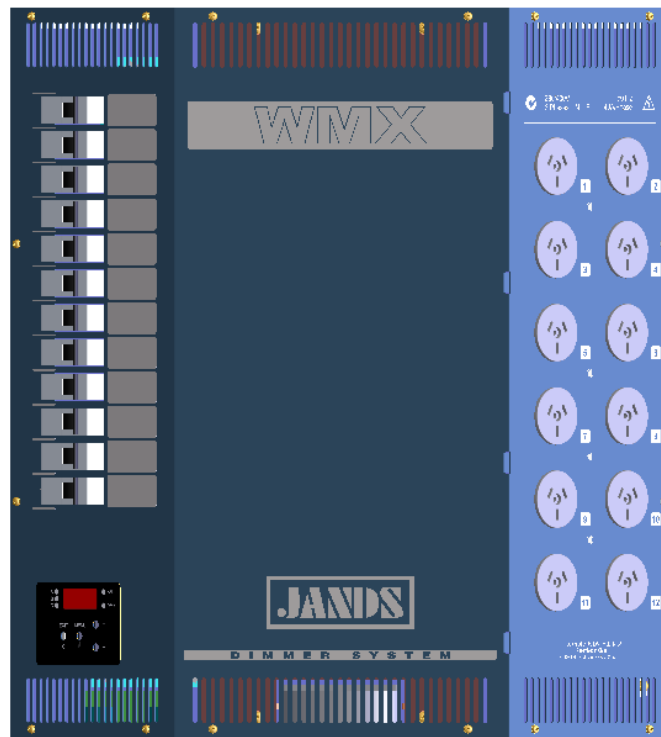# WMX

Digitally Controlled Dimmer

OPERATING MANUAL

JANDS

EMC COMPLIANCE

N108

This product is approved for use in Australia/New Zealand and conforms to the following standards:

Australian / New Zealand Standards
AS/NZS 3439.1:2002
AS/NZS CISPR 15:2002

To ensure continued compliance with EMC Directive 89/336 and the Australian Radiocommunications Act 1992, use only high quality data cables with continuous shield, and connectors with conductive backshells. Examples of such cables are:

DMX: Belden 8102   100% Aluminium foil screen, 65% Copper braid.

DISCLAIMER

Information contained in this manual is subject to change without notice and does not represent a commitment on the part of the vendor. JANDS PTY LTD shall not be liable for any loss or damage whatsoever arising from the use of information or any error contained in this manual.

It is recommended that all service and repairs on this product be carried out by JANDS PTY LTD or its authorised service agents.

JANDS PTY LTD cannot accept any liability whatsoever for any loss or damage caused by service, maintenance or repair by unauthorised personnel, or by use other than that intended by the manufacturer.

JANDS WMX Series dimmers must only be used for the purpose they were intended by the manufacturer and in conjunction with this operating manual.

Disconnect mains power when not in use.

Manufactured in China
Designed in Australia

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Revision 1   15 January 2007

Table of Contents

1.0   Introduction

The JANDS WMX is a high quality, rugged, 12 channel, 2.4kVA per channel (10A/240V) dimmer rack specifically designed for contracting / theatre applications.

A separate wall bracket simplifies the installation process. It allows cabling to be routed to the dimmer location prior to the installation of the actual dimmer units, providing the contractor with the ability to fit off the dimmers when the site is secure.

An optional extended wall mounting bracket, provides the end user with an economical and compact method of routing cable duct behind the dimmer rack.

Features

- 12 x 2.4KW dimming channels

- DMX-512 digital control protocol

- DMX terminating switch

- Suitable for permanent installations

- Soft turn on characteristic

- Low acoustic/electrical noise

- Toroidal output chokes

- Circuit breaker protection of output devices

- Three mains phase indicator LEDs

- Built in test facilities

- Dimmer curve set for linear relationship between the control input and output power

- Compensation for fluctuations in the mains supply voltage and minimises the effect of superimposed control tones, ensuring a constant light output and increased lamp life

- May be rack mounted or attached to a wall by means of supplied mounting bracket

- Microprocessor control

- Temperature controlled cooling fan

- Temperature monitor and thermal cut-out

- Dimmer will hold last DMX value should control data be interrupted
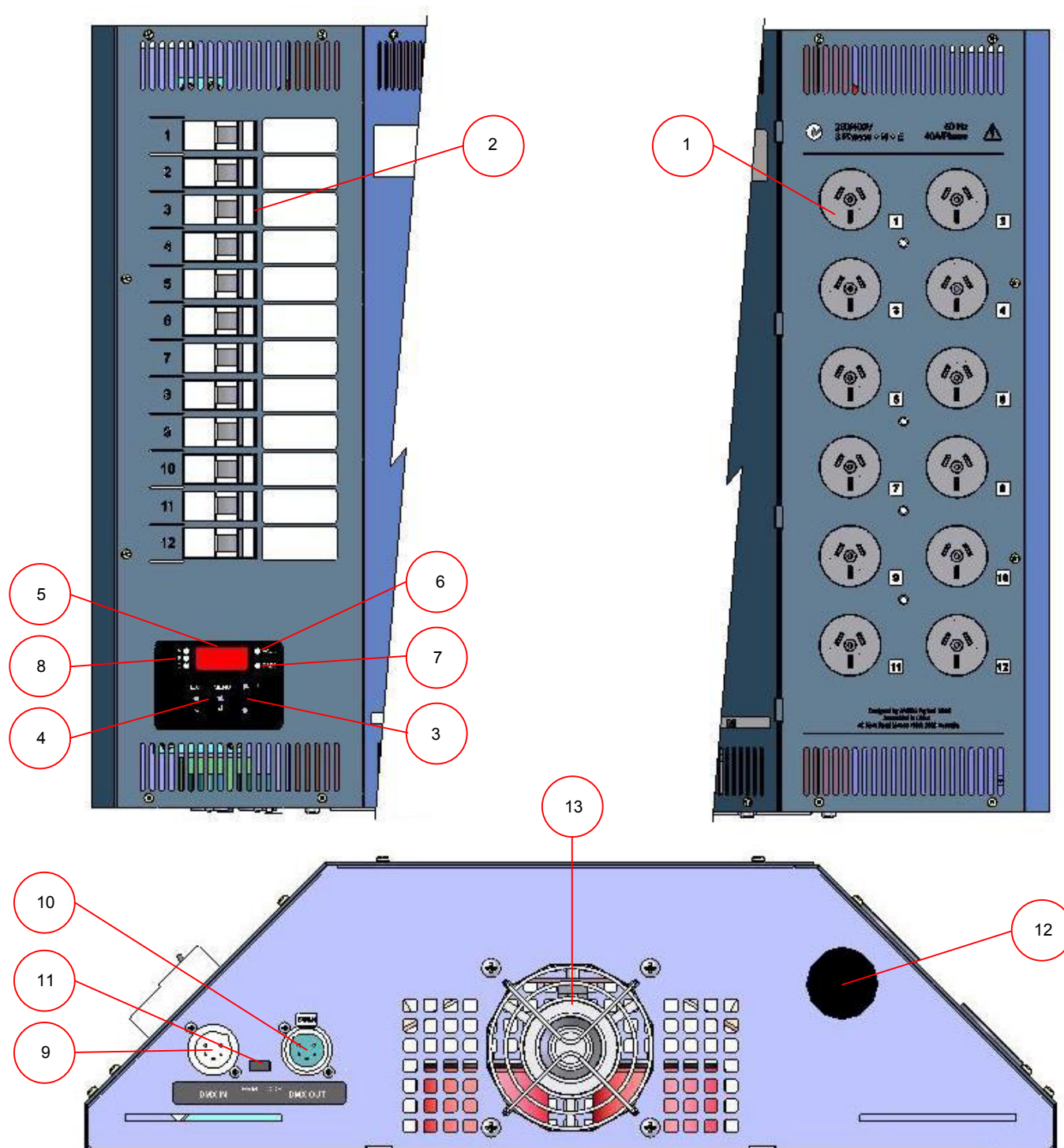
- 50/60Hz operation

2.0 Equipment Description

Figure 2.1: (Clockwise From Top Left) Control/Breaker Panel, Socket Outlet Panel, Bottom Panel

2.1 Panel layout

1. **CHANNEL OUTPUT SOCKETS:** The twelve output sockets are each rated at 10 amps.

