GUARDIAN TELECOM

a division of Circa Enterprises

tough. trusted. true.

Heavy Duty Emergency Telephones

HDE 20/30 Series Analog
Installation & Operation

HDE-30

HDE-20

P007769 Rev. A 210429 5/5/2021 11:14 AM

HDE 20/30 SERIES ANALOG TELEPHONES P007769 Rev. A

COPYRIGHT NOTICE:
© 2021 Circa Enterprises Inc.
ALL RIGHTS RESERVED

This manual and the related materials are the copyrighted property of Circa Enterprises. No part of this manual or related materials may be reproduced or transmitted, in any form or by any means (except for internal use by licensed customers), without prior express written permission of Circa Enterprises. This manual, and the products, software, firmware, and/or hardware described in this manual are the property of Circa Enterprises provided under the terms of an agreement between Circa Enterprises and the recipient of this manual, and their use is subject to that agreement and its terms.

DISCLAIMER: Except as expressly and specifically stated in a written agreement executed by Circa Enterprises Circa Enterprises makes no representation or warranty, express or implied, including any warranty or merchantability or fitness for any purpose, with respect to this manual or the products, software, firmware, and/or hardware described herein. Circa Enterprises assumes no liability for damages or claims resulting from any use of this manual or such products, software, firmware, and/or hardware. Circa Enterprises reserves the right to make changes, without notice, to this manual and to any such product, software, firmware, and/or hardware.

OPEN SOURCE STATEMENT: Certain software components included in Guardian products are subject to the GNU General Public License (GPL) and Lesser GNU General Public License (LGPL) “open source” or “free software” licenses. Some of this Open Source Software may be owned by third parties. Open Source Software is not subject to the terms and conditions of the Circa Enterprises COPYRIGHT NOTICE or software licenses. Your right to copy, modify, and distribute any Open Source Software is determined by the terms of the GPL, LGPL, or third party, according to who licenses that software.

Software or firmware provided by Circa Enterprises that is unrelated to Open Source Software is copyrighted by Circa Enterprises, subject to the terms of Circa Enterprises licenses, and may not be copied, modified, reverse-engineered, or otherwise altered without explicit written permission from Circa Enterprises.

TRADEMARK NOTICE: Guardian Telecom and the Guardian Telecom logos are trademarks of Circa Enterprises, other product names, trademarks, and service marks may be the trademarks or registered trademarks of their respective owners.

GUARDIAN TELECOM
a division of Circa Enterprises Inc.

Toll-free 1-800-363-8010
Phone (403) 258-3100
Fax. (403) 255-2595
www.guardiantelecom.com
E-mail: sales@guardiantelecom.com

Table of Contents

Table of Figures

Package Contents

(1) One HDE 20/30 Series Telephone
(1) Driver bit for Tamper Resistant Screws

Product Overview

HDE 20/30 Series Heavy Duty Emergency Telephones

HDE SERIES telephones are intended for use in public areas where direct assistance or hands-free communication is required. They provide a hands-free, two-way link to emergency/assistance through analog, half-duplex telephone transmission. A call may be initiated from the HDE or from the monitoring station. The HDE may be programmed to autodial two numbers or to ring down through a PABX. With an optional external signaling alarm such as a Scream Alert, an HDE telephone is an effective tool to alert emergency personnel of an urgent situation. The status of each HDE can be remotely monitored, informing maintenance personnel if there is a malfunction. Monitoring equipment can be purchased separately.

No other telephones may be installed on the HDE extension.

NOTE: ***In the event of a supplemental power failure, the HDE product will continue to operate in a basic functional mode however audio will be at a reduced level. The primary and supplemental relay controls will continue to function, however the devices to which they are connected may no longer operate.***

Features

Enclosure and Faceplate

- 16 Gauge 316ss, or 16 Gauge 316ss with powder coating

Emergency Button and Call Button

- Vandal resistant plastic

Tamper Resistant Screws

- Protect against unauthorized access.

Remote Programming

- program options from a remote location (password protected)

Power Surge Protection

- Surge Arrestor to protect from lightning strikes
- Polyswitch Resettable Fuse – self resetting fuse to protect from line surges

Relay(s)

- Auxiliary – on all models - Switches power to a beacon, camera or similar device whenever the HDE telephone is off-hook.
- Supplemental – Two additional relays managed from the monitoring station can control cameras, external lighting, electronic door locks, etc.

Warning

Electrical Hazard: This product should be installed by a licensed electrician according to all electrical and building codes.

Avertissement

De danger électrique : Ce produit doit être installé par un électricien agréé selon tous les codes électriques et du bâtiment.

Warning

Dislocation Hazard: To prevent injury, this apparatus must be securely attached to the floor/wall in accordance with the installation instructions.

Avertissement

Risque de dislocation: Pour éviter les blessures, cet appareil doit être solidement fixé au plancher/mur conformément aux instructions d'installation.

Options and Accessories

Conformal Coated Circuitry

- Circuit board can be protected with a silicon-based conformal coating, making it resistant to corrosive agents (e.g. H_2S, SO_2 and NH_3) and environments with high humidity.

B44 Safety Code Compliance

- All HDE models can be programmed to perform phone line diagnostics to meet B44 safety code compliance requirements.

9V-12V AC or DC Supplemental External Power Supply

- All HDE models accept 9-12V AC or DC external power supply to boost speaker volume, (non-switching power supplies are recommended).
- Maximum Speaker Volume @ 1.0 Meters - Line Powered 75.4dB, with External Power 86.1dB.

Models

Order Number	Model	Call Button Configuration	Maximum Speaker Volume @ 1.0 Meters	
			Line Powered (0.25W)	With External Power (3.3W)
P6930	HDE-20	Single Call Button	75.4dB	86.1dB
P6931	HDE-21	Single Call Button With Keypad	75.4dB	86.1dB
P6932	HDE-22	Dual Call Button	75.4dB	86.1dB
P6933	HDE-23	Dual Call Button With Keypad	75.4dB	86.1dB
P6935	HDE-30	Single Call Button	75.4dB	86.1dB
P6936	HDE-31	Single Call Button With Keypad	75.4dB	86.1dB
P6937	HDE-32	Dual Call Button	75.4dB	86.1dB
P6938	HDE-33	Dual Call Button With Keypad	75.4dB	86.1dB

Installing the HDE-20/21/22/23 Telephones

- Follow all appropriate electrical codes and use only approved electrical fittings for the installation. If 120VAC power is provided to the Auxiliary Relay, the enclosure must be properly grounded to the surge arrestor.

  Note: *Verify regulatory requirements before installing on a public network.*
- Ensure that none of the electrical connection circuits are live.
- No other telephones may be installed on the HDE extension.
- Remove the cover screws from the front of the unit and carefully remove the front cover assembly. Note that the electronics are attached to the front plate.
- If an additional cable entrance is required, punch a hole in the enclosure in a convenient location. Ensure that the fittings and wiring will not interfere with the circuit board when the faceplate is replaced.
- Choose a wall location that is free of obstructions and permits space for cable or conduit runs.

  See: *Figure 3 - HDE-20, HDE-21, HDE-22 & HDE-23 Mounting*
- Ensure mounting can support 7lbs (3kg) and any additional foreseeable load.
- Use the template provided or the enclosure itself to locate and drill holes for #8 or M4 mounting screws.
- Secure the unit to the wall.
- For convenience while connecting wiring the faceplate may be temporarily mounted inverted to either side of the enclosure.

  See: *Figure 7 - Wiring Diagram*
- Attach individual wires from the exchange (Tip/Ring/Ground) to the surge arrestor (Tip & Ring are not polarity sensitive).
- Attach individual wires from the exchange (Tip/Ring/Ground) to the surge arrestor (Tip & Ring are not polarity sensitive).
- If the external power supply connection and/or Auxiliary/Supplemental Relays are utilized, connect wiring in accordance with local electrical standards.
- If it is desired to prevent unauthorized changes to the programming and avoid nuisance calls move the jumper on JP2 from P to R after initial programming has been completed.

  Note: *Moving the jumper on JP2 from P to R will limit the HDE to outgoing calls only.*

Commissioning

- Ensure all connections are tight, then replace and secure the cover. Use the driver bit provided to install the tamper resistant screws.

