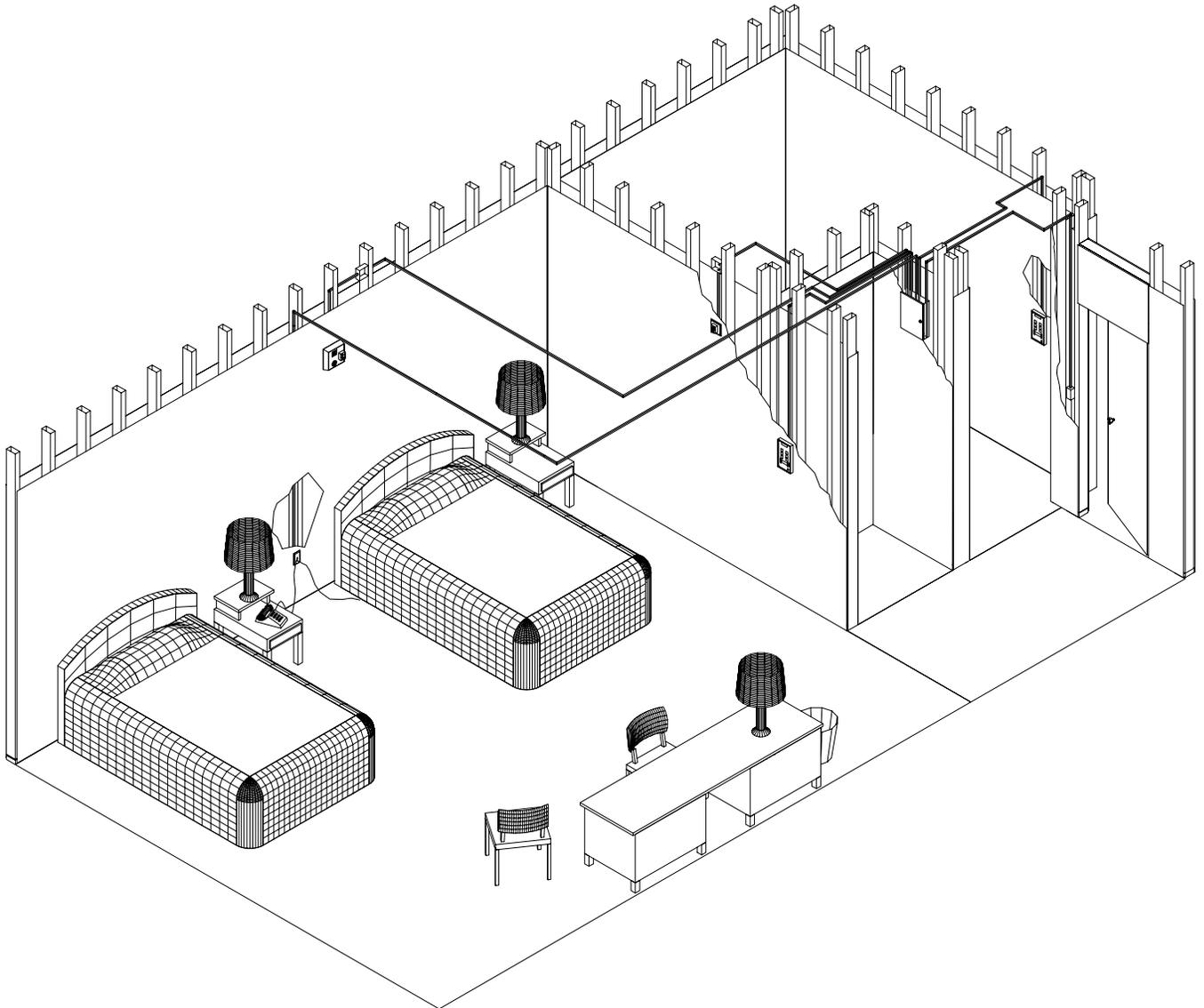


# ROOM VALET®

## Installation And Wiring Guide PARTS I, II, and III



# **ROOM VALET®**

*Visual Alerting System For The Hard of Hearing and Deaf*

## **Installation And Wiring Guide**

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# ROOM VALET®

## Installation And Wiring Guide

### Section I

#### Room Valet System Overview

**The Room Valet is designed for easy installation and is rugged enough to take daily abuses associated with the commercial hospitality environment.**

The Room Valet was specifically design to comply with the ADA guidelines. It is the first fully integrated alerting system designed specifically to meet the rigors of commercial installations providing features not found on any other product. The Room Valet meets and exceeds current A D A requirements for visual alarms and notification devices for hotels, motels, inns, boarding houses, dormitories, resorts, homeless shelters, halfway houses. As well as group homes, assisted and independent living centers, retirement homes, and any other similar living facility or transient lodging.

**The Room Valet is a hardwired, microprocessor based, fully supervised alerting system and its back up power supply assures operating reliability at all times.**

The Room Valet can be used to alert persons in private residences, condominiums or apartments. Basically any place where hearing normal audible notification signals such as the phone, door bell, alarm clock, smoke alarm, central alarm system, CO detectors, etc. is difficult.

The Room Valet is designed to be reliable, accurate and functional even under adverse conditions. Its built-in battery back-up system allows continuous operation for several hours in case of a power outage.

The Room Valets supervision system monitors its circuits, components and wiring, notifying if a failure is detected.

The Room Valet would be the primary notification system for non-emergency alerts such as the door, telephone and wake-up. It would provide secondary notification for life safety devices such as visual smoke detectors, visual/central alarm systems and CO detectors, providing tactile alerting and additional visual notification as back up.

The Room Valet was created from years of insight into the human needs of the hard of hearing. This was combined with the realization that the only available A D A solutions were products which fell dependably and logistically short of fulfilling its requirements. A product was needed to meet the performance demands of the commercial marketplace yet be user friendly.

## Room Valet Components:

(See figure 1-1)

### 1 - Room Valet Central Enclosure

The Room Valet Central Panel Enclosure is where the main control circuitry is housed for the System.

Inside the central panel enclosure is the system: main electronics module, power supply, battery, and any additional optional electronics.

The enclosure is flush mounted in a wall with a hinged, self-trimming, locking door.

The enclosure is designed to be installed in a closet, as shown in figure 1.1. Behind a door or under a counter are also good locations.

The location of the central panel enclosure does not necessarily need to be inside the room.

The central panel enclosure should be located within a 150 foot wire run of the designated room, with the display and other wire runs originating from that location back to the room(s).

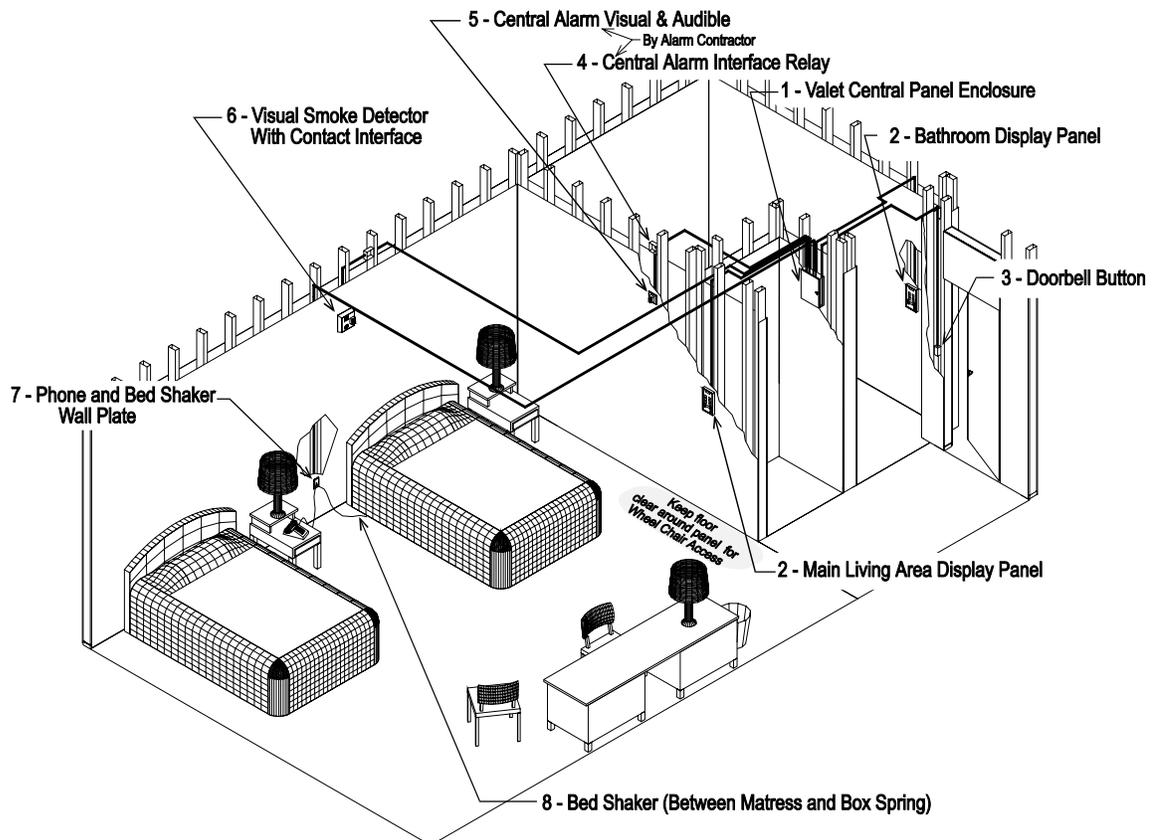


Figure 1.1 - Valet Component Layout in a Typical Room

### 2 - Room Valet Display Panel(s)

The Room Valet Display Panels are the user interface of the system.

The Display Panels attached to the walls on a self-latching back plate mounted to a standard, double-gang junction box in high visibility areas.

(Figure 1.1 shows typical panel locations for a two-room installation.)

## **Room Valet Display Panel(s)** **(Continued)**

Floor space should be left around the panels to allow wheel chair access to the panel(s).  
(See Figure 1.1)

At least one panel should be installed in each room.

The System can support up to six (6) display panels.

### **3 - Door Button**

Works similarly to a standard doorbell.

### **4 - Central Alarm Interface Relay\* (Not Part of The Room Valet System)**

This isolation relay serves as the demarcation point between the Central Alarm System and the Valet system.

### **5 - Central Alarm Signaler \* (Not Part of The Room Valet System)**

In hearing impaired sleeping areas a 110 to 170 candela strobe, is required depending on its mounting location.

**\*(These devices to be installed supervised and maintained by Central Alarm Contractor)**

### **6 - Smoke Detector (Not Part Of The Room Valet System)**

An in room Visual Smoke Detector is required.

The Smoke Detector needs an isolated set of Form "C" relay contacts to allow interfacing to the Room Valet System.

The GENTEX 710/CS or 7109/CS or similar smoke detector with strobe is ideal for use with the Room Valet and is typically installed as shown in figure 1.1.

If the in-room Smoke Detector is part of an addressable Central Alarm System then an addressable relay closure must be given to the Room Valet System by the Central Alarm System when the Smoke Detector is activated.

### **7 - Phone and Bed Shaker wall plate**

The Room Valet uses a bed shaker for tactile alerting.

The bed shaker is about the size of a hockey puck and contains a vibrating mechanism.

When the bed shaker is properly positioned between the mattress and box spring, the whole bed will vibrate.

The bed shaker cord has a 1/8" two conductor phono type jack which plugs into the wall plate that is wired to the valet central control box.

For convenience, the wall plate supplied with the Room Valet has the appropriate phono jack(s) installed along with a standard RJ11 telephone jack.

This plate configuration allows easy installation of both phone and bed shaker jacks near the bed as shown in figure 1.1, which satisfies most typical room installations.

## Display Panel (s)

The Valet Display is the input output device of the valet system.

The display measures 11" High 6" Wide and is approximately 1" Thick.

The Display Panel has six (6) main Icons for indicating alarms. (See figure 1.2)

The display panel also contains a clock that also functions as an alarm clock.

### Display Panel Features:

- 1 - Fire Indicator (RED) Icon is typically used to signal that the in room Smoke detector is activated.
- 2 - Phone Indicator (Green) Icon illuminates to signal that the telephone is ringing.
- 3 - System Malfunction (RED) Icon will light when a systems malfunction is detected.
- 4 - Strobe Window when the valet system is armed for the hearing impaired the strobe flashed for all alarms
- 5 - Alarm Clock Indicator Icon (GREEN) Signals that the valets on board alarm clock has been activated.
- 6 - Doorbell indicator (GREEN) signals the door-button has been pushed. For a second door, Icon can be configured to flash to differentiate between the doors.

7 - Emergency Alert Indicator (RED)  
Icon signals that the buildings central-alarm system has activated.

8 - Clock Display Window

9 - User Input Buttons to set the clock/Alarm and turn the valet alarm clock on and off.

10 - Arm System button activates the valet into Hearing-Impaired mode. In this mode the bed shakers, Strobe, and Icon will activate together alerting hearing impaired users. The ARM mode is indicated by the system on indicator (11).

11 - System on indicator (GREEN)  
Indicates the Valet system is active and alarms will be signaled by all available devices including the strobe and bed shakers. When this light is off only the ICON will light to signal the alert.

13 - Alarm Clock On/Off Status Indicators. LED's indicate the on or off status of the alarm clock. AM and PM indicators are displayed similarly, on the left side of the clock display.

