

# VE-1200 and VE-2400 Series of VirtualEdge™ Connectivity Panels

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## 1. GENERAL

### 1.1 Document Purpose

This practice describes Westell's VirtualEdge™ Connectivity Panels, models VE-1200, VE-1212, VE-2400, VE-2424, VE-2424BNC, and VE-2424SC, shown in Figure 1.

- NOTE -

Hereafter, the Westell® VirtualEdge Connectivity Panels may be commonly referred to as "the panel." The specific model numbers will be used where differences apply.

### 1.2 Document Status

Whenever this practice is updated, the reason will be stated in this paragraph. Revision C of this practice adds models VE-2424BNC and VE-2424SC. Revision B added Part 3, Figure 5, and Figure 6, and updated Paragraph 1.5 and Table 2.

### 1.3 Product Purpose and Description

The VirtualEdge (VE) connectivity panels are 12-position or 24-position interface panels that are used by the Telco to terminate any 10Base-T, 100Base-T, fiber, or COAX services (or a combination thereof, or any other services) typically at the CPE point of demarcation. The service terminated is determined by the coupler type selected to occupy any one or all of the 12 or 24 positions. The 24-position VE-2424BNC panels come equipped with BNC couplers (for DS3 services), the 24-position VE-2424SC panels come equipped with SC couplers (for fiber services), and the 12-position VE-1212 and 24-position VE-2424 panels come equipped with CAT 5e couplers for Ethernet services. The 12-position VE-1200 and 24-position VE-2400 panels are empty, allowing a variety of individual terminations to be installed in one panel, as needed by the application or customer. Westell offers a variety of couplers and cables as orderable options for terminating other services (see Table 2). A circuit or position designation strip, numbered 1-12 or 1-24, depending on the model ordered, allows installers to mark the physical position of the circuits terminated at the front panel. The strip's magnetic backing allows the installer to easily remove or position the strip when marking or erasing circuit numbers during an installation.

