

# Boxer™ BXM05V19-NMT

## Sealed Outdoor Cabinet with Vertical 5-RU-Rack

CONTENTS	PAGE #
1. GENERAL .....	1
2. FEATURES .....	2
3. INSTALLATION .....	4
4. SERVICE & REPAIRS .....	9
5. CUSTOMER & TECHNICAL SERVICES .....	9
6. WARRANTY & RETURNS .....	9
7. SPECIFICATIONS .....	10

### 1. GENERAL

#### 1.1 Document Purpose

This document provides general, installation, and specification information for the Westell® Boxer™ BXM05V19-NMT Outdoor Cabinet with a built-in, vertically-oriented, 5-RU by 19” relay rack. This product is designed to provide Network equipment protection in outdoor environments. The intended audience for this document is engineering, operations, and installation personnel of MSO, Telco, and utility companies. See Figure 1 for a closed view of the product, and Table 3 for product ordering information and available options to use with the BXM05V19-NMT.

- NOTE -  
Hereafter, the BXM05V19-NMT Boxer cabinet also may be commonly referred to as the “Boxer 5” or cabinet.”

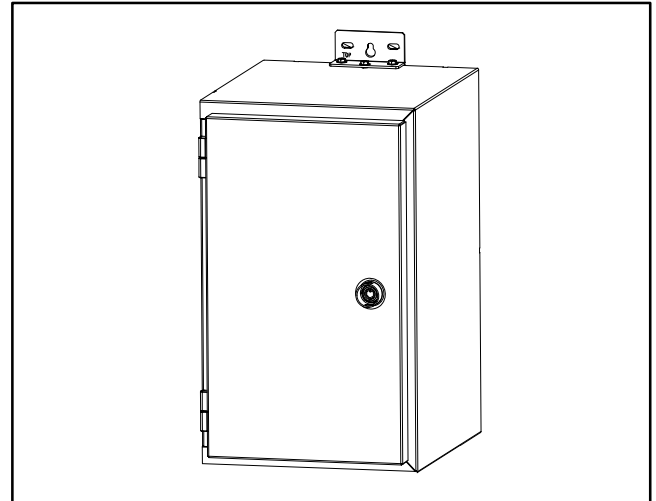
#### 1.2 Document Status

Whenever this practice is updated, the reason will be stated in this paragraph. Revision B updates the Boxer part number and updates Paragraph 1.3.

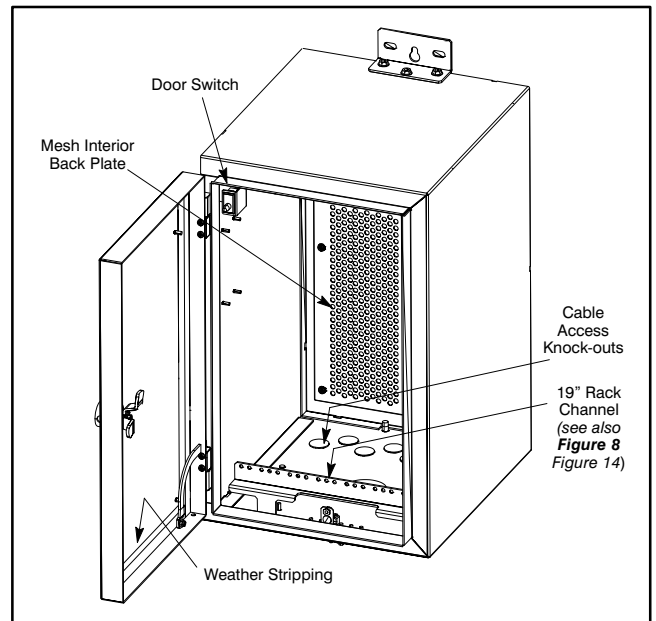
#### 1.3 Product Purpose and Description

Boxer is a compact, NEMA 4, weather-tight, outdoor cabinet that houses and protects a wide range of electronic equipment. Up to 5 RUs (8.75”) of rack space (19” racks) is available to mount Network equipment inside the cabinet, such as:

- Ethernet switches
- Multiplexers
- Fiber terminating equipment
- Copper bonding solutions
- Radio equipment
- Smart Grid equipment
- Media converters
- xDSL boxes



**Figure 1. Isometric Closed View of Boxer Cabinet**



**Figure 2. Open View of Boxer Cabinet**

- DS3 hand-offs, and
- Virtually any equipment than can be mounted on the internal mesh backboard or in a 19” rack

Adjustable rack channels are mounted inside the cabinet at the top and bottom walls, for a *rotated-rack* effect, allowing equipment to be mounted vertically in the cabinet and minimizing or streamlining the cabinet width. Boxer supports rapid equip-

ment installation and wiring through the use of adjustable and removable 19" rack channels. To ensure easy access for input and out cabling, Boxer includes multiple cable access hole knock-outs of various sizes on the cabinet floor. A door switch facilitates optional alarm functionality.

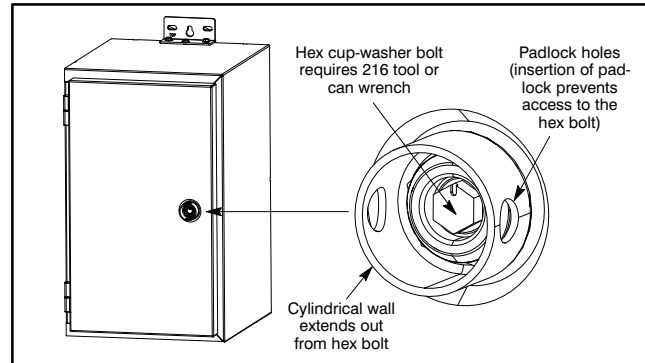
## 1.4 Product Mounting

The Boxer cabinet is typically mounted outdoors, above ground, on a pole, wall, or an H-frame. The streamlined 14" width of this rugged weather-tight cabinet both creates and adapts to numerous mounting configurations. An optional battery box can be mounted under and attached to the Boxer 5 cabinet. All mounting hardware must be capable of supporting the weight of the Boxer cabinet (approximately 20 pounds) plus the weight of any equipment mounted in it. The Boxer cabinet is typically located at the customer premises but can be located anywhere a compact, weather-tight, outdoor cabinet is required.

