MTX-DE48 DMX DECODER

OWNER'S MANUAL
Rev. 5 - 7/03

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INTRODUCTION

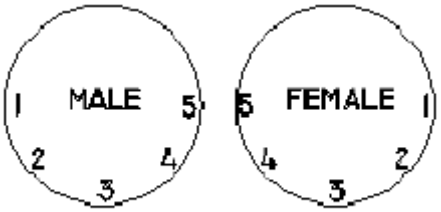
The MTX-DE decodes a multiplexed control signal into a DC voltage to drive standard analog dimmers from any controller which is compatible with DMX-512 control. Each unit decodes 48 channels and the starting channel may be set to be any dimmer, 1 to 512. The MTX-DE is factory set to start on dimmer #1 and the control output voltage is set for 0 to +10V but can be adjusted up to +28.

SET UP AND CONNECTION

INPUT AND OUTPUT

The MTX-DE is usually located close to the dimmer packs it controls. The input and output connections should be made before the decoder is plugged into power and energized. The circuit card is factory set for 120VAC 50/60Hz power input; move the line voltage select jumper at J23 to set the line voltage for 240V.

The DMX input is made at the male XLR connector. The signal loops through on the female connector. Always use the loop through connectors to link equipment in series; do not split the DMX signal without one of the specialty interfaces for this purpose.



5 PIN XLR CONNECTORS

PIN	FUNCTION
1	COMMON
2	DATA
3	DATA
4	N/C
5	N/C

Connector pin designations are as shown in the right hand figure; pins 4 and 5 are "passed through" with no connection made to these pins.

There are 48 output positions, one for each dimming channel, and two common terminals at J19 and J20. Positive voltage (i.e. 0 to +10VDC) output connections are made on the PC terminal strip near the middle of the circuit card. Some units may be equipped with negative (i.e. 0 to -10VDC) outputs, in which case output connections are made on the PC terminal strip to the rear of the circuit card. There must be a common wire to each dimmer pack. A variety of rear panel output connectors are available as options.

It is possible to parallel an analog controller as a backup control on the outputs, but only if it has diode protection.

The MTX-DE is factory set for 0 to +10 volts output and to start on channel #1. Higher output voltages are possible: adjust R2 clockwise for voltage ranges up to 0 to +28V or 0 to -28V on negative voltage units.

STARTING CHANNEL SELECT SWITCH

The starting channel is selected through a pushbutton switch on the front panel. Valid starting channels range from 001 to 512. When the decoder controls the only dimmers in the system, the starting channel should be set for 001. When there are two or more decoders in the system, the starting channel may be set for 001, 049, 097, etc. Although channels may overlap, it is usually desirable to arrange the system for one dimmer per channel. Dimming channels should not overlap with other DMX equipment, including strobe lights, moving lights, and foggers.

The starting channel select switch has a **load test / self test** function. Setting the switch to 600 turns on all outputs at 20% of full scale (2 volts typical). Setting the thumbwheel to 601 turns output 1 on full with all other outputs off. 602 turns on output 2 while all others are off. This continues through 648.

OPTION SWITCH

The nine position DIP switch at S1 performs several functions:

1 - Terminate DMX. Termination prevents possible data corruption problems due to signal reflections back along the control cable. Termination should be set only at the last DMX device in the chain.
2 - Offset for 2 to 7.6 volt output. This requires readjustment of R2, the output level control, to yield a 7.6 volt output.
3 - Nondim all outputs. Any DMX code of 128 or above yields full output.
4 - 48 channel offset. If this switch is on, 48 is added to the thumbwheel setting when it is set for a DMX channel. This allows a 96 channel decoder to have a single channel select switch. When load testing, if option switch 4 is on (48 channel offset), the unit instead responds to 649 to turn on the first output through 696 to turn on the last output.
5 - Unassigned
6 - Unassigned
7 - Unassigned
8 - Unassigned
9 - Terminate floating DMX. This functions only with units with the opto isolated input option.

TESTING THE DECODER

When the input and output connections are made the unit may be energized by plugging into a power source which can be turned on and off with the dimmer packs. The controller may now be energized and the system tested. The LED on the front panel will glow red and then green upon power-up when a valid DMX signal is present. It will glow red only without a valid signal. The decoder may be tested with a voltmeter. Place the black probe at either common terminal at J19 or J20. Place the red probe at the first output terminal and run up the first channel on the controller. The output should range from 0V at off to full, usually 10V.

