LTC
Outer Cabinet

WARNING

HEAVY

The LTC is very heavy take suitable precautions while unpacking and moving the unit.

- The LTC must only be installed by suitably qualified or trained personnel.
- Zero 88 is not liable for damage caused by poor workmanship during installation and commissioning.
- Read all the instructions before proceeding.

Technical Specification.

Mains Supply:
205 to 260 Volts 1 or 3 phase.

Maximum current per phase 100 Amps

Control Input.

24 channels Analogue positive or negative (auto sense) and DMX 512 (DMX is an option).

Output Load.

24 channels at 10 Amps, 12 channels at 254 Amps or a mixture.

Terminal Size

Incoming mains	35 mm^2
output 10 Amp	4 mm^2
output 25 Amp	10 mm^2
Control input	2.5 mm^2

Low Voltage Supply.

4 independent positive or negative, 20 Volt DC (nom) supplies at 200 mA per Control Module.

Polarity is selected in the Control Module.

Size

Height,	162 cm
Width,	54 cm
Depth,	22 cm
Maximum weight (all modules fitted).	104 kg

Temperature

Maximum Ambient	40°C

This equipment is designed for controlling lighting and is unsuitable for any other purpose.

Zero 88 reserves the right to make changes to the equipment described in this handbook without prior notice. E&OE.

General description

The LTC is a modular installation dimmer. It consists of three main parts, the Outer Cabinet, one or more (max 4) Power Modules and the same number of Control Modules.

The following accessories are available: Perspex Door, DMX Input Kit, Blanking Plate, Optional Glanding Plate.

Outer Cabinet

The Outer Cabinet provides the housing for up to 4 Power Modules, up to 4 Control Modules , all the inter wiring and power distribution, along with glanding plates. The cabinet is wired to accept all of the standard options without modification.

If any of the Power / Control Modules are not fitted Blanking plate kits must be fitted.

Power Modules

Power Modules are available in two power ratings.

6 Channels at 10 Amps per channel.

3 Channels at 25 Amps per channel.

Each Power Module plugs into the Outer Cabinet and is therefore easily fitted and exchanged.

While the cabinet is being configured, the Power Module bays must be polarised so they will only accept the correctly rated module. Power Modules need to be compatible with the corresponding Control Module. Polarisation is covered later in this manual.

The 10 Amp Power Module will operate, without modification, on either single or 3 phase supplies.

Control Modules

Control Modules provide individual channel breakers, output connectors, and individual channel test facilities. RCD / MCB combinations are also available as standard options. The type of Control Module fitted must match the Power Module it controls in order to meet the customers electrical and safety requirements.

10 Amp Control Modules are available in single phase and 3 phase both with and without RCD.

25 amp Control Modules are 3 phase and available with or without RCD.

The cabinet wiring does not need changing to accept 25 or 10 Amp Power Modules.

Unpacking.

Warning: The LTC is very heavy.

Remove all outer packaging.

Remove all Power Modules (if fitted), before trying to remove the cabinet from the box.

Do not try to remove the LTC on your own.

To remove the Power Modules:

Remove the four fixing screws on each front panel. Hold both handles and pull firmly, the Power Module will disconnect automatically. Place in a safe area to stop foreign items falling into the module or it becoming scratched or damaged. Return the four fixing screws to the cabinet for safe keeping.

INSTALLATION

Siting

The unit will produce approximately 500 Watts of heat and must therefore be situated in a suitably ventilated room, with force cooling if needed.

The vents on the front of the Power Modules must not be obstructed.

Dimensions for trunking and fixings.

See figure one, opposite.

An optional Glanding Plate for discrete wiring using flexible cables and glands, is available. Stock number 00-580-00.

Fixing.

This unit must be fixed down securely prior to installation. Either to a wall through the back or to the floor through the bottom of the unit.

Wall fixing.

Remove all Power Modules as described above.

