

# Dual Refresh Kit Installation Manual

MCA-M06028364



SAFETY US-CA  
SÛRETÉ US-CA  
E544640



RETROFIT SIGN CONVERSION  
FOR USE ONLY IN ACCORDANCE  
WITH KIT INSTRUCTIONS BY SIGN  
MODEL MCA-M06028364  
MANUFACTURED BY MELITRON  
CORPORATION



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# Product Introduction

Melitron is a full service contract manufacturer of custom engineered metal enclosures and electro-mechanical systems. Providing design, manufacturing, assembly and supply chain expertise, we deliver single source solutions to leading brands and innovative startups competing in global technology markets.

## 1. Before Using the Product

### 1.1 Safety Precautions

When installing electrical appliances, basic precautions should always be followed to reduce the risk of fire, electric shock and injury to person, including the following:

- **WARNING-** Risk of fire or electric shock. Retrofit kit installation requires knowledge of sign electrical systems. If not qualified, do not attempt installation. Contact a qualified electrician.
- **WARNING-** Risk of fire or electric shock. Install this kit only in host signs that have been identified in the installation instructions.
- **WARNING-** Risk of fire or electric shock. Installing this kit results in the outdoor digital menu board (ODMB) exceeding the electrical rating on its nameplate. Refer to the label on the kit for the correct electrical rating and ensure that the supply wire gauge and branch circuit protection is sufficient.
- **WARNING-** Risk of fire or electric shock. Installation of this retrofit kit may involve drilling or punching of holes into the structure of the sign. Check for enclosed wiring and components to avoid damage to wiring and electrical parts.
- **WARNING –** To prevent wiring damage or abrasion, do not expose wiring to edges of sheet metal or other sharp objects.
- Read all instructions before installing this product.
- Examine all parts that are not intended to be replaced by the retrofit kit for damage and replace any damaged parts prior to installation of the retrofit kit.
- Do not make or alter any open holes in an enclosure of wiring or electrical components during kit installation.
- Repair and seal any unused openings in the electrical enclosure. Openings greater than 12.7mm (1/2") diameter require a metal patch secured by screws or rivets and caulked with non-hardening caulk. Smaller openings may be sealed with non-hardening caulk.
- Wiring procedures and connections should be in accordance with the National Electric Code (NEC & CEC) and/or local electrical codes.
- Do not operate the product if a malfunction occurs. Disconnect power at service panel and have the product inspected by a certified electrician before use.
- To disconnect the product, remove both inner panels and turn the disconnect switch to the OFF position.
- Install this product only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.
- To prevent damage to the product, do not block air intakes or exhaust in any manner.
- Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock or fire, or damage the product.

## 2. Specifications

### 2.1 Kit Contents

Model	Description
M06027980	Receptacle Enclosure
M06027976	Media Player Enclosure
M06028092	Air Intake Box
M06028227-C01	Hardware Kit
M06028001	Conduit Access Bracket

Note that the M06028227-C01 hardware kit consists of 3 bags, with the following contents:

Bag 1	Bag 2 (Labelled Screen 1)	Bag 3 (Labelled Screen 2)
Spare Filter	CAT6 cable (7 feet)	CAT6 cable (10 feet)
Bag of Hardware Required for Install: <i>-14x M4 nuts</i> <i>-2x M4 hex head screws</i> <i>-2x toothed washers</i> <i>-10x cable ties</i> <i>-4x Velcro cable ties</i> <i>-ring terminal</i>	2x HDMI cables (6 feet)	2x HDMI cables (10 feet)
Bag of Spare Hardware: <i>-6x M4 nuts</i> <i>-2x M3 nuts</i> <i>-2x M4 hex head screws</i> <i>-2x toothed washers</i>		
Retrofit Kit Label		

### 2.2 Kit Electrical Rating

Voltage	Frequency	Amperage
120 V	50/60 Hz	15 A

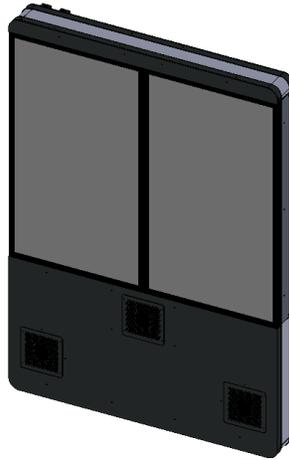
### 2.3 Required Tools

- T30 Torx Security Bit
- T20 Torx Bit
- Cordless drill
- 5mm drill bit
- 7 mm socket
- Ratchet
- Flat head screwdriver
- Phillips screwdriver
- Grinder

## 2.4 Intended Use

This retrofit kit is only intended to be installed in MC-710255 outdoor digital menu boards (see Figure 1)

