



## **MesCom D6000**

# **Application note for security panel installation**

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## **2 About your MesCom**

Whenever your intruder alarm system activates, your MesCom can send up to four separate text messages direct to any designated mobile phone. The basic unit is pre-programmed to send a message whenever your system identifies:-

- 1. An intrusion**
- 2. A fire**
- 3. A personal attack**
- 4. Whenever the system is switched on or off**

This capability depends on the type of alarm panel you have installed. You will need to check whether your control panel is able to provide all, or some, of these messages.

MesCom also has two programmable outputs which can be connected to a wide variety of devices such as lights, sounders, other electrical devices and machinery; these are activated by sending pre-determined message from your mobile phone.

All programming, reprogramming and operational alterations are carried out using any mobile. There is no need to connect the MesCom to any computer, programmer or keypad to carry out any these actions.

## 3 Installing and commissioning your MesCom

### Tools you will need:-

- A suitable, valid network SIM card
- A terminal screwdriver
- A length of 0.07mm conductor multi-strand alarm cable (long enough to connect from the alarm control panel to the MesCom location)
- A mobile telephone

### Selecting a SIM card

The MesCom can be used with any standard mobile phone SIM card, you can use a contract or pre-pay SIM, as the MesCom is SMS only you should look at the included text message and text message costs, Most network providers have a number of different tariffs one may include favourable text message costs. With pre-pay SIM cards network operators might disconnect the SIM card if inactive for a period of time, by default the MesCom will send a report of input4 every 7days to avoid being disconnected and confirm to the user the MesCom is still active. When using a pre-pay SIM it is up to the user to ensure the SIM has enough credit, Most can be topped up online or by voucher, some by ATMs, and a some companies offer automatic top-up when credit drops to a set level which would be ideal for the MesCom. Above all you should ensure the network used has good coverage where the MesCom is to be installed.

### Finding a suitable location

To keep cabling down to a minimum, the MesCom should be fitted as close to the alarm panel as practical. If the control panel has a plastic case and there is sufficient space within, fit the MesCom inside. This has the additional advantage that the MesCom and the interconnecting cables will be protected by the control panel's anti-tamper circuits. Secure to the case with double-sided adhesive tape.

- If the control panel is housed in a metal case, the MesCom antenna **MUST** be fitted outside the case, otherwise the GSM signal will be blocked and the unit will be unable to communicate.
- The Dycon GSM Signal Analyser (part number D2366) could assist in finding the most effective location for the antenna.

### 3.1 *Connecting to the alarm control panel*

#### MesCom inputs

Most alarm control panels have separate open collector or relay outputs for intruder alarm, fire alarm, personal attack alarms and to indicate whenever the system is turned on or off. Connect to the appropriate MesCom input terminal whichever of these you wish to communicate. We recommend using standard 0.7mm multicore stranded alarm cable. The photograph below shows the location of each input on the MesCom. If you are not using any of the inputs, there is no need to link them out.

## MesCom outputs

The two outputs on the MesCom are pull down (open drain) types capable of switching 100mA 30V loads and can be controlled with the SWITCH command or PULSE command. Highly inductive loads like electric door strikes should be fitted with a back EMF protection diode. Connect these outputs to whatever has to be switched using cable suitable for the purpose.

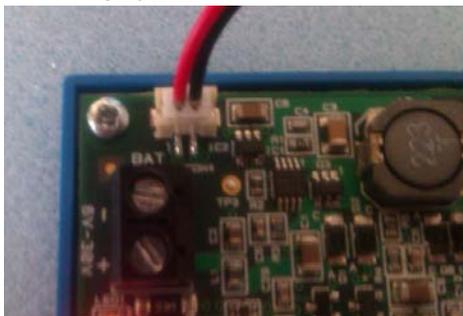
### 3.2 Connect and power up

Remove the MesCom lid by pulling up any corner - be careful not to pull the battery if already connected.

- Insert SIM card as shown here:



- Connect the supplied stub antenna or any suitable GSM antenna with an SMA connector.
- Connect the battery to the small white 2 pin socket near the power connector as shown:



The LED indicators should start to flash indicating that the unit is working. If the LEDs don't flash, the battery may be discharged. In this case, switching on the power supply will start the LEDs flashing and the battery will begin to charge.



**Before connecting a supply, ensure it is the correct voltage and current rating and the polarity is correct. The MesCom is not fitted with fuse or overvoltage/polarity protection incorrectly connecting a PSU with damage the device.**

- Connect a suitable supply to the power terminals being careful to observe polarity. And switch the supply on.

## 4 Configuring your MesCom

The MesCom is programmed by SMS (text message) from a mobile phone. All programming messages should begin with the admin password. The default **Admin** PIN password is **9876**.

**You should change the unit's passwords once you have finished programming or your security might be compromised.**

These SMS messages need to be sent to the phone number of the SIM card inserted into the MesCom. The messages need to be typed correctly, Correct messages will get a confirmation text message from the MesCom. Incorrectly typed messages will not get a response to increase security and reduce operating costs.