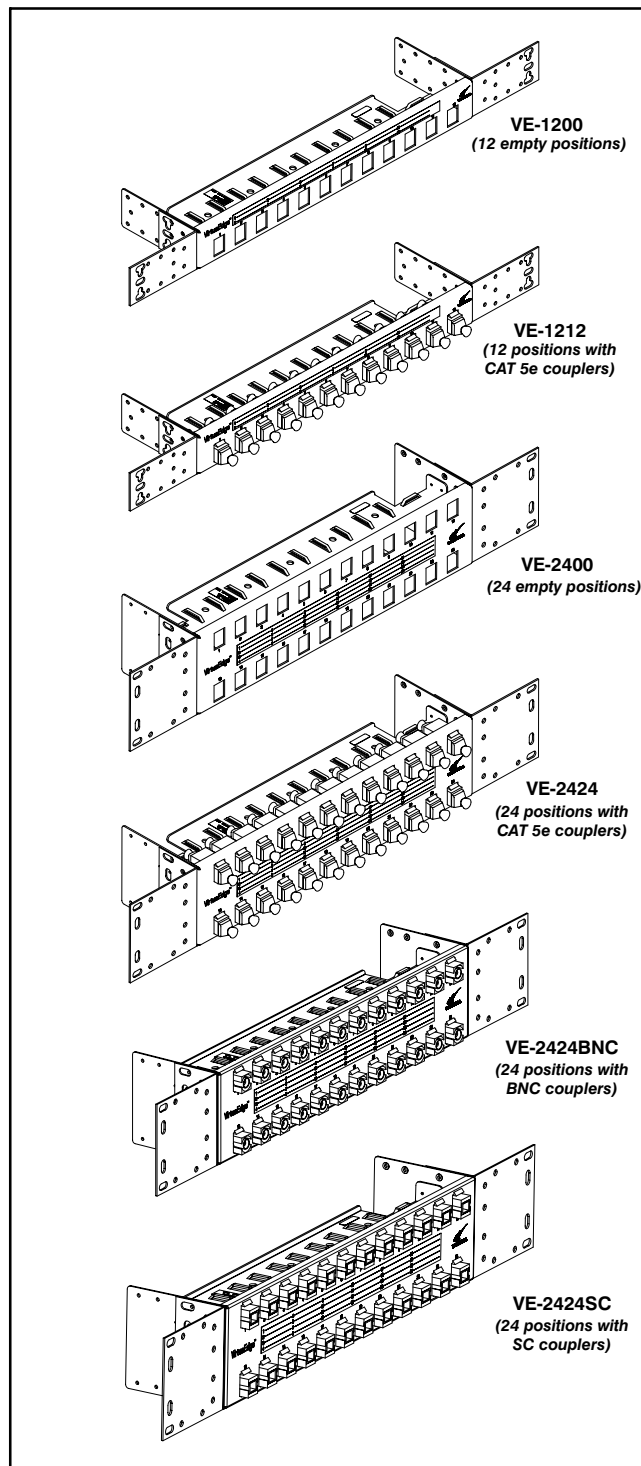


Figure 1. Isometric Views of VirtualEdge Connectivity Panels

## 1.4 Product Mounting

The panels can be rack or wall mounted. The included mounting ears come factory-installed on the panel for flush-mounting in 23" relay racks, but can be easily detached and reversed for 19" relay racks, or flipped and repositioned at the back of the panel for wall-mounting. These versatile ears also can be installed in a 'set-back' position on the panel, giving the panel a projected appearance, and the versatile ears have pre-drilled holes for mounting in standard EIA racks.

## 1.5 Applications

**1.5.1** To enable a greater variety of service and interface offerings, service providers are putting more fiber into customer premises, via either Fiber-to-the-Premise or placing more fiber multiplexers and IP aggregation devices closer to subscribers. In business markets, the strong demand for Transparent LAN and Virtual Private Network services, where the customer's LAN is extended over the Service Provider Network to provide native Ethernet service, creates numerous applications for Westell's VirtualEdge Enclosure Series.

**1.5.2** The panels are intended to be simple, sturdy, and versatile mechanical platforms used to terminate high-speed Ethernet services in any combination(s). Additional interfaces can also be installed on a per-circuit basis.

## 1.6 Product Features

The VirtualEdge connectivity panels offer the following features.

- Terminates any combination of 10/100Base-T, fiber, COAX or other services
- Mounts on wall or in 19" or 23" relay racks or data cabinets
- Occupies only 1 RU (12-position models) or 2 RUs (24-position models)
- Adjustable, reversible mounting ears
- Standard BNC couplers
- Standard SC couplers for optical services (accepts optional LC couplers)
- Standard RJ45/RJ48/CAT5e couplers for Ethernet and T1 services
- Empty positions/inserts for a variety of individual terminations (VE-1200 and VE-2400 models only)
- Magnetic and removable front-panel, circuit-designation strip for easy installation and circuit identification
- Ground lug
- Steel construction (panel and ears)
- Rear steel tray provides cable support and cable tie-downs for cables coming from the Network/Telco
- Rack mounting hardware included
- Optional couplers, cable management tray, cable management D-rings, and combination kits available (see Table 2)

## 2. INSTALLATION

### - PRECAUTIONARY STATEMENT -

**Never install telephone wiring during a lightning storm.**

**Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.**

**Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.**

**Use caution when installing or modifying telephone lines.**

### - INSPECTION NOTE -

*Visually inspect the unit for damages prior to installation. If the equipment has been damaged in transit, immediately report the extent of the damage to the transportation company and to Westell (see Part 4 for telephone number).*

The VirtualEdge panels can be mounted on a wall or in 19" or 23" relay racks with standard EIA 1.75" hole spacing. When rack mounting, the panel can be installed so the front of it is flush with the front of the rack, or mounted in a projected position in the rack. The following paragraphs and Figure 2 provide further details. Screws to attach the mounting ears to the panel are provided, as well as screws to mount the panel to a rack.

### 2.1 Mounting in a 23" Rack

The panels are shipped from the factory pre-assembled with the mounting ears already attached to the panels in a flush-mount position for quick and easy installation in a 23" Telco relay rack. Each panel is equipped with an L-shaped mounting ear. For 23" rack mounting, the mounting ear's long flange attaches to the rack channel.

1. Determine the vertical mounting location in the rack. The 12-position/coupler panels require one *vertical* Rack Unit (RU) in a standard Telco relay rack, and the 24-position/coupler panels require two RUs. *Skip the next step if flush-mounting is desired.*
2. If a *projected look* or orientation in the rack is desired, remove the ears from the panel and re-attach them further back on the panel's side flange, so that the panel is projected further forward from the mounting ears. The mounting ears and the panel's side flanges have several mounting holes from which to choose, for the desired amount of projection in the rack.
3. Once the mounting ears are attached to the panel in the desired orientation or shelf-projection positioning, attach the long flange of the ears to the rack channels with the screws provided.