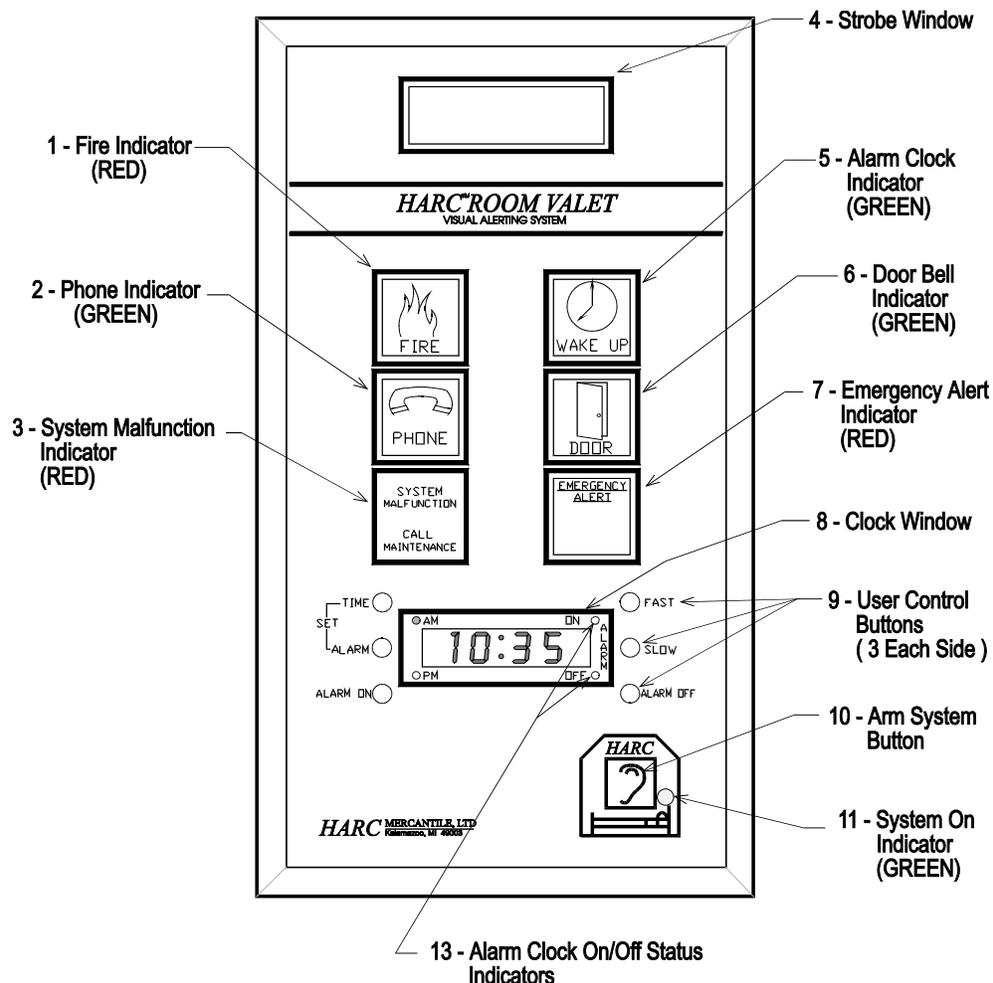


Figure 1.2 - Valet Display Panel

# ***HARC*<sup>™</sup> ROOM VALET<sup>®</sup>**

## **Installation And Wiring Guide**

### **Section II**

#### **ROUGH INSTALLATION**

#### **MECHANICAL AND WIRING REQUIREMENTS**

# Room Valet Rough-In Kit

## Basic Room Valet Rough-In Kit Parts List (Typical):

- Flush Mount Central Panel Enclosure Assembly Part No. HV-A-CAN-9602  
Consisting of:
  - 1 In/Wall Central Panel Box HVP-CAN-02
  - 1 Flush Locking Access Door HVP-CANDR-US5000
  - 1 Access Door Key HVP-CAN-KEY
  - 1 Mounting Screws for enclosure and door mounting
  - 1 Rough-In Pre-wire Instructions.

## **Typical Contractor Supplied Materials and Hardware** **For A Standard Room Valet Installation**

- X# ft. 4 pair 24 gauge Solid Category 5-type wire
- X# ft. 2 pair 24 gauge Solid Category 3/5-type wire  
(For convenience 4 pair Category 5-type can be used for all )
- 1 Single gang low profile "Handy-Box"
- 1 Duplex device & device plate
- X#\* Four square deep junction box  
w/double device plaster ring  
**\*one for each display location in room.**  
  
**Note:** A junction box does not have to be used if the plaster ring is securely fastened to the wall framing and the stud cavity can be used for excess wire.
- 1 Single gang device box at the latch side outside of the rooms entrance door
- 1 Device box for bed shaker output  
(May be common to the phone opening if in right location)
- 1 Form "C" isolated relay attached to central alarm system (Alarm Company Installed?)
- 1 Smoke Detector with built in visual alert and Form "C" relay
- X# ft. Conduit and connectors as Needed  
  
**Note:** The use of conduit is optional depending on local code and engineering specifications.
- 1 Lot misc. conduit and fittings, screws/hardware wire nuts etc. as needed.

# Installation Overview:

## 1 - Before Walls are finished:

### A.) Locate and install Central Panel Enclosure Box

- 1.) If using conduit, run pipe for an AC circuit to the lower right corner of the central panel enclosure box.  
Enter the enclosure box through one of the knock outs on the bottom or lower side.  
  
At this point inside the enclosure box mount a single gang low profile "Handy Box" flat to the bottom with device opening facing up.
- 2.) Pull or run AC wiring to the "Handy Box" or "J" Box located in the central panel enclosure box.  
  
Use wire gauge specified by the engineer or required by local code.
- 3.) Install standard duplex device and plate making sure that the "Ground" lug is on the left.  
**Note:** This will allow the power supply to plug in neatly.

### B.) Locate and install "J" Boxes for display panels

**Note:** Standard Hotel Room Configurations having one living/sleeping area and one bath room will require two display panels.  
One display panel in the main living area, this panel should be located on a wall, which will allow the panel to be in clear view through out the room.

The maximum suggested mounting height for the "J" Box to which the panel is to be mounted would be 56.5" to its center.  
The location for the "J" Box in the bathroom should be on a wall, which would be out of the way of any other fixtures, towel bars, mirrors, etc.. It can be mounted at any height it is suggested not to mount the box any higher than 56.5" to its center.

**Remember when locating all display panel "J" Boxes there needs to be MINIMUM "CLEAR" WALL AREA AROUND THE "J" BOX OF 4" INCHES LEFT AND RIGHT AND 8" BELOW AND ABOVE CENTER.**

- 1.) If using conduit run pipe from each "J" box to the central panel enclosure box.
- 2.) Pull or run wire for display panel.

Leave approximately 16" of excess wire length at each end for easy hook up and display panel mounting and removal.

Roll excess wire into box so walls can be finished.

Minimum wire required: 24 gauge, 4 pair solid twisted, category 5-type.

**C.) Locate and Install a device box at the latch side outside of the room entry door or doors**

- 1.) If using conduit run pipe from this device box to the central panel enclosure box.
- 2.) Pull or run wire for door button, leave sufficient lengths of wire at both ends for easy hook up.

Tuck excess wire into box so walls can be finished.

Minimum wire required: 24 gauge, 2 pair solid twisted, category 3/5-type.

**D.) Locate a telephone device opening servicing the room**

- 1.) If using conduit run pipe from this opening to the central panel enclosure box.
- 2.) Pull or run wire for telephone tip and ring connection, leave sufficient lengths of wire at both ends for easy hook up.

Tuck excess wire into box so walls can be finished.

Minimum wire required: 24 gauge, 2 pair solid twisted, category 3/5-type.

**Note:** If this device opening is on the same wall as the head of the bed(s) and within four foot of the bed(s). This will allow a common conduit/wire run to the central panel for the telephone and the Bed Shaker connection.

If this is the case skip to instruction E.3.

**E.) Locate and/or install a single device box for bed shaker jack.**

- 1.) This box should be located in the wall, which will be closest to the head of the bed(s).

In a single/bed room, locate the box to the left or right of the head of bed.

Alternatively, in-between the head of the beds in a double room.

The height of the box should be the same as the established standard for other device openings in the room such as the telephone and AC wall outlets.

- 2.) If using conduit, run pipe from this device opening to the central panel enclosure box.
- 3.) Pull or run wire for the bed shaker, leave sufficient lengths of wire at both ends for easy hook up.

Roll excess wire into box so walls can be finished.

Minimum wire required: 24 gauge, 2 pair solid twisted, category 3/5-type wire.

**F.) Locate device opening which has been designated as the “IN ROOM” visual smoke alarm location.**

**Note:** The Smoke Detector needs an isolated set of Form "C" relay contacts to allow interfacing to the Room Valet System. The GENTEX 710/CS or 7109/CS or similar smoke detector with strobe is ideal for use with the Room Valet. If the in room Smoke Detector is part of an addressable Central Alarm System then an addressable relay closure must be given to the Room Valet System by the Central Alarm System when the Smoke Detector is activated.

- 1.) If using conduit run pipe from this device opening to the central panel enclosure box.
- 2.) Pull or run wire for the switch leg connection from the in room smoke detector to the central panel enclosure box. Leave sufficient length of wire at both ends for easy hook up. Roll excess wire into box so walls can be finished.  
Minimum Wire required: 24 gauge, 2 pair solid twisted category 3/5-type.

**G.) Locate and install a “J” Box to which the central building alarm or annunciation system**

**Note:** This “J” Box must house an isolated relay interface device. The alarm system contractor shall install the relay interface as a supervised device for the alarm system. The room valet shall be connected to the isolated side of the relay.

- 1.) If using conduit run pipe from the “J” Box for the alarm system interface to the central panel enclosure box.
- 2.) Pull or run wire for interconnection to the central alarm or evacuation annunciation system to the central panel enclosure box. Leave sufficient length of wire at both ends for easy hook up. Roll excess wire into box so walls can be finished.  
Minimum Wire required: 24 gauge, 2 pair solid twisted, category 3/5-type.

## 2 - After walls are finished:

- A.) Install central panel enclosure flush locking access door  
(Part Number HVP-CANDR-US5000)

Push the access door and frame into the central panel enclosure box.

Making sure the screw slots in the frame should line up with the pre drilled holes in the side of the box.

Check to be sure that the doorframe is flush all the way around with the wall.  
Use #8/18 x 3/8" Pan Phil TEK Screws to attach.

This should be done before:

- 1.) Mounting the Main Control Board Assembly Part Number HV-A-MCBA-9601
  - 2.) Installing the Systems Battery Assembly Part Number HV-A-BATT-12V7A
  - 3.) Installing the power supply assemblies Part Number HV-A-PS-01
- B.) Mount display panel back plates Part Number HV-DPBP-01 to the "J" Box opening.

Place Room Valet back plate over opening aligning the mounting holes in the back plate with the holes of the "J" Box.

Make sure the plate is square and plumb.

Carefully mark the two mounting holes at the bottom of the plate on the wall.

Install hollow wall anchors unless the hole falls on a framing member.

Screw back plate to the "J" Box and firmly screw the bottom of the back plate to the wall using the hollow wall anchors previously installed.

**Note:** # 6-32 x 3/4 Thread Cutting Screws can be used to mount the back plate to the "J" Box. To mount the bottom of the plate to the wall E/Z type hollow wall anchors can be used with #8 x 1" sheet metal screws.

- C.) At the device opening for door button Cut wire to finished length.  
Strip outer insulation revealing the 2 pairs.
- D.) While main alarm system(s) are being installed, Install Approved Isolation Relay(s).
- E.) If room is done, but not ready for final installation, and needs to be put "into service" optional protective covers for the display back plates are available.

## 3 - After Room is Finished, Including all Alarm systems functioning.

- A.) Install Electronics, By Approved HARC Technicians.  
(All materials needed for steps 1 - 3 are included in this rough in kit.)

## System Wiring Overview:

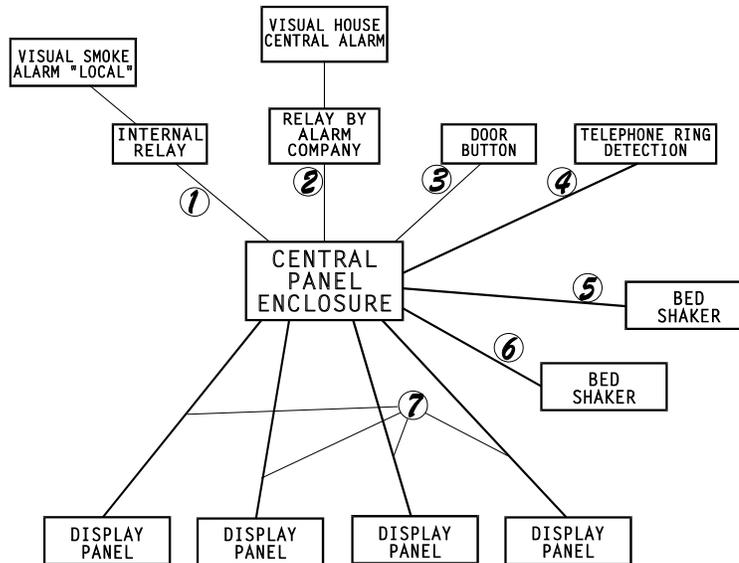


Figure 2.1 - System Block Diagram

Run	Twisted Pairs	Gauge	TYPE	Maximum
	Recommend	(Solid)		Run
1 -	2 *	24	Category 5	250 feet
2 -	2 *	24	Category 5	250 feet
3 -	2 *	24	Category 5	250 feet
4 -	2 *	24	Category 5	N/A
5 -	2 **	24	Category 5	250 feet
6 -	2 **	24	Category 5	250 feet
7 -	4	24	Category 5	100 feet

Figure 2.2 - Wire Specifications

Actual wire specs can vary with local low voltage wiring and insulation requirements.

\* 🛠️ **Installation Hint #1:** For convenience, 4 pair wire can be used for all runs.

\*\* 🛠️ **Installation Hint #2:** Doubling pairs in parallel helps reduce voltage drop on long bed shaker runs.

Run	Type	Description	Box Type	Height	Pairs	Typical Location
1-	N/O Contacts	Local Smoke Alarm	J	*3	2	N/A
2-	N/O Contacts	House Alarm	J	*3	2	N/A
3-	N/O Contacts	Doorbell	Single	Local	2	outside room by door
4-	Phone Line	Ring detect *1	Single	14"	4	Near bed, behind night stand
5-	12V SW. PWR	Bed Shaker *1	Single	14"	4	Near bed, behind night stand
6-	12V SW. PWR	Bed Shaker *1	Single	14"	4	Near bed, behind night stand
7-	Data	Display Panels	Single *2	56.5"	4	Walls

Figure 2.3 - Wiring Summary

### \*Notes

- 1.) A telephone ring detect location can also be utilized as a bed shaker. Wire both runs to same wall box.
- 2.) Display panel wall boxes can be single or double boxes.
- 3.) Installed per code and manufacturers instructions by a licensed contractor.
- 4.) All runs originate at the central control box and should not exceed the lengths specified.

