



**MULTI-ZONE ANNUNCIATOR
OPERATION MANUAL**

PROVEN PERIMETER PROTECTION

GEOQUIP LIMITED

Kingsfield Industrial Estate, Derby Road
Wirksworth, Matlock, Derbyshire, DE4 4BG
Tel : 01629 824891 Fax : 01629 824896
Int. tel : +44 1629 824891 Int. fax : +44 1629 824896

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Prepared by: P Cook
Approved by: P Elliott

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1.1 GENERAL

The Geoquip multi-zone annunciator units offer a comprehensive, yet easy to use method of monitoring up to twenty four zones of intrusion detection devices. The annunciators are available in six (GQ6ZA), twelve (GQ12ZA) or twenty four (GQ24ZA) zone versions.

The console is designed for rack mount (RM) use with the option of a desk mounted versions. The connections from the detection devices enter the rear of the unit via PG9 cable glands.

The unit is normally powered from ac mains but includes a standby battery capable of supporting operation of the console for up to 4 hours.

An in-built audio monitoring facility enables operators to gain maximum usage from detector systems capable of providing audio outputs.

Slave relay outputs provide control of ancillary equipment and mimic panel drive capability is available when used in conjunction with Geoquip mimic panels.

The twenty four zone version (GQ24ZA) is essentially two twelve zone versions (GQ12ZA) stacked on top of each other with a different front plate fitted indicating the zone numbers 13 - 24. As such any selections made, such as selection of manual reset, must be done to both boards. Similarly one board could be set to receive Form A input relays and the other board could be set to receive Form B input relays.

1.2 ACCESSORY LIST

External loudspeaker unit GQMZA-SPK

This plugs into the jack plug at the back of the unit. It is complete with a wall mounting and 10m of cable fitted with the appropriate jack plug. The internal loudspeaker is disabled when an external unit is connected.

Mimic panel GQMIMIC-A*

This echoes the LED display from the annunciators on a graphic representation of the site layout.

* is a either 2 or 3 to indicate panel size, using the same sizes as standard metric paper.

Supervisory Input Board GQMZA-SIB

This is a plug-in card into which alarm and tamper inputs supervised by a $2k2\Omega$ resistor are connected. The supervisory resistor ensures the security of the connection between the detector and the annunciators.

1.3 SCHEMATIC CONFIGURATION

Figure 1 shows a schematic configuration of the GQ12ZA annunciator connected to various detection devices, a GQMIMIC-A3 mimic panel and a GQMZA-SPK external speaker unit (drawing not to scale).

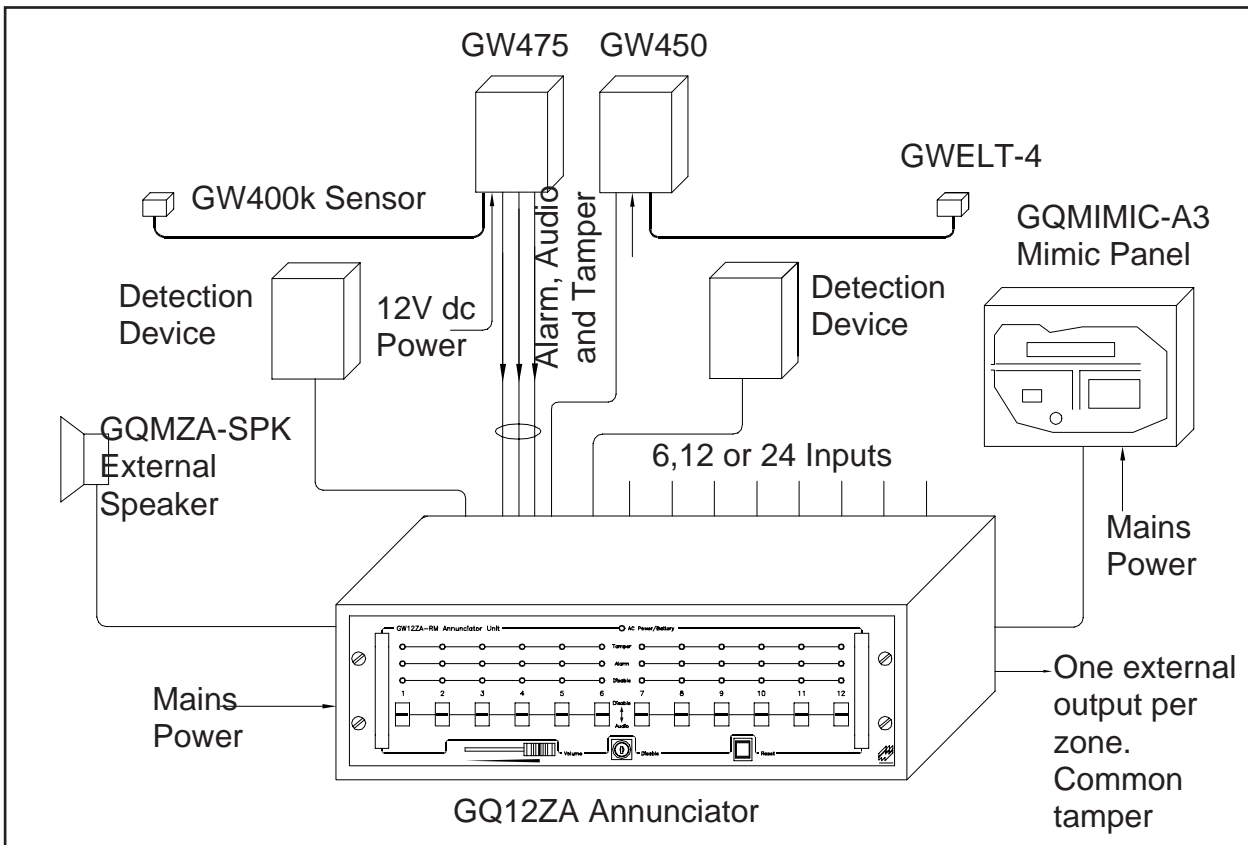


Figure 1

1.4 STATEMENT OF COMPLIANCE

The equipment described in this manual complies with all relevant sections of EMC Directive 89/336/EEC introduced in January 1996.

