



OWNER'S MANUAL

SHOE-BOX

DM-406, DM-408, DM-410
DIGITAL DIMMERS



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:RECEIVING YOUR UNIT

AS SOON AS YOU HAVE RECEIVED YOUR EQUIPMENT, OPEN THE BOXES AND EXAMINE THE CONTENTS. IF THE EQUIPMENT IN THE CARTON DOES NOT MATCH WITH YOUR ORDER OR THE PACKING SLIP, CONTACT THE FACTORY IMMEDIATELY AND WE WILL BE HAPPY TO HELP YOU. IF ANY DAMAGE IS NOTED, CONTACT THE CARRIER IMMEDIATELY TO FILE A CLAIM FOR DAMAGES. YOU CAN BE SURE THAT WHEN THE EQUIPMENT LEFT THE FACTORY IT WAS IN GOOD CONDITION, TESTED THOUGH, AND PROPERLY PACKED.

:FEATURES

THE DIMMERMASTER "SHOEBOX" DIMMER IS A COMPACT UNIT WITH FOUR 1 kW DIMMERS. IT MAY BE PIPE OR TREE MOUNTED AND IS PERFECT FOR TIGHT SPACES WHERE CONVENTIONAL RACK MOUNT DIMMER PACKS ARE TOO BULKY. THE DIMMERMASTER "SHOEBOX" MAY BE POWERED FROM A SINGLE 20 AMP OUTLET.

THE UNIT IS CONTROLLED BY A DMX-512 CONTROL SIGNAL (0 TO +10VDC CONTROLS AVAILABLE AS A FACTORY OPTION). THE STARTING CHANNEL IS SET ON A THUMBWHEEL SWITCH, WHICH ALSO PROVIDES LOAD TESTING AND LOCAL CONTROL. A STATUS LED INDICATES THE PRESENCE OF A DMX SIGNAL. WITH BOTH MALE AND FEMALE XLR CONNECTORS, THE CONTROL SIGNAL MAY BE DAISY-CHAINED FROM PACK TO PACK. THE DMX SIGNAL MAY BE TERMINATED AT THE LAST PACK BY MEANS OF A DIP SWITCH. OTHER SWITCHES SET TO INDIVIDUAL OUTPUTS FOR NON-DIM OPERATION OR FORCE ALL TO OUTPUTS TO FULL.



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:INSTALLATION

A// MECHANICAL INSTALLATION:

FOR PIPE MOUNT USE, A C-CLAMP AND SAFETY CABLE MAY BE ADDED TO THE MOUNTING BRACKET. IT MAY BE TOP OR BOTTOM HUNG BY REVERSING THE YOKE. FOR PORTABLE USE, SET THE DIMMERMASTER "SHOEBOX" ON A SMOOTH COOL SURFACE, PREFERABLY IN AN AREA THAT REMAINS FAIRLY COOL. MAXIMUM AIR TEMPERATURE MUST NOT EXCEED 50 DEGREES CENTIGRADE (122°F). MAKE CERTAIN THAT THE VENT HOLES ALL HAVE AT LEAST 6 INCHES OF FREE AIR AROUND THEM. DO NOT BLOCK ANY VENT HOLES. IT IS ESSENTIAL THAT THIS UNIT HAVE ADEQUATE COOLING FOR SAFE, RELIABLE PERFORMANCE.

B// ELECTRICAL INSTALLATION:

THE PACK CONSISTS OF FOUR 1KW DIMMING CHANNELS. IT REQUIRES A SOURCE OF 120 VOLTS AC 50/60HZ AT 20 AMPERES FOR FULL-POWER OPERATION. THE ACTUAL AMOUNT OF POWER CONSUMED IS DETERMINED BY THE TOTAL WATTAGE OF THE CONNECTED LOADS USED; THE DIMMER ITSELF CONSUMES NEGLIGIBLE POWER. IT IS RECOMMENDED THAT NO OTHER EQUIPMENT BE CONNECTED TO THE CIRCUIT WHICH IS USED FOR THE PACK, INCLUDING THAT ON OTHER OUTLETS ON SAME FUSE OR CIRCUIT BREAKER. IF THE BUILDING CIRCUIT BREAKER TRIPS, IT MAY BE NECESSARY TO REDUCE ONE OF THE LOADS. POWER INPUT TO THE PACK IS VIA A FLUSH-MOUNT MALE CONNECTOR EITHER MOTOR BASE U-GROUND INLET (DM-406) FOR REGULAR EXTENSION CORDS, 20A 125V TWIST LOCK NEMA L520 (DM-408), OR A 30A 125V TWIST LOCK NEMA L530 (DM-410) WHICH IS MOUNTED ON THE BACK PANEL. ALWAYS USE 3-WIRE, GROUNDING CABLES. 12AWG OR LARGER CABLE IS RECOMMENDED.

