Designed, Manufactured and Supported in the USA

VIKING PRODUCT MANUAL

SECURITY & COMMUNICATION SOLUTIONS

1600-IP Series

ADA Compliant VoIP Emergency Phones

December 3, 2019

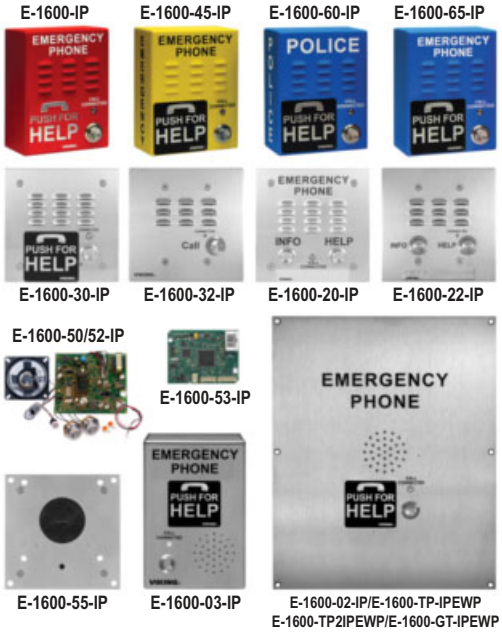
ADA & CE Compliant VoIP Emergency Phones with Built-In Dialer and Digital Voice Announcer

The **1600-IP Series** ADA Compliant VoIP Emergency Phones are designed to provide quick and reliable handsfree communication for SIP VoIP phone systems with PoE. All **1600-IP Series** phones meet ADA requirements for elevator/emergency telephones, and can be programmed from any Touch Tone phone or PC on the same LAN or remotely using a static IP address. The phones can dial up to 5 programmable emergency numbers. In addition, the **E-1600-20-IP, E-1600-22-IP**, **E-1600-52-IP** and **E-1600-TP2IPEWP** feature a second "**INFO**" button that will dial up to 5 non-emergency numbers. Two amp relay contacts are provided for strobe light, camera, door/gate control, etc.

The **1600-IP Series** phones can be programmed to automatically deliver a digital announcement to identify the location of the emergency call. Alternatively, a DTMF Touch Tone code may also be delivered. A "Call Connected" LED can be initiated manually or automatically. All programming parameters, including phone numbers and location numbers, are stored in non-volatile memory, requiring no batteries. All units are PoE powered.

For outdoor installations where the unit is exposed to precipitation or condensation, select **1600-IP Series** phones are available with Enhanced Weather Protection (**EWP**). EWP products feature foam rubber gaskets, sealed connections, gel-filled butt connectors, as well as urethane or thermal plastic potted circuit boards. For more information, see **DOD 859**.

⚠ **Installation requires the assistance of a Network Administrator / IT Technician.**



Features

- **Automatic polling and programming software included**
- **2 Amp relay contacts for door/gate or SL-2 strobe light control**
- **SIP compliant** (see page 2 for list of compatible IP-PBX phone systems)
- **Outbound Proxy, Authentication ID, Peer to Peer, VLAN Tagging**
- **PoE powered (class 1, <4 Watts)**
- **Automatic Noise Canceling (ANC) feature for proper operation in noisy areas**
- **VoIP eliminates the need for "Push to Talk" mode**
- **Network downloadable firmware**
- Meets ADA requirements for Emergency Phones:
  - Automatically lights the Red "Call Connected" LED
  - Transmits a unique location I.D. code or voice announcement
  - Grade 2 Braille label for the visually impaired
- Non-volatile digital voice announcer with 28 seconds of voice memory
- Handsfree operation
- Marine grade 316 stainless steel prevents corrosion on the stainless steel models
- Laser etched graphics on stainless steel models
- Dials up to 5 emergency numbers
- **E-1600-20-IP**, **E-1600-22-IP, E-1600-52-IP,** and **E-1600-TP2IPEWP** dial up to 5 non-emergency "INFO" numbers
- Cycles through backup phone numbers on busy or no-answer
- Optional Enhanced Weather Protection (EWP), EWP products are designed to meet IP66 Ingress Protection Rating, see **DOD 859**
- Hangs up on busy signal, time-out or touch tone command
- Extended temperature range (-40°F to 140°F)
- 11 different chassis or board only available
- Available in 42" tower phone model **E-1600-BLTIPEWP** (**DOD 249**)
- Optional **LV-1K** Line verification Panel (**DOD 246**)
- Optional **PB-100** Polling System available (**DOD 232**)
- Optional **SL-2** or **BLK-4-EWP** strobe light kit available (**DOD 242/654**)
- Optional **E-1600A-MK-GNP** Pedestal Mounting Kit (**DOD 227**)
- Optional **PB-1** Panic Button Kit (**DOD 233**)
- **Diagnostics** for testing microphone, speaker, and relay

Applications

- Elevators
- Parking ramps/lots
- Emergency pool phones
- ATM machines
- Medical centers
- Silent hold-up alarm dialer with an optional **PB-1** Panic Button Kit (**DOD 233**)
- Area of refuge locations
- Lobbies
- Entryways
- Campus emergency stations
- Stadiums
- Convention centers
- Public access areas

** Americans with Disabilities Act of 1992 contains federal regulations regarding elevator telephones (Public Law 101-336).*

www.VikingElectronics.com

Specifications

Power: PoE class 1 (<4 Watts)
Maximum Sound Pressure: 95 dB SPL @ 1m
Dimensions: See Installation and Specifications
Operating Temperature: -40°F to 140°F (-40° C to 60° C)
Humidity - Standard Products: 5% to 95% non-condensing
Humidity - EWP Products: Up to 100%
Audio Codecs: G711u, G711a, G722
Network Compliance: IEEE 802.3 af PoE, SIP 2.0 RFC3261, 100BASE-TX with auto cross over
Regulatory Compliance: CE, FCC Part 15 and Canada ICES-003 Class A
Connections: (1) RJ45 10/100 Base-T, (3) gel-filled butt connectors

VoIP SIP System Compatibility

For compatibility and vendor specific detailed configuration instructions, see the **Viking VoIP SIP System Compatibility List**, DOD 944. To open and download this PDF file:

Scan the QR code below to open and download the **Viking VoIP SIP System Compatibility List**

- OR -

1. Go to **www.vikingelectronics.com** and enter **944** in the search box
2. Click **Application Note (DOD 944)** to open and download the PDF

Important: *Exclusion from this list means only that compatibility has not been verified,* ***it does not mean incompatibility****. If you have questions, please call Viking Electronics at 715-386-8861.*

Overview of Chassis and Mounting Options

Note: *When European CE compliance is required, mount open board models within a metal enclosure.*

Model: E-1600-53-IP
Description: 1600-IP board (PCB) only kit. Can be used to convert any analog Viking 1600A-Series phone to a VoIP version

Model: E-1600-IP
HxWxD: 5.25 x 4.0 x 2.0
Mounting: Surface mount
Description: 16 gauge steel with textured red powder paint

Model: E-1600-45-IP
HxWxD: 5.25 x 4.0 x 2.0
Mounting: Surface mount
Description: 16 gauge steel with textured yellow powder paint

Model: E-1600-60-IP
HxWxD: 5.25 x 4.0 x 2.0
Mounting: Surface mount
Description: 16 gauge steel with textured blue powder paint and “POLICE” verbiage

Model: E-1600-65-IP
HxWxD: 5.25 x 4.0 x 2.0
Mounting: Surface mount
Description: 16 gauge steel with textured blue powder paint

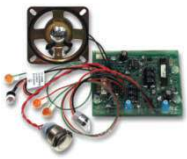
Model: E-1600-55-IP
HxWxD: 5.0 x 5.0 x 2.0
Description: Universal emergency phone kit to install behind elevator panels or when a custom panel is used

Model: E-1600-20-IP
HxWxD: 5.0 x 5.0 x 2.25
Mounting: Flush mount with included rough-in box (will not fit in a double gang box), or surface mount with a **VE-5x5**
Description: Two button, 14 gauge marine grade 316 stainless steel with #4 brushed finish, T-10 Torx Security Screws

Model: E-1600-22-IP
HxWxD: 5.0 x 5.0 x 2.25
Mounting: Flush mount in a standard double gang electrical box or surface mount with a **VE-5x5**
Description: Two button, 14 gauge marine grade 316 stainless steel with #4 brushed finish, T-10 Torx Security Screws

Model: E-1600-30-IP
HxWxD: 5.0 x 5.0 x 2.25
Mounting: Flush mount with included rough-in box (will not fit in a double gang box), or surface mount with a **VE-5x5**
Description: 14 gauge marine grade 316 stainless steel with #4 brushed finish, T-10 Torx Security Screws

Model: E-1600-32-IP
HxWxD: 5.0 x 5.0 x 2.25
Mounting: Flush mount in a standard double gang electrical box or surface mount with a **VE-5x5**
Description: 14 gauge marine grade 316 stainless steel with #4 brushed finish, T-10 Torx Security Screws



Model: E-1600-50-IP
Description: Single button 1600-IP parts kit without chassis

Model: E-1600-52-IP
Description: Two button 1600-IP parts kit without chassis

Model: E-1600-03-IP
HxWxD: 7.22 x 5.36 x 1.55
Mounting: Surface mount
Description: 14 gauge marine grade 316 stainless steel with #4 brushed finish

Model: E-1600-02-IP
HxWxD: 13.0 x 10.5 x 2.0
Mounting: Flush mount
Description: 12 gauge marine grade 316 stainless steel with #4 brushed finish

Model: E-1600-TP-IPEWP
HxWxD: 11.75 x 9.5 x 2.0
Mounting: Flush mount
Description: Direct physical replacement for Talk-A-Phone models ETP-400V or VoIP-500

Model: E-1600-TP2IPEWP
HxWxD: 11.75 x 9.5 x 2.0
Mounting: Flush mount
Description: Direct physical replacement for Talk-A-Phone models ETP-400DV or VoIP-500D

Model: E-1600-GT-IPEWP
HxWxD: 12.0 x 10.0 x 2.0
Mounting: Flush mount
Description: Direct physical replacement for GAI-TRONICS Red Alert Model 397-700

Definitions

Client: A computer or device that makes use of a server. As an example, the client might request a particular file from the server.

DHCP: Dynamic Host Configuration Protocol. In this procedure the network server or router takes note of a client's MAC address and assigns an IP address to allow the client to communicate with other devices on the network.

DNS Server: A DNS (Domain Name System) server translates domain names (ie: www.vikingelectronics.com) into an IP address.

Ethernet: Ethernet is the most commonly used LAN technology. An Ethernet Local Area Network typically uses twisted pair wires to achieve transmission speeds up to 1Gbps.

Host: A computer or device connected to a network.

Host Name: A host name is a label assigned to a device connected to a computer network that is used to identify the device in various forms of network communication.

Hosts File: A file stored in a computer that lists host names and their corresponding IP addresses with the purpose of mapping addresses to hosts or vice versa.

Internet: A worldwide system of computer networks running on IP protocol which can be accessed by individual computers or networks.

IP: Internet Protocol is the set of communications conventions that govern the way computers communicate on networks and on the Internet.

IP Address: This is the address that uniquely identifies a host on a network.

LAN: Local Area Network. A LAN is a network connecting computers and other devices within an office or building.

Lease: The amount of time a DHCP server reserves an address it has assigned. If the address isn't used by the host for a period of time, the lease can expire and the address can be assigned to another host.

MAC Address: MAC stands for Media Access Control. A MAC address, also called a hardware address or physical address, is a unique address assigned to a device at the factory. It resides in the device's memory and is used by routers to send network traffic to the correct IP address. You can find the MAC address of your **1600-IP Series** phone printed on a white label on the top surface of the PoE LAN port.

Router: A device that forwards data from one network to another. In order to send information to the right location, routers look at IP Address, MAC Address and Subnet Mask.

RTP: Real-Time Transport Protocol is an Internet protocol standard that specifies a way for programs to manage the real-time transmission of multimedia data over either unicast or multicast network services.

Server: A computer or device that fulfills requests from a client. This could involve the server sending a particular file requested by the client.

Session Initiation Protocol (SIP): Is a signaling communications protocol, widely used for controlling multimedia communication sessions such as voice and video calls over Internet Protocol (IP) networks. The protocol defines the messages that are sent between endpoints, which govern establishment, termination and other essential elements of a call.

Static IP Address: A static IP Address has been assigned manually and is permanent until it is manually removed. It is not subject to the Lease limitations of a Dynamic IP Address assigned by the DHCP Server. The default static IP Address is: **192.168.154.1**

Subnet: A portion of a network that shares a common address component. On TCP/IP networks, subnets are defined as all devices whose IP addresses have the same prefix. For example, all devices with IP addresses that start with 100.100.100. would be part of the same subnet. Dividing a network into subnets is useful for both security and performance reasons. IP networks are divided using a subnet mask.

TCP/IP: Transmission Control Protocol/Internet Protocol is the suite of communications protocols used to connect hosts on the Internet. TCP/IP uses several protocols, the two main ones being TCP and IP. TCP/IP is built into the UNIX operating system and is used by the Internet, making it the de facto standard for transmitting data over networks.

TISP: Telephone Internet Service Provider

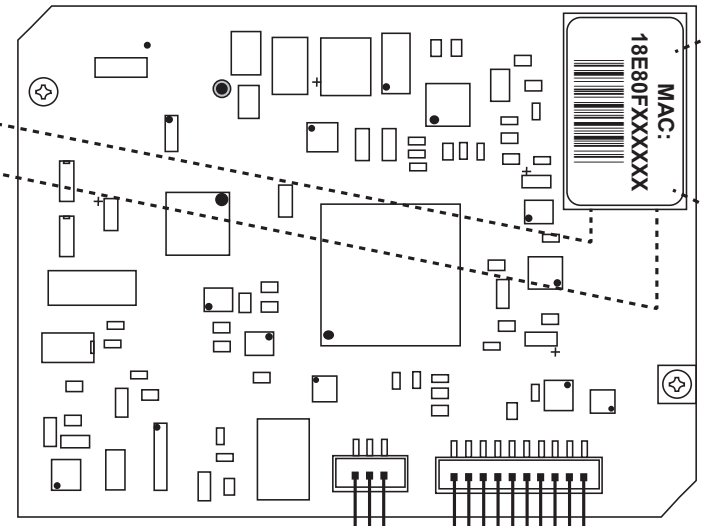
WAN: Wide Area Network. A WAN is a network comprising a large geographical area like a state or country. The largest WAN is the Internet.

Wireless Access Point (AP): A device that allows wireless devices to connect to a wired network using Wi-Fi, or related standards. The AP usually connects to a router (via a wired network) as a standalone device, but it can also be an integral component of the router itself.

Wireless Repeater (Wireless Range Extender): takes an existing signal from a wireless router or access point and rebroadcasts it to create a second network. When two or more hosts have to be connected with one another over the IEEE 802.11 protocol and the distance is too long for a direct connection to be established, a wireless repeater is used to bridge the gap.

Features Overview

Rear (PCB) View of E-1600-IP Series Emergency Phone



Green Unit Status LED

Yellow Network Status LED: Lights steady to indicate power and data link. Blinks to indicate network activity.

PoE LAN Port 10/100, PoE Class 1 (<4 Watts): Connect to your LAN via RJ45 plug and CAT5 or greater twisted pair wire.

MAC Address Label: The MAC address is a unique 12 digit number used by routers to send network traffic to the correct IP address.

Connect to Optional Strobe Light, LV-1K, etc.

Viking model **LV-1K** shown (not included), see **DOD 246**

OR

Viking model **SL-2** shown (not included), see **DOD 242**

Optional 2 Amp Relay Output Contacts
(2A@30VDC/ 250VAC max)

N.C. (Gray)

COM. (Blue)

N.O. (Yellow)

3 Gel-Filled Butt Connectors (included)

- Black
+ Red
LED

Black
Black
Help Switch

Red
Red
Info Switch (optional)

Yellow
Yellow
Speaker

- Black
+ Red
Microphone

Note: *The gel-filled (water-tight) butt connectors are designed for insulation displacement on 19-26 gauge wire with a maximum insulation of 0.082 inches. Cut off stripped wire ends before terminating.*

Installation and Specifications

The following sections show specifications and installation instructions for the different chassis in the 1600-IP Series.

IMPORTANT: *Electronic devices are susceptible to lightning and power station electrical surges from both the AC outlet and the telephone line. It is recommended that a surge protector be installed to protect against such surges.*

E-1600-IP / E-1600-45-IP / E-1600-60-IP / E-1600-65-IP

Dimensions: 5.25" x 4.0" x 2.0" (133mm x 102mm x 51mm)

Shipping Weight: 2.5 lbs (1.13 kg)

Material: 0.062" (16 gauge) steel

Finish: **E-1600-IP** - Red powder paint, **E-1600-45-IP** - Yellow powder paint, **E-1600-60/65-IP** - Blue powder paint

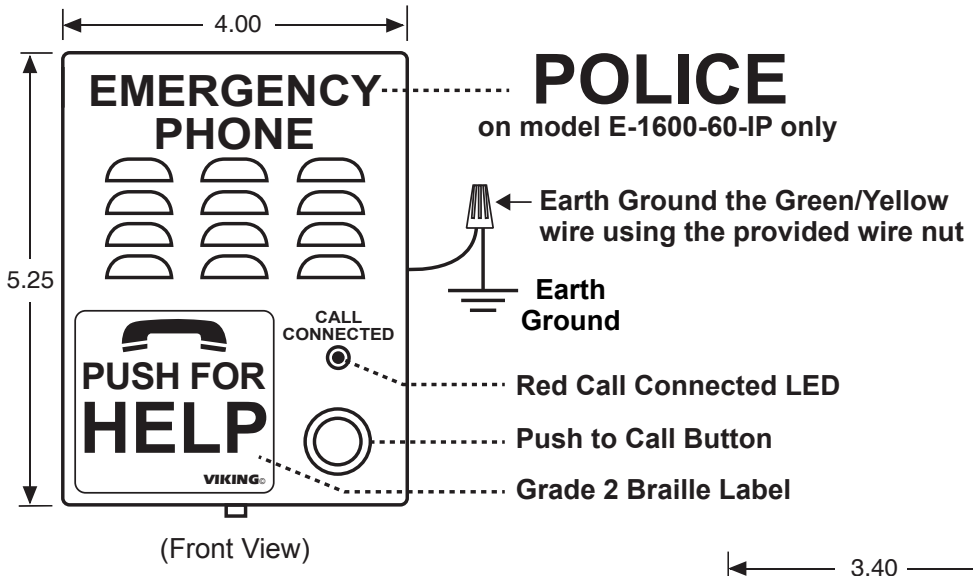
Connections: Gel-filled butt connectors

Mounting: Surface mount to walls, posts, single gang boxes or 4" x 4" electrical junction boxes or recess mount in elevator phone boxes.

