PowerMaster-33 G2 Version 19.4

Installer's Guide

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1. INTRODUCTION

PowerMaster® is a PowerG-enabled professional all-in-one wireless security, fire, and safety system. The PowerMaster supports advanced applications and Visonic's PowerG[™] Two-Way, Time Division Multiple Access (TDMA) and Frequency Hopping Spread Spectrum (FHSS) wireless technology. This offers unmatched wireless robustness, superior range, and long battery life. It is a user friendly solution for both monitoring service providers and professional installers.

The system consists of the PowerMaster-33 G2 control panel that operates in conjunction with a wireless keypad display device (KP-250 PG2). The control panel accommodates all control circuitry and operation software for a programmable 64-zone alarm system, while the keypad display unit enables the installer and the user to enter their commands, and provides visual and audible feedback. The PowerMaster-33 G2 control panel has dual path configuration: IP via Ethernet to the customer-premises gateway, and cellular modem (2G or 3G). The reporting is done through IP as primary and cellular modem as secondary.

Depending on the configuration you require the PowerMaster-33 G2 can have one of the following modules installed:

- ioXpander-2x1 internal wired expander module This configuration allows the PowerMaster-33 control panel to operate two additional wired zones, wired sirens, speech box, and one PGM.
- ioXpander-8 internal wired expander module This configuration allows the PowerMaster-33 control panel to operate eight additional programmable wired inputs/outputs (zones or PGMs) and a wired speech box interface.

The following table compares the ioXpander-2x1 and ioXpander-8 module characteristics:

External connections	Expander Module	
	ioXpander-2x1	ioXpander-8
Microphone input	Differential	Differential
Speaker output	Differential	Differential
12v output current	450 mA maximum	450 mA maximum
Zones (Inputs)	2	8
PGMs (Outputs)	2	

This manual refers to PowerMaster-33 G2 v19.4 and above. The most updated manuals can be downloaded from the Visonic Web site <u>http://www.visonic.com</u>.

Note: "Pmaster" is used as an abbreviation for "PowerMaster".

The system is supplied with 3 instruction manuals:

- PowerMaster-33 G2 Installer's Guide (this manual) used by the system installer during system installation.
- KP-250 PG2 Installer's Guide used by the system installer during KP-250 PG2 installation and PowerMaster-33 G2 configuration.
- **KP-250 PG2 User's Guide** used by the system installer during system installation and configuration. Hand over this manual to the master user of the system, after the installation is completed.

1.1 System Features

The following table lists the PowerMaster-33 features with a description of each feature and how to use it.

<u>Feature</u>	Description	How to configure and use
Visual Alarm Verification	The PowerMaster-33 when used with the Next CAM PG2 PIR-camera detector and cellular or IP communication is able to provide the Monitoring Station with clips captured in alarm situations. The system sends the clips to the Monitoring Station automatically for burglary alarms and	 Setup cellular communication: see Cellular Module Installation section 3.5) Configure camera settings: refer to the Next CAM PG2 Installation Instructions Enable fire and personal alarm verification: see KP-250 PG2 Installer's Guide, section 3.6.6 Configuring Motion
	depending on setup, also for fire and personal emergency alarms.	Cameras for Video Alarm Verification
On demand clips from cameras	The PowerMaster-33 can provide images from the Next CAM PG2 by demand from a remote PowerManage server. Pictures are taken based on a command from the	1. Setup the On demand feature: see KP-250 PG2 Installer's Guide, section 3.6.6 Configuring Motion Cameras for Video Alarm Verification
	monitoring station. To protect customers' privacy, the system can be customized to enable the "On Demand View" only during specific system modes (Disarm , Home , Away) and also to a specific time window following an alarm event.	2. To request and view images: refer to the PowerManage User's Guide, Chapter 5 Viewing and Handling Events
Easy Enrollment	PowerG devices are enrolled from the control panel. Pre-enrollment can also be performed by entering the PowerG device ID number and then activating the device in the vicinity of the panel.	To enroll or pre-enroll devices: see KP-250 PG2 Installer's Guide, section 3.4.2 Adding New Wireless Devices or Wired Sensors
Device Configuration	Device parameters and related system behavior can be configured from the KP-250 PG2 keypad or from a remote location.	To configure devices from the KP-250 PG2: see KP-250 PG2 Installer's Guide, Chapter 3 Programming and also the
	Each PowerG device has its own settings. To configure these settings through the KP-250 PG2 keypad, enter the DEVICE SETTINGS menu.	individual device's Installation Instructions. To configure devices from a remote location: refer to the PowerManage User's Guide Chapter 3 Working with Panels and to the Remote Programmer PC software User's Guide, Chapters 6 and 7.
Diagnostics of the control panel and peripherals	You can test the function of all wireless sensors deployed throughout the protected area to collect information about the received signal strength from each transmitter, and to review accumulated data after the test.	To perform diagnostics and to obtain signal strength indication: see KP-250 PG2 Installer's Guide, section 3.9 Diagnostics
Conducting periodic tests	The system should be tested at least once a week, and after an alarm. The periodic test can be conducted locally or from a remote location (with the assistance of a non-technical person at the location).	To conduct a walk test locally : see KP-250 PG2 Installer's Guide, Chapter 4 Periodic Test by Installer Code or KP-250 PG2 User's Guide, Chapter 8 Periodic Test by User Code
		To conduct a walk test from remote location: refer to the Remote Programmer PC software User's Guide, Chapter 6 Data Details Tables.