  Tip: *Store the driver bit in a secure place for future use.*
- Connect the telephone into the system.
- Program the telephone.

  See: *HDE Programming*
- Test the unit by calling to and from another telephone.

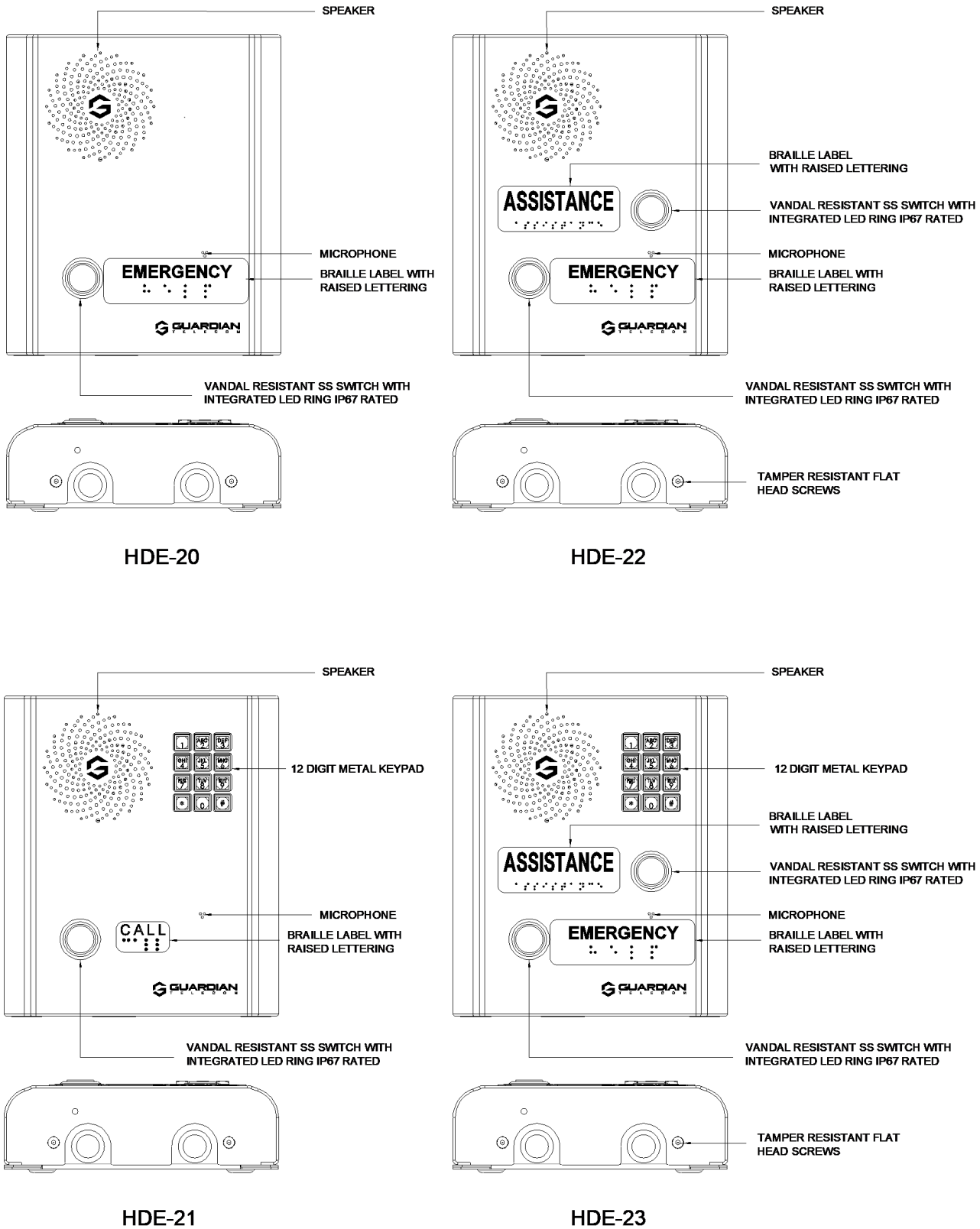


Figure 1 - HDE-20, HDE-21, HDE-22 & HDE-23 Features

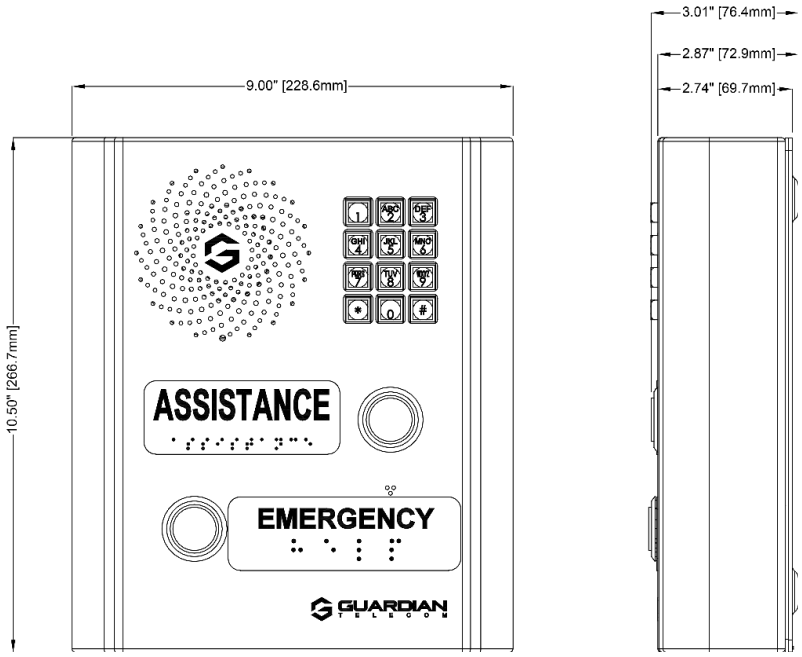


Figure 2 - HDE-20, HDE-21, HDE-22 & HDE-23 Dimensions

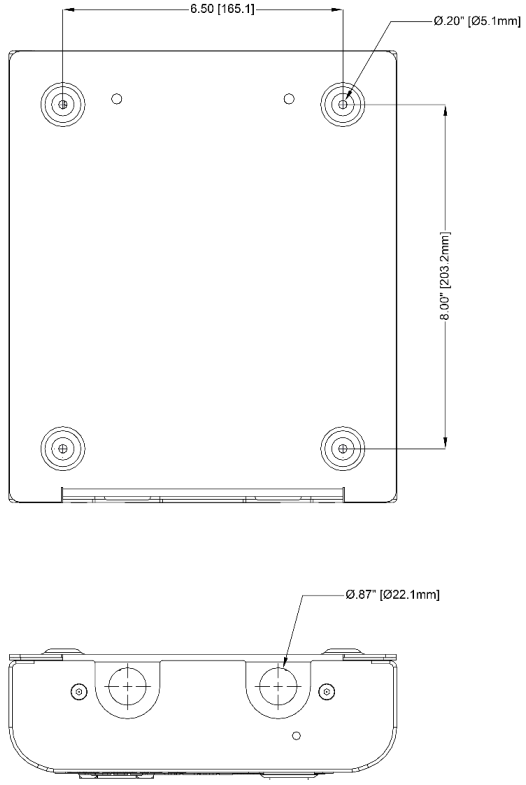


Figure 3 - HDE-20, HDE-21, HDE-22 & HDE-23 Mounting

Installing the HDE-30/31/32/33 Telephones

- Follow all appropriate electrical codes and use only approved electrical fittings for the installation. If 120VAC power is provided to the Auxiliary Relay, the enclosure must be properly grounded to the surge arrestor.

Note: *Verify regulatory requirements before installing on a public network.*

- Ensure that none of the electrical connection circuits are live.
- No other telephones may be installed on the HDE extension.
- Remove the cover screws from the front of the unit and carefully remove the front cover assembly. Note that the electronics are attached to the front plate.
- Prepare an opening 7 ½" (190 mm) wide, 10 ⅞" (276 mm) high and 3 ⅛" (79 mm) deep. Install blocking around the rough opening if required.