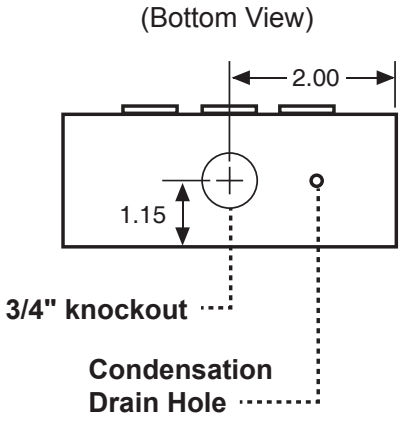
Optional Enhanced Weather Protection (EWP) Available: The optional EWP products feature foam rubber gaskets and boots, sealed connections, gel-filled butt connectors, as well as urethane or thermal plastic potted circuit boards (**DOD 859**).

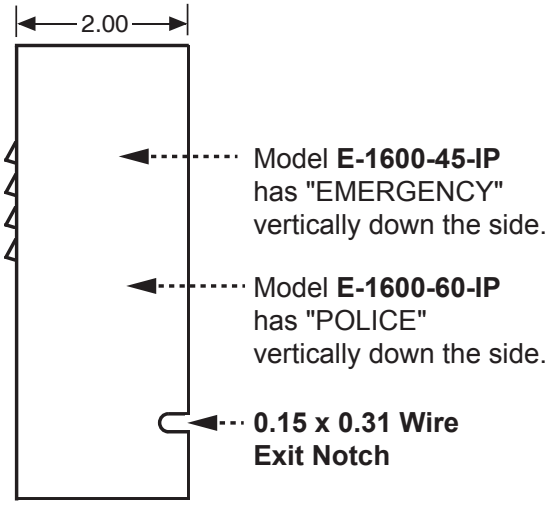
Note: *For greater weather resistance, apply a bead of clear silicon caulking around the top edge and sides of the chassis.*

Optional Gooseneck Pedestal Mounting Kit: The **E-1600A-MK-GNP** Mounting Kit (**DOD 227**) allows you to mount the **E-1600-IP**, **E-1600-45-IP**, **E-1600-60-IP** or **E-1600-65-IP** to a Viking **VE-GNP** Gooseneck Pedestal (**DOD 424**).

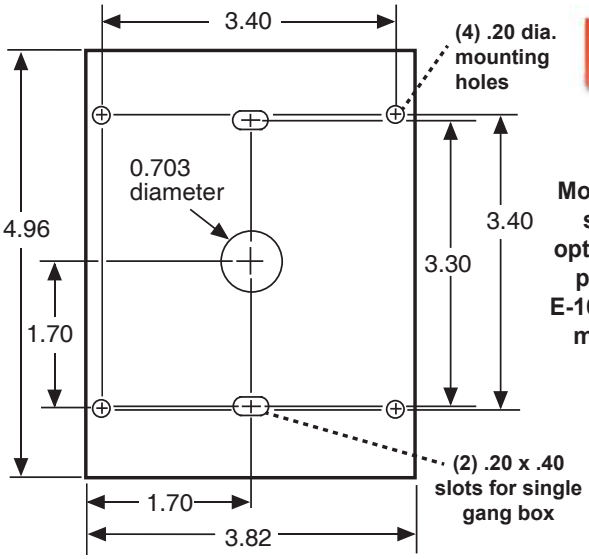


(Front View)

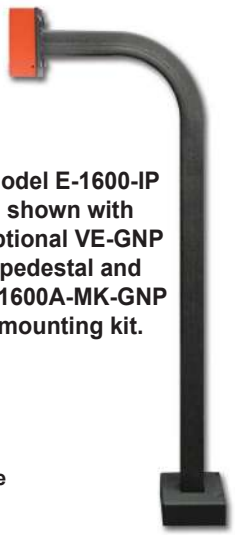




(Side View)



(Mounting Plate)



Model E-1600-IP shown with optional VE-GNP pedestal and E-1600A-MK-GNP mounting kit.

E-1600-02-IP

Dimensions: 13” x 10.5” x 2” (330mm x 267mm x 51mm)

Shipping Weight: 7 lbs (3.18 kg)

Connections: Gel-filled butt connectors

Material: 0.105” (12 gauge) brushed stainless steel

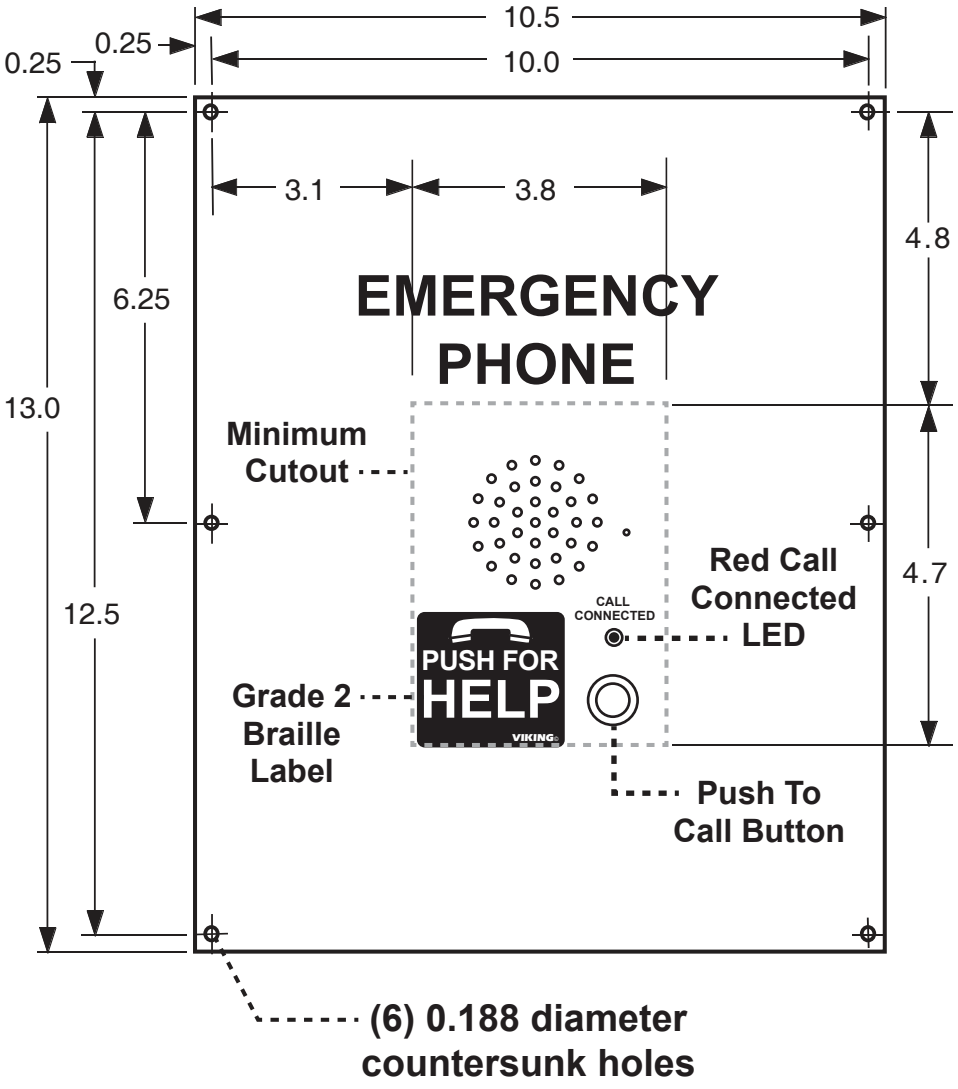
Mounting: Flush mount in elevator cabs, ATMs, stairwells, hallways, etc.

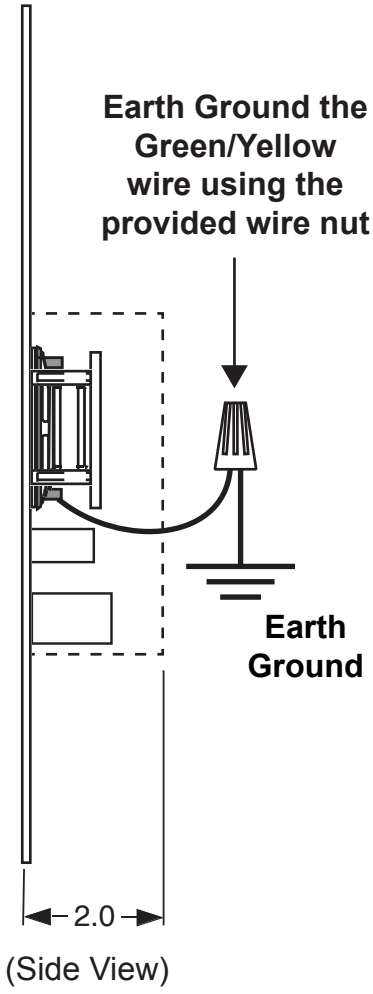
Suggested Hardware: (6) #8 x 3/4 flat head phillips sheet metal type A screws (not included)

Optional Enhanced Weather Protection (EWP) Available: The optional EWP products feature foam rubber gaskets and boots, sealed connections, gel-filled butt connectors, as well as urethane or thermal plastic potted circuit boards, see **DOD 859**.

Note: *When mounting outside to rough or uneven surfaces (brick, stucco, etc.) apply a bead of clear silicone caulking around the top edge and sides of faceplate.*

Note: *When European CE compliance is required, mount onto a metal enclosure.*





(Side View)

E-1600-03-IP

Dimensions: 7.22” x 5.36” x 1.55” (183mm x 149mm x 39mm)

Material: 14 gauge vandal resistant Marine grade 316 brushed stainless steel panel

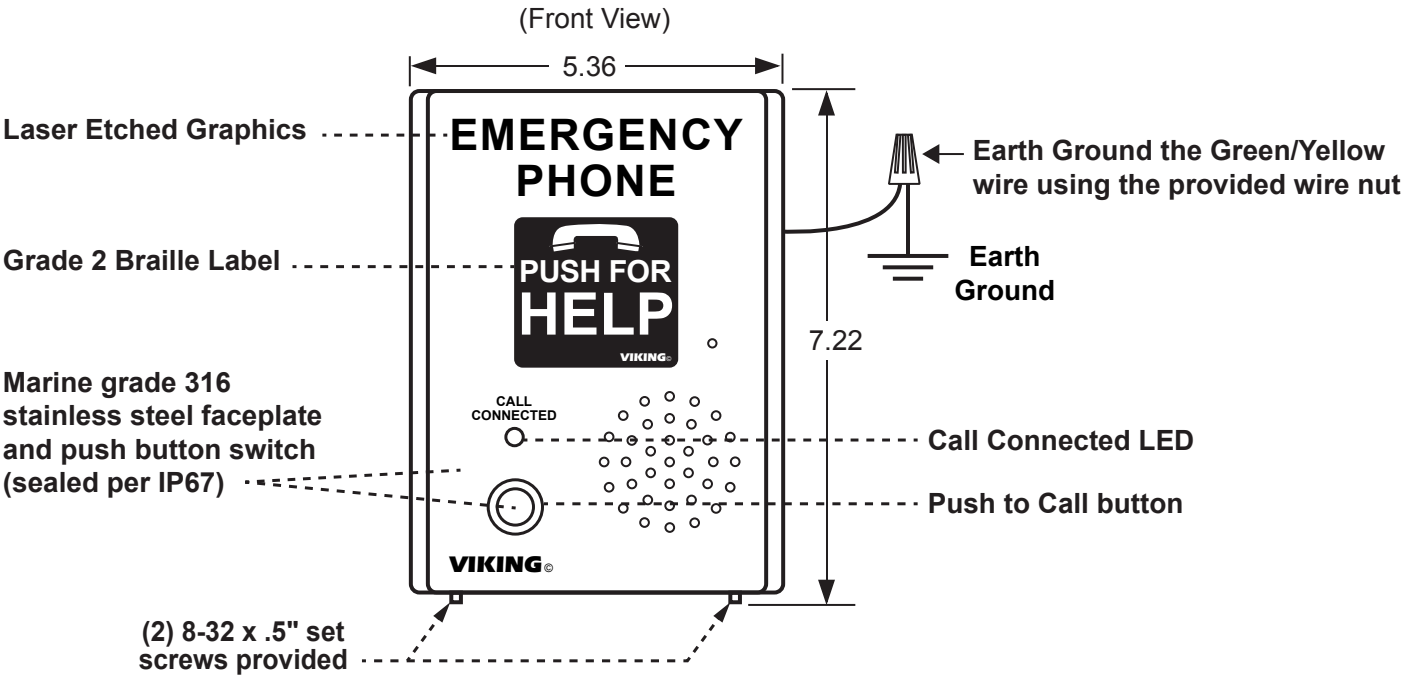
Shipping Weight: 3.0 lbs (1.36 kg)

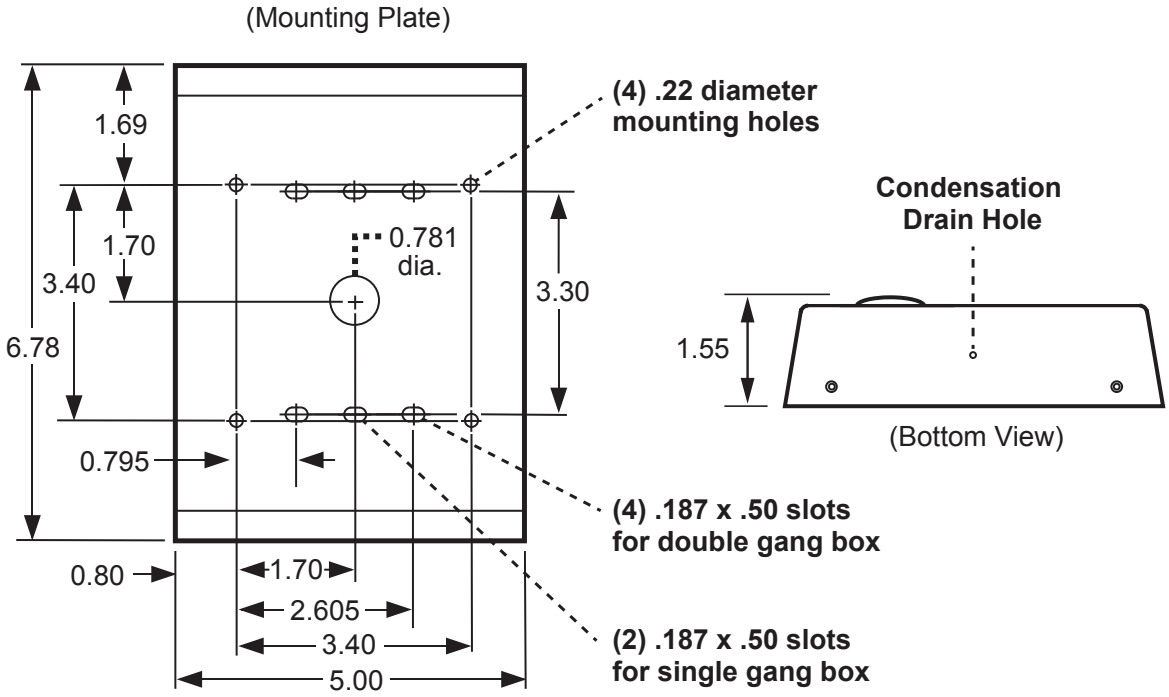
Connections: Gel-filled butt connectors

Mounting: Surface mount to walls, posts, single gang boxes, double gang boxes or 4” x 4” electrical junction boxes or recess mount in elevator phone boxes.

Optional Enhanced Weather Protection (EWP) Available: The optional EWP products feature foam rubber gaskets and boots, sealed connections, gel-filled butt connectors, as well as urethane or thermal plastic potted circuit boards, see **DOD 859**.

