

SET-DDC1 & SET-DDC2 - SINGLE & DUAL CHANNEL LIGHTING CONTROL MODULE

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.

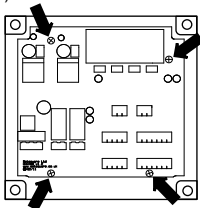
Mount the back box in a suitable location. Please note that the module will need to be accessed easily after installation for commissioning/setup purposes and future maintenance.

STEP 1.

Remove the front cover by undoing the four screws.

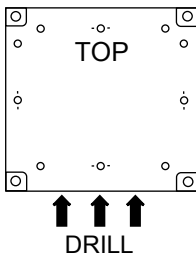
STEP 2.

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



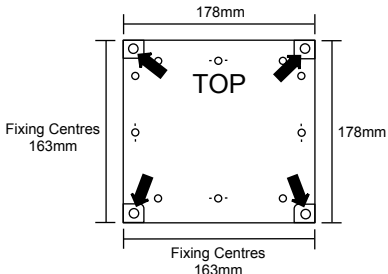
STEP 3.

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).



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.



STEP 5.

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

STEP 6.

Wire mains supply and required input/output devices and components to the controller according to the following diagram and connection details. (See Page 2 & 3 and relevant individual product installation instructions).

STEP 7.

Set network termination - It is necessary to terminate each end of a 'Local' and 'Area' network. This is achieved by operating a pair of PCB mounted switches. Switch 1 & 2 on will terminate the 'Area' network and switch 3 & 4 on will terminate the 'Local' network. (See 'Connection Diagram' on page 2). Note: Only terminate the first and last device on each network.

STEP 8.

Once the controller is powered on, it will self-configure according to what and where certain components have been wired.

For example:- If a movement sensor has been wired to MOV1 on a SET-DDC2 and a light level sensor has been wired to LL1, then both channels will respond to those sensors.

Power on the controller and observe that the LCD screen shows 'Setsquare' followed by the current firmware version. The lighting which is under control of the system should switch on.

The controller has factory set defaults which will enable a system to operate with simple functionality without the initial requirement of setup, programming or commissioning. Further functionality can be achieved by following the setup procedure detailed in the 'DLCS User Guide', the 'SET-DDC Basic User Guide' and the 'SET-DDC Basic Programming Guide'.

The factory default settings are:-

Presence Detection = On
Time Out after presence = 10 minutes
Light Level (Daylight Linked) = Light Level High

If a SET-DFP7 faceplate and a light level sensor are connected to the system then the following scenes are factory set:-

Scene 1 = Automatic (Daylight linked), Output Level = High
Scene 2 = Automatic (Daylight linked), Output Level = Low
Scene 3 = Manual (Switch Controlled), Output Level = High
Scene 4 = Manual (Switch Controlled), Output Level = Low

