Page/Talk Telephone Interface
Model PTTI

Installation & Operation

WALL MOUNT

RACK MOUNT

ISO 9001 CERTIFIED

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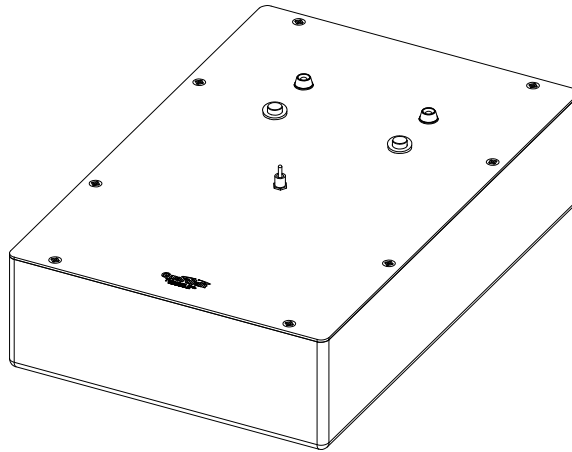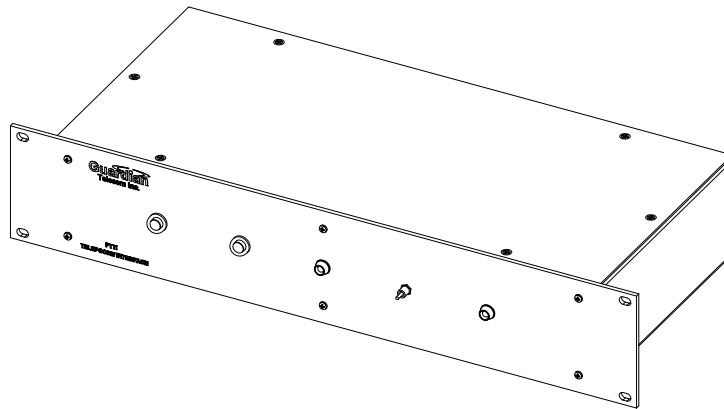
Page/Talk Product Series Description

Guardian's Page/Talk Systems provide reliable and easy to use paging and communication within industrial environments and hazardous locations, such as plants, mills and factories. Wall and desk stations are available in both single line and multi line models. Individuals can be paged from any station and two or more persons can communicate on any available line. With the addition of a Merge/Isolate Cabinet up to five zones are supported.

These systems provide quality paging and communication functions, and with the telephone interface unit, communication outside the system. Speaker amplifier units provide the capability of adding extra speakers without the need for a Page/Talk station. The alarm tone generator provides synthesized audio alarm signals for plant safety systems and can be programmed to activate strobe lights for additional warning in noisy environments.

Guardian's Stations and related equipment are compatible with systems provided by most other manufacturers.

Overview

The PTTI is a telephone interface that connects a Page/Talk system to a public or private telephone system. It is available in both wall and rack mount versions. Outgoing calls can be made from the Page/Talk system to outside telephone lines, but only by an operator using a telephone that is dedicated to the PTTI to call an outside line. Once the call has been answered the operator can press the Link button to connect the outside line to the system's designated Talk Line – the designated Talk Line is the only Talk Line in a single line system or any one of the lines in a Multi-line system, at the installer's option. Incoming calls from the outside can reach the Page/Talk System either through operator intervention or in one of four accessing modes which can be pre-programmed into the PTTI. When the call is answered it will be transferred to the designated Talk Line of the system. The operator can disconnect a call at any time by pressing the Release button.

Operator intervention capability is optional, however calling from the Page/Talk system to the outside and receiving calls when the system is in Manual mode is not possible without an operator. If operator intervention is required a telephone connected to the line from the Central Office or PABX to the PTTI, and a Page/Talk station, are required at the operator's location. If operator intervention is not required it is not necessary to connect a telephone or a Page/Talk station at the PTTI. In the latter case there will be no indication from the PTTI that a call is coming in, however it will be counting the rings prior to performing some action, depending on the parameters programmed in.

The PTTI can be programmed to monitor the designated Talk Line and broadcast a three gong warning signal over the Page Line at intervals, if a Page/Talk station is left off-hook for an extended period of time. This feature is useful to warn of malfunctions, since in certain access modes connection to the system by an outside caller is not possible until the designated Talk Line is free.

The PTTI provides for two separate, basic modes of operation; Day Mode and Night Mode. These are controlled by a front panel switch or a remote switch. Each of these modes can be programmed with different parameters.

If desired, the Link, Release and Day/Night Mode functions that are wired to the front panel switches can be controlled by remote switches provided by the customer. The remote push-button switches must be of the normally open type and can be connected in parallel with the front panel switches. The Day/Night switch is single pole, single throw. In Day mode the switch is closed and in Night Mode it is open. If the remote Day/Night switch is wired in parallel with the front panel switch then the front panel switch must be left in the night position. It is desirable for the operator to be able to see the LEDs on the front panel in order to be able to determine the status of the designated Talk Line.

The PTTI interface provides four different modes of access to the Page/Talk system for each of Day and Night configurations, these are:

- Manual Access
- Ring Access
- Voice Access
- Selective Access

Manual access requires operator intervention. Connection to the system is not possible unless the operator answers the incoming call. This mode has the advantage of intercepting wrong numbers before they get through to the Page/Talk system.

Ring Access and Voice Access do not require operator intervention or an ID code to connect to the Page/Talk system, however wrong numbers may get through causing inconvenience to bona fide users.

Selective Access requires the calling party to know the ID number; therefore the likelihood of wrong numbers getting through is much reduced.

After the caller is connected to the system re-entry to the Page Line is usually possible by pressing the * and # keys in sequence.

After entering Paging Mode, either through Voice Access, Selective Access or by re-entering by pressing the * and # keys, a Post Announcement tone will be heard by the caller to indicate that the Paging Time has expired.

A programmable feature is a signal heard by the caller in Hold-For-Answer mode to indicate that the connection is about to be terminated. This gives the caller time to press the * and # keys to enter or re-enter Paging Mode.

The PTTI is designed to detect the two closely spaced short rings found in some systems as one ring.

Fuses on the power input side and the telephone line protect the system, the user and the PTTI.

The memory containing the codes for the various modes is non-volatile and will not be lost if power is disconnected.

Page/Talk Line Connections

The PTTI is linked to the Page/Talk system through a designated Talk Line and the Page Line. Any Talk Line in a multi-line system can be selected as the designated Talk Line. The PTTI will provide the Talk Line with its own balance impedance; therefore the 33 Ohm line balance resistor which is housed in the Line Balance Unit must be removed from the designated Talk Line.

If the PTTI is tied into the last station in a system wiring for the necessary connections can be made directly to that station, otherwise it may be possible to wire into an intermediate station. A junction box on the main cable can also be used to split off the necessary conductors.
Required connections are:

- Page Line
- One Talk Line
- Power Supply
- Central Office or PBX line

Programming

The PTTI Telephone Interface provides multiple operation modes that can be configured to specific requirements. Different parameters can be programmed for day-time and night-time operations. The first time programmer should read the programming section and try the default modes to gain insight as to how the PTTI functions. If the default settings are to be changed, fill out the programming parameters on the work sheet at the back of this manual before proceeding to program the unit. The programming work sheet will help keep track of the setup parameters and will serve as a record of the settings that were programmed in. There are two basic operation modes, day-time and night-time, each with its own parameters and programming procedures. The Day mode must be programmed with the front panel switch set to Day mode, and Night mode must be programmed with the switch in Night mode. In the programming mode both the Day and Night LEDs will be off but will flash to reflect the codes being programmed in. When the unit is returned to operation mode, the Day or Night mode LED will be constantly on or flashing, responding to the setting of the Day/Night switch. See LED table for more detail.

LINE CONDITION	DAY MODE LED	NIGHT MODE LED
Line In Use	Flashing	Flashing
Line Free	Constant On	Constant On

Programming Parameters

Initiate Programming: after setting up the PTTI for Programming entering # on the programming phone starts the process.

Mode: entering a digit between one and five inclusive determines the Mode that will be programmed in. The modes are described in detail in the Programming Procedure section.