2. **CHANNEL CIRCUIT BREAKERS:** If a breaker trips during use ensure the fault has been cleared before resetting.

3. **UP/DOWN SELECT BUTTONS:** These buttons select the DMX start channel and various test functions.

4. **EXIT AND MENU/CONFIRM BUTTONS:** These buttons are used to navigate through the test menu levels and set DMX address.

5. **3-DIGIT DISPLAY:** Indicates currently selected DMX start channel and various test function options.

6. **DMX LED:** A green LED indicates the presence of DMX signals when in DMX mode. If there is no DMX signal, the LED will flash at a rate of approximately 2 seconds on - 2 seconds off.

7. **FAULT LED:** A red LED flashes in the presence of a fault. In normal operation this LED should be off.

8. **PHASE LEDs:** Three blue LEDs (one for each phase) indicate that the three phase mains supply is available.

9. **DMX IN SOCKET:** Standard 5-pin AXR connector accepts DMX-512 signals from controller.

10. **DMX LOOP SOCKET:** Standard 5-pin AXR connector links the DMX-512 signals to other dimmers or devices.

11. **TERMINATE SWITCH:** In the right hand Loop ⤓ position it links the male IN socket to the female LOOP socket, continuing the DMX signal to other devices. The left hand Terminate ⤓ position is used to terminate the DMX signal if this unit is the last device in DMX chain.

12. **CABLE ENTRY:** Removal of the hole plug provides access for a 32mm cable gland. This cover should remain in place for safety reasons unless using the hole for cable access.

13. **AIR INTAKE:** This is the main entry point for air cooling of the dimmer. **DO NOT obstruct this entry and keep it free of dust.**

3.0 Getting Started

The WMX would normally be wall mounted before any wiring is terminated. Refer to section *6.0 Installation* for details.

3.1 Connecting power

The WMX dimmer is supplied with 4 rising clamp terminals for the connection of incoming mains power and a ring star connector for the incoming protective earth wire.

To gain access to the input terminals, it is first necessary to remove the front cover that wraps around to the control panel and circuit breaker side of the dimmer, followed by the socket outlet panel. Note: The earth wire can be removed from the front panel by means of a spade connector on the bottom right corner of the panel, allowing the panel to be placed to one side while working on the dimmer.

Connect the incoming mains power cables to the rising clamp terminals on the lower right side of the main circuit board. The three phase conductors shall be connected to the terminals marked **Active A1**, **Active A2** and **Active A3**. The neutral conductor shall be connected to the terminal marked **Neutral**. It is important that the ends of the conductors go under the circuit board between the flat of the rising clamp and the copper bracket on the circuit board. *Do not screw down directly onto the wire.*
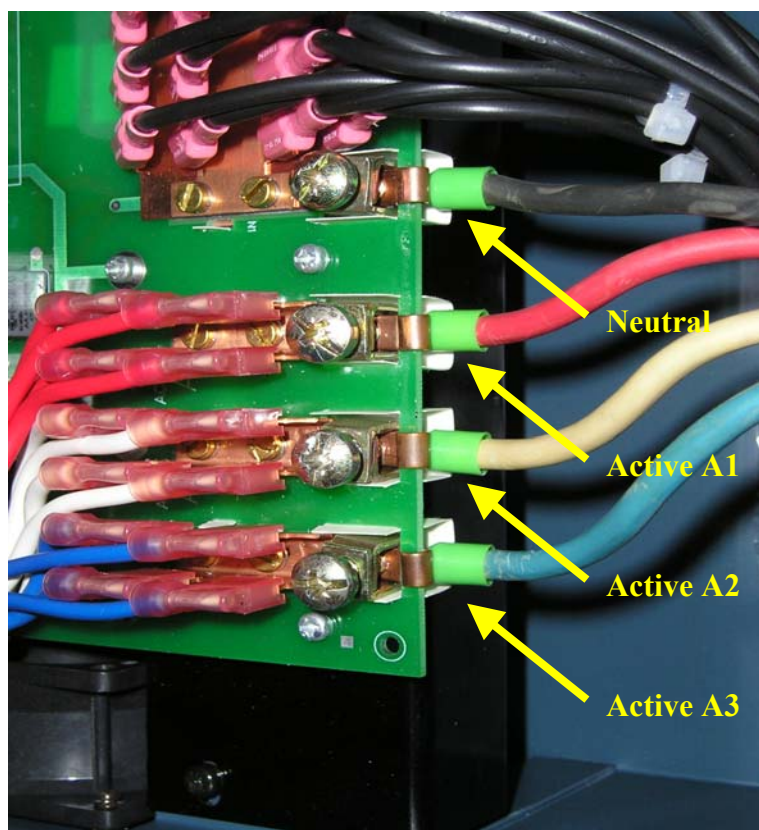

Figure 3.1   Mains Power Termination

To connect the earth wire, strip the insulation back approximately 35mm, wrap the bare end around the supplied star lug and crimp with pliers (Figure 3.2). Secure crimped earth wire to stud using supplied washers and nut (Figure 3.3).

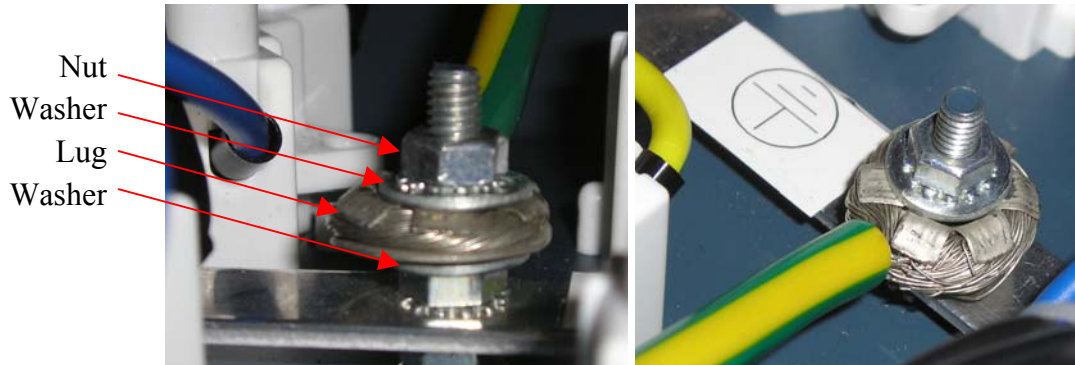Figure 3.2: Crimping Of Star Lug For Incoming Protective Earth

Figure 3.3: Termination Of Protective Incoming Earth Conductor To Earth Busbar

If the frequency needs to be changed to 60Hz, refer to section *3.2 Setting the mains frequency* before continuing. Check that the securing screw has been inserted through the lower right corner of the chassis into the wall mounting base plate (refer to section *6.6 Mounting the dimmer to the bracket* for more information).

Replace the cover panels, starting with the socket outlet panel. When replacing the covers, check to make sure that the two earth straps are connected to the chassis and the front cover for the control and circuit breakers. If not, push connectors onto the tabs marked with the earth symbol ⏚ and the replace covers.