IN CASE OF TROUBLE

Try the load test function (see above). If it works, the decoder is functional.

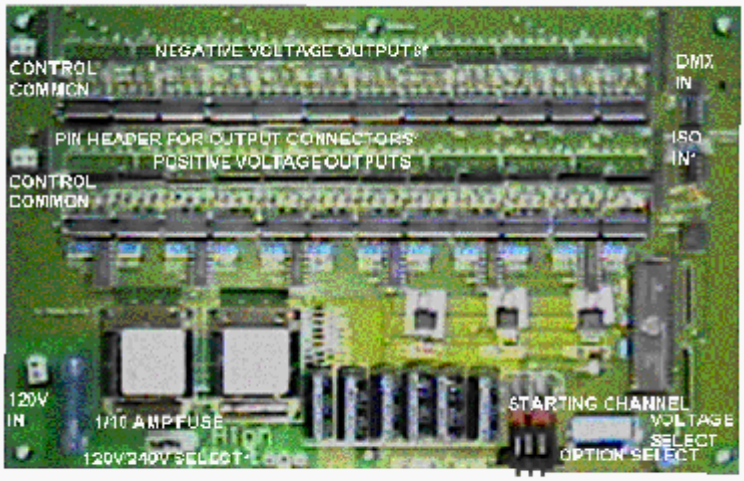
Try running the controller right next to the decoder, connecting the two with a short cable. If it works then, but not with a long cable, there may be wiring errors, improper termination, or excessive common mode voltage (requiring opto isolation).

The most common cause of trouble is a miswired connection. The pin configuration for the multiplex connector is most important: the board will not work at all if any of the wires are not on the correct pin, and the signal present LED will glow red only. There should be one control common connection per dimmer pack. The common of the dimmer should not be tied to earth ground. There should be one control wire per dimmer channel. Verify these wires.

Try enabling the DMX termination option at switch S1-1. If there is more than one DMX device in the system, check that only the last device in the system has termination enabled.

Flickering lamps across all channels may indicate the need for opto isolation. This device is an option on the circuit board and can resolve ground loop problems along the control line. Please contact the factory if this option is required.

If the problem affects just a few channels, particularly channels that are close together, try swapping IC chips to see if a problem follows a particular chip. Start at the output section, the part nearest the output terminals.



CALLING THE FACTORY

Dove Systems hours are 8AM to 5PM Pacific time, Monday to Friday. Please have a specific description of the problem, preferably from personnel who were on-site at the time. If at all possible, bring the telephone into the theatre and have the equipment at hand. Call **(805) 541-8292** or, after hours, send an email to **dove@dovesystems.com** with a complete description of the problem.

When it is necessary to send the unit to the factory for prompt repair, please ship it freight prepaid, with a note describing the specific complaint. Include the shipping address, a daytime telephone number, and the date the unit is required back. It is helpful to call the factory beforehand for a Return Materials Authorization (RMA) number. VERY IMPORTANT: PLEASE ENCLOSE A NOTE DESCRIBING THE PROBLEM--EVEN IF YOU HAVE CONTACTED THE FACTORY BY PHONE.

Send to: Service Dept
Dove Systems
3563 Sueldo Street, Suite E
San Luis Obispo, California, 93401
Phone: (805)541-8292

LIMITED WARRANTY

The manufacturer agrees that its products shall be free from defects in material or workmanship over a period of one year from date of shipment from the factory. Said warranty will not apply if equipment is used under conditions of service for which it is not specifically intended. The manufacturer is not responsible for damage to its apparatus through improper installation, physical damage, or poor operating practice.

If any device is found unsatisfactory under the warranty, the buyer should notify the manufacturer, and after receipt of shipping advice, buyer may return it directly to Dove Systems, San Luis Obispo, CA, shipping prepaid. Such equipment will be replaced or put in proper operating condition, free of all charges except transportation. The correction of any defects by repair or replacement by the manufacturer shall constitute fulfillment of all obligations to the purchaser. Manufacturer does not assume responsibility for unauthorized repairs to its apparatus, even though defective.

Manufacturer shall not be liable for any consequential damage in case of any failure to meet the conditions of any warranty of shipping schedule, nor will claims for labor, loss of profits, repairs, or other expenses incidental to replacement be allowed.

No other representation, guarantees or warranties, expressed or implied, are made by the manufacturer in connections with the manufacture and sale of its equipment. This warranty is non-transferable and applies to the original buyer only.

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