MAX-8 , MAX-16

Computerized Multi-Function Alarm Control Panels

Visonic Ltd

Installation Instructions

1. DESCRIPTION AND CAPABILITIES

The MAX-8 and MAX-16 are reliable, cost-effective control panels for residential and commercial applications. Both are highly versatile due to a DIP switch selector which permits the user to program a wide variety of features, and the E.O.L. (End-of-Line) capability which offers improved protection of the zone wiring against tampering and permits operation with N.C. and N.O. sensor contacts. The MAX-8 provides 8 zones and can be expanded to include 16 zones by using an optional plug-in expander card. When this card is plugged into the main control module, 8 instant zones are added, and the MAX-8 is automatically converted to MAX-16.

The zones are divided as follows:

- **MAX-8:** 6 instant zones (zones 3 - 8). Zones 3, 4 and 5 are convertible to follower (conditional delayed) zones.

  MAX-16: 14 instant zones (zones 3 - 16). Zones 3, 4 and 5 are convertible to follower (conditional delayed) zones.
- One delayed zone (zone 2) allows authorized people to leave or enter without causing an alarm. Four preset entry delay times may be selected.
- One 24-hour zone (zone 1) for anti-tamper, fire and panic signaling.

Eight red LED's (MAX-8) or 16 red LED's (MAX-16) on the front panel, one for each zone, provide zone status and alarm memory indications.

Two on-board alarm relays are capable of energizing an external device. RELAY-1 is associated with zone 1 only, and RELAY-2 with zones 2 – 8 (MAX-8) or zones 2 –16 (MAX-16). In addition, open collector alarm output AL-1 is activated concurrently with RELAY-1 and open collector alarm output AL-2 is activated concurrently with RELAY-2. Both models have a built-in dual loudspeaker driver that produces a yelping sound if the alarm originates in zone 2 or in a higher-number zone, and a two-tone sound if the alarm originates in zone 1 – the 24-hour zone.

A two-position ON/OFF or a momentary spring-return keyswitch may arm the control panel. To eliminate false alarms caused by careless users, the automatic zone-shunting function, if selected, bypasses any zone not secured at the instant of arming, and gives off audible warnings. Zones 2 –8 (MAX-8) or zones 2–16 (MAX-16) may be deliberately shunted out by manual programming.

An open-collector *buzzer* output is provided for activating a 12 V piezoelectric sounder during the *exit delay, entry delay* and *auto-shunting* warnings. A pin-header is provided on the printed circuit board for interfacing with a digital communicator, to report alarms, "system armed" status and AC supply failures by telephone or by radio. This connector also furnishes 12 VDC output.

Operating power is supplied from the AC mains through a built-in power supply/charger. A rechargeable, sealed lead-acid battery is connected to the system to provide operating voltage during power failure. The power supply/charger has an auxiliary output of 12 VDC at 500mA maximum for motion detectors and various auxiliary accessories.

2. FEATURES

- 8 zones with memory (MAX-8), expandable to 16 zones (MAX-16) by optional plug-in card.
- Selectable entry delay
- Zone status/memory indicators
- Built-in 2-loudspeaker driver
- Built-in power supply/charger
- Auxiliary 12 VDC power output
- Alarm duration timer
- Front panel and remote "System Armed" indications
- AC power indicator
- Auto-shunting of unsecured zones
- Manual shunting of any zone
- E.O.L. capability: N.C. and N.O. contacts may be used
- Three Instant zones may be converted into follower zones
- Two-position or momentary ON/OFF key-switch may be used
- Two on-board heavy duty alarm relays
- Buzzer output for piezoelectric sounders
- Zone status output for remote plates
- Automatic battery test
- Selectable silent alarm from the 24-hour zone
- Zone test provision
- Communicator interface connector
- Plug-in wiring terminals for easier service
- Siren Test and Arm/Disarm audible signal
- Tamper-protected

3. SPECIFICATIONS

Zones: **MAX-8:** 8 Instant, 1 Delayed, 1 24-hours.
MAX-16: Additional 8 instant zones.
Sensor Contacts Required: N.C. (N.C. or N.O. in E.O.L. mode)
Entry Delays: 10, 20, 35 and 60 seconds (selectable)
Exit Delay: Fixed, 60 seconds
Alarm Timer: Shutoff after approximately 3 minutes
Indicator Assignments:
Zone status: MAX-8: 8 red LEDs; MAX-16: 2 rows of 8 LEDs
Battery status -Yellow LED
Power status - Green LED
ARM/DISARM indicator: Red LED
Supply Voltage: 230 VAC (115 VAC optional)
Power Transformer Output: 14 VAC, 20 VA
Auxiliary DC Output: 12 VDC, 500 mA max.
Loudspeaker Impedance: Not less than 4 ohms
Relay Contact Ratings: 5 A (SPDT)
Fuse Ratings:
230 VAC input: 250 mA

12 VDC auxiliary circuit: 1A
Loudspeaker circuits: 1A each
Standby Battery: Lead-acid type, 12 V, up to 6 Ah
Open Collector Outputs Current Sinking Capability: 100 mA, protected by an 18-ohm series resistor.