See: *Figure 6 - HDE-30, HDE-31, HDE-32 & HDE-33 Mounting.*

- Bring the telephone wiring into the bottom of the opening. If the optional external power supply and/or the Auxiliary/Supplemental Relays are utilized, supply wiring for those, as well.

See: *Figure 7 - Wiring Diagram*

- Install an appropriate fitting into the 7/8" (22mm) opening in the bottom of the enclosure. If an additional cable entrance is required, punch a hole in the bottom of the enclosure in a convenient location. Ensure that the fittings and wiring will not interfere with the circuit board when the faceplate is replaced.
- Bring cables into the enclosure through the fittings and secure the enclosure into the opening.
- For convenience while connecting wiring the faceplate may be temporarily mounted inverted to the right side of the enclosure.
- Attach individual wires from the exchange (Tip/Ring/Ground) to the surge arrestor (Tip & Ring are not polarity sensitive).
- If the external power supply connection and/or Auxiliary/Supplemental Relays are utilized, connect wiring in accordance with local electrical standards
- If it is desired to prevent unauthorized changes to the programming and avoid nuisance calls move the jumper on JP2 from P to R after initial programming has been completed.

Note: *This will limit the telephone to outgoing calls only.*

Commissioning

- Ensure all connections are tight, then replace and secure the cover. Use the driver bit provided to install the tamper resistant screws.

Tip: *Store the driver bit in a secure place for future use.*

- Connect the phone line to the HDE.
- Program the HDE.

See: *HDE Programming*

- Test the unit by calling to and from another telephone.