WHEN POWER IS CONNECTED, THE STATUS LED WILL LIGHT UP IN RED (60HZ LINE), YELLOW (50HZ LINE), AND TURN GREEN WHEN A DMX SIGNAL IS PRESENT. GROUNDING

C// THE TERM "GROUNDING" REFERS TO A SEPARATE WIRE, USUALLY WITH GREEN INSULATION, WHICH IS CONNECTED FROM THE EQUIPMENT CASE TO EARTH GROUND. THIS IS NOT THE SAME AS THE NEUTRAL, OR "COMMON" AND MUST NOT BE CONFUSED WITH IT; THE NEUTRAL IS A SEPARATE, LOAD-CARRYING CONDUCTOR WHEN THE PACK IS CONNECTED TO THE POWER SOURCE BY A FLEXIBLE CABLE, THIS GROUND CONNECTION IS MADE THROUGH A THIRD WIRE IN THE CABLE AND THE GROUND PRONG ON THE PLUG. FOR MAXIMUM SAFETY, AND TO COMPLY WITH ELECTRICAL CODES, THIS CONNECTION MUST BE MADE. DO NOT USE AN ADAPTER (OR "CHEATER") PLUG.



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D// LOAD CONNECTIONS:

THE PACK WILL DIM ANY LOAD FROM 1 WATT THROUGH 1kW PER CHANNEL. THIS INCLUDES CONVENTIONAL INCANDESCENT AND QUARTZ INCANDESCENT LOADS. FLUORESCENT LOADS CAN BE CONTROLLED BY THE PACK WITH NO DAMAGE TO THE DIMMER, BUT THE NATURE OF THESE LOADS REQUIRES SPECIALIZED CIRCUITRY TO GET FULL RANGE DIMMING. CONSULT THE FACTORY IF YOU NEED TO DIM SUCH LOADS.

MERELY PLUG THE LOAD OR AN EXTENSION CORD TO THE LOAD INTO THE OUTLET WHICH CORRESPONDS TO THE CIRCUIT YOU WISH TO USE. ALWAYS USE GROUNDING CORDS. LOADS MAY BE SINGLE FIXTURES OR COMBINATIONS OF LIGHTS NOT EXCEEDING 1kW PER CHANNEL. EACH OUTPUT CHANNEL IS PROTECTED BY A 10AMP CIRCUIT BREAKER. IF THE CIRCUIT BREAKER TRIPS, IT IS DUE TO AN OVERLOAD OR SHORT IN THE OUTPUT LOAD.

E// CONTROL CONNECTIONS:

THE PACK ACCEPTS BOTH DMX-512 AND ANALOG 0 TO +10VDC CONTROL SIGNALS (AS A FACTORY OPTION). DMX-512 CONTROL SIGNALS ARE INPUT THROUGH THE MALE FIVE PIN XLR CONNECTOR ON THE CASE OF THE UNIT. THE CONNECTOR IS WIRED AS SHOWN IN DIAGRAM XLR-1. PINS 4 AND 5 ARE NOT USED BUT ARE PASSED ON THROUGH OTHER EQUIPMENT. THE DIMMER PACKS ARE WIRED IN SERIES ALONG THE CONTROL CABLE. USE ONE OF THE SPECIALTY INTERFACE BOXES FOR THIS PURPOSE.



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:CONTROL

A// STARTING CHANNEL:

THE STARTING CHANNEL IS SET ON A THUMBWHEEL SWITCH. WHEN THE SWITCH READS 001, THE DIMMER PACK RUNS ON CHANNELS 1 - 4. SETTING 005 RUNS ON CHANNELS 5 - 8, SETTING 009 RUNS ON CHANNELS 9 - 12, AND SO ON. VALID ADDRESSES RANGE FROM 001 TO 512. THE STARTING DIMMER MAY BE ANY CHANNEL, AND DIMMERS ON DIFFERENT PACKS CAN OVERLAP SOME CHANNELS, THOUGH IT IS USUALLY PREFERRED TO RUN THEM ONE DIMMER PER CHANNEL. DIMMER CHANNELS SHOULD NOT OVERLAP CHANNELS FOR OTHER DMX EQUIPMENT, INCLUDING STROBE LIGHTS, & FOG MACHINES. IT IS NOT NECESSARY TO SET THE STATING CHANNELS IN SEQUENCE (IE. 1-4, 5-8, 9-12).