Note: *For greater weather resistance, apply a bead of clear silicon caulking around the top edge and sides of the chassis.*





E-1600-20-IP

Dimensions: Overall - 5.0" x 5.0" x 2.25" (127mm x 127 x 57mm), Plastic Electrical Box - 4.0" x 4.0" x 2.14" (102mm x 102mm x 54mm)

Shipping Weight: 2.12 lbs (1.0 kg)

Front Panel Material: 14 gauge Marine grade 316 brushed stainless steel

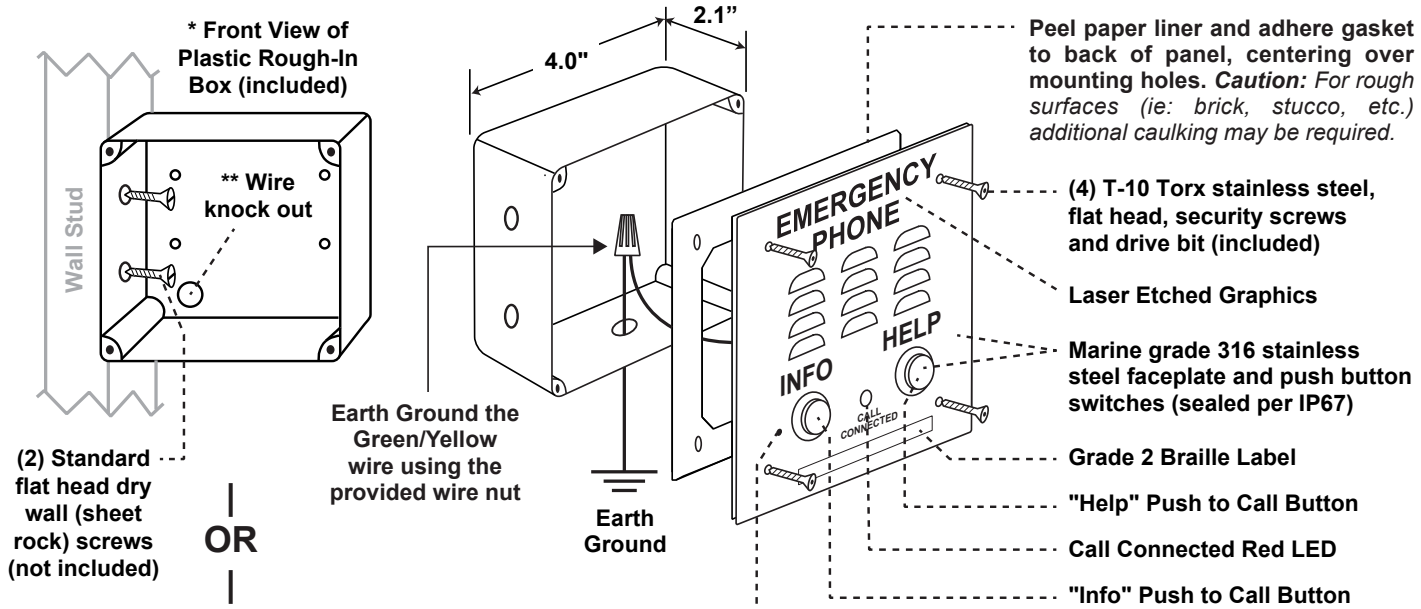
Connections: Gel-filled butt connectors

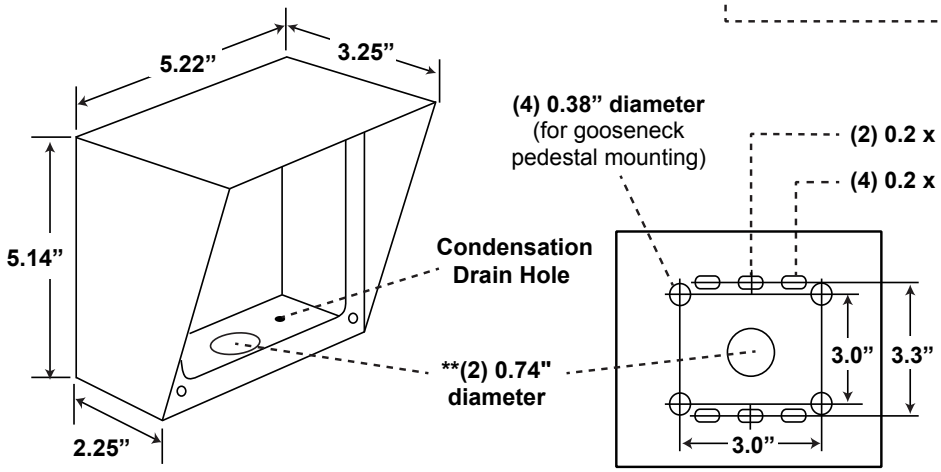
Optional Enhanced Weather Protection (EWP) Available: The optional EWP products feature foam rubber gaskets and boots, sealed connections, gel-filled butt connectors, as well as urethane or thermal plastic potted circuit boards, see **DOD 859**.

Mounting with Plastic Rough-In Box (included): Flush into walls, mounts to side of wall stud. **Mounting with Optional VE-5x5:** Surface mount to walls, single gang boxes, double gang boxes, posts, or to a Viking **VE-GNP** Gooseneck pedestal, see **DOD 424**.

Note: *When mounting outside to rough or uneven surfaces (brick, stucco, etc.) apply a bead of clear silicone caulking around the top edge / sides of faceplate or **VE-5x5**.*

Note: *When European CE compliance is required, mount in optional **VE-5X5** metal enclosure.*





Front View of Optional VE-5x5 (not included)

Rear View of Optional VE-5x5 (not included)

Optional VE-5x5 Surface Mount Box with black satin powder paint finish, not included (DOD 424). Optional VE-LIGHT kit can be used to illuminate the faceplate when used with a VE-5x5 (DOD 428). WARNING: Do NOT use a wet location box.

The optional **VE-5x5** Surface Mount Box (left) is designed to be surface mounted to a single gang box, double gang box or **VE-GNP** Gooseneck Pedestal. For more information on the **VE-5x5** and **VE-GNP**, see DOD 424.

Important: *The **E-1600-20-IP** will **NOT** mount to a standard double gang box. If your applications requires a double gang box, see model **E-1600A-22-IP** on page 10.*

* ***Note:*** *The black plastic rough-in box (**part # 259576**) may be purchased separately (**Example:** Mounting boxes to studs before the walls are finished for flush installation). Go to **www.vikingelectronics.com** and click on "**Spare Parts**" to order these rough-in boxes.*

** ***Caution:*** *When warm air comes in contact with cold surfaces, such as outside walls and conduits, it causes condensation. To prevent condensation from accumulating inside the **E-1600-20-IP** always bring conduit into the bottom of the unit. If this is not possible, drill a 1/4" diameter hole in the bottom of the black plastic box.*

E-1600-22-IP

Dimensions: 5.0” x 5.0” x 2.25” (127mm x 127 x 57mm)

Shipping Weight: 2.12 lbs (1.0 lbs)

Front Panel Material: 14 gauge Marine grade 316 brushed stainless steel

Connections: Gel-filled butt connectors

Info Button: Dials up to 5 non-emergency phone numbers

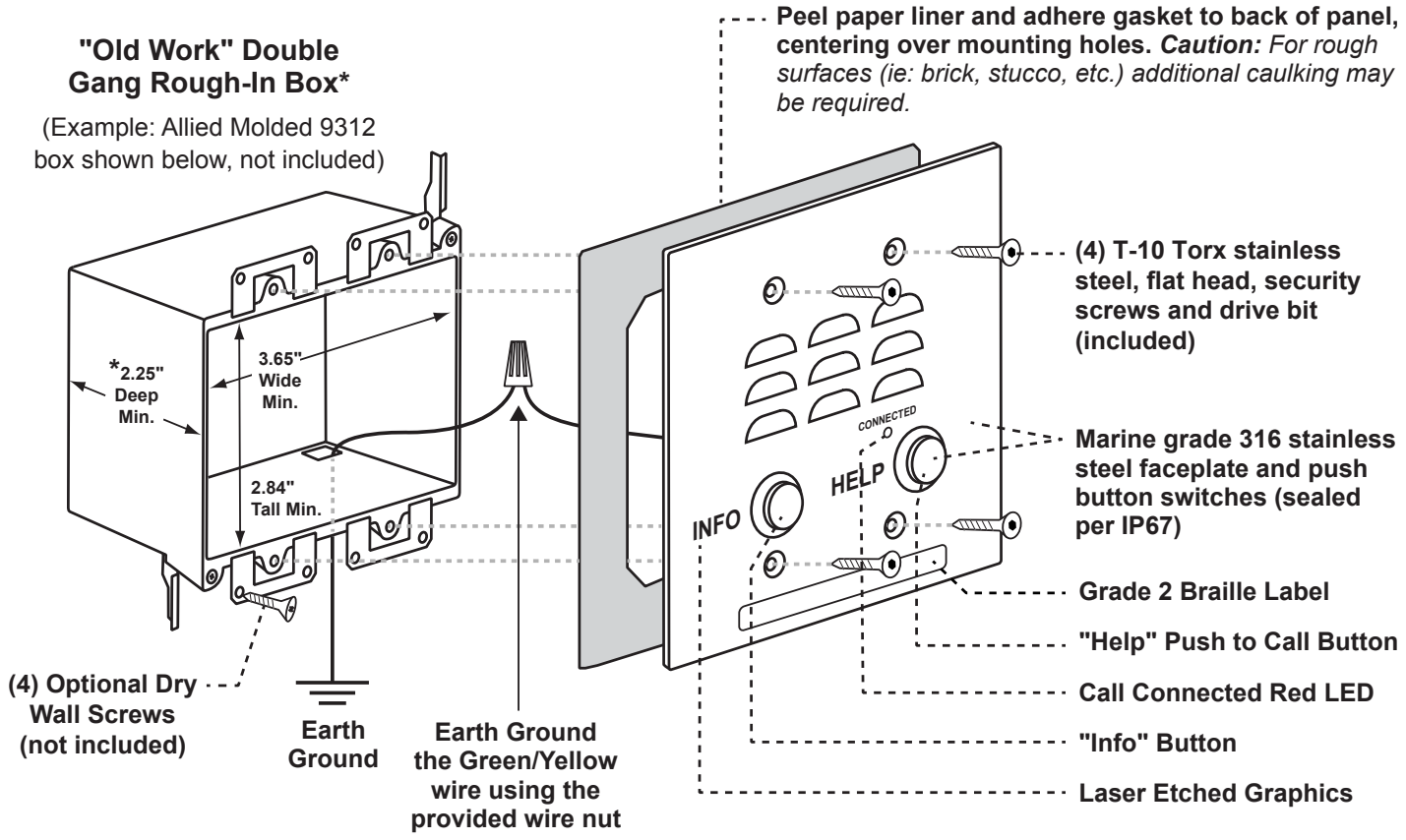
Optional Enhanced Weather Protection (EWP): The optional EWP products feature foam rubber gaskets and boots, sealed connections, gel-filled butt connectors, as well as urethane or thermal plastic potted circuit boards (**DOD 859**).

Mounting in a Double Gang Rough-In Box (not included): Flush into walls, mounts to side of wall studs, etc.

Note: *For surface mount installations, use model* ***E-1600-20-IP*** *with* ***VE-5x5*** *surface mount box.*

Note: *When mounting outside to rough or uneven surfaces (brick, stucco, etc.) apply a bead of clear silicone caulking around the top edge and sides of faceplate.*

Note: *When European CE compliance is required, mount as shown, in a metal enclosure.*



*** CAUTION:** *Excessive wire length and/or using a rough-in box with inadequate depth can apply force to the circuit board causing physical damage.*

Important: *When warm air comes in contact with cold surfaces, such as outside walls and conduits, it causes condensation. To prevent condensation from accumulating inside the* ***E-1600-22-IP*** *always bring conduit into the bottom of the unit. If this is not possible, drill a 1/4” diameter hole in the bottom of the double gang box.*

E-1600-32-IP

Dimensions: 5.0” x 5.0” x 2.25” (127mm x 127 x 57mm)

Shipping Weight: 2.12 lbs (1.0 kg)

Front Panel Material: 14 gauge Marine grade 316 brushed stainless steel

Connections: Gel-filled butt connectors

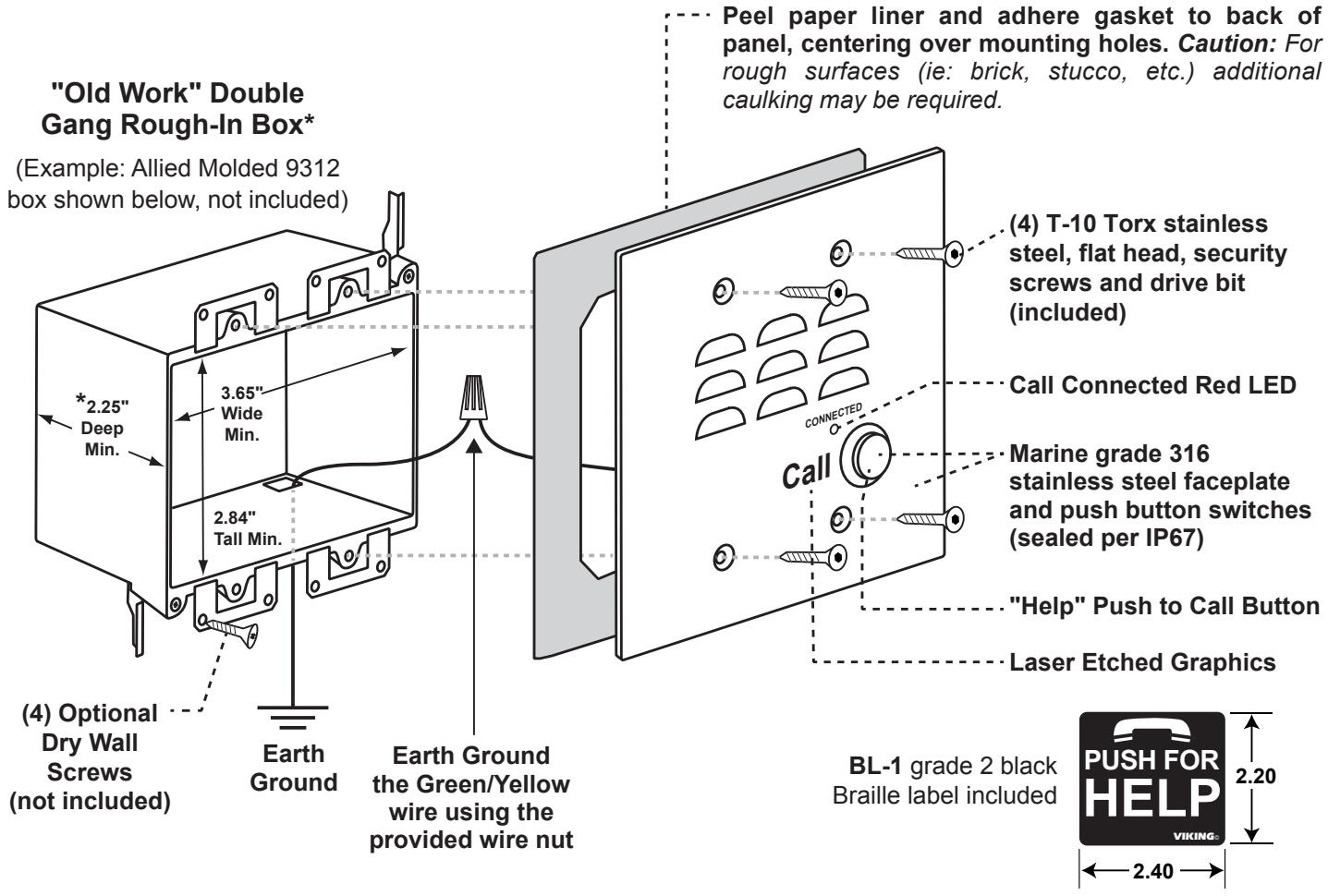
Optional Enhanced Weather Protection (EWP): The optional EWP products feature foam rubber gaskets and boots, sealed connections, gel-filled butt connectors, as well as urethane or thermal plastic potted circuit boards (**DOD 859**).

Mounting in a Double Gang Rough-In Box (not included): Flush into walls, mounts to side of wall studs, etc.

Note: *For surface mount installations, use Model* ***E-1600-30-IP*** *with* ***VE-5x5*** *surface mount box.*

Note: *When mounting outside to rough or uneven surfaces (brick, stucco, etc.) apply a bead of clear silicone caulking around the top edge and sides of faceplate.*

Note: *When European CE compliance is required, mount as shown, in a metal enclosure.*



*** CAUTION:** *Excessive wire length and/or using a rough-in box with inadequate depth can apply force to the circuit board causing physical damage.*

Important: *When warm air comes in contact with cold surfaces, such as outside walls and conduits, it causes condensation. To prevent condensation from accumulating inside the* ***E-1600-32-IP*** *always bring conduit into the bottom of the unit. If this is not possible, drill a 1/4” diameter hole in the bottom of the double gang box.*

E-1600-30-IP

Dimensions: Overall - 5.0” x 5.0” x 2.25” (127mm x 127 x 57mm), Plastic Electrical Box - 4.0” x 4.0” x 2.14” (102mm x 102mm x 54mm)

Shipping Weight: 2.12 lbs (1.0 kg)

Front Panel Material: 14 gauge Marine grade 316 brushed stainless steel

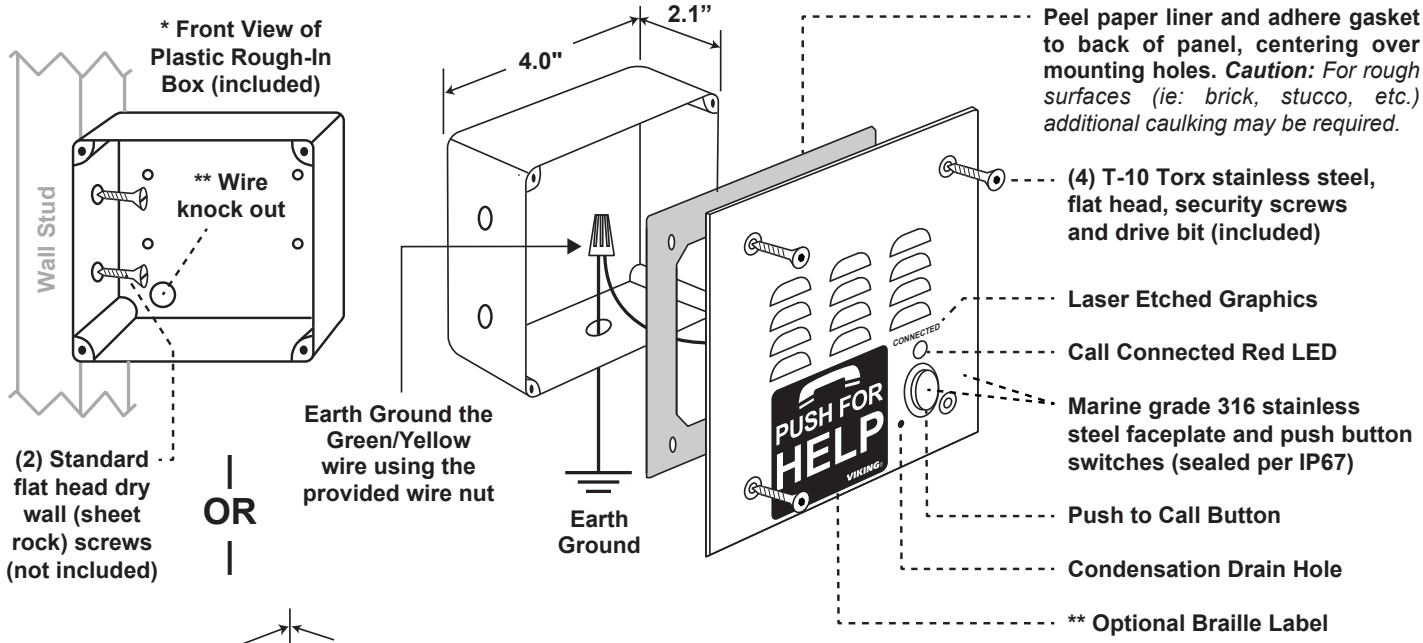
Connections: Gel-filled butt connectors

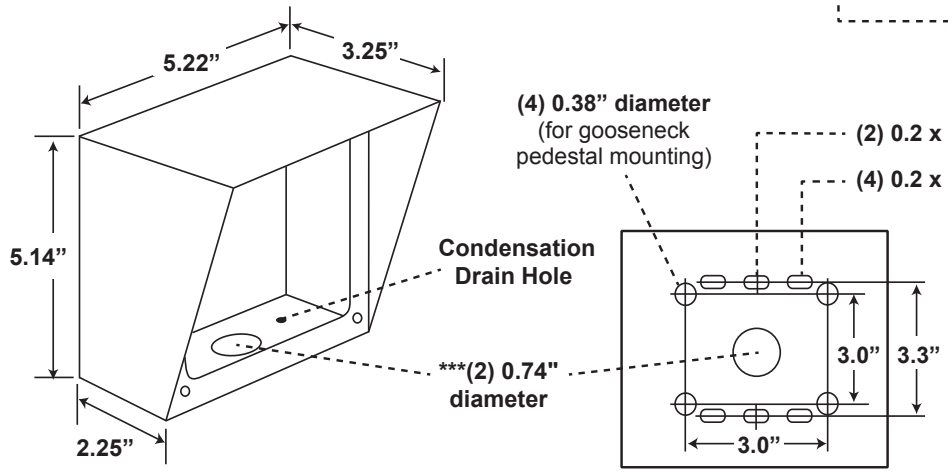
Optional Enhanced Weather Protection (EWP) Available: The optional EWP products feature foam rubber gaskets and boots, sealed connections, gel-filled butt connectors, as well as urethane or thermal plastic potted circuit boards, **DOD 859**.