Designated Talk Line Monitoring: entering a digit between one and eight inclusive instructs the PTTI to monitor the designated Talk Line for an Off-hook condition fault. If a fault condition exists the PTTI will broadcast a three gong warning signal over the Page Line at intervals of ten minutes times the digit entered. For example if a six is entered the warning signal will be broadcast every sixty minutes. Entering the digit nine disables monitoring. This feature is useful to warn of malfunctions, since in certain access modes connection to the system by an outside caller is not possible until the designated Talk Line is free.

Post Announcement Tone: signals the caller that Paging Time has expired when Paging is enabled. Entering the digit one enables this feature, two disables it.

Re-entry To The Page Line: allows the caller to return or go to Paging Mode when connected to the system by pressing the * and # keys in sequence. Entering the digit one enables this feature, two disables it. This feature is not available in Ring Mode with Auto-Connect disabled.

Voice Page time: a time of five to forty-five seconds – depending on the parameter programmed in – that a party calling in has to make a paging call. This feature is available with Auto-Connect either enabled or disabled. In Ring Mode this parameter is ignored unless the caller re-enters to Paging Mode.

Hang up delay: the length of time that the Talk Line can be disconnected before the PTTI terminates the call. This gives the party on the Page/Talk system time to make a paging call to bring another party onto the line.

Hold for answer: the length of time that the PTTI will wait for a handset to be picked up before it terminates the call. In Ring Access Mode the response by the PTTI depends on the on/off hook condition of the Designated Talk Line and whether or not Auto-Connect is enabled or disabled. If the Talk Line is free this will be a time of ten to eighty seconds – depending on the parameter programmed in – when a ringing signal will be going out on the Page Line. If the Talk Line is busy and if Auto-Connect is enabled a single Ring signal will be heard on the Page Line and by the caller, the PTTI will then connect the caller to the Designated Talk Line. If the Talk Line is busy and if Auto-Connect is disabled this is a time of ten to eighty seconds that a ringing signal will be generated on the Page Line. In this situation the Designated Talk Line must be freed by hanging up all the handsets and then picking up a handset to answer the call, otherwise the call will be terminated. In the latter case it is **not** possible to enter Paging Mode by pressing the * and # keys. If 9 – Ring Until Answered – is entered for this parameter the ringing signal on the Page Line will continue until answered or the caller hangs up. In Voice Mode entering 9 will result in 90 seconds Hold For Answer time. A distinctive series of tones on the incoming line will warn the caller beginning eight seconds before the PTTI terminates the call that disconnection is imminent. This feature gives the caller time to press the * and # keys in sequence to revert back into Paging Mode.

Talk Line connection: If Enable Auto-Connect is selected the PTTI will connect the outside caller to the designated Talk Line even if the designated Talk Line is in use. If Disable Auto-Connect is selected the PTTI will **not** connect the outside caller to the designated Talk Line if the designated Talk Line is in use. In both cases if Voice Mode has been selected the caller will have from five to forty-five seconds to make a Paging call and will hear a Chime on the line when the Paging time has expired. In Ring Mode if 9 – Ring Until Answered – was entered for Hold For Answer time the Auto-Connect parameter will never be reached. Auto-Connect is not an option in Manual Mode.

Number of incoming rings: the number of rings that will be heard on the operator's extension telephone before the PTTI intercepts the call. If operator intervention is never in use this should be set to one.

> **Note: If the PTTI is connected to a PABX extension do not program in a number of rings higher than the number that the PABX will accept, otherwise the call will be terminated by the PABX before the PTTI intercepts the call.**

FRONT VIEW   SIDE VIEW

BOTTOM VIEW
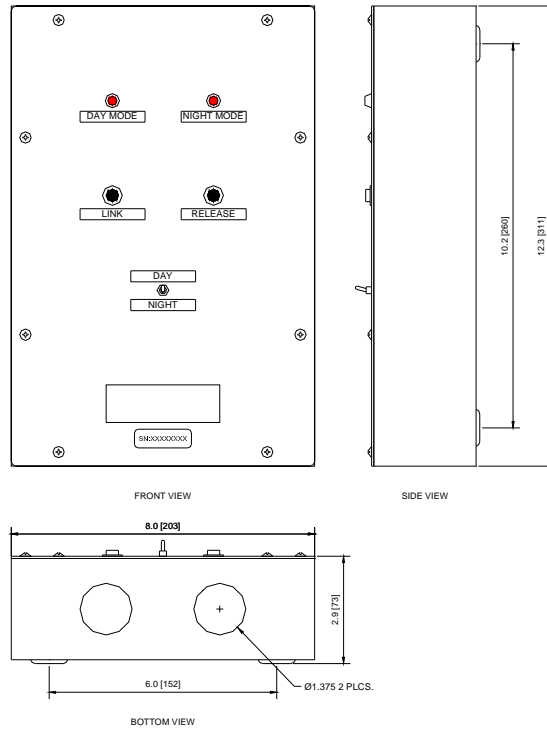
Figure 1 - Wall Mount Features and Dimensions
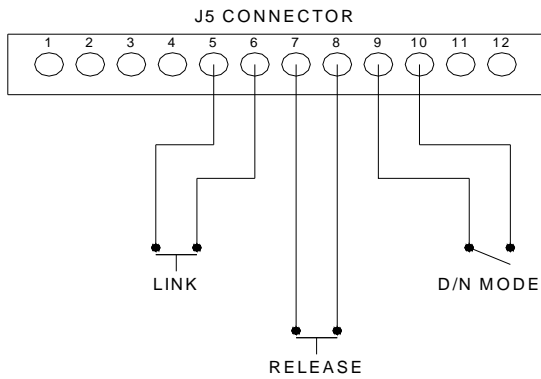
Note:
Terminals 6, 8 & 10 are common ground therefore only one conductor connected from any one of these terminals to the three switches is required.

Figure 2 - Remote Connections

TOP VIEW

205mm [5.1"]

FRONT VIEW

LINK   RELEASE   DAY MODE   DAY NIGHT   NIGHT MODE

PTTI
TELEPHONE INTERFACE

89mm [3.5"]

76mm [3.0"]

464mm [18.2"]

483mm [19.0"]
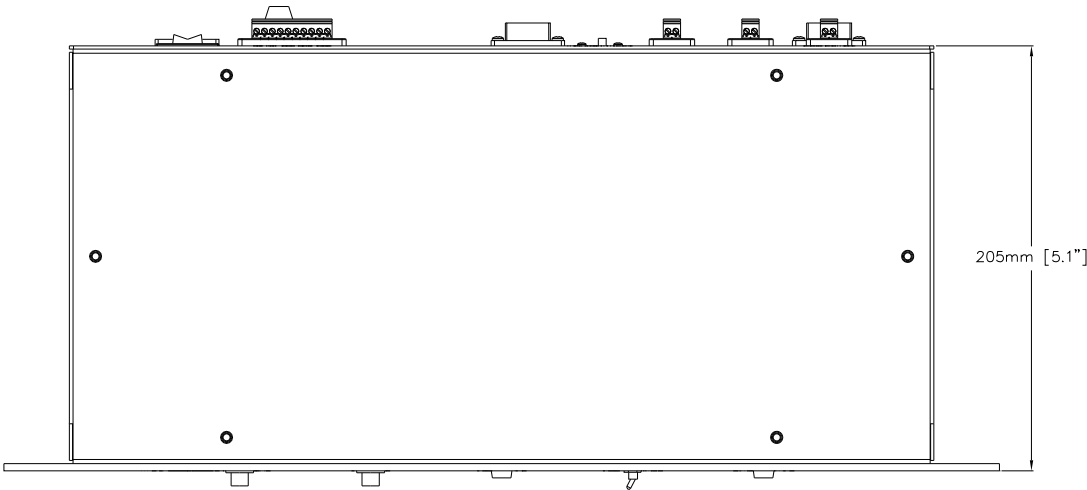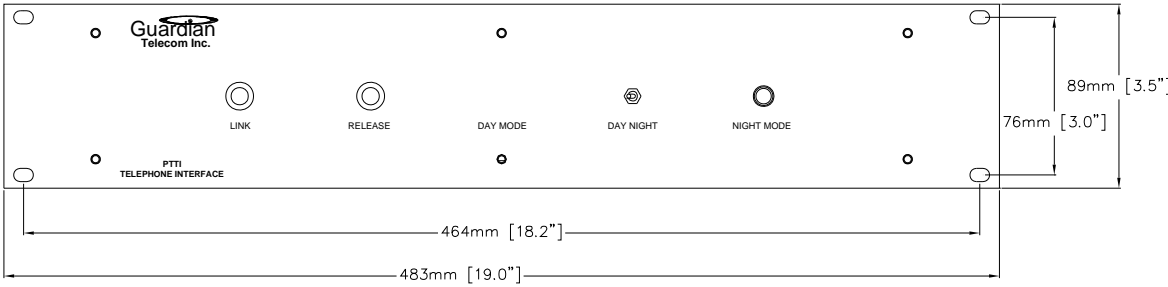
Figure 3 - Rack Mount Dimensions
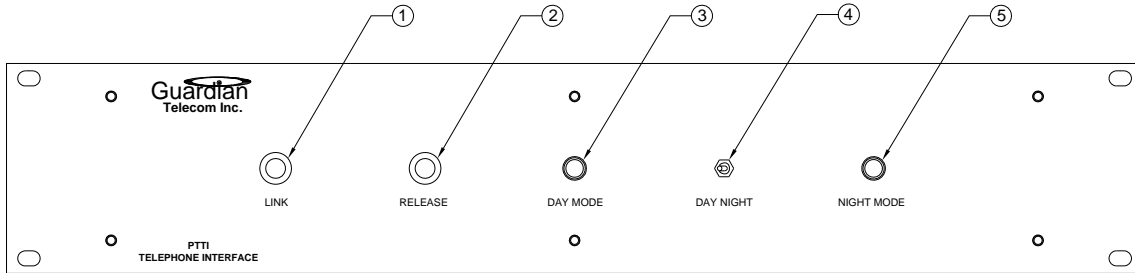
Figure 4 - Rack Mount Front