Figure 1: MC-710255 ODMB

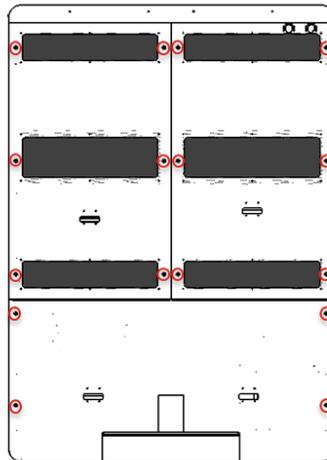


## 3. Existing Hardware Removal

### 3.1 Covers Removal

- Use T30 Torx Security Bit to remove 6x screws per middle rear cover and 4x screws from the bottom rear cover of the menu board
- Remove the middle covers and then the bottom cover and set them aside for later use (note that all fasteners are captive)
- Turn the main disconnect switch to 'OFF'

Figure 2: Location of screws on rear covers



### 3.2.1 Receptacle Removal

- Open the receptacle box and unplug the power cords
- Use Phillips screwdriver to remove receptacle covers and access the wiring
- Use 7mm socket to unfasten nut holding the ground wire from the conduit
- Use Phillips screwdriver to loosen 2x screws holding the live and neutral wires from the conduit
- Use 7 mm socket to unfasten 4x nuts and remove the receptacle box from the frame of the menu board
- Remove the flexible conduit from the disconnect switch

### 3.2.2 Patch Panel Box Removal

- Use flat head screwdriver to loosen 4x screws and remove the patch panel cover
- Disconnect the CAT6 cable
- Unfasten 4x nuts using 7mm socket and remove the patch panel box

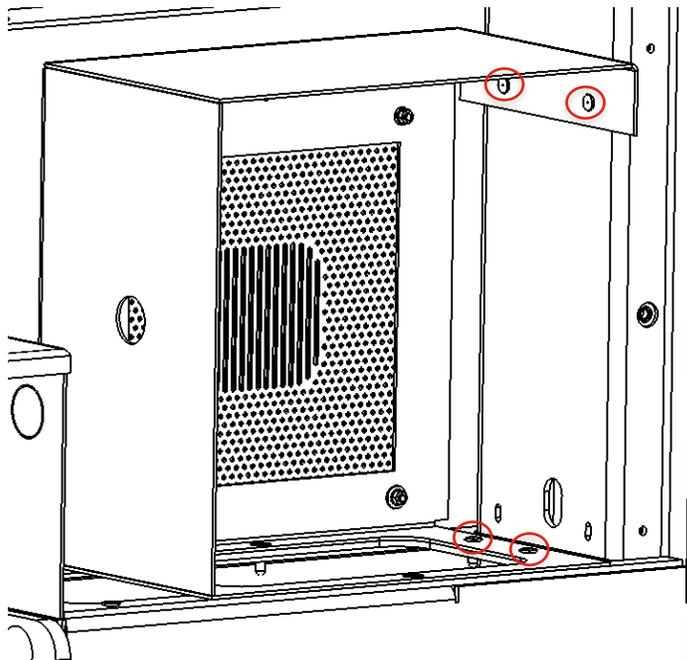
Figure 3: Patch panel box to remove



### 3.2.3 Speaker Box Removal

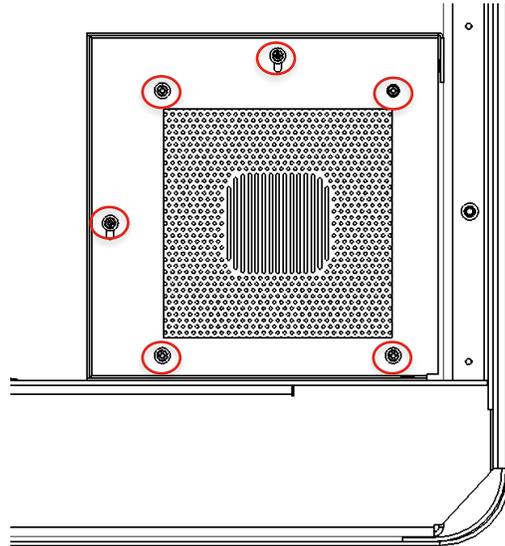
- The right speaker box (viewing from the back of the menu board) needs to be removed to provide space for the air intake box
- Remove foam from the speaker box
- Use drill and 5mm bit to remove 4x rivets from the speaker box (drill and bit shouldn't exceed 10" in length in order to drill straight on)

Figure 4: Rivets to be drilled out



- Use 7mm socket to remove 6x nuts and detach the speaker box and grill from the frame. Set the grill aside for later use and discard the speaker box