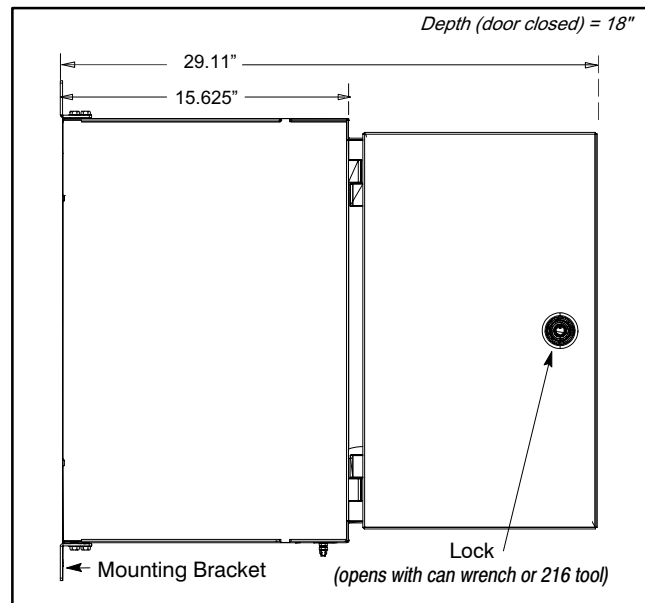
## 1.5 Product Features

Each Boxer 5 cabinet comes fully assembled and ready for field-provided customer equipment installation, and includes the following features and capabilities.

- NEMA 4 compliant
- Compact size (14" W x 23" H x 17" D)
- Weather-tight cabinet
- Full-size locking front door (opens with can wrench)
- Provides 5 RUs of 19" interior vertical rack space
- Removable/adjustable rack channels
- Full-size mesh backboard at interior rear wall for versatile cable management and equipment mounting options
- ESD jack and numerous ground posts on interior ground plate plus external ground lug
- Knock-outs at cabinet bottom accept a variety of cable, conduit, and connector sizes and types (six 1", two 2")
- Door security via a locking, hex, cup-washer bolt which also accepts a padlock
- Door sensor/alarm switch for optional alarm security
- Included mounting brackets allow pole, H-frame, wall or square post mounting
- Optional battery backup box available (knock-out hole patterns match in both units)
- Bagged parts: self-tapping screws for mounting equipment to the rear mesh backboard and rack mount screws for mounting equipment to the rack channels
- Light-weight aluminum construction (0.125" thick wall, 20 pounds) with powder-coat finish
- Operating temperature: -40° to 149°F (-40° to 65°C)



**Figure 3. Door Lock**



**Figure 4. Left-Side View, Door Open**

## 2. FEATURES

This section describes the exterior and interior features of the Westell® Boxer™ outdoor cabinet in more detail. Refer to Figure 3 through Figure 8 as needed while reading this section.

### 2.1 Exterior Features

The features located outside the large main cabinet are described hereunder. See Paragraph 2.2 for the *interior* features.

#### 2.1.1 Construction and Materials

The NEMA 4 compliant Boxer cabinet is designed to be weather-tight for above-ground applications. As such, the powder-coat painted aluminum cabinet withstands many harsh weather conditions such as rain, snow, and sleet.

#### 2.1.2 Door Lock

To lock the door, a tamper-proof hex cup-washer bolt is provided in the door. This bolt (Figure 3) is loosened and tightened with a standard telco can wrench or 216 tool. Addi-

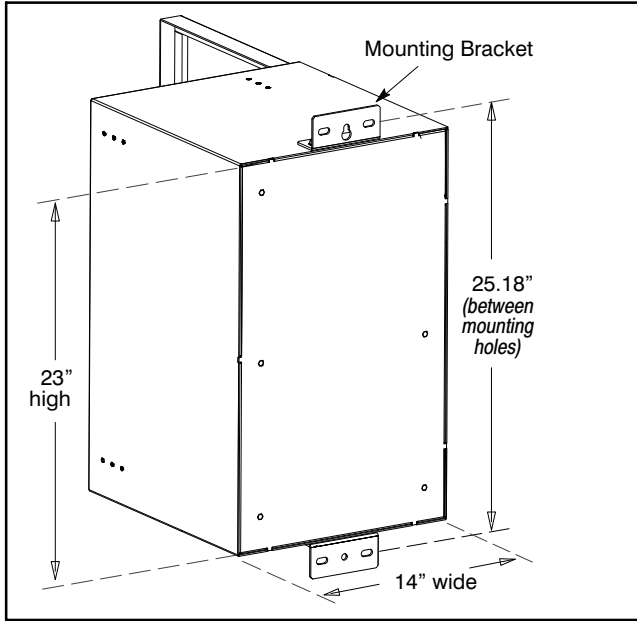


Figure 5. Rear Isometric View

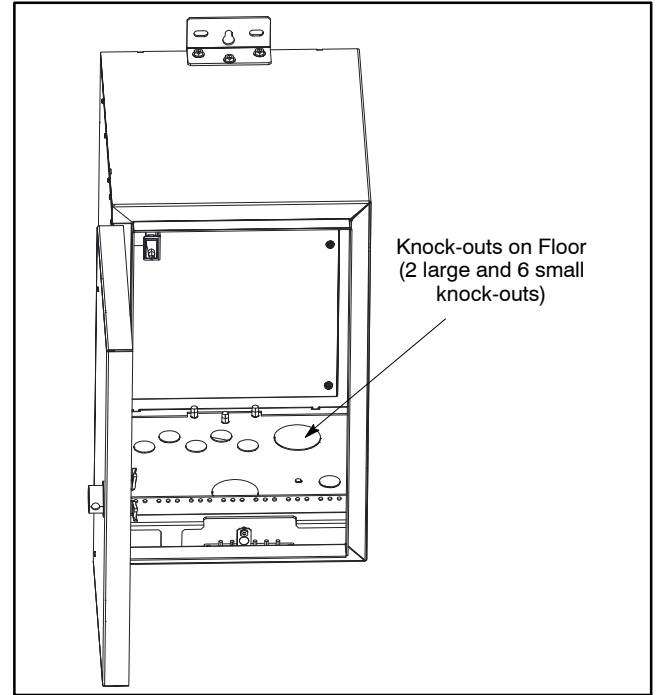


Figure 6. Front View Showing Knock-out Locations

tional security is available when a padlock is inserted through the two holes in the protruding cylindrical lock wall: a padlock hasp installed through the hole denies door tool access (tool cannot reach the hex screw).

### 2.1.3 Front Door

A full-size locking door provides maximum technician and equipment access to the interior of the cabinet and also helps protect the cabinet from tampering and vandalism. When the cabinet is mounted and the door is open, the distance from the back of the mounting brackets to the outer edge of the door's lock flange is 29.11" (as shown in Figure 4). The door opens to approximately 120 degrees. In the closed position, a gasket installed around the inside perimeter of the door abuts the front cabinet flange. When the door lock is tightened, the cabinet's door flanges and gasket provide a weather-tight seal to protect all equipment installed inside the cabinet. The door switch/sensor is described in Paragraph 2.2.1.