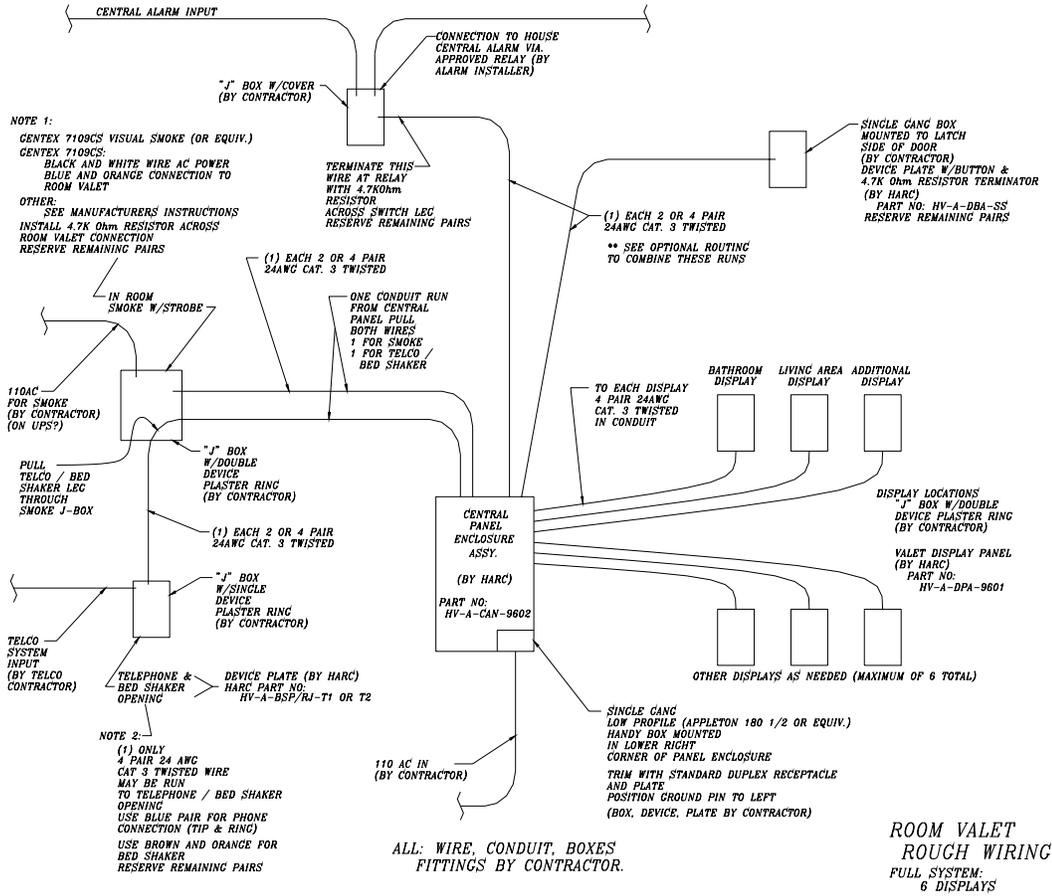


Figure 2.4 - Valet Rough Wiring Layout

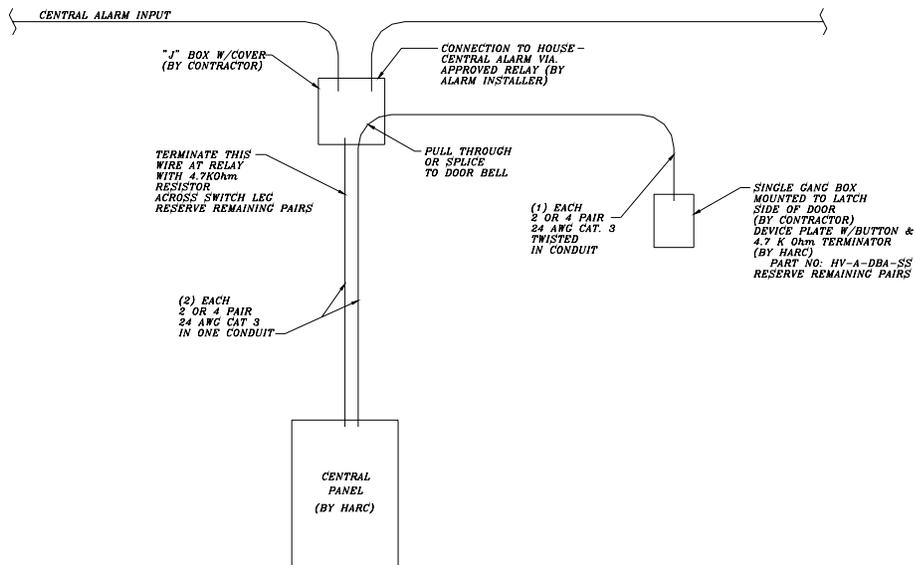


Figure 2.5 - Rough Wiring Combined Door Button and Central Alarm

## Remote Central Panel Location

The user needs no direct access to the Central Panel Enclosure. Therefore, the central panel enclosure can be located remote from the area being serviced by the Room Valet System. A location such as in utility closet, mechanical room, etc. that is not directly accessible from the room where the HARC Room Valet is being installed may be desired.

**Note:** This location must however be **within a maximum 150-foot wire run.**

## Installing the Central Panel Enclosure:

### Standard Installation Method

The Enclosure has Keyhole slots located on the sides, and back.

To mount the box, attach both sides to wall studs through the screw slots on the top and bottom.

This may require having a stud added to the wall framing.

The required stud spacing to securely mount of the box is 12 1/2" inside to allow it secure mounting. This would be approximately 14" on Center for typical wood studs. If framing with metal studs reverse the placement of one stud so the flush (none open) edge of both stud will be facing the central panel enclosure.

( See Figure 2.6)

### Optional Installation Methods

A.) An optional method of flush mounting the central panel enclosure would require the installation of horizontal bridging between two studs.

The bridging should go across the top and bottom of the enclosure box.

Then screw the box down securely through the slots in the top and bottom.

**Note:** Mounting in this fashion would increase the difficulty in running wire.

B.) Another option: Surface mounting the enclosure.

Locate and install any necessary wall anchors so they align with the screw key slots in the back of the enclosure.

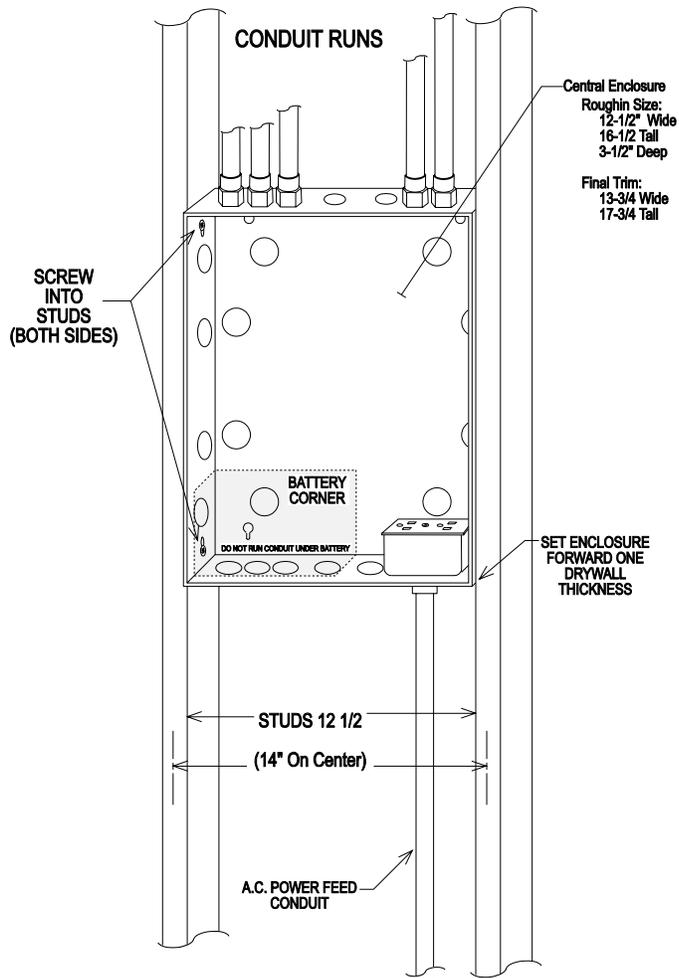
Install the two top mounting screws most of the way into the wall.

Then slide the box over and down on the screws.

Proceed to install the bottom screws.

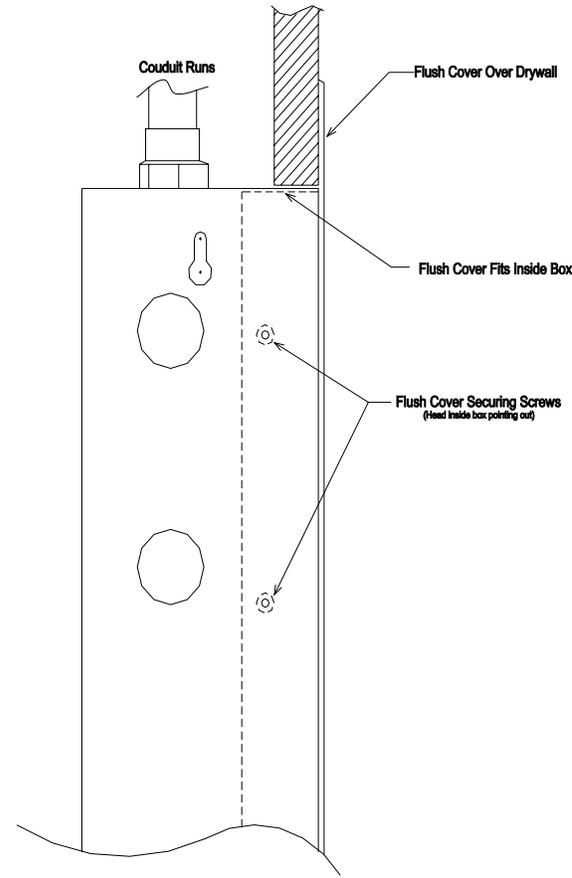
Check the enclosure box for final square and level and tighten all screws securely.

## Installing the Central Panel Enclosure:



**Figure 2.6 - Central Panel Preferred Wall Mounting**

**Note: Special stud spacing for 12-1/2" width**



**Figure 2.7 - Detail of Central Panel Mounting**

## Wiring:

The Central Panel Enclosure has several knockouts to allow conduit or wire retainer connection. The knockouts are located across the top, bottom, back and sides.

When roughing in the wire at the main control box leave wires at least 24 inches long. They will be trimmed as needed when the main electronics are installed.

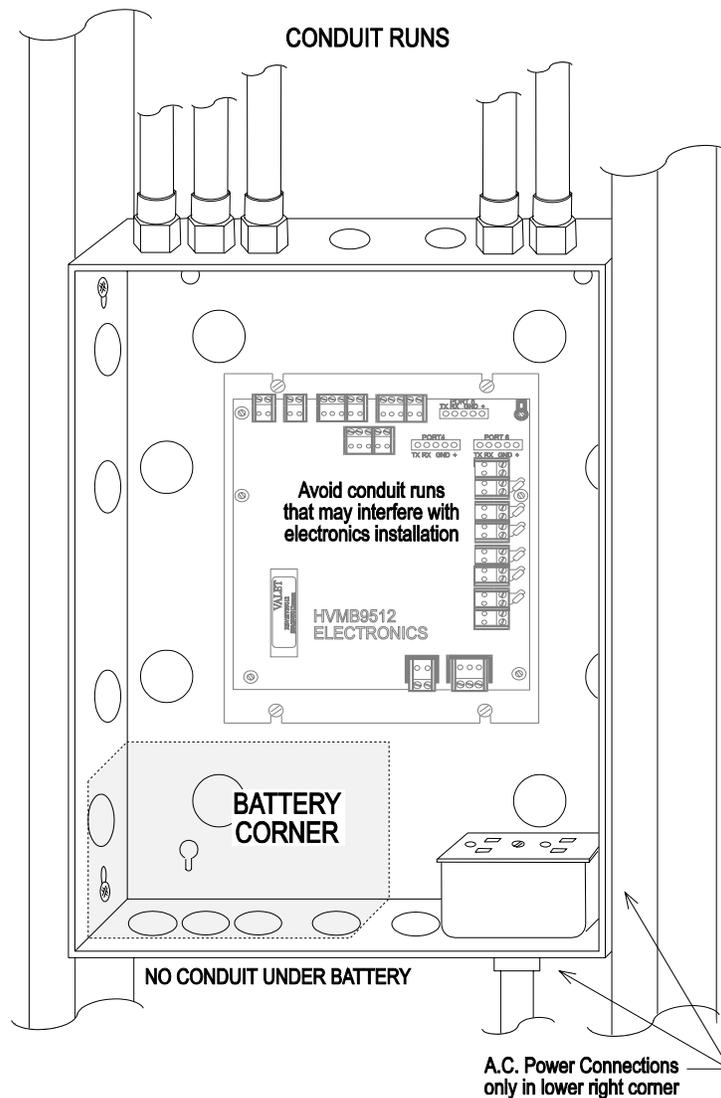
**Note:** For the areas to keep wiring away from. (See figure 2.8)

The AC power connects through the bottom of the enclosure to a lower profile Handy-Box mounted in its lower right corner.

This box is to be trimmed with a standard duplex receptacle and plate, making sure that the "ground" lug is to the left.

**Note:** This will allow the power supply to plug in neatly.

**Note:** No wiring shall be run underneath the electronics, Battery, or Transformer Areas. (See Figure 2.8.)



**Figure 2.8 - Central Panel Enclosure Conduit Locations**

## Display Panel(s):

Each display panel back plate will screw to a double gang device-plaster ring mounted on a 4 square “J” box positioned at a height of 56.5” to its center from the finish floor.

This mounting height will put the user control buttons within the ADA 54” side reach requirement for persons in a wheel chair.

The wiring to this box from the central panel enclosure shall be 4 pair 24 gauge category 5 wires {see figure 2.2 for wire specifications}.

Cut the wire, leaving it not less then 12 inches from the wall until the final electronics are installed.

Install the back plate after painting, and all wall finishing, is complete.

This is covered in section III.

The display back plate has screw holes to secure it to the box and insert two more screws at the bottom corners using hollow wall anchors and screws as needed.

Display Panel Physical Dimensions:

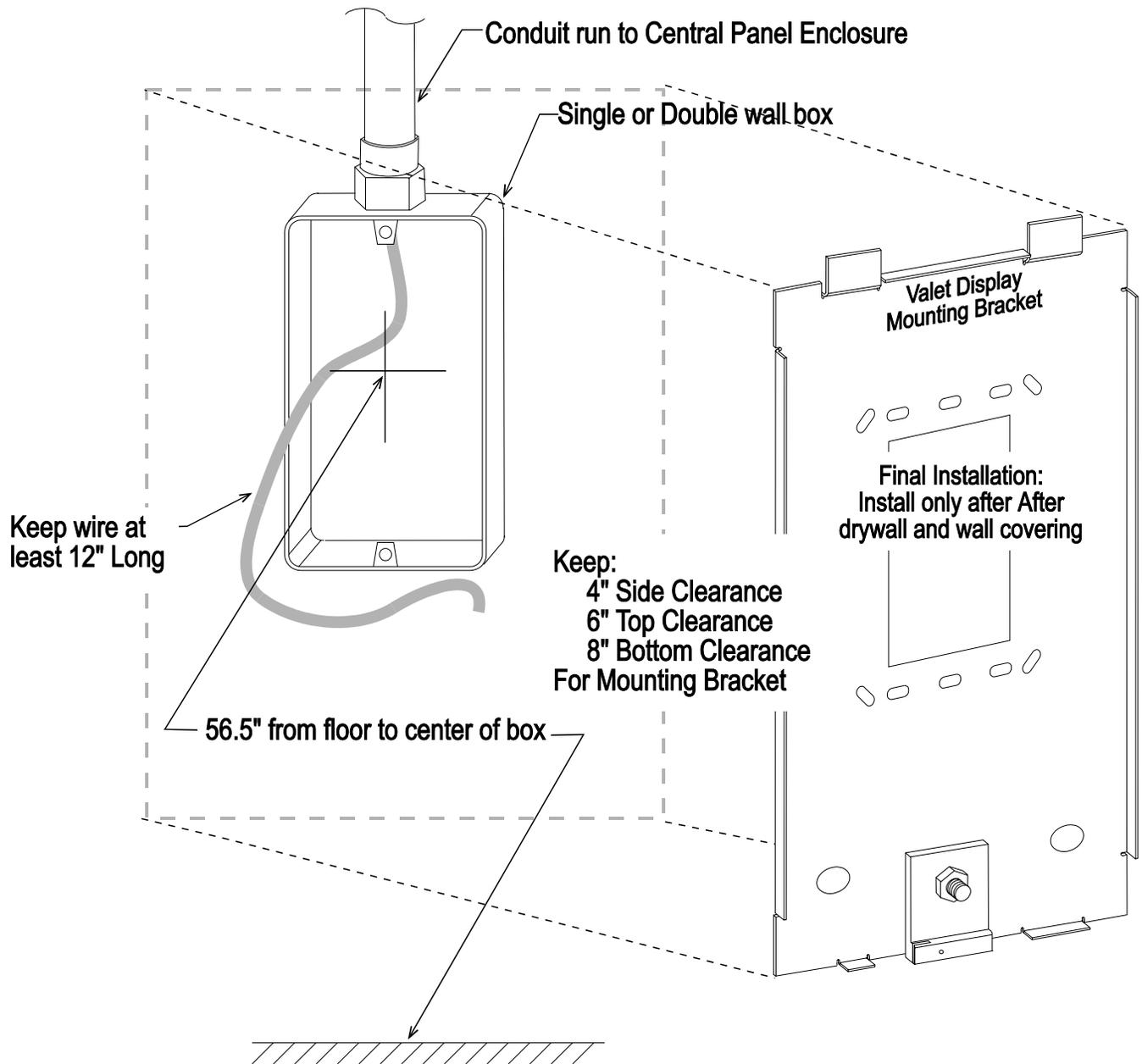
Width: 6 inches

Height: 11 inches

Depth: 1.15 inches

## Display Panel(s):

Each display panel back plate will screw to a double gang device-plaster ring mounted on a 4 square "J" box positioned at a height of 56.5" to its center from the finish floor.