Figure 5: Nut locations



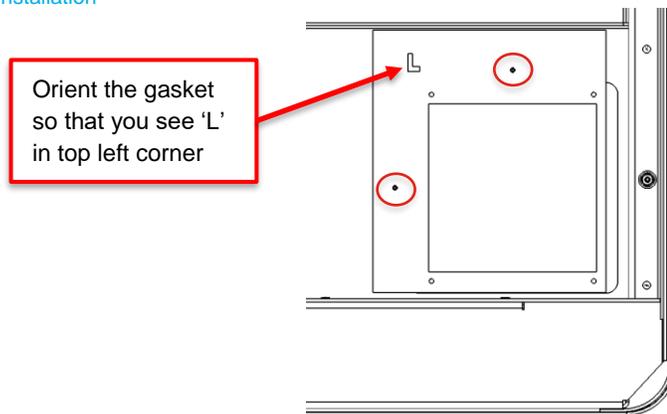
## 4. Installation

### 4.1 Installing Boxes

#### 4.1.1 Air Intake Box

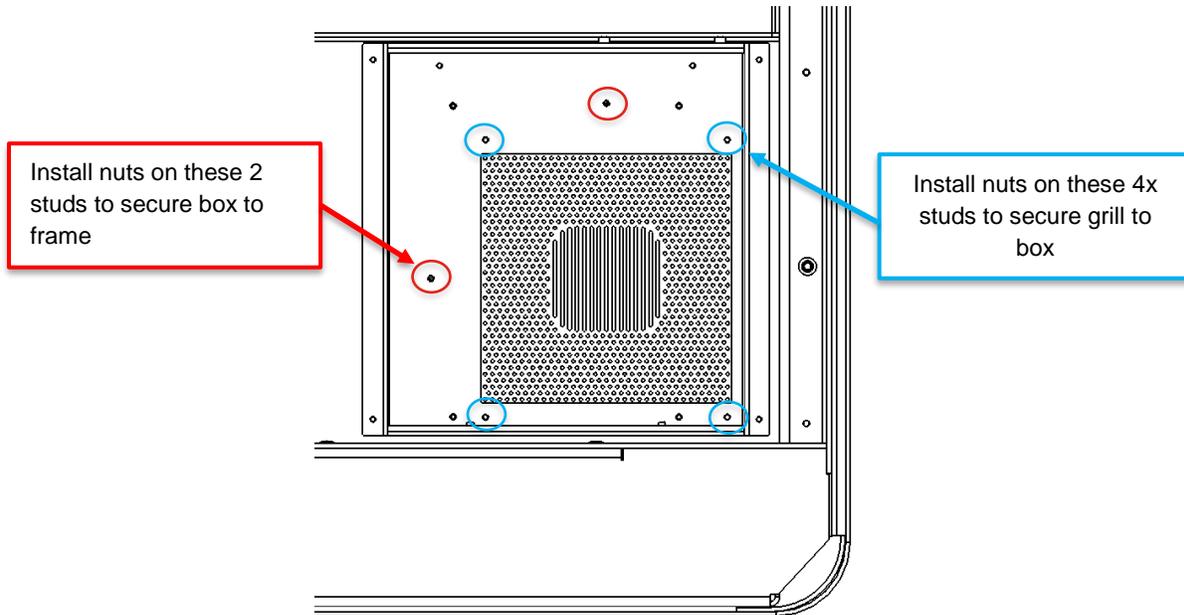
- Place the provided gasket on the two studs on the frame as shown in Figure 6

Figure 6: Gasket installation



- Remove the rear cover and fan bracket from the air intake box by using 7mm socket to unfasten 4x nuts each
- Install the empty box on the same two studs shown in Figure 6 and secure using 7mm socket and 2x nuts from the hardware kit (there are two bags containing nuts in the kit, all required hardware is in the larger bag while the smaller bag contains spares)
- Re-install the speaker grill by inserting studs through the 4x clearance holes in the gasket and air intake box
- Secure the speaker grill using 7mm socket and 4x nuts from the hardware kit. Ensure that the grill is flush with the front of the menu board

Figure 7: Air intake box and speaker grill installation

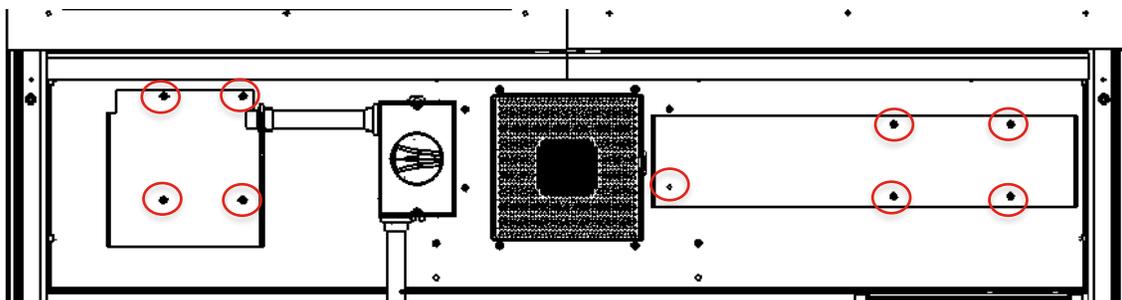


- Re-install the fan bracket

#### 4.1.2 Mounting Brackets

- Detach the mounting brackets from the receptacle and media player enclosures and install on the studs shown in Figure 8
- Use 7mm socket to secure each bracket with nuts from the hardware kit