3.2   Setting the mains frequency

The WMX can be configured to run from either 50Hz or 60Hz mains power - as supplied from the factory it is configured for 50Hz. To change the dimmer to 60Hz, change the three jumpers to "60Hz" as per Figure 3.4.
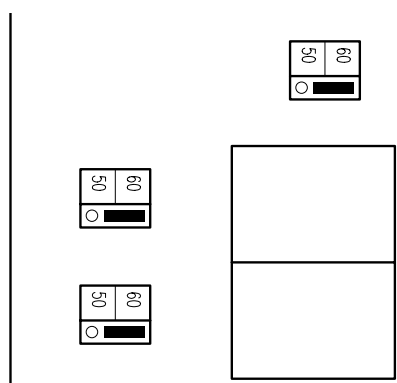

Figure 3.4: 60Hz Jumper Locations

3.3   Powering up

Turn on the power and check that the three PHASE indicator LEDs are on before connecting any loads. If the PHASE LEDs indicate a fault condition (refer to section *5.3 Phase fault indication*), power down and remedy the fault before trying again.

If all is well, power down and connect loads.

3.4   Connecting loads

The standard output connectors are twelve 10 amp Australian sockets (Export models may differ from these configurations). Ensure any plugs are pushed firmly into their sockets and/or all screw terminals are tight.

The WMX will drive most incandescent loads as well as some downlight transformers (suitable for leading edge dimmer control), fans, and dimmable fluorescent tubes. The load should be greater than the specified minimum (refer to section *8.0 Technical Data and Specifications*).

3.5   Connecting DMX-512 input

The input signal to the dimmer should conform to the AMERICAN NATIONAL STANDARD (ANSI) E1.11-2004 ENTERTAINMENT TECHNOLOGY USITT DMX-512-A specification. Plug the DMX signal to the "DMX IN" socket. The DMX signal may be daisy-chained to the next dimmer via the LOOP connector.

When power is on the DMX LED indicates the presence of DMX signals.

The DMX receiver input is protected against extreme over-voltages across any input pins and from any input to chassis. The "terminating" resistor is not protected against over-voltages.

3.6   DMX termination

In any DMX-512 system the signal should be terminated at the last dimmer or receiver in the chain, and the WMX can provide this function. To terminate the DMX signal, set the front panel slide switch from LOOP ⤓ to the Terminate ⤓ position. Note that in this position no signal is present at the LOOP connector.

3.7   Power-up sequence

When powering up lighting systems, the following sequence should be used:

1. First the control desk;

2. Then any softpatches and/or DMX receivers;

3. Finally the dimmers, preferably one at a time starting from the first dimmer rack in the DMX loop.

This procedure minimises the risk of producing the lighting equivalent of an audio "thump" and prevents damage to lamps, dimmers, and other controlled devices.

Use the reverse procedure when powering down.

4.0   Dimmer Operation

This section assumes the dimmer has been correctly connected to three phase power and a source of DMX-512 control signal.
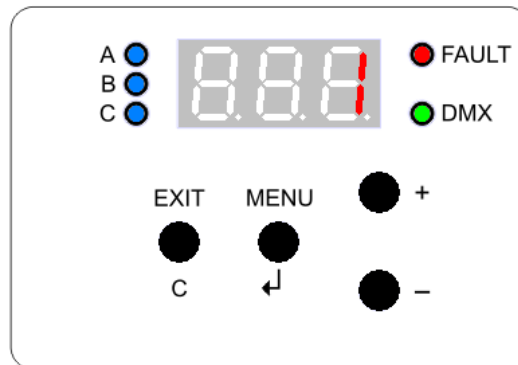

Figure 4.1:   Control Panel Layout

o   Pressing "Menu/↵" at any time moves up menu level or confirms a new setting.

o   Pressing the "Exit/C" button at any time moves back a menu level with no setting change.

o   When adjusting a setting, the display will flash briefly once per second for three seconds. If the "Menu/↵" button is pressed within that three seconds, the new value is retained and subsequently takes effect. If no button is pressed within that 3 seconds, or if the "Exit/C" button is pressed within 3 seconds, the setting reverts to the previous value.

4.1   Operating modes

The WMX has two operating modes:

1. **DMX mode:** the dimmer is controlled from an external DMX-512 control console,
2. **Test mode:** the dimmer is controlled by the internal microprocessor and the front panel buttons.

4.1.1   DMX mode

In this mode, the "+" and "−" buttons are used to select which bank of 12 channels (from the 43 possible DMX-512 banks) will control the WMX.

By default the display shows the DMX start channel. The start channel can only be changed in steps of 12. Pressing the "+" or "−" button results in the display increasing or decreasing by one bank of 12 channels. Eg. 1, 13, 25, etc.

For example, if DMX Channels 25 to 36 are desired, set the start channel to "25". WMX Channel #1 is now DMX Channel #25. A WMX with this setting ignores DMX Channels 1 to 24 and 37 to 512, and only decodes Channels 25 to 36 as its dimmer information.

Pressing and holding the "+" or "−" button results in the display changing by one bank, and after 0.5 seconds it will start changing automatically at a fast rate.

The display will halt at 505 in the up direction and at 1 in the down direction, but if the button is released and pressed again the menu will wrap around from 505 to 1 (or from 1 to 505 in the other direction).

Once selected, the start channel is retained in memory if the power is switched off.

4.1.2 Test mode

In this mode, the WMX's internal controller is used to drive the selected dimmer channels. No DMX control is necessary, but a control signal may be left connected if desired.

Pressing the "Menu/↵" button displays the first menu item. The menu items are listed in Table 4.1.

Display	Description
Chn	Turn selected Channel on full
PHS	Turn Phase channels on at set level
CHS	Turn on all channels sequentially at set rate

Table 4.1: Menu Items

Pressing the "−" button when the display shows *Chn* changes it to *CHS*; pressing the "+" button when the display shows *CHS* changes it to *Chn*, ie. the menu wraps around.

Pressing the "Exit/C" button returns the dimmer to normal operation, displaying the previously set DMX start channel.

4.1.2.1 Chn

Pressing "Menu/↵" while *Chn* is displayed moves into the Channel Test menu. The display shows the last channel tested (*C 1 … C12*) and immediately turns it on full.

The "+" and "−" buttons may be used to select a different channel. The channel is output live and there is no need to press "Menu/↵". The display (and output) remains in that state until the "Exit/C" button is pressed, even if power is disconnected; ie. when power is restored the dimmer will continue to drive the selected channel to full.

Pressing the "−" button when the display shows *C 1* changes it to *C12*. Pressing the "+" button when the display shows *C12* changes it to *C 1*; ie. the menu wraps around.

When "Exit/C" is pressed, the dimmer returns to the menu displaying flashing *Chn*. If no button is pressed within 3 seconds the dimmer returns to normal operation, displaying the previously set DMX start channel.

4.1.2.2 PHS

Pressing "Menu/↵" while *PHS* is displayed moves into the Phase Test menu, and the display shows the last phase tested (*A, B, C,* or *ALL*). Pressing "+" or "−" and then "Menu/↵" selects a phase to test. That phase is indicated on the display with a top, middle, or lower horizontal bar in the left-most display digit, signifying phases A, B and C respectively. The display initially shows a phase level of *0*. All channels fed from the selected phase will be tested simultaneously.

ie. Phase A = Channels 1-4,   Phase B = Channels 5-8,   Phase C = Channels 9-12.

The "+" and "−" buttons are used to select a different level in 20% increments, ie. 20, 40, 60, 80, FL (100). Refer to table 4.2 for the display output in each state.

Output Level	Phase A Display	Phase B Display	Phase C Display	ALL Phases Display
0%	0	−0	0	0
20%	20	−20	20	20
40%	40	−40	40	40
60%	60	−60	60	60
80%	80	−80	80	80
100%	FL	−FL	FL	FL

Table 4.2: Display Data To Output Level Relationship

The output is live and there is no need to press "Menu/↵". The display (and output) remains in its current state until the "Exit/C" button is pressed, even if power is disconnected. ie. when power is restored the dimmer will continue to drive the selected phase to the same level.

When "Exit/C" is pressed, the dimmer returns to the menu displaying flashing *A, B, C* or *ALL*. If no button is pressed within 3 seconds the dimmer returns to normal operation, displaying the previously set DMX start channel.