① Link Button

② Release Button

③ Day Mode Indicator Light

④ Day/Night Mode Indicator Switch

⑤ Night Mode Indicator Light
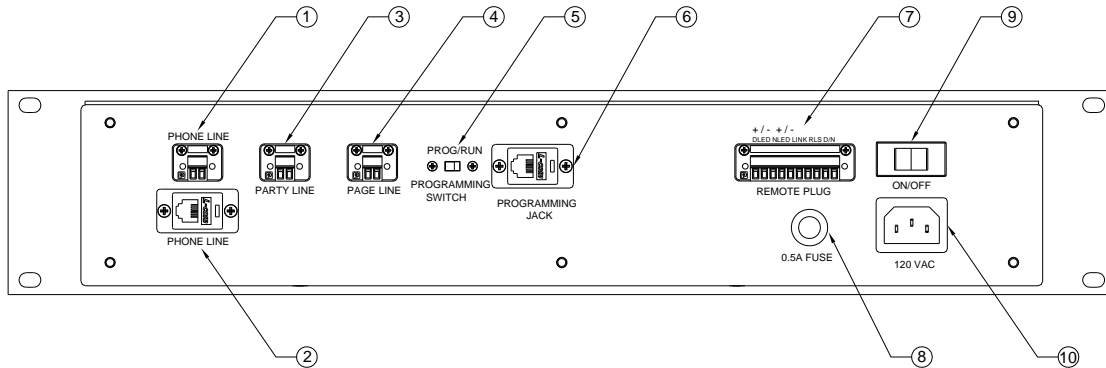
Figure 5 - Rack Mount Back

① Analog Phone Line Input (TIP/RING) [Screw Terminals]

② Analog Phone Line Input (TIP/RING) [RJ-11 Jack] (parallel with screw terminals)

③ Talk Line Output Terminals (+/-)

④ Page Line Output Terminals (+/-)

⑤ Programming Switch

⑥ PTTI Programming RJ-11 Jack

⑦ Remote Switch Control Termination

⑧ On/Off Power Switch

⑨ Fuse Holder (0.5Amp)

⑩ AC Power Cord Socket
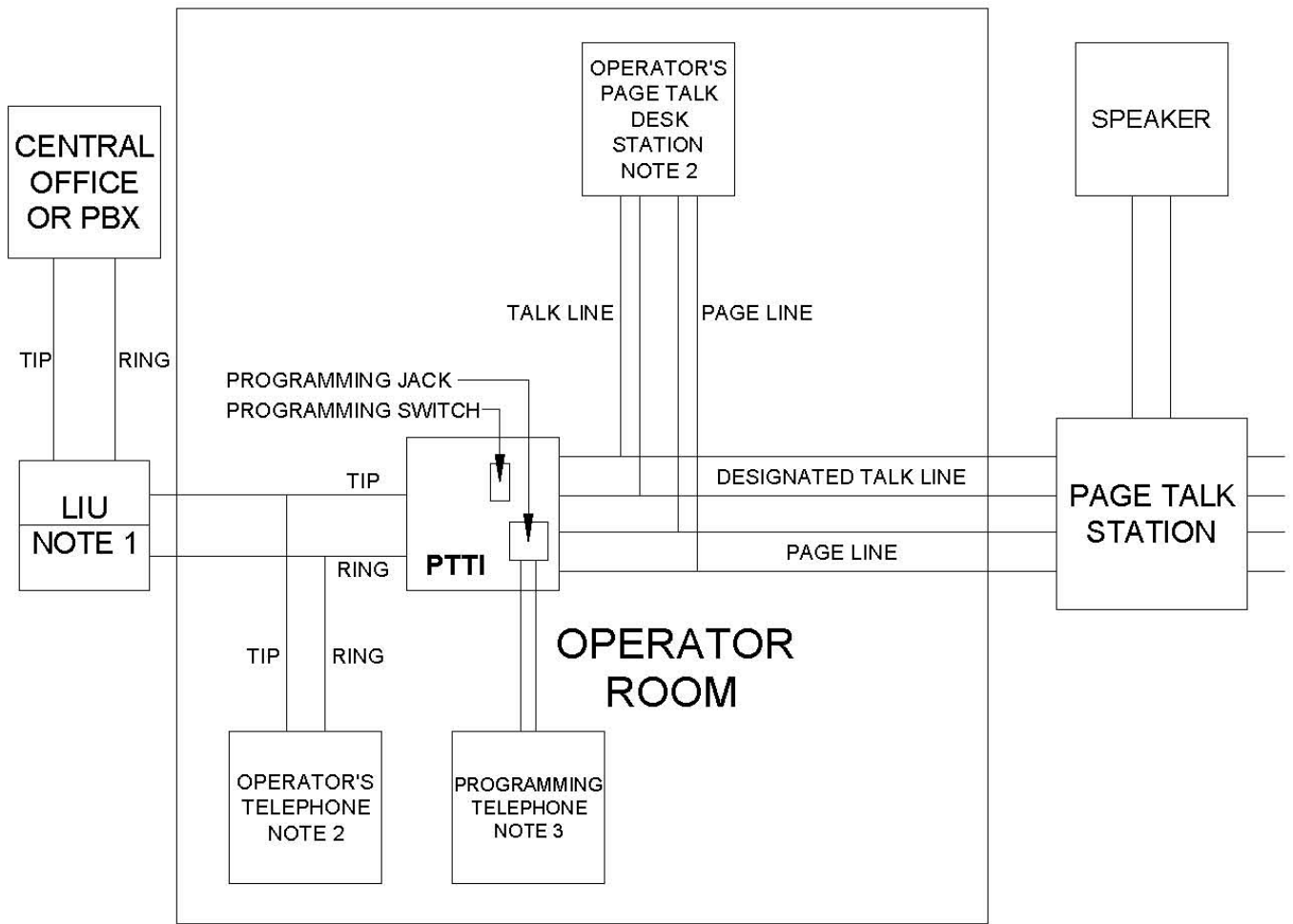
NOTES:
1. Line Isolation Unit (LIU) – only if required by local authorities.
2. Operator's telephone and Page/Talk desk station not required if there will be no operator intervention.
3. Programming phone only required when programming the PTTI.

