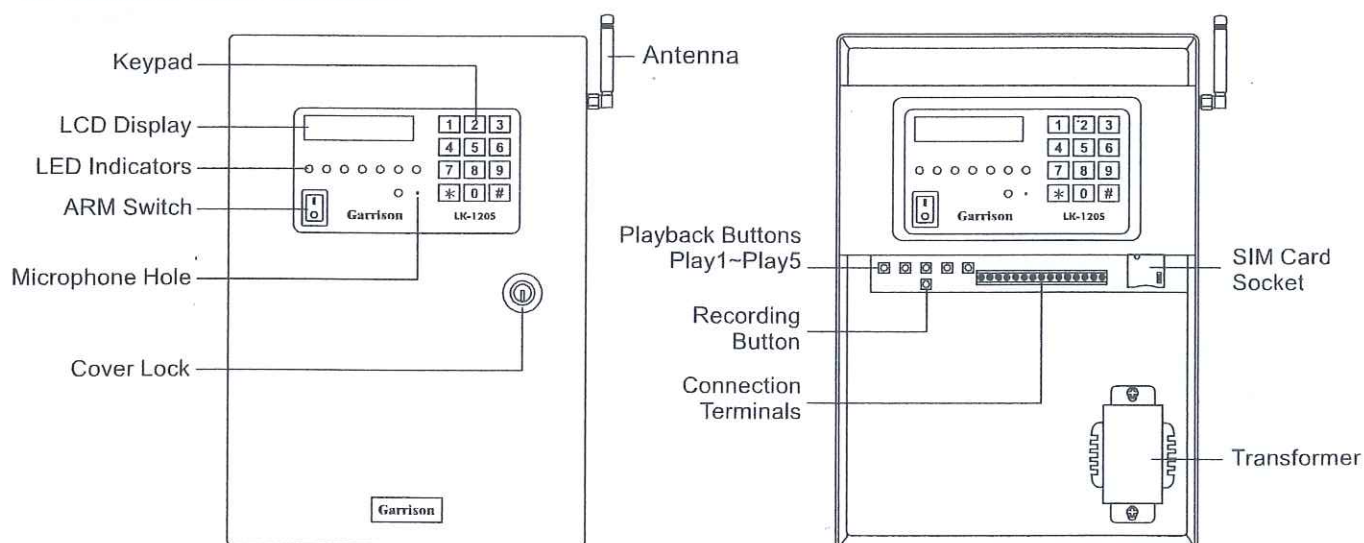**Garrison®**

LK-120S GSM Communicator
Instruction Manual

A. FUNCTION DESCRIPTIONS

1. Five inputs: Zones 1-4 are N.C. loops, monitored when the unit is armed. Zone 5 is a Panic N.O. loop, constantly monitored even when the unit is disarmed.
2. With five SMS and five voice messages, each zone can have its own unique alarm messages.
3. Up to ten landline or cellphone numbers can be stored.
4. The built-in GSM module is compatible with every carrier's SIM cards.
5. When a zone alarm is tripped, the SMS message is sent first to the phone numbers 1 to 20 sequentially (only those programmed to receive this message). then the voice message is sent (to those programmed to receive this voice message).
6. The voice message will be played for 20 seconds before it is cut off automatically. If a call is not answered within 30 seconds or the recipient hangs up the phone, the next number will be dialed.
7. For voice message recipients, the number will be redialed for five trials if the call is not answered. For SMS recipients, the number will be dialed once only.
8. To keep the line open, all incoming calls will be blocked except the ones from the Administrative Cellphone which is used for inputting SMS messages, status inquiry or arming/disarming the unit offsite.
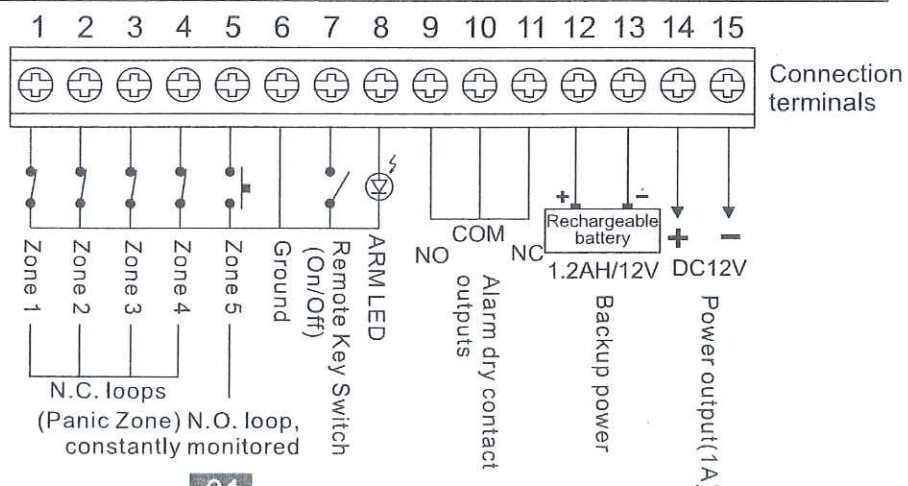
B. PARTS AND WIRING

