AV In-Wall Game-changer

Aesthetics Meets Fire Safety

FIRST FIRE-RATED, IN-WALL
BOX FOR AV APPLICATIONS

FSR

INTRODUCTION

AV technology advances have created new opportunities for commercial displays everywhere – from complex airport wayfinding to executive conference rooms. In the past, AV monitors sat on a table, shelves or pedestals with bulky cabling dangling from the back and sides. Flat screen TVs and monitors – plasma, LCDs, LEDs and now OLEDs – are all designed to be cleanly mounted.

Today's AV systems and their connectivity are typically the final line item to be budgeted for and the last infrastructure component to be installed. Last minute "make-shift" connectivity often occurs, leaving unsightly cables behind protruding TV mounts. In-wall mounts save tons of space and offers flexibility and protection of wall plates, panels and cable connections.

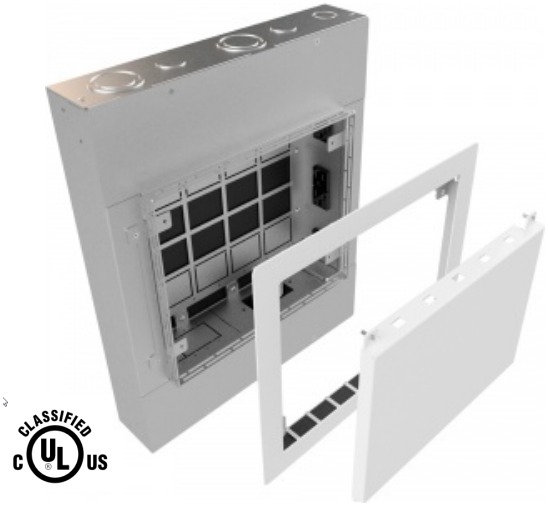
In-wall mounting or "pass-throughs" offer some organization but creates problems when poking through fire-rated walls. FSR offers the only solution to provide a recessed fire-resistant electrical box for mounting electrical, audio-visual or other digital media within a fire-resistant wall while maintaining the one-hour fire rating of the wall. FSR's Project Wall Box, PWB-FR-450 in-wall boxes offer straightforward flat panel installations, stress-free set-ups, and cost-effective technology upgrades while meeting stringent fire code regulations for customer safety and equipment security.

THE PWB-FR-450 ADVANTAGES

The PWB-FR-450 is designed for applications where you need to mount larger interfaces or equipment behind a video display. The PWB-FR-450 in-wall boxes are engineered to provide storage of all AV system components recessed in the wall. The PWB-FR-450 allows the display to be mounted as close to the wall as possible which reduces tampering and provides additional security in all environments:

Sideview: Thin Mount

- Hospitals
- Airport Wayfinding
- Hotel Interactive Display Boards
- Conference Hall Signage
- Shopping Mall Advertising
- Concert Halls & Gathering Centers
- Huddle Spaces



The PWB-FR-450 is the only fire-rated, UL Classified 1479 wall box in the infrastructure industry. This box has passed harsh flame, temperature and water testing by UL labs to earn the fire-resistant rating of one-hour within a fire-rated wall. This means flames will not penetrate into the adjoining space while keeping temperature within the one-hour limit making it the safest wall box on the market.

This unique wall box eliminates the need to construct double walls for the inside mount, for which other in-wall boxes would be required to meet code and AHJ approvals. It is designed for walls that require more opening than is allowed by code to accommodate large monitors, such as Crestron's DM-RMC-4K-SCALER C monitor. In addition, there are removable internal brackets to be customized to mount a variety of devices.

It is constructed of heavy-duty 14-gauge steel and comes in either black or white to fit all interior decorating designs. It contains four pre-wired AC outlets and knock-outs to accept other cable types and connector formats. There is a built-in exit slot to pass cables from the interior of the box to the display unit, eliminating unsightly cord clutter.

THE AV MOUNT GAME CHANGER: PWB-FR-450 MEETS UL-RATING

The PWB-FR-450 is the first in-wall box to pass extensive testing by UL, meeting all through-penetration firestopping systems for fire-resistive openings. The main purpose of this listing is to prevent the spread of fire through a prescribed period of time (one-hour rating). Testing of the fire resistive assemblies were conducted at UL's testing lab, which is the most prominent testing lab evaluating products designed for use in firewall breaches.