The wiring chamber cover (see figure one) must be removed. Remove the 3 upper screws and the lower two screws (shown as "A" in the diagram). Remove the cover. Return the screws to the cabinet to keep them safe.

Locate the 6 fixing holes. There are 2 at the top, 2 in the middle and 2 at the bottom. (marked as fixing holes in the figure one).

The panel has a 5 mm diameter holes through it, suitable fixings must be used to secure the unit.

Floor fixing.

Remove all Power Modules as described above.

Locate the fixing holes in the feet of the base.

4 fixing holes are provided. They are 9.5 mm diameter, suitable fixings must be used to secure the unit.

Fit The Control Modules

Follow instructions supplied with the Control Module.

It must be noted that where a 10 Amp Control Module is fitted the corresponding Power bay must be polarised for the 10 Amp Power Module. Where a 25 Amp Control Module is fitted the corresponding Power bay must be polarised for 25 Amp Power Module (see polarisation on Page 4).

Fitting DMX Input Kit.

Follow instructions supplied with the DMX Input Kit.

WARNING

Ensure incoming supply is isolated until installation is complete. Use suitable Safety precautions to prevent the incoming supply from becoming live by accident.

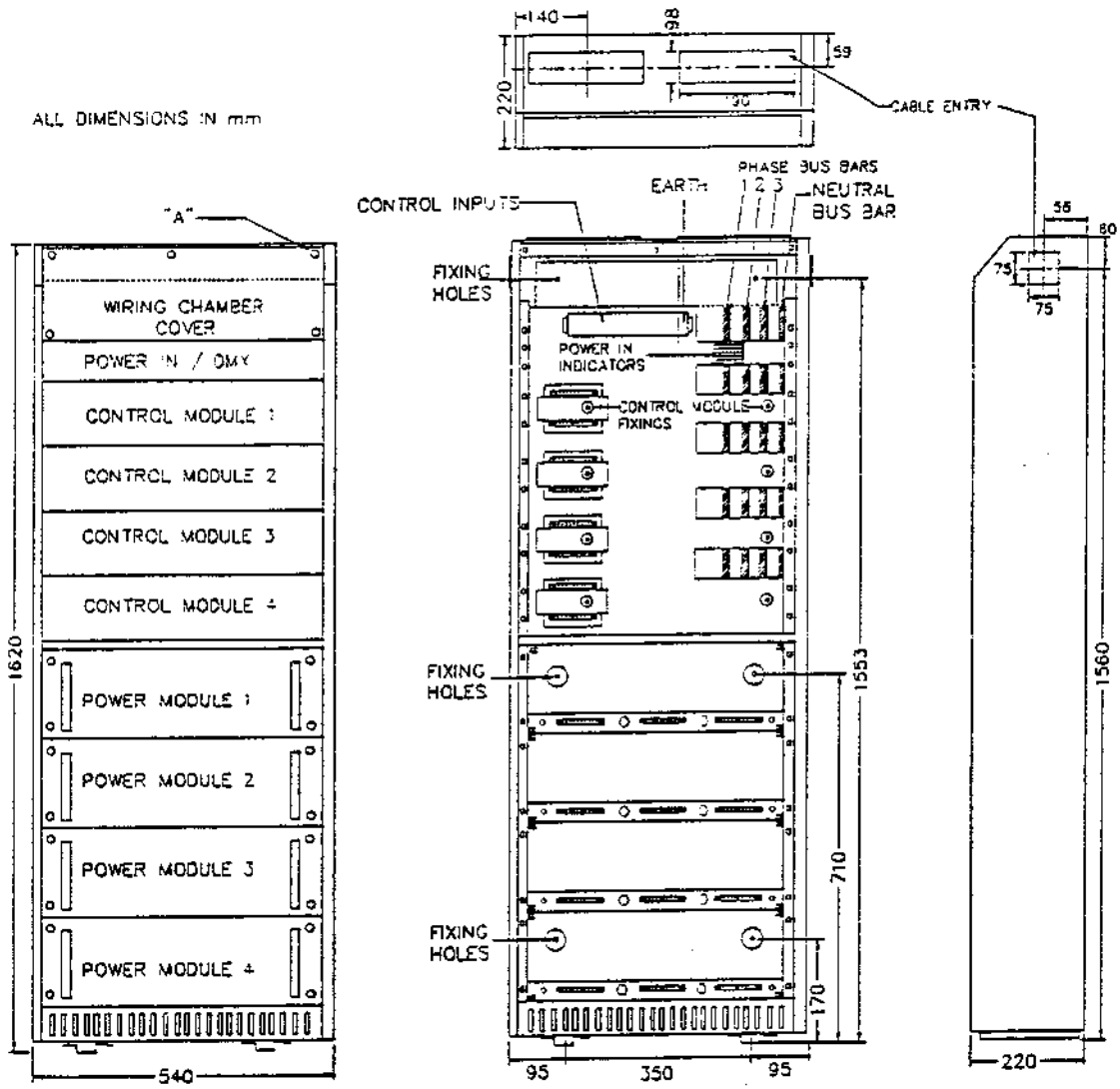

Figure one: LTC dimensions and layout.

Wiring

Once the Outer Cabinet is securely fixed into place. The Control Modules and DMX Kit (if any) are fitted, then wiring can commence.