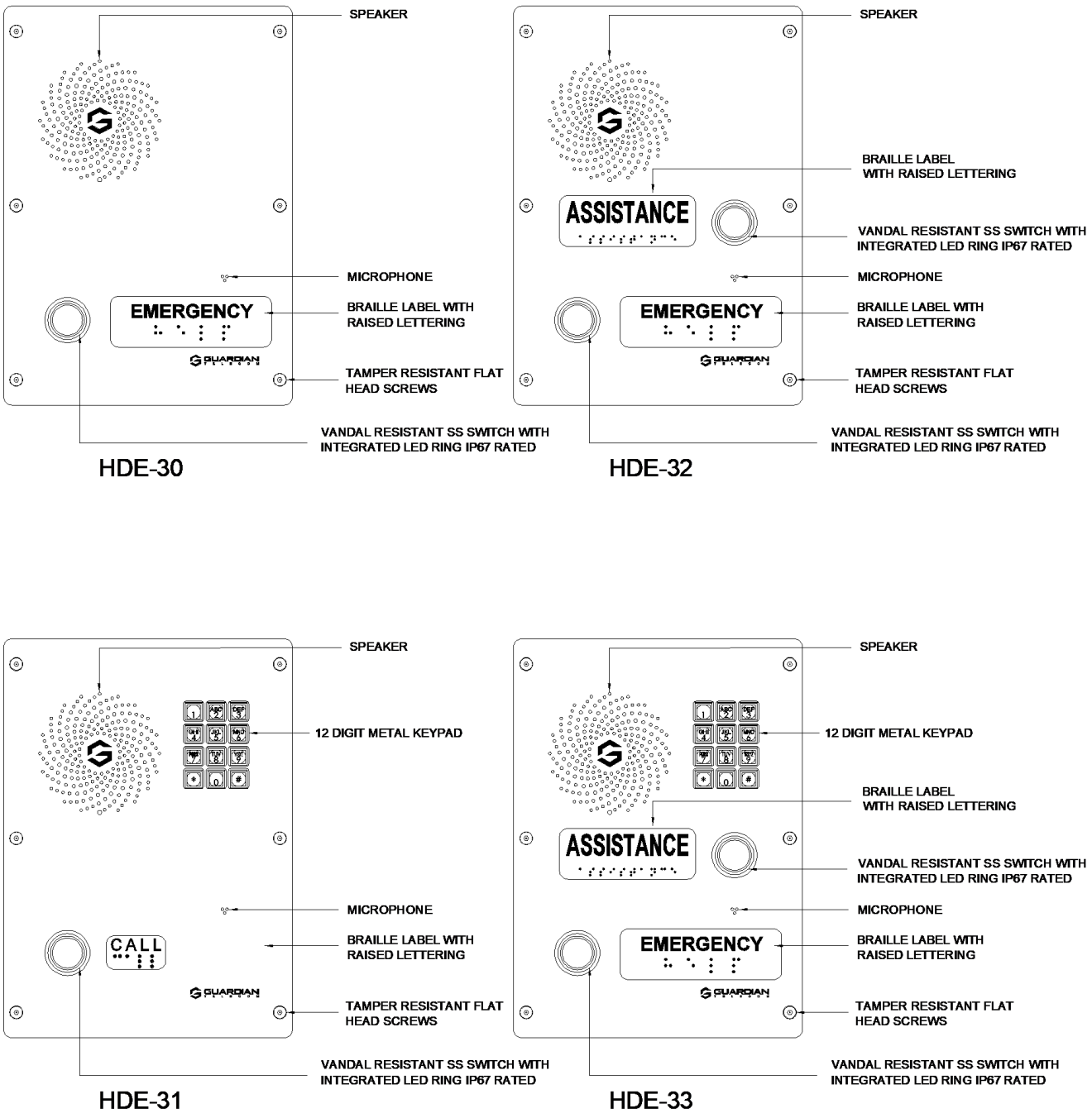


Figure 4 - HDE-30, HDE-31, HDE-32 & HDE-33 Features

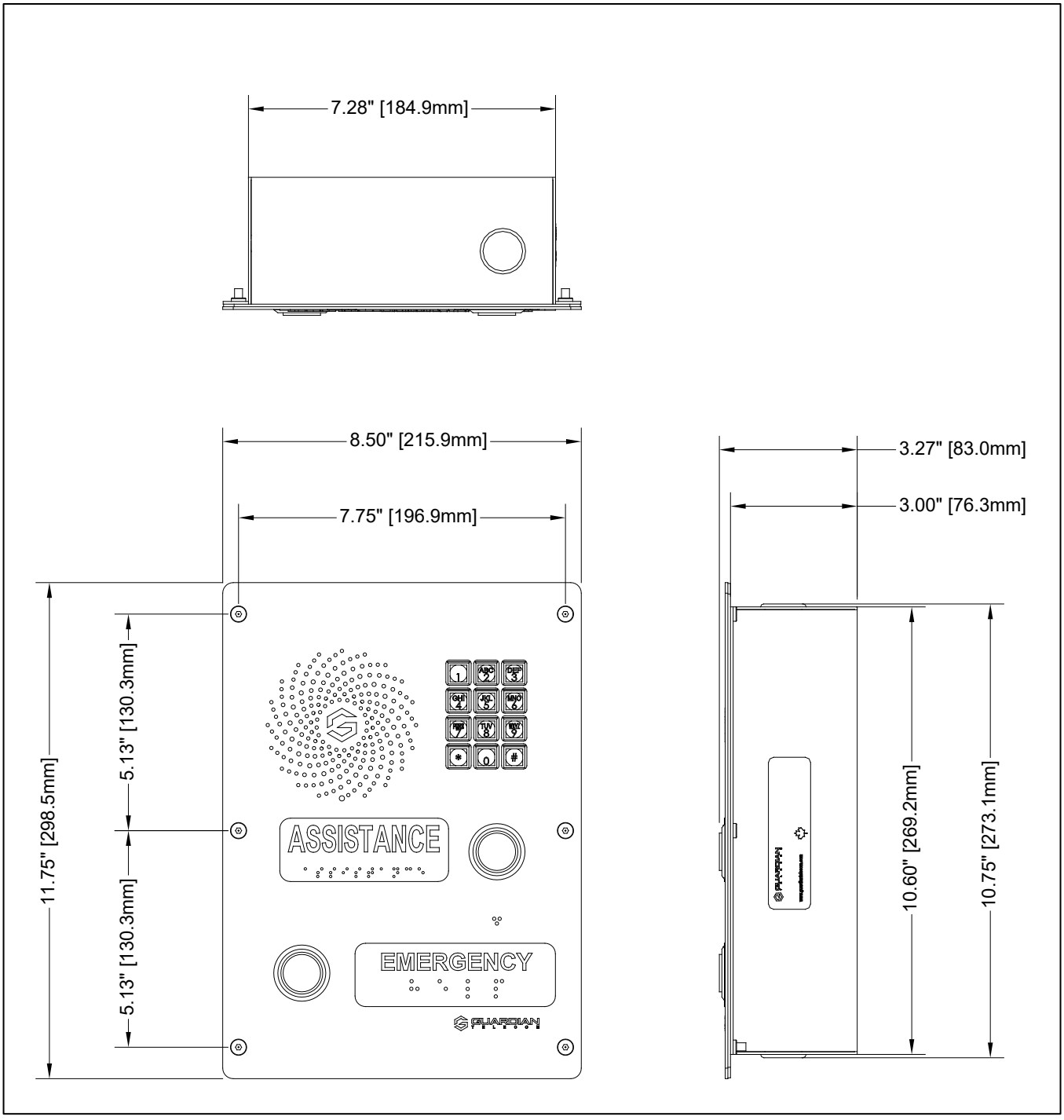


Figure 5 - HDE-30, HDE-31, HDE-32 & HDE-33 Dimensions

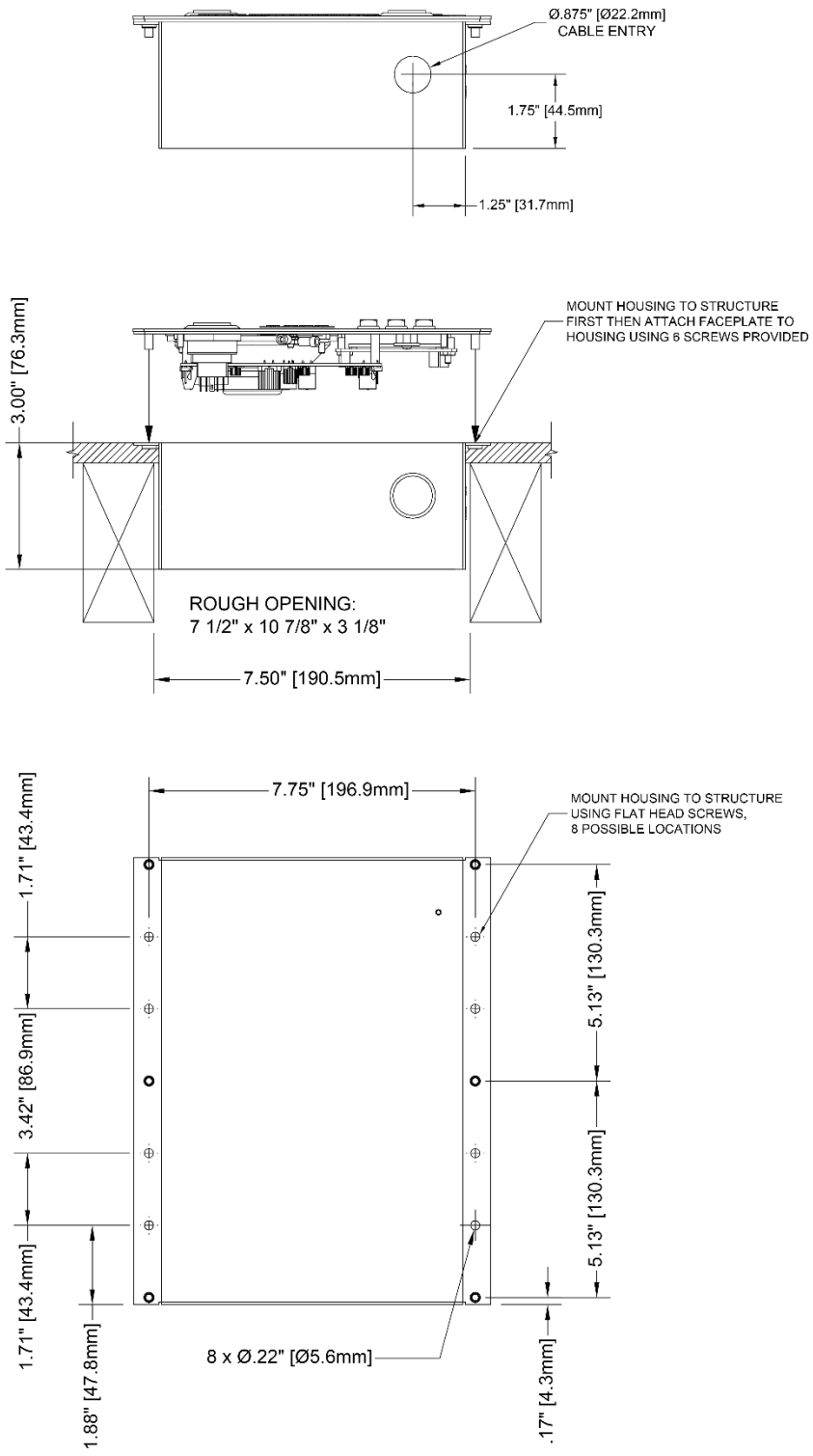


Figure 6 - HDE-30, HDE-31, HDE-32 & HDE-33 Mounting

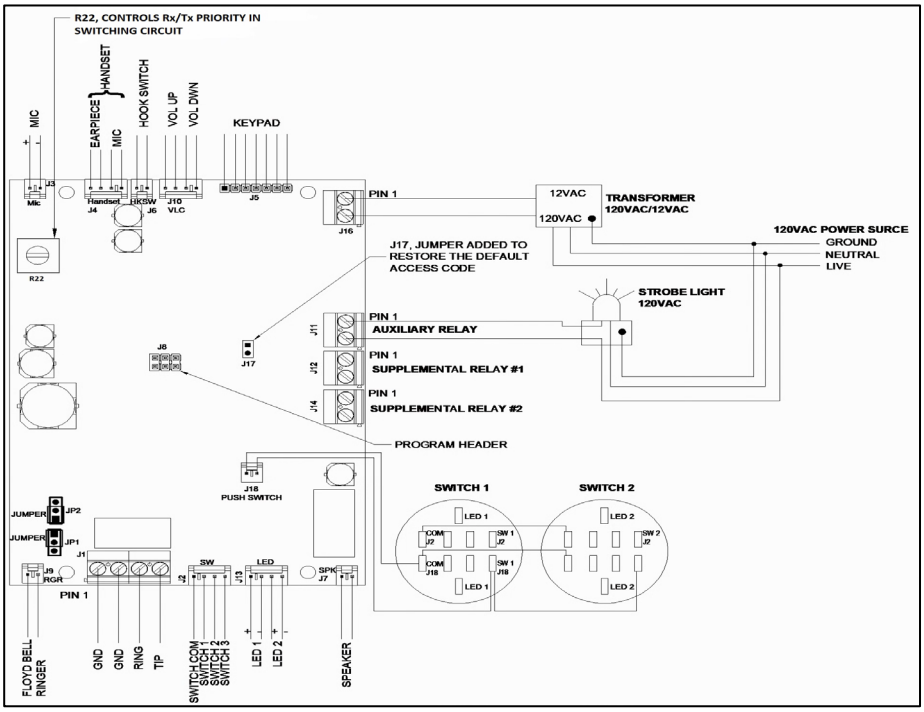


Figure 7 - Wiring Diagram

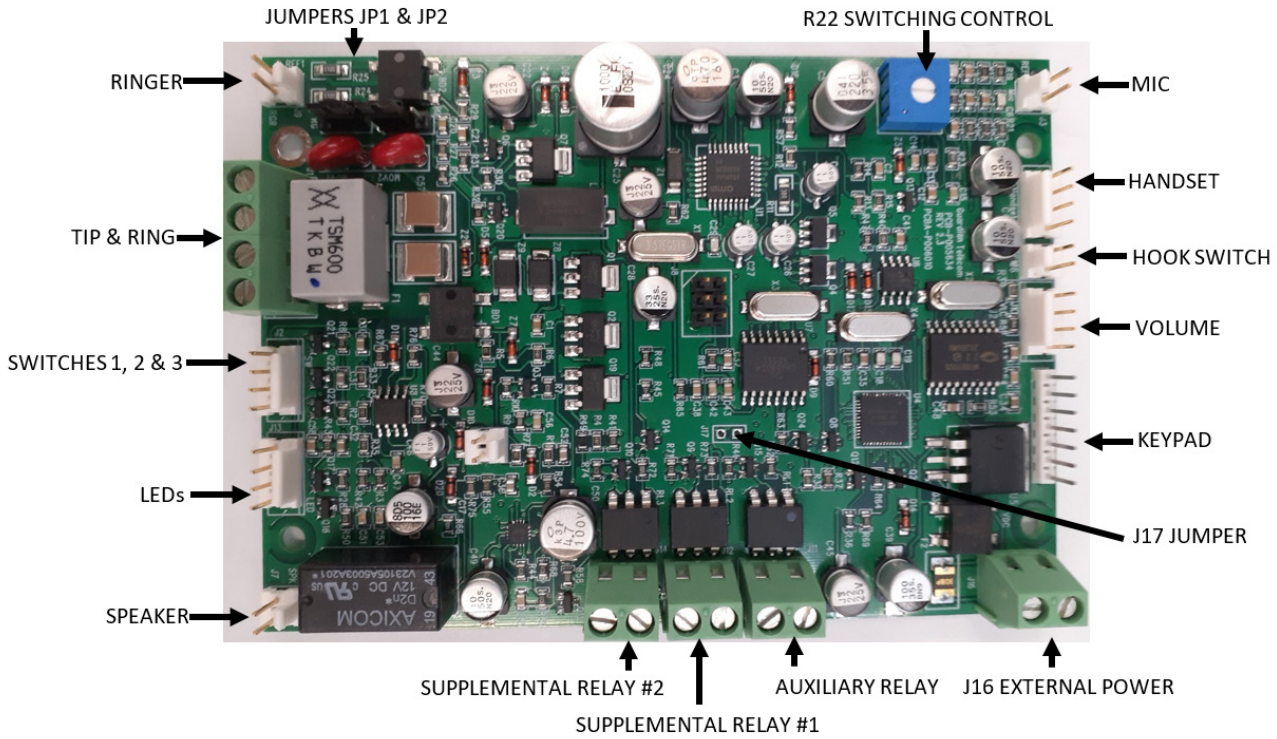


Figure 8 - Circuit Board Layout

Setting up the HDE

Initial Setup of the HDE

Once the HDE has been installed and connected, it should accept incoming calls and automatically answer them. Typically, the first thing to do would be to program the outgoing phone numbers to dial when the different buttons are pressed. The procedure for programming the dialed numbers varies for the different versions of the HDE and is outlined below:

HDE-20 and HDE-30:
Dial into the HDE and when it answers, press the 0 key to enter programming mode. Enter 01 and wait for a confirmation beep. Enter the phone number to dial when the red EMERGENCY button is pressed, followed by the * key and wait for a confirmation beep. If it is desired to program a backup phone number, in case the first number is not answered within 15 seconds, or if the line is busy, enter 00 and wait for a confirmation beep. Enter the backup phone number followed by the * key and wait for a confirmation beep. Press the # key or hang up the call.

HDE-21 and HDE-31:
Since these versions of the HDE come equipped with a keypad, programming the call register is optional. Any digits programmed in the call register will precede the digits dialed on the keypad after the blue CALL button is pressed. This feature may be useful if it is desired to have the HDE automatically select a line or enter an area code prior to the user manually entering a phone number on the keypad. If some preset digits are to be programmed in the call register, dial into the HDE and when it answers, press the 0 key to enter programming mode. Enter 02 and wait for a confirmation beep. Enter the preset digits followed by the * key and wait for a confirmation beep. Press the # key or hang up the call to exit.

HDE-22 and HDE-32:
Dial into the HDE and when it answers, press the 0 key to enter programming mode. Enter 01 and wait for a confirmation beep. Enter the phone number to dial when the red EMERGENCY button is pressed followed by the * key and wait for a confirmation beep. If a backup phone number is required in case the first number is not answered within 15 seconds or the line is busy, enter 00 and wait for a confirmation beep. Enter the backup phone number followed by the * key and wait for a confirmation beep. Enter 02 and wait for a confirmation beep. Enter the phone number to dial when the blue ASSISTANCE button is pressed followed by the * key and wait for a confirmation beep. Press the # key or hang up the call.

HDE-23 and HDE-33:
Dial into the HDE and when it answers, press the 0 key to enter programming mode. Enter 01 and wait for a confirmation beep. Enter the phone number to dial when the red EMERGENCY button is pressed followed by the * key and wait for a confirmation beep. If it is desired to program a backup phone number, in case the first number is not answered within 15 seconds or the line is busy, enter 00 and wait for a confirmation beep. Enter the backup phone number followed by the * key and wait for a confirmation beep. Since these versions of the HDE come equipped with a keypad, programming the call