Mounting with Plastic Rough-In Box (included): Flush into walls, mounts to side of wall stud **Mounting with Optional VE-5x5:** Surface mount to walls, single gang boxes, double gang boxes, posts, or to a Viking **VE-GNP** Gooseneck pedestal.

*** Important:** *Optional Braille “Push for Help” label should be adhered to the faceplate in ADA applications. Clean surface with isopropyl alcohol, peel off backing and press firmly to the front panel in location as shown.*

***Note:** When European CE compliance is required, mount in optional **VE-5X5** metal enclosure.*





Front View of Optional VE-5x5 (not included)

Rear View of Optional VE-5x5 (not included)

Optional VE-5x5 Surface Mount Box with black satin powder paint finish, not included (DOD 424). Optional VE-LIGHT kit can be used to illuminate the faceplate when used with a VE-5x5 (DOD 428). WARNING: Do NOT use a wet location box.

The optional **VE-5x5** Surface Mount Box (left) is designed to be surface mounted to a single gang box, double gang box or **VE-GNP** Gooseneck Pedestal. For more information on the **VE-5x5** and **VE-GNP**, see DOD 424.

***Important:** The **E-1600-30-IP** will **NOT** mount to a standard double gang box. If your applications requires a double gang box, see model **E-1600A-32-IP** on page 11.*

* ***Note:** The black plastic rough-in box (**part # 259576**) may be purchased separately (**Example:** Mounting boxes to studs before the walls are finished for flush installation). Go to **www.vikingelectronics.com** and click on “**Spare Parts**” to order these rough-in boxes.*

*** ***Caution:** When warm air comes in contact with cold surfaces, such as outside walls and conduits, it causes condensation. To prevent condensation from accumulating inside the **E-1600-30-IP** always bring conduit into the bottom of the unit. If this is not possible, drill a 1/4” diameter hole in the bottom of the black plastic box.*

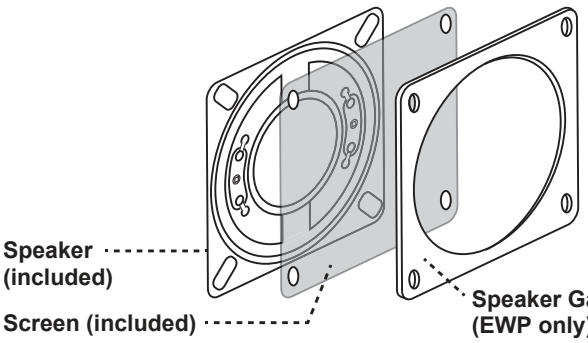
E-1600-50-IP / E-1600-52-IP

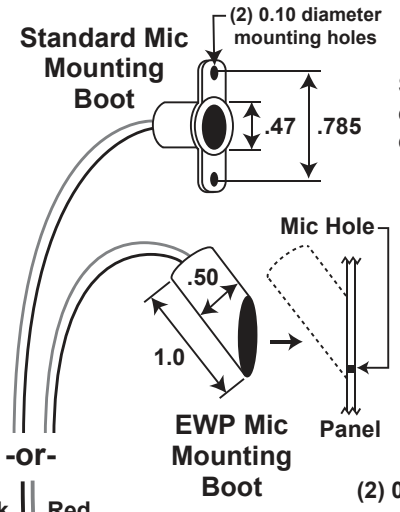
This is a **E-1600-IP** Emergency Phone "parts kits" without a chassis. It is specifically designed to be used behind custom elevator panels or with custom elevator phones. Just like all Viking ADA Compliant Emergency Phones, these kits provide quick and reliable handsfree communication in the event of an emergency.

Shipping Weight: 1.0 lb (0.45 kg)
Connections: Gel-filled butt connectors

Optional Enhanced Weather Protection (EWP) Available: The optional EWP products feature foam rubber gaskets and boots, sealed connections, gel-filled butt connectors, as well as urethane or thermal plastic potted circuit boards, **DOD 859**.

Note: *When European CE compliance is required, mount in a metal enclosure.*

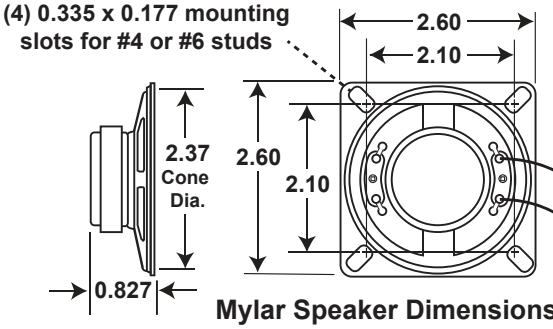




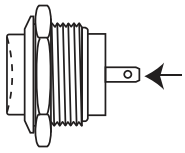
Standard Mic Mounting Boot: Glue or screw directly behind 0.04" - 0.125" diameter hole in panel.

Note: *Mic holes should be near the bottom of the boot to allow for drainage.*

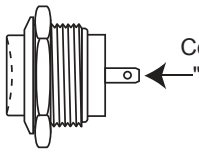
EWP Mic Mounting Boot: Glue to the back of your panel at an upward angle (shown left) behind a 0.10" - 0.25" diameter hole.



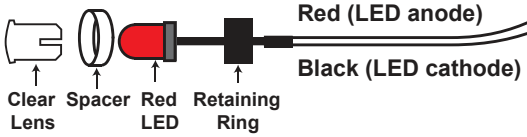
Mylar Speaker Dimensions



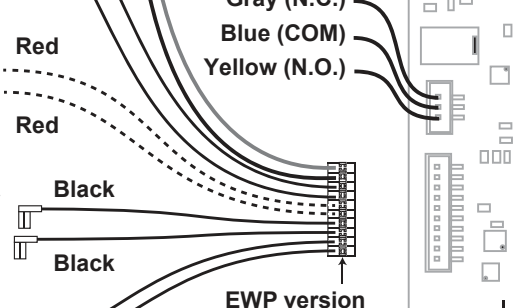
Connect to "**INFO**" button (**E-1600-52-IP** only, requires a 0.75" diameter mounting hole)

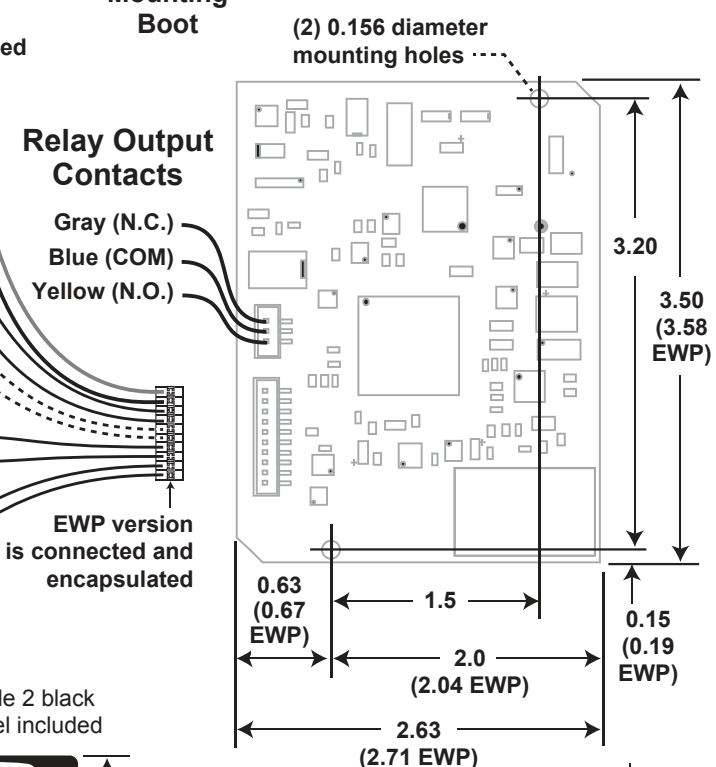


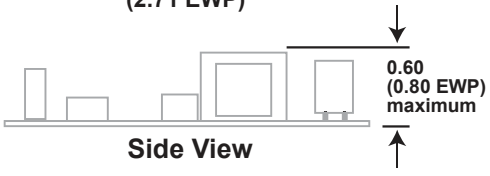
Connect to "**PUSH FOR HELP**" or "**HELP**" button (requires a 0.75" diameter mounting hole)



Red call connected LED with mounting hardware (requires a 0.250" diameter mounting hole).







BL-1 grade 2 black Braille label included

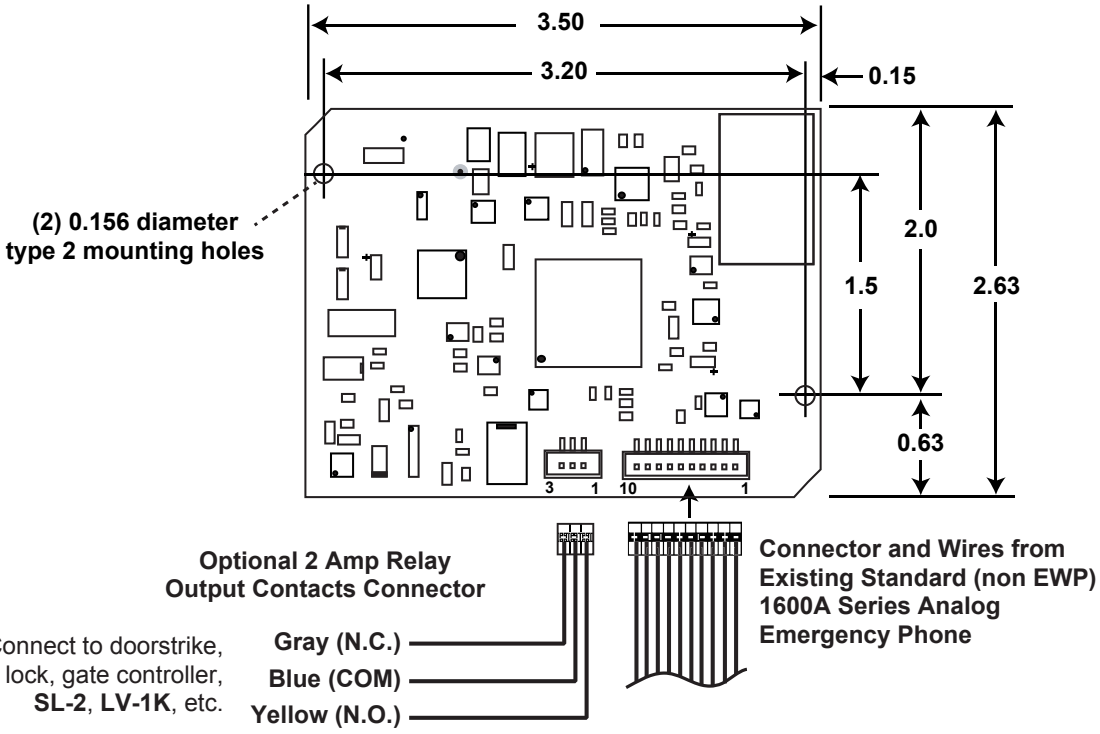
E-1600-53-IP

This is a **E-1600-IP** board (PCB) only kit. This kit can be used to convert 2008 or newer Viking 1600A Series Analog Emergency Phones to a VoIP version. A special connector and microphone assembly is required to convert 2007 and older Viking 1600A Series Emergency Phones. Contact Viking Technical Support if attempting to install this kit in these older phones. This kit can also be used to replace a damaged "IP" board in the field.

Shipping Weight: 1.0 lb (0.45 kg)

Connections: (1) RJ45 10/100 Base-T, (3) optional gel-filled butt connectors

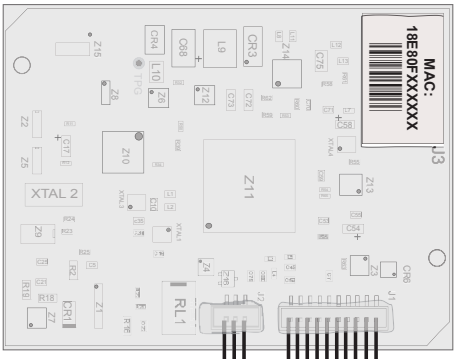
Note: *When European CE compliance is required, mount in a metal enclosure.*



E-1600-53-IP-EWP

This is a **E-1600-IP-EWP** board (PCB) only kit. This kit can be used to convert any Viking 1600A-EWP Series Analog Emergency Phone to a VoIP version. The kit can also be used to replace a damaged "IP" board in the field.

Shipping Weight: 1.0 lb (0.45 kg)
Connections: (1) RJ45 10/100 Base-T, (13) gel-filled butt connectors
Note: *When European CE compliance is required, mount in a metal enclosure.*



Optional 2 Amp Relay Output Contacts Connector

Gray (N.C.)
Blue (COM)
Yellow (N.O.)

Connect to doorstrike, mag lock, gate controller, **SL-2**, **LV-1K**, etc.

- Black
+ Red
Black
Black
Red *
Red *
Yellow
Yellow
- Black
+ Red

LED
Help/Call Switch
Info Switch (optional)
Speaker
Mic

FIGURE 1

Replacing Analog 1600A Series EWP Potted Circuit Boards:

Step 1.	Cut wires from J1 (10 pin connector) and J2 (3 pin connector).
Step 2.	Remove the two #6 phillips screws fastening the circuit board.
Step 3.	Cut off any stripped wire ends from the replacement cable.
Step 4.	Using the supplied gel-filled butt connectors, connect corresponding wires from replacement cable to the previously cut wires from the LED, Help/Call switch, optional Info switch, Speaker and Microphone. See **FIGURE 1** for wire color and polarity.

**** Note:*** *These two red wires are only used on units with an Info button. When installing on a single button unit, cut off these two red wires and discard.*

E-1600-55-IP

The **E-1600-55-IP** is a universal emergency phone kit for installing behind elevator panels, or an installation requiring a custom panel. The finished panel should provide: (4) studs (#6 diameter minimum) for mounting plate, audio holes for speaker and microphone, a momentary SPST push button switch and a 0.25" diameter mounting hole for the LED. Alternatively, the LED can be cut off and the wires connected to a integral switch with LED (often found in elevators).

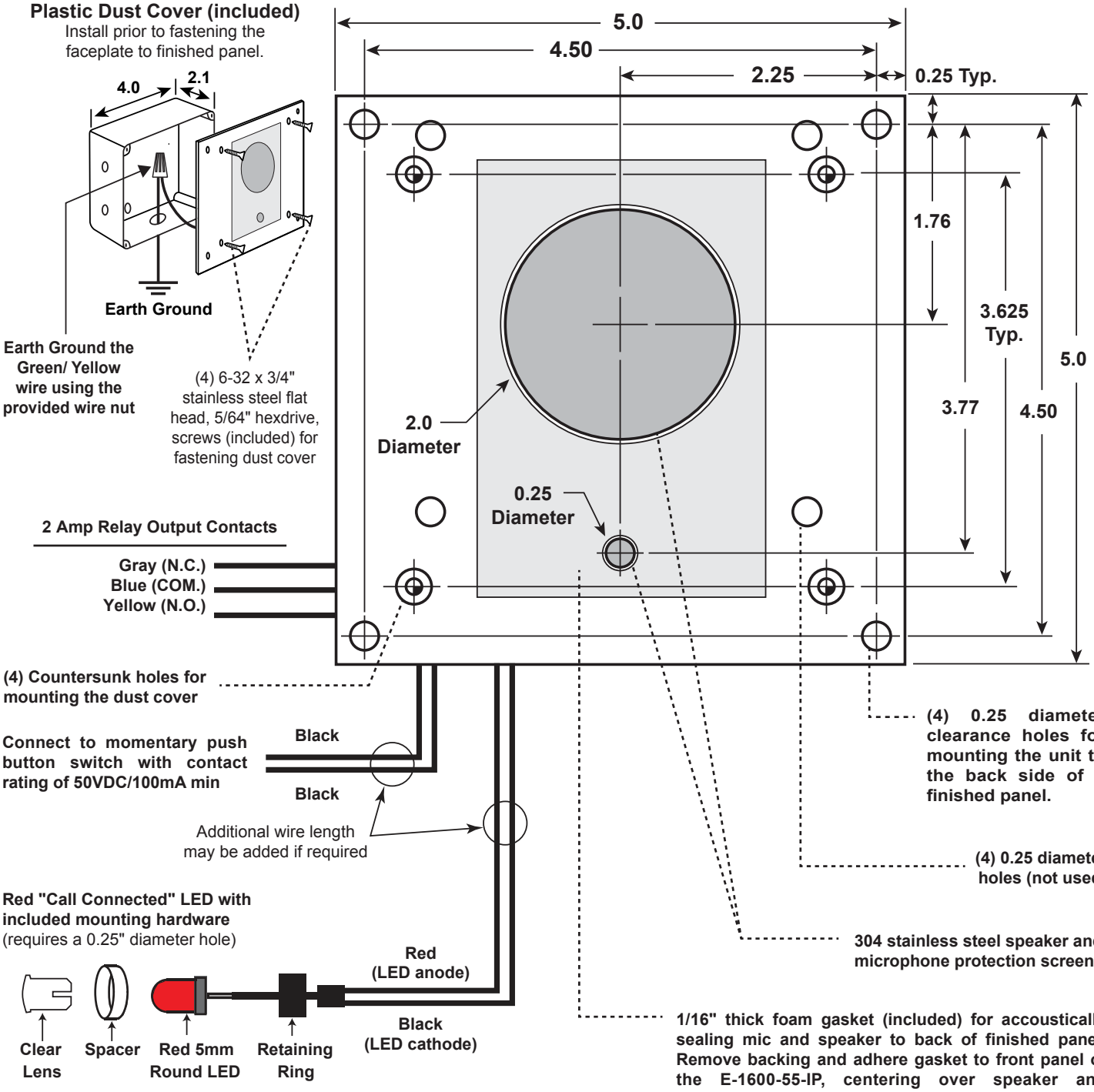
Optional Enhanced Weather Protection (EWP) Available: The optional EWP products feature foam rubber gaskets and boots, sealed connections, gel-filled butt connectors, as well as urethane or thermal plastic potted circuit boards, see **DOD 859**.