Keypad — Antenna
LCD Display
LED Indicators
ARM Switch
Microphone Hole
Cover Lock

Playback Buttons Play1~Play5 — SIM Card Socket
Recording Button
Connection Terminals
Transformer

Wiring Diagram

Note:
1. Once the alarm dry contact relay output is triggered, it will stay on for 50 seconds.
2. ARM LED output: The ARM LED is on when the unit is armed, off when the unit is disarmed, blinks during autodialing.

Connection terminals: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Zone 1, Zone 2, Zone 3, Zone 4 — N.C. loops
Zone 5 — (Panic Zone) N.O. loop, constantly monitored
Ground
Remote Key Switch (On/Off)
ARM LED
NO, COM, NC — Alarm dry contact outputs
Rechargeable battery 1.2AH/12V — Backup power
DC12V — Power output(1A)

C. LED INDICATORS

LK-120S GSM
COMMUNICATOR 7

G
S   Z1   Z2   Z3   Z4 PNC ARM
M
○   ○   ○   ○   ○   ○   ○
ON   REC MIC
                      ○   °
I
O

GSM LED (red): Blinks when the unit is connecting with the base station.
Z1-Z4 LED's (yellow): In running pattern when the unit is armed, on when the unit is disarmed, blinking when the zone alarm is tripped.
PANC LED (red): Blinks when the panic zone alarm is tripped.
ARM LED (green): On when the unit is armed, off when the unit is disarmed, blinking during autodialing.
REC LED (red): On when the voice messages are being recorded, blinking during playback.
MIC Hole: Built-in microphone receiving hole.
ARM Switch: To arm/disarm the unit.

D. LCD DISPLAY

The LCD screen displays the status of the unit.

LK-120S GSM
COMMUNICATOR 7

The unit is disarmed.

The number "7" indicates the strength of the GSM signals on a scale of o to 7; the bigger the number is the stronger the signals are. A minimum strength of 3 or above is required for the transmission to work, relocate the GSM Communicator or use a prolonged antenna if the strength is below 3.

LK-120S GSM
--RUNNING-- 7

The unit is armed, all zones are being monitored.

LK-120S GSM
CALLING#1 → V1

Calling the first phone number to send the voice message 1.

LK-120S GSM
HANG ON → PLAY V1

The call has been answered and the voice message 1 is being played.

LK-120S GSM
---ALARM---

An alarm event has occurred and the autodialing has been completed.

LK-120S GSM
REC 1

Voice message 1 is being recorded.