register is optional. Any digits programmed in the call register will precede the digits dialed on the keypad after the blue ASSISTANCE button is pressed. This feature may be useful if it is desired to have the HDE automatically select a line or enter an area code prior to the user manually entering a phone number on the keypad. If some preset digits are to be programmed into the call register, enter 02 and wait for a confirmation beep. Enter the preset digits followed by the * key and wait for a confirmation beep. Press the # key or hang up the call.

Adjusting the Volume of the Speaker, Microphone and Handset

The volumes of the speaker, microphone, and handset (if equipped), can be adjusted by programming registers 23, 24, 30 and 31, see *(HDE Programming)* and *(Register Number and Functions for the HDE Series)*.

Register 31 (Rx Gain)
The Rx gain register sets the amplification level of the received signal before it reaches the speaker amplifier. It can be adjusted from 22dB to 37dB in 2dB increments by setting the value in the register from 1 to 8.

Register 24 (Speaker Volume)
The speaker volume register sets the telephone line powered speaker amplifier volume level. It can be adjusted from -20dB to 0dB in 2.5dB increments by setting the value in the register from 1 to 8.

Register 30 (Tx Gain)
The Tx gain register sets the amplification level of the transmitted signal. Adjusting this register will affect the sensitivity of the HDE microphone. It can be adjusted from 39dB to 54dB in 2dB increments by setting the value in the register from 1 to 8.

Register 23 (Handset Volume)
The handset volume register sets the volume level of the handset speaker (if equipped). It can be adjusted from -6dB to 9dB in 2dB increments by setting the value in the register from 1 to 8.

Generating a Test Report

The HDE can generate a test report using DTMF tones. This command code is only useful when a polling module is installed, see *(Station Monitoring)*.

Reporting the Station ID

Pressing the * key will cause the HDE to report the Station ID# programmed into Register 09 (if any) using DTMF tones.

Incoming Call Lockout

The HDE can be restricted to outgoing calls only – for example, to prevent unauthorized programming changes or to avoid nuisance calls. To implement this feature, move the jumper on JP2 from position ‘P’ to ‘R’. If there is a need to answer incoming calls again or alter register settings, replace the jumper on JP2 back to the original ‘P’ position, see *(Figure 8 - Circuit Board Layout)*.

B44 Safety Code Compliance Option:

Some HDE models come equipped with a B44 safety code compliance option. They are programmed to automatically check for a dial tone every 5 minutes (provided the phone is on-hook) to ensure integrity of the phone line. In order for the HDE to perform this diagnostic, a 12-24V power supply must be externally connected to J16. Once the HDE is properly installed and connected to a landline, the contacts of supplemental relay #2 (J14) will be open. Press either the red EMERGENCY button or the blue CALL/ASSISTANCE button to dial out and close the contacts of supplemental relay #2 (J14). The HDE will now automatically check for a dial tone every 5 minutes (provided it is on-hook). In case of a failure to detect a dial tone or a loss of power to connector J16 of the HDE, the contacts at J12 will open. Thus, this relay could be used to trigger an alarm and notify maintenance personnel that the HDE is off-line.