Shipping Weight: 1.6 lbs (0.73 kg)

Connections: (1) RJ45 10/100 Base-T, (5) gel-filled butt connectors

Material: 0.062" thick (16 gauge) zinc plated steel

Note: *When European CE compliance is required, mount in a metal enclosure.*



Note: *If you do not want to use the LED, tuck it inside the unit.* ***Do NOT cut it off.***

E-1600-TP-IP-EWP / E-1600-TP2-IP-EWP

Dimensions: 9.5” x 11.75” x 2.0” (241mm x 299mm x 51mm)

Shipping Weight: 6.4 lbs (2.9 kg)

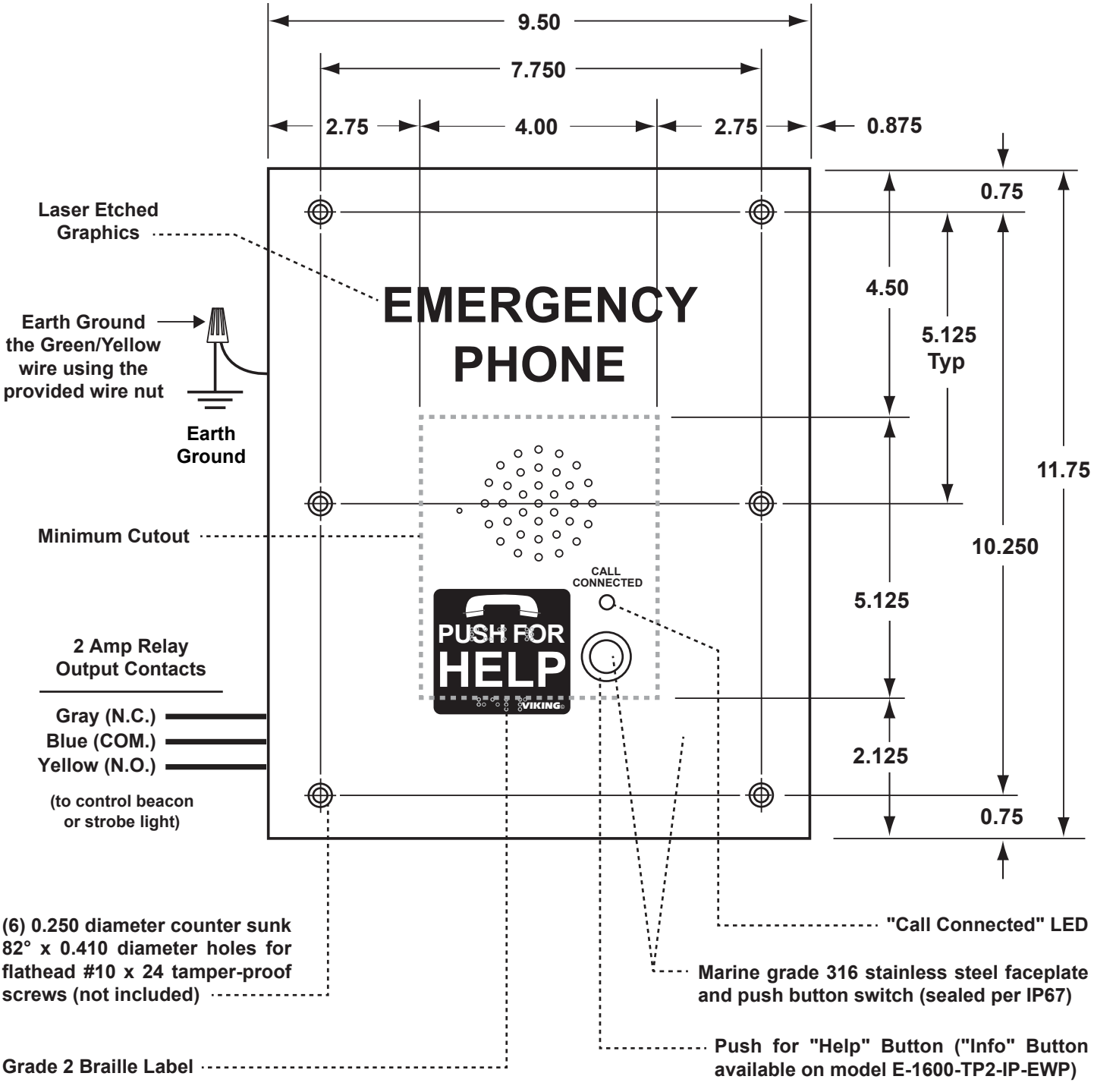
Mounting: Flush mount to Talk-A-Phone ETP towers, wall mounts, boxes and pedestals

Material: 0.105” (12 gauge) brushed Marine grade 316 stainless steel

Connections: (1) RJ45 10/100 Base-T, color-coded wires with gel-filled butt connectors

Enhanced Weather Protection (EWP): EWP products feature foam rubber gaskets and boots, sealed connections, gel-filled butt connectors, as well as urethane or thermal plastic potted circuit boards, see **DOD 859**.

Note: *When European CE compliance is required, mount onto a metal enclosure.*



E-1600-GT-IP-EWP

Dimensions: 10.0” x12.0” x 2.0” (254mm x 305mm x 51mm)

Shipping Weight: 6.4 lbs (2.9 kg)

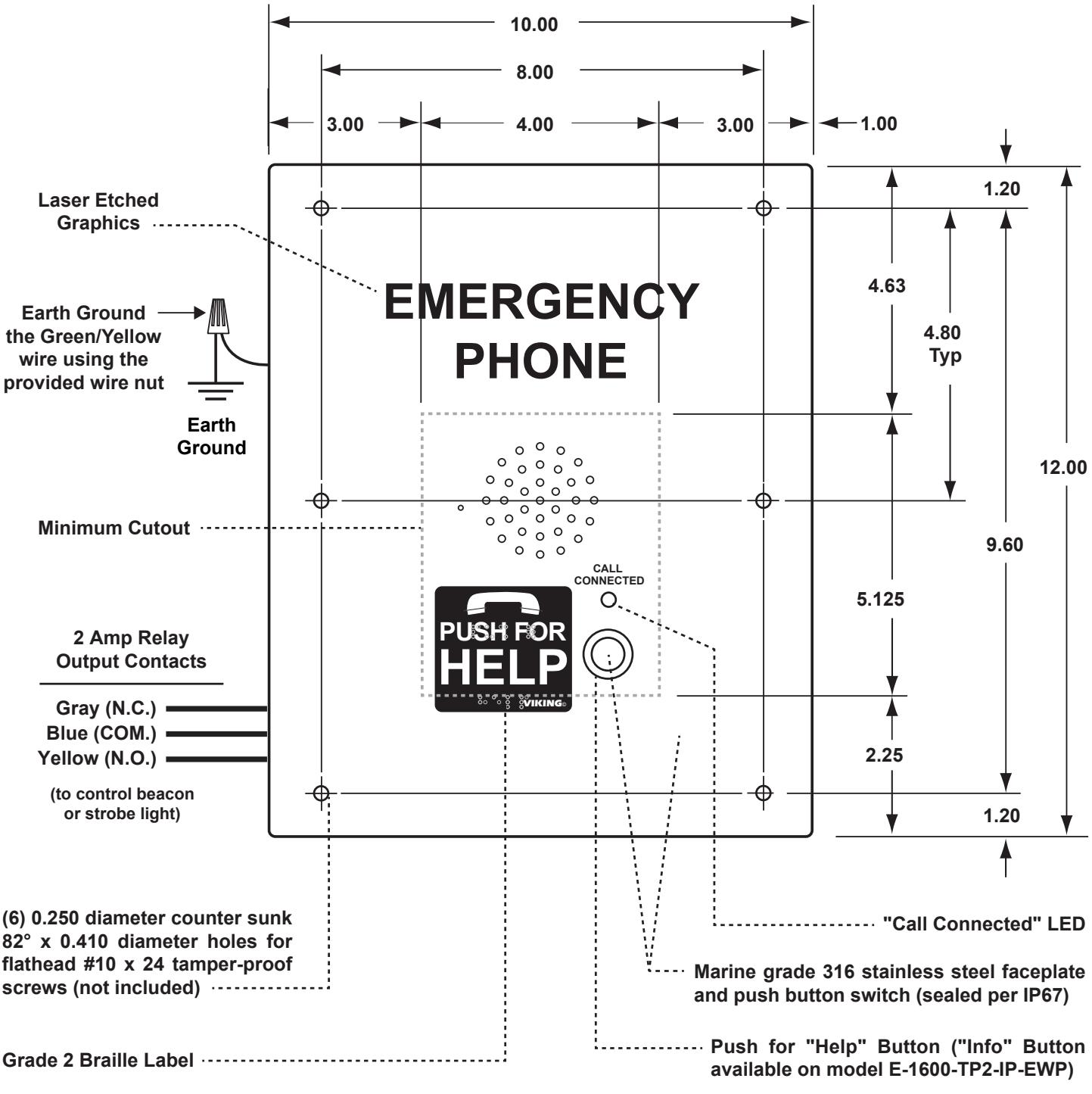
Mounting: Flush mount to GAI-TRONICS towers, wall mounts, boxes and pedestals

Material: 0.105” (12 gauge) brushed Marine grade 316 stainless steel

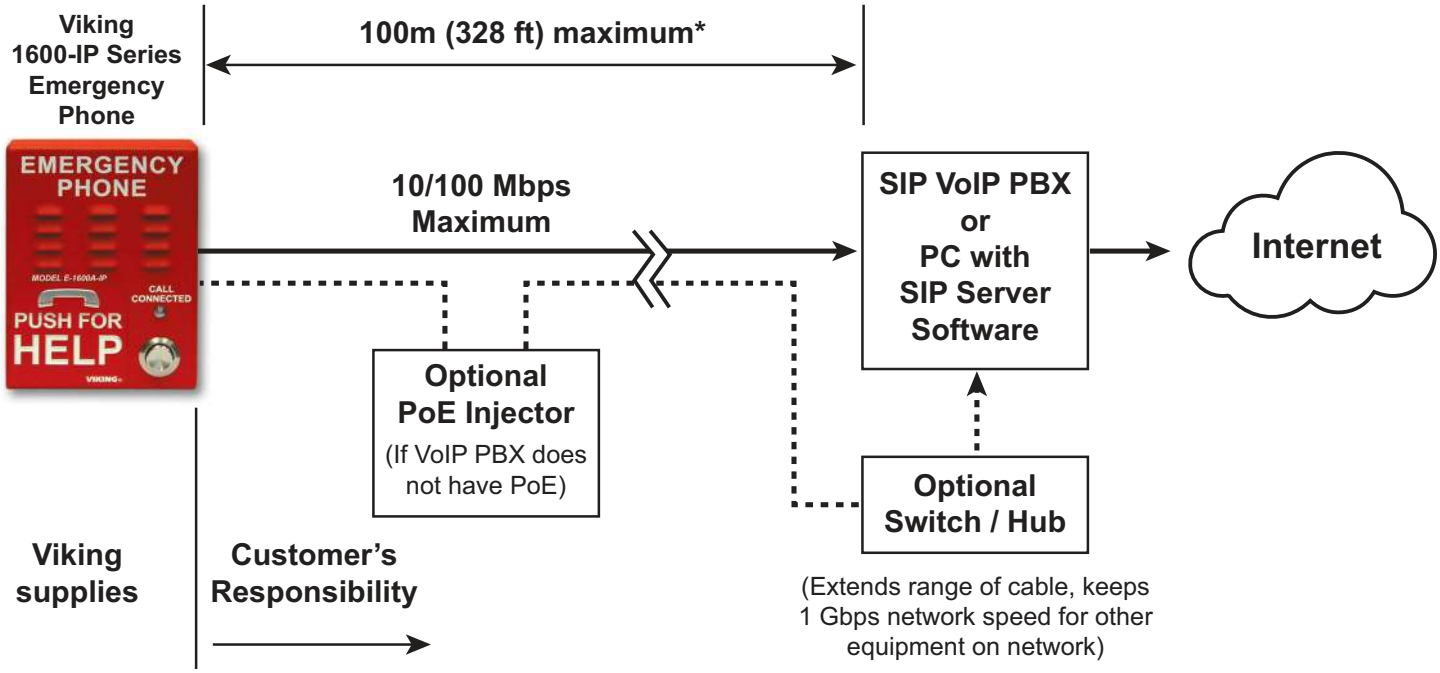
Connections: (1) RJ45 10/100 Base-T, color-coded wires with gel-filled butt connectors

Enhanced Weather Protection (EWP): EWP products feature foam rubber gaskets and boots, sealed connections, gel-filled butt connectors, as well as urethane or thermal plastic potted circuit boards, see **DOD 859**.

Note: *When European CE compliance is required, mount onto a metal enclosure.*



Typical Installation on SIP Based VoIP Phone System



** **Note:** A PoE extender can be used for an additional 100 meters per extender. For longer runs (up to 2 km / 1.2 miles) a ethernet to fiber media converter can be used.*

PC Requirements

- **IBM** compatible personal computer with: Windows 7, 8 or 10
- Adobe Acrobat Reader 8 or higher
- **1600-IP Series** hardware
- Available LAN with PoE (class 1, < 4 watts)
- Ethernet cable (CAT5 min.)
- 1 MB minimum free hard drive space for installation
- 16MB of free physical RAM

PC Programming

Download and install the programming software

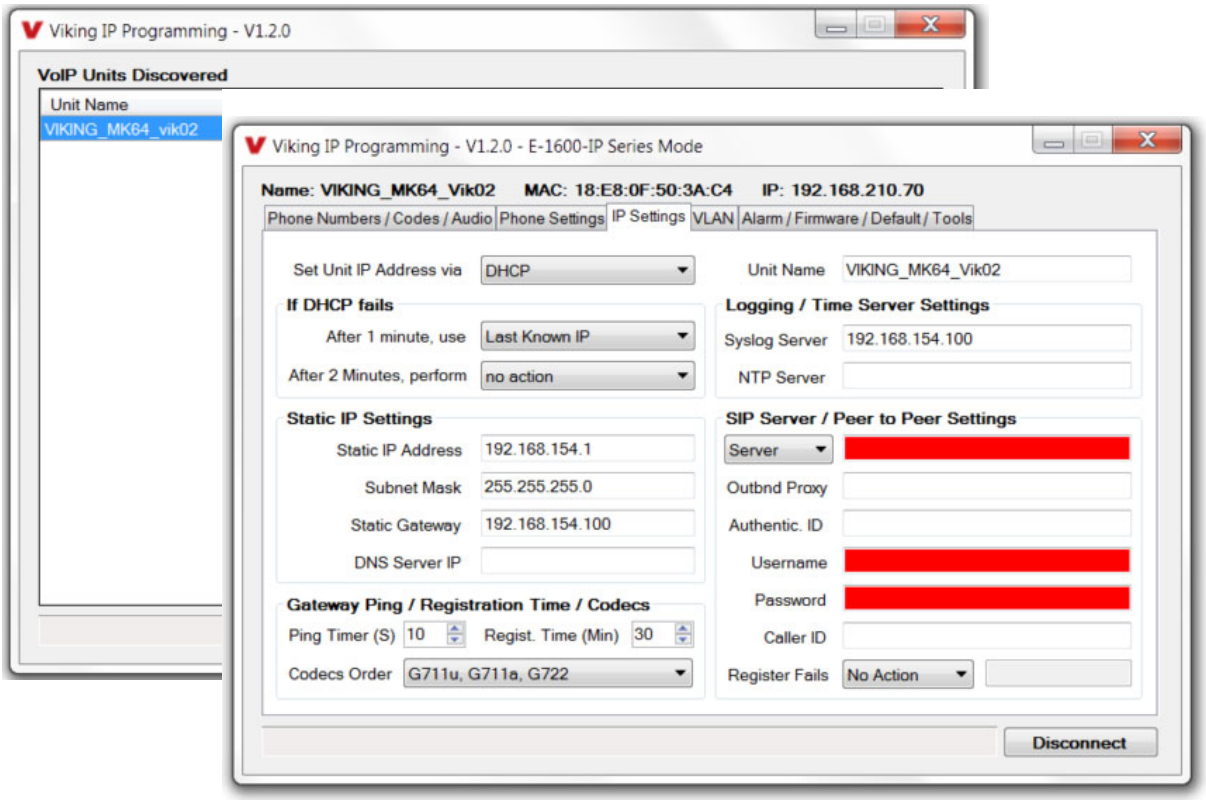
1. Go to www.vikingelectronics.com and enter **E-1600-IP** in the search box
2. Click **E-1600-IP** in the search results
3. Scroll down the page to Downloads, click **IP Programming Software**
4. Install the programming software by saving or opening the file and then clicking on **setup Viking IP Programming.exe**
5. Follow the prompts on your screen to complete software installation
6. To start the Viking IP Programming application, click on the Viking IP Programming icon on your desk top. The Main screen will appear, allowing the user to program any **1600-IP Series** connected to that LAN.