Specifically, the equipment has been tested to the following standards:

BS EN 50082-1 1992 - Generic Immunity Standard

and

BS EN 50081-1 1992 - Generic Emission Standard

While the system complies with the standards listed above, it is still possible that certain high level interference sources can have an adverse effect on the system performance. The guidelines detailed later in this manual should be followed to minimise such problems.

A technical report detailing these tests and procedures is available from Geoquip Ltd. on request.

Additionally, to satisfy the requirements for CE marking of the product, the equipment complies with all other relevant standards for this type of equipment.

2.1 ENCLOSURE

Construction	19" rack mount with optional desk mount case		
Finish	Front panel finished in black with white screen printed legends Optional eggshell black case		
Dimensions	GQ6ZA	GQ12ZA	GQ24ZA
Width	482mm	482mm	482mm
Height	132mm	132mm	264mm
Depth	330mm	330mm	330mm
Weight (inc battery)	8 kg	8 kg	16 kg
Operating Temperature	0 °C to + 50 °C		

2.2 INTEGRAL POWER SUPPLY

Input Voltage	220/240 or 110/120V ac (factory selected)
Input Frequency	50/60 Hz
Max Current Consumption	500mA
Integral battery	12V sealed lead acid with 3 Ah capacity
Standby Time	4 hours
Battery protection	Line fuse and automatic disconnection before deep discharge occurs

2.3 SYSTEM CONNECTIONS

Detector Connections	Via polarised 7 way de-mountable terminal block Cable entry via PG9 cable gland
Slave Relay Outputs	Via one, two or four 15 way D-type connectors Common tamper and individual alarm
External Loudspeaker	Via 3.5mm jack socket
Mimic Panel Drive	Via 7 way de-mountable terminal block

2.4 INPUT CHARACTERISTICS

No. of Inputs 6, 12 or 24

Inputs per Zone 1 Alarm relay input
1 Tamper relay input
1 Audio monitoring input

Alarm and Tamper Inputs Dry relay contacts only
Alarm relay inputs can be either all NO or NC
Tamper relay inputs can be either all NO or NC
Maximum loop resistance per input must not exceed 1kΩ
Supervised input option available

Audio Inputs Balanced 2 wire 600Ω input. 0dBm typical level

2.5 ALARM ACTIVATED RELAY OUTPUTS

No. provided 6 12 or 24

Contact rating	ac	dc
Voltage	110V	30V
Current	0.3A	1.0A
Power	30VA	20W

Contact configuration Form A (NC) or Form B (NO) contact configurations selected individually by internal jumper links

2.6 TAMPER ACTIVATED RELAY OUTPUTS

No. provided 1

Contact rating	ac	dc
Voltage	110V	30V
Current	0.3A	1.0A
Power	30VA	20W

Contact configuration Form A (NC) or Form B (NO) contact configuration selected by internal jumper link

2.7 MIMIC PANEL OUTPUT

Output type Logic level synchronous data transfer system to Geoquip mimic panels

2.8 CONNECTION SCHEMATIC

Figure 1 shows the back of the GQ12ZA annunciator and indicates the various input and output ports. The GQ24ZA is effectively two sets of ports stacked on top of each other. The GQ6ZA is the same as the GQ12ZA with the exception that the right zone inputs and slave outputs are omitted.

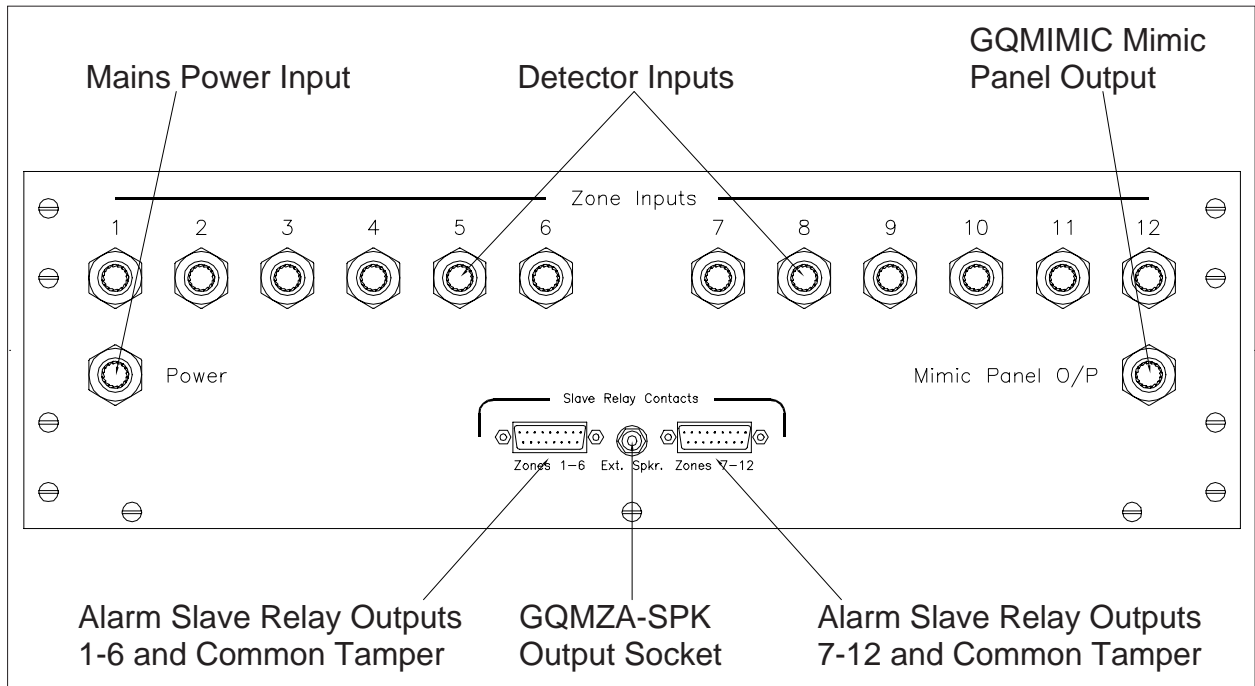


Figure 2

3.1 GENERAL

Figure 3 shows the front of the GQ12ZA and Figure 4 shows the front of the GQ6ZA. The front of the GQ24ZA is essentially twice as deep as the GQ12ZA shown in Figure 3 with the lower zones suitably renumbered.