### 2.1.4 Mounting Brackets

Two mounting brackets are provided at the back wall of the Boxer cabinet, one at the top and one at the bottom. Each bracket has three mounting holes or slots. The center hole of the top bracket is a keyhole, for easy one-person, cabinet-self-leveling mounting. Use mounting fasteners with a diameter of up to  $\frac{3}{8}$ ". The vertical distance between the top and bottom mounting bracket hole centers is 25.18" (see Figure 5).

Quantity	Description
2	2.5" knock-out for 2" conduit
6	1.125" knock-out, for 3/4" conduit

Table 1. Knock-out Sizes and Quantities

### 2.1.5 Bottom Floor Knock-outs

Multiple knock-outs are provided on the floor of the cabinet. The knock-out sizes and quantities are shown in Table 1 and Figure 15. Do not remove a knock-out unless it is absolutely necessary to do so for cable ingress and egress, and use either tight-fitting rubber grommets or liquid-tight fittings, or other proper and approved knock-out hole sealants, to assure the best internal air quality and weather-resistance. Always use proper and company-approved tools to remove knock-outs. There are four, small, 0.300" diameter knock-outs in the floor of the Boxer cabinet where an optional battery box attaches to the cabinet (hole patterns of both units match).

**- KNOCK-OUT REMOVAL NOTE -**  
*Always remove knock-outs where holes are desired before mounting the cabinet or the optional battery box, regardless of the type of knock-out and the order of the mounting steps.*

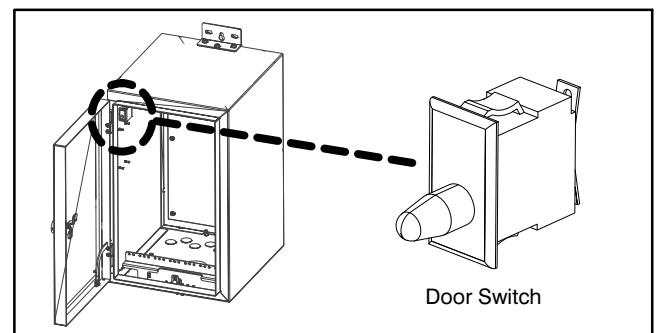


Figure 7. Door Switch Location

## 2.2 Interior Features

The features located inside Boxer are described hereunder.

### 2.2.1 Door Sensor Switch

A door sensor switch for door alarm reporting purposes is located at the top, left, front corner of the cabinet (Figure 7). This switch is factory-rewired to a cable stub. Connect the wires as needed to the field-installed equipment. To temporarily disable the sensor, pull out the cylindrical door switch actuator until it clicks. To re-activate the sensor, either gently push the actuator back in until a click is heard, or simply close the cabinet door.

### 2.2.2 Internal 19" Rack Channels

Two removable/adjustable rack channels (see Figure 8 or Figure 13) inside the cabinet provide 19" relay rack mounting for equipment that is to be mounted in the cabinet. With each rack channel in the forward-most position, the distance between the inside of the closed front door and the channel's front face is approximately 3.75" (equipment projection), and the distance from the channel's rear face to the cabinet's interior mesh backboard is approximately 12.5". Three rack channel positions are available (see Figure 13), each 1" apart, if one or two additional inches of equipment depth is needed at either the front or back of the channel. Each rack channel also contains predrilled holes, with standard hole spacings (either 1", 1.75", or 2" rack hole patterns), to mount customer-supplied equipment in the cabinet. Network equipment up to 5 Rack Units (5 RUs:  $5 \times 1.75 = 8.75$ ") high can be mounted vertically on the internal rack inside the cabinet, either as a single piece or multiple pieces of equipment.

#### - EXTRA RU NOTE -

*An extra rack unit of equipment mounting space is available at both the left and right sides of the cabinet; however, these RUs have limited front access (partially obstructed).*

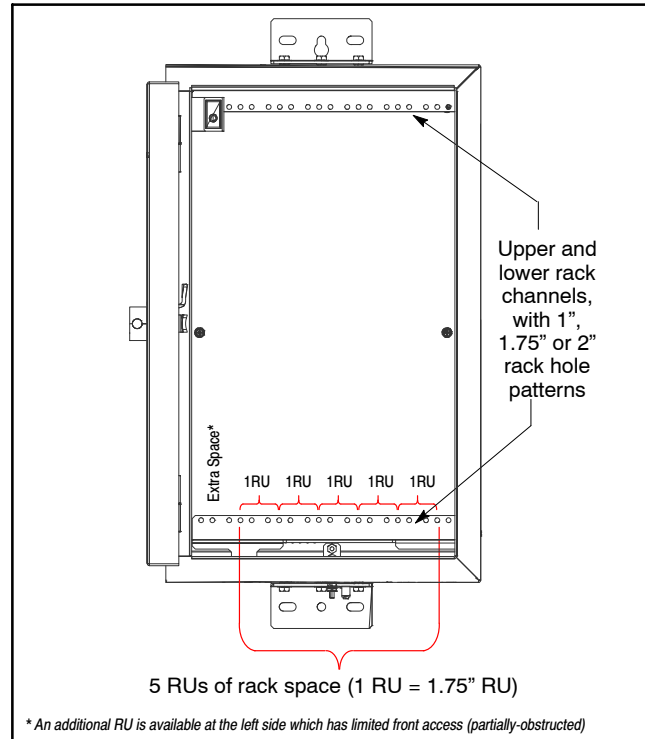
### 2.2.3 Grounding and Bonding Center

Boxer's grounding and bonding center is located on the bottom interior surface of the cabinet, close to the front door. A ground plate is provided that contains five sets of ground posts and one copper ground lug, for cable and chassis/earth ground. Bond equipment/cables to the ground posts per company practice, and connect a #6 AWG chassis or earth ground wire to the ground lug. An Electro-Static Discharge (ESD) wrist-strap jack is also located on the ground plate.

## 3. INSTALLATION

Use and follow local codes and company practices to install the Westell® Boxer™ cabinet. If none exist, use the instructions contained herein. Installation consists of:

- inspecting the unit for possible shipping damages,
- following proper safety precautions,
- reviewing pre-mounting considerations, such as selecting the mounting type and location, and preparing the mounting site,
- gathering all tools, materials, and equipment,



**Figure 8. Internal Rack Space for Equipment**

- removing knock-outs where holes are needed,
- mounting the cabinet,
- making ground connections,
- mounting customer-supplied equipment inside the cabinet,
- making communication cable connections,
- making any needed alarm connections,
- optioning the installed equipment and placing it in service, and
- performing cabinet housekeeping, and closing and locking the cabinet.

The following paragraphs provide detailed instructions for performing these procedures.