Dimensions:
Cabinet (H X W X D - with front panel protrusions): 300 X 240 X 90 mm, (11-13/16 X 8-15/16 X 3-1/2 in.)
Main PC Board: 170 X 71 mm, (6-11/16 X 2-3/4 in.)
Expander Board: 170 X 20 mm, (6-11/16 X 25/32 in.)
Weight: 2.4 kg (5-1/4 lb)

4. INPUTS

4.1 Instant Zones

The MAX-8 includes 6 instant alarm zones (zones 3 through 8) and the MAX-16 includes 14 instant alarm zones (zones 3 to 16). Each instant zone is represented by a red LED, which indicates zone status (secured/unsecured) and also provides alarm memory indication. Any violation of an instant zone when the control panel is in the **armed** state will activate the yelping alarm and the RELAY-2 output for 3 minutes. Zones 3, 4 and 5 can be converted to follower zones (see *FOLLOWER ZONES*).

4.2 Delayed Zone

Zone 2 (delayed) allows users to arm the system and leave the protected area within 60 seconds without causing an alarm. It also allows users to enter its protected area when the system is **armed** and disarm the control panel within a preset time limit.

DIP switches SW1 and SW2 (see Para. 7.8) preset the entry delay. A red LED for zone status and memory indications also represents zone 2.

4.3 24-Hour Zone

Zone 1 is active in the armed and the disarmed states. N. C. PANIC buttons, perimeter detectors, tamper switches and fire detectors can be connected to zone 1 terminals. Any violation of this zone will activate a two-tone priority alarm, which overrides alarms from other zones, and simultaneously triggers RELAY-1 output.

The two-tone priority alarm may be disabled by setting DIP switch **SW5** to OFF (see *DIP SWITCH UNIT*). A red LED also represents zone 1 on the front panel.

4.4 Standby Battery

A rechargeable, 12-volt lead-acid battery must be connected to the BAT terminals on the terminal board. The battery-input circuitry is protected against wrong polarity connections. A built-in charger provides charging current for the battery.

4.5 AC Power Input

Each control panel includes a step-down AC transformer mounted inside the cabinet and a 0.5 A fuse mounted on a small, separate PCB. The mains (220 – 240 VAC) power should be connected to the **220 VAC** terminals on the small terminal board. The transformer's secondary winding (14 VAC) is connected to the **14 VAC** terminals on the main terminal board.

4.6 Keyswitch Input

This input (between the **KEY** and the **[G]** terminals) is provided for arming/disarming of the control panel by means of a keyswitch located on the control panel itself or on a remote plate. The keyswitch may be a normal ON/OFF type or a momentary spring-return type, depending on the setting of DIP switch **SW6** (see *DIPSWITCH UNIT*).

5. OUTPUTS

5.1 Loudspeaker

The control panel includes a built-in, high power loudspeaker driver. A 1A fuse located on the main PCB protects each speaker output. Each **SPEAKERS** output is designed to drive a separate loudspeaker with 8-ohm minimum impedance. It is easy to identify the alarm's origin because alarms from zones 2 through 8 (MAX-8) or 2 through 16 (MAX-16) produce a yelping sound, whereas an alarm from zone 1 produces a two-tone sound.

Note: *If zone 1 triggers an alarm while any of the other zones is already in alarm, the zone 1 two-tone siren overrides the yelping siren (provided that the two-tone siren is enabled by setting DIP switch SW5 to ON).*

5.2 Alarms

Two on-board relays, **RELAY-1** and **RELAY-2**, are provided to enable external devices such as a self-activating siren, a digital communicator or a lighting device. The relays provide N.C. (normally closed) and N.O. (normally open) contacts and are therefore suitable for connection to any external circuit configuration.

- RELAY-1 and the AL-1 output on the COMM OUT connector are tripped by alarms in zone 1.
- RELAY-2 and the AL-2 output on the COMM OUT connector are tripped by alarms in zones 2 to 16.