Each zone has three LEDs to indicate status and a zone control switch to select the available operational modes.

The unit provides a disable keyswitch, volume control, and a reset button which control functions common to all zones. An LED at the top of the panel indicates the power status of the unit.

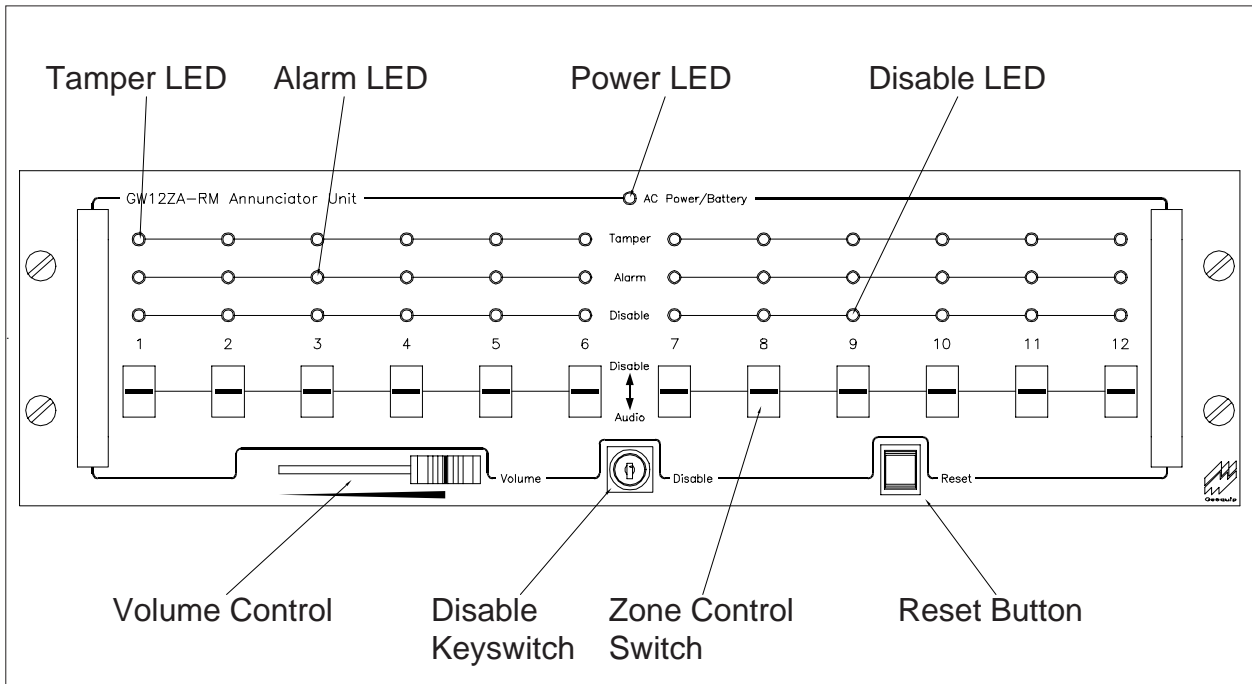


Figure 3

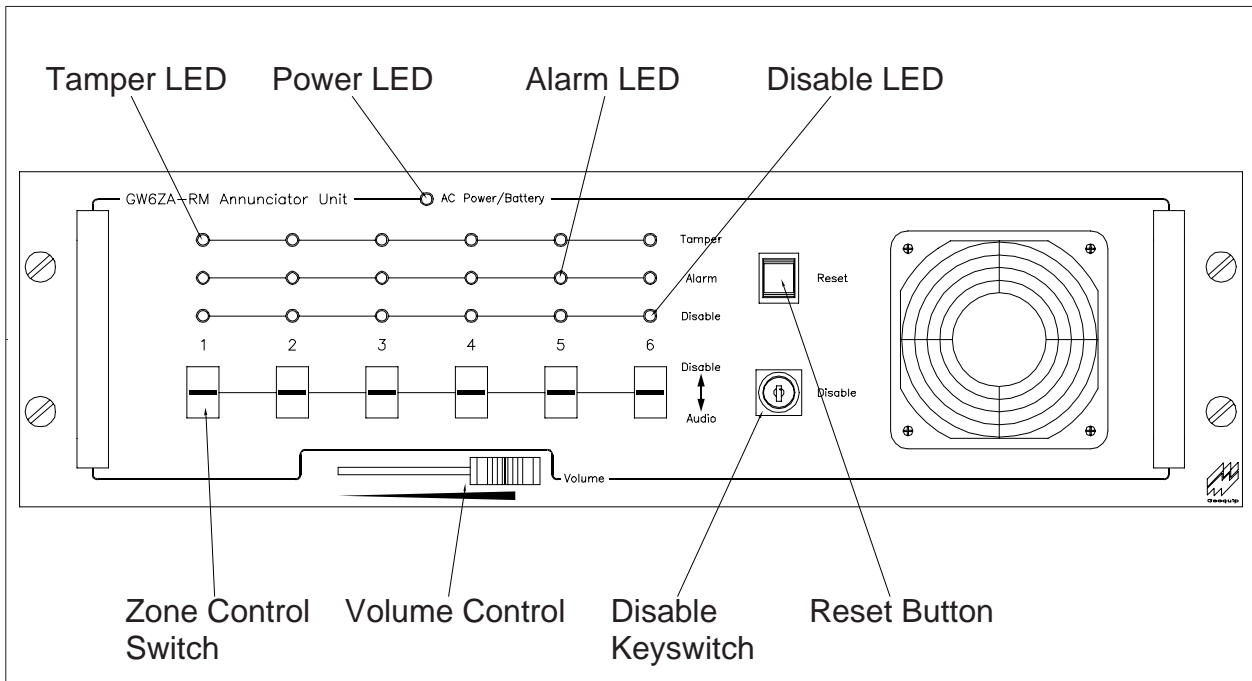


Figure 4

3.2 ZONE TAMPER INDICATION

To make use of the separate tamper monitoring relays provided by most detection devices the annunciators are able to separately monitor and display the status of them.