Note: These HDEs would be operational even without a 12-24V power supply externally connected to J16. However, no diagnostics would be performed and the contacts at J12 will remain permanently open.

Setting Transmitting and Receiving Paths Priority:

Potentiometer R22 controls the transmit and receive path priority of the HDE. Adjusting the potentiometer in a counter-clockwise direction will increase the sensitivity of the receive path and adjusting it clockwise will increase the sensitivity of the transmit path. The default setting is mid-range.

Station Monitoring

Displaying the HDE Station ID# requires a DTMF decoder at the monitoring station. It will display provided Register 09 was programmed by the user with a 1-8 digit number. The Station ID# can be determined at any time during a call by pressing the * key at the monitoring station.

Equipment is available to automatically monitor the integrity of a system. Contact Guardian Telecom for information on Station ID display or Automatic Monitoring equipment.

Field Repairs

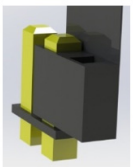
Field repairs may only be carried out by qualified technicians using OEM parts. Substitution of parts voids warranty and may pose a hazard to users of the equipment.

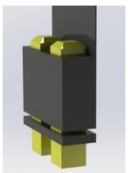
Note: The circuitry in the HDE Series telephones is protected by a Polyswitch resettable fuse. The fuse will reset itself after a time lapse determined by the fault condition and ambient temperature.

Restoring the Factory Access Code

To reset the HDE factory Password and configuration:

1. Call into or out of the HDE with the faceplate open and PCBA accessible.
2. Move the jumper on J17 to connect both pins (Jumpered Image) for approx. 1 second or more.
3. Remove the jumper and place back in the unjumpered position.
4. Disconnect the call to the HDE.
5. On the next dial in the unit will be restored to factory settings, including the access pass code.


Unjumpered


Jumpered

HDE Programming

Introduction

In order to change the register values of the HDE, the access code stored in Register 10 is required; see *(Register Number and Functions for the HDE Series)*. The factory default access code is 12345678. The user can alter the access code by storing a custom code into Register 10. If the user-defined access code has been forgotten, the factory default access code (12345678) can be restored by calling into the HDE and momentarily shorting the two pins of connector J17, see *(Restoring the Factory Access Code).* Alternatively, contact Guardian Telecom and we can remotely restore the factory default access code.

Entering Programming mode

1. Call the HDE and wait for it to auto-answer.
2. Press "0" to access programming mode.
3. Enter the eight-digit access code and press the * key (factory default access code is 12345678).
4. If the access code is accepted, a confirmation beep will be heard. If the access code is not recognized, the HDE will go back on-hook (see “Introduction” section above on how to restore the factory default access code).
5. Once the HDE has entered the programming mode, the user has 3 minutes to set up the required registers before the HDE disconnects the call.

Programming procedure

1. Enter the two-digit number corresponding to the register to be accessed. A single confirmation beep will be heard. See *(Register Number and Functions for the HDE Series)* for more details.
2. Enter an “Entered Codes” option for that register.
3. If fewer than the maximum number of digits allotted for that register have been entered, press * to store the selection. One beep will signify that the entry has been accepted, two consecutive beeps will signify that the entry has been rejected. If the maximum number of digits have been entered, the selection will automatically be stored and a beep will be heard (there is no need to press the * key). It is possible to program multiple registers consecutively – after a selection is stored in a register and a beep confirmation is heard, enter the value of the next register to be accessed and repeat steps 1-3. To restore the factory default settings in Registers 11-31, access Register 08 and wait for a beep confirmation.
4. Registers 00, 01, 02, and 03 can store phone numbers up to 20 digits. If fewer than 20 digits are to be stored, enter them consecutively followed by the * key and wait for a beep confirmation. If the HDE times out or the programming phone terminates the call before the terminator * is entered, the register will not update and will retain the existing number (if any) in memory. If only the * key is entered after one of these registers is accessed, nothing will be stored in that register. In this case, when the call button on the HDE is pressed, no number will be dialed out. This option could be used in a ring-down line, where the PABX automatically directs the call upon receiving a call request. Additionally, if Register 00 is left blank, the HDE will not attempt to dial a second number if the primary number (stored in Register 01) is busy and automatically disconnect the call.
5. If the HDE comes equipped with a keypad, a default access number (for example 9 - to access an outside line), can be stored in Register 02 and the rest of the number can be dialed manually with the keypad.
6. The “#” key can be included in the phone numbers entered into Registers 00-03 to provide a 3 second pause, but it contributes to the total digit count entered (20-digit maximum). This feature could be useful if an access number needs to be keyed in prior to dialing a phone number or an extension needs to be selected. For example, “9#1234567” can be entered to automatically access an outside line “9”, wait 3 seconds, and then dial the number “1234567”.

Alternatively, “1234567#123” will dial the phone number “1234567”, wait 3 seconds, then select extension 123. The “#” can be written consecutively to provide a longer pause (for instance “1234567##123” will provide a 6 second delay).

7. To exit programming mode, press the # key or hang up the phone.

Register Number and Functions for the HDE Series

This list contains all the possible functions of the HDE Series.

Register number	Functions	Description	Entered codes	Remarks
00	Phone #1 B	Switch #1 (Emergency) Autodial, Second phone number	20 digit phone number	**Second Autodial number** – This is the secondary number that will be dialed if the number stored in Register 01 cannot be reached. If the line is busy, the call is not answered within 15s, or this register is left blank, the HDE will go on-hook.
01	Phone #1 A	Switch #1 (Emergency) Autodial, First phone number	20 digit phone number	**First Autodial number** – This is primary number that will be dialed when the red EMERGENCY button is pressed. If the line is busy or the call is not answered within 15s, the HDE will dial the number stored in Register 00.
02	Phone #2	Switch #2 (Call/Assistance) Autodial phone number	20 digit phone number	This is the number that will be dialed when the blue CALL or ASSISTANCE button is pressed. In HDEs equipped with a keypad, the digits stored in this register precede the number dialed by the user.
03	Phone #3	Switch #3 Autodial phone number	20 digit phone number	Only if a third switch is installed.
04 - 07	Not used			
08	Default Settings	11 Dial tone check = 1 12 Call progress tone = 1 13 EM switch lockout = 1 14 Message Playback = 2 21 Talk time = 1 22 Max digits in keypad dialing = 7 23 Handset volume = 3 24 Speaker volume = 6 25 Ring count = 0 26 Relay closed time = 1 27 Voice switch speed = 1 28 BGN offset = 2 29 Soft clip = 5 30 TX level = 6 31 RX level = 6	None	Accessing register 08 returns all functions listed in the ‘Description’ column to the default settings shown. A confirmation beep will be heard when the process has been completed.
09	Station ID #	Station Identification Number (recognizing the station ID requires a DTMF decoder at the receiving end) (optional)	1 - 8-digit number	A 1 - 8-digit Station ID# can be assigned to the HDE. The HDE will automatically send the Station ID# when it auto-answers a call or if an outgoing call is made from the HDE and the user on the other end of the line presses the * key. Additionally, supplemental relay 1 can be closed by entering the first 3 digits of the Station ID# followed by the * key and supplemental relay 2 can be closed by entering the 4th, 5th, and 6th digits of the Station ID# followed by the * key. If this register is left blank, there will be no response from the HDE when the Station ID# is queried.
10	Access code	Programming mode Access code	8 digit number	This is the 8-digit user-definable access code that needs to be entered to access the programming mode of the HDE. **Default = 12345678.**
11	Dial tone check	Dial tone check before autodial	1 = check dial tone 2 = no check	Option to check or not check for a dial tone on the line before autodialing. **Default = 1**
12	Call progress tones	Call progress tone associated with systems	1 = PABX, 2 = CO line	Option to select PABX or CO line progress tones. **Default = 1**