### 2.2 Mounting in a 19" Rack

The mounting ears can be removed, adjusted, and re-attached for 19" rack installations.

1. Determine the vertical mounting location in the rack. The 12-position/coupler panels require one vertical Rack Unit (RU) in a standard Telco relay rack, and the 24-position/coupler panels require two RUs.
2. Remove the mounting ears from the factory-assembled panel. Flip and rotate the ears and re-attach them to the

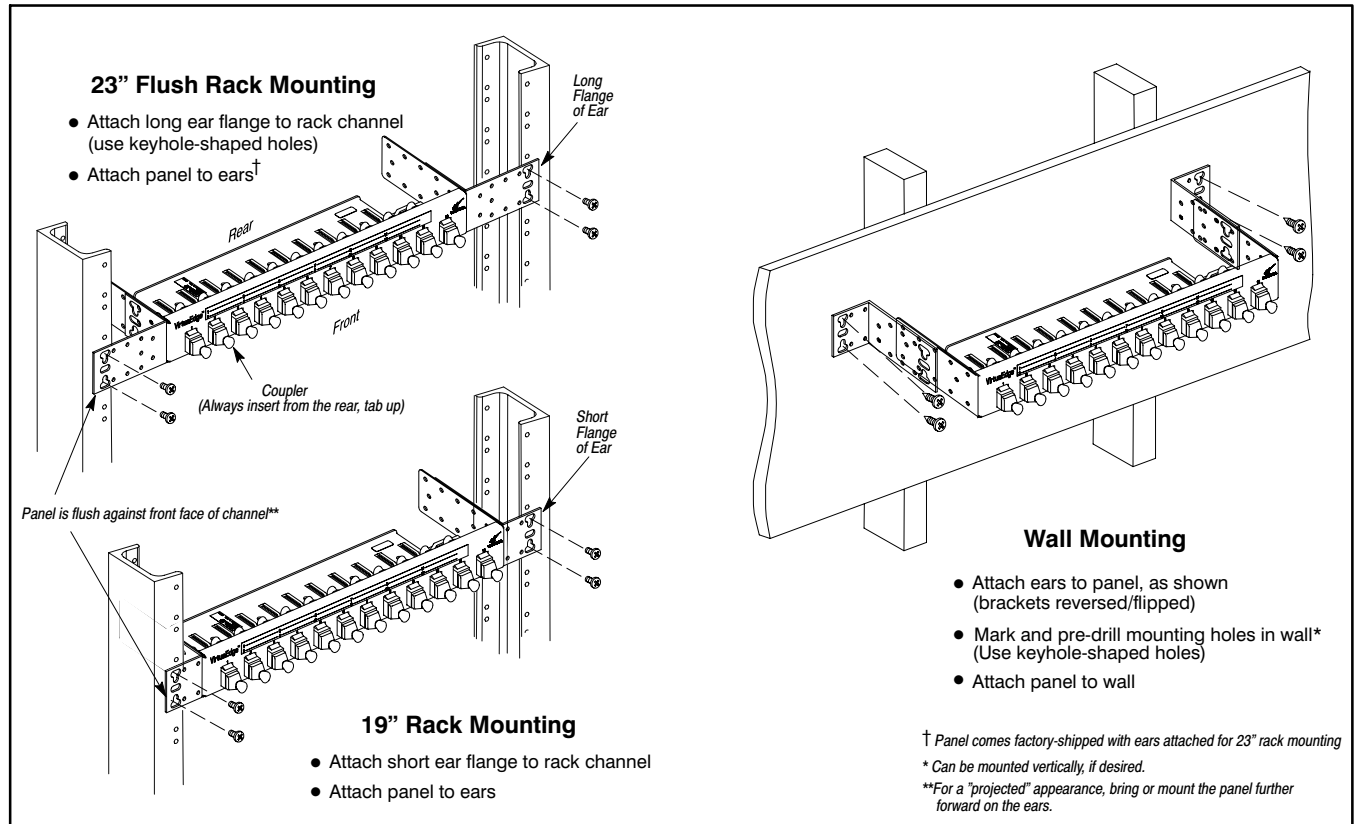


Figure 2. Mounting Views of the 12-Position Connectivity Panel

panel so the long flange of the ears abuts or is up against the panels' side flanges, using the screws provided. If a projected look or orientation in the rack is desired, attach the mounting ears further back on panels' side flanges. Several holes are provided for a choice of projection.