### 3.1 Inspecting the Equipment

#### - 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 5 for telephone number).*

#### - DESICCANT NOTE -

*To prevent condensation during shipment and storage, Westell includes a desiccant pack within the Boxer cabinet. Once the electronic equipment is installed and turned-up, the internal power dissipation reduces the likelihood of condensation within the cabinet. However, follow company practices for desiccant maintenance procedures to prevent internal condensation.*

### 3.2 Following Proper Safety Precautions

The cabinet should be installed only by authorized and trained personnel. Always exercise caution and follow all safety precautions.

#### Important Safety Instructions (Please Save)

When using your telephone/telecommunications equipment, follow basic safety instructions to reduce the risk of fire, electric shock, and injury to person(s), including the following:

- A. Read and understand all instructions.
- B. Follow all warnings and instructions marked on product.
- C. Do not place this product on an unstable cart, stand or table: the product may fall, causing serious damage to product.
- D. Slots and openings in the cabinet are provided for ventilation. To protect it from overheating, these openings must not be blocked or covered. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation unless proper ventilation is provided.
- E. This product should be operated only from the type of power source indicated on the marking label.
- F. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in the risk of fire or electrical shock. Never spill liquids of any kind on the product.

**- 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.**

### 3.3 Selecting and Preparing the Mounting Type and Site (*Pre-Mounting Considerations*)

Mount the cabinet in a location with an adequate earth ground and power access, with unobstructed cabinet access, and which insures the best lighting, ventilation, heat dissipation, and equipment access. Verify sufficient space exists to allow the opening of the left-hinged large door, to access and mount the cabinet, to mount and access the optional battery box if it will be mounted below it, and to adequately access, prepare, and dress all cables. Adequate horizontal and vertical space should be left between any multiple installations to allow for cabinet opening, equipment access, and cable routings and preparations. Follow company practice for the proper distance from the cable entry point or from upstream or downstream equipment.

### 3.4 Gathering all Tools and Equipment

The following tools and supplies (not provided) are required to mount the Boxer cabinet.

#### Door Opening/Locking Tools

- 7/16" can wrench or 216 tool
- Padlock (optional)

#### Knock-Out Removal Tools

- Hammer
- Punch
- Pliers

#### Cabinet Mounting Tools, Equipment, and Hardware

- Tape measure
- Marking utensil (to mark mounting hole locations)
- Level (optional)
- Power or hand drill with assorted bits, plus long bits or drill bit extensions if pole mounting
- Socket driver and sockets, or wrenches
- Wall- or pole-mounting hardware, such as 3/8" diameter wood-type lag screws or bolts
- H-frame mounting hardware (for H-frame mounting)
- Optional pole-mount kit (for pole mounting)
- Outdoor site preparation tools
- Safety gloves and glasses (optional)
- Power hoist or lifting equipment and cables (optional)
- Assorted screwdrivers
- Appropriate ground wire and equipment

#### Cable Preparation Tools and Equipment

- Cable opening and preparation tools
- Proper lengths and types of communications cables
- Proper lengths and types of power cables and fittings
- Cable management supplies (ties, clips, markers, etc.)
- Power installation and testing equipment
- ESD protection

**- KNOCK-OUT REMOVAL NOTE -**

*Always remove knock-outs where holes are desired before mounting the battery box or cabinet, regardless of the type of knock-out and regardless of the order of the mounting steps.*

### 3.5 Removing the Knock-outs

Knock-outs should be removed wherever holes for cable access are needed prior to mounting the cabinet. See Figure 15 or Table 1 for knock-out sizes, quantities, and locations, and follow the steps below to remove the knock-outs.

1. **Open the cabinet door.** If knock-outs will need to be removed, using a 216 tool or can wrench, open the large front door of the Boxer cabinet to access the knock-outs.
2. **Remove knock-out(s).** Prior to mounting the cabinet, per company practice, remove as many appropriately-sized knock-outs at the bottom of the cabinet as needed for the specific application (consider ground, power, and communication cable access needs, venting, and whether optionally mounting a battery box with the cabinet).
3. **Install rubber grommets or conduit fittings.** Install either a heavy-duty rubber grommet or the conduit fitting of choice (liquid-tight recommended) in each selected knock-out hole. If an optional vent is desired, the provided vent cap can be installed in one of the smaller knock-outs.
4. **Close the cabinet door.** Once the knock-outs are removed, lock the door using the 216 tool or can wrench, to minimize possible product damage and personal injury.

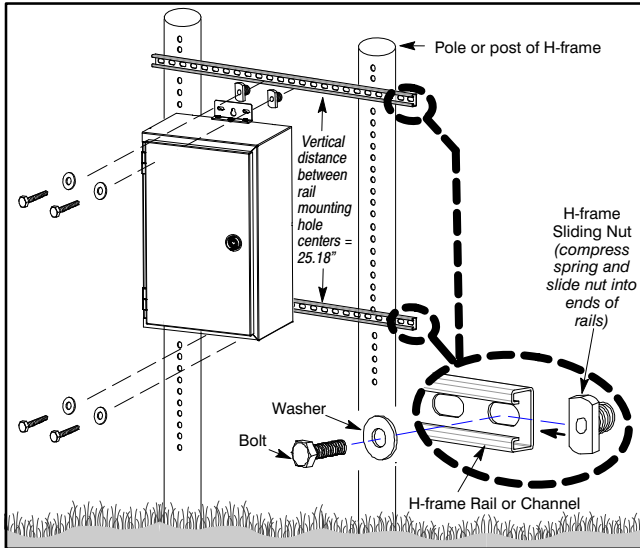


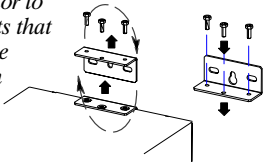
Figure 9. H-Frame Mounting

### 3.6 Mounting the Cabinet

The Boxer cabinet is typically mounted outdoors, above ground, on an H-frame or wall. Optional mounting kits are available to support a round pole (from 8" to 20" in diameter) or a square pedestal or post (minimum 8" wide). All mounting hardware (not provided) must be capable of supporting the weight of the Boxer cabinet (approximately 20 pounds) plus the weight of any equipment mounted in it. Run all cables to the mounting location, perform any trenching, trench cable placements, and backfilling prior to the cabinet mounting, and clear the installation area of any debris, vegetation, and unneeded equipment or obstacles.

#### - MOUNTING EAR ADJUSTMENT NOTE -

The Boxer cabinet is shipped with the ears rotated 180 degrees so the ears' inside right-angle corner abuts the cabinet's top-rear wall corner, to protect the ears during transport. Prior to mounting the cabinet, unscrew the bolts that secure the ears to the cabinet, rotate the ears 180 degrees so that the flange with the oblong holes faces away from the cabinet, then re-attach and tighten the ear mounting bolts.



#### - WEIGHT NOTE -

The Boxer cabinet weighs 20 pounds. The weight of the internal equipment installed in the Boxer should not exceed 25 pounds. The mounting surface, structure, and hardware must be able to support the combined weight (45 pounds).