13	EM switch lockout	Emergency switch lock out	1 = disable lockout 2 = enable lockout	If the Emergency Switch Lockout is disabled, pressing the red EMERGENCY button during a call will disconnect the call. If the Emergency Switch Lockout is enabled, pressing the red EMERGENCY button during a call will NOT disconnect the call. This feature could be used to prevent an assailant from hanging up the HDE during an emergency call. **If Emergency Switch Lockout is enabled and the PABX to which the HDE is connected does not automatically generate a disconnect signal, the HDE could stay off-hook and unusable for the duration of the Talk Time programmed in Register 21. Therefore, it is recommended that the # key always be pressed when terminating a call with the HDE.** **Default = 1**
14	Message Playback	Pre-record message playback (optional)	1 = Playback message 2 = No Playback	When a user queries the Station ID# by pressing the * key, the Station ID# (if programmed) will be provided by the HDE. Additionally, a pre-recorded message can be played (to describe the location of the phone, for instance). This register selects whether or not such a message is played. **Default = 2**
15	Record Message	Enter Voice Message Recording mode (optional)	N/A	In this register, the user can record the message that will be played if Register 14 is set to 1. To record the message, simply enter programming mode, enter '15', and wait for a confirmation beep. Begin recording your message and press the * key when finished. The maximum duration of this recorded message is 20s.
16-20	Not used			
21	Talk time	Communication link timer (1 -10 minutes)	1 - 9, 0 = 10 minutes	This register sets the maximum talk time duration before the HDE disconnects a call. This feature prevents the line from being tied up indefinitely by a caller who forgets to hang up. **Default = 1**
22	Max digits in keypad dialing	Maximum digits allowed during keypad dialing (4 to 12 digits or no keypad lockout)	1 - 9 = 3+(1 to 9) 0 = No keypad lockout	Restricting the maximum number of digits that can be dialed on an HDE with a keypad could prevent a caller from making long distance calls, for instance. **Default = 10**
23	Handset volume	Handset volume (-6dB to 9dB in 2dB steps)	1 - 8	This register sets the handset speaker volume of the HDE (if equipped). **Default = 3**
24	Speaker volume	Speaker volume (-20dB to 0dB in 2.5dB steps)	1 - 8	This register sets the speaker volume of the HDE. **Default = 3**
25	Number of rings before call is answered	Number of times the HDE rings before call is automatically answered	0 - 9	This register sets the number of times the HDE rings before the call is answered. Typically set to 0 for auto-answer, but can be changed to a custom value between 1-9 if there is a need to alert the user of an incoming call. This register can also be used to extend answering times in case another device, such as a fax machine, occupies the same line. Pressing either the blue CALL/ASSISTANCE button, the red EMERGENCY button or picking up the handset (if equipped) will still answer the call immediately. **Default = 0**
26	Supplemental relays	Duration of time the supplemental relays remain closed in seconds (number entered x 5s)	1 - 9 (5s - 45s)	This register sets the duration of time in seconds that supplemental relays 1 & 2 remain closed when activated. **Default = 1**
27	Voice switch speed	Rx to Tx switch speed (1 to 4)	1 = max speed 4 = min speed	This register sets the speed at which the HDE switches from receive to transmit mode. **Default = 1**
28	Background Noise (BGN) offset level		1 = 120mV 2 = 180mV 3 = 240mV 4 = 300mV	This register sets the background noise offset level. If Register 29 is set to 8, BGN offset is 0. **Default = 2**

29	Soft Clip (SC) and Background Noise (BGN) settings		1 = Tx SC on 2 = Rx SC on 3 = Tx and Rx SC on 4 = BGN on 5 = BGN on, Tx SC on 6 = BGN on, Rx SC on 7 = BGN on, Tx and Rx SC on 8 = BGN off, Tx and Rx SC off	This register sets the Tx SC, Rx SC, and BGN settings. When SC is on, it prevents loud clicks from being transmitted/received. **Default = 5**
30	TX gain	Sets the Tx gain (39dB to 54dB in 2dB steps)	Tx gain: 1 - 8	This register sets the amplification level of the transmitted signal. Adjusting this register will affect the sensitivity of the HDE microphone. **Default = 6**
31	RX gain	Sets the Rx gain (22dB to 37dB in 2dB steps)	Rx gain: 1 - 8	This register sets the amplification level of the received signal before it reaches the speaker amplifier. Adjusting this register will affect the volume of the HDE speaker. **Default = 6**

Making a Call from the HDE:

HDE-20 and HDE-30:
Press the red EMERGENCY button and the phone number(s) programmed into Registers 00 and 01 will automatically be dialed, see *(Initial Setup of the HDE)*.

HDE-21 and HDE-31:
Press the blue CALL button and then dial the phone number upon hearing the dial tone. If some preset digits were programmed into Register 02, they will automatically precede the number dialed on the keypad by the user, see *(Initial Setup of the HDE)*.

HDE-22 and HDE-32:
If the red EMERGENCY button is pressed, the phone number(s) programmed into Registers 00 and 01 will automatically be dialed.
If the blue ASSISTANCE button is pressed, the phone number programmed into Register 02 will automatically be dialed, see *(Initial Setup of the HDE)*.

Note: The EMERGENCY call always takes priority over an ASSISTANCE call. In the event the EMERGENCY button is pressed while an ASSISTANCE call is in progress, the ASSISTANCE call will be disconnected and the EMERGENCY call will be processed.

HDE-23 and HDE-33:
If the red EMERGENCY button is pressed, the phone number(s) programmed into Registers 00 and 01 will automatically be dialed.
If the blue ASSISTANCE button is pressed, the user can dial the phone number upon hearing the dial tone. If some preset digits were programmed into Register 02, they will automatically precede the number dialed on the keypad by the user, see *(Initial Setup of the HDE)*.

Note: The EMERGENCY call always takes priority over an ASSISTANCE call. In the event the EMERGENCY button is pressed while an ASSISTANCE call is in progress, the ASSISTANCE call will be disconnected and the EMERGENCY call will be processed.

LED Indicator		
Action	**Phone Status**	**LED Status**
Pressing a button	HDE dials pre-programmed number(s)	Flashing
	HDE connected to dialed number and call has been accepted	Steady
	HDE is on-hook	Off

Handling an Incoming Call from the HDE at the Monitoring Station

When the monitoring station answers an incoming call from the HDE, the operator has 30 seconds to enter one of the following command codes before the HDE terminates the call:

1: Accept the call – The HDE will remain connected for the duration of time programmed in Register 21, see *(Register Number and Functions for the HDE Series)*.

#: Hang up the call.

Actuating the Supplemental Relays:

Once communication has been established between the HDE and the monitoring station, the contacts of auxiliary relay (J11) will automatically close and open only when the HDE is back on-hook. The operator at the monitoring station can close the contacts of supplemental relay #1 (J12) for the length of time specified in Register 26 by entering the first 3 digits of the programmed Station ID# (Register 09) are entered, followed by the * key see, *(Register Number and Functions for the HDE Series)*. Similarly, the contacts of supplemental relay #2 (J14) will close for the length of time specified in Register 26 when the 4th, 5th, and 6th digits of the programmed Station ID# (Register 09) are entered, followed by the * key. Entering two * keys consecutively at the monitoring station, **, will cause the button LED on the HDE to flash, indicating that help is on the way.

Specifications

Audio Performance	
Audible Range Frequency Response	300 – 3400 Hz
Dialing Method	DTMF
Transmit Objective Loudness Rating (TOLR)	-36 dB @ 0.5 meter
Maximum Speaker Volume All Models	75.4 dB @ 1.0 Meter Without External Power Supply
Maximum Speaker Volume All Models	86.1 dB @ 1.0 Meter With External Power Supply
Set Impedance	600 Ohms Nominal
Maximum Loop	15,000 Ft (4,500 M) of 22 AWG Copper
Electrical	
Auto Answer Sensitivity	40 – 100 VRMS, 16 – 25 Hz
Line Voltage	24 – 56 VDC
Line Fuse	0.25 Amp 250 Volt Resettable
Ringer Equivalence Number	0.44B
Connection Method	Surge Arrestor
Call Progress Tones	Dial Tone: 350Hz & 440Hz @ -16dBm0 Busy Tone: 480Hz & 620Hz @ -24dBm0 Duty cycle 500mS on, 500mS off
External Power Supply (Optional)	9V-12V, 5W (non-switching is recommended) AC or DC?
Relay Contacts Auxiliary Relay Supplemental Relays 1 & 2	 0.13A @ 350V 2.5A @ 60V
Environmental	
Temperature	-40° to +50° C (-40° to +122° F)
Humidity	0 to 95% RH
Mechanical	
Body Construction	16 Gauge 316SS, Or 16 Gauge 316SS With Powder Coating
Dimensions	See Drawings – Pages 5 To 9
Weight	6lbs(2.72kg)
Shipping Dimensions	14-5/8” X 10-3/4”X4-3/4” (371 X 273 X 121 Mm)
Shipping Weight	HDE-20, HDE-21, HDE-22, HDE-23 7.1 Lbs (3.2 Kg) HDE-30, HDE-31, HDE-32, HDE-33 6.5 Lbs (3 Kg)
Standard Mounting	Vertical Wall Or Recessed
Wiring Access	Two 7/8” Holes For Owner Supplied Fittings
Hardware Material	Stainless Steel
Compliance	
Industry Canada	1012A-601B