E. HOW MESSAGES ARE SENT

Playback buttons:

○   ○   ○   ○   ○
PLAY1 PLAY2 PLAY3 PLAY4 PLAY5

Connection terminals:

⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕ ⊕
Z1 Z2 Z3 Z4 Z5
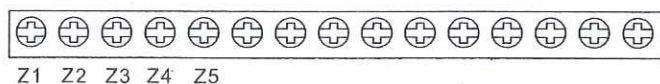
Zone 1 alarm is tripped → send SMS message 1 → send voice message 1.
Zone 2 alarm is tripped → send SMS message 2 → send voice message 2.
Zone 3 alarm is tripped → send SMS message 3 → send voice message 3.
Zone 4 alarm is tripped → send SMS message 4 → send voice message 4.
Zone 5 alarm is tripped → send SMS message 5 → send voice message 5.

F. GETTING STARTED

1. Screw tight the antenna to the connector located at the upper right side of the case.
2. The SIM card stores the SMS messages and the programmed phone numbers, to protect the memory, do not bend the card or leave any scratches on it, keep it away from static, moisture and dust.
3. **Power off the unit when inserting or removing the SIM card, otherwise damage to the memory may occur.**
4. **Erase the PIN number stored in the SIM card before any programming.**
5. Carefully insert the SIM card into the socket with the metal contact facing down, gently push SIM card into socket.

6. The SIM card must be installed before the power is turned on. **Do not install the SIM card when the power is on otherwise the GSM Communicator will not be able to connect with the base station.**

micro SIM card
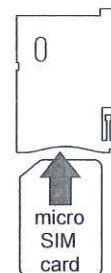
7. After the SIM cards is installed, power on the unit, the GSM RED LED light on for about 25 seconds, then it becomes flashing, this is to link with base station. Wait for about 35 seconds for the linking. When the linking successes, one beep sounds, the yellow zone LED's (Z1-Z4) go on and the LCD screen displays `LK-120S GSM COMMUNICATOR 7`, then the unit is disarmed.
If two beeps sound the yellow zone LED's (Z1-Z4) are in running pattern and the LCD displays `LK-120S GSM --RUNNING--7`, then the unit is armed and linking with base station.

8. If SIM card is not installed properlly, LCD will show `SIMCARD NOT AVAILABLE!!` when the power on.

9. When setling the zones, if the zone is not ready, LCD will show `ZONE NOT READY !!!!!!!!!!` and continuous beeps sound.

G. ADMINISTRATIVE CELLPHONE

The Administrative Cellphone is the cellphone that carries the first programmed phone number. Except for normal use, it is also used for entering the SMS messages, checking the status of the unit and interrupting the autodialing. Therefore, the user of the Administrative Cellphone must be either the owner or the administrator of the unit.

H. RECORDING VOICE MESSAGES

This operation can only be done with the unit disarmed, make sure the green ARM LED is off beforehand.

To record

1. Voice message 1: Press and hold the REC button then press PLAY 1 button, a beep sounds and the REC LED goes on. Release both buttons, the LCD screen displays `LK-120S GSM REC 1`
Speak to the microphone hole for a length of less than 20 seconds until the LED goes off.
2. Voice message 2: Repeat the procedure 1 but press REC + PLAY 2 buttons instead.
3. Voice message 3: Repeat the procedure 1 but press REC + PLAY 3 buttons instead.
4. Voice message 4: Repeat the procedure 1 but press REC + PLAY 4 buttons instead.
5. Voice message 5: Repeat the procedure 1 but press REC + PLAY 5 buttons instead.

To play
1. Voice message 1: Press PLAY 1 button, the REC LED blinks and the recorded voice message 1 is played.
2. Voice message 2: Press PLAY 2 button, the REC LED blinks and the recorded voice message 2 is played.
3. Voice message 3: Press PLAY 3 button, the REC LED blinks and the recorded voice message 3 is played.
4. Voice message 4: Press PLAY 4 button, the REC LED blinks and the recorded voice message 4 is played.
5. Voice message 5: Press PLAY 5 button, the REC LED blinks and the recorded voice message 5 is played.