Partitions	The partitioning feature, when enabled, divides your alarm system into distinct areas each of which operates as an individual alarm system. Partitioning can be used in installations where shared security systems are more practical, such as a home office or warehouse building.	 Enable partitioning: see KP-250 PG2 Installer's Guide, section 3.13 Partitioning Setup partition association for each device: see KP-250 PG2 Installer's Guide, section 3.4.2 Adding New Wireless Devices or Wired Sensors To understand more about partitioning: see KP-250 PG2 Installer's Guide, APPENDIX B. Working with Partitions.
Device configuration templates	The default parameters with which a new device is enrolled into the system can be set before you enroll devices. This default template saves time on device configuration.	 Define enrollment defaults for devices: see KP-250 PG2 Installer's Guide, section 3.4.7 Defining Configuration Defaults for "Device Settings" Enroll or pre-enroll devices: see KP-250
		PG2 Installer's Guide, section 3.4.2 Adding New Wireless Devices or Wired Sensors
SirenNet – distributed siren using Smoke detectors	All PowerG smoke detectors are able to function as sirens, alerting on any of 4 types of alarm in the system: burglary, gas, fire or flood.	Enable and configure SirenNet for each smoke detector: refer to the SMD-426 PG2 / SMD-427 PG2 Installation Instructions
Wired Siren outputs	The control panel can operate a wired siren and strobe devices	Install and connect wired siren: see section 3.8 Optional Expander Module
Wired zones and programmable outputs (PGM)	The control panel can support wired detectors and control automation devices with programmable wired outputs.	 Connect a wired zone or PGM device: see section 3.4 Adding a Wired Zone and Siren. Program the wired zone: see KP-250 PG2 Installer's Guide, section 3.4.2 Adding New Wireless Devices or Wired Sensors Program PGM outputs behavior: see KP-250 PG2 Installer's Guide, section 3.7 PGM Output.
Reporting to Private Users and/or Monitoring Station by telephone, SMS and IP communication	The PowerMaster-33 system can be programmed to send notifications of alarm and other events to 4 private telephone subscribers by voice ¹ and also to 4 SMS cellular phone numbers and to report these events to the Monitoring Station by SMS, PSTN or IP communication.	To configure notifications to Private phones: see KP-250 PG2 User's Guide, Chapter 6, section B.12 Programming Private Phone and SMS Reporting To configure reporting to the Monitoring Station: see KP-250 PG2 Installer's Guide, section 3.6.4 Configuring Events Reporting to Monitoring Stations
Quick installation with link quality indication	With PowerG devices, there is no need to consult the KP-250 PG2 keypad when mounting a wireless device, because PowerG devices include a built-in link quality indicator. Choosing the mounting location is a quick and easy process.	To choose the ideal location to mount a wireless device, see Chapter 2 Choosing the Installation Location.

¹ Supported in specific PowerMaster-33 G2 variants (for further details, please contact your Visonic representative).

Device Locator	Helps you to easily identify the actual device displayed on the KP-250 PG2 LCD display.	To read more on the Device Locator: see KP-250 PG2 User's Guide, Chapter 3, Arming and Disarming the System To use the device locator when bypassing a zone or when clearing a bypassed zone: see KP-250 PG2 User's Guide, Chapter 6, section B.1 Setting the Zone Bypass Scheme To use the device locator when conducting
		the periodic test: see KP-250 PG2 Installer's Guide, Chapter 4 Periodic Test by Installer Code or KP-250 PG2 User's Guide, Chapter 8 Periodic Test by User Code.
Guard key-safe	The PowerMaster-33 is able to control a safe that holds site keys that are accessible only to the site's guard or Monitoring Station's guard in the event of an alarm.	 Connect the safe to the panel: see section 3.8 Optional Expander Module Mounting, Figure 3.8b Configure the safe's zone type to "Guard Zone": see KP-250 PG2 Installer's Guide, section 3.4.2 Adding New Wireless Devices or Wired Sensors Setup guard code: see KP-250 PG2 Installer's Guide, section 3.3 Setting Installer Codes
Arming key	External system can control arming and disarming of the PowerMaster-33 system	Connect the external system output to the panel: see section 3.8 Optional Expander Module Mounting, Figure 3.8b

System Architecture:



2. CHOOSING THE INSTALLATION LOCATION

To ensure the best mounting location for the PowerMaster-33 control panel, the following points should be observed when selecting a location:

- Place approximately in the center of the installation site between all the transmitters, preferably in a hidden . location.
- Place in close proximity to an AC source. .
- Place in close proximity to a telephone line connection when a PSTN is used.
- Place in close proximity to a home router wired Ethernet connection when an Ethernet network is used. •
- Ensure that there is good cellular coverage, when a Cellular Module is used.
- Place far from sources of wireless interference, such as:
- Computers or other electronic devices, power conductors, cordless phones, light dimmers, etc. 0
 - Large metal objects such as metal doors or refrigerators. 0

Note: A distance of at least 1 meter (3 ft.) is recommended.

When mounting wireless devices, take note of the following:

- Make sure that the signal reception level for each device is either Strong or Good, but not Poor. If the reception of the cellular module is poor, use an external cellular antenna.
- Wireless magnetic contacts should be installed in a vertical position and as high up the door or window as possible.
- Wireless PIR detectors should be installed upright at the height specified in the associated Installation Instructions.
- Repeaters should be located high on the wall in mid-distance between the transmitters and the control panel.

WARNING! To comply with FCC and IC RF exposure compliance requirements, the control panel should be located at a distance of at least 20 cm from all persons during normal operation. The antennas used for this product must not be co-located or operated in conjunction with any other antenna or transmitter.

Customer Premises Equipment and Wiring



- A. Network Service Provider's Facilities
- B. Telephone Line
- C. Network Demarcation Point
- D. RJ-31X Jack
- E. Telephone

- G. Answering System
- H. Unused RJ-11 Jack
- Fax Machine L.
- J. Computer

Note: The REN is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.

Connection to telephone company provided coin service is prohibited. Connection to party lines service is subject to state tariffs.

The installer should verify line seizure. Be aware of other phone line services such as DSL. If DSL service is present on the phone line, you must install a filter. It is suggested to use the DSL alarm filter model Z-A431PJ31X manufactured by Excelsus Technologies, or equivalent. This filter simply plugs into the RJ-31X jack and allows alarm reporting without breaking the internet connection.

3. POWERMASTER-33 G2 INSTALLATION

Required tool: Philips screwdriver #2.

PowerMaster-33 G2 mounting process is shown in Figures 3.1 - 3.10.