Replacement Parts		
Part No.	**Description**	**Field Replaceable**
P006474	4” Speaker C/W Connector	Yes
P006010	PCBA – Speaker Phone Standard	Yes
P004593	Microphone C/W Connector	Yes
P005706	Bit For Tamper Proof Screws	
P007535	Tamper Proof Screw, #10-32 ½” (T-25)	Yes
P007391	SA- METAL KEYPAD	Yes
P007363	SA-Emergency Red push button for HDE analog	Yes
P007364	SA-Emergency Red push button for HDE analog	Yes

Warranty

Guardian Telecom, a division of Circa Enterprises Inc. warrants that its products are free from defective workmanship and materials. Guardian Telecom will, within three years from the date of final sale to the customer, replace or repair any such products provided they are returned to our facilities for examination. Freight costs (including brokerage if applicable), both to and from Guardian, are the sole responsibility of the customer. This warranty does not extend to any items that are deemed to have been misused, modified, neglected, improperly specified, improperly installed, or used in violation of instructions or specifications approved by Guardian Telecom. Guardian Telecom, a division of Circa Enterprises Inc. shall not be liable for incidental or consequential damage of any kind caused by any defect in our product. The total liability shall not, under any circumstances, exceed the purchase price of the products furnished by Guardian Telecom, a division of Circa Enterprises Inc.

A return authorization must be obtained prior to warranty claims or repairs.

Disclaimer

The products covered by this manual are designed for use in Industrial Environments and/or Hazardous Locations. Due to the range of possible applications for these instruments the manufacturer will not be responsible for damages or losses of any kind suffered as a result of the use of this product, including consequential damages.

Warning

This device may be opened and reassembled by qualified personnel only, for the purposes of installing the product, making adjustments and replacing components, following the instructions in the product manual.

High voltages may be present in this product when connected to telephone wiring.

Service Telephone Number

1-800-363-8010

Guardian Telecom provides a customer service telephone number that is toll-free within North America. If you need assistance when installing or operating this product, please call the toll-free telephone number between regular business hours (8:00AM-5:00PM), Mountain Standard Time. If you are calling outside of regular business hours, please leave a detailed message, and a member of Guardian Telecom's Service Department will return your call as soon as possible. If your product requires service, Guardian personnel will supply you with an RMA (return materials authorization) number over the telephone or through our web site product return page. This number must be included with your return address and the name of the person to contact.

Guardian Telecom, a Division of Circa Enterprises Inc.
Toll-free 1-800-363-8010
Ph. (403) 258-3100
Fax. (403) 255-2595
www.guardiantelecom.com

Feedback

Guardian Telecom continually strives to make reliable, durable, and easy to use products. If you, as an installer or user of our equipment, have any suggestions for improvements to this or any of our products or documents, including this manual, we would appreciate hearing from you.

Guardian Product Return

Guardian products have been quality tested and are in full working order when shipped from the factory, given the rugged nature of these products shipping is not expected to damage a unit. In the unlikely event of a malfunction, Guardian follows the three-step procedure below.

Step I - On-Site Correction

- The most common source of difficulties with a new product is improper installation in one of two ways: incorrect wiring connections or connection to an incorrect power source.
- Product wiring needs to be properly connected to the on-site wiring. Correct wiring instructions are shown in the user manual included with the product.
- Connecting a telephone to a standard power source, rather than tip & ring, will blow the telephone's internal, user-replaceable fuse or trip the resettable fuse. In the event of fuse burnout, disconnect the telephone from the power source, replace the fuse, and reconnect following the wiring diagrams provided with the product. If a resettable fuse trips continuously disconnect the telephone from the power source and reconnect following the wiring diagrams provided with the product.

Step II - Return Materials Authorization (RMA)

- When a product has been installed following user manual instructions and the unit fails to operate, the user must contact Guardian Telecom to obtain authorization to return the product. This can be done by completing an RMA form online at https://www.guardiantelecom.com/support/rma/, or by calling the service telephone number given in this manual.
- After providing information on the product, the owner and the nature of the problem, Guardian will issue a RMA number, to be shown on documentation returned with the product.
- In addition to the RMA number, shipping documents should include name, address and telephone number of the owner along with contact information for the person responsible for the repair and/or the user who identified the malfunction.
- (Where a product is being returned for repair from outside of Canada, customs documentation must show the product's serial number, date of export [date of purchase], and a notation that the equipment is: "Canadian goods returning.")

Step III - Factory Authorized Service

- Once received, each product is carefully inspected and tested. If the product is under warranty, repairs are completed and the product returned to the owner, generally within five working days of receipt by the factory.
- A product that has been subjected to misuse, neglect or accident or is beyond the warranty period will be evaluated. The service department will provide the owner's representative with a repair cost estimate. Once approved, repairs are completed and the product returned, generally within five working days.

Cleaning Tips for Guardian Telephones

Guardian Telephones may occasionally need to be cleaned to maintain appearance. Generally, wiping the surface with a clean, water-dampened cloth will remove most films or residues. If the soiling is too stubborn for plain water, a mild detergent solution may be used. Be sure to wipe away any detergent residue with a plain water dampened cloth. The Telephone may be cleaned with any general-purpose household glass and surface type cleaner. Do not spray the telephone directly! Spray the cleaner on a soft cloth then wipe the surface. Pre-treated cloths, such as those used for eyeglasses or cameras, may be used to clean the Telephone. Premoistened towelettes may also be used, however, avoid those containing lanolin or aloe, as they will leave a slippery residue. The handset and surface of the telephone may be cleaned with disinfectants used for general cleaning in a medical environment. Isopropyl alcohol may be used applied with a cloth. Avoid using alcohol on silicon-based keypads, since doing so may significantly degrade legibility.

- Do not use furniture polishes, waxes or plasticizer-based cleaner (Armor All etc.)
- Do not use lanolin, aloe, glycerin or other skin care type products.
- Do not apply any solvent such as acetone, mineral spirits etc.
- Do not directly spray or immerse the handset.

Storage

General Storage (All situations):

- Note any stacking limits or warnings on packaging (if any).
- Do not store in temperatures over +80C.
- Store in original packaging if possible until needed.

Long Term Storage (> 6 Months):

- If area is air-conditioned and not subject to high changes in humidity, continue to store in original packaging.
- If wide humidity shifts are expected, then use these steps:
  - Remove product from packaging (including plastic bags) and store on shelf in open air.
  - If area is subject to a high degree of dust, to help maintain cosmetic appearance you can cover with cloth (Do not cover with plastic or materials that will trap moisture) or clean periodically.
  - Do not store out of packaging long term where they are exposed to sunlight. Long-term exposure to UV may cause fading on plastic parts.

Notes:

Model No.
Part No.
Serial No.
Date of Purchase

THIS PAGE INTENTIONALLY LEFT BLANK

THIS PAGE INTENTIONALLY LEFT BLANK

THIS PAGE INTENTIONALLY LEFT BLANK

Certified System™
SAI GLOBAL
ISO 9001:2015

Guardian Telecom, a Division of Circa Enterprises Inc.
Toll-free 1-800-363-8010
Phone (403) 258-3100
Fax. (403) 255-2595
www.guardiantelecom.com
E-mail: sales@guardiantelecom.com

Tough. Trusted. True.

© Circa Enterprises 2021