I. PROGRAMMING PHONE NUMBERS

This operation can only be done with the unit disarmed, make sure the green ARM LED is off beforehand.

Programming the first number:

1. Press [*] the LCD screen displays

        SET TEL NO

2. Press [1] the LCD screen displays

        SET TEL NO
        1>

3. Enter the phone number, the LCD screen displays

        SET TEL NO
        1> (phone number)

4. Press [#] the operation is completed and the first phone number is stored.

Note:
1. The first phone number must be the number of the Administrative Cellphone which is later used for other programming.
2. **For landline numbers, remember to add the area code.**
3. To change a stored number, enter the new number.
4. To delete a stored number, enter a blank number. For example: to delete phone number 9, press [*] → [9] → [#]

Programming the second to the ninth phone numbers:
Repeat the above procedures but press the corresponding numerical keys instead.

Programming the tenth phone number:
Repeat the above procedures but press [0] instead.

J. PROGRAMMING RECIPIENTS OF MESSAGES

This operation can only be done with the unit disarmed, make sure the green ARM LED is off beforehand.

According to the purposes of the zones, each phone number can be programmed to receive or not receive a SMS message and a voice message.

(First, program which SMS messages to receive for each phone number.)

1. Press [*] the LCD screen displays

        SET TEL NO

2. Press [*] again, the LCD screen displays

        SET SMS/VOICE

3. Press [#] the LCD screen displays

        SET TEL1 SMS
        S1+ S2+ S3+ S4+ S5+

4. Press PLAY1 - PLAY5 buttons to determine which SMS messages the first phone number will receive. "+" represents "yes," and "−" represents "no." With each press, the signs + and − appear by turns.

   For example, if the setting is "S1+ S2− S3+ S4+ S5−", the first phone number will receive SMS messages triggered by zone 1, 3 and 4 alarms.

```
SET TEL1 SMS
S1+S2+S3+S4+S5+
  ↑   ↑   ↑   ↑   ↑
 [O] [O] [O] [O] [O]
PLAY1 PLAY2 PLAY3 PLAY4 PLAY5
```
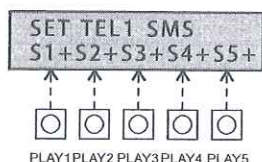
Note:
For landlines, choose " − " for all SMS messages.

5. Press #, the LCD screen displays
```
SET TEL2 SMS
S1+S2+S3+S4+S5+
```
. Repeat the above procedure 4 to determine which SMS messages the second phone number will receive.

6. Keep on pressing # and repeating the above procedure 4 to determine which SMS messages the third to the tenth phone numbers will receive.

   (Now, program which voice messages to receive for each phone number.)

7. Press #, the LCD screen displays
```
SET TEL1 VOICE
V1+V2+V3+V4+V5+
```

8. Press PLAY1 - PLAY5 buttons to determine which voice messages the first phone number will receive. "+" represents "yes," and "−" represents "no." With each press, the signs + and − appear by turns. For example, if the setting is "V1+ V2+ V3+ V4− V5−", the first phone number will receive voice messages triggered by zone 1, 2 and 3 alarms.

```
SET TEL1 VOICE
V1+V2+V3+V4+V5+
  ↑   ↑   ↑   ↑   ↑
 [O] [O] [O] [O] [O]
PLAY1 PLAY2 PLAY3 PLAY4 PLAY5
```
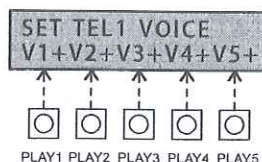
9. Press #, the LCD screen displays
```
SET TEL2 VOICE
V1+V2+V3+V4+V5+
```
. Repeat the above procedure 8 to determine which voice messages the second phone number will receive.

10. Keep on pressing # and repeating the above procedure 8 to determine which voice messages the third to the tenth phone numbers will receive.