#### 3.6.1 Mounting on an H-Frame

Follow the steps below to mount the Boxer cabinet on an H-frame. See Figure 9 for an H-frame mounting drawing. If the installation includes the battery box, attach the battery box to the cabinet prior to mounting to the H-Frame.

1. **Determine exact mounting location in H-frame.** Select and mark the exact horizontal and vertical final mounting loca-

tion within the H-frame. The spacing between the top and bottom horizontal rail mounting holes should be 25.18" (on centers, see Figure 5). Westell recommends a height of 30" from the ground. In addition to allowing for a comfortable installer working height, leave adequate space under Boxer for cable access (or an optional battery box), as stated in Paragraph 3.3, as well as in front of the mounting to allow the door to open (see Figure 4), and at the sides in the event of any multiple installations.

2. **Remove knock-outs.** See the steps in Paragraph 3.5 (*Removing the Knock-outs*) to remove the knock-outs where any cable access holes (or holes for mounting the optional battery box) are desired.
3. **Prepare the mounting hardware.** Bring the appropriate mounting hardware to the installation site. The hardware must be capable of supporting the weight of the cabinet plus the weight of the added internal equipment. Insert all rail nuts into the channel (compress the spring on the nuts as needed) and slide them over to the marked mounting location.
4. **Lift cabinet.** Lift the cabinet to the mounting height.
5. **Attach cabinet to H-frame rails.** Align the holes in the cabinet's top mounting bracket with the holes in the inserted rail nuts in the H-frame, then insert and install an appropriate bolt through each set of aligned holes. Tighten appropriately. Repeat for the bottom mounting bracket and H-frame rail. Verify the cabinet is in the proper horizontal position, make any needed adjustments, then securely tighten all mounting hardware.
6. **Test installation firmness.** Test the installation by attempting to move the cabinet. Correct any looseness, if detected.
7. **Determine next step.** If ground, power, and communications cables and internal equipment will not be connected and mounted at this time, proceed to the next step to finalize the cabinet installation. If ground, power, and communications cables and internal equipment will be connected, mounted, and powered-up at this time, skip the next step and proceed to Paragraphs 3.7 through Paragraph 3.11 for those procedures.
8. **Close up cabinet and clean the site.** If not already closed, close the Boxer door, and lock it using a can wrench or 216 tool and an optional padlock. Pick up any tools and materials at the installation site, and clean the site of any trash or debris.

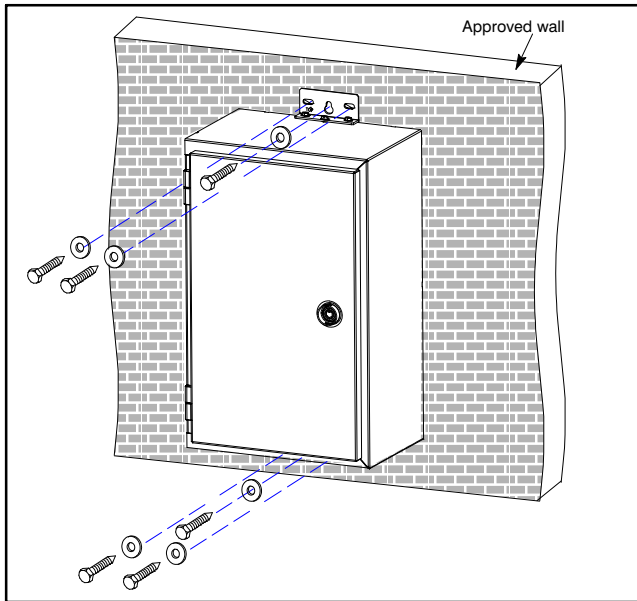
#### 3.6.2 Mounting on a Round Pole or Post

Order the optional pole/pedestal mounting kit (listed in Table 3) for details on mounting the Boxer cabinet on a round post or pole.

#### 3.6.3 Mounting on a Wall

Follow the steps below to mount the Boxer cabinet to an approved wall (Figure 10). The approved wall must be capable of supporting the combined weight of the cabinet, the equipment mounted inside the cabinet, plus the optional battery box (and batteries), if installed. Westell recommends a minimum installation height of 30" from the ground. See Figure 5 and Figure 16 for cabinet and mounting hole dimensions.





**Figure 10. Wall Mounting**

1. **Remove knock-outs.** See Paragraph 3.5 (*Removing the Knock-outs*) to remove the knock-outs where any cable access holes are desired.
2. **Find best wall position.** Locate the best mounting position for the cabinet on the wall. Verify this location meets all cabinet spacing requirements.
3. **Prepare the mounting hardware.** Bring the appropriate mounting hardware to the installation site. The hardware must be capable of supporting the weight of the cabinet plus the weight of the added internal equipment.
4. **Determine mounting height and mark top hole locations.** Measure and mark the top mounting hole locations on the wall. Westell recommends a height of 30" from the ground. In addition to allowing for a comfortable installer working height, leave adequate space under Boxer for cable access (or an optional battery box), as stated in Paragraph 3.3, as well as in front of the mounting to allow the door to open and at the sides in the event of any multiple installations. With a marking utensil, mark the top mounting holes to be drilled, in a level horizontal line, at the desired wall height.
5. **Drill top mounting holes.** Drill appropriately-sized pilot holes, slightly smaller than the width and depth of the mounting bolts, screws or fasteners, at the marked location. *Do not drill the holes too large.*
6. **Partially install bolts.** Partially install the bolts until only 1/2" remains.
7. **Lift cabinet, and align mounting holes.** Lift the cabinet to the partially installed bolts, align the top bracket keyholes with the bolts, then hang the cabinet from the bolts.
8. **Fully install the top mounting bolts.** Verify the cabinet is level. Finish driving the top mounting bolts until they are snug and the cabinet is flush and tight against the wall. Manually test the bolt tightness to verify the bolts will sup-

port the cabinet weight before the next step. Correct any level or mounting bolt discrepancies.

9. **Mark and drill bottom mounting holes.** Mark the exact locations for the bottom bracket's mounting bolts through the predrilled slotted holes in the bottom mounting bracket. Drill appropriately-sized pilot holes, slightly smaller than the width and depth of the bolts, at the marked locations. *Do not drill the holes too large.*
10. **Install bottom mounting bolts.** Insert and drive all bottom bolts completely in to their final seated position. Finish the installation by verifying all bolts are firm and snug.
11. **Determine next step, or close up cabinet and clean the site.** Repeat Steps 6-8 of Paragraph 3.6.1 to determine the next step or finish the physical cabinet installation.