Figure 6 - Typical Setup

Figure 7 - Circuit Board Layout (Wall Mount)
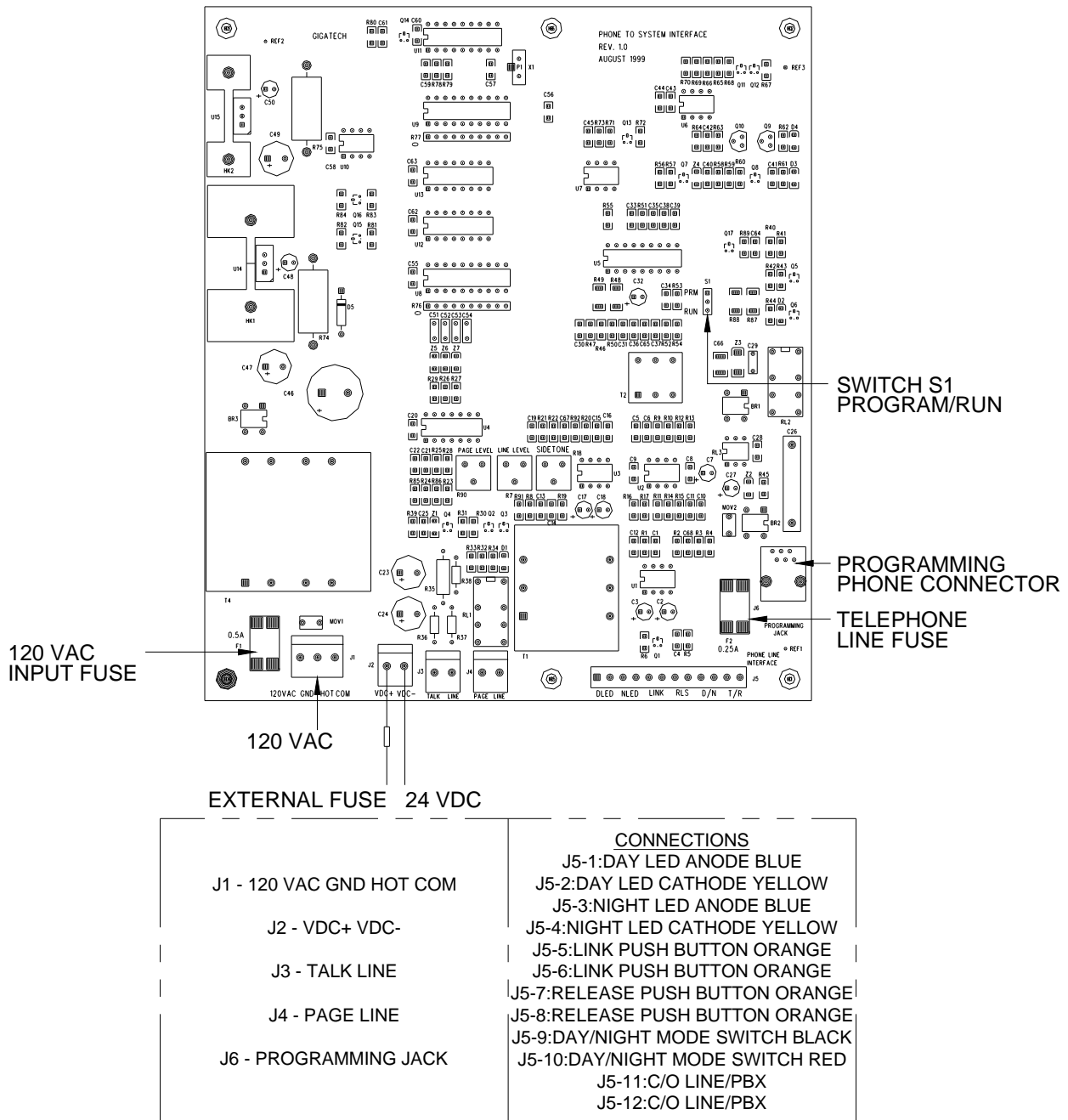
Note: Power requirement is either 120VAC or 24VDC, not both.

Installing the Wall Mount PTTI

- Follow all appropriate electrical codes and use only approved electrical fittings for the installation.

- If required by local authorities install a Line Isolation Unit (LIU) between the Central Office and the PTTI.

- Choose a wall location that is free of obstructions and permits space for conduit or wire. The location should also provide access to the telephone line extension that the PTTI will be connected to.

  See: Figure 1 - Wall Mount Features and Dimensions

- If the PTTI will be set up for an operator to accept incoming calls and connect outgoing calls the unit should be installed near the operator's location.

- Ensure mounting can support 11 lbs./5 kg and any additional foreseeable load.

- Use the template provided to locate and drill holes for mounting screws.

- Remove the screws on the faceplate, carefully lift off the faceplate and unplug the connector.

  Note: When removing the faceplate ensure that it does not put a strain on the wiring connecting the faceplate to the circuit board.

- Secure the unit to the wall.

- Ensure that none of the electrical circuits are live.

- Bring wiring into the enclosure through the conduit entrance and attach individual wires to the appropriate terminals on the connectors. If system power is 120 VAC connect conductors to the terminal block marked 120 VAC. If system power is 24 VDC connect conductors to the terminal block marked VDC with an inline 0.75 Amp fuse. **Connect Tip and Ring to terminals 11 and 12 on connector J5.**

  See: Figure 7 - Circuit Board Layout
  Note: The RJ11 socket on the circuit board is for programming only.

- If remote switches for Link, Release and Day/Night Mode are required install them at this time. Remote switches may be wired in parallel with the front panel switches. Terminals 6, 8 & 10 are common ground therefore only one conductor connected from any one of these terminals to the three switches is required. Set the Day/Night Mode switch on the front panel to Night if the remote switch is to be used to control the PTTI.

  See: Engineering Specifications and Figure 2 - Remote Connections

- Ensure that all connections are secure.

- Replace the faceplate.

- **In the Line Balance Unit disconnect the 33 ohm resistor from the designated Talk line.**

  See: Appendix for Line Balance Unit location.

- Apply power to the system.

- Test the installation by making a call as described in the operating section.

- If the default parameters are to be changed refer to the Programming section of this manual.

Figure 8 - Programming Setup (Wall Mount)