11. Press #, the programming is completed and the LCD screen displays
```
LK120S GSM
COMMNICATOR 7
```

K. VERIFYING RECIPIENTS OF MESSAGES

This operation can only be done with the unit disarmed, make sure the green ARM LED is off beforehand.

1. Press the sequential number of the phone number, the LCD screen displays which SMS messages and voice messages this phone number will receive.

2. For example:

Press ②, the LCD screen displays:

| TEL2 NO |
| (phone) |

(The second phone number stored.)

↓

| SET TEL2 SMS |
| S1+S2-S3-S4-S5+ |

(This phone will receive SMS messages 1 and 5.)

↓

| SET TEL2 VOICE |
| V1+V2-V3+V4-V5+ |

(This phone will receive voice messages 1, 3 and 5.)

3. To verify the tenth number, press ⓪.

L. PROGRAMMING SMS MESSAGES

This operation can only be done with the unit disarmed, make sure the green ARM LED is off beforehand.

1. If no new SMS messages are stored in the SIM card, when the GSM Communicator is initiated, the following default SMS messages will be uploaded to the SIM card:

SMS message 1: Alarm event in zone 1
SMS message 2: Alarm event in zone 2
SMS message 3: Alarm event in zone 3
SMS message 4: Alarm event in zone 4
SMS message 5: Alarm event in zone 5

Bao, trom 1

2. To change a message, use the Administrative Cellphone to enter the desired SMS message and send it to the GSM Communicator.

3. A suffix digit (1~5) must be added to each message to appoint the sequential number for the message:

For zone 1: enter (SMS message)1
For zone 2: enter (SMS message)2
For zone 3: enter (SMS message)3
For zone 4: enter (SMS message)4
For zone 5: enter (SMS message)5

Note:
> A maximum of 70 letters (including punctuations and spaces) can be entered for each message.
> If a new message is successfully stored into the SIM card, the message will be sent back to the Administrative Cellphone for confirmation.
> If a prepaid card is used, beware of the depletion. Recharge it when necessary.

M. STATUS INQUIRY

1. Use the Administrative Cellphone to call the GSM Communicator. The GSM Communicator will automatically answer the call and hang up instantly.
2. Then, depending on the status, one of the following report messages will be sent to the Administrative Cellphone.

Examples:
LK120S is disarmed, no alarm events.
LK120S is disarmed, emergency in zone 5.
LK120S is armed, no alarm events.
LK120S is armed, alarm event in zone 1.
LK120S is armed, alarm event in zone 2.
LK120S is armed, alarm event in zone 3.
LK120S is armed, alarm event in zone 4.
LK120S is armed, emergency in zone 5.
LK120S is armed, alarm events in multiple zones.

N. INTERRUPTING AUTODIALING

When the autodialing has been initiated, it can be interrupted with the Administrative Cellphone.
After the SMS message has been received, answer the voice message call, while the voice message is being played, press any key (1~9, #, *) on the Administrative Cellphone keypad, the autodialing will be stopped instantly.

O. ARMING/DISARMING UNIT OFFSITE

The GSM Communicator can also be armed or disarmed offsite with the Administrative Cellphone.

To ARM the GSM Communicator:
1. Use the Administrative Cellphone to send the following command to the GSM Communicator (the text must be exactly the same):
LK120S ARM

2. When the unit is armed, the following message will be sent back to the Administrative Cellphone for confirmation:
LK120S GSM Communicator is armed.

To DISARM the GSM Communicator:
1. Use the Administrative Cellphone to send the following command to the GSM Communicator (the text must be exactly the same):
LK120S DISARM

2. When the unit is disarmed, the following message will be sent back to the Administrative Cellphone for confirmation:
LK120S GSM Communicator is disarmed.

Note:
> If there is any faulty situation causing the GSM Communicator fail to arm the unit, the following message will be sent to the Administrative Cellphone.
> *Zones not ready, LK120S GSM Communicator is not armed.*
> In that case, check the zones and try again.