Figure 8: Mounting bracket locations



#### 4.1.3 Receptacle Enclosure Installation

- Install the receptacle enclosure onto its mounting bracket
- Using 7 mm socket, remove 2x screws from the front cover of the receptacle enclosure & take off cover
- Remove the plug highlighted in Figure 9 and connect a conduit fitting between the receptacle enclosure and the disconnect switch, as shown in Figure 10 (the disconnect switch may need to be temporarily unfastened from the frame in order to do this)

Figure 9: Plug in the side of the receptacle enclosure

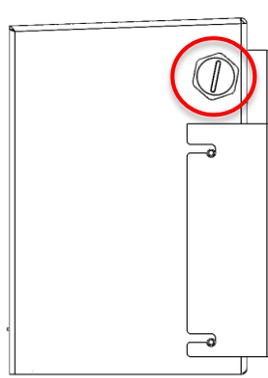
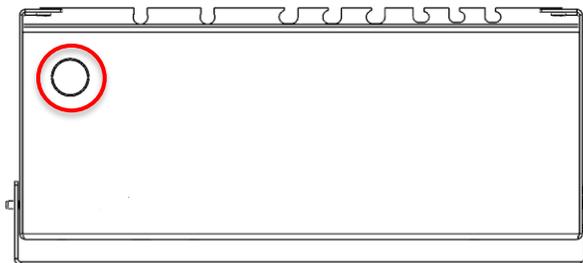


Figure 10: Installed receptacle enclosure, utilizing a 3" conduit fitting between the disconnect switch and side of the receptacle enclosure



- Alternatively, route conduit from the disconnect switch to underneath the receptacle enclosure and utilize the knockout highlighted in Figure 11

Figure 11: Knockout on the bottom of the receptacle enclosure



#### 4.1.4 Media Player Enclosure Installation

- Install the media player enclosure onto its mounting bracket
- Using 7 mm socket, remove 4x screws from the front cover of the media player enclosure and take off cover

- Connect the media player enclosure to the air intake box with 2x screws and toothed washers using 7mm socket (see Figure 12)

Figure 12: Screw locations in media player enclosure to fasten to air intake box

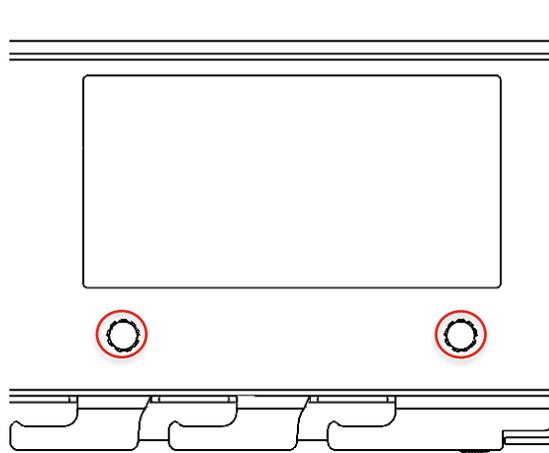
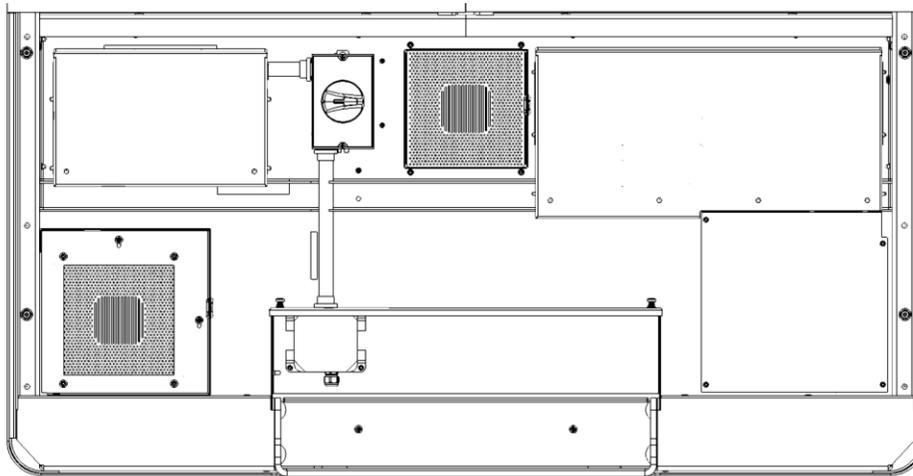