**Figure 2.9 - Display Panel Rough install**

**Note:** This mounting height will put the user control buttons within the ADA 54" side reach requirement for persons in a wheel chair.

## Bed shaker / Phone Interface:

The bed shaker wall box must be within 4 feet of the bed.

The bed shakers come with an eight-foot cord and will not reach otherwise.  
Figure 1.1 shows typical location of a telephone/bed shaker jack next to the bed.

If a telephone jack is near the bed, the device opening can also be used for bed shaker(s).  
In this case one plate can be used for both telephone and bed shaker jacks.  
(See Section III Figure 3.13.)

If the bed and telephone jacks are not located near each other, a separate box can be used.  
In this case at least one pair\* is needed to each bed shaker, and one pair must bring the telephone line into the central enclosure.

**🔧 Installation Hint: \* It is recommended to double up wires on long bed shaker runs using 24AWG Solid. Using the Blue pair for plus and the Orange pair for minus works well. This is Very important if multiple bed shakers are going to be plugged into one Wall Plate.**

## Switch Legs:

The HARC Valet has the capacity for up to 8 switch leg inputs.

All switch legs should be run using MIN. 2 - 4 pair 24 Gauge Category 5 wire.

Switch legs, which involve Life Safety systems, must be installed as outlined below by the licensed and/or approved alarm contractor for the site location.

### **Telephone:**

The Telephone "TIP" and "RING" should be ran to the central panel enclosure and connect to "PHONE" on the main electronics.

### **Doorbell:**

A box at door button height wired with one pair to the main control box.

Recommended Door button: Edward's #620, available from HARC (PART # HV-A-DBA-SS) already mounted onto a single wall plate with termination resistor.

### **Fire / Smoke:**

A J-box with a approved fire / smoke detector with form C contacts (I.E. Gentex Series #7109, available separately from HARC).

At least one wire pair, see figure 2.2 for specification, must be ran to the central panel enclosure. This pair needs to be terminated with a 4.7K Ohm resistor at the fire / smoke detectors relay output.

A licensed and/or approved alarm contractor for the site location must wire any wiring that involves fire or life critical systems.

### **House Alarm System:**

A "J"-Box with an approved normally open relay contact closure.

One wire pair should be ran for each relay, and terminated. See fig 11.1

### **Alarm System Termination:**

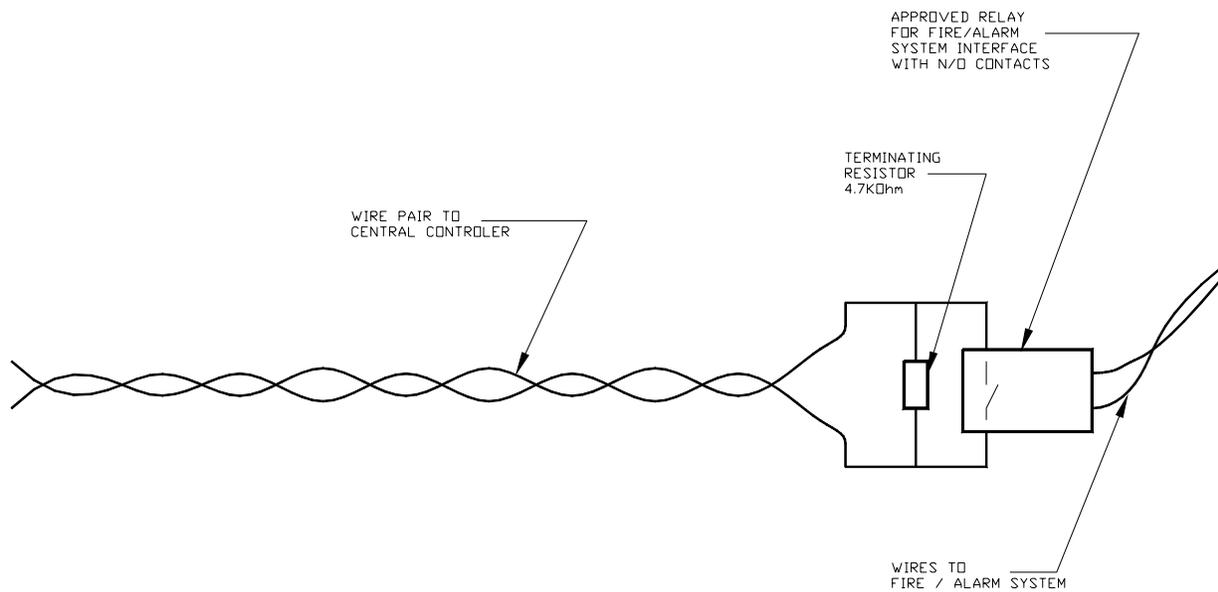
All Room Valet inputs require a normally open switch contact terminated with a 4.7K Ohm resistor across the contacts.

This should be done as part of the alarm system/relay installation.

The pair of wires should be labeled inside the Central Panel Enclosure as to the function / signal source.

### **All Switch Legs:**

When the electronics are installed, the lines will be tested for the 4.7 Kohm load.



**Figure 2.11 - Fire / House Alarm Relay Detail**

**🔧 Installation Hint:** All switch legs are terminated at the switch end with a 4.7K Ohm resistor. Any 4.7K Ohm, 5% tolerance, 1/4-Watt or 1/2-Watt resistor will work.

# A/C Power Wiring

## Plug-In Type Power Supply (Standard)

The standard power supply used in the ROOM VALET is a:  
12 V/AC 30 VA grounded plug in type CLASS 2 Transformer.

The plug in power assembly consists of the transformer, pre-prepped wire harness with noise filter and circuit board connector. (Complete Assembly Part # HV-PS-01)

This power supply will require that a low profile type HANDY BOX be installed inside the central panel enclosure at the lower right hand corner of the in wall housing.  
(See figure 2.8.)

This handy box will need to be supplied with UNSWITCHED 120 Volt AC.

The handy box must be mounted, flat to the bottom of the enclosure as far to the right as possible, with the device open facing upward.

**Note:** This location will allow room for the back up battery to set next to the power supply and have room between the out and circuit board to allow the transformer to be plugged in and out. (See figure 3.20.)

This box is to be trimmed with a standard duplex receptacle and plate, making sure that the "ground" lug is to the left.

**Note:** This will allow the power supply to plug in neatly.

# ***HARC***<sup>™</sup> **ROOM VALET**<sup>®</sup>

## **Installation And Wiring Guide**

### **Section III FINAL INSTALLATION**

#### **DISPLAY PANELS MAIN CONTROL BOARD SWITCH INPUTS:**

***BED SHAKER/PHONE, & DOOR BUTTON ASSEMBLIES  
SMOKE ALARM REQUIREMENTS  
CENTRAL ALARM SYSTEM INTERFACE***

#### **MECHANICAL INSTALLATION AND FINAL WIRING TERMINATION**

## Display Panels:

- 1) Locate the display panel assemblies.
- 2) Remove the display panel front from the mounting back plate using the special latch tool included. (See figure 3.1)

To work the latch, position the display assemblies face up, hold the tool perpendicular to front, keeping the “small hook” to the right. Place the “hook end” of the tool between the back edge of the display frame and the back-plate just about 1” left of the center of the bottom. Then let the tool swing down until it is approximately lying flat in line with the display.

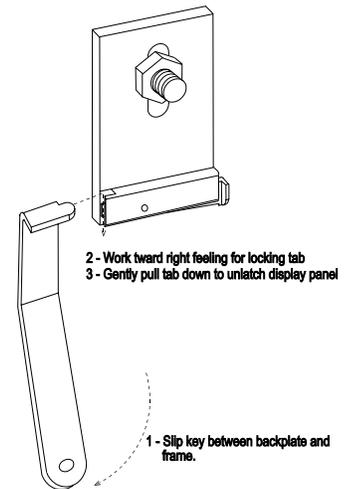


Figure 3.1 - Display Panel Latch

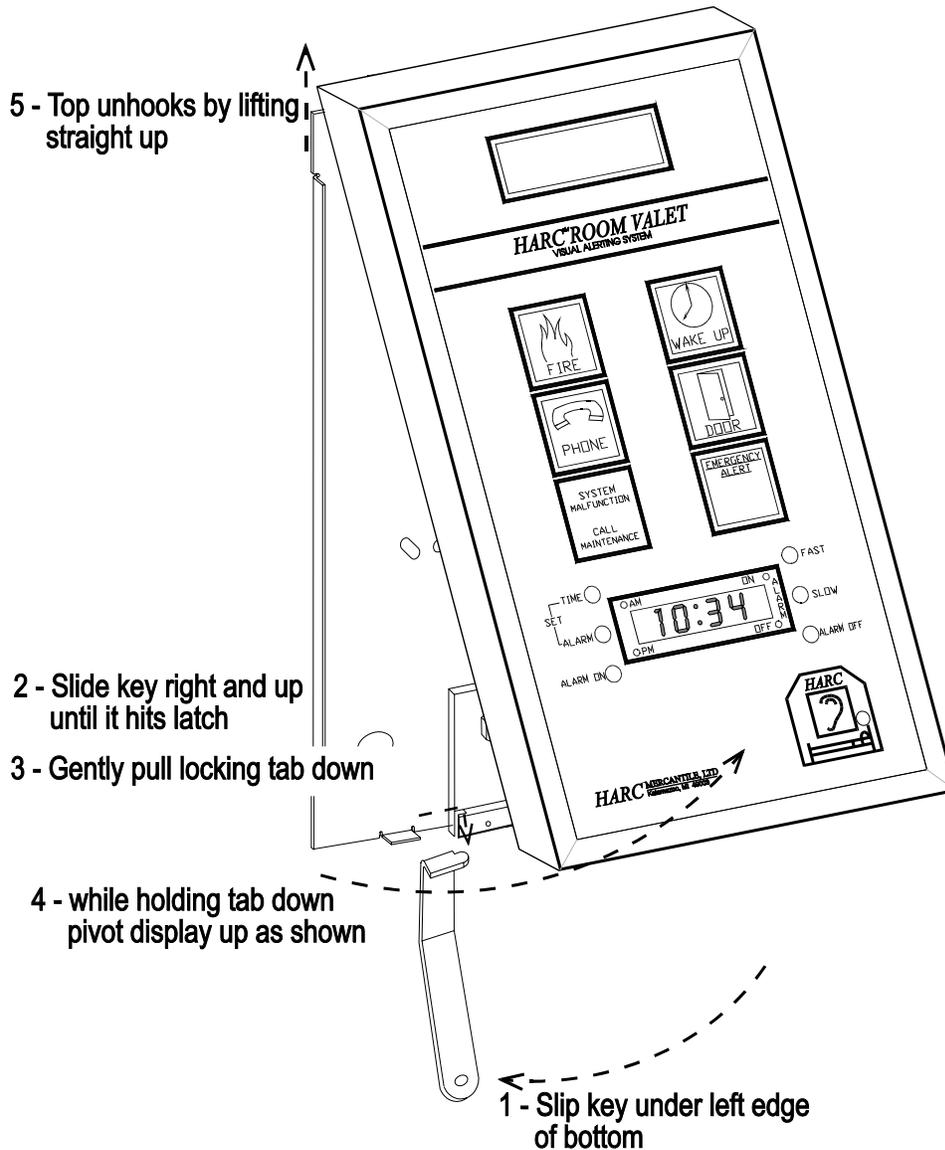


Figure 3.2 - Unlatching the Valet Display Panel

Then gently move the latch tool to the right until it stops. When it hits the latch, then pull the tool downward until the latch releases. (See figure 3.2) If the first attempt does not release, repeat until the tool connects with the latch, it may require moving the tool slight up and to right to engage.

- 3) After the front panel is removed from the back plate, the back plate is ready to attach to its junction box and wall.

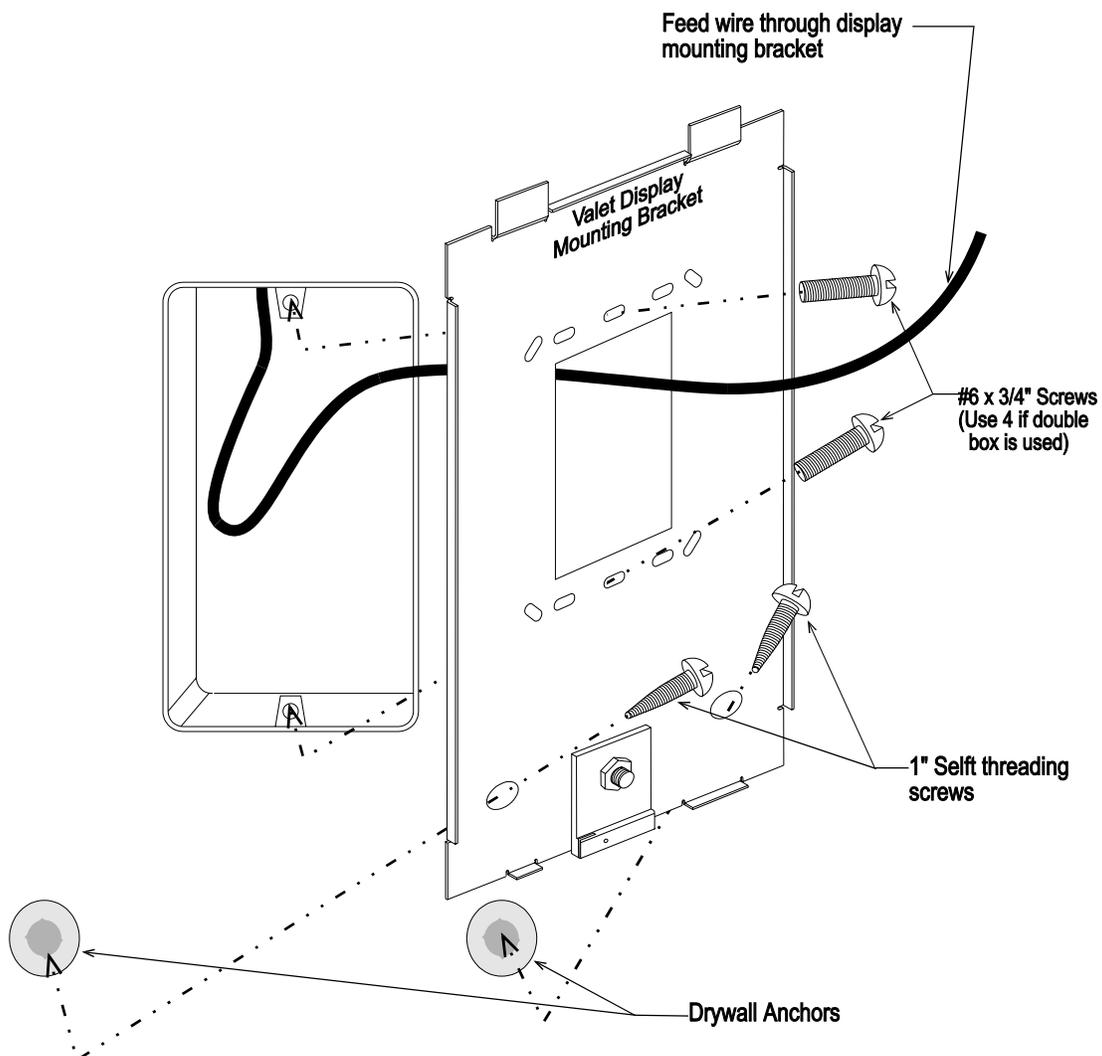
Position the back-plate over the junction box opening so at least two or more of the junction box device mounting screw holes align with the holes in the back plate. Then temporarily fasten the plate to the box using the #6-32 thread cutting screws.

