

# INSTALLATION/OPERATING INSTRUCTIONS FOR SERIES 193 DIMMERS

As the name suggests, this Series of Dimmers are 19" rack mounting units occupying 3 units of rack space and are available with 3, 6 or 12 channels of 48, 24, or 12 Amps per channel capability, depending on the particular model. The model numbers are D310, D650 and D1225.

## **FRONT PANEL**

The front panel is 3mm brushed and powder coated aluminium, secured to the welded steel chassis by six M6 machine screws. The sides and front of the chassis extend behind the rack mounting 'ears' to give increased strength and rigidity to the unit when rack mounted.

## **ALL MODELS HAVE THE FOLLOWING FEATURES:**

- \* Circuit Breaker Protection on each channel
- \* Load Present/Good Indicator
- \* Panel Mounted Fuse holder for 'Electronics' fuse
- \* Fan Cooling (Thermostatically controlled) Inputs
- \* Models D310 and D650 have an over temperature cut out
- \* Removable Front Panel Section, giving access to Preheat and Max Level Controls
- \* Phase Indicators
- \* Local Control
- \* Monitor LEDs
- \* DMX and Analogue Inputs

Circuit breaker protection has several advantages over fuse protection, the obvious one being that you don't have to play 'hunt the fuse' in the bottom of the tool box in the dark! This leads nicely onto the next advantage; no more aluminium foil around the fuse or the old faithful 300 Amp never blow fuse (just cut to length), otherwise known as a 4" (sorry 100mm) nail!! On a more serious note, if the fault condition persists the breaker will not reconnect the load, even if the lever is taped up.

Load indicators are particularly useful when packs are out on tour and loads are regularly being connected and disconnected. With all control signals off, but the pack powered up and breakers on, the load indicators will glow as long as there is a load on that channel. They will operate in reverse to the monitor LEDs in that they will fade to off as the level is brought up on that channel.

Local control comes in the form of rotary controls; one for each channel, situated adjacent to each channel monitor LED. This allows the pack to function without the need for a desk, and may be useful if being used for fixed level background lighting. Alternatively, they could be used to check the operation and positioning of lamps prior to the connection of the desk, or as minimum level controls when used in conjunction with a desk.

Monitor LEDs are provided for each channel and confirm the correct operation of the low voltage electronics section of the dimmer. As they are almost the last component before the mains referenced electronics, they can also be useful in any fault finding situation in the unlikely event that one should occur.

DMX Input: A DMX512 card is fitted to all Series 193 models and is mounted on the right hand side of the unit, with the address switch and status LEDs located on the front panel.

The address switches are binary weighted labelled 1, 2, 4, 8 and 16 etc. to 256 and are used to select the start address: e.g. to select start address 25, switches 16, 8 and 1 should be moved to the right.

To select start address 144, switches 128 and 16 should be moved to the right etc. The electronics will automatically select the next channels sequentially. The yellow LED will glow as long as there is a DMX signal present.

The top switch is marked “test” and if selected will override any incoming DMX signal and run a pre-programmed sequence. The yellow LED will be extinguished and the red LED will illuminate.

**NOTE:** The test sequence is based on a 16 channel chase.

The In/Through DMX connection to the pack is via one Male and one Female 5 pin XLR Socket, which are located on the back panel.

Phase Indicators. There is not much you can say about these. They are simply there to indicate the presence of that particular phase (the electronics circuitry is powered from phase 3).

Electronics Power LED. Another obvious one I’m afraid, no L.E.D = no electronics power.

The panel mounted fuse holder holds the fuse which protects both the electronics and the fan. If all phase indicators are lit, but the electronics power LED is unlit, then suspect this fuse. Fuse failure may indicate a faulty transformer, but can be caused by fan failure – which may occur if the fan has become jammed with fluff due to lack of regular cleaning/servicing.

On the D310 and D650 models, a thermal cut out is fitted, along with a red neon indicator on the front panel. If this neon lights the electronics PCB will shut down, but the fan will remain running until the unit reaches an acceptable temperature, at which time the electronics will be reconnected (and the thermal neon indicator will extinguish).

Preheat and max level presets can be accessed and adjusted while the dimmer is mounted in the rack and working, thus allowing these controls to be tailored precisely to the load on the dimmer. Access to these controls is achieved by removing the cross head screws, then the panel around the level controls (there are two screws on the D310 and D650 channel units and four screws on the D1225).

### **MAINS SUPPLY**

The series 193 Dimmers are designed for three phase star operation (but can be run on single phase if required), and are supplied with a 40mm hole for the mains cable entry, which is fitted with a cable gland which will accommodate cable diameters from 30mm to 17.5mm. Termination of the cable inside the pack is into a clearly labelled 4 way (3 Lives & N) DIN rail mounted 135 Amp terminal block. A separate brass bar is mounted on the output PCB which is clearly labelled for the earth cable. Mounting facilities are provided for a 5 way (3L+N+E) input socket if required.(CEE Form).

The output terminals are PCB mounted and are accessed by removing the output plate. This allows the output connections to be made when the unit is rack mounted.

The basic unit comes with a hardwired output plate fitted (12 x 20mm grommets). However, output plates for 4 x 19 Pin Socapex Sockets, 12 or 24 x IEC Sockets, and 2 or 4 Harting sockets can be fitted to order. Control signal inputs are provided for on the rear panel in the shape of 2 x 5 pin XLR Sockets – 1 Male and 1 Female for DMX In/Through and 2 x 8 pin ring locking DIN sockets per 6 channels for 0 – 10v analogue inputs. The sockets nearest the side of the case are for use with Pulsar equipment, whilst the others are wired for use with most other manufacturer’s equipment, including our own and Zero 88. The lower pair of sockets are fitted on the D1225 only and are for channels 7 → 12.