4.1.2.3 CHS

Pressing "Menu/↵" while *CHS* is displayed moves into the Chase menu, where the display shows the last chase speed selected (*SP1...SP4*) and the chaser is immediately turned on. Each channel from 1 to 12 is sequentially driven to full output and then the chase sequence keeps repeating.

The "+" or "−" buttons are used to select a chase speed; SP1 is slowest and SP4 is fastest. The display (and output) remains in its current state until the "Exit/C" button is pressed, even if power is disconnected. ie when power is restored the dimmer will continue to run the chase at the selected rate.

When "Exit/C" is pressed, the dimmer returns to the menu displaying flashing *CHS*. If no button is pressed within 3 seconds the dimmer returns to normal operation, displaying the previously set DMX start channel.

4.1.3 Front panel menu structure
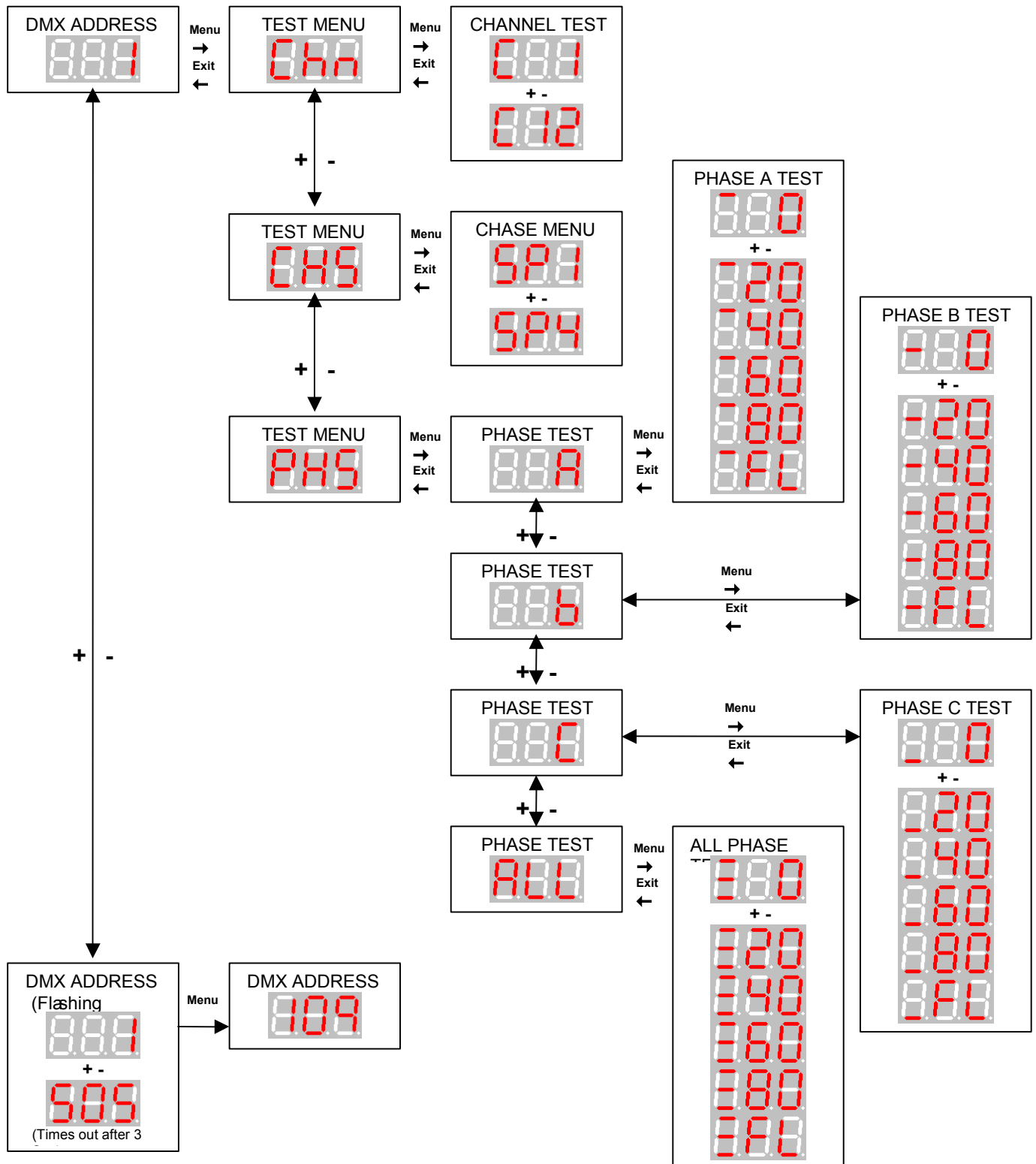
Figure 4.2: Front Panel Menu Structure

4.2   Fault LED

The Fault LED is used to indicate fault conditions. In normal operation this LED should not illuminate. When active this LED will either be flashing or on continuously.

1. When the LED is flashing an over-temperature or over-voltage condition is present, and the dimmer outputs will be off until the over-voltage or over-temperature condition is removed.

2. When the Fault LED is on continuously, one or more of the following error conditions have occurred:

    - Over-voltage

    - Over-temperature

    - Serial data errors

    - Software failure

The dimmer outputs are active while the Status LED is on continuously.

If the Fault LED is on it may be cleared by pressing the "+" or "−" buttons, or by switching the dimmer off momentarily.

5.0 Fault Diagnosis

> **NOTE**
>
> **Contact your authorised JANDS Distributor for repairs or servicing.**
>
> **In Australia refer all repairs to an authorised JANDS service agent or return the faulty unit in suitable packaging to:**
>
> **JANDS Service Dept,**
>
> **Unit 2 / 26 Kent Rd**
>
> **Mascot NSW 2020**
>
> **Australia**

5.1 Output protection

Each of the twelve output circuits is protected by a 10 Amp fast-acting thermal/magnetic circuit breaker. These breakers are designed to pass the rated current, but will disconnect the output circuit for any overload condition (the larger the overload, the quicker the disconnection).

NOTE: 3-pin GPO outlet sockets are rated at 10 Amps. Dimmer channels should not be loaded beyond the socket capacity.

The breakers protect the dimmer's output devices from short-circuit loads, faulty wiring looms and save on expensive dimmer repairs. A tripped circuit breaker indicates a load fault that requires immediate attention.

If a short-circuit lamp or output cable is plugged into the dimmer, the breaker will trip to disconnect the fault from the dimmer. In nearly all circumstances, this is quick enough to prevent damage to the output devices.

In some circumstances however, a triac failure may be experienced, although these devices are usually quite reliable and robust. If a triac does fail, it will either turn a channel on to full (triac short-circuit), or turn it off (triac open-circuit). If a triac fault should occur, that channel may be isolated by manually tripping that channel's circuit breaker.

These breakers have been specified for electrical protection, reliability and safety. They will allow repeated turn-on surges to cold lamps without failure, while still protecting the triacs. The breakers will interrupt large short-circuit fault currents without damage.

5.2 DMX faults

The WMX dimmer features an "Output Hold" facility that "remembers" the last received DMX message. In the event of a cable being unplugged or severed, the WMX dimmer rack will continue to output the "Held" DMX levels until a new DMX message is provided. If no new data is received within 10 minutes the outputs are driven to 0.

The **DMX** LED will flash slowly if the DMX signal is removed.

Note that control consoles, when powered down, may transmit spurious DMX data which can unintentionally cause dimmer channels to turn on. Disconnect mains power when not in use.

The DMX receiver input is protected against extreme over-voltages across any input pins and from any input to chassis. The "terminating" resistor is not protected against over-voltages.

5.3   Phase fault indication

The three blue **PHASE** LEDs show when all three power input phases are present.

WARNING

IF ONE OR MORE PHASE LEDS IS OFF, IMMEDIATELY DISCONNECT POWER TO THE DIMMER AND CHECK THE MAINS SUPPLY AND WIRING BEFORE RE-CONNECTING POWER TO THE DIMMER.