5.3 Warning Sounder

Modulated signals for driving a sounder are available across the **BUZ** and the **12 VDC [+]** terminals, to provide miscellaneous warnings. The pulsed output signal is sufficient to drive a piezoelectric resonator, located either inside the control panel's cabinet or near the exit/entry door.

A. Exit delay warning: When the exit delay starts, the sounder emits a short beep once every 5 seconds, and then beeps rapidly during the last 7 seconds.

B. Entry delay warning: When the entry delay starts, the sounder emits a short beep once every 3 seconds. A continuous sound is heard during the last 7 seconds.

C. Auto shunting warning (see *AUTO SHUNTING*)**:** When the system is armed and automatic zone shunting takes place, two alternating tones are emitted for 12 seconds. This warns the user that some zones that are not secured have been automatically shunted.

5.4 "System Armed" Output

This is an open-collector 100mA output which may be used to provide remote indication of system arming by lighting an LED installed on a remote plate, near the remote keyswitch. The remote LED, with 1k ohm resistor in series, should be connected between the **ARM** and the **12 VDC [+]** terminals.

5.5 Zone Status Summing Output

This is an open-collector 100mA output, which may be used to provide zone status information by lighting an LED installed on a remote plate. If one zone or several zones are disturbed, the LED connected to the summing output will flash rapidly to indicate zone violation trouble. When all zones are secured, the zone status summing LED will be extinguished. The line to the zone status remote LED, which should have a 1k ohm resistor in series, is connected between the **STA** and the **12 VDC [+]** terminals.

5.6 12 VDC Auxiliary Supply

This output provides 500 mA maximum current via the **12 VDC [-]** & **[+]** terminals, for powering various detectors and auxiliary devices. A 1A fuse on the PCB provides overload protection.

5.7 Communicator Interface

The COMM. OUT connector located on the main PC board is a 6-pin header which serves as an interface between the control panel and a digital communicator (See WIRING - COMM. OUT CONNECTOR for pin assignments).

6. LED INDICATORS

6.1 Zone Status/Memory Indicators

Eight red LED's are mounted on the MAX-8 printed circuit board, and 8 additional red LED's are mounted on the extender board, which converts the MAX-8 to MAX-16. The zone numbers are indicated on the front panel, next to each LED. The LED's function both as zone status and memory indicators, as described in the following tables.

Daytime Operation (system disarmed)

LED Indication	Zone Status
Extinguished	The zone is secured.
Flashes rapidly* (twice per second)	The zone is violated. Once the disturbance is cleared, the LED extinguishes.
Lights steadily	Memory indication - this zone alarmed during the last armed period but is secured now. Rearming the control panel clears the indication.
Flashes slowly (once every two seconds)	Memory indication - this zone alarmed during the last armed period and is still unsecured. As soon as the zone is secured, slow flashing is replaced by steady lighting. Rearming clears the steady light.

****Note:*** *A zone's LED flashes rapidly also in the course of manual bypassing (shunting), to acknowledge successful completion* (see *MANUAL SHUNTING*).

Night Time Operation (system armed): The red LED's indicate the status of their associated zones.

LED Indication	Zone Status
Extinguished	The zone is secured.
Flashes slowly	The zone is violated. When the disturbance is cleared, the LED will light steadily.
Lights steadily	Memory indication - this zone alarmed previously, but the disturbance is no longer there (the zone is secured now).

6.2 System ARMED Indicator

A red LED mounted on the printed circuit board lights when the control panel is turned ON (armed by the keyswitch).

6.3 POWER Indicator

The green LED mounted on the printed circuit board indicates, when illuminated, that AC power is supplied to the system, and will go out if the AC power fails.

6.4 BAT. TEST Indicator

The battery is automatically tested under load during the exit and entry delays. The result of this test is indicated by the yellow LED, which lights steadily during the test if the battery's condition is good, but glows dimly or does not light at all if the battery is weak.

7. SPECIAL FUNCTIONS

7.1 Follower Zones

Zones 3, 4 and 5 can be converted to follower zones by setting DIPswitch **SW4** to ON. A follower zone is a conditional delayed zone which has a 60-second exit delay just like zone 2 (the original delayed zone), **but whose entry delay is applied only when zone 2 is entered into first.** This function is useful in cases where detectors wired to the instant zones are activated along the exit/entry route. The entry delay starts when zone 2 is entered and expires after the preset delay (see *DIPSWITCH UNIT*). Entry through a zone other than zone 2 will cause an immediate alarm. To cancel the follower zone function, set **SW4** to OFF.