Program/Run Switch

RJ11 Socket for
programming phone
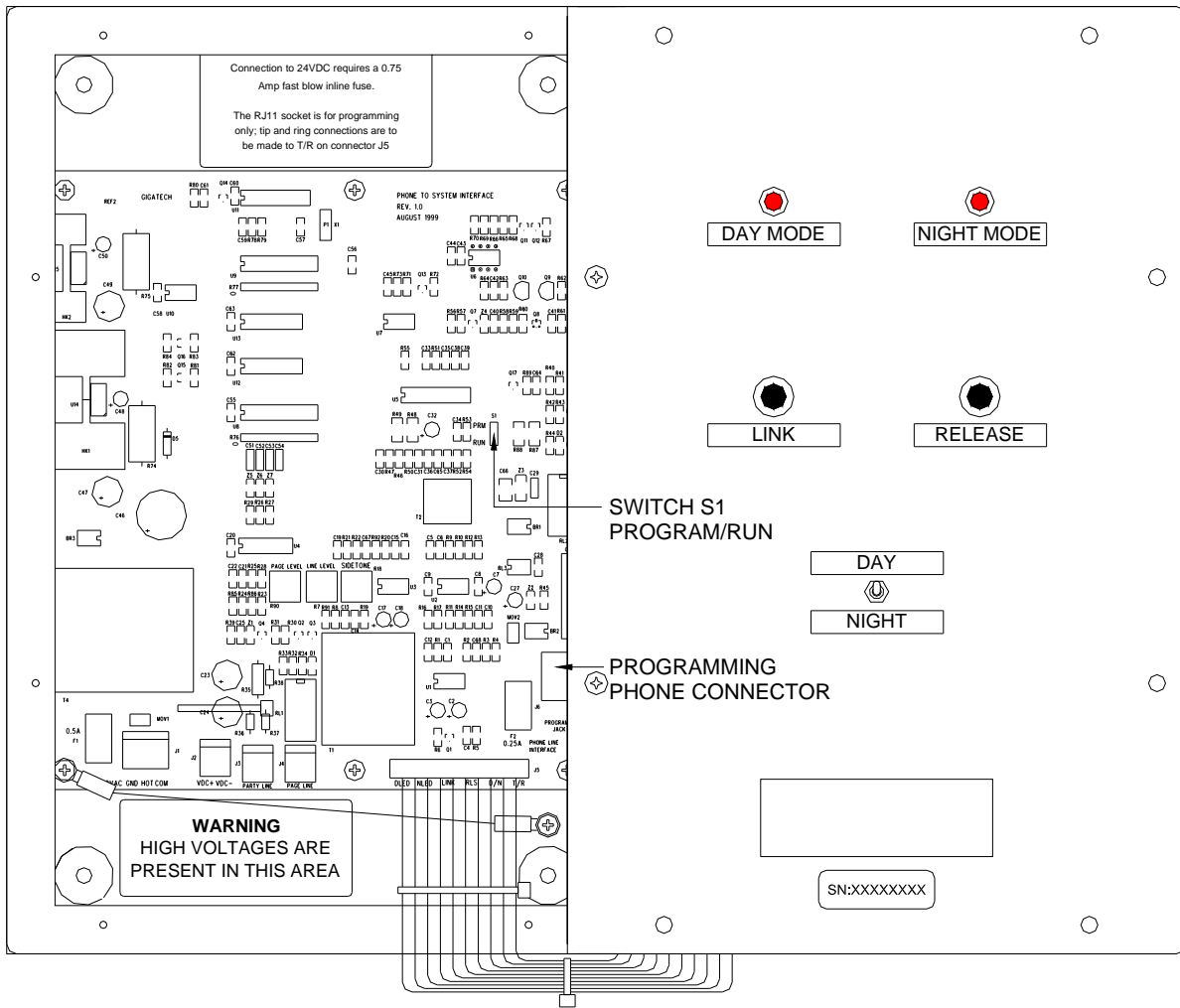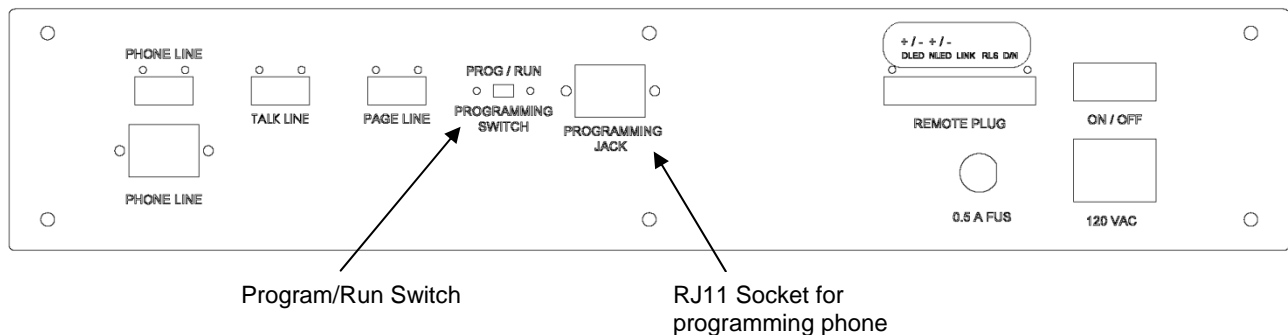
Figure 9 - Programming Setup (Rack Mount)

Installing the Rack Mount PTTI

- Follow all appropriate electrical codes and use only approved electrical fittings for the installation.

- If required by local authorities install a Line Isolation Unit (LIU) between the Central Office and the PTTI.

- Install the rack mount PTTI into the rack.   *Tip: Two rack units are required*

- Ensure that none of the electrical circuits are live.

- Connect the designated Talk Line and the Page Line to the screw terminals on the back plate.

- Connect the phone line to the screw terminals on the back plate or to the RJ11 socket.

- Ensure that the power switch is in the OFF position and connect 120 VAC power to the socket on the back plate.

- If remote LEDs and switches for Link, Release and Day/Night Mode are required install them at this time and connect the wiring to the screw terminals on the REMOTE PLUG. Set the Day/Night Mode switch on the front panel to Night if the remote switches are to be used to control the PTTI.   *See: Figure 4 - Rack Mount*

- Ensure that all connections are secure.

- **In the Line Balance Unit disconnect the 33 ohm resistor from the designated Talk line.**   *See: Appendix for Line Balance Unit location.*

- Apply power to the unit and turn the Power switch on.

- Test the installation by making a call as described in the operating section.

- If the default parameters are to be changed refer to the Programming section of this manual.

Programming Procedure
Note: The PTTI does not require programming unless the default parameters need to be changed. Check the Default mode settings Table. Either the Day Mode or Night Mode settings can be changed without affecting the default settings of the other, if this is desirable.
Read the programming instructions to determine which incoming call access modes are suitable for Day and Night modes. Recording the parameters in the work sheet will make programming quicker, easier and error free. The work sheet can also be kept as a reminder of the programmed access ID number and parameters.
Preparing the Wall Mount PTTI for Programming:
1) Remove the screws holding the faceplate and lift off the faceplate. Do not allow the faceplate to pull on the wires connecting the faceplate to the circuit board.
2) Secure the left edge of the faceplate to the right side of the enclosure with two screws, as illustrated in Figure 8 - Programming Setup (Wall Mount).
3) Plug a DTMF phone into the RJ11 socket on the circuit board.
4) Move the S1 switch on the circuit board to the program (PRM) position.
Preparing the Rack Mount PTTI for Programming:
1) Plug a DTMF phone into the RJ11 socket on the back panel.
4) Move the S1 switch on the back panel to the program (PROG) position.
Entering Programming Mode:
1) Set the Day/Night mode switch on the front panel to the mode that the programmed parameters will be assigned to.
2) Press the Release button to disconnect the PTTI from the telephone line.
3) The PTTI is now in the programming mode with all LEDs off.
Incoming call Access Mode Selection:
Refer to the Programming section on page 4 for an explanation of the parameters that can be programmed in to the various modes.
1) Manual Access Mode:
In Manual Access Mode incoming calls will only be transferred to the Page/Talk system after an operator answers the call on a telephone connected to the PTTI extension. The operator will page the party to whom the caller wishes to be connected. When the called party picks up a handset on the designated Talk Line the operator will press the Link switch to complete the connection. Once a connection is made the Day or Night LED on the front panel will blink as long as the line is in use and revert to steady on when the call is disconnected. If the operator does not answer, the operator's phone will continue to ring until the caller hangs up or the PABX automatically disconnects the call. If the operator does not answer it is not possible for an outside caller to access the Page/Talk system in manual mode
2) Ring Access Mode:
In Ring Access Mode, if the operator answers the incoming call on a telephone connected to the PTTI extension connection to the system is the same as for manual mode. If an operator does not answer the call before the programmed number of rings is reached, the PTTI will intercept the call. If the designated Talk Line is free a ring signal will be generated on the system Page Line with a distinctive ring back tone to the caller's phone. The call will then be connected if one of the handsets on the designated Talk Line is picked up. If the designated Talk Line is not free and if Auto-Connect has been programmed in, the PTTI will generate one ring signal on the Page Line and will then connect the caller to the Designated Talk Line. If Disable Auto-Connect was selected the PTTI will still generate a ringing signal on the Page Line. In the latter case all

of the handsets on the designated Talk Line must be hung up before the call can be connected by picking up a handset. If a handset is not picked up the PTTI will disconnect the call after the Hold For Answer Time has expired.

3) Voice Access Mode:
In Voice Access Mode, if an operator answers the incoming call on a telephone connected to the PTTI extension connection to the system is the same as for Manual mode. If an operator does not answer the call before the programmed number of rings is reached, the PTTI will intercept the call and will generate two pre-announcement chimes on the Page Line. The incoming caller will also hear two chimes and will then have five to forty five seconds – depending on the parameter programmed in – to make a paging call. After the Page Time expires and if Disable Auto-Connect was programmed in, the PTTI will monitor the designated Talk Line for a station to go off-hook to connect the incoming call to the system. If Enable Auto-Connect has been programmed in, the PTTI will make the connection to the designated Talk Line after the Page Time expires, even if the line is in use. If Disable Auto-Connect was selected and the line is in use the PTTI will still allow a paging call to be made. In the latter case all of the handsets on the designated Talk Line must be hung up before the call can be connected by picking up a handset. If a handset is not picked up the PTTI will disconnect the call after the Hold For Answer Time has expired unless Paging Mode is re-entered by pressing * and #.