It is recommended that the mains supply and load wiring comes from the right hand side of the unit and the low voltage control signal wiring comes from the left hand side.

Removing the panels for wiring.

Remove wiring chamber cover as previously described.

Remove the Control Module front panels and DMX front panel (if fitted).Remove the four fixing screws holding each front panel on. Store the front panels carefully and return the screws to the cabinet for safe keeping.

See the installation record / diagram for the terminals wiring details.

Incoming Mains Supply

External isolation must be fitted.

A good earth connection is essential.

Incoming supply must be in accordance with local regulations.

Connect through the glanding plate to the 4 bus bars (3 phase and neutral) and to the Din rail mounted earth terminal as shown in the figure two.

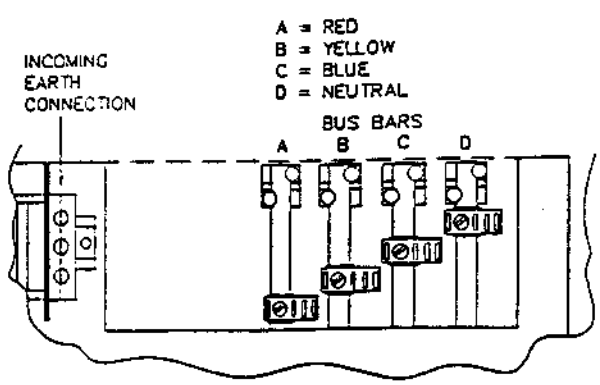

Figure two: Incoming phase connections

Wiring the Outputs

Output terminals are on the right hand end of the control modules, above the bus bars. The user wiring comes in from the top. Individual Live, Neutral and Earth terminals are provided for each channel on both 10 amp and 25 amp modules. These terminals will accept wiring up to 4 mm^2 for the 10 Amp outputs and up to 10 mm^2 for the 25 Amp outputs.

See figure three for the 10 Amp output terminal configuration and figure four for the 25 Amp version.