3.1.1 PowerMaster-33 G2 Wiring Diagram with ioXpander-8 Module



A. Expander Module Flat Cable	B. Wired Zone / Special Siren Terminal Block	C. Battery Connector	D. ENROLL button
E. Front Panel	F. Back Panel	G. ioXpander-8 module wiring terminal blocks	H. Power Supply
I. ioXpander-8 Expander Module	J. Power connector	K. Phone Wiring Connectors	L. Cellular Module

* or External Power Supply Unit

** or External Power Connector

*** or Terminal Block in North American Panels

Figure 3.1.1 – PowerMaster-33 G2 Wiring Diagram with ioXpander-8 Module

3.1.2 PowerMaster-33 G2 Wiring Diagram with ioXpander-2x1 Expander Module



A. Expander Module Flat Cable	B. Wired Zone / Special Siren Terminal Block	C. Battery Connector	D. ENROLL button
E. Front Panel	F. PGM-5 Module	G. ioXpander-2x1 module wiring terminal blocks	H. Back Panel
I. Power Supply	J. ioXpander-2x1 Expander Module	K. Power Connector	L. Phone Wiring Connectors
M. Callular Madula			

M.Cellular Module

or External Power Supply Unit
 or External Power Connector

*** or Terminal Block in North American Panels

Figure 3.1.2 – PowerMaster-33 G2 Wiring Diagram with ioXpander-2x1 and PGM-5 modules

3.2 Opening the PowerMaster-33 G2 Control Panel and Bracket Mounting



Figure 3.2 – Back Panel Mounting

3.3 Connecting to the Telephone Line



Figure 3.3a – Phone Wiring



Figure 3.3b – Phone Wiring in North America

Phone wiring in the UK: Line terminals must be connected to pins 2 and 5 of the wall jack. **For all installations:** If DSL service is present on the phone line, you must route the phone line through a DSL filter See <u>2. CHOOSING THE INSTALLATION LOCATION</u>, note about <u>DSL filters</u> for details.

3.4 Connecting Wired Zone and Siren

If an expander module is not installed, one wired zone and one low voltage siren can be connected directly to the front panel PCB. Review Figure 3.1.1.or 3.1.2 and identify symbol "B".



WIRED ZONE²&SIREN WIRING

Figure 3.4 – Wired Zone and Siren Wiring

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 $^{^2}$ Wired zones can be enrolled in any zone in the PowerMaster-33 G2 control panel from 01 to 64

3.5 Cellular Module and SIM Installation

Review Figure 3.1.1.or 3.1.2 depending on the configuration.



Plug in the Cellular module and fasten it as shown in the above drawing making sure that the two leading slots on both sides of the Cellular module slide along the two leading ribs on the front unit.

- A. Cellular module
- B. Leading ribs
- C. Leading slot (1 of 2)
- D. Front panel

Caution! Do not install or remove the Cellular module when the system is powered by AC power or backup battery.

Insert the SIM card into the Cellular module as shown in the above drawing.

- **1.** Slide top cover.
- 2. Open cover
- 3. Align SIM card in cover (note cover orientation)
- 4. Slide SIM card into cover
- 5. Rotate cover to close
- 6. Lock cover to close

IMPORTANT! Do not insert or remove SIM card when the control panel is powered by AC power or battery.

Figure 3.5 – Optional Cellular Module Mounting and SIM Card Insertion

3.6 PGM-5 Installation

The PGM-5 module is an output interface module designed to provide alarm, events and status signals to external devices such as long range wireless monitoring transmitters, CCTV systems, automation systems, and LED announcement panels.

Review Figure 3.1.2, symbol F identifies the location for the PGM-5 module. For more information about installing the PGM-5 module, see *D*-302182 PGM-5 Installation Instructions.

PGM-5 module can be used in the panel only when the ioXpander-8 Module or PowerLink3 Module is not in use.

3.7 PowerLink3 Installation

The PowerLink3 is used to view and control the PowerMaster-33 system over the Internet. To install the PowerLink3, complete the following steps:



Figure 3.6 – PowerLink3 Mounting

3.8.1 ioXpander-8 Module Installation

The ioXpander-8 is an optional module. Review Figure 3.1.1 and identify symbol I.

To mount the expander module as shown in Figure 3.8a, complete the following steps:

- Press downward on the expander module between the two clips to insert the module into the back panel. See Figure 3.7a ioXpander-8 Module (A) to identify the clips.
- 2. Connect the ioXpander-8 Module by the flat cable to the front panel Expander slot "EXPANDER".



Figure 3.7a – ioXpander-8 Module



A. Back Panel

- B. ioXpander-8 Module Flat Cable
- **C.** Connecting Devices

 $\mathsf{Pin}\ \texttt{\#1}$ to $\texttt{\#8}\ \texttt{can}\ \texttt{be}\ \texttt{configured}\ \texttt{either}\ \texttt{as}\ \texttt{zone}\ \texttt{inputs}\ \texttt{or}\ \texttt{as}\ \mathsf{PGM}\ \texttt{outputs}.$

For wired zones, the control panel classifies the events according to the resistance it measures as shown in the table below.

E.O.L or Arming Key Resistance

Range	Zone	Arming Key
~0 kΩ - 1.76 kΩ	Tamper/	Tamper
	Short circuit	
~1.77 kΩ - 2.64 kΩ	Normal	Normal
~2.65 kΩ - 3.52 kΩ	Tamper	Tamper
~3.53 kΩ - 5.26 kΩ	Alarm	Alarm
~5.26 kΩ - ∞	Tamper	Tamper

Figure 3.7b – ioXpander-8 Module Wiring

Notes for ioXpander-8 Module wiring:

Wired zone^{*} terminals can be connected to a normally closed contact of a detector, switch (for example a Tamper switch of any device), or a pushbutton, via a 2.2 K Ω resistor. **The 12V terminal can be used to supply 12V** to low power detectors with up to 10mA standby current drain as DA-5; PL-1; Next_PIR; Vi-Motion; Vi-Pet.

The Speech Box is a wired remote speaker and microphone device for indoor use. It provides two-way voice communication between the user and the central station using the control panel.

Caution! Do not install or remove the ioXpander-8 module when the control panel is powered by AC power or battery.

3.8.2 ioXpander-2x1 Module Installation



- A. Back Panel
- B. LE Expander module and connecting devices
- C. Internal siren or strobe 6-12 VDC, 150 mA Max.
- D. External siren MG441PDS or similar siren 12 VDC (nominal) 350 mA Max.
- E. Connect wired detectors as illustrated. *Note:*

The wired detector should be installed at least 2 meters away from the control panel.

Regarding the two wired zones, the control panel classifies the events according to the resistance it measures as shown in the table below.