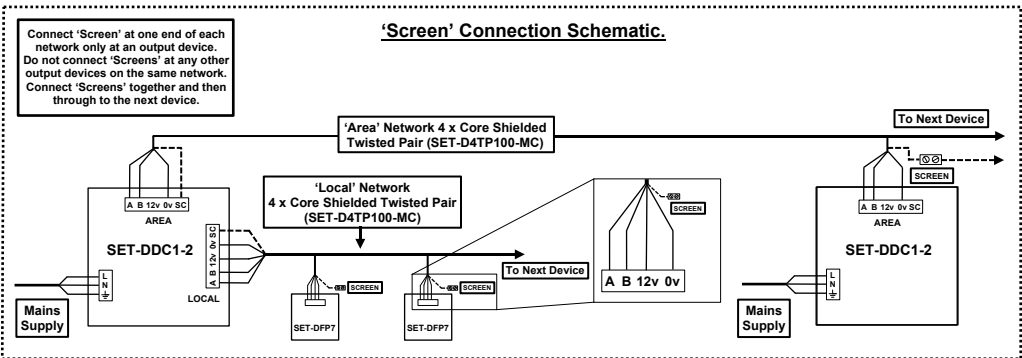
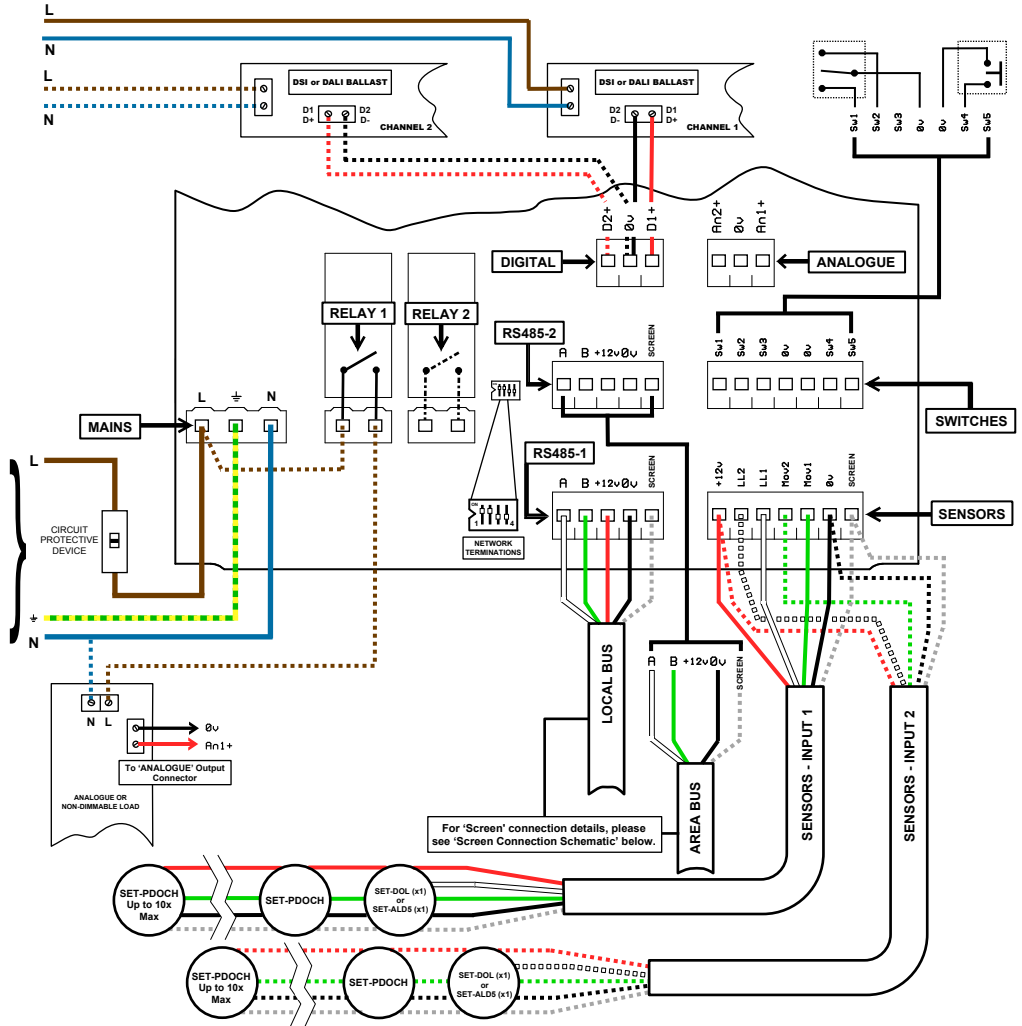
If a light level sensor is not fitted, then Scene 1 & 2 are as per Scenes 3 & 4 above.

For further details on the operation of the SET-DFP7 faceplate, please see the 'DLCS User Guide', the 'SET-DDC Basic User Guide' and the 'SET-DFP7 User Guide'.

STEP 9.

Once setup and operational checks are complete, refit front cover.

CONNECTION DIAGRAM.



CONNECTION DETAILS.

Connections should be made to the relevant connectors based on the requirements of the system design/specification i.e. If the system is going to be used for occupancy detection, light level control using either faceplates/switches or automatic via light level sensors.

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.

RELAY 1

Volt free relay connector - output 1.

Switching (relay 1). Wire according to requirements of the installation. Used when there is a non dimmable load which requires switching, for signalling/interfaces with other systems or switching an analogue (1-10v DC) lighting load.