The UL rating is accepted by the National Fire Codes, published by the National Fire Protection Association (NFPA), which contains recommended practices and technical data for determining fire-resistive requirements. Standards for fire-resistive tests are found through the American National Standards Institute (ANSI), ASTM, UL and the NFPA. The two most widely accepted are UL 1479, entitled *Fire Tests of Through-Penetration Firestops* and ASTM E-814 (international) *Standard Test Method for Fire Tests of Penetration Firestop Systems*.

Section 300.21 of the National Electrical Code® (NEC®) covers electrical system penetrations through fire-resistant rated wall, partitions, floors, or ceilings. The main purpose of this requirement is to control the possible spread of fire or combustion of products. The Code also states, in an informational note, that qualified testing laboratories' directories contain listing installation restrictions necessary to maintain the fire-resistive rating of the assemblies where penetrations or openings are made. Details and installation requirements contained in the UL Fire Resistance Directory will show that many common penetrations can be protected in a relatively straightforward manner.

Code requirements clearly define fire-resistant construction and the requirements for through penetration firestopping, the details of fire-resistant design, and the responsibility of the design professionals. Architects are responsible for the design of fire-resistive walls,

floors, partitions, floor-ceiling and other assemblies, and the protection of openings, as well as the horizontal and vertical fire and smoke barriers. The engineers or system designers are responsible for knowing the location of all fire-rated penetrations, partitions or smoke barriers. The information required on project plans and in specifications is comprehensive, but necessary, for contractors to include this work in their estimates and provide installations that comply with code requirements.

Approval of through-penetration firestop systems is obtained when a specific combination of the tests pass F- and T-ratings, measured in hours, in which a fire-rated system has prevented the passage of fire. The "F" (flame) rating defines the amount of time before flame pokes through openings to the unexposed side of the test assembly. The "T" rating is a measure of the thermal conductivity of a firestop system and can be considered a temperature rating. This is also the time required for various points on the unexposed side of the assembly to rise 325 degrees over the starting (ambient) temperature. This provides information relative to how hot penetrants might react in a fire exposure.

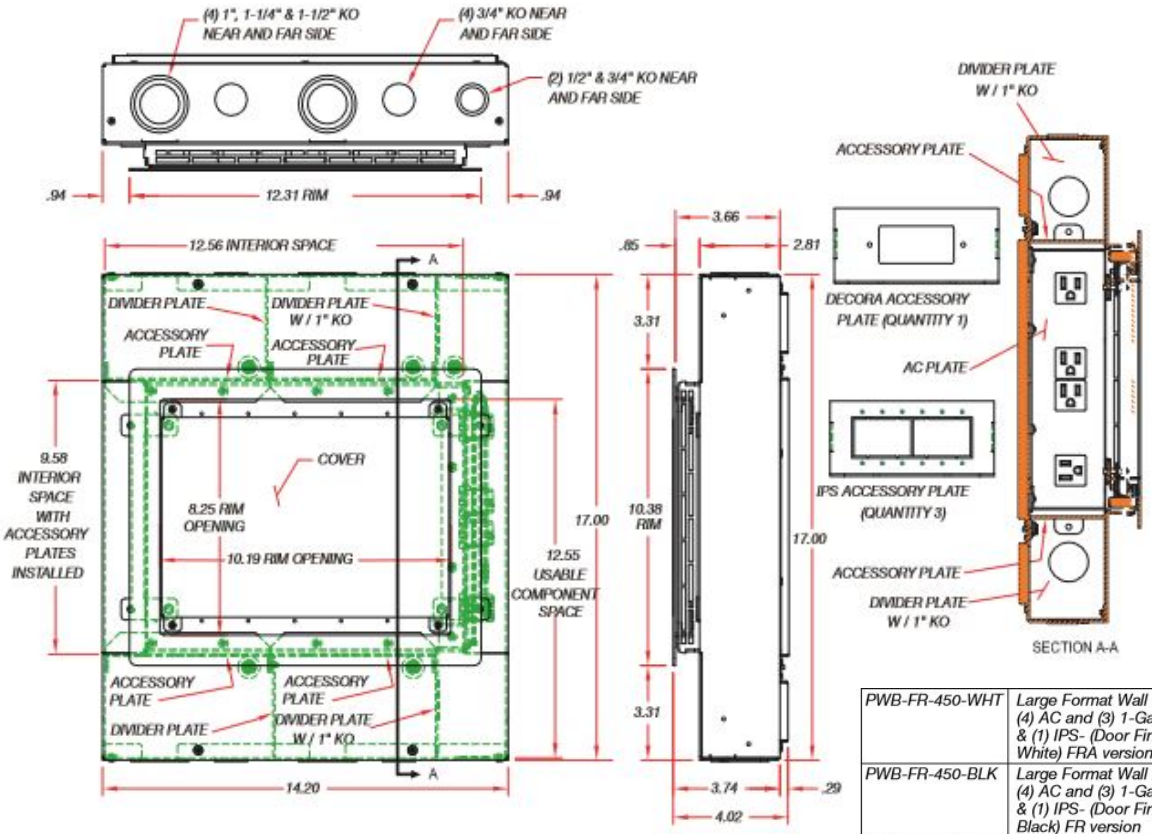
During the testing process, intumescent material is used which creates a chemical reaction in which heat applied to the firestop material causes it to expand quickly and in doing so, closes off the opening and prevents the fire from spreading. Intumescent products are very common in the industry. The PWB-FR-450 is constructed with intumescent material mounted strategically within that was tested and rated up to 60 minutes of protection. In addition to filling the box with expanding intumescent material during a fire, The PWB-FR-450 incorporates intumescent material in the front panel openings to expand and block off any flames during a fire. During normal operation, the cover of the PWB-FR-450 is ventilated top and bottom to provide convection cooling and allows the cables to exit safely from the interior of the box to a display.