E.O.L or Arming Key Resistance

Range	Zone	Arming Key
$0 \text{ k}\Omega \leftrightarrow \sim 1.76 \text{ k}\Omega$	Tamper	Tamper
$\sim 1.76 \text{ k}\Omega \leftrightarrow \sim 2.64 \text{ k}\Omega$	Normal	Arm
$\sim 2.64 \text{ k}\Omega \leftrightarrow \sim 3.52 \text{ k}\Omega$	Tamper	Tamper
$\sim 3.52 \text{ k}\Omega \leftrightarrow \sim 5.26 \text{ k}\Omega$	Alarm	Disarm
~5.26 k $\Omega \leftrightarrow \infty$	Tamper	Tamper

- F. Detector without tamper switch or arming key
- G. Detector with tamper switch or arming key's tamper
- H. PGM device
- I. Wired connection zones
- J. Ground (GND)

Figure 3.8 – Zone^{*} and Siren Wiring

Notes for ioXpander-2x1 Module wiring:

- * Wired zone* terminals can be connected to a normally closed contact of a detector, switch (for example a Tamper switch of any device), or a pushbutton, via a 2.2 KΩ resistor. The 12v terminal can be used to supply 12v (up to 36mA) to a detector (if necessary).
- ** The EXT terminal can be used to trigger an external siren. The IN terminal can be programmed for an "internal siren" or "strobe". The 12V and "GND" terminals can be connected to a siren (for constant DC power supply).
- *** The 12V supply to the PGM device is fused. Current is limited to 100 mA.

IMPORTANT! The terminals for internal and external sirens are DC outputs intended for 12v sirens. Connecting a loudspeaker to any of these outputs will cause a short circuit and will damage the unit.

Caution! Do not install or remove the expander module when the control panel is powered by AC power or battery.

3.9 Connecting Power to the Control Panel

Note: This equipment should be installed in accordance with Chapter 2 of the National Fire Alarm Code, ANSI/NFPA 72. Connect the power cable and close the control panel as shown in Figures 3.9a –3.10.



Figure 3.9a – Power Cable Clamp Extraction and Power Connection for Internal Power Supply

EXTERNAL POWER CONNECTION



Connect the power adaptor to the front panel power connector.

Figure 3.9b – External Power Connection

3.9.1 Battery Insertion

Open battery compartment cover. Insert one 6-battery pack or 8-battery pack and connect its connector as shown in Figure 3.8c.

- A. Front panel
- B. Battery cable
- C. Battery cable connector
- D. Slot for battery cable



Figure 3.9c - Battery Insertion

3.9.2 Connect AC Power to the Unit

Connect power to the PowerMaster-33 G2 to mains power outlet (see Figures 3.9a and 3.9b). Disregard any "trouble" indications pertaining to lack of battery or lack of telephone line connection.

For Europe Safety Compliance:

- a. The model shall be installed according to the local electrical code.
- b. The circuit breaker shall be readily accessible.
- c. The rating of the external circuit breaker shall be 16A or less.

3.10 Closing the PowerMaster-33 G2 Control Panel

Control panel final closure is shown below.

To Close the Control Panel:

- 1. Connect the flat cables, between the front and back panel, with the respective connectors. You can have a maximum of 3 connections, depending on the configuration options.
- 2. Make sure that the "Power" indicator on the control panel lights green.
- 3. Close the panel and fasten the 2 screws.



4. VISUAL INDICATIONS, FIRST KEYPAD ENROLLMENT AND USING PROX TAG

4.1 PowerMaster-33 LED Indications

The following table provides a detailed description of the LED indications on the PowerMaster-33 panel.

	Color	Definition	LED Operation
Э	Green	Local Power indication	STEADY: Indicates that system has mains power BLINKING: Low battery state NO LIGHT: AC failure
>	Green	Ready / Not Ready Indication	STEADY: All partitions are ready NO LIGHT: Not Ready / at least one partition is Not Ready
0	Red	System Arming State Indication	STEADY: AWAY / At least one partition is AWAY BLINKING: HOME / At least one partition is HOME and no partitions are in AWAY NO LIGHT: The system is presently in the disarmed state
S	Orange	System Not Online Indication	STEADY: System is unavailable (Sync/Updating/In-menu) NO LIGHT: System is available
	Orange	System Trouble indication	STEADY: System has trouble NO LIGHT: No trouble – all is well

4.2 Enrollment of the First KP-250 PG2 Keypad

The PowerMaster-33 G2 is designed to operate wirelessly with the KP-250 PG2 keypad installed anywhere within the protected premises. The first keypad is always enrolled as Keypad no. 1.

Note: The enrollment procedure described here is for the first KP-250 PG2 keypad only. The enrolment of additional keypads is performed via the first enrolled KP-250 PG2 keypad (for instructions, refer to the KP-250 PG2 Installer's Guide, section 3.4.2).

Step	Action	
1	Press the ENROLL button for 2 seconds. The Enroll button is physically located inside the front panel of the PowerMaster-33 G2 control panel, see Figure 3.1.1 or 3.1.2 symbol D. If no keypad exists in the first location, the ENROLL LED on the PowerMaster-33 G2 blinks slowly for 1 minute (go to step 3).	
	If a keypad already exists in the first location, the ENROLL LED on the PowerMaster-33 G2 control panel lights steady for 10 seconds (go to step 2). Note: Pressing the ENROLL button takes the system out of any menu mode (Installer Mode, User Settings and Periodic Test).	
2	Press the ENROLL button again within the timeout period (10 seconds). Any keypad that was enrolled in keypad no. 01 is deleted from the system.	
	The ENROLL LED on the PowerMaster-33 G2 blinks slowly for 1 minute.	
3	During this 1 minute period, hold the * button for 5-7 seconds, until the UED on the keypad lights red, and release ³ . The ENROLL LED on the PowerMaster-33 G2 will indicate the result of the enrollment procedure.	
	PowerMaster-33 G2 ENROLL LED indication Result	
	Blinks fast for 5 sec. Successful enrollment of keypad	
	Lights steadily for 5 sec. Wrong device type	
4	For V19.3 and up: upon completion of the enrolling procedure, the keypad will get the corresponding update to the current PM SW version. This procedure will take several minutes, and will be automatically skipped if the KP SW version is compatible. Do not turn off or reset the PM or KP during this procedure. In order to perform this procedure, good batteries must be inserted into the KP unit. KP in LOW BAT state will not enter this procedure and will not be able to operate the system.	
5	Upon completion of the enrolling procedure and SW versions adjustment procedure (starting at V19.3), the keypad is ready for immediate use even if the system is currently in the Armed state.	