Although the dimmer will survive most power supply faults, indications of unusual or potentially dangerous power conditions should never be ignored.

5.4   Thermal protection

The WMX dimmer features temperature-controlled fan cooling. As the internal temperature of the dimmer increases, the fan speed also increases.

The internal heatsink temperature is constantly monitored by the dimmer. If the heatsink temperature rises above the specified maximum, the dimmer will automatically shut down the output drive. The fan will continue to cool the heatsink during the shut down period.

The electronic shutdown is backed up by a buried cutout, which shuts down power to all electronics other than the cooling fan should the temperature continue to rise.

Even though the WMX is a fan-cooled dimmer, it is very important that adequate ventilation is provided when in use, particularly around the top and bottom of the chassis. If air circulation to the air vents is blocked and/or the ambient air temperature is too high, the dimmer will shut down and the status LED will flash until the temperature is reduced.

Refer to section *6.1 Dimmer ventilation* regarding WMX dimmer ventilation requirements.

5.5   Over-voltage

The WMX incorporates an over-voltage cutout that constantly monitors the incoming mains voltage. If the mains voltage rises above the specified maximum the dimmer will shut down and the status LED will flash until the over-voltage condition is removed.

5.6 Fault finding guide

FAULT SYMPTOM	POSSIBLE CAUSE	REMEDY
Breaker trips when desk channel flashed to full or near full	Large incandescent load Excessive load	Use console preheat facility Reduce channel loading
Breaker trips after prolonged operation	Excessive load Lamp or wiring fault	Reduce channel loading Check lamps and wiring
Breaker trips immediately when channel is driven	Output short Triac short	Check lamps and wiring Factory service
One channel flickers when dimmed Same load flickers on another Channel	DMX source problem Faulty dimmer channel Insufficient or very inductive load	Softpatch another console fader Service console Factory service Connect >100W incandescent lamp in parallel
Radio interference	Faulty EMC filtering	Factory service
All Channels flicker when dimmed	Incorrect DMX protocol / wiring Unterminated DMX line Mains control tones exceed limits	Replace DMX source / wiring Set Terminate switch on last DMX receiver to TERM Contact factory
DMX LED flickers	Faulty DMX wiring/connections Faulty console Faulty dimmer rack	Repair Repair Factory service
Fault LED flashing	Over-voltage Over-temperature	Check mains connection/supply Improve dimmer cooling
Fault LED on continuously	Recent over-voltage Recent over-temperature DMX control errors Software failure	Check mains connection/supply Improve dimmer cooling Check DMX wiring, console Factory service
No signal at DMX Loop output	Terminate switch set to TERM	Set Terminate switch to LOOP

Figure 5.1: Fault finding guide

6.0   Installation

The WMX dimmer is designed for use in fixed installations - the dimmer is supplied with a wall-mounting bracket. This bracket enables the WMX to be mounted in one of the following arrangements:

- The dimmer may be mounted in a 19 inch equipment rack (11RU of rack space required)

- The dimmer may be mounted flush to a wall with the cabling coming through the wall

An optional extended mounting bracket allows the following mounting options:

- The dimmer may be mounted proud of a wall for use with surface cable conduit. The conduit may run either horizontally or vertically

- The dimmer may be mounted straddling a vertical cable tray up to 420mm wide and 75mm deep

6.1 Dimmer ventilation

The WMX dimmers are cooled by a temperature controlled fan. The air intake is at the bottom, and exhausts through slots at the top and top-front.

The WMX dimmers are intended for wall mounting in unenclosed spaces. Multiple dimmer arrays should be spaced **at least** 100mm apart vertically, and no more than three dimmers high, to avoid excessive heating of the top dimmer. Dimmers should be spaced **at least** 50mm horizontally.

Dimmers should be mounted **at least** 300mm from the floor to avoid excessive ingress of dust and fluff, or as dictated by local building statutes. Dimmers must be mounted **at least** 150mm below ceilings or shelves for adequate ventilation.

Mounting within unventilated cupboards is not recommended. If the dimmers are mounted within cupboards, allow **at least** 150mm above and below the dimmer, and at least 100mm at each side and the front of the dimmer. In addition, the cupboard must be vented with **at least** 400 cm^2 (eg 40cm x 10cm) per dimmer at the top and bottom of the cupboard. Additional venting area will serve to further reduce internal dimmer temperatures and will enhance the dimmer's reliability.
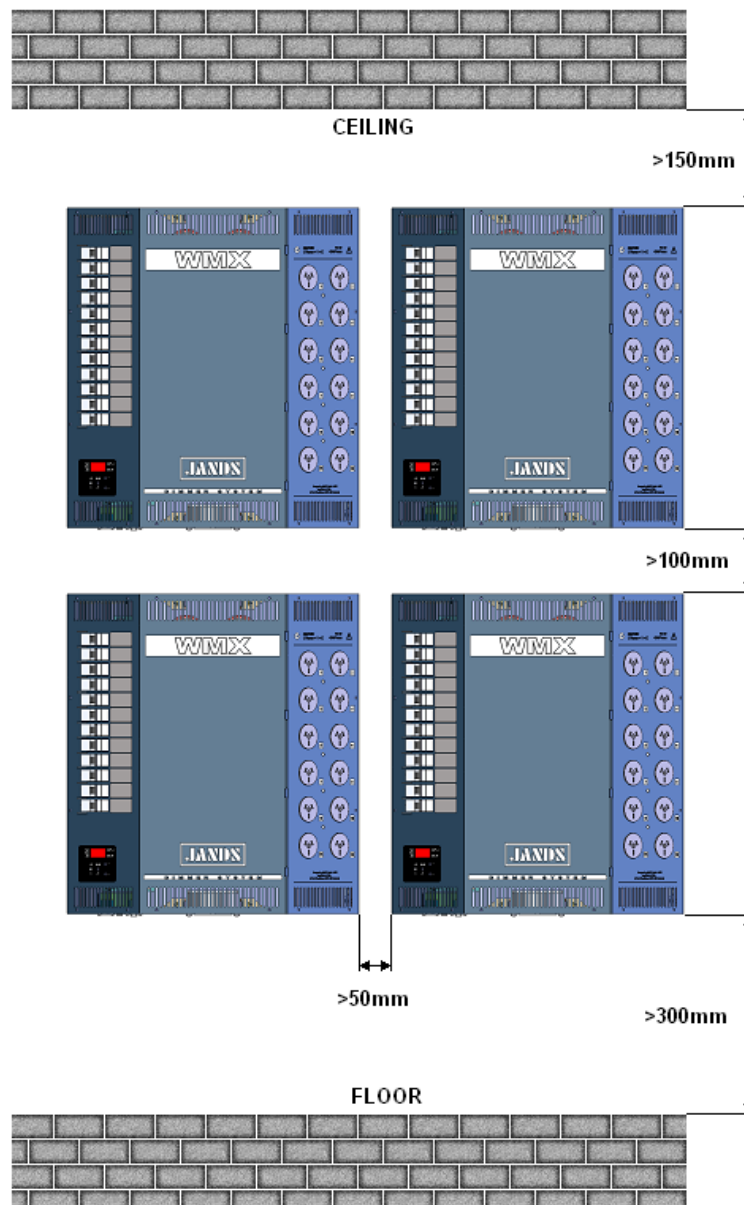

Figure 6.1: Spacing Of Wall Mounting Dimmers

6.2   Wall mounting dimmers - In racks

Both the wall and the extended mounting bracket may be attached to standard 19" rack strips. The bracket is screwed to the rack strip using standard cage nuts and screws (not supplied).

Supply cable entry may be via a 32mm gland hole at the bottom right of the main chassis, or by removing the links from one of the partially notched holes in the rear face of the dimmer chassis and the shallow wall mounting bracket. If the 32mm hole is not used for cable access it should be coved with the blanking plug provided.