***Note:** PC must be connected to the same LAN as the* **1600-IP Series**.

A. Connect / Disconnect

Open the “Viking IP Programming” software on the PC and the start screen shown below will appear. Any Viking IP phones that are connected to the network will appear on the list. Simply select the **1600-IP Series** on the list and click on the “Connect” button at the bottom or double click the selected phone. If the security code of the selected phone is still set to default (845464), the PC software will not require entering a security code to connect to the phone. **1600-IP Series** have a default name of “VIKING_MK64_Vik02”, so if many phones are connected to the same network that all have the default name, MAC addresses must be used to identify each phone.

When finished programming, click on the “Disconnect” button at the bottom. Closing the program will also automatically disconnect the unit.

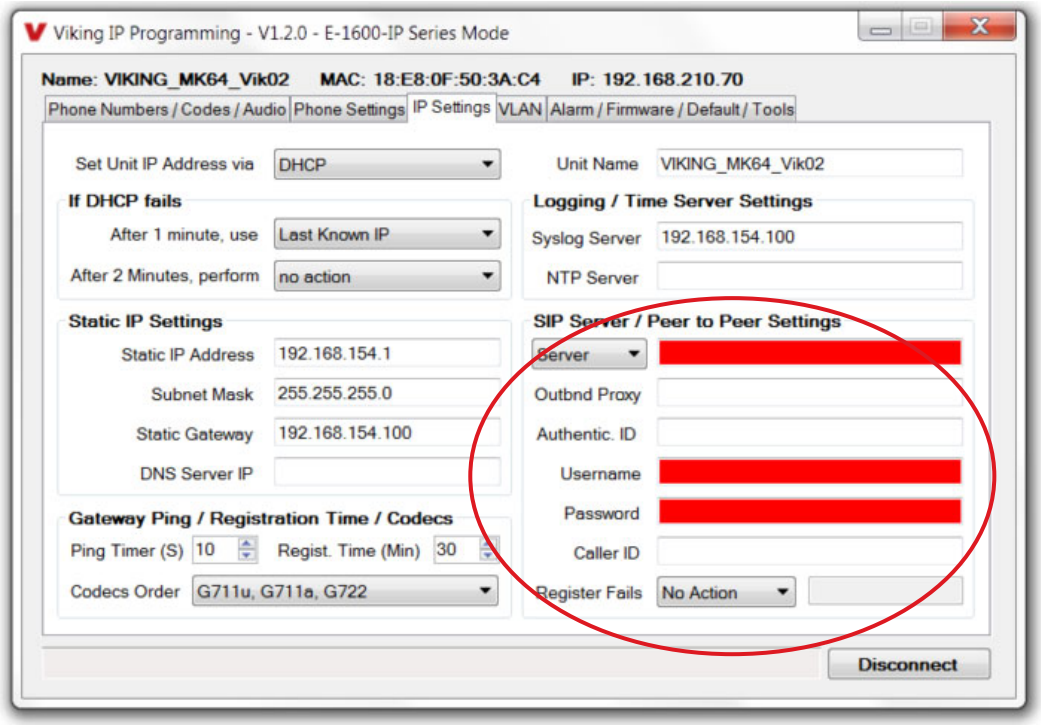


B. Manually Muting SIP/Network Failure Alarm Beeps **(3 beeps repeated every 30 seconds)**

With the unit connected and powered (Green LED on and Yellow LED off or blinking) it will output 3 beeps every 30 seconds and turn the Call/Call Connected LED on and off once per second indicating a SIP registration failure, failure to receive an echo reply from a pinged gateway or Ethernet connection failure. You can manually disable the beeps by pressing and holding the Call button for 5 seconds (2 beeps will then be heard) or by clicking the “Mute Alarm Until Next Failure” tab in the Viking IP programming software. The LED will continue to flash allowing you to trouble shoot the failure.

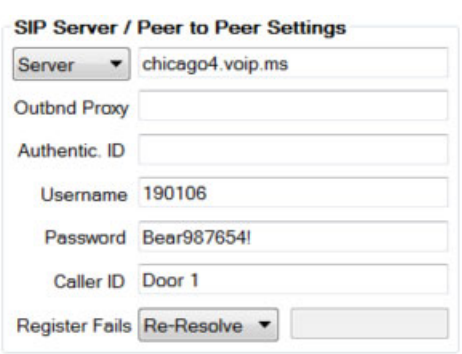
C. Configuring the E-1600-IP Network Settings

Step 1.	Open the “Viking IP Programming” software on a windows PC that is connected to the same LAN as the **1600-IP Series** phone to be programmed.
Step 2.	The window in the upper left corner of the menu will show you each **1600-IP Series** phone that is connected to that LAN. Select the unit with the same MAC address shown on the label located on the top of the Ethernet connector on the **1600-IP Series** phone.
Step 3.	Click the “Connect” button. If a pop up window appears, enter the unit’s security code (factory set to **845464**) then click “OK”.
Step 4.	The program will then read and display the **1600-IP Series** phone’s IP and programming settings.
Step 5.	Click on the “IP Settings” tab.
Step 6.	Select the appropriate value Static IP Settings or DHCP for “Set Unit IP Address via”. Note: changing the IP address will cause you to have to reconnect to the unit. Enter the values for the fields in “if DHCP fails” or “Static IP Settings” as needed.
Step 7.	Set the “Unit Name”, “Logging / Time Server Settings” as needed.
Step 8.	Select Peer-Peer in the “SIP Server / Peer to Peer Settings” to use the unit in Peer to Peer mode. Select Server to register with a SIP registrar server and fill in the “Outbnd Proxy” (SIP Outbound Proxy Server Address, “ip:port”), “Authentic. ID” (SIP Authentication ID), “Username” (SIP Username, <string>), “Password” (SIP Password), and “Caller ID” (SIP Caller ID) with values from your VoIP provider.

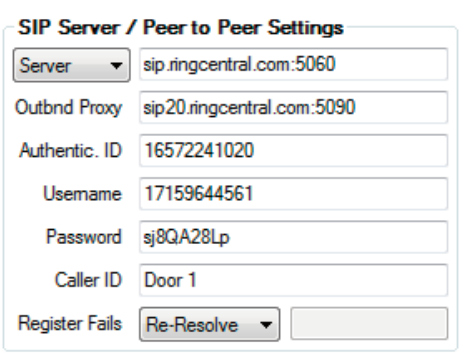


Example 1: On-Premise SIP Phone System
(Panasonic TDE 100/200)

Example 2: Cloud Based Service Provider
(Voip.ms)

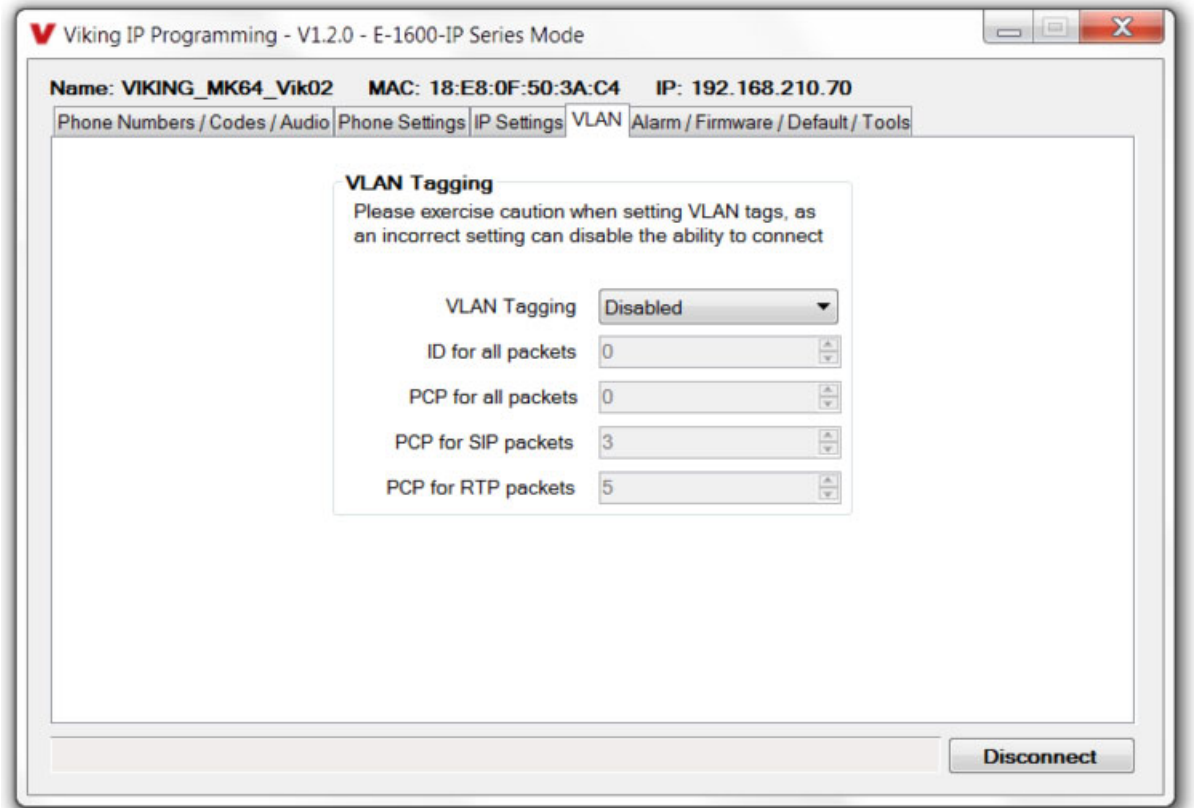


Example 3: Cloud Based Service Provider requiring Outbound Proxy and Authentication ID (Ring Central)



D. Configuring E-1600-IP VLAN Settings

Step 1.	Click on the “VLAN” tab
Step 2.	Disable or enable VLAN tagging by setting the value of “VLAN Tagging”.
Step 3.	Set the VLAN tag ID by selecting an integer (1 to 4094) in “ID for all packets”.
Step 4.	Set the Priority Code Point (PCP) value for all not SIP and RTP packets in the “PCP for all packets” input (0 is default, priorities are from low to high: 0, 1, 2, 3, 4, 5, 6, 7). Set the “PCP for SIP packets” (3 is default). Set the “PCP for RTP packets” (5 is default).



E. Manually Resetting the Security Code to Enter Programming

Step 1.	Power down the **1600-IP Series** phone by disconnecting the LAN Cable (RJ45 plug).
Step 2.	Press and hold the Call button, then reconnect the LAN Cable (RJ45 plug).
Step 3.	Continue to hold Call button until you hear 2 beeps, (approximately 6 seconds). Then release the button. The LED will remain off for the first 3 seconds, flash slowly for 3 seconds then fast flash (after 2 beeps), indicating when to release button.
Step 4.	The security code is now reset to **845464** (factory default).
Step 5.	You can now enter programming by following the steps in section **A**.

F. Manually Resetting All Network Parameters to Factory Default

Step 1.	Power down the **1600-IP Series** phone by disconnecting the LAN Cable (RJ45 plug).
Step 2.	Press and hold the Call button, then reconnect the LAN Cable (RJ45 plug).
Step 3.	Continue to hold the Call button until you hear 2 beeps, (approximately 6 seconds). Continue to hold Call button until you hear 4 more beeps, approximately 6 seconds later, then release the button. The LED will remain off for the first 3 seconds, flash slowly for 3 seconds (2 beeps), fast flash for 6 seconds (4 beeps), then light steady indicating when to release button.
Step 4.	You can now enter programming by following the steps in section **A**.

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Ring Cadence (factorty set to Normal Ring, 2 seconds on 4 seconds off)	31	28
Dial Next Number on RNA (Ring No Answer) (disabled, 1 - 9 = number of rings, factory set to 7)	32	28
Dial Next Number on Busy (disabled or enabled, factory set to enabled)	33	28
Send ID Numbers as (RFC 2833 or In Band DTMF, factory set to RFC 2833)	34	28
Call LED Mode (OFF, Entry Phone, Emergency Phone or Emergency Outbound only, factory set to Entry Phone)	35	29
Call LED Control (Automatic or enter * to light, factory set to Automatic)	36	29
Mute Current / Next Alarm	37	29
Permanent Alarm Mute (factory set to Alarm Tones Enabled)	38	30
IP Firmware	39	30
Unit Firmware	40	30
Import/Export	41	30
Clear Phone Settings	42	30
Clear IP Settings	43	30
Diagnostics (used to check mic, speaker and relay operations)	44	30

Programming Features

1. Unit Name

Up to a 31 character unit name can be assigned to the **1600-IP Series** Phone being programmed.

2. SIP Server

Enter the IP address or URL of your SIP server or service provider in this field. The SIP server IP address is limited to 74 characters. ***Note:*** *If an alternate SIP server IP address is programmed, the IP address for the SIP server and alternate SIP server will be limited to 31 characters.* ***Note:*** *If outbound proxy is not required, enter the SIP server IP address into the Outbnd Proxy field.*

3. Peer to Peer Settings

When set to Peer to Peer mode, a SIP server is not used. The unit should be programmed with a Static IP Address and Username, a password is not used. Caller ID can be programmed if needed. Simply call the unit by entering the programmed "username@192.168...(Static IP address for the unit)". The static IP address is normally programmed into a page button on the VoIP telephones.

4. Outbound Proxy

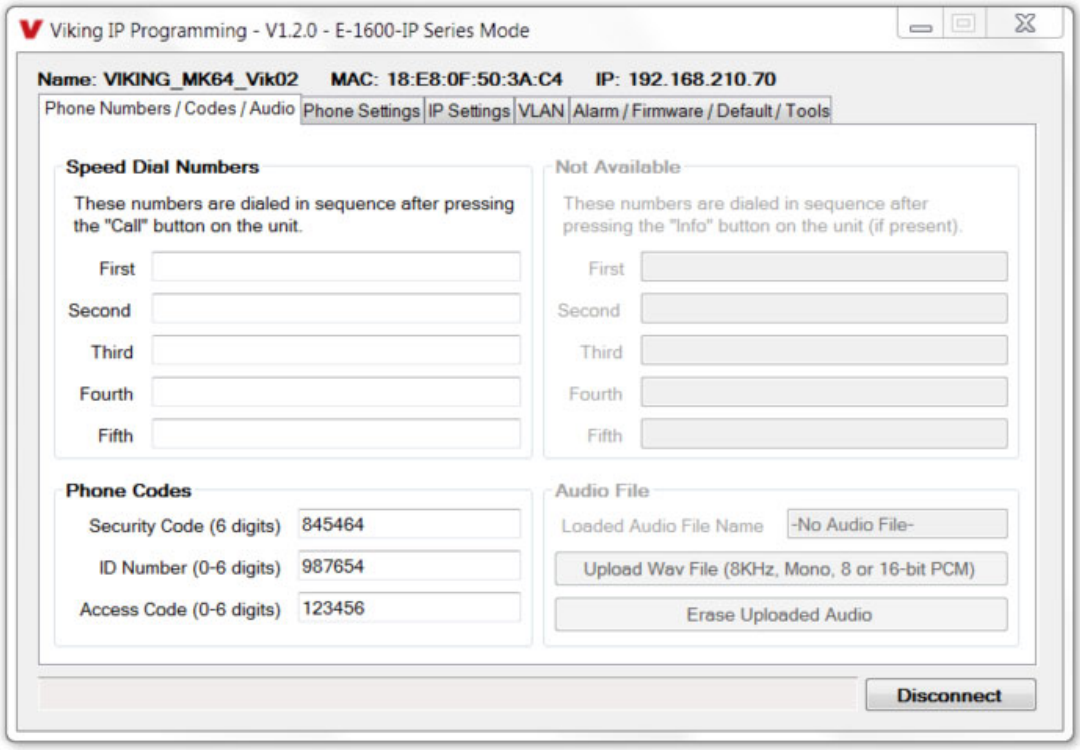
If your SIP provider requires an outbound proxy IP address enter it in the Outbnd Proxy field. If outbound proxy is not required enter the SIP sever IP address into the Outbnd Proxy field. ***NOTE:*** *If not required, this field must match your SIP server IP address.*

5. Authentication ID

If your SIP provider requires Authentication ID, enter it in the Authentic. ID field. If Authentication ID is not required, leave this field blank.

6. Register Fails (Re-Resolve or Alternate Server)

When registered to a SIP server in the event that registration is lost you can program the unit to re-resolve using the current SIP server IP address or route pages through an alternate SIP server. With Alternate Server selected enter the IP address of the alternate SIP server in the field next to the Register Fails drop down box. ***Note:*** *With an alternate SIP server IP address programmed, the IP address for the SIP server and alternate SIP server will be limited to 31 characters.*



Note: *A majority of the features below can also be Touch Tone (In-Band DTMF) programmed, see DOD 949.*

7. Speed Dial Phone Numbers

Note: *Up to 90 digits can be stored in each of the 5 speed dial phone number positions.*

The number programmed in the first location under "Speed Dial Numbers" is the telephone or extension number that is dialed when the call button is pressed. Additional numbers (if programmed) will be dialed when there is no answer and the Dial Next No. on Ring No Answer feature is enabled. The **1600-IP Series** Phone will also detect busy and move on (Dial Next Number on Busy Enabled). The **1600-IP Series** Phone will cycle through the programmed Speed Dial numbers until answered.

8. Security Code

The security code allows the user/installer to program the **1600-IP Series** Phone. It is recommended that the factory set security code be changed. **Factory Setting:** 845464

Note: *The security code must be 6 digits and cannot include a ∗ or a* ***#****.*

9. ID Number:

The ID Number (1 - 6 digits) is used by emergency personnel to identify the location of the caller and is given out when the receiving party presses a ∗. This ID number is transmitted as In-Band DTMF. This can be cleared out by leaving the field blank. **Factory Setting:** 987654

10. Access Code

The Access Code is used for remotely operating the relay (Doorstrike, Mag-Lock, etc) by calling into the unit. This code provides basic security and only allows operation of the relays and not the ability to change any of the programming parameters. Once entered, any of the "Remote Access Operation Commands" can be used. The code can be 1 - 6 digits in length and cannot contain a "∗" or "#" or match the numbers used for the security code. Simply call the **1600-IP Series** Phone (set to auto-answer/auto-answer secure), the unit will automatically answer the line and output one beep. You then enter the programmed 1 - 6 digit access code, 2 beeps should be heard. You can now enter any "Remote Access Operation Commands" (see page 19). This code will also enable audio to/from the speaker and the caller. The access code can be cleard (by leaving the field blank) if this additional level of security is not required. **Factory Setting:** 123456

11. Audio File (optional)

The **1600-IP Series** Emergency Announcement can be uploaded with any user edited WAV file. See "WAV File Guidelines" below. Alternatively the announcement can be recorded via a telephone call (See section 12 below).