Make sure the back plate is square and level, and then screw the bottom of the plate to wall through the hole approximately one inch from the bottom at the left and right corners.

If the finish wall requires the use of hollow wall anchors, mark the location for the anchors, then remove plate and install the hollow wall anchors.

For other types of walls use alternate appropriate mounting methods. Remount plate and tighten all screws.

- 4) Once the plate is attached to the wall begin connecting the wire to the six pin connector provide on or with each display panel. (See next section Recommended Display Wire Colors)



**Figure 3.3 - Installing a Display Mounting Plate**

## Recommended Display Wire Colors:

Display Panel wires (4 pair) are terminated to a 6 pin removable terminal block\*\* on the display side. (See figure 3.4 and 3.5)

At the central panel enclosure it terminates to a 5 pin removable terminal block\*\* with the green pair left about 4"-6" longer for a ground lug. (See figure 3.9 and 3.10)

\* The 6 pin removable terminal is an assembly of two three pin removable terminals interlocked together.

\*\* The 5 pin removable terminal is an assembly of a three pin removable terminal and a two pin removable terminal interlocked together.

- Note:**
- 1) Maximum wire length should be no more than 125 feet.
  - 2) Wire colors are for standard 4 pair cable.  
The First color is the solid or dominate color and the second listed is the color of the stripe on the dominate color. Ex: BLUE/WHITE is the predominately blue wire with a small white stripe.
  - 3) Leave 12 to 16 inches of wire stubbed out at each display location.

## Display Panel Side:

A blue six (6) pin connector is included in the box containing each display panel or it may be found pushed on the pin connector at the back side of the display.

Attach the 6 pin removable terminal block to the display panel side of the wire run(s) that extend out of the wall through the display panels back plate.

The wire should be cut to a final length of about 12" beyond the pack plate.

Strip outer jacket of multiple pair wire two to three inches; strip each conductor back 3/16" to 1/4".

Place appropriate wire colors into connector following the pin drawn below. (If wire colors are different than shown make notes of wire color substitution/pin-out.)

**NOTE: At this point do not connect plug connector on to the display panel. Continue prepping all display locations. Proceed to main panel enclosure and finish wiring displays and switch legs to the main board. (See Section "Connections Inside Display Panel Enclosure:") Once connections inside display panel enclosure are complete and power applied see section "Checking Display Wiring" Follow voltmeter-reading instructions and then proceed to connect to display panel.**

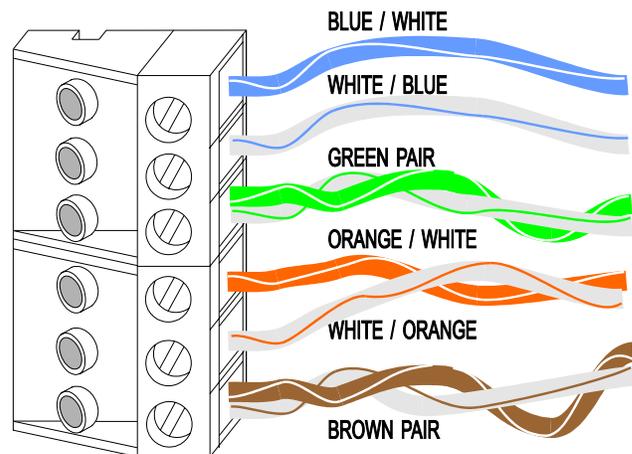


Figure 3.4 - Display Side Wire Colors

## Checking Display Wiring

With all display panels removed from the backplate, power the main electronics board up.

With a voltmeter, check the voltages as shown below.

If all voltages are correct plug the display panel on the connector and hook it on the back plate.

Immediately the display will show a time and a system malfunction.

The system malfunction should be cleared and the display will revert to the correct system time within 1 minute.

If the voltages do not match with the above connector carefully, test wiring until the fault is found.

Do not connect the display until the correct voltages are present, as damage to the display can result.

## Connecting the Display Panel:

Attach the removable terminal block to the display panel by pushing it over the connector pins located on the back of the display panel's circuit board making sure that the wiring is configured correctly. (See figure 3.6)

**Note:** It is recommended to leave panel unplugged until the wiring is tested. (See Page 20)

After attaching the removable terminal block to the display panel circuit board, hook the top of the display frame over the tabs in the back-plate and snap the bottom over the latch. (See figure 3.7)

**🔧 Installation Hint:** The panel can be left unlatched until the room is finished and tested, then press the bottom of the display panel to latch it.

# Display Wiring

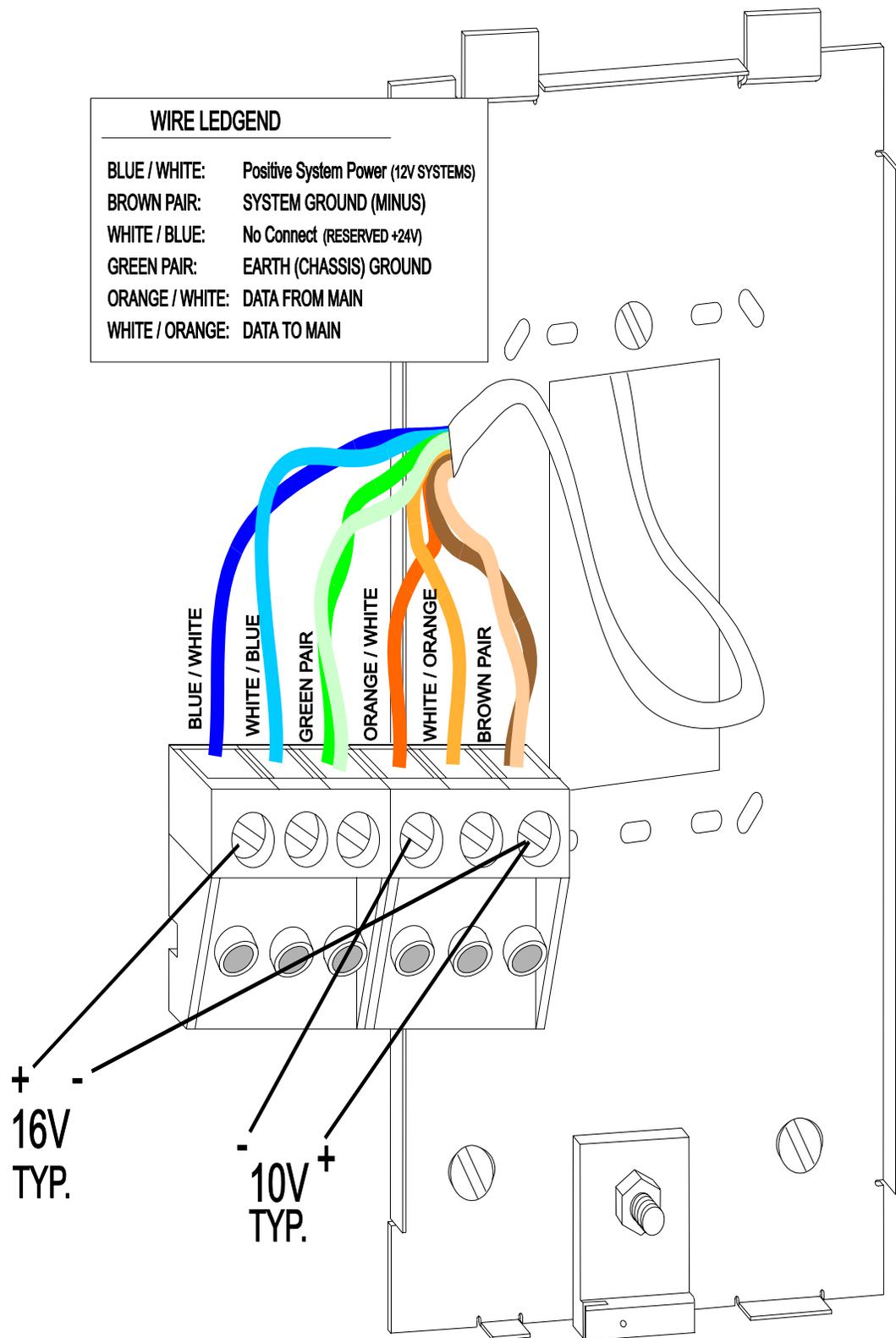


Figure 3.5 - Typical Voltages on the Display Panel Connector

## Display Wiring (Continued)

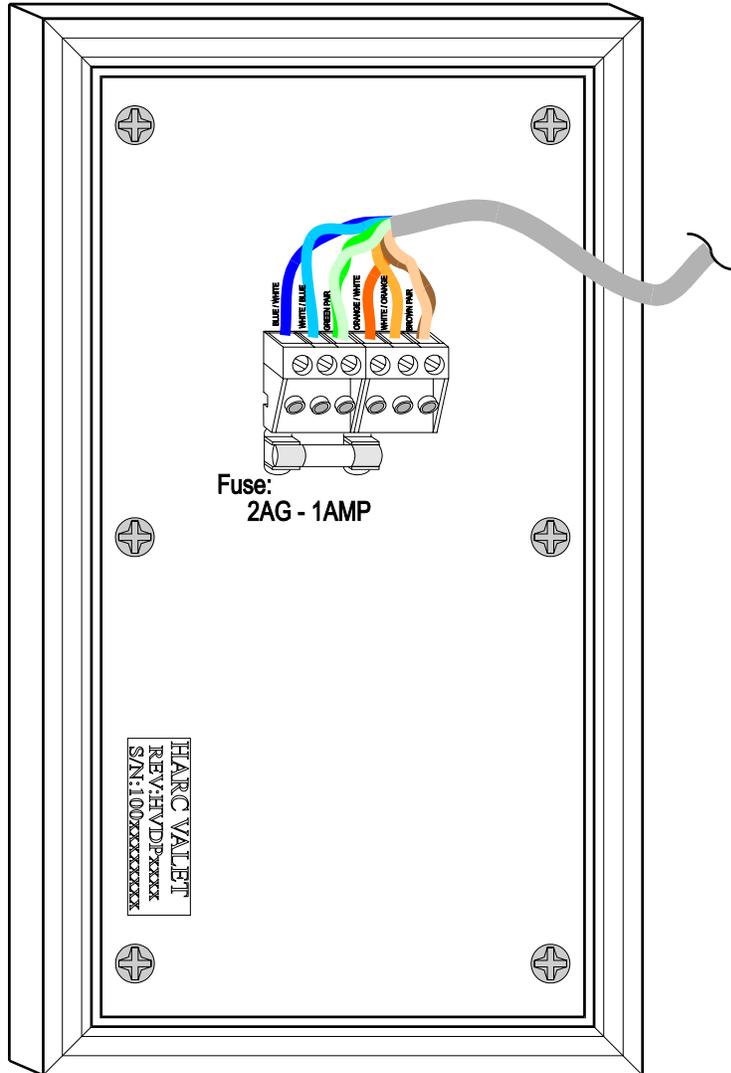


Figure 3.6 - Back View of Display Panel showing connection

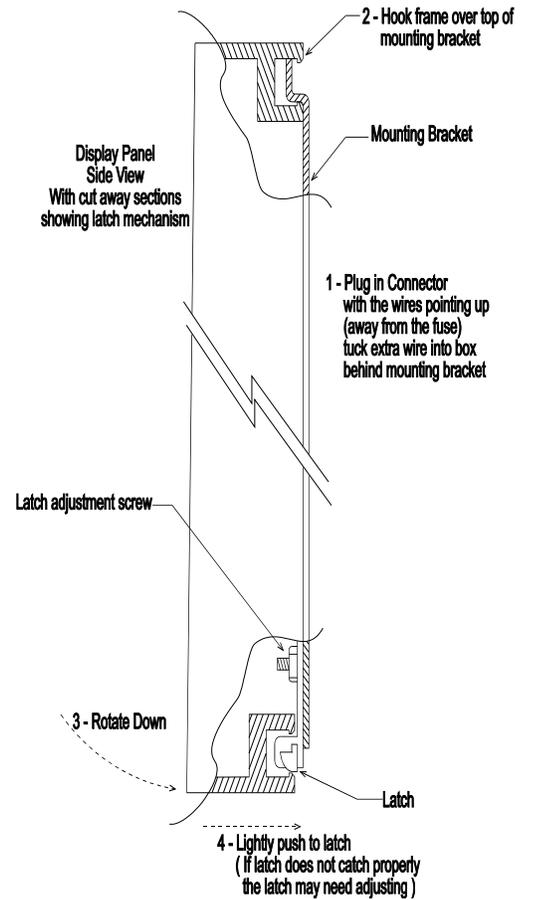


Figure 3.7 - Latching the Display

### Warning!!

**Damage will occur when the connector is reversed or wires are wrong!!**

# MAIN CONTROL BOARD

## Connections Inside The Central Panel Enclosure

### Mounting the Main Electronics:

Before the main control electronics is installed make sure; the A.C. outlet is installed in the lower right corner, all wires are pulled, and the central enclosure door is installed.

Inspect rough install for problems. It is more difficult to correct problems in the rough installation once the electronics are installed, and damage to the electronics could result.