3. Next, lift and place the re-assembled panel between the two rack channels, attaching the short flanges of the mounting ears to the rack with the screws provided.

### 2.3 Mounting on a Wall

The mounting ears can be removed, adjusted and re-attached for wall mounting.

1. Determine the mounting location on the wall. The 24-position/coupler panels require more vertical space than the 12-position panels. In addition, the panels can be mounted in a vertical position, if desired.
2. Remove the ears from the factory-assembled panel. Re-orient and re-attach the ears to the panel so the short flange of the ears will be flush against the wall and the long ear flange abuts or connects to the side wall of the panel.
3. Next, lift and place the re-assembled panel on the wall in the desired final position and mark the mounting holes to be drilled in the wall with a marking utensil.
4. Set aside the panel and drill the holes. Do not make the holes too big.

5. Again lift the panel and align the holes in the mounting ears with the drilled holes in the wall, then insert and tighten the mounting screws (not provided).

- GROUNDING NOTE -

*Always follow local safety precautions and standard operating procedures for grounding the equipment when installing, upgrading, repairing or maintaining equipment. Any instructions or information contained herein is subordinate to local codes, operating procedures or practices.*

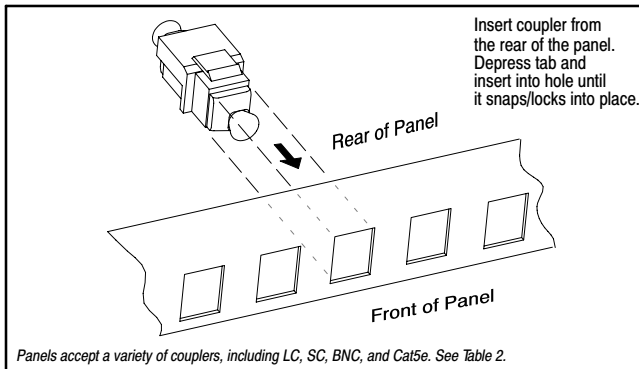
### 2.4 Making Ground Connections

**2.4.1** The Westell VE panels are shipped from the factory with a ground lug capable of accepting #6 ground wire for wall-mount applications. The installer should remove the factory-installed hex-nut and washer from the post on the rear of the panel and install the provided ground lug to this post, under the washer and the hex-nut. Make the ground connection to the ground lug using a #6 ground wire and then ground the panel to an earth ground or according to local installation procedures for grounding and bonding Network equipment.

**2.4.2** If the VE panel is installed in a relay rack, the #6 ground lug is not required, but a bond wire may be used to connect the VE panel's chassis to the common ground or bond for the relay rack or cabinet, per local procedures.

### 2.5 Making Installer Connections

After the panel is mounted, installer connections can be made to the panel. The VE-1212, VE-2424, VE-2424BNC, and VE-2424SC models come equipped with couplers pre-installed.



**Figure 3. Inserting Couplers into VE-1200/2400 Panels**

To install couplers of a different type or to install couplers on the VE-1200 and VE-2400 models, see Paragraph 2.5.1 below.

**- CAUTION -**

Use care when installing and removing couplers - *do not force into place*. If a coupler resists insertion, remove it and check for debris in or near the coupler or hole. Then gently re-insert the coupler.