- 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.*

### 3.7 Making Ground Connections

Five sets of bond/ground posts are provided on a ground plate on the interior floor of the cabinet (see Figure 11). These posts are provided to bond network and customer equipment or communications cables. **Make all ground connections prior to any telecommunications cable connections.**

1. **Locate or establish an external earth ground.** Find or create an external and appropriate earth ground, per company practice and local codes.
2. **Connect earth ground wire.** Connect the earth ground wire to the #6 AWG ground lug provided at the bottom of the cabinet (exterior, see Figure 12), per company practice.
3. **Ground cables and installed equipment.** As each cable and piece of equipment is mounted inside the cabinet (in the following sections), connect it to a ground lug or post provided on the ground plate (see Figure 11), per company practice.
4. **Use ESD ground jack.** Whenever installing equipment or performing system testing or maintenance, use the provided ESD ground jack also provided on the cabinet's interior ground plate.

- WARNING -

**Any cabinet AC/DC power wiring, cabling, and installation methods, both externally to the cabinet and installation and wiring of internal cabinet equipment, must be performed by a qualified electrician in accordance with the National Electrical Code (NEC) rules and local codes and practices.**

- DESICCANT NOTE -

*To prevent condensation during shipment and storage, Westell includes a desiccant pack within the Boxer cabinet. Once the electronic equipment is installed and turned-up, the internal power dissipation reduces the likelihood of condensation within the cabinet. However, follow company practices for desiccant maintenance procedures to prevent internal condensation.*

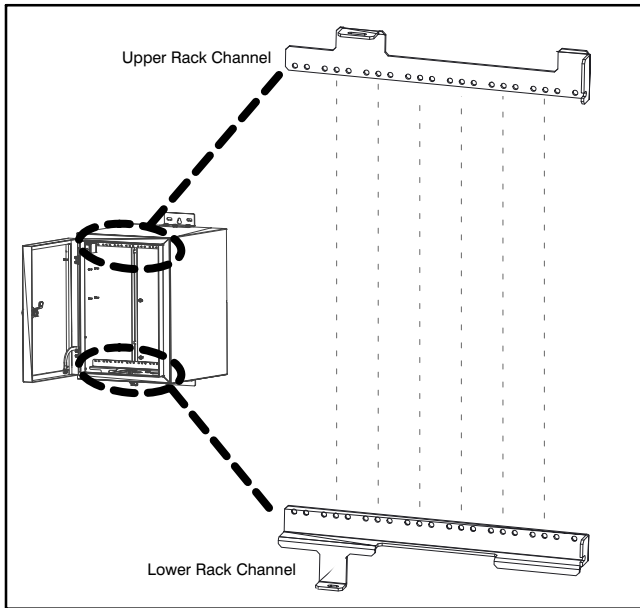


Figure 14. Internal 19" Rack (Rotated 90 Degrees)

- EXTRA RU NOTE -

*An extra rack unit of equipment mounting space is available at both the left and right sides of the cabinet; however, these RUs have limited front access (partially obstructed).*

Always follow company practices and the guidelines below when mounting equipment inside the cabinet.

1. Verify the combined equipment height does not exceed 5 RUs.
2. Verify the combined weight of all customer-supplied equipment installed inside Boxer does not exceed 25 pounds.
3. Verify any equipment to be installed in the cabinet will not extend into the door of the cabinet.
4. Verify each piece of equipment does not exceed the cabinet's interior width or depth.
5. Determine the best mounting location for each piece of equipment, for maximum capacity.
6. *Determine/adjust* the rack channel depth (optional). If the factory installed rack channels are not at the proper equipment projection depth, adjust the channels at this time. Remove the nuts that secure each channel and re-position the channels as needed, then re-install the nuts to secure each rack channel.
7. Use the bond posts provided on the ground plate as needed for bonding or grounding any cables or equipment installed inside the cabinet.

### 3.8 Mounting Equipment Inside Boxer

Boxer utilizes a 5-RU by 19" rack with adjustable/removable rack channels. Three channel adjustment posts on the side walls (see Figure 13) are provided which allow the channels to be mounted in one of three different positions (can be adjusted forward or backward as needed). Boxer's rack-hole pattern accommodates a wide variety of equipment and mounting bracket hole patterns.

### 3.9 Connecting Communication Cables

The types of communication cables used and their connector types (if any) vary per the application and the equipment installed inside the cabinet. To accommodate a variety of cable and connector sizes, the Boxer cabinet has eight cable-hole knock-outs of various sizes, as shown in Table 1 and Figure 15.

1. Run the communications cables to the Boxer cabinet.

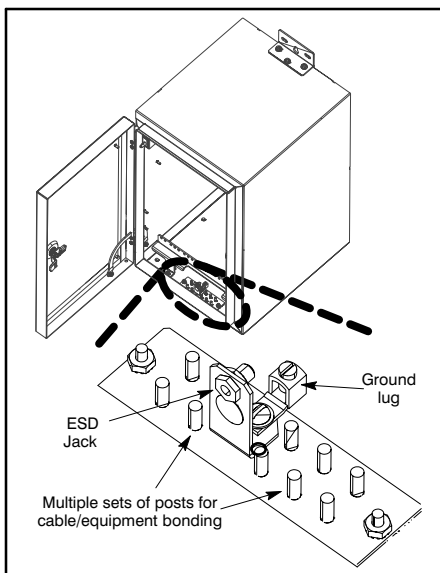


Figure 11. Ground Plate for Equipment and Cable Grounding

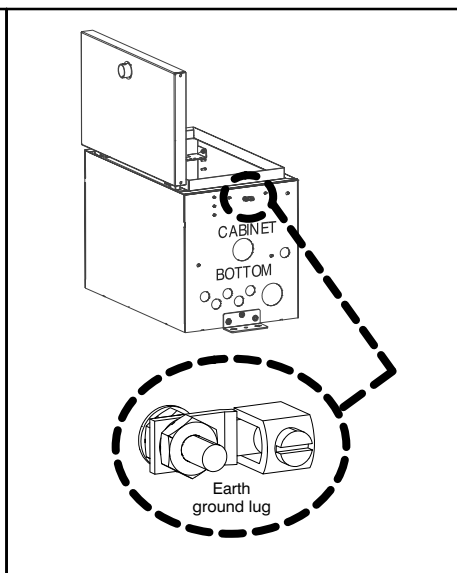


Figure 12. External Ground Lug

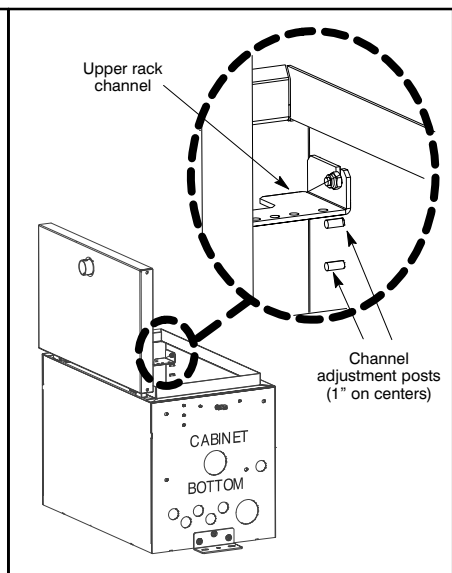


Figure 13. Channel Adjustment Posts



2. Insert and route the cable through the desired grommet.
3. Attach the cable's connector to the appropriate connector of the targeted equipment.
4. Repeat for each cable.
5. Make any desired connections between pieces of equipment.
6. Use the bond posts and ground lugs provided on the ground plate as needed for bonding and grounding any communications cables brought into the Boxer cabinet.

