

RYGER

Manufacture of Lighting Effects and Control
Systems for the Entertainment Industries

DP40MS 4 Channel Multi Standard Dimmer pack

Instruction Manual

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Description

The DP40MS is a 19" rack mount 4 channel multi standard dimmer pack capable of handling up to 10A per channel. The control for the dimmer pack can come from DMX or Analogue (0-10V). The connections are all hard wired to enable any type of controller to be easily wired into the unit. The mains handling components are over-rated and the outputs are individually, externally fused for safety and reliability. Each of the mains handling components can be easily replaced with the use of a screwdriver; no soldering is required. The unit also incorporates various data fail modes and a unique fuse testing facility.

Connections

Before working on this unit please ensure that the mains supply has been Disconnected.

Mains Input

The unit is designed for hard wired use the connections are labelled on the main PCB the Wire colours shown are for your guidance only.

BROWN / RED	LIVE
YELLOW / GREEN	EARTH \perp
BLUE /BLACK	NEUTRAL

WARNING



Ensure that the cable can withstand the **TOTAL** load of the outputs and is suitable for mains operation. The power feed must be capable of supplying the **TOTAL** load and supplied via a means of electrical isolation.

Outputs

The outputs of the unit are presented on 8 terminals each output has a channel output (Switched Live) and a common (Neutral) connection. The connections are as follows:-

Channel 4	Channel 4 Switched live
Common	Channel 4 Neutral
Channel 3	Channel 3 Switched live
Common	Channel 3 Neutral
Channel 2	Channel 2 Switched live
Common	Channel 2 Neutral
Channel 1	Channel 1 Switched live
Common	Channel 1 Neutral

The lamps are wired between a channel output and one of the lamp commons. The cable used should be of an adequate size to handle the channel output load.

If you are unsure about any of the above please contact an electrician or your dealer.

Analogue (0-10V) Connection

The DP40ms has four 0-10V inputs labelled **CH1,CH2,CH3** and **CH4** these inputs should be connected to the 0-10V outputs of the controller . The **0V** line must also be connected to the channel 0V or GND connection on the controller. The enable input is a 0-10 volt control line that can be used to enable or disable the whole dimmer pack. To use this control line move the enable link to the **EXTERNAL**. position and connect a 0-10V control line to **ENABLE**. This control line may also be used as a master for the 4 input channels. If you do not require external enable , shift the link to the **INTERNAL** position. **Dip 6** must be set to OFF for analogue operation. Please note :- analogue inputs will not function while DMX data is being received.

DMX connection

The DMX connection is via the **DATA+ ,DATA-** and **0V / Screen** connections. These three connections should be wired into your DMX controller. Or to a suitable plug or socket. The standard DMX connections on a 5 pin XLR are shown below:-

Pin	Wire	Signal
1	Braid / Screen	Screen / 0V
2	Black (usually)	Data -
3	White (usually)	Data +
4	n/c	
5	n/c	

For simple DMX operation all of the dip switches should be set to OFF . For more information on DMX channel settings and DMX options see the DIP Switch Settings.

DMX DIP SWITCH SETTINGS

CHANNEL SELECT DMX CHANNELS



1-4



5-8



9-12



13-16



17-20



21-24



25-28



29-32



33-36



37-40



41-44



45-48



49-52



53-56



57-60



61-64

OTHER DIP SWITCH SETTINGS

No Data Operation



Output Levels from Analogue (0-10V)



Soft chase on DMX fail or no DMX

Switch or Dimmer



Dimmer



Switch only
No Dimming

Pre heat



No Pre Heat



Pre Heat
Outputs minimum 25%

KEY TO DIP SWITCH SETTINGS



Don't care



Must be ON for function



Must be OFF for function

INTERNAL LINK SETTINGS

ANALOGUE (0-10V) ENABLE SETTINGS



Analogue channels are internally enabled



Analogue lines are externally enabled via the ENABLE line

DMX TERM / THROUGH SETTINGS



DMX input is HIGH impedance



DMX input is terminated at 100 OHMS

Operation

Power LED

Indicates that the unit has power connected.

Data/Run LED

- Flashing Slowly** Indicates that the Dimmer pack is ready for use.
- Flashing Fast** Indicates that the Dimmer pack is receiving data.
- Constant On or Off** Indicates an internal fault.

Fault LED

- Flashing** Fuse or Triac Fail / Data Error / Bad Mains supply
- On** Internal Fault.

Channel LEDES

There are 4 channel LEDES . These give an indication of the output on the appropriate channel.

Switch/Dimmer

If **DIP 7** is on the DP40MS will work as a switch pack. All levels below 50% will be treated as off and all levels above 50% will be treated as on.

DMX Failure

In the event of the DMX data stream into the DP40MS failing the unit can operate in various ways.

Hold Last Data

If the analogue input is not enabled. (See analogue connections) The unit will remain outputting the last data that was sent to the unit.

Use Analogue in

If the analogue input is enabled the unit will use the levels from the analogue input until the DMX data is restored (See analogue Connections).

No Data Chase

If **DIP 6** is set the unit will soft chase until the DMX data is restored.(regardless of the analogue inputs & enables).

Pre-heat

Turning **DIP 8** on you will enable a pre-heat level on all of the outputs. Pre heat will not work in switch only mode (**DIP 7 on**).

Maintenance

Channel, Fuse and Triac Test

The DP40MS has a channel test built in. On power up all of the channels will chase. If a Channel is faulty the chase will stop at the faulty channel and the Fault and Channel LEDS will light for about 5 Seconds before the unit will resume its normal operation. The fault led will stay flashing. Disconnect the load on the faulty channel and replace the fuse (see fuse and triac changing). If this does not cure the problem then it is likely that the triac has blown. The Fuses and triacs can be re-tested by switching both **DIP 7 & DIP 8** on.

Do not change Fuses or Triacs without first removing the power to the unit.

Fuse and triac Changing



To change a fuse First **disconnect the mains supply** unscrew the fuse holder and replace the fuse with a direct replacement. Replace the fuse holder.

To change a triac first **disconnect the mains supply** to the unit. Then remove the four screws retaining the lid. The triacs can be removed by unscrewing the three terminals connecting the legs of the triac and then unscrewing the screw holding the tab of the triac. The replacement of the triacs is the reverse of this procedure. The triacs should be replaced with a direct replacement . Please note the Tab of the replacement triac **MUST** be isolated. **Do not re-connect the mains supply until you have replaced the lid.**

If you are unsure about replacement Triacs or Fuses contact your dealer.
Fuses and Triacs are not covered by our guarantee.

Ventilation

Ensure that there is adequate ventilation around the unit.

If the unit is to be used with a total output current of more than 30A the unit **MUST** be forced air cooled.

Specification

Size	19" x 1U x 190mm
Weight	2Kg
DMX In	USITT DMX 512 (1990)
DMX Through Impedance.	>12K Ohms
DMX Term Impedance.	100 Ohms
Analogue Input Impedance.	10K Ohms
Output Levels .	256 Linear power response.
Pre-heat level.	5%
Max. load per channel.	10A Resistive 7A Inductive
Max. Load Intermittent.	40A Resistive 28A Inductive
Max. Load Continuous.	30A Resistive 28A Inductive
Triacs.	BTA16-600CW
Fuses.	4 x 20mm 10A HRC
Power supply voltage.	220-250Vac
Supply Frequency.	50 / 60Hz Automatic Detection.

The DP40MS conforms to EN 60730-2-1, EN60335-1, EN50082 and EN55014

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