RELAY 2

Volt free relay connector - output 2.

Switching (relay 2). Only fitted on SET-DDC2 dual channel model. Wire according to requirements of the installation. See 'RELAY 1' detail above.

DIGITAL

Digital (DSI / DALI) output connector. Wire to the required DSI **or** DALI ballasts. Connect from D1+ and 0v for channel 1 output and D2+ and 0v for channel 2 output. Please note: Channel 2 output is not available on a SET-DDC1

ANALOGUE

Analogue output connector. Wire to the required Analogue ballasts (1-10v DC). Connect A1+ and 0v for channel 1 output and A2+ and 0v for channel 2 output. Please note: The live supply to these ballasts will need to be wired through either Relay 1 (channel 1) or Relay 2 (channel 2) for the lighting to be switched off by the SET-DDC. Please note: Channel 2 output is not available on a SET-DDC1.

SENSORS

Sensor input connector SET-DDC1.

Wire SET-DOL (combined light level and movement), SET-PDOCH (movement) or SET-ALD5 (light level) signals here as required using 4 x Core Screened cable as applicable.

+12v DC = Red, LL1 (Light Level Input 1) = White, MOV1 (PIR Sensor Input 1) = Green, 0v DC = Black, Cable Shielding = Screen.

Please note: It is advised that a suitable sleeving is used to insulate the cable screen(s), such as Green/Yellow PVC Earth Sleeving.

Sensor input connections for SET-DDC2

For dual channel control where independent movement/light level is required, wire as above, but MOV2 is Movement Sensor Input 2 and LL2 is Light Level Input 2.

For further information on sensor wiring, please refer to the relevant sensor installation instruction.

RS485-1

Network bus connector 1 (Local).

Local Bus connection. For connection of 'Local' networked input devices such as SET-DFP type faceplates or other local network devices. **Note: Please refer to the 'Screen Connection Schematic' on page 2 for the correct termination of 'Screens'. If a termination point does not exist on a device, then make sure that continuity is preserved by connecting the 'screens' together in a terminal block.**

RS485-2

Network bus connector 2 (Area).

Area Bus connection. For connection of 'Area' networked output devices such as other SET-DDC's, SET-DLDM'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.

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-DDC Basic User Guide' and the 'SET-DDC Basic Programming Guide' for more details.

Technical Data.

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

Total Power consumption: Standby = 2.8 Watts. Maximum = 8 Watts.

Relay Contacts: Volt-free, SPST, N/O. 8 Amp Resistive or 8 x HF Ballasts. Max. Voltage 250v A.C. Mains loads (outputs) must be on the same phase as the SET-DDC1-2. A contactor can be switched in the event that the load exceeds the relay(s) capacity or output circuits are on different phases to the SET-DDC1-2 supply.

Dimming Outputs: Digital (DSI / DALI) = 50 ballasts per channel. Analogue = 50 ballasts per channel.

Dimming bus cable lengths and CSA's (2 x core):- 110m = 0.5mm². 220m = 1.0mm². 300m = 1.5mm².

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

Sensor Inputs: Max. 1 x SET-ALD5 or SET-DOL per light level input and up to 10 x SET-PDOCH sensors or 1 x SET-DOL and 9 x SET-PDOCH sensors per movement input.

Local Network: RS485. Max. 4 x Input Devices. (SET-DFP's, SET-DIR's, SET-DMI's, SET-DCI's etc).

Area Network: RS485. Max. 127 x Output Devices. (other SET-DDC1's or SET-DDC2's, SET-DLCM's etc).

Sensor Cable Specifications: Recommended sensor cable - Setsquare SET-D4SC100-MR-7-W (4 x core screened) for SET-DOL, SET-PDOCH and SET-ALD5.

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 and relay output terminals capacity = Maximum 1 x 2.5mm² or 2 x 1.5mm²

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

Material: Grey Polycarbonate.

Weight: 700 grams.

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

Operating Temperature: 0-40°C.

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-DDC1 & 2 are part of a range of energy conservation products available from Setsquare. This apparatus may be 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.



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 wheellie 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.



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