days. After power is re-instated it will take approximately 15 minutes to recharge the internal storage cell. All other functions and operating settings are stored in non-volatile memory and will not be affected by a power failure.

**WARNING**

This product contains electronic devices.

Do not perform any high voltage tests on this product or to any equipment connected to it. Mains connections can be high voltage tested in accordance with BS 7671:2008, IET Wiring Regulations 17th Edition section 612.3.3.

The DLCS SET-DAC is part of a range of energy conservation products available from Setsquare. This apparatus maybe turned on by high powered RF interference and should not be installed near pager aerials or Inductive loop equipment. It will recover when the RF ceases.

C E

**WEEE Directive.**
Electrical and electronic equipment should never be disposed of with general domestic or commercial waste but collected for their proper treatment and recovery. The crossed out wheely bin symbol is to remind you of the need to dispose of this product at the end of its life in a way that will assist in the recovery, recycling and reuse of many of the materials used in this product. Where possible also recycle the packaging.

WEE/DJ0002ZR

SET-DAC Installation Instruction - 13/12/13 DS298 V1.0