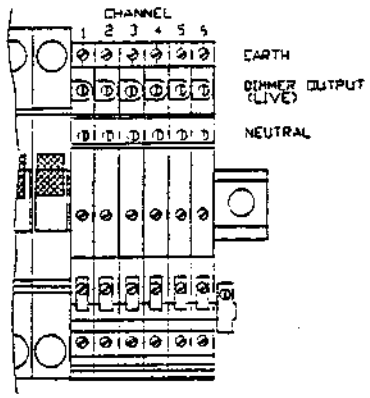

Figure three: 10 Amp output terminals

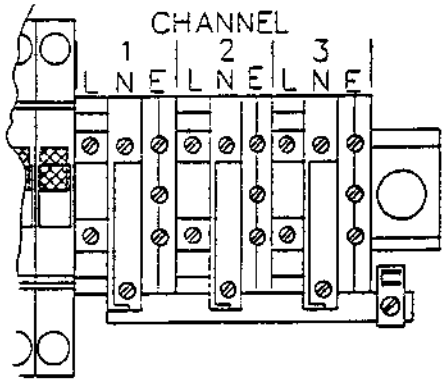

Figure four: 25 Amp output terminals

TO POLARISE THE POWER MODULE

Each Power Module bay must be polarised to be compatible with the power rating of the Control Module fitted in the corresponding position.

Power Module bays are supplied polarised for 10 Amp Power Modules. To change for a 25 Amp module, using a screwdriver, move the centre polarising peg from the 10 Amp to the 25 Amp position.

Note. Position "A" is the 10 Amp position and "B" is the 25 Amp position.

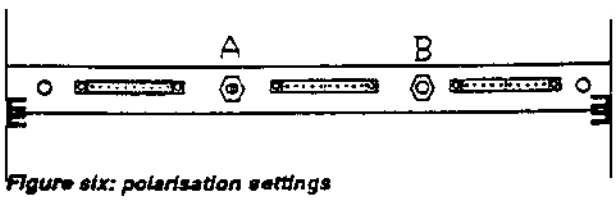

Figure six: polarisation settings

Wiring low voltage input connectors

Mains rated insulation MUST be used for the control input wiring. The connectors will accept cable up to 2.5 mm^2. The 20 Volt outputs are independent and may be configured to give positive or negative supplies. See figure five.

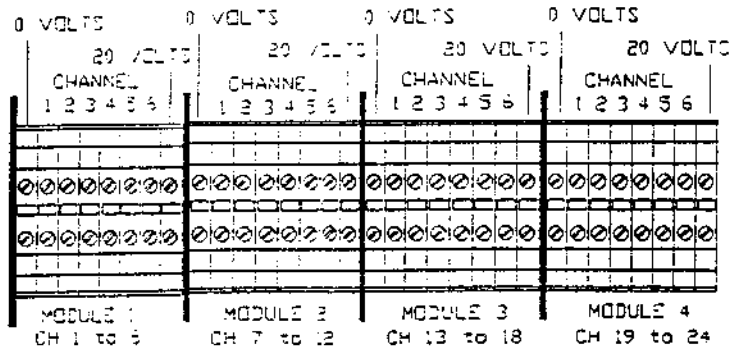

Figure five: Control input terminals

Testing.

Check all screw terminals are tight before applying mains.

Do not flash test control signals.

Live to Neutral voltage must not exceed 250 Volts A.C.

To test insulation, join lives and neutral conductors together. Apply a test voltage NOT EXCEEDING 2500 VOLTS between the joined conductors and Earth for a period NOT EXCEEDING one second.

Refitting Panels.

Refit the Wiring chamber, power in / DMX and Control Modules covers. DO NOT forget to fit blank Control Module covers where Control module Bays are unused.

Powering up for the first time.

Before inserting the Power Modules it is worth turning the power on. There are neon mains indicators on the bus bars and on each Control Module. Ensure that they all light up correctly.

Fitting Power Modules.

Isolate the Cabinet from the Mains supply. If the Control Modules have RCD / MCB combinations fitted, isolating here is adequate for removing and refitting Power Modules.

Remembering bays are polarised for 10 or 25 Amp use, offer the correct Power Module to its bay.

Line the top of the Module up with the runners in the cabinet and slide forwards until the lower runners are engaged.

Push the Power Module firmly home.

Screw the Power Module in place with the four screws provided with the Cabinet.

Powering up the Cabinet.

Reconnect the power. Check that the neon lights come on.

If output loads are connected then they may be tested by using the Control Module test switches or by connecting a remote desk.

Zero 88 Lighting Ltd., Hart Road, St. Albans, AL1 1NA, U.K.