4) Selective Access Mode:
In Selective Access Mode, if the operator answers the incoming call on a telephone connected to the PTTI extension connection to the system is the same as for manual mode. If an operator does not answer the call before the programmed number of rings is reached, the PTTI will intercept the call and will generate two different audible signals that will be fed back to the calling party, depending on the status of the designated Talk Line. One chime indicates that the line is free and a high/low chime indicates that the line is busy. If the line is busy it may still be possible to make the connection as described above for Ring or Voice Access. The calling party has 30 seconds to enter the access code. The access code consists of a two-digit number, and one mode-selecting key. If the access code is correct, the mode selecting key, '*' will put the call through in the same manner as for Voice Access mode and the '#' key will put the call through as in Ring Access mode.

Selective Access Mode summary table

Access Mode	Access ID (2 digits)	Access mode key
Voice access	XX	*
Ring access	XX	#

5) Default Mode:
The PTTI is shipped with parameters in default mode, (see *Default mode settings*. The unit may be returned to default mode by following the programming procedure and entering # 5 as shown in the Default Mode table**. It is not necessary to enter the parameters; this is done automatically when # 5 is entered.**

Confirming the programmed parameters:
After the last parameter of the selected mode is entered, the LED will flash the same number of times as each entered parameter, with a long pause in between.
Pressing the '*' will repeat the display of the programmed parameters through the LED.

Exiting the programming mode:
Do not hang up or unplug the programming phone until the LED stops blinking.
Unplug the programming phone from the RJ11 socket and slide the program switch to the RUN position. The PTTI is now in the operation mode with the Day LED or the Night LED turned on reflecting the Day/Night switch setting.
Check the programming by calling in to the PTTI then replace the faceplate.

Manual Access Mode

Programmed Code	Entered key	Function
1st key	#	Initiate programming
2nd key	1	Manual access mode
3rd key	1 to 8 9	Designated Talk Line Monitoring: (1 to 8) X 10 minutes 9 = Disable Talk Line Monitoring
4th key	1 or 2	Post announcement tone: 1 = Enable 2 = Disable
5th key	1 or 2	Re-entry to Page Line: [1] 1 = Enable 2 = Disable
6th key	1 to 9	Voice Page Time: [2] (1 to 9) X 5 seconds
7th key	1 to 9	Hang up delay: (1 to 9) X 5 seconds

Ring Access Mode

Programmed Code	Entered key	Function
1st key	#	Initiate programming
2nd key	2	Ring access mode
3rd key	1 to 8 9	Designated Talk Line Monitoring: (1 to 8) X 10 minutes 9 = Disable Talk Line Monitoring
4th key	1 or 2	Post announcement tone: 1 = Enable 2 = Disable
5th key	1 or 2	Re-entry to Page Line: [1] 1 = Enable 2 = Disable
6th key	1 to 9	Voice Page Time: [2] (1 to 9) X 5 seconds
7th key	1-9	Hang up delay: (1 to 9) X 5 seconds
8th key	1-8, or 9	Ring and Hold for answer: (1 to 8) X 10 seconds 9=Ring and hold until answered
9th key	1 or 2	Talk Line connection: 1 = auto-connect 2 = disable auto-connect
10th key	1-9	Number of incoming rings

Voice Access Mode

Programmed Code	Entered key	Function
1st key	#	Initiate programming
2nd key	3	Voice access mode
3rd key	1 to 8 9	Designated Talk Line Monitoring: (1 to 8) X 10 minutes 9 = Disable Talk Line Monitoring
4th key	1 or 2	Post announcement tone: 1 = Enable 2 = Disable
5th key	1 or 2	Re-entry to Page Line: [1] 1 = Enable 2 = Disable
6th key	1 to 9	Page Time: (1 to 9) X 5 seconds
7th key	1-9	Hang up delay: (1 to 9) X 5 seconds
8th key	1-9	Hold for answer: (1 to 9) X 10 seconds
9th key	1 or 2	Talk Line connection: 1=auto-connect 2=disable auto-connect
10th key	1-9	Number of incoming rings

Selective Access Mode

Programmed Code	Entered key	Function
1st key	#	Initiate programming
2nd key	4	Selective access mode
3rd key	1 to 8 9	Designated Talk Line Monitoring: (1 to 8) X 10 minutes 9 = Disable Talk Line Monitoring
4th key	1 or 2	Post announcement tone: 1 = Enable 2 = Disable
5th key	1 or 2	Re-entry to Page Line: [1] 1 = Enable 2 = Disable
6th key	1 to 9	Voice Page Time: (1 to 9) X 5 seconds
7th key	1-9	Hang up delay: (1 to 9) X 5 seconds

8th key	1-9	Voice Mode [3]
		    Hold for answer:
		    (1 to 9) X 10 seconds
		Ring Mode [3]
		    Ring and Hold for answer:
		    (1 to 8) X 10 seconds
		    9=Ring and hold until answered

9th key	1 or 2	Talk Line connection: 1=auto-connect 2=disable auto-connect
10th key	1-9	Number of incoming rings
11th & 12th keys	1,2,3,4,5,6,7,8,9,0	Two digit I.D. code:

Default Mode (returns settings to default mode - see table below)

Programmed Code	Entered key	Function
1st key	#	Initiate programming
2nd key	5	Default mode

To return settings to Default Mode it is only necessary to enter # 5. The parameters will then be as shown in the following table.

Either the Day Mode or Night Mode settings can be changed without affecting the default settings of the other, if this is desirable.

Default mode settings

Description	Default setting (day mode)	Default setting (night mode)
Incoming call mode	Voice access mode	Ring access mode
Designated Talk Line monitoring	Disabled	Disabled
Post announcement tone	Enabled	N/A [4]
Re-entry to Page Line [1]	Enabled	N/A [4]
Voice Page duration	10 seconds	N/A [4]
Hang up delay	10 seconds	N/A [4]
Hold for answer	60 seconds	Ring until answered
Auto connection	Enable	N/A [4]
Incoming rings	5 rings	1 ring

[1] After the caller is connected to the Page/Talk system Paging Mode can be accessed by pressing * and # in sequence, except in Ring Access Mode with Auto-Connect Disabled.

[2] In Manual Access and Ring Access Modes Voice Page Time is only effective if Paging has been re-entered by pressing the * and # keys.

[3] In Selective Access Mode only one Parameter can be entered in number eight slot. The response will vary depending on whether the caller selects * (Voice Access) or # (Ring Access). The number entered should therefore accommodate either contingency.

[4] Because the Hold For Answer Time is programmed for Ring Until Answered, Auto-Connect will not occur and re-entry to the Page Line will never be possible.

Calling In To the Page/Talk System

NOTE: If the Page/Talk system has a Merge/Isolate controller installed refer to the manual for that device.

To access the system from the outside, the phone number or extension number assigned to the PTTI is called. Depending on the access mode programmed in to the PTTI the following signals may be heard.

- A normal telephone ringing signal indicates that the operator's telephone connected to the PTTI extension is ringing and the PTTI is counting the number of rings. If no telephone extension is provided or if the operator does not pick up the extension prior to the programmed number of rings being reached, the PTTI will perform some action depending on the parameters programmed in. The number of Incoming Rings may be any number between one and nine except that in Manual Mode the operator's telephone will ring until the caller hangs up or the PABX disconnects the call, if it is programmed to do so.

- A busy signal indicates that the telephone extension to the PTTI is in use.

- If the operator answers, the caller can ask to be connected to the desired party. The operator will then page the party on the paging line and when the party picks up a handset the operator will press the Link button to make the connection.

- If the line goes dead after several rings the PTTI is in manual mode, the operator has not answered the call and the PABX has terminated the call. In this case no access to the system is possible.

- A series of distinctive ring back tones heard after the programmed number of rings has been reached indicates that the PTTI is in Ring Access Mode and the ringing signal is going out on the Paging Line. If the designated Talk Line is free and a handset is picked up the PTTI will make the connection. If the designated Talk Line is not free and if Auto-Connect has been programmed in, the PTTI will make the connection regardless, after first generating one ring signal to the Page Line. If Disable Auto-Connect was selected the PTTI will still generate a ringing signal on the Page Line. In the latter case all of the handsets on the designated Talk Line must be hung up before the call can be connected by picking up a handset. If a handset is not picked up the PTTI will disconnect the call after the Hold For Answer Time has expired.