**2.5.1 Installing Couplers (VE-1200 & VE-2400 models only)**

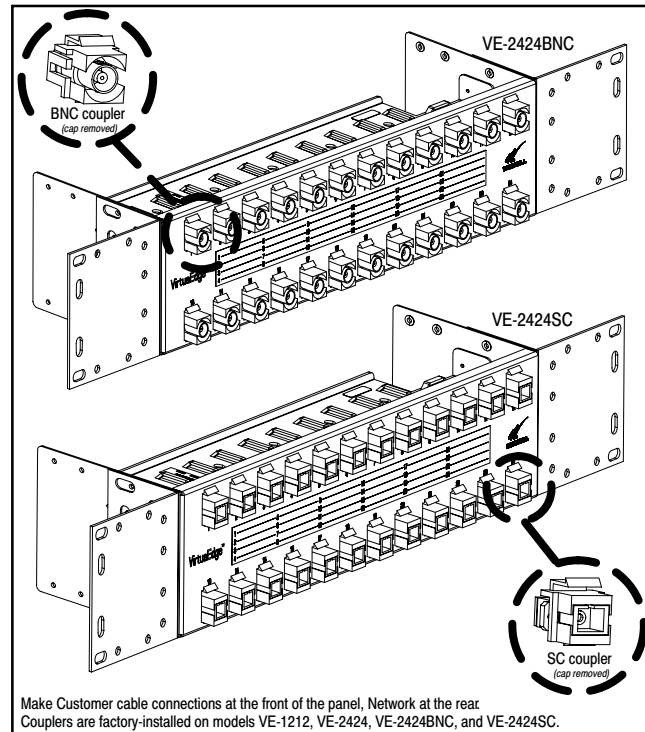
The VE-1200 and VE-2400 models come without couplers installed in the panel (the positions are empty), to enable the technician to install the coupler(s) of choice, depending on the application or service desired. Follow the steps below to insert the coupler(s) of choice.

1. Call Westell to order the coupler(s) of choice for the application (see Table 2).
2. Insert the coupler of choice from the rear of the panel and orient the coupler in the proper position before insertion. Each coupler has a top tab (similar to a phone plug) and a front and rear connector of identical service type and gender. The coupler should be inserted from the rear of the panel halfway through and into the hole or space provided. The top tab should face up and must be depressed while gently but firmly inserting the coupler into the hole, then released when it snaps into place, for a firm fit. In this final position, the tab remains on the back side of the panel, for a clean front-panel appearance.

**2.5.2 Connecting Network/Telco Cables**

Network/Telco connections are made to the connector at the back of the installed coupler(s), at the back of the panel on all models. Figure 4 shows both a BNC and SC coupler, 24 of which are provided with the VE-2424BNC and VE-2424SC models, respectively.

1. Remove the protective connector insert or cover from the back of the coupler in the first coupler position.
2. Run the cable of choice to the first coupler and insert the cable's connector into the back of the coupler.



**Figure 4. Pre-installed Couplers in VE-2424 Panels**

3. Leave enough cable slack so as not to strain the cable, then use a cable tie (provided) to secure the cable to the cable tie-down provided near the coupler hole on the rear shelf of the panel.
4. Repeat for each coupler. Excess cable can be routed to either or both sides for neat cable management.

If using a VE-1212, VE-2424, VE-2424BNC, or VE-2424SC panel (fully-loaded with couplers in each position), the installer can connect the appropriate service-type connectorized cable to any desired circuit position and route the cable to the Network equipment. When the Network equipment is activated, signals from the Network equipment should be present at the VE front panel where the end-user or customer equipment can be connected.

**2.5.3 Connecting End-User or Customer Cables**

Customer connections are made to the connector at the front of coupler(s), at the front of the panel.

1. Remove the protective connector insert or cover from the front of the coupler in the first coupler position.
2. Run the cable of choice to the first coupler and insert the cable's connector into the front of the coupler.
3. Repeat for each coupler.

**2.5.4 Labelling Circuit Positions**

A detachable, magnetic-backed, circuit-position label is provided for indicating and identifying each circuit or position. The magnetic backing allows this label to be removed for easier marking or writing on a larger horizontal surface, then re-attached for quick and easy future reference.