The top row of LEDs shows the status of the tamper relays connected to the annunciators.

When a tamper relay is in the secure condition, the corresponding LED will be off. When a tamper condition occurs, the LED will turn red.

3.3 ZONE ALARM INDICATION

The central row of LEDs shows the status of the alarm relays connected to the annunciators.

When an alarm relay is in the secure condition, the corresponding LED indicator will be green. When a alarm condition occurs, the LED will turn red.

3.4 ZONE DISABLE INDICATION

The bottom row of LEDs show whether a particular zone has been disabled so that it will not respond to alarm activations.

IMPORTANT

**When a zone is disabled the zone tamper LED will still illuminate in the event of a tamper condition.
The zone disable function will not operate unless the keyswitch is operated**

When a zone is in normal monitoring mode the disable LED will be off. If the zone has been disabled, the LED will be yellow.

3.5 AC POWER/BATTERY LED

This LED is green when ac power is present and turns red if the ac power fails and the system is running on the internal battery supply.

3.6 ZONE CONTROL SWITCH

One three position zone control switch per zone provides selection of the required mode of operation. The switch latches in the up position and is spring-biased to return from the down position to the central position.

Normally the switch lever is in the central position where the system annunciates and indicates alarm conditions when they occur.

Pressing the switch lever down and then releasing places the unit in audio monitoring mode, indicated by the alarm LED flashing green, routing the audio for that zone to the loudspeaker. A subsequent activation of the switch cancels the audio monitoring mode and the alarm LED reverts to a steady green.

Placing the switch lever in the up position selects the zone disable mode and, provided that the zone disable keyswitch is activated, the zone will be disabled. To re-enable the zone return the switch to the central position.

3.7 RESET BUTTON

A single reset button is provided to cancel alarm and tamper annunciation when in the manual reset mode. The button is operated by pressing and releasing.

3.8 DISABLE KEYSWITCH

The disable keyswitch is provided to prevent inadvertent or malicious selection of a disable condition. Additionally the keyswitch also controls the selection of the manual or auto-reset alarm modes of operation, see Section 5.3. The keyswitch operates by inserting and rotating the key. The key cannot be removed while the switch is in the active position.

3.9 VOLUME CONTROL

The volume control permits selection of a comfortable level of audio output for the purposes of audio monitoring. It is not possible to turn the loudspeaker output off entirely. Alarm and tamper conditions are signalled by tones fed to the loudspeaker, however the volume control has no effect on the level of these tones.

3.10 INTERNAL CONTROLS AND LINK OPTIONS

In addition to the external operator controls and indicators, there are also controls and link options provided within the case of the unit which determine certain aspects of the system operation. Refer to Figure 5.