B// DMX TERMINATION:

DMX TERMINATION MAY BE MADE ON THE DIP SWITCH ON THE FRONT. SIGNAL REFLECTIONS CAN CAUSE CORRUPTION OF THE DMX-512 DATA, TYPICALLY CAUSING FLICKERING OR FLASHING OF LIGHTS IN THE SYSTEM. ONLY THE LAST PACK IN THE CHAIN SHOULD HAVE TERMINATION ENABLED. (DMX TERMINATE PICTURED TO THE RIGHT)

WHEN THE POWER IS CONNECTED, THE STATUS LED WILL LIGHT UP RED (60HZ LINE), YELLOW (50HZ LINE), AND TURN GREEN WHEN DMX SIGNAL IS PRESENT.

CROSSFADE CHASE FUNCTION

SET THE THUMBWHEEL SWITCH TO 701 THROUGH 799 AND THE UNIT WILL PERFORM A CROSSFADING CHASE FROM 1 SECOND (701) TO 99 SECONDS (799).

C// LOAD TEST, LOCAL CONTROL, NON-DIM, & EMERGENCY FUNCTIONS:

THE THUMBWHEEL SWITCH ENABLES THE LOAD TESTING/ LOCAL CONTROL FUNCTION. THE LOAD TEST IS USEFUL FOR DETERMINING WHICH LOAD IS PLUGGED IN. SET THE FIRST DIGIT TO 6 AND THE SECOND DIGIT TO THE DIMMING CHANNEL (FROM 1 TO 4). SET THE THIRD DIGIT TO THE DIMMING LEVEL, FROM 0 (OFF) TO 9 (FULL ON). LEVELS THUS SET REMAIN IN EFFECT UNTIL THE POWER IS DISCONNECTED.



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HERE IS AN EXAMPLE:

-SET THE THUMBWHEEL SWITCH TO 600 FOR LOCAL CONTROL.

-SET THE SECOND TO 1 TO CONTROL THE LAMP ON CHANNEL ONE. SET THE THIRD DIGIT TO 5 TO PUT LAMP ONE AT HALF POWER. (THE FIRST LOAD WILL NOW STAY AT HALF POWER)

-NOW SET THE SECOND LOAD TO HALF POWER BY SETTING THE THUMBWHEEL TO 625. (THE FIRST AND SECOND LOAD ARE NOW BOTH AT HALF POWER)

-NOW SET THE THUMBWHEEL TO 639. THIS WILL SET THE THIRD LOAD TO FULL ON WHILE LEAVING THE FIRS TWO LOADS AT HALF POWER.

*TO RETURN TO DMX OPERATION SET THE THUMBWHEEL SWITCH TO THE DMX START CHANNEL OF YOUR CHOICE (1-512).

IN ADDITION TO DMX TERMINATION, THE DIP SWITCH SETS INDIVIDUAL CHANNELS FOR NON-DIM (FULL ON OR OFF) FUNCTION OR FORCES THE OUTPUT OF ALL CHANNELS TO FULL ON. IN NON-DIM MODE, THE DIMMER FORCES THE LOAD TO FULL WHEN IT RECEIVE A DMX VALUE OF 50% OR MORE (ABOUT HALF WAY UP TO FULL ON THE SLIDER) AND FORCES THE LOAD OFF WHEN IT RECEIVES A DMX VALUE OF 49% OR LESS (ABOUT HALF WAY OR LESS THAN ON THE SLIDER). THE EMERGENCY ON FUNCTION FORCES ALL OUTPUTS TO FULL REGARDLESS OF THE LEVEL OF CONTROL. (EMERGENCY ON DEPICTED TO THE RIGHT)

CROSSFADE CHASE FUNCTION:

SET THE THUMBWHEEL SWITCH TO 701 THROUGH 799 AND THE UNIT WILL PERFORM A CROSSFADING CHASE FROM 1 SECOND (701) TO 99 SECONDS (799).

EXAMPLE:

THUMBWHEEL SWITCH IS SET TO 710. THE UNIT WILL THEN CROSSFADE FROM CHANNEL #1 TO CHANNEL #2 IN 10 SECONDS. THEN THE UNIT WILL CROSSFADE FROM CHANNEL #2 TO CHANNEL #3 IN TEN SECONDS, FROM CHANNEL #3 TO CHANNEL #4 IN TEN SECONDS, AND THEN BACK TO CHANNEL #1. THIS WILL REPEAT UNTIL YOU CHANGE THE THUMBWHEEL SETTING OR POWER DOWN THE UNIT.