Page 3-7

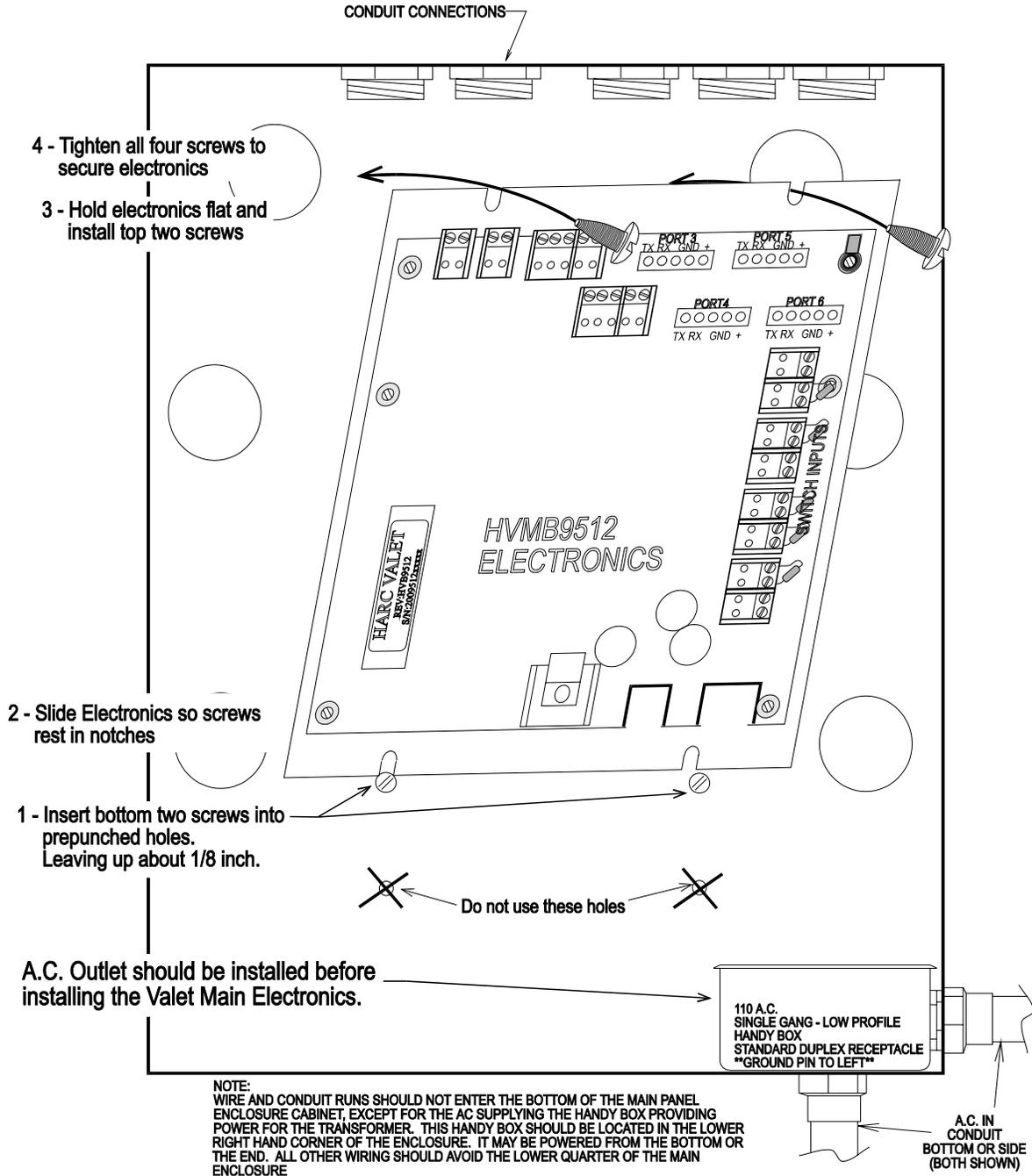


Figure 3.8 - Mounting the Main Electronics Module

Page 3.7

## Connections Inside The Central Panel Enclosure

### Mounting the Main Electronics: (Continued)

The Electronics is attached to an aluminum back plate.

The back plate mounts with four (4) self-threading screws into the back of the Central Control Enclosure Box.

Insert the bottom two screws first, as shown in figure 3.8.

Then pivot the electronics flat against the back until the bottom two screws slip into their notches.

Hold the module flat against the back and insert the top two screws into their holes.

Tighten all four screws when done.

### Display Panel Wire Connection (Main/Central Panel Side)

The Display cables are connected to a five (5) pin removable terminal block inside the central control enclosure. The Display Wires should be left about 20" long, strip outer jacket back about 16", cut all wire pairs except for the "Green Pair" back 8 to 10 inches, thus leaving the green pair (CHASSIS GROUND) approximately 6 inches longer. (See figure 3.9 and 3.10)

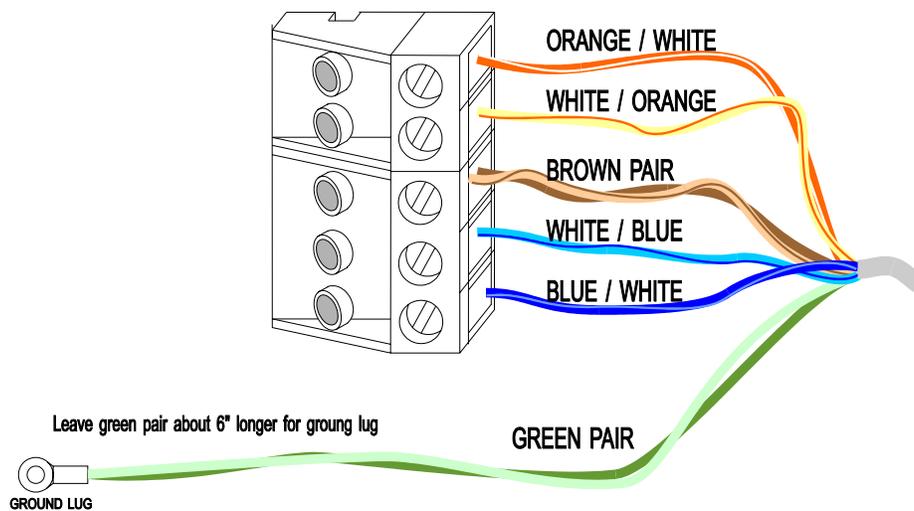


Figure 3.9 - Processor Port Wiring (Recommended Colors)

### Display Panels

The display ports are along the top edge, see figure 3.10.

Up to six display panels can be directly connected to the Room Valet Main Board electronics.

The switch inputs are along the right edge. (See figure 3.11)

The power inputs are on the bottom right. (See figure 3.20)

## **Telephone Connection**

The telephone line is connected to the Main Electronics Board. (As shown in figure 3.11)

Polarity does not matter on these two connections.

The telephone connection is used for RING detection purposes only.

## **Bed Shaker**

The Bed Shaker output is a relay switched 15V line to power the bed shaker(s) when activated.

A maximum of three (3) bed shakers should be used on one Board.

Polarity does not matter to the bed shaker(s).

However the LEFT pin is minus (GND) and it is recommended to keep them all the same.

**Note:** voltage will only be present when bed shaker is ON.

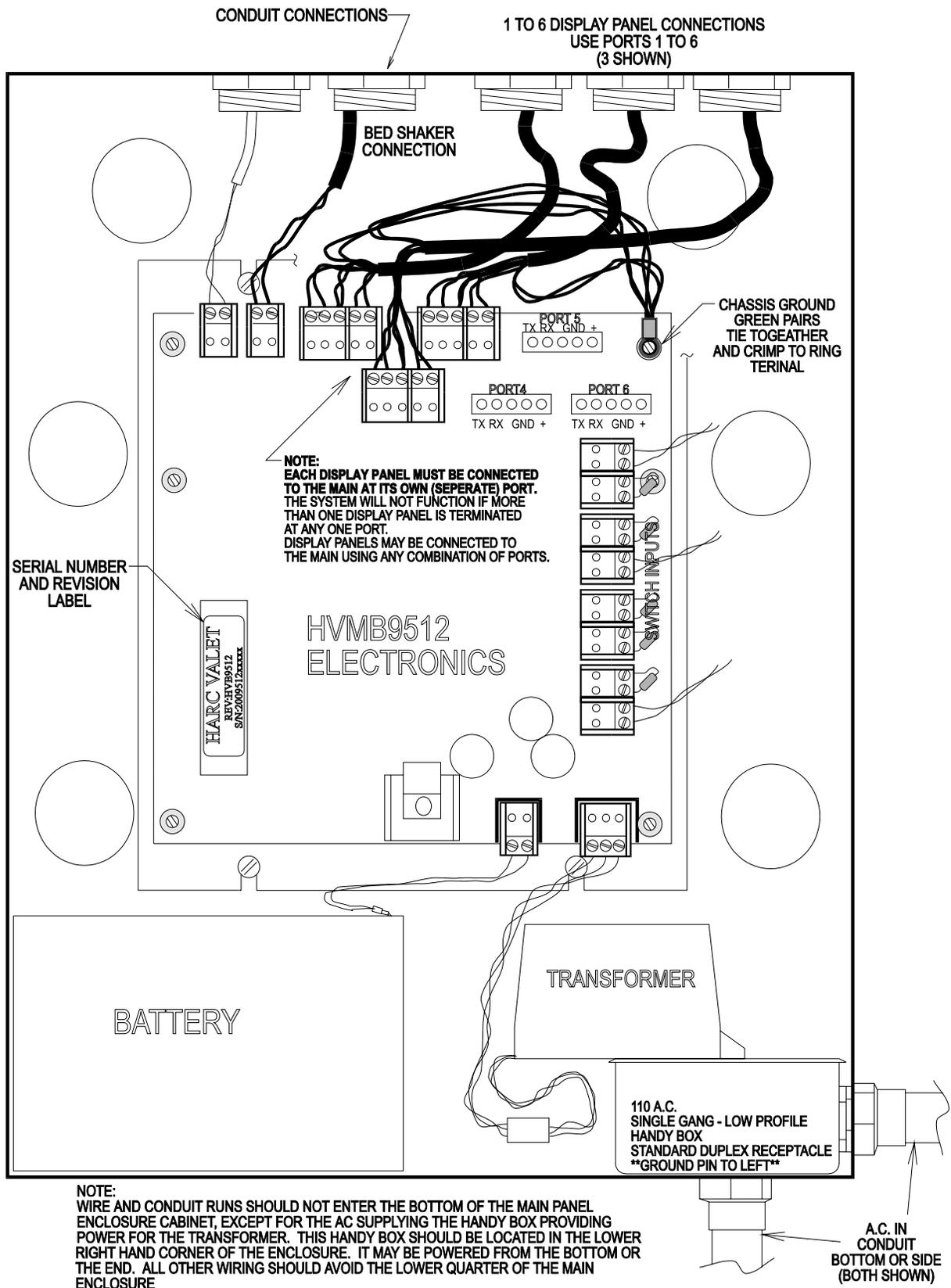


Figure 3.10 - Central Panel Enclosure Main Electronics Output Terminations

## Switch Inputs

- The HARC Valet has up to Eight (8) switch leg inputs.
- All switch legs should be run using Two (2)- 4 pair 24 Gauge category 5-type wire.
- Switch legs that involve Life Safety systems must be installed as outlined below by the licensed and/or approved alarm contractor for the site location.

### Telephone Connection

The connection for the Telephone "TIP" and "RING" should be ran to the central panel enclosure and connect to "Telephone" terminals on the main electronics.

No termination resistor is used for the tip and ring run to the ROOM VALET ring detects circuit.

**NOTE: DO NOT TERMINATE THIS SWITCH LEG WITH ANY RESISTOR. DAMAGE WILL BE CAUSED TO THE PHONE LINE OR SYSTEM IF THIS IS DONE.**

When the ROOM VALET **is not** being connected to the tip and ring or detectable ring-side of the telephone system, but the phone system is providing a "DRY CONTACT" closure only, the switch leg then should be terminated at the contact end of the switch leg with a 4.7 K ohm resistor. The wire should be connected to the control panel at switch input position number six (6).

At least one wire pair, (see figure 2.2) for specification, must be run to the central panel enclosure.

Additional pairs are suggested in case of wire failures or future system modification or expansion.

## **Door Alert Button**

The connection for the Door Alert Button will require a single gang box be installed. Locate it at door button height on the latch side of the door, outside of the room.

Run a wire from this box to control panel where it will be terminated at switch input seven (7) or eight (8).

Either or both can be used if the room has more than one entry door, however the system at this time can not differentiate "one door from another.

At least one wire pair, (See figure 2.2 for specification), must be ran to the central panel enclosure.

Additional pairs are suggested in case of wire failures or future system modification or expansion.

The Recommended Door button is an Edward's #620, available from HARC mounted in a single wall plate with termination resistor across the terminals, pigtailed with 24 gauge wire. It is prepped to connect to the switch leg wire with "Scotch-Lock" Type ULG Connectors or equivalent. (See figure 3.14)

The Door Alert Button Assembly (Part # HV-A-DBA-SS) is normally included with the finish or trim-in electronics package or may be purchase separately.

## **Fire / Smoke**

The connection to the in room smoke detector or alarm should be through a Junction box on which is mounted an approved fire / smoke detector.

This smoke detector/alarm must have a built-in visual strobe alert which meets all codes and standards and have built-in "Form C" contacts.  
(I.E. Gentex Series #7109, available separately from HARC)

The switch legs terminate at the control panel at input switch location: one (1), two (2), three (3) or four (4).

One or more up to four smoke detectors or alarms may be connected to system however the system will only show one "FIRE" alert and not be able to indicate which area.

At least one wire pair (See figure 2.2) for specification, must be ran to the central panel enclosure.

Spare wire pairs are suggested in case of wire failures or future system modification or expansion

The switch leg from the smoke detector will connect to the N/O contacts of its built-in relay. It will be terminated at that point with a 4.7 K ohm resistor.

## **House /Central Alarm or EVAC System**

The connection to the House or Central Fire Alarm or EVAC System will require a Junction Box which will house an approved normally open "form C" isolated relay.

This relay's coil should be connected to and supervised by the central alarm system and must be installed and maintained by the central alarm contractor.

This relay switch leg will connect to the control panel at switch input number five (5).

At least one wire pair (See figure 2.2) for specification, must be run to the central panel enclosure,

Spare wire pairs are suggested in case of wire failures or future system modifications or expansion.

The switch leg servicing the ROOM VALET shall be connected to the N/O contacts of the isolated relay and be terminated at that point with a 4.7 K ohm resistor. See detail to follow.