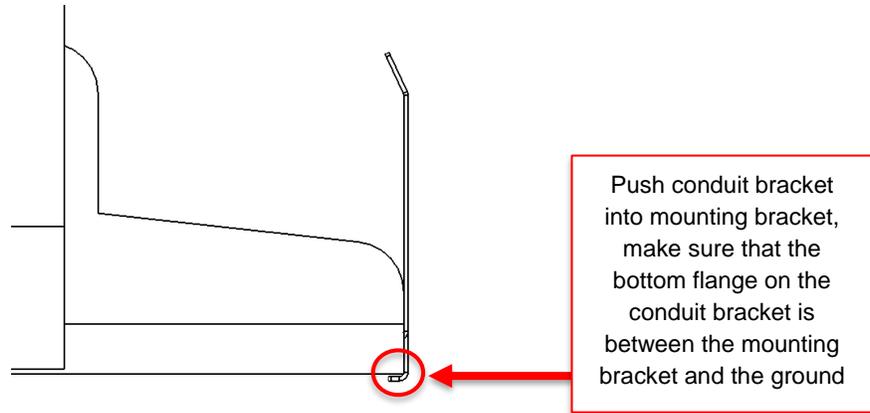
Figure 13: Boxes installed on their brackets



#### 4.1.5 Conduit Bracket Installation

- Press fit the conduit bracket into the mounting bracket, note that there is a flange on the conduit bracket that goes underneath the edge of the mounting bracket (see Figure 14)
- Knockout the tabs in the conduit bracket as needed and install conduit adapter(s) (not provided by Melitron)

Figure 14: Boxes installed on their brackets

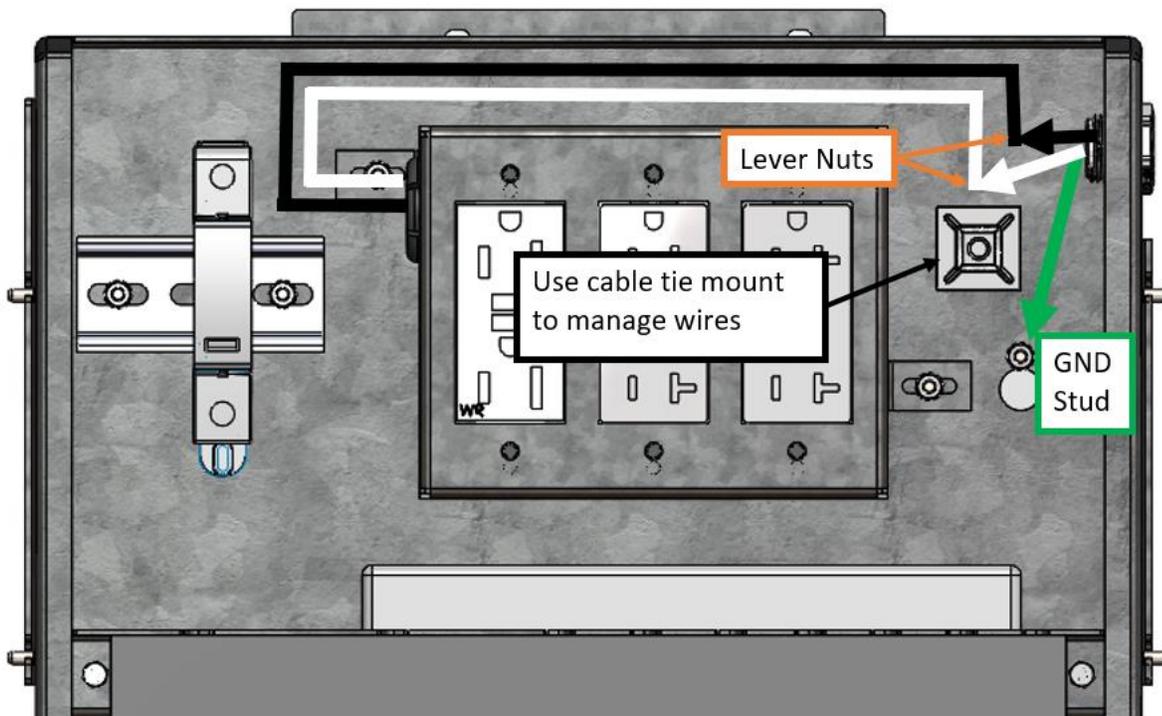


## 4.2 Networking & Communication

### 4.2.1 Cable Management in Receptacle Enclosure

- Connect the live and neutral wires from the disconnect to the corresponding wires in the receptacle enclosure using the provided lever nuts
- Crimp a ring terminal (provided in hardware kit) onto the ground wire coming from the disconnect
- Fasten the ring terminal to the ground stud in the receptacle enclosure (see Figure 15)
- Plug in 2x display power cords