³ If the KP-250 PG2 unit is battery-powered: first press any button on the KP-250 PG2 keypad momentarily to take the KP-250 PG2

keypad out of sleep mode and then hold the * button for 5-7 seconds, until the ⁽⁴⁾ LED on the keypad lights red, and release. D-307076 PowerMaster-33 G2 Installer's Guide

4.3 Using Proximity Tags

Proximity tags enable authorized people to enter restricted areas. Presenting a valid proximity tag to the tag reader (as shown in the drawing) while the system is armed causes the system to disarm. Presenting a valid proximity tag to the tag reader while the system is disarmed causes the system to be armed in AWAY (optional HOME) mode. To enroll / delete proximity tags, refer to the KP-250 PG2 User's Guide.

Notes:

- 1. Use of the Proximity tags is optional.
- 2. Proximity tags are not compatible for use when partition is enabled.



5. MAINTENANCE

5.1 Dismounting the Control Panel

- A. Remove the screw that fastens the front panel to the back panel, see Figure 3.2.
- **B.** Remove the 4 screws that fasten the back panel to the mounting surface, see Figure 3.2 and remove the control panel.

5.2 Replacing the Backup Battery

Replacement and first-time insertion of battery pack is similar, see Figure 3.9c.

With a fresh battery pack, correct insertion and tightened battery compartment lid, the TROUBLE indicator on the kp-250 PG2 keypad should extinguish. However, the **MEMORY** message will now blink in the display (caused by the **tamper** alarm you triggered when opening the battery compartment lid). Clear it by arming the system and immediately disarming.

5.3 Fuse Replacement

The PowerMaster-33 G2 has several internal fuses that reset automatically. Therefore, there is no need to replace the fuses.

When over current condition occurs, the fuse cuts off the circuit current. Upon fault current being removed for several seconds, the fuse is automatically reset and allows current flow through the circuit again.

5.4 Replacing/Relocating Detectors

Whenever maintenance work involves replacement or re-location of detectors, always perform a full diagnostic test according to the KP-250 PG2 User's Guide, section 12.9.

Caution: A poor signal is not acceptable.

5.5 Annual System Check

Note: The PowerMaster system must be checked by a qualified technician at least once every three (3) years (preferably every year).

The annual system check is designed to ensure proper operation of the alarm system by performing the following checks:

- Periodic test
- Arm/disarm function
- No trouble messages are displayed on control panel
- The clock displays the correct time
- Reporting: generating an event to be transmitted to the Monitoring Station and to the user.

APPENDIX A. Specifications

A1. Functional

Zones Number	Up to 64 wireless zones. The ioXpander-8 Module includes 8 hard-wired inputs and the ioXpander-2x1 Module includes 2 hard-wired inputs.
Hard-wired Zone	2.2 k Ω E.O.L. resistance (max. resistance of wires 220 Ω).
Maximum Loon Current	1 5 mA
Maximum Loop Voltage	3.3 V
Shorted Loop Voltage	$0 - 1.38 \vee (0 - 1.76 \Omega)$
Normal Loop Voltage	1.38 – 1.69 V (1.77 k Ω – 2.64 k Ω)
Open Loop Voltage	2.18 – 3.3 V (5.26 k Ω - ∞ Ω)
	 1 master installer (9999 by default)*
Installer and User Codes	 1 installer (8888 by default)*
	 I master user, no. 1 (1111 by default) Users no. 2 - 48
	* Codes must not be identical
Control Facilities	- Integral keynad wireless keyfobs and keynads
	- SMS commands via optional cellular module.
	- Remote control by telephone.
Arming Modes	AWAY, HOME, AWAY-INSTANT, HOME-INSTANT, LATCHKEY, FORCED, BYPASS.
Alarm Types	Silent, personal panic/emergency, burglary, gas, fire and flood.
Siren Signals	Continuous (intrusion / 24 hours / panic); triple pulse – short pause - triple pulse (fire);
	<u>four pulses – long pause – four pulses</u> (gas);
	long pulse – long pause – long pulse (flood).
Siren (bell) Timeout	Programmable (4 min. by default)
Internal Sounder Output	At least 85 dBA at 10 ft (3 m)
Supervision	Programmable time trame for inactivity alert
Special Functions	- Chime zones
	- Local and Remote Programming over Telephone, cellular connections.
	- Calling for help by using an emergency transmitter.
	 Tracking inactivity of elderly, physically handicapped and infirm people.
	- Message center (recording and playback)
Data Retrieval	Alarm memory, trouble, event log
Real TIME CIOCK (RTC)	Ine control panel keeps and displays (by KF-200) time and date. This realure is also used for the log file by providing the date and time of each event
Battery Test	Once every 10 seconds
,	,

Note:

The PowerMaster-33 system allows you to authorize up to 48 people to arm and disarm the system by providing each with a unique 4 digit personal security code (code 0000 is not allowed, maximum number of variations of PIN codes for each user - 10000 for logical keys), and assigning them with different security levels and functionalities. For more information, refer to Chapter 6, section B.4 of the KP-250 PG2 manual.

For details on programmable functions provided, information about number of invalid code entries before user interface is disabled, refer to Chapter 6, section A1, A2 of the KP-250 PG2 manual.

Up to 1000 events are stored in the event log that can be reviewed via the Remote Programmer PC software application or by the remote PowerManage server. For further information about event log capacity, refer to Chapter 9, Maintenance of the KP-250 PG2.

A2. Wireless

RF Network	PowerG – 2-way synchronized Frequency Hopping (TDMA / FHSS)		
Frequency bands (MHz)	433 – 434	868 - 869	912 - 919
Hopping frequencies	8	4	50
Region	Worldwide	Europe	North America and selected countries
Encryption	AES-128		
Maximum Tx Power	10 dBm @ 433 MHz, 14 dBm @ 868 MHz		
Cellular Frequency (MHz)	2G Band	3G Band	
	850, 900, 1800, 1900	850. 900, 1900, 210	0
	Note: The above frequencies are dependent on country and operator.		