WAV File Guidelines:

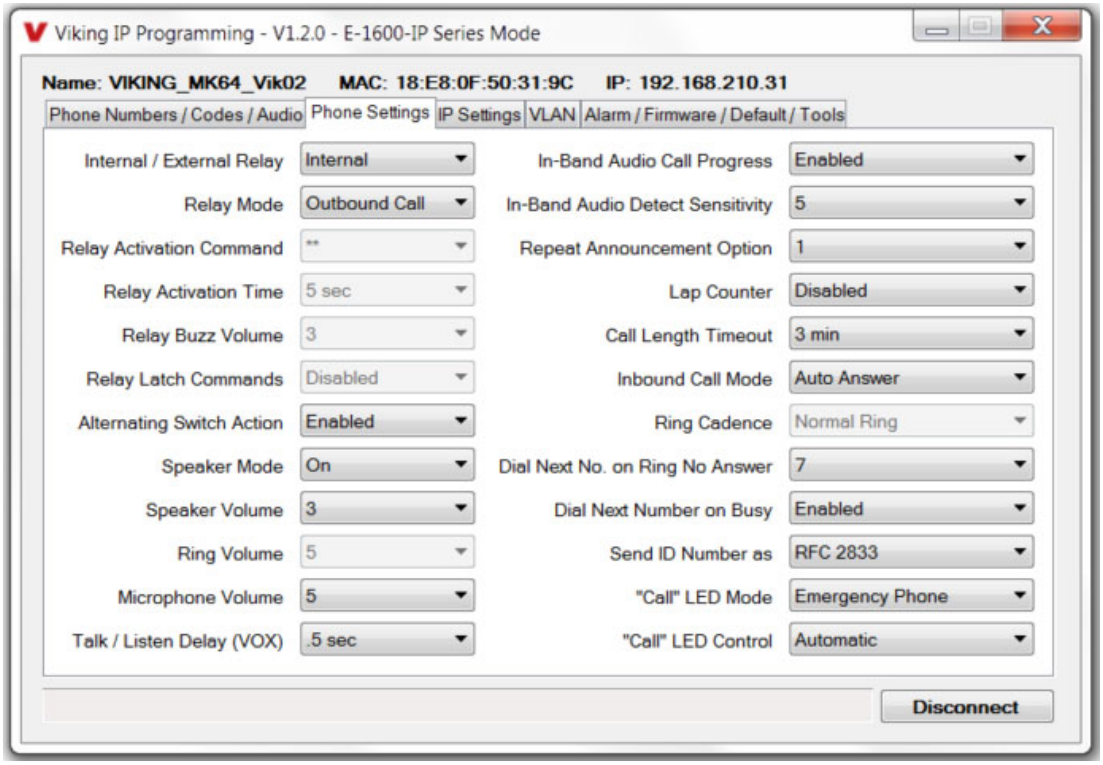
1.	The WAV file should be 8 or 16 bit PCM mono or stereo.
2.	Sampling rates of 8k,16k or 32kHz are acceptable.
3.	The WAV file may be stereo or multi-channel, but only the Left Channel will be loaded.
4.	When saved, wave files will be converted to 8KHz, mono, 16 bit, PCM.
5.	The internal flash memory can hold up to 28 seconds of recorded audio.

Note: *Applications such as Sound Forge, Audacity, and Windows Sound Recorder can be used to create the WAV files.*

12. Recording Emergency Announcement from a Phone

Step 1.	Call into the 1600-IP Series with a Touch Tone phone and access programming by entering the security code (845464 is the factory default).
Step 2.	Enter ∗4, wait for the tone and then begin recording (28 seconds of record time is available).
Step 3.	Enter # to stop the recording. Playback (for reviewing) is automatic.
Step 4.	Enter ∗5 to review the announcement again.
Step 5.	If you choose to not use a voice announcement, enter ∗3 to clear the recording.

Example: "Hudson Elementary School, classroom number 216 needs assistance. Press the star (∗) key on your telephone to hear this announcement again."



13. Relay Internal / External

With the relay set to “Internal” the **E-1600-IP Series** Phone will activate its on board relay for door strike / gate control. The Relay should be set to “External” for higher security installations when using a Viking remote model **RC-4A** relay controller to activate the door strike / gate controller (see DOD 582). **Factory Setting:** Internal

14. Relay Mode

Door Strike Mode. When programmed for Door Strike Mode the relay will momentarily activate for the preprogrammed relay activation time after detecting the correct relay activation command (one or two digit touch tone) from the called party.

Outbound Call Mode. When programmed for Outbound Call Mode the relay will activate continuously for the duration of any outbound call from the Emergency/Entry phone. This mode is useful for activating strobe lights for Emergency VoIP phones.

Inbound/Outbound Call Mode. When programmed for Inbound/Outbound Call Mode the relay will activate continuously for the duration of any inbound or outbound call to or from the Emergency/Entry phone. This mode is useful for turning on IR flood lights, VoIP phones with cameras, etc.

Doorbell Mode. When programmed for Doorbell Mode the relay will momentarily activate the relay for the preprogrammed relay activation time on any outbound call from the Emergency/Entry phone. This mode is useful for activating a door chime, etc. When activating door chimes, a 0.5 - 1 second relay activation time is recommended.

LV-1K Control Mode. When programmed for **LV-1K** Control Mode the relay will activate continuously while the Emergency/Entry phone is powered and registered to the SIP server. In the event the unit loses power and/or SIP registration the relay will turn off, activating **LV-1K**’s flashing LED and audible beep signals.

Ring Mode. When programmed for Ring Mode the relay will continuously activate while the ringing extension is called. This mode is useful for activating a Viking model **SL-2** strobe light, etc.

Ring Flash Mode. When programmed for Ring Flash Mode the relay will momentarily turn on and off in a 400ms on/off cadence while the ringing extension is called. This mode is useful for activating a Viking **LPL-1** Remote Visual Indicator, etc.

Factory Setting: Outbound Call

15. Relay Activation Command

The one or two digit code stored in the Relay Activation Command is the touch tone command that the person being called must enter on their phone in order to momentarily activate the relay to control a doorstrike, mag-lock, gate controller, or other device. The code can contain the characters 0 - 9, # or ∗. The code cannot match a relay latching command (∗1, ∗0). The code must be entered while the remote phone is communicating with the Speaker phone. **Factory Setting:** ∗∗

16. Relay Activation Time

The value stored in the Relay Activation Time is the amount of time the relay will be energized after a correct momentary touch tone command is entered. This number can range from 0.5 - 99 seconds. This also affects timing in Doorbell Mode. **Factory Setting:** 5 seconds

17. Relay Buzz Volume

The relay activation tone is a buzzing sound that is heard from the speaker when the door strike relay is activated. After the called party enters the correct relay activation command, the called party will hear 2 short confirmation beeps and the entry phone will output a buzzing sound (relay activation tone) while the door strike relay is activated. The tone (buzz) length will match the relay activation time up to a maximum of 5 seconds. The tone (buzz) can be programmed to three different volume settings 1 = Low, 2 = Medium, 3 = High or it can be disabled. **Factory Setting:** 3

18. Relay Latch Commands

When set to “Enabled” the Remote Access Operation Commands (∗0 to ∗1) to Un-Latch or Latch the relay are enabled. These can be entered on a Inbound call after the access code is dialed (if programmed).

When set to “Disabled” the Remote Access Operation Commands (∗0 to ∗1) to Un-Latch or Latch the relay are disabled. Disabling the Latch commands can be useful in applications where you want to eliminate the possibility of inadvertently entering a latch command leaving a gate open/closed, etc. **Factory Setting:** Enabled

19. Alternating Switch Action (Panic Button Mode)

With Alternate Switch Action Enabled the CALL button alternately connects and disconnects calls. With Alternate Switch Action Disabled the CALL button connects calls only. Pressing the button again after the call has been initiated will not terminate the call. **Factory Setting:** Enabled

20. Speaker Mode

The Speaker Mode can be set to one of the following three modes. **Factory Setting:** ON

OFF/Silent Monitoring Mode: In the “OFF” mode the speaker is disabled at all times. However, the speaker can be enabled after communication has been established by entering touch tone command “**9#**”. The speaker will remain on for the duration of the call.

ON (factory setting): In the “ON” mode the speaker is enabled during In-bound and Out-bound calls.

OFF Until Answered: In the “OFF Until Answered” mode the speaker will remain silent during dialing and will not turn on until the called party has answered.

21. Speaker Volume

The Speaker volume can be set from 0 - 9, 0 = lowest volume setting, 9= highest volume setting. Adjusting this will set the volume level for incoming/outgoing Phone calls. **Factory Setting:** 3

22. Ring Volume

When set to Ring or Ring with AGC, The **1600-IP Series Phone** will output a loud ring when it is called. The level can be adjusted from 0 - 9. **Factory Setting:** 5

23. Microphone Volume / Automatic Noise Cancelling Mode

The microphone volume can be set from 1 to 9, 1 = lowest volume setting, 9 = highest volume setting. Alternatively the microphone can be placed in the “Auto” Automatic Noise Cancelling mode. With the mic in the Auto mode, when background noise increases, the mic gain will automatically decrease. When background noise decreases the mic gain will automatically increase. The Auto mode is useful in applications where the background noise level can change drastically. **Factory Setting:** 5

24. Talk / Listen Delay (VOX)

This feature selects switching time between talk and listen modes (VOX switching time). The Talk/Listen Delay can be programmed from 0.1 - 0.9 seconds. **Factory Setting:** 0.5 seconds

25. In-Band Audio Call Progress

The In-Band Audio Call Progress Detection can be set to enabled or disabled. In-Band Audio Call Progress detection should be enabled in applications where you are making an outbound call through your VoIP phone system and are relying on In-Band analog audio for ringback or busy detection. **Factory Setting:** Enabled.

26. In-Band Audio Detect Sensitivity

The In-Band Audio Detection level (Sensitivity) can be set from 1 - 9, 1 = minimum setting, 9 = highest setting. Increasing or decreasing the sensitivity may be required in applications where you are making an outbound call through your VoIP phone system and are relying on In-Band analog audio detection. **Factory Setting:** 5

27. Repeat Announcement Option

The **1600-IP Series** Phone can be programmed to play the announcement from 1 - 9 times, or to continuously repeat the announcement every 6 seconds until a Touch Tone ✻ is detected from the distant party. The call connected LED will turn on automatically after the announcement has stopped repeating. **Factory Setting:** 1 (play the announcement 1 time)

28. Lap Counter

With the lap counter disabled, if the **E-1600-IP Series** Phone is programmed to dial the next number on ring-no-answer and/or busy signal, the **E-1600-IP Series** Phone will continuously call its programmed phone numbers forever until the call is answered.

The lap counter is a programmable counter that determines how many times the **E-1600-IP Series** Phone will cycle through its list of up to 5 Speed Dial phone numbers, before it stops the dialing process and hangs up. When all of the programmed phone numbers have been dialed, the lap counter is incremented and the dialing process repeats. When the lap counter has been met, the dialing process stops and the **E-1600-IP Series** Phone hangs up.

Factory Setting: Disabled

29. Call Length Timeout

This feature selects the maximum length of time that calls can be connected. Programmable in increments of 1 minute up to a maximum of 9 minutes or disabled. With the call length disabled, the **1600-IP Series** Phone must rely on a call ended signal, busy signal, Ring No Answer limit, or touch tone # to hang-up. **Factory Setting:** 3 minutes

30. Inbound Call Mode

The Inbound Call Mode determines how the **1600-IP Series** Phone handles incoming SIP calls. One option is to generate a loud ring sound through the speaker. The **1600-IP Series** Phone can also auto answer a SIP call to transmit a page, control the relay or listen to transmit audio from the microphone. The last option is the silent monitor mode, which allows callers to listen to the transmit audio from the microphone. The "secure" options for auto answer require the callers to dial the access code in order to transmit a page, activate the relay or activate the optional **RC-4A** relays. **Factory Setting:** Auto Answer

Disabled – Inbound SIP calls are not allowed.

Auto Answer – Inbound SIP calls are auto answered on the first ring. This can also be used for Silent Monitoring by changing the Speaker Mode to 'OFF/Silent Monitor", See page 26. For more security use the Auto Answer Secure Mode.

Auto Answer Secure – In the "Auto Answer - Secure" mode, the phone will automatically answer an incoming call on the first ring. The unit will then output 2 beeps but will not go into two-way voice mode. After the 2 beeps are heard, you will have 10 seconds to enter the pre-programmed 1 - 6 digit Access Code (see section 10 on page 24). When the correct code in entered, 2 beeps will be heard and the unit will enable the Two-Way Mode (mic and speaker audio). After the correct Access Code is entered, any of the "Remote Access Operation Commands" can be used (see Operation, section B on page 31). ***Note:*** *If the wrong Access Code is entered or more than 10 seconds have elapsed, the phone will output 3 beeps and disconnect.*

Ring: In the "Ring" mode the speaker phone will not automatically answer an incoming call but will output a loud ring signal out of the speaker in a 2 seconds on, 4 seconds off ring pattern. There are four available ring cadences.

Ring with AGC: In the "Ring with AGC" mode the speaker phone will not automatically answer an incoming call but will output a loud ring signal out of the speaker in a 2 seconds on, 4 seconds off ring pattern. The phone will automatically increase or decrease the ring volume based on background ambient noise. The call can then be answered by momentarily pressing the call button.

31. Ring Cadence

The Ring cadence can be programmed to one of 4 different cadences. **Factory Setting:** Normal Ring

Normal Ring (single ring, 2 seconds on 4 seconds off) factory setting

Double Ring (double ring, 1 second on 0.5 seconds off 1 second on 3.5 seconds off)

Short-Short-Long (triple ring, 0.5 seconds on 0.5 seconds off 0.5 seconds on 0.5 seconds off 1 second on 3 seconds off)

Short-Long-Short (triple ring, 0.5 seconds on 0.5 seconds off 1 second on 0.5 seconds off 0.5 seconds on 3 seconds off)

32. Dial Next Number on Ring No Answer

If enabled and a ring-no-answer is detected, the **1600-IP Series** Phone will dial the next programmed Speed Dial number after the programmed amount of rings. A momentary press of the call button will dial the first programmed Speed Dial number. **Factory Setting:** 7 (will redial after 7 rings)

33. Dial Next Number on Busy

If enabled and a busy is detected, the speaker phone will dial the next programmed Speed Dial number. A momentary press of the call button will dial the first programmed phone number. **Factory Setting:** Enabled

34. Send ID Number as

The I.D. number can be transmitted as RFC 2833 or as In-Band DTMF. **Factory Setting:** RFC 2833

35. Call LED Mode

The “Call” LED on the **E-1600-IP Series** can be programmed to one of four different modes. **Factory Setting:** Entry Phone

OFF Mode: Useful for silent monitoring applications. In this mode the LED will not light during normal operation. It will only light (blink) if it cannot register with the programmed SIP server or while manually resetting all network parameters to factory default.

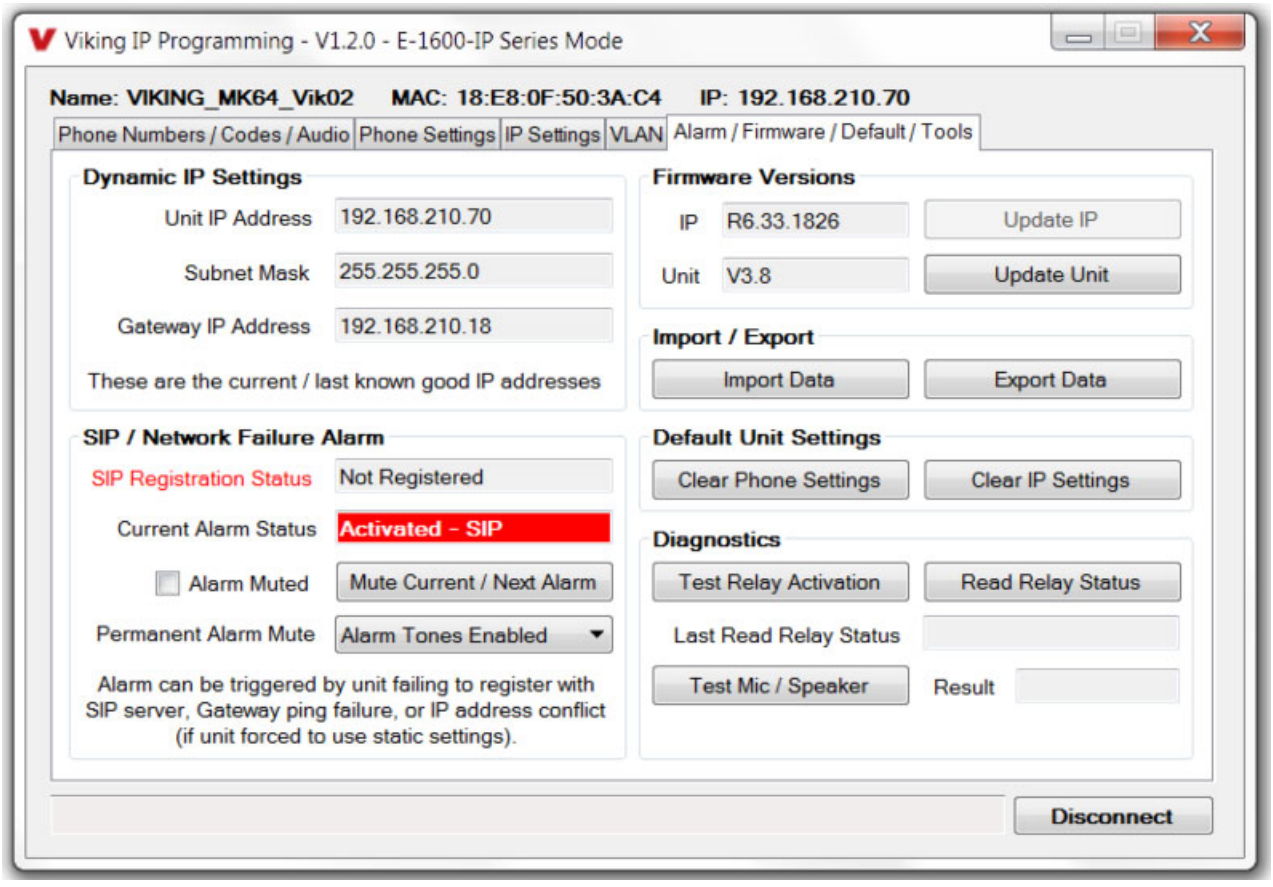
Entry Phone Mode: The LED will remain ON in the idle state, turn off while button is pressed, blink during dialing, light steady when the call is answered, then turn OFF momentarily when the call is completed.