### 4.1 To give your MesCom an identity

You must change the name of the unit to one which you can relate to, for example 'Home' or 'Office'. Any new name can be up to 24 characters long and may contain any character supported by SMS but **MUST NOT** contain any spaces. The underscore character '\_' can be used as an alternative.

Enter the Admin password first, followed by the command **OPTION IDENT** then send the message to the phone number of the MesCom.

**Example:** 9876 OPTION IDENT Home

Where '**Home**' is your name for the site of the alarm system.

### 4.2 Adding contact phone numbers

You must register the telephone numbers of all persons who the MesCom should contact when the unit detects a change in any input or output.

Enter the Admin password first, followed by the command **ADDNUM** and the number to add then send the message to the phone number of the MesCom.

**Example:** 9876 ADDNUM +447.....

The phone number must be in international format (i.e. starting with a + symbol). You must include the country code (+44 for UK) and omit the first 0 from any area code. *The example shown above would be how to enter the code for the UK phone number 07000 123456.*

The MesCom can store a maximum of four contact numbers.

- If there is insufficient space in the list for another number to be added you will get a message saying 'failed'.
- If you do not enter a number, the Mescom will only store and contact the number of the phone you are currently using for programming.
- Adding a number that is already on the user list will not create a duplicate.

### 4.3 Configure type of alarm trigger

#### Volt-free contacts

To configure the MesCom for volt free inputs, relay contacts or open collector, the PULLUP resistor needs switching on.

Enter the Admin password first, followed by the command **OPTION PULLUP YES** then send the message to the phone number of the MesCom.

**Example:** 9876 OPTION PULLUP YES

This will cause the inputs to be pulled up when there is no connection instead of pulled down.

Pull-Up enabled is the default for the MesCom.

## Voltage assert/absent triggers

Some panels use voltage assert/absent signalling which requires 'pull down' to be used.

Enter the Admin password first, followed by the command **OPTION PULLUP NO** then send the message to the phone number of the MesCom.

**Example:** 9876 OPTION PULLUP NO

Disabling the Pull-Up off implies the pull down must be enabled

## Simplifying commands strings

In order to avoid having to send too many separate messages, up to four command settings can be combined into a single message.

These and other option settings can be combined up to 4 settings in per message:

**Example:** 9876 OPTION IDENT MyPanel PULLUP YES

In this example the first setting is 'IDENT' and its value is 'MyPanel', the second setting is 'PULLUP' and its value is 'YES'.

### 4.4 Configure inputs

MesCom inputs can be configured as Digital, Analogue, Timer or Counter.

Most alarm panels are digital only and this is the default setting of the MesCom.

If you wish to change the inputs to analogue, timer or counter, please refer to the MesCom Workshop Manual or appropriate MesCom specialist application notes.

You should personalise the input name to correspond to the trigger as well as personalise the message to be displayed when the signal is off or on.

Eg. The default settings for the MesCom are:

| Input  | Name     | Off   | On     |
|--------|----------|-------|--------|
| Input1 | Fire     | Alarm | Normal |
| Input2 | Intruder | Alarm | Normal |
| Input3 | P.A.     | Alarm | Normal |
| Input4 | Status   | Unset | Set    |

There are settings for each input and again these settings can be combined into one message per input.

To change settings for an input you must use the **POINT** command. Settings you may wish to change are:-

- **PNAME**, followed by a the new name of the input
- **LEVELS** followed by names for OFF and ON (and 3 unused states) *i.e. alarm = OFF state, Normal = ON state.*

Enter the Admin password first, followed by the command **POINT** and the input name followed by any settings you wish to change. Then send the message to the phone number of the MesCom.

**Example:** 9876 POINT Fire PNAME Tamper LEVELS Alarm Normal NA NA NA

In this example:

- **Fire** is the current name of the input.
- **Tamper** is the new name of the input.
- **Alarm** is the OFF state message.
- **Normal** is the ON state message.
- The 3 x **NA** part of the message is required as all inputs have 5 levels but the top three are not used with digital inputs.

If your inputs are Low going High, you will need to change the OFF state name to 'Normal' and the ON state name to 'Alarm'.

**Example:** 9876 POINT Intruder LEVELS Normal Alarm NA NA NA

It is also possible to change de-bounce and threshold levels for digital inputs but this is not normally required for standard alarm systems. If you need to change these values, please refer to the MesCom Workshop Manual or appropriate MesCom specialist application notes.

## 4.5 Configure outputs

MesCom has two 'pull down' (open drain) outputs capable of switching 100mA 30V loads; highly inductive loads such as electric door strikes or gate motors, should be fitted with a back EMF protection diode.

Eg. The default settings for the MesCom are:

| Output  | Name | Off | On | Power On State |
|---------|------|-----|----|----------------|
| Output1 | Op1  | Off | On | Off            |
| Output2 | