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## **CM18 GSM PHONE LINE BACKUP**

### **User Guide V4.00**

The CM-18 is a cellular backup to PSTN phone line system.

When connected to an alarm control panel, the CM-18 operates as a GSM back up unit to a PSTN line, enabling to re-direct incoming and outgoing calls to the GSM network in case of regular phone line failure.

#### **General Specification**

- ❑ Built-in Tri-Band GSM transceiver
- ❑ Continuous PSTN line supervision
- ❑ GSM backup at PSTN Line failure
- ❑ SMS support for alarm system events
- ❑ 4 input for SMS message transferring
- ❑ 6 outputs for status indication and activation
- ❑ Battery backup support including charger

#### **SMS Support**

The CM-18 support SMS for control panels events such as zone alarm, low battery ...and provides SMS operated outputs related to the same events as the SMS messages.

#### **Operation**

The system powered by 14VDC with a 12V/1.3A backup battery. The battery is recharged by the system.

#### **Inputs**

The CM-18 offers 4 digital inputs. Every input trigger generates an SMS message to a programmed number and activates an output.

## Outputs

The CM-18 has 7 outputs: 3 outputs for status indication (phone line failure and GSM error), and 4 outputs activated according to control panel's events.

Outputs 1-6 are all open collector outputs capable of switching 100mA current.

Besides those outputs the CM-18 has a relay dry contacts output. The relay contacts are switched on phone line failure, normally when PSTN line is OK then the relay is connected between COM and NC, when phone line fails the relay contacts switches and they are connected between COM and NO.

## Outputs operation

- Output 1 : indicates GSM error. (such as bad reception quality, no SIM card present, antenna disconnected etc..)
- Output 2 :indicates phone line failure.
- Output 3 : will go "on" when input 1 is activated and will go "off" when input 1 is deactivated.
- Output 4 : will go "on" when input 2 is activated and will go "off" when input 2 is deactivated.
- Output 5: will go "on" when input 3 is activated and will go "off" when input 3 is deactivated.
- Output 6 : will go "on" when input 4 is activated and will go "off" when input 4 is deactivated.

Outputs 1-6 are all open collector outputs capable of switching 100mA current, when an output is activated it switches the CM-18 ground to the output contact, this way the user can use different voltages.

## Low power messages

The CM-18 checks both main power entry and battery voltage. When the battery voltage drops below 11.5V the system will send an SMS to the programmed numbers (if there are phone numbers programmed in the system), the message is "GSM

LOW BATTERY". When the voltage will be above 11.5V a restore message will be sent : "GSM BATTERY OK"

When the main DC entry voltage drops below 11.5V the system will send an SMS to the programmed numbers ( if there are phone numbers programmed in the system ) , the message is " GSM POWER FAIL". When the voltage will be above 11.5V a restore message will be sent : "GSM POWER OK"

### **Ignoring a programmed prefix**

There are cases you need the system to ignore a certain prefix number, in this case you can program the relevant number and when ever the phone number will start with that number the system will ignore it. In case you need to back an internal phone line extention and you need to ignore the digits that takes external line and also you need to add a prefix number the system can do both , just program witch prefix to add and what to ignore

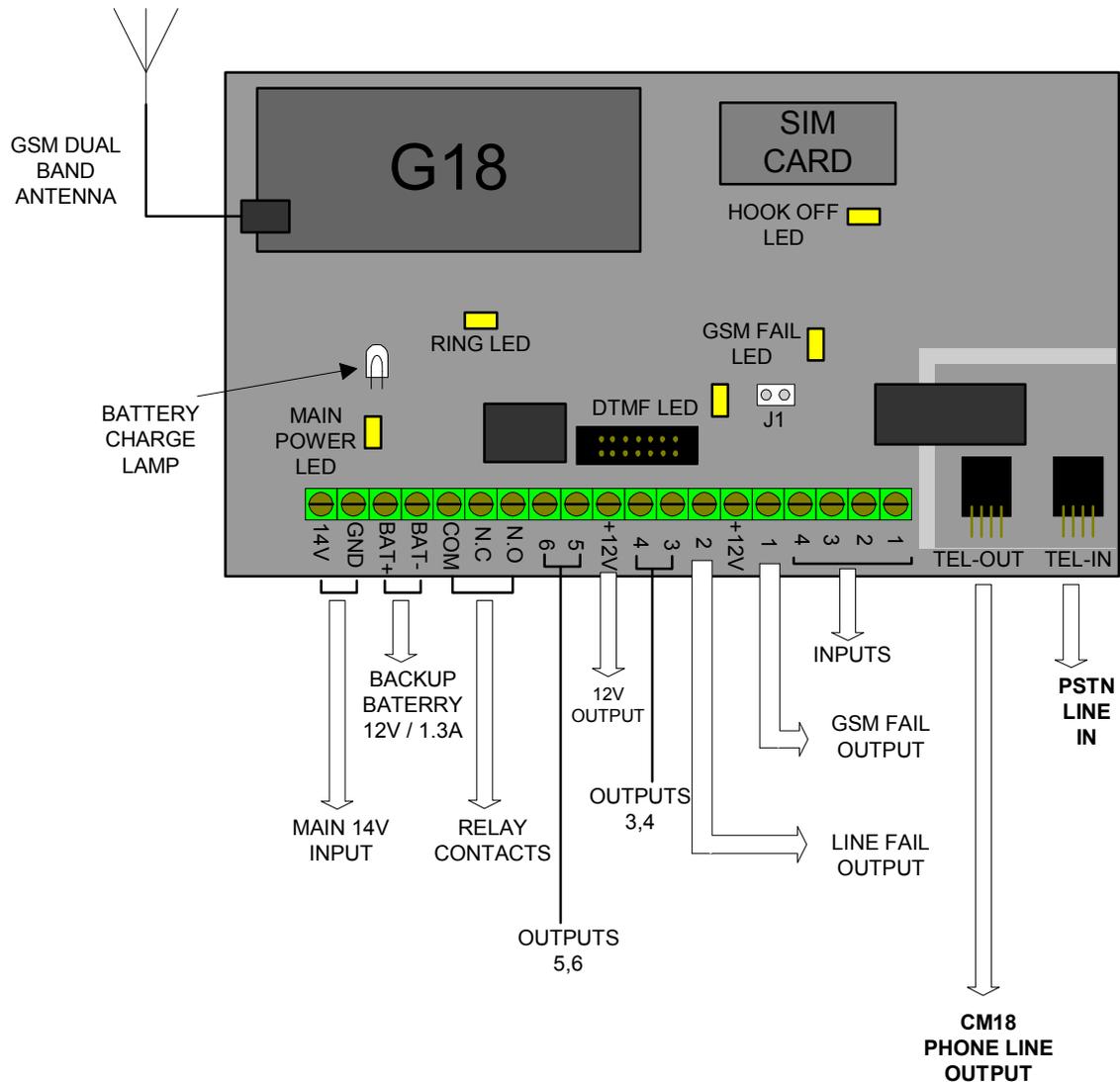
### **Sim card**

The CM-18 supports 3V / 5V sim cards. Before entering a sim card to the CM18 the pin code should be cancelled for that sim card , you can cancel the pin code using any kind of mobile phone.

### **Programmable installer code**

The default installer code is "0000" but this code is programmable , in order to change the installer code just enter installer mode by using the old code then program the new code . In case you changed the code and you forgot it you can default the installer code during power up. Power down the system , connect input 1 and 4 to GND and make sure that inputs 2,3 aren't connected to anything .Power up the system , wait until board is ready for use now you can return the inputs to the state you need and the installer code has already been changed to default

## Connections:



- ❑ TEL-OUT : phone line output supplied to an external system
- ❑ TEL-IN : PSTN phone line input (main phone line)
- ❑ Main power supply : 13.8 VDC supplied by external power source or panel
- ❑ Battery : 12V / 1.3A
- ❑ J1 : Reset jumper, should be always closed . In order to reset the internal micro controller, jumper should be open and then closed again to activate a power on reset simulation.
- ❑ Antenna : dual band GSM antenna.

## Indication leds

- Main power led : 14V DC entry indication
- Ring led : indicates ringing from GSM network
- DTMF led: the led is "on" at every DTMF dial via the GSM line.
- GSM fail led: indicates a problem with the GSM network such as bad reception quality, no SIM card present, antenna disconnected etc.
- Hook off led : the led is "on" when the external system picks up the phone (goes off hook ).