Emergency Phone Mode: The LED will remain OFF in the idle state, blink during dialing, light steady when the call is connected, then turn OFF when the call is completed.

Emergency Phone Outbound Only: On outbound calls, the LED will remain OFF in the idle state, blink during dialing, light steady when the call is connected, then turn OFF when the call is completed. On in-bound calls, the LED will remain off. This is useful for silent monitoring on inbound calls.

36. “Call” LED Control

During outbound SIP calls the “CALL” LED can be programmed to light automatically when the called party has answered or only light after the called party has entered a touch tone “*”. **Factory Setting:** Automatic



37. Mute Current / Next Alarm

A network failure alarm will be indicated by providing 3 beeps every 30 seconds. A network failure indicates the unit is not registered to the SIP server or there is a communication failure with the gateway. The three beeps can be muted by clicking on “Mute Current / Next Alarm”. The Status LED will continue to flash to assist troubleshooting. The alarm beeps can also be permanently disabled. See Permanent Alarm Mute.

38. Permanent Alarm Mute

Selecting “Alarm Tones Disabled” will mute all alarm tones indefinitely. To re-enable alarm tones select “Alarm Tones Enabled”. **Factory Setting:** Alarm Tones Enabled

39. IP Firmware

If new **1600-IP Series Phone** firmware is available, after opening the programming software a pop window will come up asking you if you would like to update firmware. An alternative method of updating can be done by clicking the IP firmware “Update IP” button. You can then browse to the folder that contains the PIP file for updating the unit’s IP firmware. This method is typically only used when Viking Technical Support has sent you updated IP firmware.

40. Unit Firmware

If new **1600-IP Series Phone** firmware is available, after opening the programming software a pop up window will ask if you would like to update firmware. Another way to update is accomplished by clicking the Unit firmware “Update Unit” button. You can then browse to the folder that contains the HEX file for updating the unit’s firmware. This method is typically only used when Viking Technical Support has sent you updated firmware.

41. Import / Export

The Import / Export feature is useful for backing up all the **1600-IP Series** Phone’s programming or for importing programming when installing multiple units with a majority of the same programming.

42. Clear Unit Settings

Clicking on the “Clear Unit Settings” button in programming will reset all of the Programming Features back to their factory default settings. ***Note:*** *This command will not change or reset your IP settings.*

43. Clear IP Settings

Clicking on the “Clear IP Settings” will reset all of the IP settings back to their factory default settings. This also clears paging Group settings and Addresses. ***Note:*** *This will not effect any speaker or paging settings.*

44. Diagnostics

The Diagnostics section in the Viking IP Programming can be used to test the functionality of the mic, speaker and the on-board relay. ***Note:*** *This will not work when relay mode is set to external or Alarm.*

Operation

A. "HELP" / "CALL" Button

When the "**HELP**" / "**CALL**" button is pressed, the **1600-IP Series** phone dials a pre-programmed telephone number. The Call Connected LED momentarily flashes during dialing. In the event the line is busy or there is a ring-no-answer, the unit can be programmed to call additional phone numbers.

The phone then cycles through up to 5 pre-programmed emergency numbers until the call is answered. When the call is answered, the digital voice announcer will automatically play to identify the location of the emergency call. The phones are factory programmed to play the announcement once, and then automatically light the "Call Connected" LED to show that handsfree communication to emergency personnel is established. The ∗ key will send the I.D. number (if programmed), and play the announcement again. The distant party will know the location of the emergency call by either the voice announcement or by decoding the touch tone I.D. number. Once the "Call Connected" LED is on, the # key can be used to force the phone to hang-up.

B. "INFO" Button (E-1600-20/22/52/53-IP)

When the "**INFO**" button is pressed (**1600-20/22/52/53-IP** only), the phone goes off-hook and dials the first "**INFO**" phone number programmed. If a busy signal is detected or the call goes unanswered, the phone will cycle through all five "**INFO**" phone numbers until the call is answered or lap counter is met. When answered, handsfree communication is established. ***Note:*** *The voice announcement is for* ***Emergency/Help*** *calls only and will not play on a call initiated from the "****INFO****" button.*

C. Remote Access Operation Commands

The following commands can be entered after answering an inbound call from the emergency phone. The commands can also be entered on an outbound call to the emergency phone. After the emergency phone auto answers the call, two beeps will be heard. If the access code has been disabled, you can now enter the Remote Access Operation Commands below. If an Access code has been programmed, enter the Access code digits. With the correct code entered, two beeps will be heard and you can now enter the Remote Access Operation Commands below.

Feature	Tone Tone Command	Description
Activate Relay	∗∗ or ___ ___	Momentarily activate relay (1 or 2 digits, factory set to ∗∗).
Un-Latch Relay	**∗0**	Un-latch* (deactivate) the relay.
Latch Relay	**∗1**	Latch* (continuously activate) the relay.
Disconnect	**#**	Disconnects or forces the emergency phone to hang up.
Send ID and Play Message	∗	Send I.D. number (if programmed) and plays the announcement.

**** Note:*** *Latching commands must be enabled (∗**6**) in programming.*

Troubleshooting

If the unit cannot register with the programmed SIP server, the LED will blink on and off every two seconds, and three error beeps will be heard every 30 seconds until communication is restored. This alerts a potential user of a problem with the device that will prevent an emergency phone call from being made.

You may silence the error beeps, per instance, by pressing and holding the HELP/CALL button for 5 seconds or by clicking the "Mute Alarm Until Next Failure" button in the Viking IP Programming Software (see section **B** on page 19). The error beeps automatically re-enable once the unit is registered, to alert of any new problems that arise.

Line Verification Panel with Key Switch

New ASME A17.1-2010 code requires that “the two-way communications means within the (elevator) car shall include a means to verify operability of the LAN connection”. When your local municipality adopts this new ASME A17.1 code the **LV-1K** can be added to fulfill all requirements for visual and audible signaling when it is determined the LAN connection is not functioning.

The **LV-1K** can be added to any new or existing Viking **1600-IP Series** elevator emergency phone as a stand alone solution. The **LV-1K** continuously monitors for loss of PoE or communication with the server and will immediately provide an audible and visual indication when the LAN connection has been accidentally cut or disconnected.

In accordance to ASME A17.1, the **LV-1K** is labeled “ELEVATOR COMMUNICATION FAILURE” in ¼” high red letters, and will sound an audible signal every 30 seconds and flash a red light when a loss of connection is detected. Authorized personnel can silence the audible signal with the included key switch. The LED will remain flashing until the fault is corrected.

For more information, see DOD 246

Surface or Pedestal Mount Viking Products While Maintaining Weather and Vandal Resistance

The **VE-3x5**, **VE-5x5**, **VE-6x7** and **VE-5x10** add vandal and weather resistance, as well as versatility to many Viking products. The **VE-Series** backboxes are available in black fine texture powder painted steel or Marine Grade 316 stainless steel. The weather resistant boxes are designed to be surface mounted to a wall, post, single gang box, or a **VE-GNP** gooseneck pedestal. ***Note:*** *The **VE-3x5** is not compatible with the **VE-GNP** pedestals and is not available in stainless steel.*

The **VE-3x5** is designed to be used with the **E-40-EWP** or **E-50-EWP** Series entry phones. The **VE-5x5** is designed to be used with the **E-10A-EWP, E-30-EWP, E-30-PT-EWP, E-60-EWP, E-65-EWP, E-70-EWP, E-75-EWP** entry phones, the **E-1600-20A-EWP, E-1600-20-IP-EWP, E-1600-30A-EWP** and **E-1600-30-IP-EWP** emergency phones, as well as the **W-1000-EWP** and **W-3000-EWP** handsfree doorboxes. The **VE-6x7** is designed to be used with the **K-1700-3-EWP** and **K-1705-EWP** entry phones and the **VE-5x10** is designed to be used with the **K-1900-7-EWP** and the **K-1900-8-EWP** vandal resistant phones.

For more information, see DOD 424

The **VE-GNP** gooseneck pedestals are designed to be used with the **VE-5x5**, **VE-6x7** and **VE-5x10** backboxes and are ideal for drive up communications. ***Note:*** *The **VE-3x5** is not compatible with the **VE-GNP** pedestals.* The **VE-PNL**’s are **VE-Series** backboxes with a blank aluminum panel. The user can customize the clear-coated aluminum panel to mount an **PRX-1** card reader, **PRX-2** keypad or switch. The kits come complete with box, gasket, panel and screws. Model numbers that end with “SS” are stainless steel version. ***Note:*** *The use of magnets to mount the **VE-Series** enclosure to a metal surface can affect the operation of the enclosed product.*

Viking Area of Refuge Signs Designed to Comply with IBC, ADA, NFPA and ICC Requirements

ARS-TB100
Tactile Blue Braille and raised letter sign to be placed next to the Area Of Refuge (stairwell exit) door.

ARS-IB100
Instructional Blue Braille and Raised letter sign to be placed next to the Area of Refuge emergency phone (E-1600A-IP,

ARS-LR100
Lighted double sided Wall or ceiling mount sign to be placed above the Area Of Refuge (stairwell exit) door.

ARS-DLB100

ARS-DRB100

Directional Blue signs with left or right arrow to be placed next to exit doors without Area Of Refuge.

- **ARS-LR100:** Red LED edge lit wall sign, 120/277V AC power, Included NiCad battery delivers over 3 hours of battery backup, UL listed, Universal wall, side or ceiling mounting, Silver aluminum housing with mirrored double sided acrylic sign surface, Battery test button, AC pwr LED, Low voltage automatic battery disconnect to prevent deep cycling battery, mounting hardware and 4 optional Chevron arrows with mounting templates included.
- **ARS-TB100:** 6” wide x 9” tall Tactile Sign with 0.031” raised white letters and accesability symbol, California compliant Contrated Grade 2 Braille. Blue PMS 300 Acrylic with non-glare finish, 0.032” thick double sided foam included.
- **ARS-IB100:** 6” wide x 7.5” tall Instructional sign with 0.031” raised white “Push For Help” letters and ingraved white text, California compliant Contrated Grade 2 Braille. Blue PMS 294 ABS with non-glare finish, 0.032” thick double sided foam included.
- **ARS-DLB100** (left arrow) and **ARS-DRB100** (right arrow): 12” wide x 4” tall Directional sign with ingraved white text, Blue PMS 294 ABS with non-glare finish, 0.032” thick double sided foam included.
- **VE-ARSW:** Area of Refuge surface mount command center cabinet. Lockable for mounting “Two-Way Communications System” phone in low rise (less than 60 ft tall) buildings. See **DOD 237**.

The **ARS Series** Area of Refuge Signs are designed comply with IBC 1007,1011, ADA 4.3.11, NFPA 22, 101 and ICC 703 code requirements. The **ARS-LR100** is an LED Illuminated edge-lit double sided hanging Sign. It is AC powered with 3 hour battery backup. The unit can be ceiling mounted, mounted flat against a wall or end mounted so it can be viewed from either direction. The Instructional, Tactile and Directional signs are made from Acrylic or durable ABS plastic and are designed to adhere to the wall with the provided double sided foam tape. **For more information, see DOD 235.**

Emergency Phone Panic Button Kit
(for use with Viking Emergency Phones)

The **PB-1** Panic Button Kit connects to a Viking **1600A** or **1600-IP Series** Emergency Phone to provide a one-way talk path to the pre-programmed number when used.

The **PB-1** will activate the **1600A** or **1600-IP Series** Emergency Phone and allows the called party to light a red LED to indicate that the call is connected. The called party will be able to hear the installation site, but the site will not be able to hear the called party. This makes it a very effective security measure, as there is no other indication that the site is being monitored.

For more information, see DOD 233

Warranty

IF YOU HAVE A PROBLEM WITH A VIKING PRODUCT, CONTACT: VIKING TECHNICAL SUPPORT AT 715-386-8666

Our Technical Support Department is available for assistance Monday through Friday 8:00am to 5:00pm central time. So that we can give you better service, before you call please:

1. Know the model number, the serial number and what software version you have (see serial label).
2. Have your Product Manual in front of you.
3. It is best if you are on site.

RETURNING PRODUCT FOR REPAIR

The following procedure is for equipment that needs repair:

1. Customer must contact Viking's Technical Support Department at 715-386-8666 to obtain a Return Authorization (RA) number. The customer MUST have a complete description of the problem, with all pertinent information regarding the defect, such as options set, conditions, symptoms, methods to duplicate problem, frequency of failure, etc.

2. Packing: Return equipment in original box or in proper packing so that damage will not occur while in transit. Static sensitive equipment such as a circuit board should be in an anti-static bag, sandwiched between foam and individually boxed. All equipment should be wrapped to avoid packing material lodging in or sticking to the equipment. Include ALL parts of the equipment. C.O.D. or freight collect shipments cannot be accepted. Ship cartons prepaid to: **Viking Electronics, 1531 Industrial Street, Hudson, WI 54016**

3. Return shipping address: Be sure to include your return shipping address inside the box. We cannot ship to a PO Box.

4. RA number on carton: In large printing, write the R.A. number on the outside of each carton being returned.

RETURNING PRODUCT FOR EXCHANGE

The following procedure is for equipment that has failed out-of-box (within 10 days of purchase):

1. Customer must contact Viking's Technical Support at 715-386-8666 to determine possible causes for the problem. The customer MUST be able to step through recommended tests for diagnosis.

2. If the Technical Support Product Specialist determines that the equipment is defective based on the customer's input and troubleshooting, a Return Authorization (R.A.) number will be issued. This number is valid for fourteen (14) calendar days from the date of issue.

3. After obtaining the R.A. number, return the approved equipment to your distributor, referencing the R.A. number. Your distributor will then replace the Viking product using the same R.A. number.

4. The distributor will NOT exchange this product without first obtaining the R.A. number from you. If you haven't followed the steps listed in 1, 2 and 3, be aware that you will have to pay a restocking charge.

TWO YEAR LIMITED WARRANTY

Viking warrants its products to be free from defects in the workmanship or materials, under normal use and service, for a period of two years from the date of purchase from any authorized Viking distributor. If at any time during the warranty period, the product is deemed defective or malfunctions, return the product to Viking Electronics, Inc., 1531 Industrial Street, Hudson, WI., 54016. Customer must contact Viking's Technical Support Department at 715-386-8666 to obtain a Return Authorization (R.A.) number.

This warranty does not cover any damage to the product due to lightning, over voltage, under voltage, accident, misuse, abuse, negligence or any damage caused by use of the product by the purchaser or others. This warranty does not cover non-EWP products that have been exposed to wet or corrosive environments. This warranty does not cover stainless steel surfaces that have not been properly maintained.

NO OTHER WARRANTIES. VIKING MAKES NO WARRANTIES RELATING TO ITS PRODUCTS OTHER THAN AS DESCRIBED ABOVE AND DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTIES OR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

EXCLUSION OF CONSEQUENTIAL DAMAGES. VIKING SHALL NOT, UNDER ANY CIRCUMSTANCES, BE LIABLE TO PURCHASER, OR ANY OTHER PARTY, FOR CONSEQUENTIAL, INCIDENTAL, SPECIAL OR EXEMPLARY DAMAGES ARISING OUT OF OR RELATED TO THE SALE OR USE OF THE PRODUCT SOLD HEREUNDER.

EXCLUSIVE REMEDY AND LIMITATION OF LIABILITY. WHETHER IN AN ACTION BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE OR STRICT LIABILITY) OR ANY OTHER LEGAL THEORY, ANY LIABILITY OF VIKING SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE PRODUCT, OR AT VIKING'S OPTION, REFUND OF THE PURCHASE PRICE AS THE EXCLUSIVE REMEDY AND ANY LIABILITY OF VIKING SHALL BE SO LIMITED.

IT IS EXPRESSLY UNDERSTOOD AND AGREED THAT EACH AND EVERY PROVISION OF THIS AGREEMENT WHICH PROVIDES FOR DISCLAIMER OF WARRANTIES, EXCLUSION OF CONSEQUENTIAL DAMAGES, AND EXCLUSIVE REMEDY AND LIMITATION OF LIABILITY, ARE SEVERABLE FROM ANY OTHER PROVISION AND EACH PROVISION IS A SEPARABLE AND INDEPENDENT ELEMENT OF RISK ALLOCATION AND IS INTENDED TO BE ENFORCED AS SUCH.

If trouble is experienced with the **1600-IP Series** phone, for repair or warranty information, please contact:

Viking Electronics, Inc., 1531 Industrial Street, Hudson, WI 54016 715-386-8666

WHEN PROGRAMMING EMERGENCY NUMBERS AND (OR) MAKING TEST CALLS TO EMERGENCY NUMBERS:

Remain on the line and briefly explain to the dispatcher the reason for the call. Perform such tests in off-peak hours, such as early morning or late evenings.

PART 15 LIMITATIONS

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CANADA

This class A digital apparatus complies with Canadian ICES-003. Cet appareil numerique de la classe A est conforme a la norme NMB-003 du Canada.

Product Support: 715-386-8666

Due to the dynamic nature of the product design, the information contained in this document is subject to change without notice. Viking Electronics, and its affiliates and/or subsidiaries assume no responsibility for errors and omissions contained in this information. Revisions of this document or new editions of it may be issued to incorporate such changes.