7.2 Auto Shunting

Auto shunting is a feature selected by setting DIPswitch **SW7** to ON. When this position is selected, any zone from 2 to 8 (MAX-8) or 2 to 16 (MAX-16), which is disturbed (unsecured) at the time the control panel is armed, will be automatically bypassed. Zones, which are secured at the instant of arming, will be armed. The LED(s) associated with the shunted zone(s) will flash rapidly, indicating which zone or zones have been shunted, and the warning sounder will issue a 12-second warning (see *WARNING SOUNDER*). Other LED's corresponding to enabled zones will remain OFF. A shunted zone that is later secured will be automatically armed.

7.3 Manual Shunting

A toggle switch located on the front panel can be used to shunt out zones 2 to 16 (zone 1 cannot be shunted), regardless of SW7 position and regardless of the zone's status. The switch, which has two spring-return momentary positions, may only be operated during **disarm**. Any attempt to operate it during **arm** will cause an immediate two-tone alarm. To manually bypass a zone, proceed as follows:

- Hold the switch lever down briefly (SELECT position). The LED corresponding to zone 2 will illuminate. Each successive stroke of the lever will select the next zone in ascending order. *Keeping the lever down will cause the zone LED lights to race across the panel and the programming mode will be aborted.*
- When the desired zone's LED illuminates, hold the switch lever up briefly (BYPASS position). *There will be no immediate response!*
- Hold the switch lever briefly down. The selected zone's LED will start to flash rapidly, indicating that the zone is bypassed, and the next zone's LED will illuminate (the next zone will be selected).
- Repeat the process for all other zones you wish to bypass.
- The manual bypass programming mode is aborted automatically if you do nothing for 25 seconds.

Remember that manual shunting is valid for one-armed period only and will clear as soon as the system is disarmed again.

7.4 Remote Shunting Switches

Remote shunting switches for each zone may be easily incorporated into the system, provided that **SW7** is set to ON. A remote shunting switch can be wired in series with the circuit of its associated zone, same as any sensor contacts.

A particular zone can be shunted out only in the **disarmed** state by breaking its circuit loop, by opening the remote switch wired into that loop. When the control panel is later armed, the violated zone is identified by the auto shunting as unsecured and is automatically bypassed. However, any attempt to shunt a secured zone while the control panel is armed will immediately trigger the alarm.

Due to this unique feature, shunting switches can be mounted anywhere along the zone wiring in addition to the manual shunting switch on the control panel.

7.5 End of Line (E.O.L.) Capability

The control panel is equipped with E.O.L. selectors. Their purpose is to prevent tampering and to convert all zones from normally closed circuits to dual-purpose circuits (suitable for operation with devices utilizing normally closed and normally open contacts).

The E.O.L. mode is selected by installing a jumper across the two pins of J1 (converts zones 1 to 8) and/or by installing a jumper across the two pins of J2 (converts zones 9 to 16 MAX-16 only). When the E.O.L. mode is selected, 10 k ohm resistors must be wired in series with the loop at the end of the line of each zone. Normally closed contacts are then wired in series with the zone terminals, and normally open contacts are wired in parallel with the zone terminals. In the E.O.L. mode, tampering with the circuit by opening or shorting the line will be recognized as a violation of the zone and will trigger the alarm.

7.6 Alarm Duration Limits

When an instant zone triggers an alarm, the siren will sound for about 3 minutes and then shut off - provided that the violated zone is restored to normal within this period and all other zones are secured. RELAY-2 will be energized for the same duration and will be de-energized as soon as the alarm stops. However, if the AUTO SHUNT feature has been selected, siren shutoff and the unlatching of RELAY-2 will occur even if a certain zone remains violated. The violated zone will arm itself automatically if later restored.

Remember that an alarm triggered by zone 1 (24-hour zone) does not stop by itself and also RELAY-1 will not unlatch automatically. To reset the 24-hour alarm, first make sure that the cause of alarm is no longer there. If the alarm sounds while the system is disarmed, ***arm*** *then* ***disarm*** *the control panel. If the alarm sounds while the system is armed,* ***disarm*** *then* ***arm*** *the control panel.*

7.7 Zone Testing

Testing system detectors periodically is mandatory and can be carried out very easily. While the system is disarmed, set DIPswitch **SW8** to ON and violate the alarm zones one by one. When a detector is triggered, the siren will emit a continuous tone for 1 second and the respective zone LED will latch into memory. Restore SW8 to OFF at the end of the test.