A3. Electrical

External AC/AC adaptor	NA	
External AC/DC adaptor	External (wall-mounted) switching power supply 100VAC to 240VAC, 50/60 Hz, 1A / 12.5 VDC, 1.5A	
Internal AC/DC	Internal switching power supply: Input: 100-240VAC/1A, 50/60 Hz Output: 12.5 VDC, 1.5A.	
Current Drain	Approx. 260 mA standby at the beginning (power ON) and then goes down to 60 mA, 1400 mA maximum current drain during alarm. Average current consumption of each Supervised Premises Transceiver (SPT) – at IP: 120mA, at cellular: 150mA Peak current consumption of each SPT – at IP: 440mA, at cellular: 280mA	
Low Battery Threshold	7.2 V (6-cell battery pack) 9.6 V (8-cell battery pack)	
Backup Battery Pack	 Backup Battery Options: The external devices must be connected between 12V and ground. The current for each specified backup period can be drawn from the batteries with the internal cellular module and the proximity reader connected to the PowerMaster-33 G2. T.2V 1300 mAh, rechargeable NiMH battery pack, p/n 130AAH6BMX, manufactured by GP or p/n LTT-AA1300LSDX6B, manufactured by LTT. 9.6V 1800 mAh, rechargeable NiMH battery pack, p/n GP180AAH8BMX, manufactured by GP or p/n LTT-AA1800LSDX8B, manufactured by LTT. 9.6V 2200 mAh, rechargeable NiMH battery pack, p/n 220AAH8BMX, manufactured by GP or p/n LTT-AA2200LSDX8B, manufactured by LTT. 6.8V 2200 mAh, rechargeable NiMH battery pack p/n 220AAH8BMX, manufactured by GP or p/n LTT-AA2200LSDX8B, manufactured by LTT. 7.2 Caution! <i>Risk of explosion, if battery is replaced by an incorrect type. Dispose of used batteries according to the manufacturer's instructions.</i> Notes: For compliance with EN standards the battery backup period must be at least 12 hours For compliance with UL standards the battery backup period must be at least 24 hours 	
Time to Charge	80 % (< 30 hours) for all battery types	
Optional Backup Battery Pack Time to Charge (optional backup battery pack)	See "Backup Battery Options" table above NA	
Wired Detectors Total (Sum)	36* mA max.	
Site External Siren Current	450* mA max @ 12.5 VDC when powered by AC/DC (10.5 VDC when in standby mode)	
Site Internal Siren Current	450* mA max @ 12.5 VDC when powered by AC/DC (10.5 VDC when in standby mode)	
()	* Total PowerMaster-33 G2 output current (of INT & EXT sirens, PGM output and detectors)	
PGM	Current sink to control panel GND 100 mA max. Max. external DC voltage +15 VDC	
High Current / Short Circuit Protection	All outputs are protected (automatic reset fuse)	

A4. Communication

Communication Built-in Modem Type of SPT (IP and cellular modules) to CIE (control panel) interconnections	PSTN; cellular; IP 300 baud, Bell 103 protocol Serial UART interfaces
STP Substitution Security	The control Panel has a unique ID used for enrolment to the server that burns during production process. The server has a special procedure that the operator uses to deliver an encrypted message with the ID to the panel.
Information Security	Keep alive messages are protected with TLS protocol that prevents the transmitted data from being read, and replaces the server name/IP (Power Manage). Events reporting and tunneling with the ATS protect AES 128 encryption.
Data Transfer to Local Computer	Via RS232 serial port
Report Destinations	2 Monitoring Stations, 4 private telephones
Reporting Format Options	SIA, Contact ID, Scancom, SIA IP, Visonic PowerNet.
Pulse Rate	10, 20, 33 and 40 pps – programmable
Message to Private Phones	Tone or voice, SMS
Ring Detection	The unit does not support ring detection without DC voltage present on the telephone lines

Notes:

1. After all trouble messages have been reviewed and if a SIM card is installed in the panel, the KP-250 keypad displays the following indications:

Cellular signal strength: indicated as CELL RSSI STRONG / CELL RSSI GOOD / CELL RSSI POOR. Network Type: indicates the type of network the cellular modem is registered to. Represented by two characters, for example 2G or 3G.

Cellular provider: indicates the name of the cellular provider, which the cellular modem is registered to. Represented by 13 characters, for example Orange.

2. If a PIR camera is enrolled in the system, the control panel will read GPRS initialize to indicate that the modem is undergoing initialization. This message appears at the end of all trouble messages and immediately following the cellular signal strength indication (if a SIM card is installed). The trouble indications (illuminated TROUBLE indicator and flashing TRBL message) are cleared once you eliminate the cause of trouble. The table below describes the system faults and respective corrective actions. If you do not know how to correct a trouble situation, report it to your installer and seek his advice.

Fault	Meaning	
CELL NET FAIL	The cellular communicator is not able to connect to the cellular network	
COMM. FAILURE	A message could not be sent to the monitoring station or to a private telephone (or a message was sent but was not acknowledged)	

- 3. For user programming features and information about entering an invalid user code refer to Chapter 6 sections A1 and A2.
- 4. PowerMaster-33 system allows you to authorize up to 48 people to arm and disarm the system by providing each with a unique 4 digit personal security code (code 0000 is not allowed, minimum number of variations of PIN codes for each user 10000 for logical keys), and assigning them with different security levels and functionalities. For more information refer to Chapter 6, section B.4 of the KP-250 PG2 guide.
- 5. Up to 1000 events are stored in the event log that can be reviewed via the Remote Programmer PC software application or by remote PowerManage server.