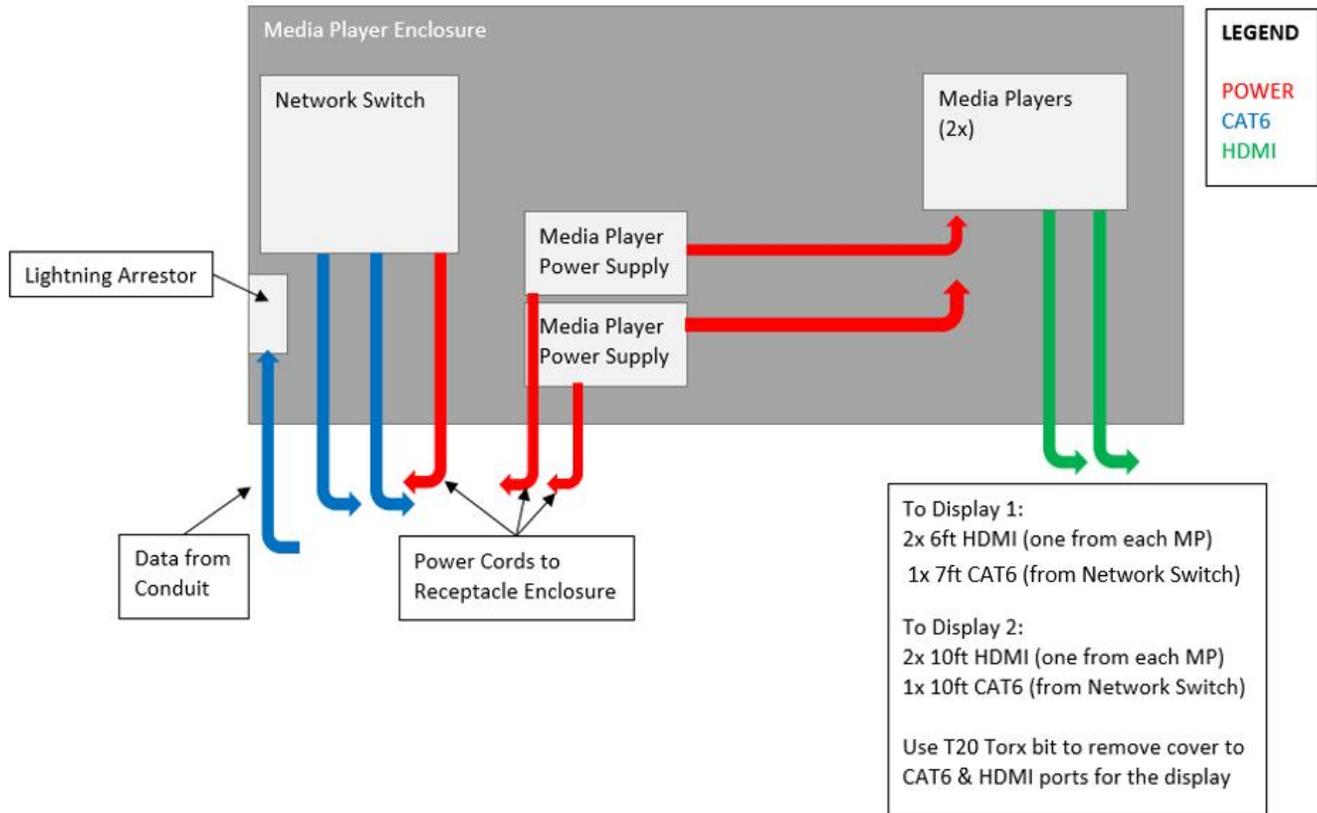
Figure 15: Wiring in receptacle enclosure



#### 4.2.1 Cable Management in Media Player Enclosure & Air Intake Box

- Route the cables as shown in Figure 16
- Utilize slots in the box, cable clamps, zip ties and velcro to manage the cables
- Ensure that there are no cables resting on the bottom of the ODMB. All cables must be secured at least 1/2" from the bottom

Figure 16: Routing of cables in media player enclosure



- Route the fan power cord through the cutout between the air intake box and media player enclosure, then cable clamp it the wall of the media player enclosure
- Fasten the thermostat bracket onto the media player bracket as shown in Figure 17
- Connect the power cord to an outlet in the receptacle enclosure
- Utilize zip ties to manage cables, as shown in Figures 17 & 19. In the media player enclosure, ensure that the wiring is below the top of the enclosure so that it doesn't get pinched when the cover is put on. In the air intake box, ensure that the wires are tied away from the blades of the fan