7.8 DIP Switch Unit

An 8-DIP switch unit enables the user to select the following functions:

SW1 - Entry Delay
SW2 - Entry Delay
SW3 - Arming/Disarming Tone Warning (siren test)
SW4 - Follower Zones
SW5 - Zone 1 Siren Muting
SW6 - Keyswitch Type
SW7 - Auto Shunting
SW8 - Zone Testing

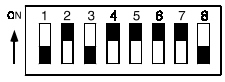

Figure 1. *DIP Switch Unit*

A. SW1 and SW2: The entry delay is preset by selecting the proper combination of SW1 and SW2 positions. The delay must be chosen in accordance with the time required to get to the control panel and disarm it. Refer to the following table:

SW1	SW2	Entry Delay
OFF	OFF	10 seconds
OFF	ON	20 seconds
ON	OFF	35 seconds
ON	ON	60 seconds

B. SW3: Setting this switch to ON enables automatic testing of the siren. When SW3 is ON, the loudspeakers connected to the **SPEAKERS** terminals will issue a tone whose pitch increases in steps for 1 second each time the control panel is armed, and a tone whose pitch decreases in steps for 1 second each time the system is disarmed.

Besides testing the siren, the recognizable tones are especially important when arming and disarming with a wireless transmitter or a remote keypad.

C. SW4: This DIP switch, when set to ON, converts zones 3, 4, and 5 into follower zones, meaning that they are subject to the normal exit delay, and the entry delay follows entrance through zone 2 into these zones (for details, see *FOLLOWER ZONES*).

D. SW5: Setting SW5 to OFF mutes the alarm produced by zone 1 and converts zone 1 to a silent alarm zone. The RELAY-1 alarm output, also associated with zone 1, is not affected by this setting and continues to be triggered normally.

E. SW6: Setting SW6 to ON adapts the control panel for arming/disarming by a momentary spring-return keyswitch. With SW6 at OFF, the control panel is adapted for use with a two-position keyswitch.

F. SW7: If SW7 is set to ON, zones which are not secured at the instant of arming will be automatically bypassed (shunted). At the OFF position, automatic shunting will not take place (see *AUTO SHUNTING* for more information).

G. SW8: When SW8 is set to ON, all zones can be tested with the control panel in the **disarmed** state (see *ZONE TESTING* for more information).

8. INSTALLATION

8.1 Mounting on the Wall

Install the control panel in a protected, easily accessible, out of view location, and preferably near an uninterrupted AC power source.

Remove the wiring knockouts from the top or bottom of the cabinet, to suit your particular installation. Mount the cabinet on the wall using the 4 mounting holes at the rear.

CAUTION! Do not connect AC power or the battery until all other wiring is completed.

8.2 Wiring

Refer to the wiring diagrams in Figures 2, 3. Be well advised that the terminal boards consist of plug-in sections, which may be removed complete with attached wiring to facilitate quick and efficient PCB replacement.

A. MAX-8 Main Board Terminals

The terminals are counted from left to right.

G Three negative [-] common terminals. Each zone loop is connected between one of these terminals and the appropriate zone terminal.

1 Zone 1 - 24 hours. Connect anti-tamper switch or PANIC pushbutton N.C. contacts between this terminal and any one of the three G terminals.

2 Zone 2 - delayed. Connect sensor contacts between this terminal and any one of the three **G** terminals.

3 Zone 3 - instant. Connect sensor contacts between this terminal and any one of the three **G** terminals.

4 - 8 Zones 4 through 8 - instant (same as zone 3).

KEY Keyswitch terminal. Connect a key-switch between this terminal and the ground [–] terminal for arming/ disarming the control panel.

BUZ Buzzer output. Connect a piezoelectric sounder between this terminal (buzzer signal) and the 12 VDC [+] terminal.

STA Provides zone status summing output. Connect LED with 1 kΩ resistor in series between this terminal (switched [–]) and the 12 VDC [+] terminal.

ARM Provides remote indication for system arming. Connect LED with 1 kΩ resistor in series between this terminal (switched [–]) and the 12 VDC [+] terminal.

RELAY-1 Alarm from zone 1. Use the N.O. or N.C. terminals as required by the external device.

RELAY-2 Alarm from zones 2 - 8 (MAX-8) or zones 2 - 16 (MAX-16). Use N.O. or N.C. terminals as required by the external device.

12 VDC 12 VDC supply. Provides 500 mA maximum current for external devices between the [+] and [–] terminals.

SPEAKERS Speaker output. Connect an 8-ohm speaker between terminals 1 and COM. If another speaker is required, connect it between terminals 2 and COM.