A5. Physical Properties

Operating Temp. Range Storage Temp. Range Humidity Size (WxHxD) Weight Color 14°F to 120°F (-10°C to 49°C) -4°F to 140°F (-20°C to 60°C) 85% relative humidity, @ 30°C (86°F) 266 x 201 x 46 mm (10-7/16 x 7-7/8 x 1-13/16 in.) 1.44Kg (3.2 pounds) (with battery) White

A6. Peripherals and Accessory Devices

Modules	Cellular (2G or 2G/3G), IP
Additional wireless devices	64 detectors, 32 keyfobs, 32 keypads (10 KP-250 PG2), 8 sirens, 4 repeaters , 32 proximity
	tags
Wireless Devices and	Magnetic Contact: MC-302 PG2, MC-302E PG2, MC-302EL PG2, MC-302V PG2
peripherals	TOWER-30AM PG2, TOWER-30AM K9 PG2, TOWER-32AM PG2, TOWER-30AM PG2, TOWER-30AM K9 PG2, CLIP
	PG2
	PIR Camera Detectors: Next CAM PG2; Next CAM-K9 PG2
	Smoke Detector: SMD-426 PG2, SMD-427 PG2
	Cellular Module: Cellular Module
	Keyfob: KF-234 PG2, KF-235 PG2
	Keypad: KP-140 PG2/KP-141 PG2, KP-160 PG2, KP-250 PG2
	Indoor Siren: SR-720 PG2
	Outdoor Sirens: SR-730 PG2, SR-740 PG2, SR-740 HEX PG2
	Repeater: RP-600 PG2
	Gas: GSD-441 PG2, GSD-442 PG2
	Glass-break: GB-501 PG2
	Temperature: TMD-560 PG2
	Flood: ELD 550 DC3

Flood: FLD-550 PG2 Shock: SD-304 PG2

APPENDIX B. Compliance with Standards

CE

European : EN 300 220, EN 300 330, EN 301489, EN 50130- 4, EN 60950-1 , EN 50130-5, EN 50131-3, EN 50131-6, EN 50136-1, EN 50136-2

For Control Panel PMASTER-33 EXP : EN 50131-10

Hereby, Visonic Ltd. declares that the radio equipment type PM-33 is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address: http://www.visonic.com/download-center. According to the European standard EN50131-1 and EN 50131-3, the PowerMaster security grading is 2 - "low to medium risk" and environmental classification is II - "indoor general" and the power supply type is A. EN 50131-6, and ATS Category SP4, by GPRS (module only, DP4 with IP module primary path, and GPRS secondary according to EN50136-1, EN50136-2 (pass through Operation Mode) and according to EN 50131-10 - Supervised Premises Transceiver (SPT).

Certified by Applica T&C in accordance with EN 50131 and EN 50136.

UK: The Powermaster 33 G2 is suitable for use in systems installed to conform to PD6662:2010 at Grade 2 and environmental CLASS II. DD243 and BS8243

Security Grade: Grade 2 Environmental Class: Class II

WARNING! Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

VISONIC LIMITED WARRANTY Visonic Ltd. ("Seller") warrants the Products to the original purchaser only (the "Buyer") against defective workmanship and materials under normal use of the Products for a period of twelve (12) months from the date of shipment by the Seller.

This Warranty is absolutely conditional upon the Products having been properly installed. maintained and operated under conditions of normal use in accordance with the Seller's recommended installation and operation instructions. Products which have become defective for any other reason, according to the Seller's discretion, such as improper installation, failure to follow recommended installation and operational instructions, neglect, willful damage, misuse or vandalism, accidental damage, alteration or tampering, or repair by anyone other than the Seller, are not covered by this Warranty.

There is absolutely no warranty on software, and all software products are sold as a user license under the terms of the software license agreement included with such Product.

The Seller does not represent that Products may not be compromised and/or circumvented or that the Products will prevent any death and/or personal injury and/or damage to property resulting from burglary, robbery, fire or otherwise, or that the Products will in all cases provide adequate warning or protection. The Products, properly installed and maintained, only reduce the risk of such events without warning and it is not a guarantee or insurance that such events will not occur

Conditions to Void Warranty: This warranty applies only to defects in parts and workmanship relating to normal use of the Products. It does not cover:

- damage incurred in shipping or handling; damage caused by disaster such as fire, flood, wind, earthquake or lightning;
- damage due to causes beyond the control of the Seller such as excessive voltage, mechanical shock or water damage;
- damage caused by unauthorized attachment, alterations, modifications or foreign objects being used with or in conjunction with the Products
- damage caused by peripherals (unless such peripherals were supplied by the Seller;
- defects caused by failure to provide a suitable installation environment for the products;
- damage caused by use of the Products for purposes other than those for which they were designed:
- damage from improper maintenance;
- damage arising out of any other abuse, mishandling or improper application of the Products.

Items Not Covered by Warranty: In addition to the items which void the Warranty, the following items shall not be covered by Warranty: (i) freight cost to the repair centre; (ii) customs fees, taxes, or VAT that may be due; (iii) Products which are not identified with the Seller's product label and lot number or serial number; (iv) Products disassembled or repaired in such a manner as to adversely affect performance or prevent adequate inspection or testing to verify any warranty claim. Access cards or tags returned for replacement under warranty will be credited or replaced at the Seller's option.

THIS WARRANTY IS EXCLUSIVE AND EXPRESSLY IN LIEU OF ALL OTHER THIS WARRANTY IS EACLOSIVE AND EXPRESSLY IN LIEU OF ALL OTHER WARRANTES, OBLIGATIONS OR LIABILITIES, WHETHER WRITTEN, ORAL, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE. IN NO CASE SHALL THE SELLER BE LIABLE TO ANYONE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS WARRANTY OR ANY OTHER WARRANTIES WHATSOEVER, AS AFORESAID.

THE SELLER SHALL IN NO EVENT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL. CONSEQUENTIAL OR PUNITIVE DAMAGES OR FOR LOSS. DAMAGE. INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES OR FOR LDSS, DAMAGE, OR EXPENSE, INCLUDING LOSS OF USE, PROFITS, REVENUE, OR GODWILL, DIRECTLY OR INDIRECTLY ARISING FROM PURCHASER'S USE OR INABILITY TO USE THE PRODUCT, OR FOR LOSS OR DESTRUCTION OF OTHER PROPERTY OR FROM ANY OTHER CAUSE, EVEN IF SELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE SELLER SHALL HAVE NO LIABILITY FOR ANY DEATH, PERSONAL AND/OR BODILY INJURY AND/OR DAMAGE TO PROPERTY OR OTHER LOSS WHETHER DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR OTHERWISE, BASED ON A CLAIM THAT THE PRODUCT FAILED TO FUNCTION. However, if the Seller is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty, THE SELLER'S MAXIMUM LIABILITY (IF ANY) SHALL NOT IN ANY CASE EXCEED THE PURCHASE PRICE OF THE PRODUCT INVOLVED, which shall be fixed as liquidated damages and not as a penalty, and shall be the complete and exclusive remedy against the Seller

When accepting the delivery of the Products, the buyer agrees to the said conditions of sale and warranty and he recognizes having been informed of.

Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so these limitations may not apply under certain circumstances.

The Seller shall be under no liability whatsoever arising out of the corruption and/or malfunctioning of any telecommunication or electronic equipment or any programs.

The Seller's obligations under this Warranty are limited solely to repair and/or replace at the Seller's discretion any Product or part thereof that may prove defective. Any repair and/or contact under the state of the processing of the state of insurance costs are the responsibility of the Buyer and are not included in this Warranty.

This warranty shall not be modified, varied or extended, and the Seller does not authorize any person to act on its behalf in the modification, variation or extension of this warranty. This warranty shall apply to the Products only. All products, accessories or attachments of others used in conjunction with the Products, including batteries, shall be covered solely by their own warranty, if any. The Seller shall not be liable for any damage or loss whatsoever, whether directly, indirectly, incidentally, consequentially or otherwise, caused by the malfunction of the Products due to products, accessories, or attachments of others, including batteries, used in conjunction with the Products. This Warranty is exclusive to the original Buyer and is not assignable.

This Warranty is in addition to and does not affect your legal rights. Any provision in this warranty which is contrary to the Law in the state or country were the Product is supplied shall not apply.

Governing Law: This disclaimer of warranties and limited warranty are governed by the domestic laws of Israel.

Warning

The user must follow the Seller's installation and operational instructions including testing the Product and its whole system at least once a week and to take all necessary precautions for his/her safety and the protection of his/her property.



POWERMASTER-33 G2 Installer's Guide D-307076 Rev 0 (09/17)

D-307076

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The Quick Start Guide is intended for the user of the system. Please remove this detachable sheet and hand it to the user.

Arming and Disarming the System

Ste	ep	Operation	User Actions	Key & Keypad Response
Optional	1	Press the Partition Selection button and then select a PARTITION (if Partition is enabled)	followed by any combination of	The selected key blinks.
	2	Arm AWAY	🐨 💼 + [💬] or enter code	The selected key and the
		Arm HOME	+ [begin to blink and
		Disarm (OFF)	🖙 💼 + [💬] or enter code	prompt you to present your Tag or enter your
		Quick arm AWAY (If Quick Arm is enabled)	E D	user code.
		Quick arm HOME (If Quick Arm is enabled)	æ 🚹	red once to indicate
otional		Forced arming AWAY (system not ready)	☞	arming command to the control panel.
ŏ			to silence the "protest" buzzer	The LED and the buzzer
		Forced arming HOME (system not ready)	+ [then indicate the control panel's response – refer
			to silence the "protest" buzzer	to the KP-250 PG2 User's Guide. Chapter 4
onal	3	INSTANT	(After arming HOME/AWAY) C	"System Status and Indications".
Opti		LATCHKEY	F	

Note: The factory default master user code is 1111. The code is not required if <u>quick arming</u> has been permitted by the installer. Change the factory default code to a secret code without delay (refer to the KP-250 PG2 User's Guide, Chapter 6, section B.4).

Initiating Alarms

Alarms	Actions	Notes
Emergency alarm	ເ ອີ + ິບ (≈ 2 sec.)	When pressing the Fire or Emergency icons, the KP-250 PG2 starts beeping. After pressing the button for approx. 2 seconds, the KP-250 PG2 sends the command.
Fire alarm	(≈ 2 sec.)	
Panic alarm	+IU UI€ (≈ 2 sec.)	

Preparing to Arm

Before arming, make sure that READY is displayed.

HH:MM READY This indicates that all zones are secured and you may arm the system as desired.

If at least one zone is open (disturbed) the display will read:

HH:MM NOT READY This indicates that the system is not ready for arming and in most cases that one or more zones are not secured. However, it can also mean that an unresolved condition exists such as certain trouble conditions, jamming etc., depending on system configuration.

To review the open zones press ^{O low}. The details and location of the first open zone detector (usually an open door or window sensor) will be displayed. To fix the open zone, locate the sensor and secure it (close the door

or window) – see "device locator" below. Each press of vill display another open zone or trouble indication. It is highly recommended to fix the open zone(s), thus restoring the system to the state of "ready to arm". If you do not know how to do this, consult your installer.

Note: To quit at any stage and to revert to the "READY" display, press the Delete or Escape key.

Device Locator: The PowerMaster system has a powerful device locator that helps you to identify open or troubled devices indicated on the LCD display. While the LCD displays an open or faulty device, the LED on the respective device flashes indicating "it's me". The "it's me" indication will appear on the device within max. 16 seconds and will last for as long as the LCD displays the device.

Zone Bypass Scheme

Bypassing permits arming only part of the system and at the same time allowing free movement of people within certain zones when the system is armed. It is also used to temporarily remove from service faulty zones that require repair work or to deactivate a sensor if, for example, you are decorating a room.

You can set the Zone Bypass Scheme i.e. to scroll through the list of registered (enrolled) sensors to your PowerMaster system and to Bypass (deactivate) faulty or disturbed sensors (either READY or NOT-READY) or to Clear (reactivate) BYPASSED zones (sensors).

Once you have set a Bypass Scheme you can use the following 3 options:

- To quickly review the bypassed zones refer to Chapter 6, section A.2 of the KP-250 PG2 User's Guide.
- To quickly clear a bypassed zone i.e. to reactivate the bypassed zone refer to Chapter 6, section A.1 of the KP-250 PG2 User's Guide.
- To repeat (recall) the last used zone bypassing scheme refer to Chapter 6, section A.3 of the KP-250 PG2 User's Guide.

Notes:

- 1. Zones will be bypassed throughout one disarm-arm period only. Disarming the system after arming will suspend the entire bypassing scheme but you can recall and reuse it as described in Chapter 6, section A.3 of the KP-250 PG2 User's Guide.
- 2. Fire zones cannot be bypassed.