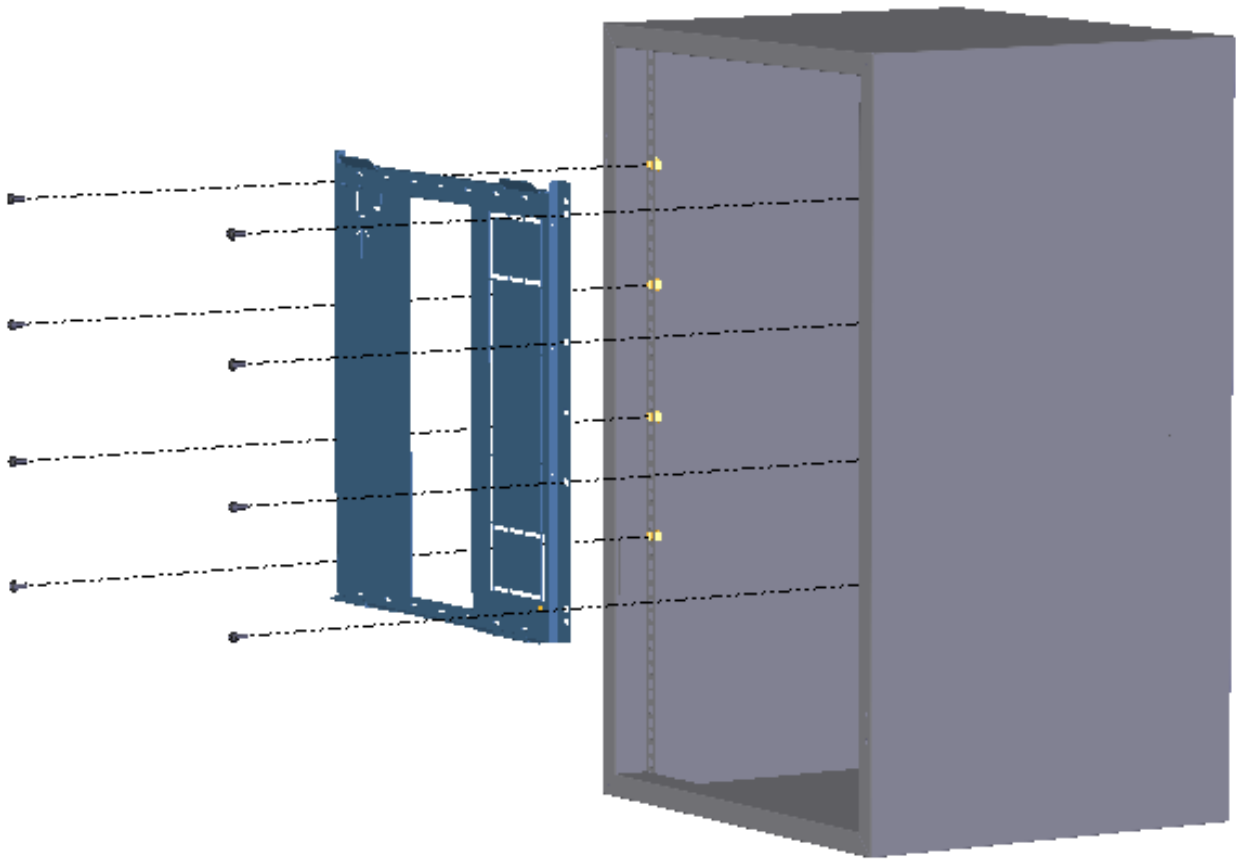Attach the dimmer to the bracket as described in Section 6.6.

Figure 6.2: Rack Mounting A Wall Mount Dimmer

6.3   Wall mounting dimmers - Flush to wall

Remove the cable access blanking piece of the wall mounting bracket by cutting the holding webs with shears. De-burr the metal. Feed any cables (supply, output, and control) through this cable access cutout, and place the bracket against the wall, orienting the bracket as indicated on the bracket. Mark and drill at least 4 fixing points, and attach the bracket to the wall.

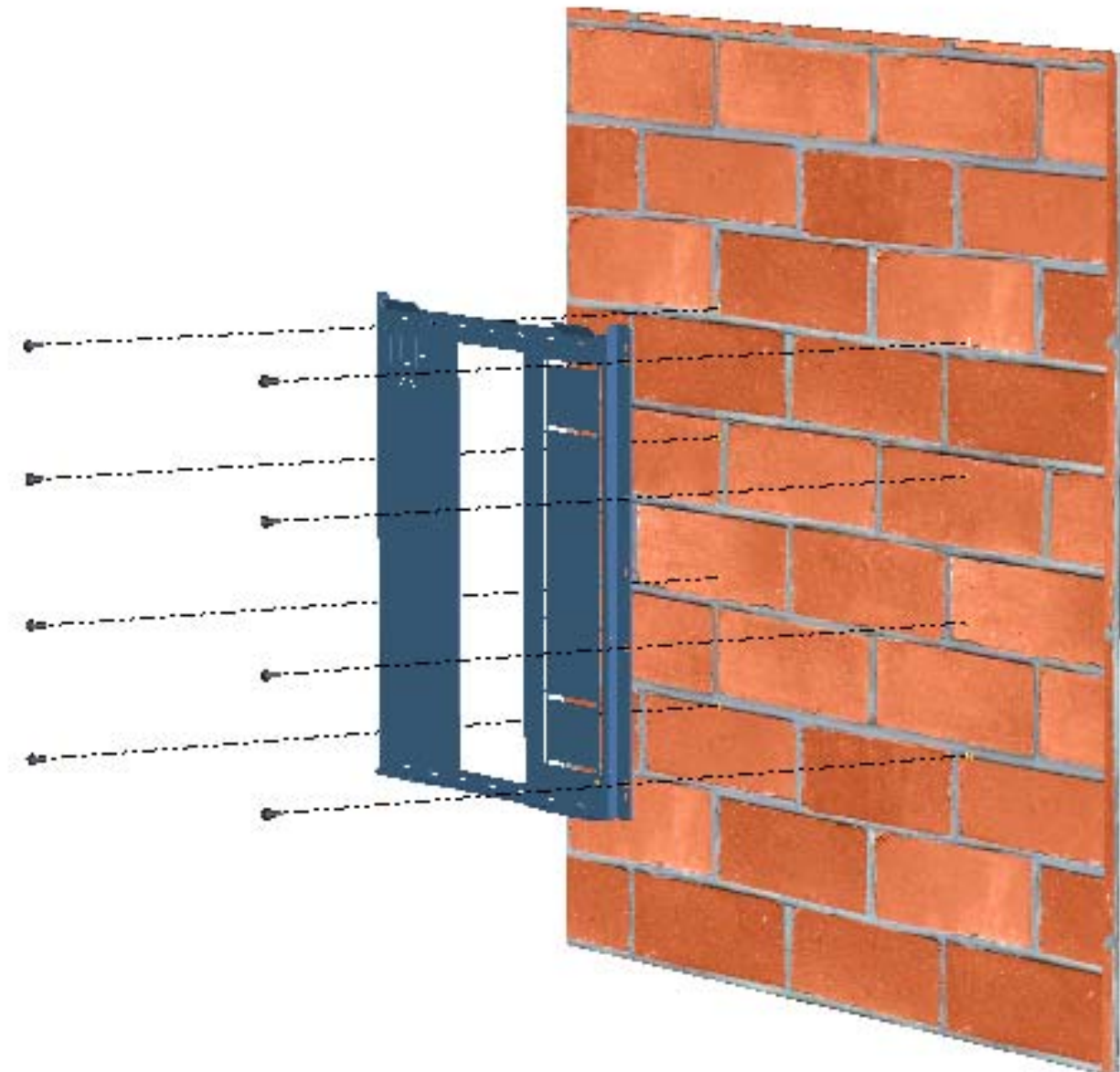Attach the dimmer to the bracket as described in Section 6.6.