### 3.10 Making Door Alarm Connections

Connect the factory-provided door alarm wire to the Alarm input of the field-installed alarm monitoring device.

*- DEACTIVATING THE DOOR ALARM -*

*The door alarm sensor can be temporarily disabled during equipment installation or maintenance by gently pulling out the cylindrical-shaped switch actuator until it clicks. Closing the door automatically resets and enables the sensor. To manually enable the door alarm sensor, gently push the switch actuator back in until a click is heard.*

### 3.11 Optioning Installed Equipment

Make all option settings on the installed equipment per equipment manufacturer instructions and company practices.

### 3.12 Performing Cabinet Housekeeping

Verify all equipment is secure, verify all wires and cables are neatly organized and managed, verify all bonding and grounding connections are made at the ground plate, and verify no equipment, tie-downs, cables, or wires will interfere with the closing of the door. Clean up the installation site per company practice.

### 3.13 Closing and Locking the Cabinet

Upon completion, the installer should close and lock the cabinet by tightening the cup-washer bolt. The customer may optionally lock the door with a padlock (customer supplied) through the holes provided for it in the cylindrical door-lock flange.

## 4. SERVICE AND REPAIRS

Replacing parts is the only recommended type of field repair for the Westell® Boxer™ cabinet. The list below contains the only Boxer parts which may be ordered and field-replaced (see Part 5 for a telephone number, Table 3 for part numbers, and Paragraph 6.2 for the return procedure). See Paragraph 4.1 for detailed steps to remove and replace this part.

#### *Field-replaceable parts:*

- Door Alarm Sensor Assembly (part # 080-300389)

### 4.1 Replacing the Door Alarm Sensor

Door alarm sensor switch cannot be field repaired. Should a problem be suspected with the door alarm, remove the entire door alarm switch assembly and return it to Westell for service,

then replace it. To remove and replace the door alarm switch assembly, proceed with the following instructions.

1. **Open the cabinet.** Open the large main cabinet door.
2. **Remove door sensor assembly mounting screws.** Remove the nuts that attach the door alarm sensor to the threaded posts in the top, right, inside corner of the open cabinet.
3. **Partially pull out door sensor assembly to disconnect cable.** Lift and slightly pull out the door sensor assembly to access the cable wires. Carefully disconnect each wire one at a time, noting which terminal was used and noting or labelling the color or polarity of each connector, for easy re-connection to the new assembly.
4. **Remove the door sensor assembly.** Fully remove the old door sensor assembly.
5. **Install the new door sensor assembly.** Reverse the steps above to install the replacement door alarm sensor assembly. When re-attaching the door alarm cable's two connectors to the new door switch sensor assembly, verify the following:
  - verify the connectors are routed so that they reach the back of the door sensor,
  - verify that the door alarm cable's black wire connects to the door switch terminal lug labelled "COM," and that the cable's red wire connects to the terminal lug labelled "NC", and
  - after re-attaching the entire door sensor assembly to the cabinet via the two hex nuts, verify that the door alarm is not present when installation is complete and power is re-applied.

## 5. CUSTOMER & TECHNICAL SERVICES

### 5.1 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)

For additional information about Westell, visit the Westell World Wide Web site at <http://www.Westell.com>.

### 5.2 Part Numbers

This equipment is identified by a product number (A90-BXM05V19-NMT), which consists of three parts: the issue letter of the equipment (A), the assembly type (90), and the specific model number (BXM05V19-NMT). 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.

## 6. WARRANTY & RETURNS

### 6.1 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

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

## 6.2 Return and Replacement Policy

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, and a brief problem description to:

Voice: (630) 375-4457

email: rgmdept@westell.com

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.

**- TL9000 RECYCLING NOTE -**

*Westell recommends that its products be recycled at the end of their product life. For Westell products that have reached their product End Of Life (EOL), please recycle and dispose of the products per your company practice, per local recycling programs and local codes, and per state statutes.*

## 7. SPECIFICATIONS

### 7.1 Physical Specifications

The Boxer™ physical specifications are shown in Table 2.

### 7.2 Regulatory/Agency Specifications

The Boxer cabinet is designed to meet the following regulatory, safety or environmental specifications or requirements:

- NEMA 4 compliant

## 7.3 Ordering Specifications

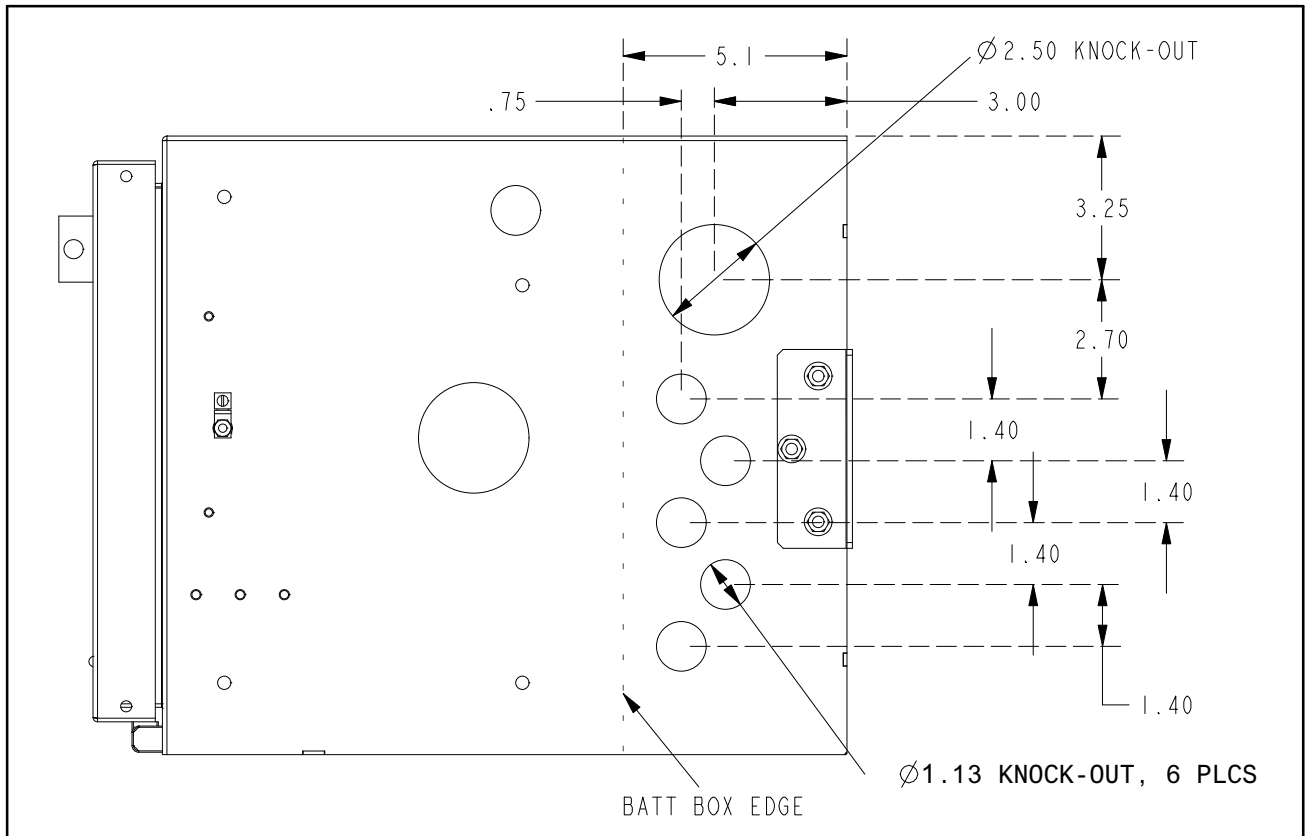
To order units, call the telephone number shown in Paragraph 5.1 and specify a specific model number shown in Table 3.