Figure 17: Installed thermostat and fan power cord

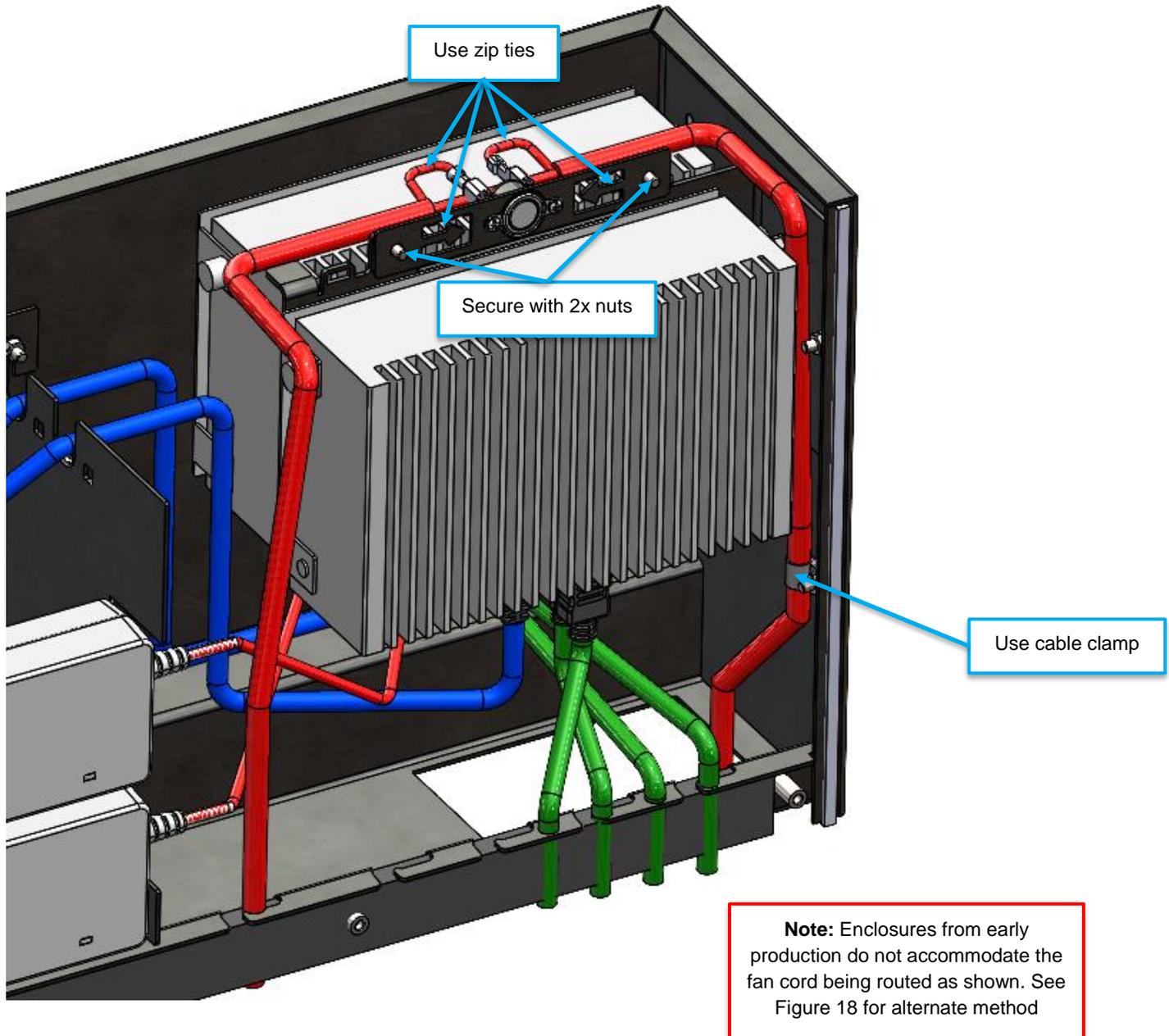


Figure 18: Alternative method for installing thermostat and fan power cord

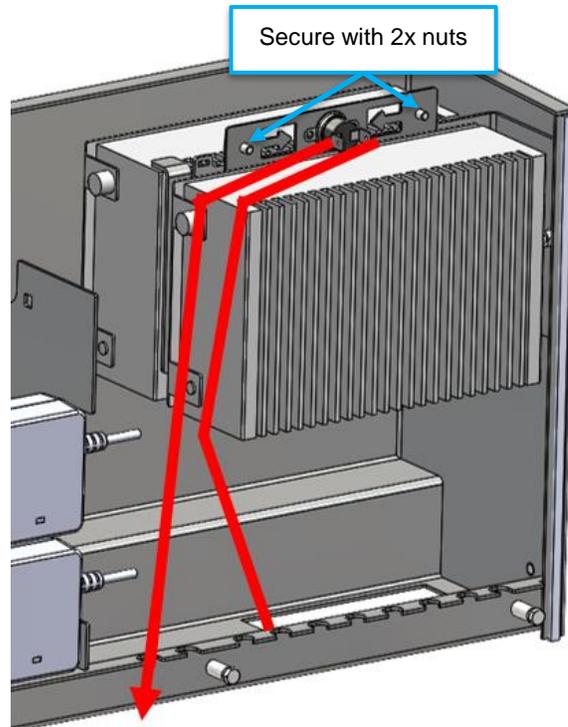
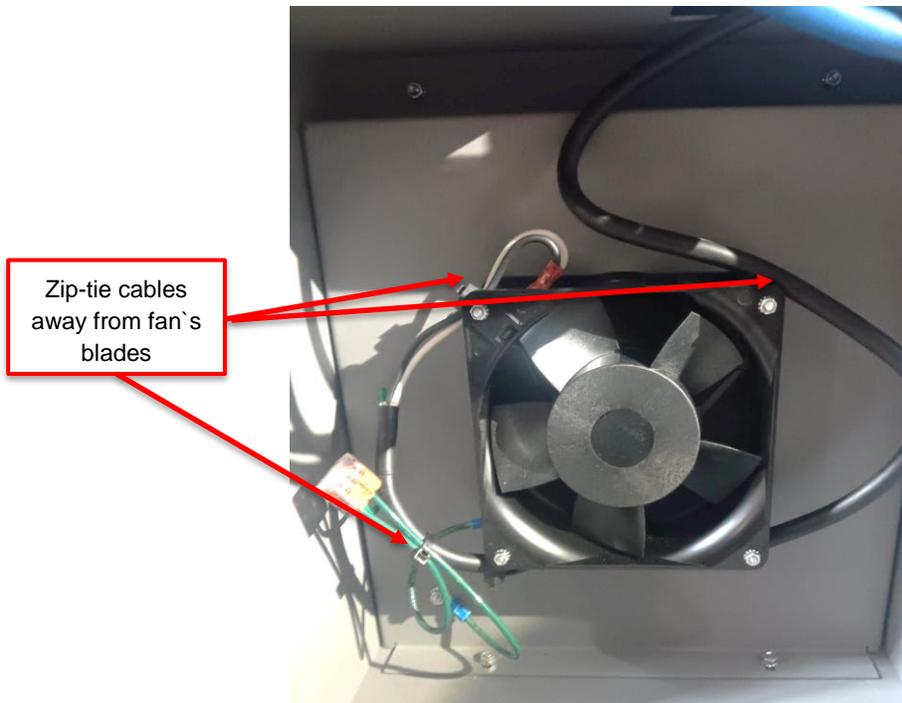