BAT Battery terminals. Use a 12 VDC, lead-acid rechargeable battery only. Connect its leads between the [–] and [+] terminals. Observe polarity.

14 VAC AC power input. Connect 14 VAC output from a 20VA power transformer across these terminals.

B. Expander Module (MAX- 16 only) Terminals

(–) Two negative [–] common terminals. Each zone loop for zones 9 to 16 is connected between one of these terminals and the appropriate zone terminal.

9 - 16 Instant Zones 9-16. Connect sensor contacts between each zone terminal and one of the two (–) terminals.

C. AC Power Module Terminals

~ Live AC mains wire.

0 Neutral AC mains wire

⏚ Ground wire - connect to nearest electrical ground.

IMPORTANT! For MAX-8 or MAX-16 units ordered without the power pack kit, the following power transformer requirements must be met:

Safety Standards: EN60950 and EN60742

Secondary Voltage: ≤14 VAC at 1A load, ≤16.5 VAC at no load (open-circuit voltage).

Breakdown Voltage: 3.75 Kv @ 50 Hz for one minute.

Protection: Thermal cutoff at 115°C (250 VAC / 1A).

D. COMM. OUT Connector Pins

1 ARM - system armed output (low when armed)
2 AL-1 (low on alarm, sinks 100 mA max.)
3 AL-2 (low on alarm, sinks 100 mA max.)
4 AC power monitoring output (low if AC supply is normal).
5 + 12 VDC auxiliary supply
6 Ground [–] connection.