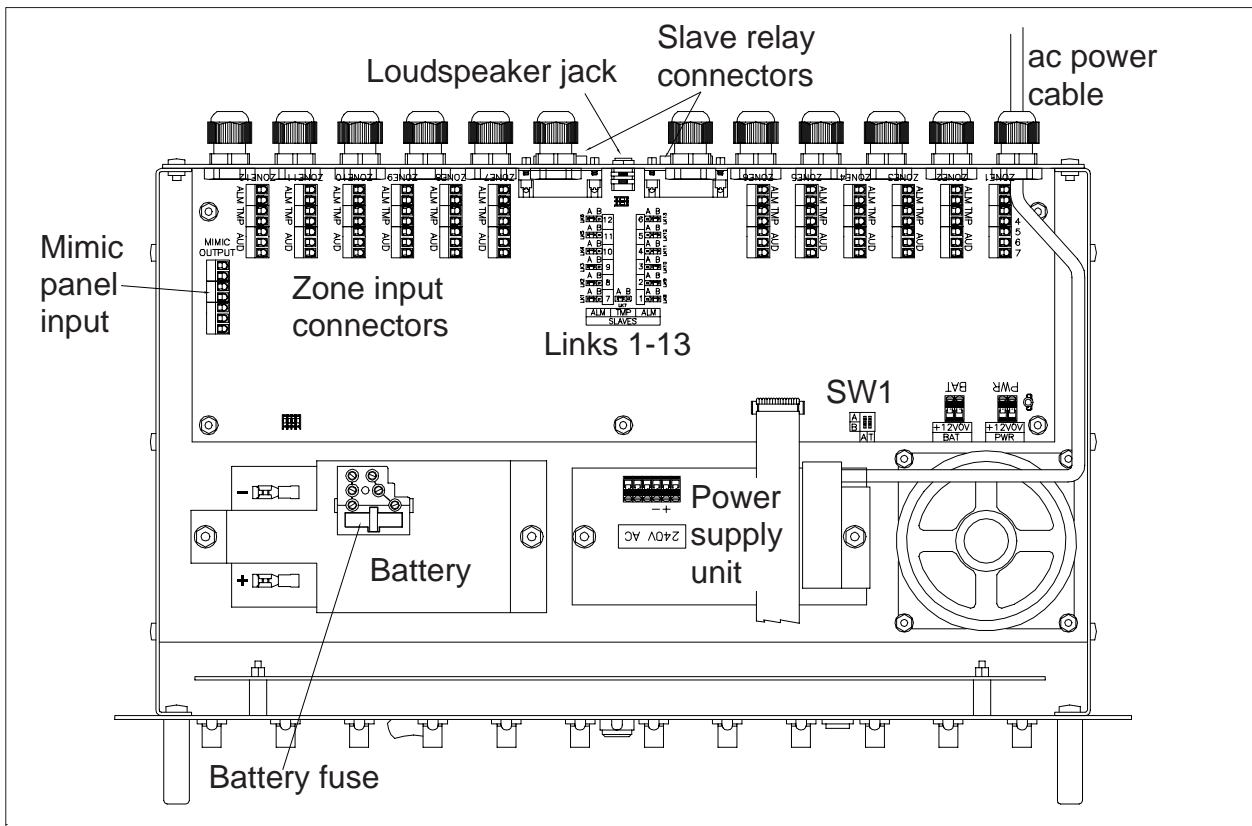


Figure 5

3.11 SW1 - INPUT CONDITION SWITCH

Located in the lower right-hand corner of the main PCB assembly, when looking from the front, the input condition switch allows the user to adjust the systems response to the alarm and tamper inputs provided by the detector relays connected to the annunciator. See Section 5.2 for details of switch settings.

The switch positions may be altered by pressing the high side of the switch rocker with a ball-point pen or similar tool.

3.12 LINK OPTIONS LK1 - LK13

A series of jumper links designated Lk1 - Lk13 are provided centrally on the main PCB to select the contact outputs to open or close in response to an alarm or tamper condition. On the GQ6ZA links Lk7 - Lk12 are omitted.

3.13 BATTERY FUSE

To prevent serious damage in the event of a component failure, a battery fuse is placed in series with the positive terminal of the battery. This fuse must be installed during commissioning of the system in order to allow the system to revert to battery backup mode in the event of a mains failure.

IMPORTANT

Replacement of the battery fuse with any fuse of a higher rating than 2A will automatically invalidate the warranty of the system.

3.14 ZONE INPUT CONNECTORS

A seven way demountable terminal block assembly is provided for each zone to permit connection of the alarm, tamper, and audio connections from the detector units. Six of the terminals are used for detector inputs and the seventh is keyed to act as a polarising device.

3.15 SLAVE RELAY OUTPUT CONNECTORS

One, two or four 15-way D-type connectors are provided to facilitate connection of the slave relay contact outputs to external peripheral equipment. Mating connectors and shrouds for these outputs are provided as standard with each unit.

3.16 MIMIC PANEL OUTPUT CONNECTOR

A single 7 way demountable terminal block is provided on the annunciator PCB for connection of a mimic panel to the annunciator unit. Connections made to this terminal block can only be used in conjunction with a mimic panel interface board provided by Geoquip Ltd.

3.17 EXTERNAL LOUDSPEAKER CONNECTOR

A jack socket is mounted centrally on the rear of the PCB which allows connection of an external loudspeaker to the annunciator. Connection of an external loudspeaker automatically disables the internal loudspeaker.

This section details the requirements of the system and the method of making connections between the security detectors, ancillary equipment, and the annunciator units.

4.1 POWER REQUIREMENTS

The unit requires an ac power source of either 220 - 240V at 50Hz or 110 - 120V at 60Hz. The power consumption of the unit is typically 500mA. A three core mains cable is supplied with the unit and this should be wired to an appropriate supply point, either by plug and socket or by a fused outlet.

IMPORTANT

The earth wire in the ac supply lead must be connected for reasons of safety and reliability of the unit.

Verify that the ac supply voltage matches that stated on the adhesive label on the rear panel of the unit. The ac supply voltage range is not adjustable within the annunciators and if the label does not correspond to the available ac supply, the unit must be returned and be fitted with an appropriate power supply unit.

4.2 ZONE INPUT CONNECTIONS

1. Remove the unit by removing the screws from each side of the front panel.
2. Slide the unit out using the handles provided.
3. Identify the demountable terminal block for zone 1 at the right-hand side of the main PCB and carefully remove it from the PCB pins. Refer to Figure 5.
4. Prepare the end of the cable from the detector unit by stripping and tinning the ends. This cable should consist of three twisted pairs, one each for alarm, tamper and audio.

The cable may have an optional fourth pair of wires to provide power to the detection device from a power supply unit situated in the vicinity of the annunciators. It is recommended that cable used externally has adequate weather protection.

IMPORTANT

Note that the maximum loop resistance of the interconnection between the relay in the security detector and the annunciator inputs must not exceed 1k Ω . This resistance value corresponds to a maximum cable length of 6km assuming that the conductor construction is 7 x 0.2mm tinned copper wire.

5. Insert the cable from the detector unit into the PG9 cable gland at the right-hand side of the rear panel.
6. Connect the prepared ends of the cable to the terminal block in accordance with the schedule shown below. Ensure that the corresponding pair is connected to the same function at both ends of the cable, ie the pair connected to the detection devices audio output is connected to the audio input terminals in the annunciator.

Terminal Block Number	Input Function
1	Alarm
2	Alarm
3	Tamper
4	Tamper
5	Audio
6	Not used
7	Audio

7. Repeat the procedure for additional zones until all detectors are wired up.

If the full complement of zones is not installed, and the annunciator is configured to accept Normally Closed (NC) relay contacts, see Section 5.2, it will be necessary to install wire links across the unused alarm and tamper relay inputs. Unless this is done, the unused inputs will indicate permanent alarm conditions.

4.3 SLAVE RELAY CONTACT CONNECTIONS

Connections to the slave relay outputs are made via the 15 pin D-type connectors mounted on the rear panel of the units.

Looking at the connectors from the rear, the alarm contacts for inputs 1 - 6 are routed to the left-hand connector while the alarm contacts for inputs 7 - 12, where fitted, are routed to the right-hand connector. A single tamper relay output which activates if any tamper alarm is detected is routed to both connectors.

The pin-out schedule for both D-type connectors is as shown below.