Figure 6.3: Wall Mounting A Wall Mount Dimmer

6.4   Wall mounting dimmers - Straddling cable trays

The optional extended mounting bracket (JND-WM-EBP) will straddle cable trays up to 420mm wide and 75mm deep. Remove the top blanking piece by cutting the holding webs with shears, and remove the eight screws securing the bottom blanking piece. De-burr the metal. Position the bracket over the cable tray against the wall, orienting the bracket as indicated on the bracket. Mark and drill at least 4 fixing points, and attach the bracket to the wall. Feed any cables (supply, output, and control) through the cable access cutout.

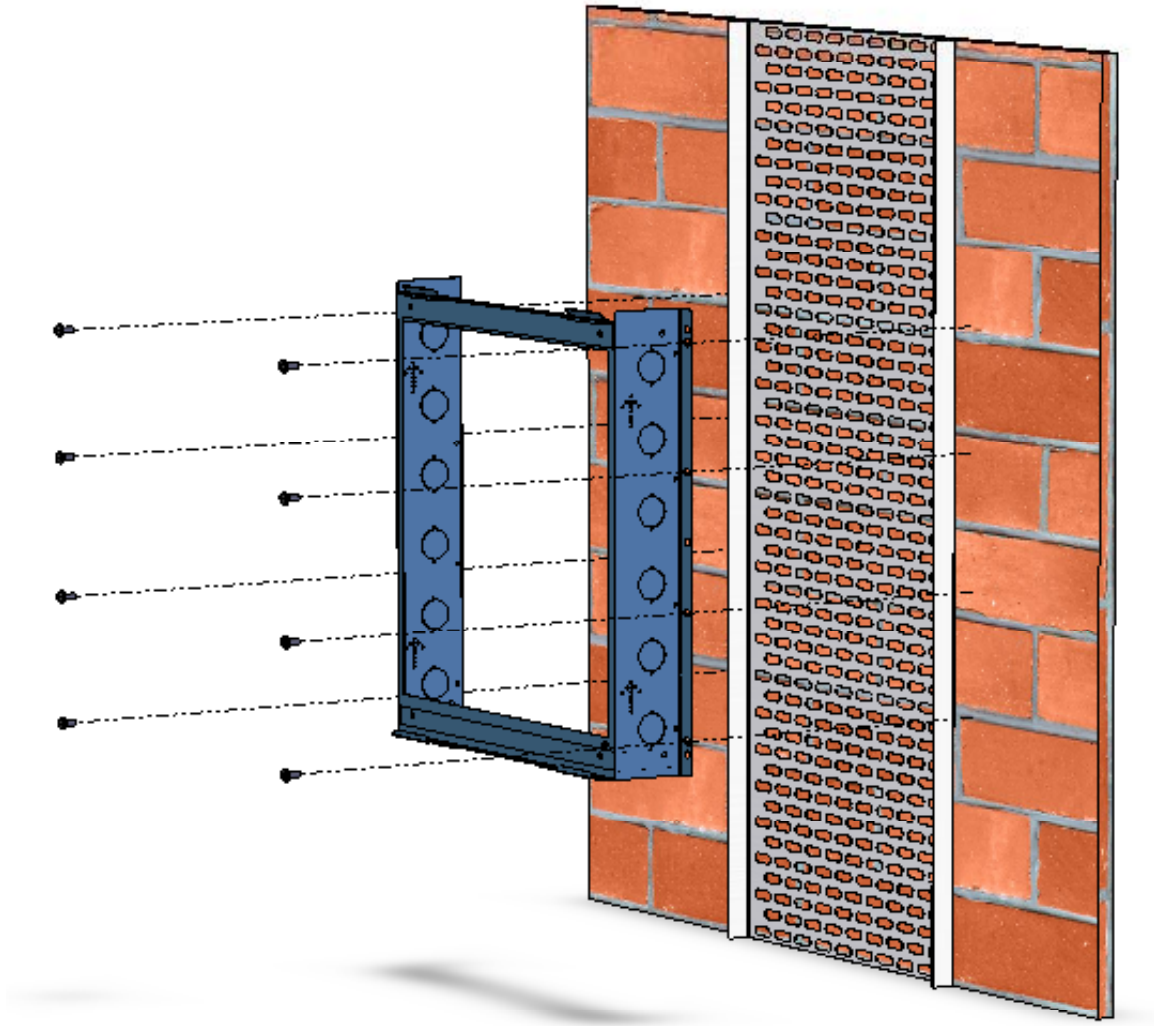Attach the dimmer to the bracket as described in Section 6.6.

Figure 6.4: Wall Mounting A Wall Mount Dimmer Over Cable Tray

6.5   Wall mounting dimmers - Conduit cable entry

Use both the shallow wall mount bracket (supplied) and optional extended mounting bracket (JND-WM-EBP) to form an enclosure. Place the deep bracket over the shallow bracket, so that the tags in the back of the deep plate fit into the mating slots in the shallow bracket, noting the orientation marks on both pieces. Use four thread-cutting screws (supplied) at each side to screw the two pieces together, forming an 80mm deep enclosure. The enclosure formed has an assortment of holes to suit 25mm and 32mm (1" and 1-1/4") conduit end nuts on all four sides.

Place the assembly against the wall at the desired location, and mark and drill holes for at least 4 fixing points. Mount the enclosure on the wall.

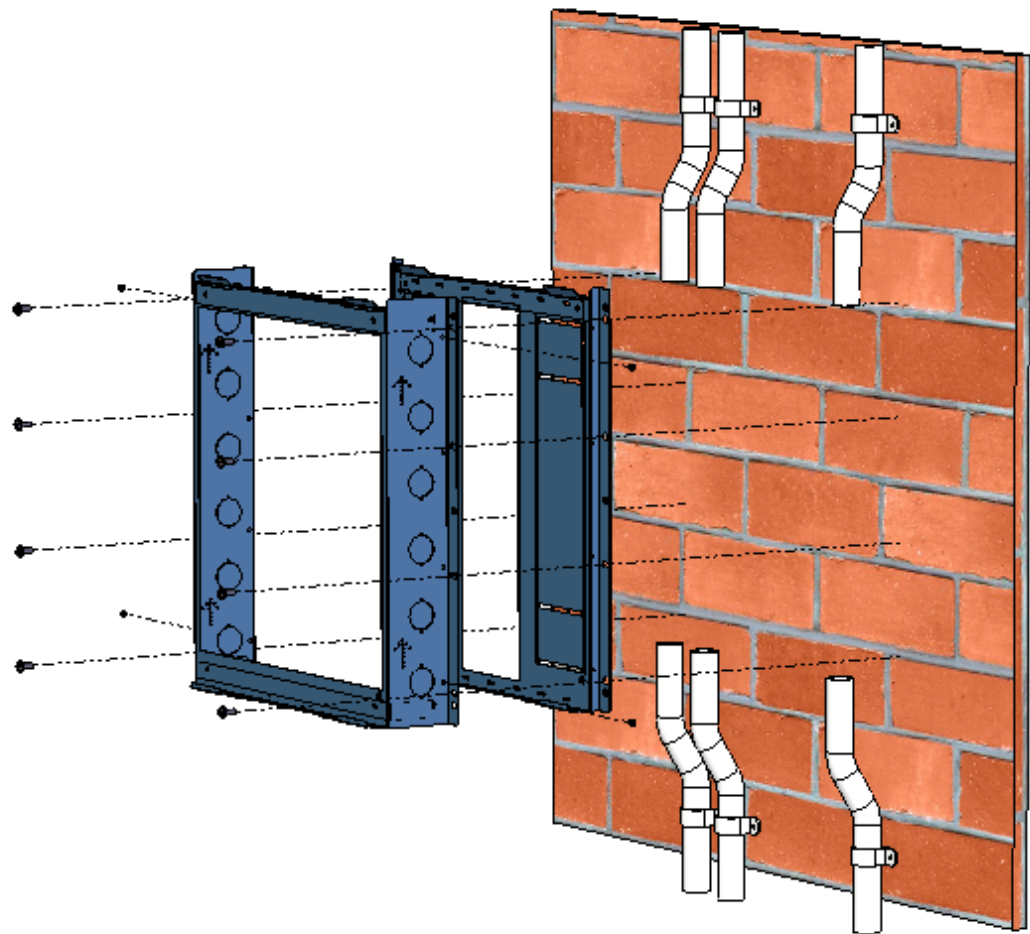Attach the dimmer to the bracket as described in Section 6.6.