PWB-FR-450 EASE OF INSTALLATION

The PWB-FR-450 mounts in a typical 4" deep wall between the studs in a standard 16" wood or 24" steel stud bays. The ventilated cover is flush to the wall allowing minimal space between the wall and the monitor while hiding the cables and connectivity.

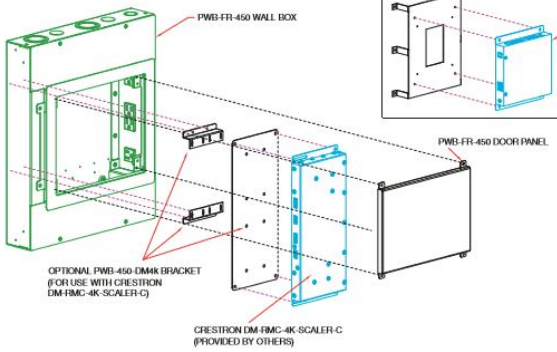
In addition to the four (4) pre-wired AC outlets along one vertical side of the box are four (4) more additionally isolated accessory plate mounting brackets to allow AC and low-voltage connections within the same box. There is a ½" – ¾" concentric knock-out (KO) on the top and bottom of the box for the AC conduit connections. One (1) inch KO's in the divider plates allow the use of one or more accessory plates for AC connections.

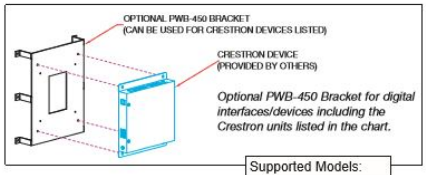
Three of the accessory plate brackets are punched for a single-gang standard Decora opening while the fourth bracket is punched for FSR's IPS Connector Plates. Behind each bracket is a ¾" and a 1"–1 ½" concentric KO providing ample wiring flexibility and easy installation. Any or all of the accessory plate mounting brackets can be removed to provide space to mount larger devices for all customer needs. The FSR IPS family of interconnect solutions offers a comprehensive selection of accessories. Simply select a plate that fits your application and available space, then select your internal connector plate.



PWB-FR-450-WHT	Large Format Wall box with (4) AC and (3) 1-Gang plates & (1) IPS- (Door Finish-White) FRA version
PWB-FR-450-BLK	Large Format Wall box with (4) AC and (3) 1-Gang plates & (1) IPS- (Door Finish-Black) FR version
PWB-450-MMS (Bracket only)	Optional PWB-450-MMS Bracket accommodates Digital interfaces & devices
PWB-450-DM4K (Bracket only)	Optional PWB-450-DM4SK Bracket accommodates Crestron DM-RMC-4K SCALER-C

Optional PWB-450-DM4k Bracket for Crestron DM-RMC-4K-SCALER-C





Supported Models:
DM-RMC-SCALER-C
DM-RMC-SCALER-S
DM-RMC-100-S
DM-RMC-200-C
DM-RMC-200-S
DM-RMC-200-S2
DM-RMC-4k-100-C

Specifications are subject to change without notice.

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