## Connections Inside The Central Panel Enclosure

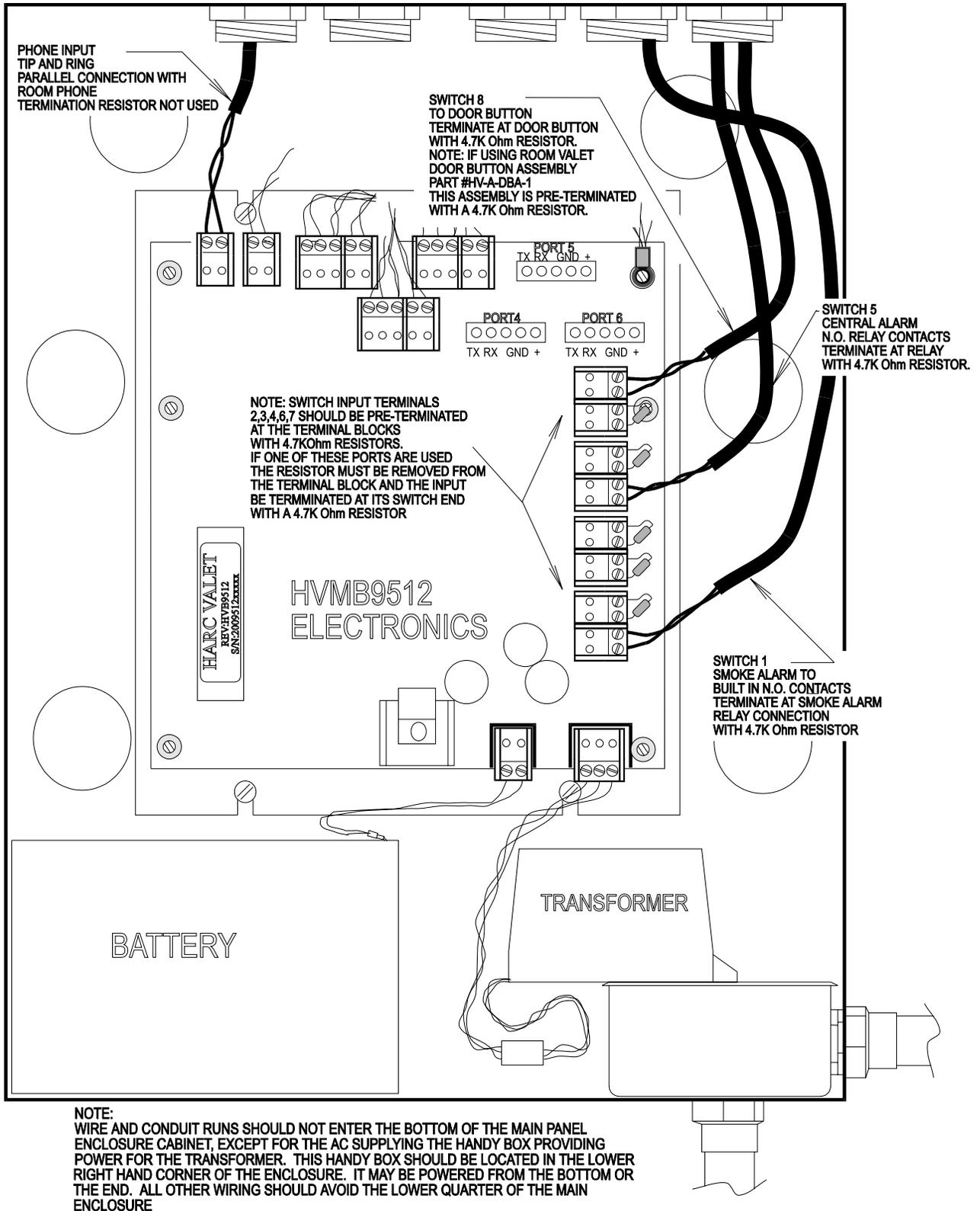


Figure 3.11 - Central Panel Enclosure Showing Main Electronics Input Terminations

## Switch Input Functions:

All switch inputs must be terminated with a 4.7K Ohm resistor.

The door bell assembly as it comes from HARC has the resistor in place.

The resistor for the smoke alarm should be placed across the switch legs as close to the relay or “smoke Detector side of the wire run as possible.

All unused inputs must have this resistor installed at the terminal block (As shown in figure 3.11).

The House Alarm or Emergency-Alert switch leg has had the circuit terminated at the main electronics. This resistor should be removed from the connector at the main electronics and place across the switch legs as close to relay interface servicing the Room Valet as possible (As shown in figure 2.11).

**Note: ALL used inputs MUST have the resistor across the switch contacts to provide proper wire fault detection. All unused switch inputs MUST have the termination resistors installed at the terminal block on the main board. The resistors need to be relocated to the switch side if the switch is put into service. The supervision circuit will turn on the "SYSTEM MALFUNCTION" ICON if a wire fault is found indicating Broken wire, or other open non-terminated condition.**

SW	Typical Function	DISPLAY ICON
1	FIRE - 1	FIRE
2	FIRE - 2	FIRE
3	FIRE - 3	FIRE
4	FIRE - 4	FIRE
5	HOUSE ALARM	EMERGENCY ALERT
6	NONE*	PHONE*
7	DOOR BUTTON - 1	DOOR
8	DOOR BUTTON - 2	DOOR

**Figure 3.12 - Switch input functions**

\* SW-6 should be terminated at the SW-6 input, as shown in figure 3.11. This allows standard on board ring detection using the telephone line input.

# Telephone/Bed Shaker Assemblies

## Wall Plate Options:

The bed shaker uses a standard 1/8" Switchcraft type two-conductor jack with a termination resistor for the supervision feature of the system.

Pigtailed jack assemblies are included with the standard Room Valet System.

If a double jack is required, two jacks are wired parallel in a "Y" configuration with termination resistor included, and will allow one or two bed shakers to be used.

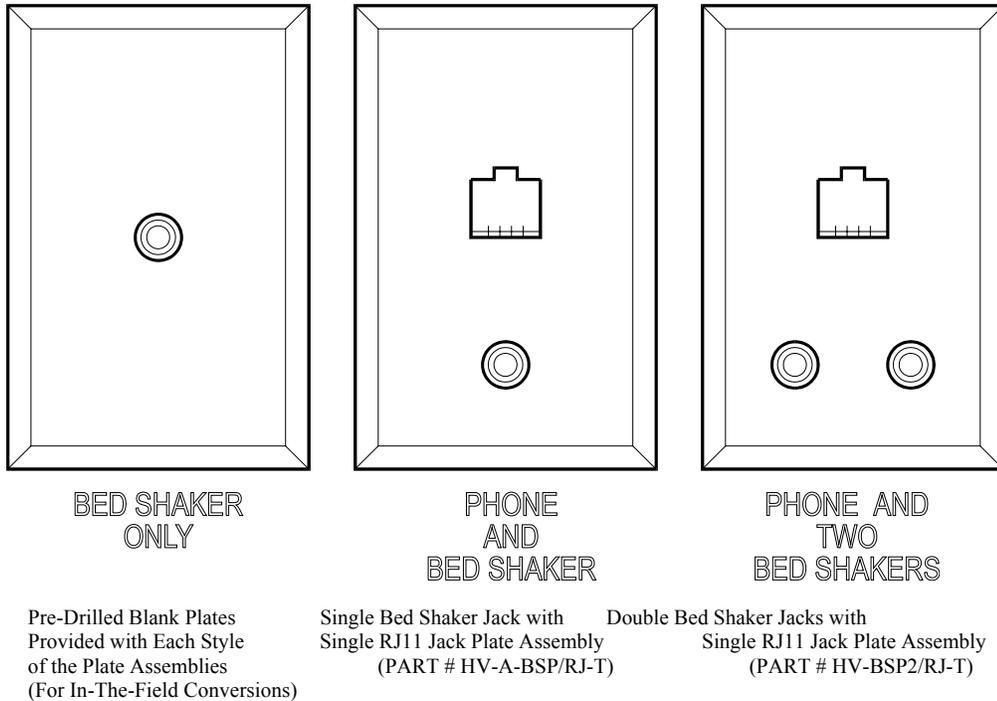


Figure 3.13 - Bed Shaker(s) Jack and RJ11 Jack Wall Plate Assemblies

**⚠ Installation Hint: Care must be taken not to short the bed shaker output to each other or ground. Shorting will blow the fuse in the Main Board electronics.**

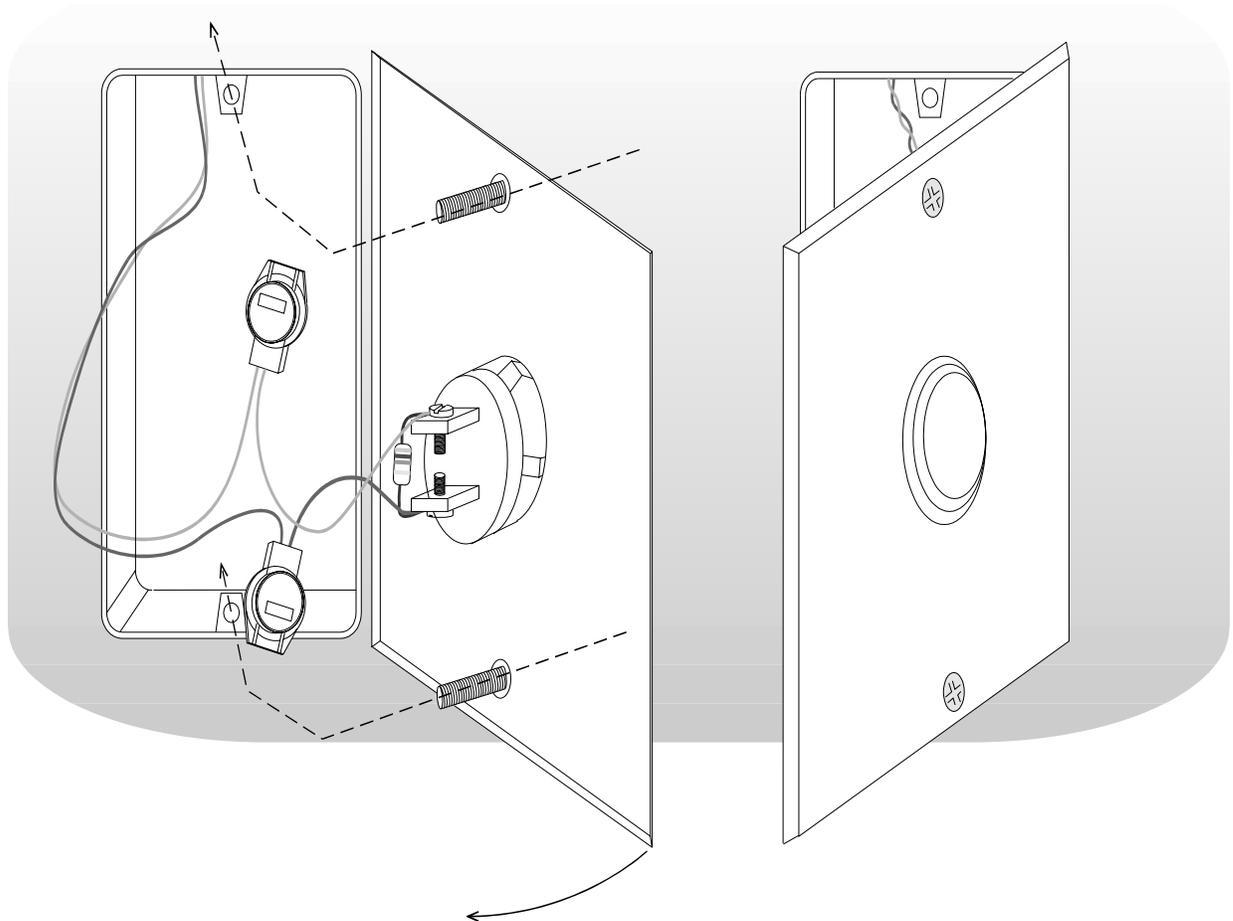
## Door Button Assembly

The Valet system comes with a door button assembly.

The door button assembly is designed to fit on a standard single-gang box at the appropriate door button location.

The Valet door button assembly comes pre assembled with the termination resistor and a wire pigtail. (See figure 3.14)

To install, use the supplied wire splice connectors to connect the door button pigtail to the wire pair that goes to the central control enclosure for the door button switch leg interface (SW #8). Then screw the wall plate into the wall box.



**Figure 3.14 - Door Button Assembly**

## Smoke Alarm Requirements:

The Room Valet requires a normally open Form "C" relay contact from the in room smoke alarm system.

The GENTEX 710/CS or 7109/CS meets all requirements for a hearing impaired room and it has a normally open Form "C" Relay contact available for the Room Valet. Other Gentex options are available, consult GENTEX specifications for details.

Figure 3.15 shows the Gentex 710/CS.

The Gentex 710/CS is powered by 120 V/AC. It typically requires an UPS circuit to provide protection during power outages.

The Gentex 7109/CS unit contains a 9V battery that keeps the unit functioning in power loss except the on board strobe light does not function. It will however provide relay closure to trigger the Room Valet which will still function using it's own battery.

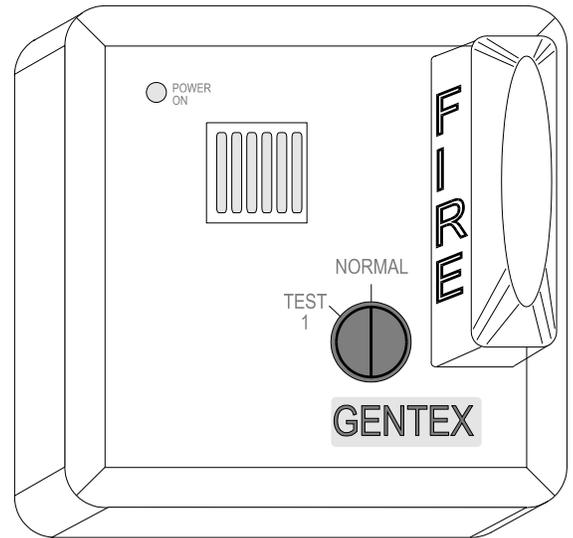


Figure 3.15

## GENTEX 700 Series:

The Gentex series typically mounts on a "4" square junction box high in the sleeping area of the room. (As shown in figure 1.1) The Gentex 700 series units also have facilities for chaining "Tandem" multiple detector locations allowing multiple areas to be covered easily. Consult the Gentex 700 series instructions for more details on these features.

Figure 3.16 shows the Gentex 710cs connections to the Room Valet. Make connections using wire nuts and tuck harness inside J-box, as shown in figure 3.17. It is important to attach the wires nut joints with a couple turns of electrical tape will prevent the nuts from slipping off when the detector is inserted and removed for maintenance through the years.