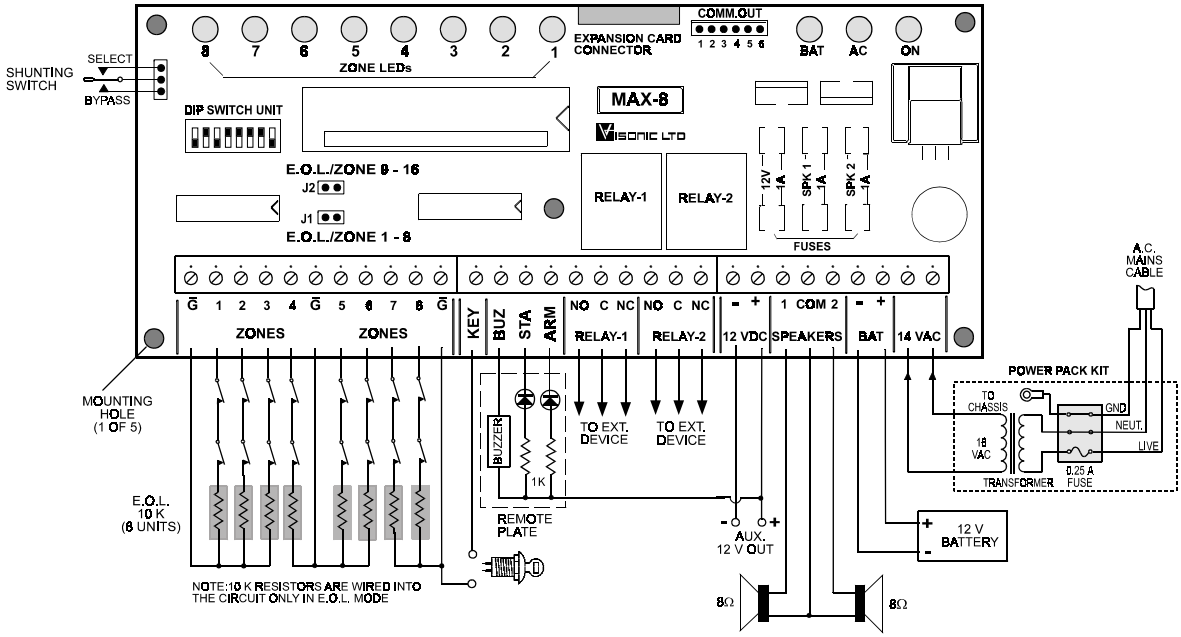

Figure 2. *MAX-8 Parts Layout and Connection Diagram*

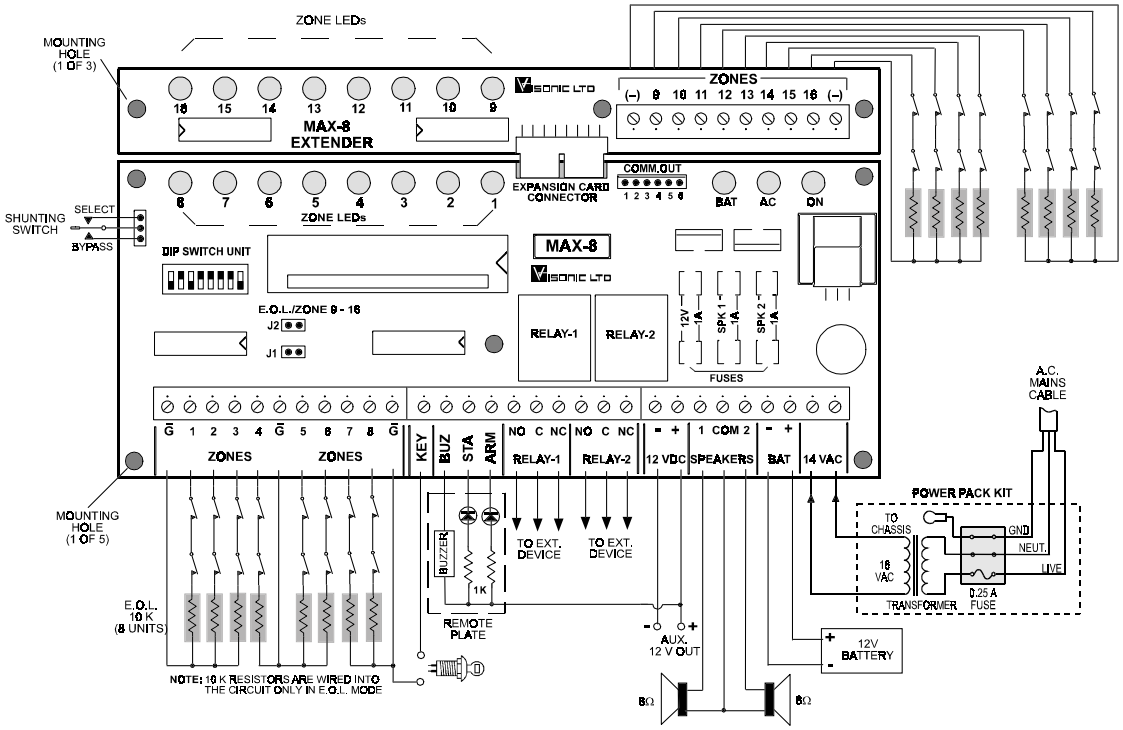

Figure 3. *MAX-16 Parts Layout and Connection Diagram*

IMPORTANT! ✦ Installation must be carried out by a qualified electrician only. ✦ All electrical wiring must comply with the local standards and regulations that are valid at the time of installation. ✦ Do not perform service or repair operations unless the mains supply is cut off with a circuit breaker.

9. TESTING AND CHECKOUT

A. Verify that all wiring and DIPswitch settings have been completed per user's requirements.

B. Set the keyswitch to its OFF position.

C. Connect the ground lead to the GND terminal of the mains power input module.

D. Connect a 12 V, lead-acid rechargeable battery to the red [+] & black [–] wires. Observe polarity.

E. Connect the AC line to the 220 VAC terminals of the mains power input module; the green **AC** LED should light up.

Note: *It is recommended that AC power be obtained from an uninterrupted power source.*

F. Bridge any unused zone terminal pair with a short jumper wire. If the E.O.L. mode has been chosen, bridge with a 10k-ohm resistor instead.

G. Turn the keyswitch to ON. The red **ARMED** LED will light and the zone status LED's will not light (provided that all zones are secured).

H. Check the operation of each of the contacts and sensors in the zone to which they are wired. Do this both in the **arm** and **disarm** positions. Verify the proper operation of the alarm relays and the red status/memory LED indicators (8 LED's in the MAX-8 and 16 LED's in the MAX-16) .

Note: *For detailed functional description, refer to previous sections.*

I. Set the entry delay time according to the time required to get to the control panel and disarm it.

J. Disconnect the AC mains power. Repeat testing and checkout on backup battery power. The green LED will not light, thus indicating a power failure. However, the control panel should function properly on battery power.

K. Reconnect the AC mains power.

L. Disconnect the battery [+] terminal and check for approximately 13.8 Volts DC across the BAT [+] and [–] terminals.

M. Reconnect the battery [+] terminal.

10. TROUBLESHOOTING

No green light when mains power is applied

☞ Power OFF - check the 220 VAC mains power source and the circuit breaker.

☞ AC power fuse blown - inspect the 0.5A fuse on the AC power input module.

☞ Defective transformer - verify 14 VAC across the 14 VAC terminals.