## SMS messages

The CM-18 supports several fixed SMS messages which will be sent to a pre-programmed phone number. The system can store up to 4 phone numbers and the message will be sent to phone numbers that were pre-programmed into the system memory. An SMS message will be sent every time one of the inputs is activated or deactivated as follows:

- When input 1 is activated the message is : "ALARM "
- When input 1 is deactivated the message is : " ALARM CLEAR "
- When input 2 is activated the message is : "BATTERY LOW "
- When input 2 is deactivated the message is : " BATTERY OK "
- When input 3 is activated the message is : "PANIC ALARM "
- When input 3 is deactivated the message is : " PANIC RESTORED "
- When input 4 is activated the message is : "TAMPER "
- When input 4 is deactivated the message that is: "TAMPER RESTORED "

An sms message " phone line fail " will be sent when the PSTN line fails , and another sms message "phone line OK " will be send when the PSTN line is restored.

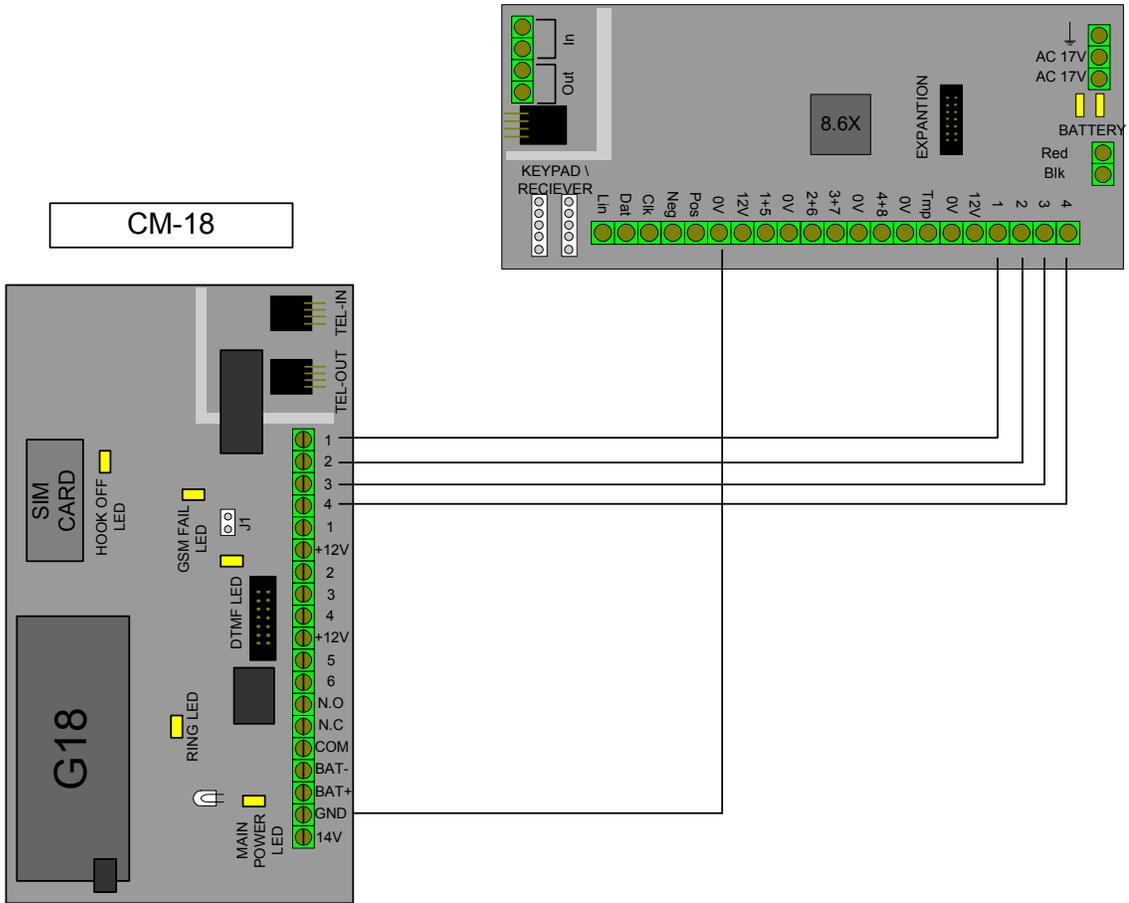
In parallel to SMS messages, the system also activates the relevant output. If no phone number was programmed, then no message will be sent when an input is "on" and the relevant output will still be activated.

An input goes "on" when the entry falls from "1" to "0" .

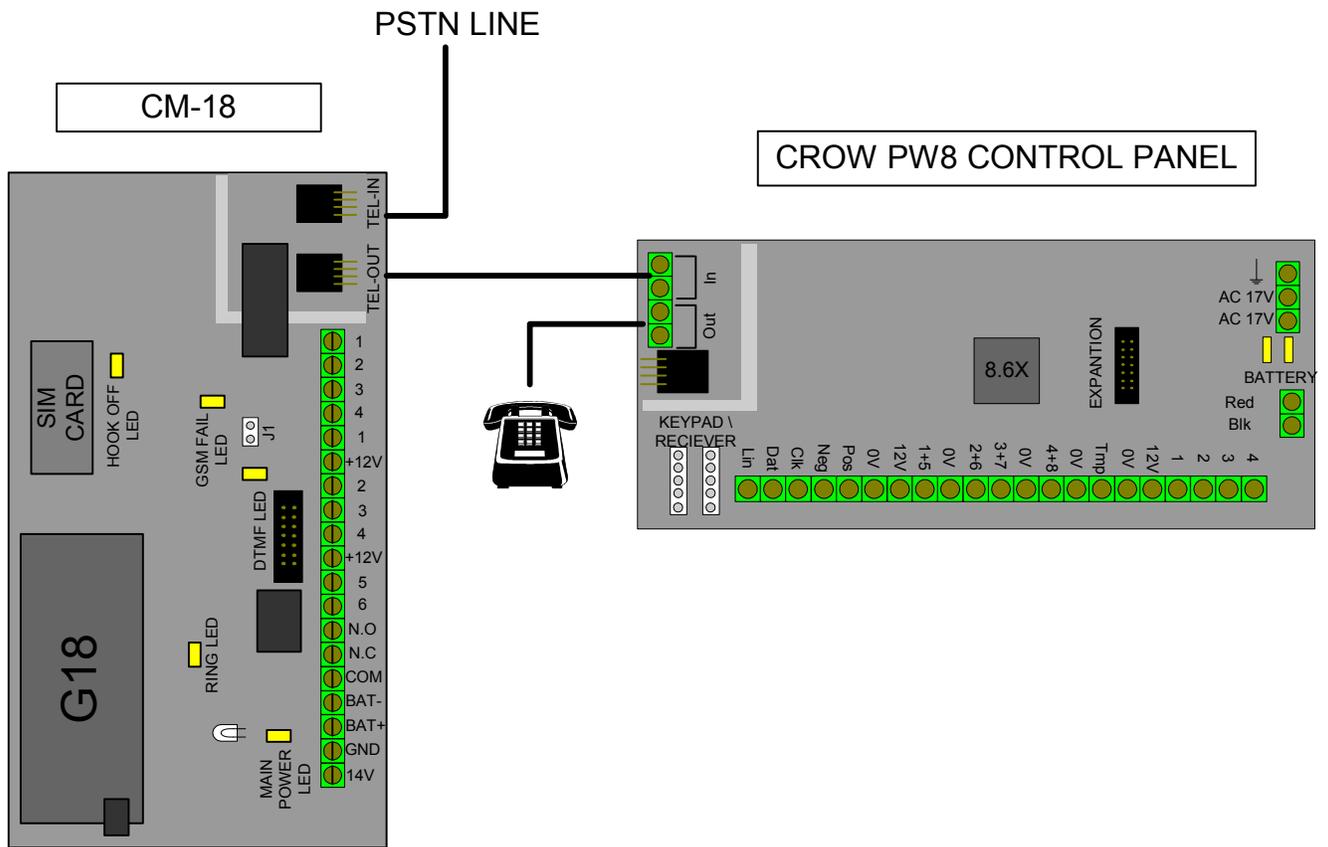
\*Example A : using PW8 Crow control panel with the CM-18 in SMS mode

CROW PW8 CONTROL PANEL

CM-18



\* Example B : using PW8 Crow control panel with the CM-18 in GSM line back up mode



- In a case of a GSM failure (such as bad reception quality, no SIM card present, antenna disconnected etc..) the system will switch the line back to the PSTN line , this if there is no PSTN line present and a GSM fail there will be no line to the control panel and the control panel will know it doesn't have a phone line , and when the GSM line is restored it checks the PSTN line and if there is no PSTN line it switches to the cellular line.

## CM-18 Programming

To program the CM-18 system:

- Connect the phone to the "TEL-OUT" connector
- Wait for dial tone
- Then proceed as follows:

### 1. Programming prefix number:

When using the GSM network, the addition of a prefix number may be needed.

The prefix number is user programmable.

- Press " 0000 " to enter program mode. Wait for beep acknowledging program mode is accessed.
- Type the prefix number.
- Press " # " to acknowledge
- Hear the acknowledge beeps

Example: if the prefix number is " 03 " - press " 0000 03 # "

### 2. Programming phone numbers:

Enter first phone number to the system memory:

- Press " 0000 " to enter program mode. Wait for beep acknowledging program mode is accessed.
- Press " 2 "
- Type the phone number.
- Press " # " to acknowledge
- Hear the acknowledge beeps

Example : if the number is 055646363 - press " 0000 2 055646363 # "

#### 2.1 Entering second phone number to the system memory:

- Press " 0000 " to enter program mode. Wait for beep acknowledging program mode is accessed.
- Press " 3 "
- Type the phone number.
- Press " # " to acknowledge
- Hear the acknowledge beeps

Example: if the number is 058646768 - press " 0000 3 058646768 # "

## 2.2 Entering third phone number to the system memory:

- Press " 0000" to enter program mode. Wait for beep acknowledging program mode is accessed.
- Press " 4 "
- Type the phone number.
- Press " # " to acknowledge
- Hear the acknowledge beeps

Example: if the number is 058646888 - press " 0000 4 058646888 # "

## 2.3 Entering fourth phone number to the system memory:

- Press " 0000" to enter program mode. Wait for beep acknowledging program mode is accessed.
- Press " 5 "
- Type the phone number.
- Press " # " to acknowledge
- Hear the acknowledge beeps

Example of the number is 058646889 - press " 0000 5 058646889 # "

## 3. Deleting phone numbers from memory :

### 3.1 Deleting first phone number :

- Press " 0000" to enter program mode. Wait for beep acknowledging program mode is accessed.
- Press " 2 "
- Press " # " to acknowledge
- Hear the acknowledge beeps

Example : press " 0000 2 # "

### 3.2 Deleting second phone number :

- Press " 0000" to enter program mode. Wait for beep acknowledging program mode is accessed.
- Press " 3 "
- Press " # " to acknowledge
- Hear the acknowledge beeps

Example : press " 0000 3 # "

### 3.3 Deleting third phone number :

- Press " 0000" to enter program mode. Wait for beep acknowledging program mode is accessed.
- Press " 4 "
- Press " # " to acknowledge

- Hear the acknowledge beeps

Example : press " 0000 4 # "

#### 3.4 Deleting fourth phone number :

- Press " 0000" to enter program mode. Wait for beep acknowledging program mode is accessed.
- Press " 5 "
- Press " # " to acknowledge
- Hear the acknowledge beeps

Example : press " 0000 5 # "

#### 3.5 Deleting prefix number:

- Press " 0000" to enter program mode, then the system will beep to acknowledge program mode access.
- Press " # " to acknowledge
- Hear the acknowledge beeps

Example : press " 0000 # "

#### 3.6 Program prefix to ignore

- Press " 0000" to enter program mode. Wait for beep acknowledging program mode is accessed.
- Press " 6 "
- Type the prefix to be ignored.
- Press " # " to acknowledge
- Hear the acknowledge beeps

Example of ignoring 805 - press " 0000 6 805 # "

#### 3.7 Program new installer code

- Press " 0000" to enter program mode. Wait for beep acknowledging program mode is accessed.
- Press " 7 "
- Type the new installer code .
- Press " # " to acknowledge
- Hear the acknowledge beeps

Example of using 1234 as a code - press " 0000 7 1234 # "



## **CROW LIMITED WARRANTY**

(CROW) warrants this product to be free from defects in materials and workmanship under normal use and service for a period of one year from the last day of the week and year whose numbers are printed on the printed circuit board inside this product.

CROW's obligation is limited to repairing or replacing this product, at its option, free of charge for materials or labor, if it is proved to be defective in materials or workmanship under normal use and service. CROW shall have no obligation under this Limited Warranty or otherwise if the product is altered or improperly repaired or serviced by anyone other than CROW.

There are no warranties, expressed or implied, of merchantability or fitness for a particular purpose or otherwise, which extend beyond the description on the face hereof. In no case shall CROW be liable to anyone for any consequential or incidental damages for breach of this or any other warranty, expressed or implied, or upon any other basis of liability whatsoever, even if the loss or damage is caused by CROW's own negligence or fault.

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