Pin Numbers	Function	Left Connector	Right Connector
1 and 9	Tamper relay	All Inputs	All Inputs
2	Not Used		
3 and 10	Alarm relay	Input 6	Input 12
4 and 11	Alarm relay	Input 5	Input 11
5 and 12	Alarm relay	Input 4	Input 10
6 and 13	Alarm relay	Input 3	Input 9
7 and 14	Alarm relay	Input 2	Input 8
8 and 15	Alarm relay	Input 1	Input 7

Ensure that the relay contact ratings listed in Sections 2.5 and 2.6 are not exceeded.

The annunciators offer a number of configuration options to cater for most commonly encountered operational situations. This section describes the available options.

5.1 SLAVE RELAY OUTPUT OPTIONS

Each of the slave relay outputs provided by the annunciators may be either Normally Open (NO) or Normally Closed (NC) contact types.

Jumper links (Lk1 - Lk13) provide selection of the appropriate contact option for the equipment connected. The table below lists the relationship between the jumper link numbers, where fitted, and the zone affected.

Link Number	Zone Number	Function
Lk 8	1	Alarm
Lk 9	2	Alarm
Lk 10	3	Alarm
Lk 11	4	Alarm
Lk 12	5	Alarm
Lk 13	6	Alarm
Lk 1	7	Alarm
Lk 2	8	Alarm
Lk 3	9	Alarm
Lk 4	10	Alarm
Lk 5	11	Alarm
Lk 6	12	Alarm
Lk 7	All	Tamper

Each jumper link comprises a removable shorting link which can be placed between the central pin of the jumper header and either the pin designated A or the pin designated B on that jumper.

If option A is selected, the corresponding relay operates as a Form A relay (NC) whereas if option B is selected, the relay operates as a Form B relay (NO).

A relay configured as Form A provides a contact which opens when an alarm condition is present while a relay configured as Form B provides a contact pair which will close when an alarm condition is present.

By selecting the appropriate option, each relay may be configured as required by the peripheral equipment. Link Lk7

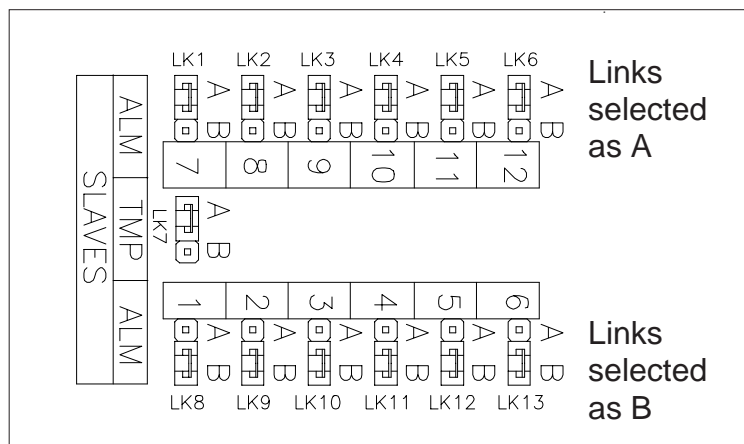


Figure 6

performs exactly the same function for the common tamper relay provided by the system.

Figure 6 shows the jumper links as seen on a GQ12ZA PCB. Outputs 1-6 have the links selected as B and are therefore Normally Open. Whereas outputs 7-12 have the links selected as A and are therefore Normally Closed. The Tamper link is selected as A.

5.2 RELAY INPUT SENSING

Since the alarm and tamper inputs to the annunciators are controlled by relay contacts within the detector units, an option is provided to allow the system to be triggered by relay contacts which open in response to an alarm condition (Form A) or relay contacts which close to an alarm condition (Form B).

Switch SW1 located near the lower right-hand side of the main PCB assembly has two separate switch poles. See Figure 4 for the location of the switch. The left-hand side of the switch controls the method of sensing the alarm relay inputs while the right-hand side of the switch controls the method of sensing the tamper relay inputs.

The two possible positions for each switch are designated position A and position B by legends screen printed on to the PCB. The selected position is when the switch is flat.

If option A is selected, the corresponding relay operates as a Form A relay. If option B is selected, the relay operates as a Form B relay.

In Figure 7 the Alarm Inputs are set to Form A and the Tamper Inputs are set to Form B.

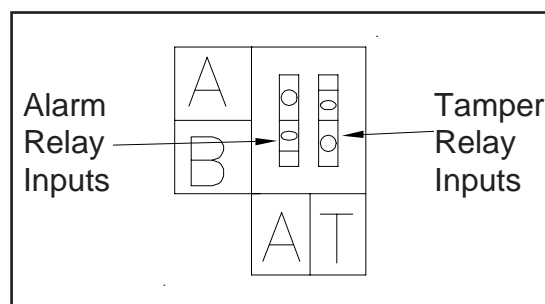


Figure 7

IMPORTANT

Note that if the switch setting is changed, it is necessary to power the system off and on again before the new switch setting is recognised

The limitation of this control is that setting the switch to a particular setting means that **all** channels will operate in the selected mode. The only variation possible is to have the alarm inputs responding in one mode while the tamper inputs respond in the other mode.

5.3 MANUAL/AUTOMATIC RESET OPTION

The annunciators have the facility to have their operational mode altered so that alarm conditions which occur may be manually reset by operator intervention - normal mode, or to have the system automatically reset after a pre-determined interval has elapsed - auto-reset mode.

5.4 SELECTION OF AUTO-RESET MODE

To select auto-reset mode do the following:

1. Remove mains power.
2. Turn the disable keyswitch to ON ie horizontal.

3. Re-apply mains power
4. Turn the disable keyswitch to OFF ie vertical

5.5 SELECTION OF MANUAL MODE

To select normal mode do the following:

1. Remove mains power
2. Turn the disable keyswitch to OFF ie vertical
3. Re-apply mains power

When selecting operational modes it is not necessary to disconnect the internal battery.

This section details the operational features of the annunciator system. With the exception of Section 6.4 the following sections apply to both manual and auto-reset reset modes of operation.

6.1 POWER-UP SEQUENCE

The annunciators must be powered up in the sequence given otherwise the battery backup feature will fail to operate.