Figure 18: Air intake box wire management



### 4.2.3 Commissioning

- Ensure all connections are properly grounded and terminated
- Return disconnect to the 'ON' position
- Ensure GFCI is operational by pressing the reset button. The red light should be off
- Ensure the power surge protection is functional by checking to make sure a green light is on

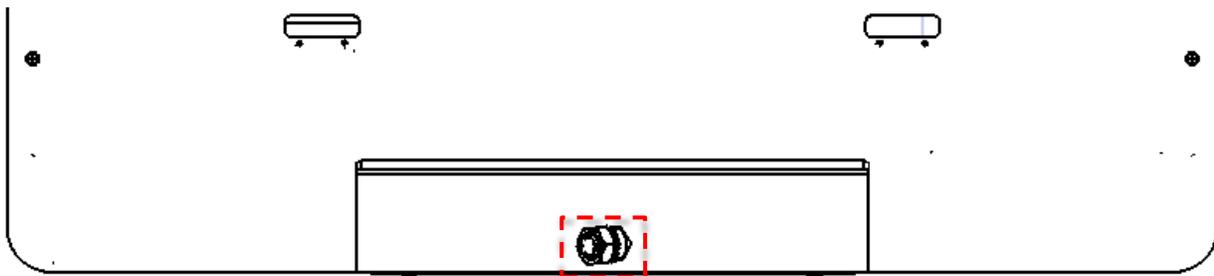
Figure 19: Disconnect switched to the "ON" position



### 4.3 Re-Assembly

- Re-install covers for receptacle, media player and fan boxes and secure fasteners using 7mm socket
- Cut a clearance in the bottom rear cover for the newly installed conduit connector(s) using a grinder or alternative appropriate tool

Figure 20: Installed conduit adapter(s) will require a clearance cut out

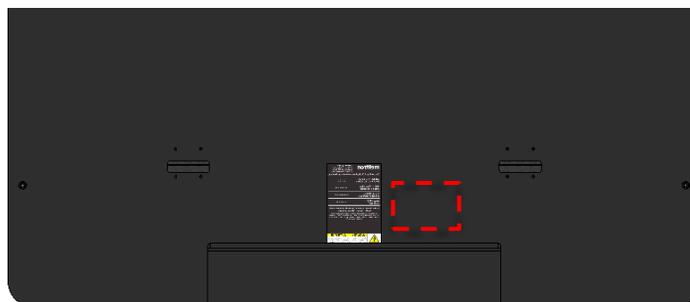


- Re-install bottom and middle rear covers and tighten screws using T30 Torx security bit

### 4.4 Labelling

- Apply "retrofit kit" label from the hardware kit onto the rear bottom cover of the unit, beside the existing label (see Figure 21)

Figure 21: Location for label



## 5. Filter Maintenance

- Due to different environments the unit is installed in, the period in which to check the filter will vary.
- Filter should be checked periodically to make sure if the filter is still functioning and not dirty.
- Remove the bottom rear cover of the unit and then the cover of the fan enclosure as seen at the bottom right of Figure 13. Remove the bracket that holds the fan as seen in Figure 18 to access the filter behind. Check the filter if it needs to be replaced.
- If so, use the spare filter that was provided and located inside the unit. The dirty filter can be washed, dried and reused. If not available or the filter is damaged, use the specifications below to help buy one.

Specification	
Length	10" Nominal
Width	10" Nominal
Depth	0.5" Nominal
Filter Material	Synthetic Material, suitable for outdoor applications
Filtration Rating	45 PPI
Colour	Black
Initial Resistance	Maximum 0.23 in WC @ 300 FPM

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