No yellow light or very weak light during entry or exit delay

☞ Battery is weak - check battery voltage

☞ Battery connected incorrectly - check polarity

☞ Charger is defective - disarm the control panel, disconnect the battery leads and measure DC voltage between the red and black leads. There should be approximately 13.8 VDC if the AC supply is correct.

No siren through speakers

☞ Overload protection fuse is blown. Inspect both 1A fuses on the PC board (SPK 1 and SPK 2) and replace if necessary. If a fuse blows again, check for shorted speakers.

☞ Defective speakers - disconnect the suspected speaker from the terminals and measure speaker resistance. Normally it should be greater than 3 ohms.

Exit/Entry sounder does not function

☞ Check buzzer connection across the BUZ and 12 VDC [+] terminals.

☞ Check buzzer polarity

Zone LED's do not stop flashing

☞ Faulty wiring or sensors

Remove both leads of the faulty loop and replace with a jumper. Turn the keyswitch momentarily to ON and back to OFF. If the LED now turns OFF, it is an indication that a particular contact or sensor is violated, or that the wiring is faulty. Check all sensor contacts wired to the faulty zone.

Verify the presence of 12 VDC supply at the input to each sensor wired to the faulty zone.

No 12 VDC supply

☞ The 12 V 1A fuse on PC board is blown. If the fuse blows again after replacement - check for a short circuit in the 12 VDC wiring to the auxiliary devices.

WARRANTY

Visonic Ltd. and/or its subsidiaries and its affiliates ("the Manufacturer") warrants its products hereinafter referred to as "the Product" or "Products" to be in conformance with its own plans and specifications and to be free of defects in materials and workmanship under normal use and service for a period of twelve months from the date of shipment by the Manufacturer. The Manufacturer's obligations shall be limited within the warranty period, at its option, to repair or replace the product or any part thereof. The Manufacturer shall not be responsible for dismantling and/or reinstallation charges. To exercise the warranty the product must be returned to the Manufacturer freight prepaid and insured.

This warranty does not apply in the following cases: *improper installation, misuse, failure to follow installation and operating instructions, alteration, abuse, accident or tampering, and repair by anyone other than the Manufacturer.*

This warranty is exclusive and expressly in lieu of all other warranties, 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 Manufacturer be liable to anyone for any consequential or incidental damages for breach of this warranty or any other warranties whatsoever, as aforesaid.

This warranty shall not be modified, varied or extended, and the Manufacturer 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 Product only. All products, accessories or attachments of others used in conjunction with the Product, including batteries, shall be covered solely by their own warranty, if any. The Manufacturer shall not be liable for any damage or loss whatsoever, whether directly, indirectly, incidentally, consequentially or otherwise, caused by the malfunction of the Product due to products, accessories, or attachments of others, including batteries, used in conjunction with the Products.

The Manufacturer does not represent that its Product may not be compromised and/or circumvented, or that the Product will prevent any death, personal and/or bodily injury and/or damage to property resulting from burglary, robbery, fire or otherwise, or that the Product will in all cases provide adequate warning or protection. User understands that a properly installed and maintained alarm may only reduce the risk of events such as burglary, robbery, and fire without warning, but it is not insurance or a guarantee that such will not occur or that there will be no death, personal damage and/or damage to property as a result.

The Manufacturer 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 Manufacturer is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, regardless of cause or origin, the Manufacturer's maximum liability shall not in any case exceed the purchase price of the Product, which shall be fixed as liquidated damages and not as a penalty, and shall be the complete and exclusive remedy against the Manufacturer.*

Warning: *The user should follow the installation and operation instructions and among other things test the Product and the whole system at least once a week. For various reasons, including, but not limited to, changes in environmental conditions, electric or electronic disruptions and tampering, the Product may not perform as expected. The user is advised to take all necessary precautions for his /her safety and the protection of his/her property.*

6/91

VISONIC LTD. (ISRAEL): P.O.B 22020 TEL-AVIV 61220 ISRAEL. PHONE: (972-3) 645-6789, FAX: (972-3) 645-6788
VISONIC INC. (U.S.A.): 10 NORTHWOOD DRIVE, BLOOMFIELD CT. 06002-1911. PHONE: (860) 243-0833, (800) 223-0020. FAX: (860) 242-8094
VSONIC LTD. (UK): UNIT 1, STRATTON PARK, DUNTON LANE, BIGGLESWADE, BEDS. SG18 8QS. PHONE: (01767) 600857 FAX: (01767) 601098

MADE IN ISRAEL