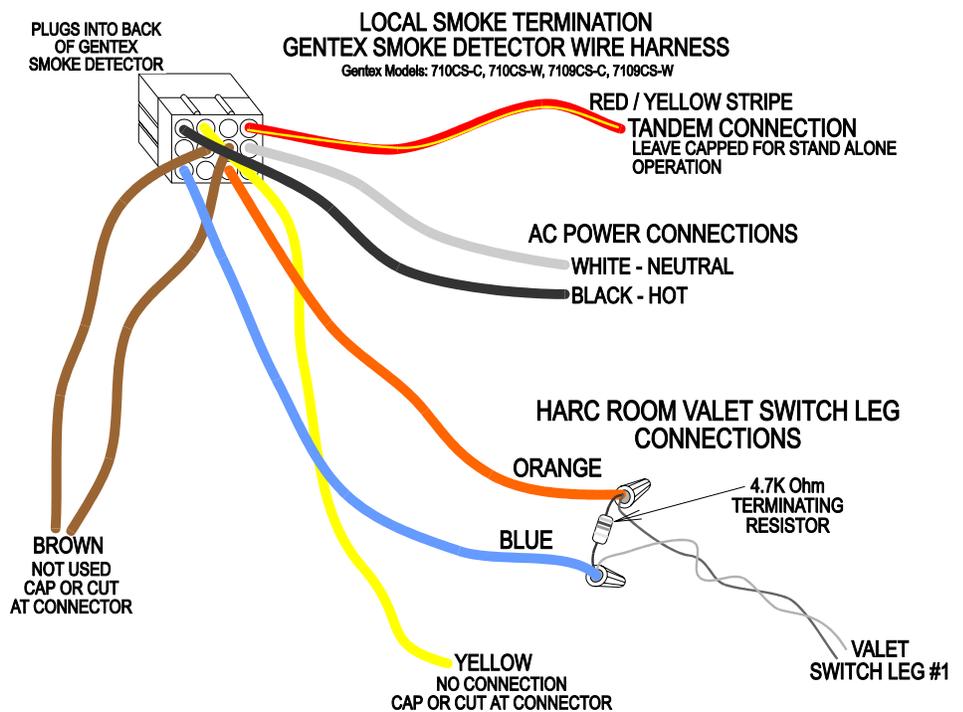
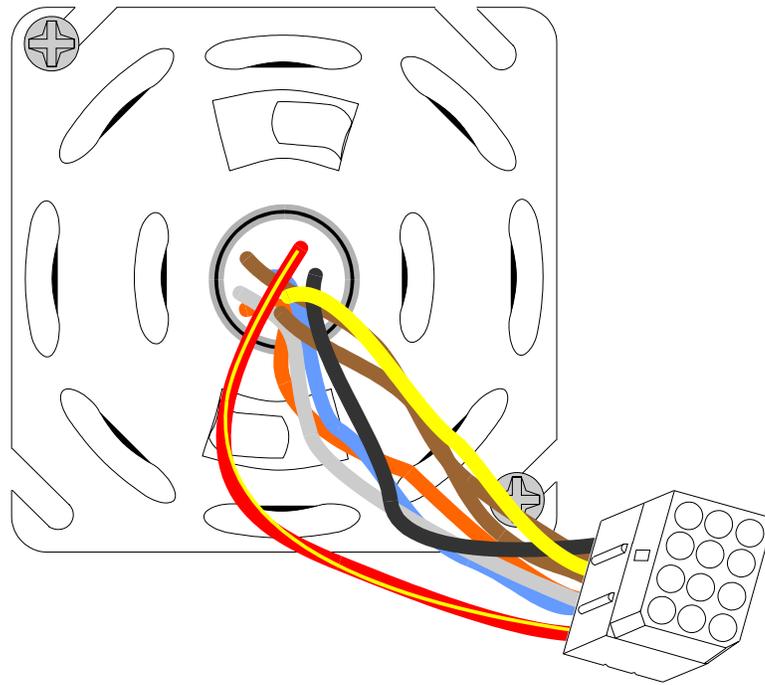
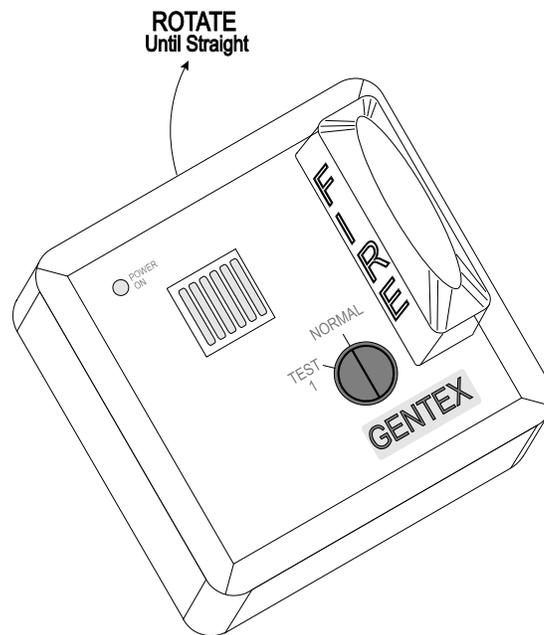


Figure 3.16 - Gentex 710cs Wiring Harness W/ Valet Connections

When installing the detector push connector into the back of the unit, observing proper orientation. Then holding unit at about 45 degrees in the counter clockwise direction hold flat against the wall and rotate clockwise until the latches hold, See Figure 3.18. Adjust unit so a perfect vertical orientation is achieved.



**Figure 3. 17 - Gentex Mounting Bracket Ready for Detector**



**Figure 3. 18 - Installing a Gentex Smoke Detector Onto it's Mounting Bracket**

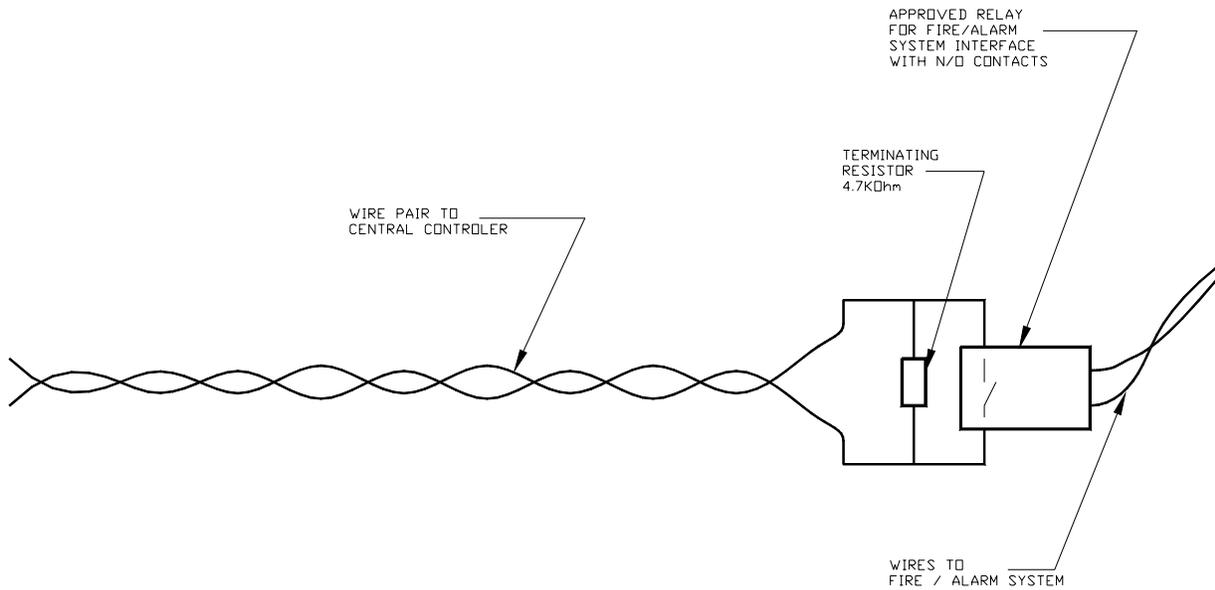
## FIRE / ALARM System Termination

All Room Valet inputs require a normally open switch contact terminated with a 4.7K Ohm resistor across the contacts.

This should be done as part of the alarm-system relay installation.

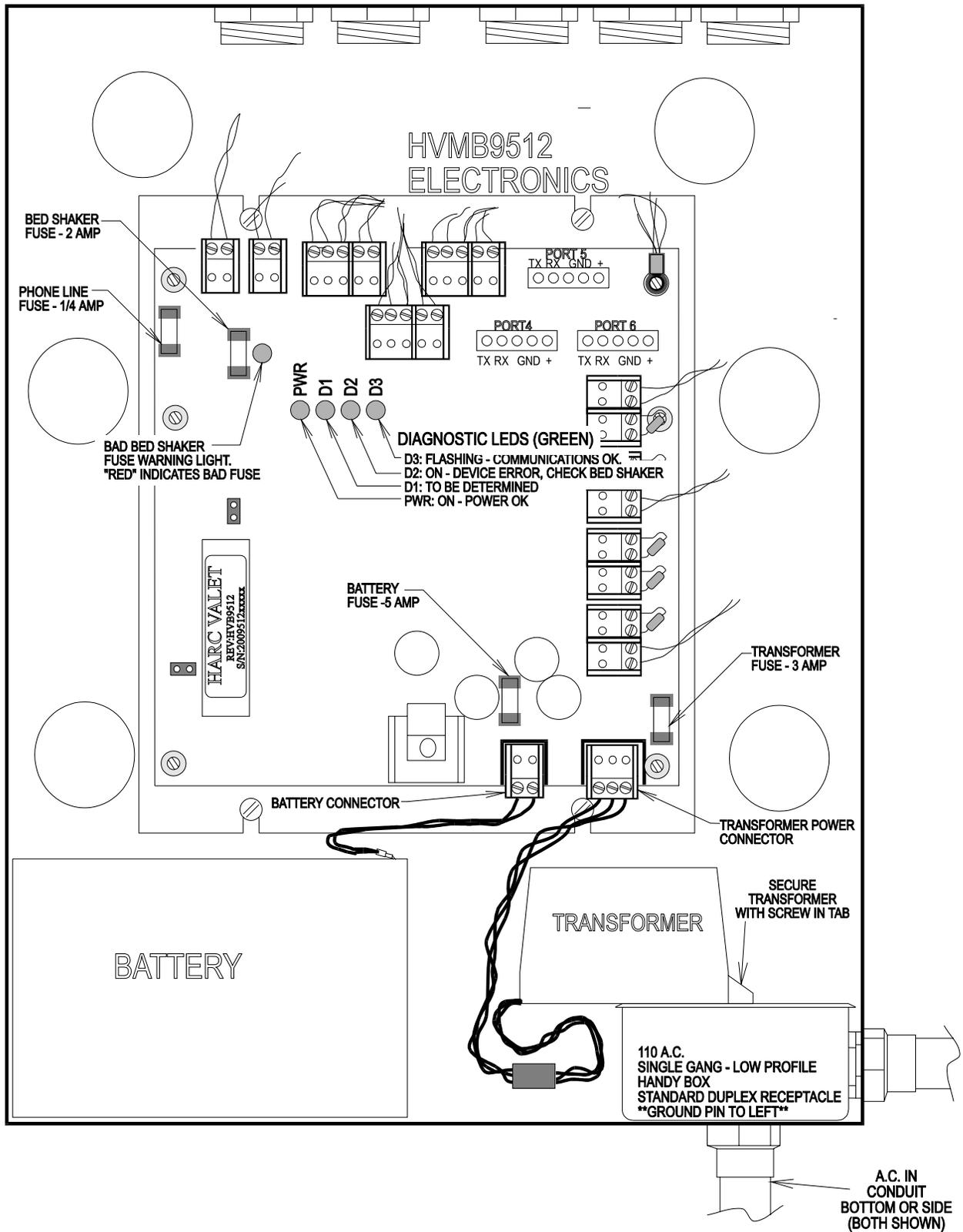
The pair of wires should be labeled inside the Central Panel Enclosure as to the function / signal source.

When the electronics are installed the lines will be tested for the 4.7 KOhm load.



**Figure 3.19 - Fire / House Alarm Relay Detail**

**🔧 Installation Hint:** All switch legs are terminated at the switch end with a 4.7 KOhm resistor. Any 4.7K Ohm, 5% tolerance, 1/4 Watt or 1/2 Watt resistor will work.



**Figure 3.20 - Central Panel Enclosure Main Power Wiring**

## **General Wiring Information**

### **Proper Grounding:**

Earth ground must be connected to the "GND" terminal.

This is very important to prevent long term static discharge damage.

If there is a GOOD Ground is connected to the Central Control enclosure, then the "GND" connection is not necessary to the Main Board Electronics.

It is also recommended to have grounded conduit runs, or ground each Display Panels Wall Box.

This will give the user interface a good ground to help prevent static discharge damage.

## **Final Connections and Power ON**

DO NOT connect either of these until final wire inspections have been made. Plugging these into the main board will power it up into an operational mode.

**1 - Before powering the installation up double-check all wiring.**

**2 - Unplug and remove all display panels from back plates.**

### **3 - Battery:**

Make sure the Red wire goes to the "+" terminal on the battery. It should connect to the "RED" terminal on the Main Board electronics. The battery sits on the bottom of the central control enclosure.  
(As shown in figure 3.20)

### **4 - AC/1 and AC/2 Connections:**

These are from the 12 V/AC Transformer and should go to AC/1 and AC/2. When connected unit power is supplied.

**5 - Test Display Panel Voltages as described on page 15.**

**6 - Plug Displays in one at a time until all are running properly.**

### **7 - Test Bed Shaker(s) and Phone Ring.**

(Remember to arm the impaired features by pressing the ear on the lower right corner)  
(When Impaired features are active, a GREEN light appears by the ear)

**8 - Set Clock and then disable system (Press the Ear symbol on the lower right corner).**

**9 - Perform final checkout on next page.**

**Installation is now done!**

# HARC Room Valet Room inspection and Checkout

The following list should be performed on any new HARC Room Valet installation. If problems exist, and cannot be resolved call 1-888-RM VALET (888-768-2538) for technical support.

Before testing ARM the system by pressing the "EAR" in the lower right corner of any display panel. A green indicator should light near the EAR when the system is "ARMED"

## Final Checkout:

### Displays:

- \_\_\_\_\_ All displays are attached securely to walls.
- \_\_\_\_\_ All displays are clean and "NEW" looking, no visible defects.
- \_\_\_\_\_ All displays show proper time, all buttons respond when pressed.
- \_\_\_\_\_ All displays show armed state by green LED in lower right corner.
- \_\_\_\_\_ All displays strobe, and sound for alarms (In armed mode).

### Bed Shaker(s):

- \_\_\_\_\_ All bed shakers function properly.
- \_\_\_\_\_ Bed Shaker cords show no visible sign of wear, if so replace.
- \_\_\_\_\_ Bed Shaker(s) attached and secured with supplied strain relief
- \_\_\_\_\_ Bed Shaker(s) properly placed between mattress and box spring of bed.

### Inputs: (Response to inputs can vary - These are typical responses for a "ARMED" system.)

- \_\_\_\_\_ Doorbell - When pressed the Room Valet should show the "DOOR" Icon and should be in full alarm for about 5 seconds.
- \_\_\_\_\_ Local Smoke - When smoke detector is in test mode the Room Valet should show the "FIRE" icon and should be in full alarm until the input is cleared.
- \_\_\_\_\_ Central Alarm - When a house, or central, alarm is indicated the Room Valet should show the "Emergency Alert" Icon and should be in full alarm until the input is cleared
- \_\_\_\_\_ Phone - Have someone call the room - when the phone rings the "PHONE" icon should light, and strobe should flash, but no sound (because the telephone is ringing). This will continue until about 5 seconds after the telephone stops ringing.

### Overall:

- \_\_\_\_\_ AC power supply OK, unplug battery - Valet should still function normally.
- \_\_\_\_\_ Battery OK, unplug AC power supply - Valet should still function normally.
- \_\_\_\_\_ Both AC and Battery properly reconnected.

## **Before Leaving Room:**

- ⇒ Make sure the Central Panel Enclosure is locked, and secured with the two 1/4 turn screws.
- ⇒ Set clock to proper time.
- ⇒ Disarm the system (Press the "EAR" on the lower right until green indicator is off)
- ⇒ Make sure the alarm clock is off (Press the "ALARM OFF" Button)

# IN ROOM OPERATION INSTRUCTIONS