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:IN CASE OF TROUBLE

A// TROUBLESHOOTING:

A REVIEW OF THE FOLLOWING PARAGRAPHS MAY SAVE YOU A LONG DISTANCE PHONE CALL A TIP TO THE SERVICE CENTER, OR THE COST OF SHIPPING &/OR REPAIR. EVEN IF SOMETHING IS STILL WRONG, THIS PROCESS WILL HELP YOU EXPLAIN THE MALFUNCTION TO THE SERVICE TECHNICIAN.

READ THE OPERATING INSTRUCTIONS CAREFULLY. BE SURE YOU KNOW HOW TO OPERATE THE EQUIPMENT. DO NOT EXPECT THIS EQUIPMENT TO OPERATE EXACTLY LIKE OTHERS. ANY APPARENT FAILURES RESULT FROM NOT BEING FAMILIAR WITH THE OPERATING CHARACTERISTIC OF THE UNIT.

THERE ARE THREE FORMS OF MALFUNCTIONS COMMON TO SOLID STATE DIMMERS:

- "FAILED OFF" (IN WHICH THE LIGHTS DO NOT COME ON)
- " FAILED ON" (IN WHICH THE LIGHTS ARE ON ONLY)
- "FLICKERING" (WHERE THE LEVELS WILL NOT MAINTAIN)

FOR SOLUTIONS TO THESE COMMON PROBLEMS SEE THE CHARTS ON THE FOLLOWING PAGES

CHECK ALL LAMPS AND WIRING FOR SHORTS CAN CAUSE DAMAGE!

B// OBTAINING SERVICE:

SERVICE TECHNICIANS ARE GENERALLY AVAILABLE BETWEEN THE HOURS OF 8AM TO 4PM (PACIFIC TIME) MONDAY THROUGH FRIDAY. IT IS HELPFUL TO HAVE A COMPLETE DESCRIPTION OF THE PROBLEM & TO BE IN THE THEATRE OR OTHERWISE HAVE ACCESS TO THE EQUIPMENT WHEN PLACING THE CALL.

IT IS RECOMMENDED THAT ALL EQUIPMENT BE REPAIRED AT THE FACTORY. IF THE UNIT IS UNDER WARRANTY, IT MUST BE REPAIRED AT THE FACTORY. REPLACEMENT PARTS ARE AVAILABLE, BUT BECAUSE THE DIMMERMASTER PACKS ARE MICROCONTROLLER BASED PRODUCT RUNNING PROPRIETARY SOFTWARE, SCHEMATICS CAN NOT BE RELEASED.



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***BE SURE TO CHECK ALL WIRING AND LAMPS FOR SHORTS. SHORTS IN POWER CABLES, LAMPS CAN CAUSE REOCCURRING MAJOR MALFUNCTIONS. MOST COMMONLY BLOWN SSR MODULES AND TRIACS. IN SOME INSTANCES IT MAY BURN OUT THE MOTORBASE OR THE WIRING.

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USERS WITH FURTHER TECHNICAL QUESTIONS MAY CALL THE FACTORY AT (805)541-8292. NOTE: DOVE SYSTEMS DIMMER PACKS USE TRADE SECRET AND PROPRIETARY CIRCUITRY. FOR THIS REASON, SCHEMATICS CANNOT BE RELEASED FOR THIS PRODUCT. TO OBTAIN SERVICE, PACK THE UNIT WITH THE ORIGINAL PACKING MATERIALS OR CRUSHED NEWSPAPER AND RETURN IT, FREIGHT PREPAID,

TO: **DOVE LIGHTING SYSTEMS**
3563 SUELDO STREET UNIT E
SAN LUIS OBISPO, CA 93401

(THE REPAIR PROCESS IS EXPEDITED WHEN YOU INCLUDE: A NOTE DESCRIBING THE PROBLEM; YOUR DAYTIME PHONE NUMBER; AND YOUR RETURN UPS SHIPPING ADDRESS.)

:WARRANTY INFORMATION

THE MANUFACTURER AGREES THAT THE DIMMERMASTER 2412 SHALL BE FREE FROM DEFECTS IN MATERIAL OR WORKMANSHIP FROM DATE OF SHIPMENT OVER A PERIOD OF ONE YEAR. 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 REPRESENTATIONS, GUARANTEES OR WARRANTIES, EXPRESSED OR IMPLIED, ARE MADE BY THE MANUFACTURER IN CONNECTION WITH THE MANUFACTURE AND SALE OF ITS EQUIPMENT. THIS WARRANTY IS NON-TRANSFERABLE AND APPLIES TO THE ORIGINAL BUYER ONLY.



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