1. Remove the battery fuse to disconnect the battery.
2. Apply mains power.
3. This initiates a self-test sequence within the system which flashes all the alarm LEDs red.

This action is an indication that microprocessor memory within the unit is fully functional and that the system should operate correctly. If a memory fault is detected during the power-up test, the alarm LEDs will remain red. If this occurs, the unit should be serviced immediately.

4. Replace the battery fuse to re-connect the battery.

6.2 POWER-DOWN SEQUENCE

When intentionally powering the system down the following sequence must be followed otherwise the system will continue to operate on battery backup.

1. Remove the battery fuse to disconnect the battery.
2. Disconnect mains power
3. Replace the battery fuse to re-connect the battery.

6.3 SECURE STATE

The annunciators indicate the zones in a secure state when the alarm LEDs are green.

If there are no tamper conditions, all the tamper LEDs will be turned off.

If no zones have been previously disabled, all disable LEDs will be turned off.

Provided that ac power is present, the power/battery LED will be green.

6.4 ALARM/TAMPER ACTIVATION

For operation sequence when in Manual Reset Mode refer to Section 7. For operation sequence when in Auto-Reset Mode refer to Section 8.

6.5 ZONE DISABLE CONTROL

In addition to the normal alarm and tamper indications described in the following sections, the annunciators also permit the operator to disable one or more zones so that any alarm conditions occurring on the disabled input(s) are ignored.

This disable function applies only to the alarm input channels and not the tamper input channels.

6.6 DISABLING AN ALARM ZONE

To disable an alarm channel turn on the disable keyswitch to a horizontal position and place the zone control switch for the selected channel in the Up position. This turns the yellow disable LED on and the green secure LED off.

The disable keyswitch can now be turned off and removed.

6.7 RE-ENABLING AN ALARM ZONE

To re-enable a previously disabled zone, simply press the zone control switch to the central position. This turns the yellow disable LED off and the green secure LED on.

Re-enabling a zone does not require the disable keyswitch to be operated.

6.8 MANUAL AUDIO SELECTION

Selection of audio from any of the zones connected to detection devices providing audio can be activated at any time by pressing and releasing the appropriate zone control switch. The alarm LED commences flashing green to indicate from which zone the audio is coming.

The audio can be deselected by pressing and releasing the zone control switch, or by manually selecting the audio from another zone. Deselecting a zone turns the alarm LED back to a steady green.

If an alarm or tamper condition occurs whilst in manual audio monitoring, the audio is automatically deselected and the alarm condition is annunciated as a priority.

6.9 MULTIPLE ALARM CONDITIONS

In the event of multiple alarms/tampers all the respective LEDs turn red and the audible warning is activated. The audible warning will **either** pulsate if there are multiple alarms or a combination of alarms and tampers **or** be steady if there are multiple tampers only.

If a zone displays both alarm and tamper then both LEDs will flash red on selection of the audio.

If whilst monitoring the audio from one activated zone an alarm activation on another zone occurs, the audio is automatically reset and the LED(s) return to steady red.

6.10 POWER/BATTERY LED

When ac power is present, the power/battery LED indicator will be illuminated green. If the ac power fails, and the internal battery supply is connected and charged, the power/battery LED indicator will change to a steady red illumination.

The internal battery will maintain the unit in an operational condition for a period of 4 hours (assuming that the battery is fully charged). 3 hours 30 minutes after mains failure, the power/battery LED indicator will start to flash off and on and a short audible warning 'beep' will be sounded at 30 second intervals to warn the operator that the battery supply is approaching the limit of its capacity. Once the maximum duration of the battery's capacity has been reached (approximately 4 hours), the system will switch off to prevent deep discharge battery damage occurring.

This section details the sequence of events when an alarm/tamper input is activated whilst the annunciators are in Manual Reset Mode.

7.1 ALARM INDICATION

In the event of an alarm activation the following occur.

1. The audible warning is activated and emits a tone every two seconds.
2. The alarm LED for the activated channel changes from green to red.
3. The slave output relay for the channel is activated.

7.2 AUDIO ASSESSMENT REQUIRED

Press the zone control switch lever downwards and release. This causes -

1. The audible warning tone to be silenced
2. The alarm LED to commence flashing red.
3. Audio signals from the detector device to be routed to the loudspeaker.
4. The slave relay to remain activated.

To de-select audio press the zone control switch downwards and release. This causes -

1. The alarm LED to change to a steady red condition.
2. The audio channel to be turned off.
3. The slave relay to remain activated.

Operating the RESET button causes -

1. The alarm LED to change to a steady green condition.
2. The slave relay contact to revert to the initial condition.

7.3 AUDIO ASSESSMENT NOT REQUIRED

Press the RESET button. This causes -

1. The audible warning tone to be silenced.
2. The alarm LED to revert to green.
3. The slave relay contact to revert to the initial condition.

7.4 TAMPER INDICATION

In the event of a tamper condition the following occur.

1. The audible warning is activated and emits a steady warning tone.
2. The tamper LED for the activated channel turns red.
3. The common slave tamper relay is activated.

7.5 AUDIO ASSESSMENT REQUIRED

Press the zone control switch lever downwards and release. This causes -

1. The audible warning tone to be silenced
2. The tamper LED to commence flashing red
3. Audio signals from the detector device to be routed to the loudspeaker
4. The slave relay to remain activated

To de-select audio press the zone control switch downwards and release. Dependent on whether or not the tamper has been cleared this causes -

WITH TAMPER STILL PRESENT

1. A short 'beep' to be emitted at thirty seconds intervals indicating that a tamper condition still exists.
2. The tamper LED changes to a steady red condition.
3. The audio channel to be turned off.
4. The slave relay to remain activated.

WITH TAMPER NO LONGER PRESENT

1. The tamper LED changes to a steady red condition.
2. The audio channel is turned off.
3. The slave relay remains activated.