### 3. ACCESSORIES

#### 3.1 Couplers

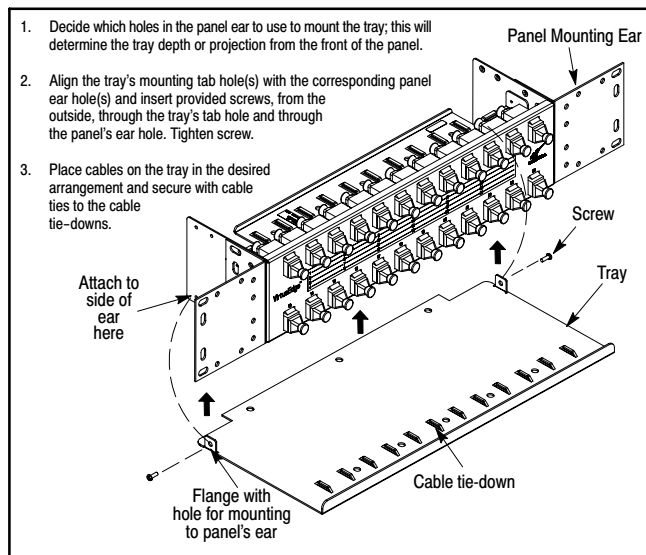
Westell's VirtualEdge panel accepts multiple coupler types that can be used or interchanged within the panel(s), including LC type fiber couplers. Couplers can be purchased separately using the part numbers shown in Table 2.

#### 3.2 Cable Management Tray

To facilitate cable management at the front of the panel(s), Westell offers a metallic Cable Management Tray (Figure 5). This tray attaches to the panels as shown in Figure 5. The tray is designed to allow jumpers and cables to cross in front of the panel without putting unnecessary downward force or strain on the couplers, when installed. The tray also has bridge-forms or cable ties to allow technicians to dress cables to the tray, if desired. The tray can be mounted to the panels at two different depths to allow customization based on the amount of cables and jumpers running across the panels. Use alone or with one or more D-rings described in Paragraph 3.3 for a customized, cable management solution.

#### 3.3 Cable Management D-Rings

Optional, metallic D-rings (Figure 6), installed at either or both ends of a VirtualEdge panel, provides guidance and support of the cables that run across the front of the panel to the couplers. A diagonal slit in the front of the ring allows existing or newly-installed cables/jumpers to be easily inserted into the ring, without re-feeding or re-routing, and the 3" ring depth accommodates up to 24 or more cables. Use one or more D-rings alone or with the tray described in Paragraph 3.2 for a customized cable-management solution.



**Figure 5. Installing Cable Management Tray to the Panel**

#### 3.4 24-Position Panel Kits

Kits which contain two D-rings, a cable management tray, and a 24-position panel equipped with either BNC or SC-type couplers are available from Westell. If desired, the factory-installed couplers in these kits can be replaced with other coupler types, such as LC couplers. See Table 2 for ordering information.

### 4. CUSTOMER & TECHNICAL SERVICES

#### 4.1 Customer Service & Technical Assistance

If technical or customer assistance is required, contact Westell by calling or using one of the following options:

Voice: (800) 377-8766  
email: [global\\_support@westell.com](mailto:global_support@westell.com)

Visit the Westell World Wide Web site at <http://www.Westell.com> for additional information about Westell.

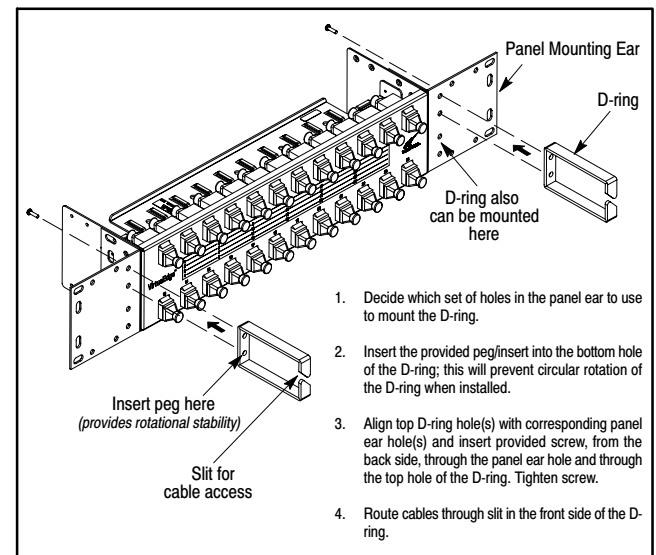
#### 4.2 Part Numbers

This equipment is identified by a product number (A90-VE1200), which consists of three parts: the issue letter of the equipment (A), the assembly type (90), and the specific model number (VE1200). Each time a change is made to the product which changes the form, fit, or function of the product, the issue letter is incremented or advanced by one. Be sure to indicate the issue level as well as the model number when making inquiries about the equipment.