Figure 6.5: Wall Mounting A Wall Mount Dimmer With Conduit Cable Entry

6.6 Mounting the dimmer to the bracket

Dimmers are attached to the pre-mounted brackets as follows:

1. Remove the dimmer's two front panels (sixteen screws).

2. Hang the top edge of the dimmer on the two bracket tabs. These support the weight of the dimmer while allowing the bottom of the dimmer to pivot away from the bracket.

3. Feed any cables (mains supply, output or control) into the rear of the dimmer and terminate them as necessary. This may only be performed by a licensed electrician.

4. Latch the dimmer onto the bracket by lifting the dimmer a few millimetres and allowing the bottom two bracket tabs to engage.

5. Lock the dimmer in place with one M4 screw at the bottom right inside corner.
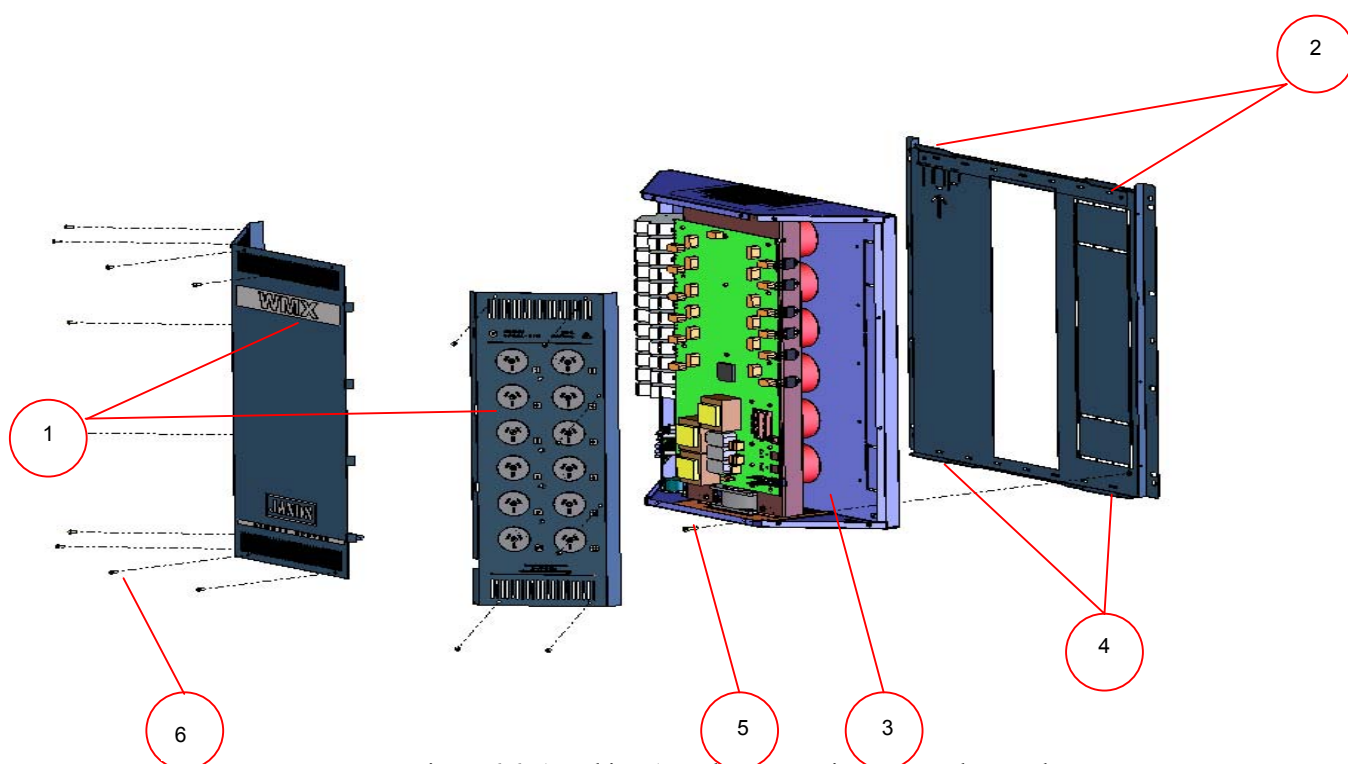
6. Re-attach the front panels.

Figure 6.6: Attaching A Wall Mount Dimmer To The Bracket

7.0   Maintenance

With care, the WMX dimmer will require little or no maintenance.

WARNING

DO NOT ALLOW THE ENTRY OF LIQUIDS OF ANY SORT INTO THE DIMMER CHASSIS.

EXTERNAL CLEANING:

If the front panels require cleaning, wipe with a mild detergent on a damp soft cloth.

DO NOT spray liquids onto the front panels.

DO NOT use solvents for cleaning the front panels.

INTERNAL CLEANING:

The WMX dimmer will require little internal maintenance other than periodic flushing of dust build up to prevent the fan and air-path becoming clogged with dirt or fluff.

- ISOLATE POWER to the dimmer (by disconnecting the power cable or locking off the mains supply isolator)

- Remove the front panels

- Blow clean the fan and internals with compressed air

- DO NOT "spin" the fan with compressed air - the blades may break off

- When the fan and internals are clean, replace the front panels and screws, then re-connect the power cable

ROUTINE MAINTENANCE:

WMX dimmers should be routinely checked and maintained at six- to twelve-month periods.

The maintenance routine should include:

- Inspection of chassis for evidence of impact damage and physical abuse

- Inspection of outlets for wear and damage

- Inspection of power cable for wear and damage

- Electrical checking of ground integrity from power cable to chassis

- Electrical checking of ground integrity from power cable to outlet grounds

- Flushing of dust build up

- Testing the operation of all front panel switches and breakers

8.0   Technical Data and Specifications

PARAMETER	WMX
No. of Channels:	12
Input Power Requirements: 3 phase Star only	415 VAC Phase-Phase @ 40A/phase protected at 50A/phase max Full size neutral required
User Protection	Safety Extra-low voltage and Earthed enclosure Impulse withstand voltage 2500V
Maximum Power / Channel	2.4 kW
Minimum Power/Channel	25W
Maximum Dissipation	<24 W/channel (<300 W total)
Maximum Ambient Temp	40ºC
Control Signal	ANSI E1.11 DMX-512-A Protocol
DMX Input	5 pin AXR male / female
Test Function Level	Individual Channels @ 100% Group Channels @ 20% steps
LED Indicators	DMX, FAULT, Phases A, B, and C
Output Protection	12 x 10 Amp thermal/magnetic circuit breakers
Over-temperature cutout	Electronic: 83°C rising, 78°C falling Mechanical: 90°C
Over-voltage cutout	Average 290VAC
Ingress protection	IP20
Size (mm) - Dimmer - Shipping	485mm (w) x 490mm (h) x 145mm (d) 630mm (w) x 580mm (h) x 190mm (d)
Weight	16.6 kg net / 19.0kg gross

Table 8.1: Technical Data And Specifications

8.1 DMX connector pin-outs

PIN No	CONNECTION (DMX IN)	CONNECTION (LOOP)
1	SHIELD	SHIELD
2	IN-	OUT-
3	IN+	OUT+
4	nc	Nc
5	nc	Nc

Table 8.2: DMX Connector Pin Outs

8.2 Mains wiring colour codes

Phase A	Red
Phase B	White
Phase C	Dark Blue
Neutral	Black
Earth	Green/Yellow

Table 8.3: Mains Wiring Colour Codes