Physical Feature	U.S.	Metric
Height (including mounting brackets)	27 in.	68.58 cm
Height (between mounting holes)	25.2 in.	64 cm
Height (cabinet only, exterior)	23 in.	58.42 cm
Width (exterior)	14 in.	35.56 cm
Depth (door closed)	18 in.	53.3 cm
Depth (door open 90°)	29.11 in.	73.94 cm
Depth (cabinet box only, approx.)	15.625 in.	39.69 cm
Weight (empty, approx.)	20 lbs.	9.08 kg
Operating Temperature (including solar loading)	-40° to 149°F	-40° to 65°C
Humidity	0 to 95% (non-condensing)	
Mounting*	H-Frame, wall, pole or post	

**Table 2. Boxer Cabinet Physical Specifications**

Part #	Description
<b>A90-BXM05V19-NMT</b>	Boxer™ cabinet, no active cooling, with single full-size door, built-in 5-RU 19" rack, door switch, and internal mesh back plate

**Table 3. Ordering Information**



**Figure 15. Knock-out Locations and Sizes**

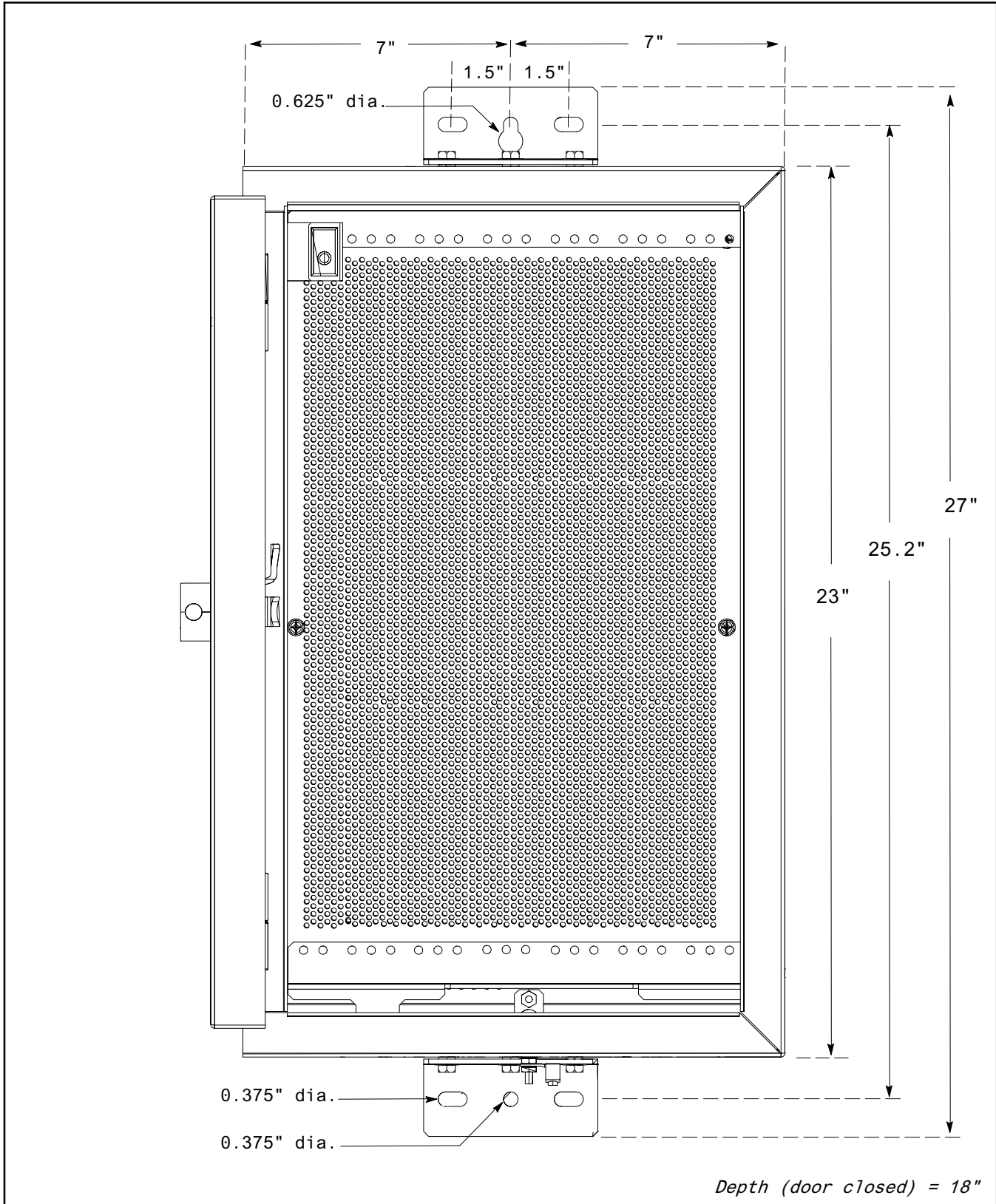


Figure 16. Front View, Door Open