Model	* Supply Voltage/ Phase	Max Supply Current	Max Output Channel/ Amps	DC Output Volts/ Amps	( ) Control Inputs	Net Weight Kg	Chassis Dimensions W/H/D
D310	200/240→ 3Phase Star	48A/ Phase	3/48 C50 Breaker	25v/100mA	0→10 Analogue + DMX512	17.5	445x130x325
D650	200/240V 3Phase Star	48A/ Phase	6/24 C25 Breaker	25v/100mA	0 →10 Analogue + DMX512	17.5	445x130x325
D1225	200/240V 3Phase Star	48A/ Phase	12/12 C13 Breaker	25v/75mA	0 → 10 Analogue + DMX512	17.5	445x130x325

\* 100/120V AC Available to order.  
Max supply 132A when used in  
Single Phase mode.

( ) Factory set for a 0 → 10V input but may be  
trimmed using max level preset to accommodate  
input levels from 5 → 25V

**OUTPUT OPTION PLATE (may be supplied with the following)**

- 1) 6 x 20mm holes to accept conduit fittings, supplied with grommets
- 2) 12 x IEC CEE22 sockets
- 3) 12 x 110V 3 pin sockets (110V version only)
- 4) 2 x Socapex 19 pin sockets, wired as follows:

Pin	Channel	Pin	Channel
1	1 Live	8	4 Neutral
2	1 Neutral	9	5 Live
3	2 Live	10	5 Neutral
4	2 Neutral	11	6 Live
5	3 Live	12	6 Neutral
6	3 Neutral	13-18	Earth
7	4 Live	19	Blank

Wiring configuration for 12 Channel Models

11	9	7	5	3	1
12	10	8	6	4	2

Wiring configuration for 6 Channel Models

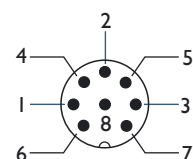
6	5	4	3	2	1
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# INPUTS

**A)** Only used on S1205 Pins 1 → 12 channels 1 → 12 Pin 25 → 0V  
Pin 24 +22V (Internal movable link to select Pin 21 for 22V)

**VIEW INTO SOCKET  
PIN NOs**

**B,C)** As below for D610, D605, S610 (Series 192/4).  
D310, D650, D1225 (Series 193).



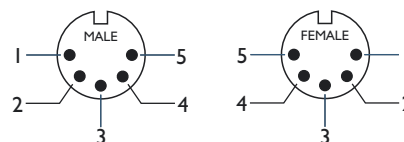
B as Pulsar

Pin	1	2	3	4	5	6	7	8	
Channel	+V	0V	1	2	3	4	5	6	
			Ref						

**DMX 5 PIN XLRs VIEW  
INTO SOCKETS**

C as Zero 88

Pin	1	2	3	4	5	6	7	8
Channel	1	2	3	4	5	6	+V	0V
								Ref



On S1205 B Channels 7 → 12

C Channels 1 → 6

Both above sockets wired as Pulsar.

**D)** 2 Holes punched to accept XLR Sockets. When pack comes supplied with DMX it is fitted with The 5 pin XLR sockets, one male and one female and connected as follows:



Pin 1 Screen Pin 2 DMX – Pin 3 DMX+ Pins 4 & 5 through connected.

We would recommend that the last pack in the DMX line should be fitted with a Terminating Resistor between 100R – 150R connected between Pins 2 & 3. (This is more important on long cable runs).

**E)** Hole punched and fitted with snap-in bush to give access to PCB mounted 8 pin non locking DIN Socket, connected as follows: (only fitted on D605 / D610 Packs).

Pin	1	2	3	4	5	6	7	8
Channel	1	0V	4	2	3	6	5	10V
								Ref

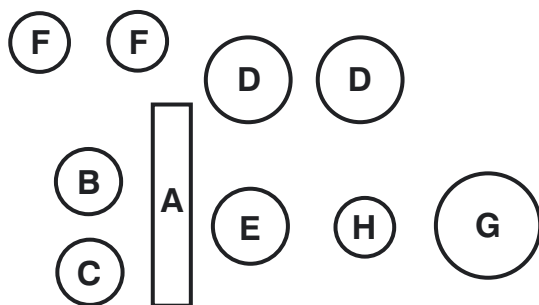
**F)** Two 12.7mm holes (which accept Heyco strain relief bush 5N-4) fitted with grommets giving Access to input screw terminals for use in fixed installation, and giving access to ‘electronics only’ terminals to be supplied with mains, when Triacs are used directly to switch a lower AC voltage, e.g. 24v for tube light. (NOTE: Links L1 and L2 must be cut if this configuration is used, only applicable to D605).

**G)** 32mm Hole fitted with cable clamping gland with removable inserts to accept cable diameters from 12.5mm → 25mm (on 192 / 194).

**H)** Mounting hole for alternative 5 pin male XLR.

**I)** 40mm Hole fitted with cable clamping gland with removable inserts to accept cable diameters from 19 → 32mm, alternatively provision exists for either a 32 Amp or 63 Amp 3 Phase + N = E input socket to be fitted (on 193).

**SERIES 192/4**



**SERIES 193**