7.6 AUDIO ASSESSMENT NOT REQUIRED

Press the RESET button. Dependent on whether or not the tamper has been cleared this causes -

WITH TAMPER STILL PRESENT

1. The constant audible warning tone to be silenced, but a short 'beep' to be emitted at thirty seconds intervals indicating that a tamper condition still exists.
2. The tamper LED to remain illuminated red.
3. The common slave tamper relay to remain activated.

WITH TAMPER NO LONGER PRESENT

1. The audible warning tone to be silenced.
2. The tamper LED indicator to turn off.
3. The tamper slave relay to revert to the initial condition.

This section details the sequence of events when an alarm/tamper input is activated whilst the annunciators are in Auto-Reset Mode.

IMPORTANT

The auto-reset mode is restricted to alarm channel function only.

8.1 ALARM INDICATION

In the event of an alarm activation the following occurs.

1. The audible warning is activated and emits a tone every two seconds.
2. The alarm LED for the activated channel changes from green to red.
3. The slave output relay for the channel is activated.

After an interval of approximately 5 seconds has elapsed, the following occurs.

1. The audible warning device is silenced.
2. The alarm LED reverts to green.
3. The slave relay contact reverts to the initial condition.

9.1 SUPERVISED INPUTS

The addition of this optional plug in card permits input connections to be supervised to ensure the security of the cable connection between the detection device housing and the annunciator. The inputs are supervised using a 2k2Ω terminating resistor

The GQMZA-SIB card plugs directly onto one or all of the sets of six terminal blocks on the main PCB. The board is fitted with six terminal blocks into which the inputs are connected - refer to Section 4.2 for details. Figure 8 shows the GQMZA-SIB card complete with twelve supervisory resistors.

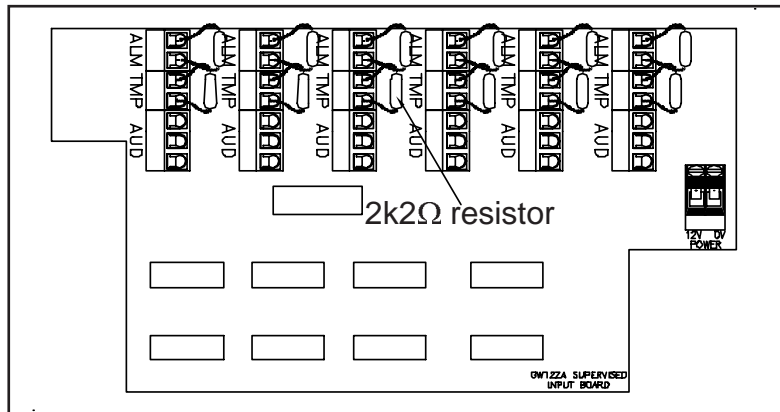


Figure 8

9.2 RESISTOR LOCATION

The supervisory resistors are either in series with Normally Closed (NC) contacts or in parallel with Normally Open (NO) contacts. With reference to Figure 5, since detector 1 requires the contacts to open in an alarm condition it has the resistor in series. Detector 2 requires the contacts to close in an alarm condition and it has the resistor in parallel.

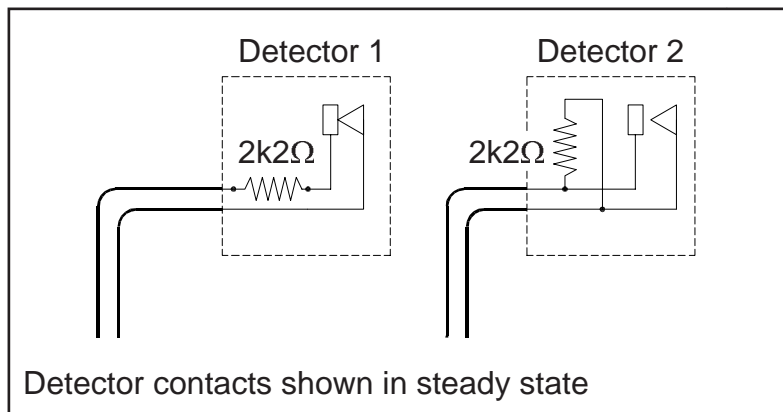


Figure 9

Any unused Alarm or Tamper input terminals on the GQMZA-SIB must have the 2k2Ω supervisory resistor wired across them otherwise a permanent alarm condition will be produced. Since the resistors are critical to the operation of the annunciator system when installed with a GQMZA-SIB card, the card is supplied with twelve appropriate resistors wired across the alarm and tamper input terminals.

Once all connections to the detector units have been made, the annunciator can be commissioned.

10.1 INPUT RELAY SWITCH SETTING

Prior to power-on, set each pole of DIP switch SW1 to accept Form A or Form B relay inputs according to the configuration of the detector relay contacts. Refer to Section 5.2 for appropriate guidance. Note that if Form A relay inputs are selected, wire links must be installed in unused inputs to prevent continuous alarm/tamper indication.

10.2 SLAVE RELAY CONFIGURATION

Set jumper links Lk1 - Lk13 to provide the required signalling to peripheral equipment. Refer to Section 5.1 for appropriate guidance.

10.3 SET OPERATIONAL MODE

Set the operational mode of the system to either manual or automatic reset. Refer to Section 5.3 for appropriate guidance.

10.4 MAINS SUPPLY

Switch on the ac mains supply and verify that, after the self test sequence described in Section 6.1, the Power/Battery LED turns green.

Verify that all zones indicate a secure condition with the alarm LED indicators showing green.

10.5 BATTERY SUPPLY

Connect the internal battery supply by inserting the fuse supplied into the battery connector block. The fuse will be found taped to the top of the battery clamp plate.

10.6 SYSTEM TESTING

Cause an alarm condition on the first zone and verify that the system responds as described in Section 7 or 8 dependent on the monitoring mode selected.

Cause a tamper condition on the first zone and verify that the system responds correctly.

If audio is routed from the detector, select the audio monitoring mode and verify that the audio is clear and of sufficient volume to permit aural monitoring.

Repeat the above steps for each installed zone.