- Two chimes heard after the programmed number of rings has been reached indicates that the PTTI is in Voice Access Mode. Two pre-announcement chimes will be generated on the Page Line and the caller then has five to forty-five seconds – depending on the parameters programmed in – to make a paging call. After the Page Time expires a single chime will be heard by the caller to warn that the PTTI has made the transition from Page to Hold For Answer. This chime will not be generated on the Page Line. If Disable Auto-Connect was programmed in, the PTTI will monitor the designated Talk Line for a station to go off-hook to connect the incoming call to the system. If Enable Auto-Connect has been programmed in, the PTTI will make the connection to the designated Talk Line after the Page Time expires, even if the line is in use. If Disable Auto-Connect was selected and the line is in use the PTTI will still allow a paging call to be made. In the latter case all of the handsets on the designated Talk Line must be hung up before the call can be connected by picking up a handset. If a handset is not picked up the PTTI will disconnect the call after the Hold For Answer Time has expired.

- A single chime heard after the programmed number of rings indicates that the PTTI is in Selective Access Mode and the designated Talk Line is free, a high/low chime indicates that the designated Talk Line is busy. In both cases the caller has 30 seconds to enter the access code that has been programmed in, and either a '*' for Voice Access or a "#" for Ring Access. Once the access code has been entered the resulting indications and actions will be the same as described above for Voice Access and Ring Access.

- A series of high/low tones at any time after gaining access to the system indicates that the PTTI is about to disconnect the call. Pressing the * and # keys in sequence on the caller's telephone at this time – or at most other times when connected to the system – will put the call into paging mode and restart the sequence.

Engineering Specifications	
ELECTRICAL PERFORMANCE	
TELEPHONE NETWORK INTERFACE	CENTRAL OFFICE LINE OR PBX LINE
NETWORK SIGNALING	DTMF
RINGER EQUIVALENCE NUMBER (REN)	0.4B
PAGE LINE IMPEDANCE	33 TO 133 OHM NOMINAL LOAD FROM LINE BALANCE ASSEMBLY
TALK LINE IMPEDANCE	33 OHM NOMINAL AC SOURCE INTERNAL LINE BALANCED
OUTPUT LEVEL	ADJUSTABLE: 1.5 VRMS NOMINAL
PAGE LINE BIAS	12 VOLTS DC
TELEPHONE LINE FUSE	0.25 AMP, FAST BLOW, 2AG
ELECTRICAL REQUIREMENTS	
INPUT VOLTAGE	105-130 VAC, 50/60HZ / 23-28 VDC
INPUT CURRENT	120VAC 0.1AMP, 24 VDC 0.5 AMP
FUSE - 120VAC INPUT	0.5AMP 250VAC 2AG FAST BLOW
FUSE - 24VDC INPUT	EXTERNAL 0.75 AMP FAST BLOW
CONTROLS	
EXTERNAL	LINK, RELEASE AND DAY/NIGHT MODE SWITCH
INTERNAL	PAGE LINE AND TALK LINE LEVELS
REMOTE (OWNER SUPPLIED)	LINK AND RELEASE - PUSHBUTTONS - NORMALLY OPEN DAY/NIGHT MODE SWITCH - SINGLE POLE - SINGLE THROW
ENVIRONMENTAL	
WEATHER TIGHT	ENCLOSURE GASKET
DUST TIGHT	ENCLOSURE GASKET
MECHANICAL WALL MOUNT	
BODY CONSTRUCTION	16 GAUGE STEEL, ZINC DICHROMATE PLATED AND POWDER COATED
COLOR	STANDARD YELLOW, OTHER COLORS OPTIONAL
DIMENSIONS (H X W X D)	12.3 X 8.0 X 5.7 INCHES (313 X 203 X 145MM)
NET WEIGHT	11 LBS/5 KG
STANDARD MOUNTING	VERTICAL WALL
WIRING ACCESS	2 X 1 3/8" OPENINGS FOR OWNER SUPPLIED FITTINGS

MECHANICAL RACK MOUNT	
BODY CONSTRUCTION	16 GAUGE STEEL, ZINC DICHROMATE PLATED AND POWDER COATED
COLOR	BLACK
DIMENSIONS (H X W X D)	3.5 X 18.2 X 5.1 INCHES (89 X 464 X 205MM)
NET WEIGHT	11 LBS/5 KG
STANDARD MOUNTING	TWO STANDARD RACK UNITS
WIRING ACCESS	BACK PLATE

Programming Work Sheet

To program the Wall Mount PTTI set up the device as described in the Programming Procedure section. Connect a DTMF phone to the RJ11 socket on the circuit board, set switch S1 on the circuit board to PRM, press the RELEASE button and set the Day/Night switch on the front panel to the desired position.

To program the Rack Mount PTTI connect a DTMF phone to the RJ11 socket on the back plate, set the programming switch to PROG. Press the RELEASE button and set the Day/Night switch on the front panel to the desired position.

See PROGRAMMING on page four for a detailed description of parameters.

To enter the desired program pick up the handset on the telephone that has been connected to the RJ11 socket, press the pound "#" key and one numeral for the access code, enter additional digits as required. **The settings to be input are only required down to the dotted lines for the various modes.** If an incorrect key is punched a chime will be heard on the programming phone and a correct digit must then be entered. If more than the required number of digits is entered a chime will be heard on the programming phone and the additional digits will be ignored.

The parameters may be entered without delays between them. The LED for the selected day or night mode will blink to confirm the parameters entered and may continue for some time after inputting data. To have the LED repeat the parameters press the "*" key on the programming phone once.

Do not hang up or disconnect the programming telephone until the LED stops blinking.

When programming is complete disconnect the programming phone and return the programming switch to the RUN position.

Access Mode:	**Example**	**Day Mode**	**Night Mode**	
Manual 1	(Ring Mode)			
Ring 2				
Voice........3				
Selective ..4				
Default .....5 (reverts to factory settings)	2			**Default mode**
Designated Talk Line Monitoring: 1 to 8 (X 10 minutes) 9 = Disable monitoring	6			
Post Announcement Tone: 1 = enable 2 = disable	1			
Re-entry To Page Line: 1 = enable 2 = disable	1			
Voice Page Time: (**Note 1)** 1 to 9 (X 5 seconds)	2			
Hang Up Delay: 1 to 9 (X 5 seconds)	2			**Manual mode**
Hold for answer time: (**Note 2)** 1 to 8 (X 10 seconds) 9 = (ring until answered)	2			
Talk Line Connection mode (**Note 3)** 1 = enable auto-connect 2 = disable auto-connect	1			
Number of incoming rings: 1 to 9 rings (**Note 4)**	2			**Ring or Voice Mode**
Access ID: 2 digits X X 1,2,3,4,5,6,7,8,9,0	N/A			**Selective mode**

Note 1: In Voice Access Mode a Paging call can be made for the duration of the time programmed. In Ring Access Mode this parameter is ignored unless the caller re-enters to Paging Mode however the program still expects a digit to be entered.
Note 2: In Ring Access Mode a ringing signal will be going out on the Page Line for the time programmed. In Voice Access Mode entering 9 will result in 90 seconds Hold For Answer Time.
Note 3: In Ring Mode if 9 was entered in Hold For Answer Time the Auto-Connect parameter will never be reached, however the program still expects a 1 or a 2 to be entered.
**Note 4: If the PTTI is connected to a PABX extension do not program in a number of rings higher than the number that the PABX will accept, otherwise the call will be terminated prematurely.**

Page/Talk System Models and Options

Indoor Handset Stations PTI-1 & PTI-5

P5550	Ambient noise sensor, single line
P5551	Ambient noise sensor, five line
P5552	Ambient noise sensor, headset connector, single line
P5553	Ambient noise sensor, headset connector, five line
P5554	Single line
P5555	Five line
P5556	Headset connector, single line
P5557	Headset connector, five line

Outdoor Handset Stations PTO-1 & PTO-5

P5560	Ambient noise sensor, single line
P5561	Ambient noise sensor, five line
P5562	Ambient noise sensor, headset connector single line
P5563	Ambient noise sensor, headset connector five line
P5564	Single line
P5565	Five line
P5566	Headset connector, single line
P5567	Headset connector, five line