### 5. WARRANTY & REPAIRS

#### 5.1 Warranty

Westell warrants this product to be free of defects at the time of shipment. Westell also warrants this product to be fully functional for the time period specified by the terms and conditions governing the sale of the product. Any attempt to repair or



**Figure 6. Installing Cable Management D-Rings to the Panel**

modify the equipment by anyone other than an authorized Westell representative will void the warranty.

**5.2 Repair and Return**

Westell will repair or replace any defective Westell equipment without cost during the warranty period if the unit is defective for any reason other than abuse, improper use, or improper installation. Before returning the defective equipment, first request a Return Material Authorization (RMA) number from Westell. Once an RMA number is obtained, return the defective unit, freight prepaid, along with a brief problem description, to:

Westell, Inc.  
 ATTN: R.G.M. Department  
 750 N. Commons Drive  
 Aurora, IL 60504-7940

Replacements will be shipped in the fastest manner consistent with the urgency of the situation. Westell will continue to repair or replace faulty equipment beyond the warranty period for a nominal charge. Contact Westell for details.

**6. SPECIFICATIONS**

**6.1 Physical Specifications**

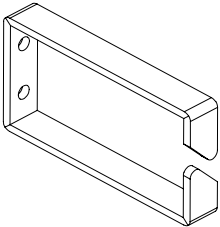
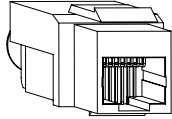
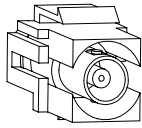
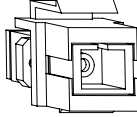
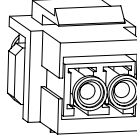
The physical specifications are shown in Table 1.

**6.2 Ordering Specifications**

To order units, call the telephone number shown in Paragraph 4.1 and please specify a specific part number shown in Table 2.

All Models	U.S.	Metric
Width, w/o ears	15.5 inches	39.4 cm
Width, w/ears	19 or 23 inches	48.3 or 58.4 cm
Depth, minimum	4 inches	10.2 cm
Depth, maximum	6 inches	15.2 cm
Operating Temp.	-40° to 149°F	-40° to 65°C
Humidity	0 to 95% (non-condensing)	
VE-1200/1212	U.S.	Metric
Height	1.75 inches (1 RU)	4.45 cm
Weight (VE-1200)	25 ounces	709 g
Weight (VE-1212)	33.5 ounces	950 g
VE-2400/2424	U.S.	Metric
Height	3.5 inches (2 RU)	8.9 cm
Weight (VE-2400)	30.5 ounces	865 g
Weight (VE-2424)	47.4 ounces	1344 g

**Table 1. Physical Specifications**

Part #	Description
A90-VE1200	Model VE-1200 - 12-position, 1 RU high, VirtualEdge Connectivity Panel with 12 empty coupler termination positions.
A90-VE1212	Model VE-1212 - Same as VE-1200 but equipped with 12 CAT 5e couplers.
A90-VE2400	Model VE-2400 - 24-position, 2 RU high, VirtualEdge Connectivity Panel with 24 empty coupler termination positions.
A90-VE2424	Model VE-2424 - Same as VE-2400 but equipped with 24 CAT 5e couplers.
A90-VE2424BNC	Model VE-2424BNC - Same as VE-2424 but equipped with 24 BNC couplers.
A90-VE2424SC	Model VE-2424SC - Same as VE-2424 but equipped with 24 SC couplers.
Panel Accessories and Options*	
A90-VECMTRAY	Cable management tray (front projection)
A90-VECMRING3	Cable management D-ring (Qty = 1) 
A90-VECPLE10	CAT 5e Keystone style coupler (Qty = 10) 
A90-VECPLEIDC10	CAT 5e coupler with IDC termination on Network side (Qty = 10)
A90-VECPNBNC10	BNC COAX coupler (Qty = 10) 
A90-VECPNLC1	Fiber coupler with SC connectors (Qty = 1) 
A90-VECPNLC1	Fiber coupler with LC connectors (Qty = 1) 
A90-VEBLNK100	Blank Inserts (100 per package)
A99-VE2424BNC	Kit which contains a 24-position panel, 24 BNC couplers, a cable management tray, 2 D-rings, kit assembly hardware, and rack mounting hardware.
A99-VE2424SC	Same as A99-VE2424BNC but with SC couplers.

\*A variety of cables and fiber jumpers also are available. Call Westell for details.

**Table 2. Ordering and Option Information**