Handset Explosion Proof Stations EXP-1 & EXP-5

P5930	Ambient noise sensor, single line
P5935	Ambient noise sensor, five line

Indoor Speaker Amplifier Stations PSA-I

P5570	Ambient noise sensor
P5571	Speaker amplifier

Outdoor Speaker Amplifier Stations PSA-O

P5572	Ambient noise sensor
P5573	Speaker amplifier

Desk Set Amplifiers PDA

P5580	Ambient noise sensor
P5581	Speaker amplifier

Desk Set Stations (Complete) PTD & PDA

P5590	Ambient noise sensor, amplifier and single line desk set
P5591	Ambient noise sensor, amplifier and five line desk set
P5592	Amplifier and single line desk set
P5593	Amplifier and five line desk set

P5940	**Telephone Interface PTI**

P5980	**Line Balance Assembly LBU**

Alarm Tone Generator AG-17

P5960	With Relay
P5970	Without Relay

Acoustic Booths

P9010	AB100 Aluminum or Steel full size
P9035	AB1000 Glass Reinforced Plastic hood
P9029	AB2000 Glass Reinforced Plastic full size

Cable

	2 Conductor 18AWG Industrial Armored Speaker Cable
	2 Conductor 18AWG Industrial Standard Speaker Cable
P006217	4 Conductor 18AWG Industrial Armored Speaker Cable
P006216	4 Conductor 18AWG Industrial Standard Speaker Cable
P005863	Heavy Duty 8 Conductor Armored Cable (Single Line Page/Talk)
P005916	Standard Duty 8 Conductor Cable (Single Line Page/Talk)
P005366	Heavy Duty 16 Conductor Armored Cable (Multi Line Page/Talk)
P005219	Standard Duty 16 Conductor Cable (Multi Line Page/Talk)
P006218	Heavy Duty 17 Conductor Armored Cable (Multi Line Page/Talk)

Loudspeakers

P7247	SR40 Explosion Proof (Class I, Div. 1) Metal Horn Speaker
GB406	8 Watt Indoor Plastic Wall Speaker
GCW4T	8 Watt Indoor Cabinet Speaker
GBL650	15 Watt Indoor Plastic Ceiling Speaker
GB640	20 Watt Indoor Metal Ceiling Speaker
GCAR6	10 Watt Metal Surface Mount Speaker
GHP15	15 Watt Outdoor Plastic Horn Speaker
GHS15	15 Watt Outdoor Metal Horn Speaker
GHS15IIN	15 Watt Hazardous Area (Zone 2) Metal Horn Speaker
GHP20S	20 Watt Hazardous Area (Zone 2) Plastic Horn Speaker
GBA56EExeN	6 Watt Hazardous Area (Zone 1) Indoor Metal Ceiling Speaker
GCAPEEX6	6 Watt Hazardous Area (Zone 1) Metal Surface Mount Speaker
GHS15EExmN	15 Watt Hazardous Area (Zone 1) Metal Horn Speaker
GHS15ExdFM	15 Watt Hazardous Area (Class I, Div. 1) Metal Horn Speaker
AM15XD2	15 Watt Hazardous Area Speaker (Class I, Div. 2) Metal Horn Speaker

Appendix - Typical Installation
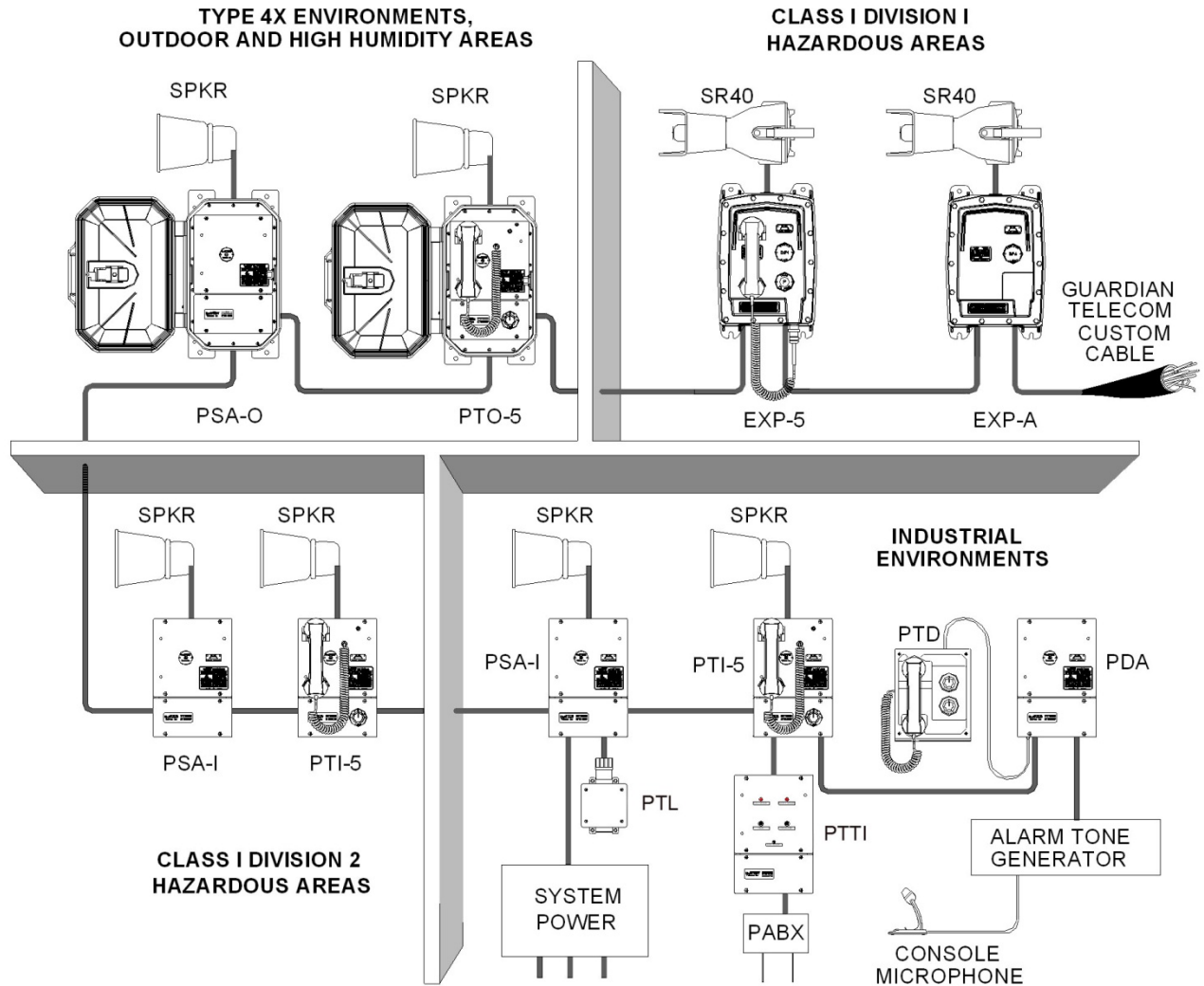
Warranty

Guardian Telecom warrants your product to be free of defects in material and workmanship for a period of one year. Guardian Telecom will repair or replace any defective unit that is under warranty free of charge.

This warranty is null and void if any non-authorized modifications have been made to this product, or if it has been subjected to misuse, neglect, or accident. This warranty covers bench repairs only; such repairs must be made at Guardian Telecom or an authorized service depot. Guardian Telecom is not responsible for costs incurred for on-site service calls, freight, or brokerage.

Guardian products have been quality tested and are in full working order when shipped from the factory, shipping damage should be claimed on the carrier.

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 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

High voltages may be present in this product. Ensure that power is removed before installing, performing maintenance or repairs. **Use caution when programming the wall mount model with enclosure open and power on, high voltages are present.**

Service Telephone Number

1-800-363-8010 (North America)

Guardian Telecom provides a customer service telephone number which 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 Inc.
Toll-free 1-800-363-8010 in North America
Ph. (403) 258-3100
Fax. (403) 253-4967
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.
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 a RMA form online at www.guardiantelecom.com, 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.

Notes:

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

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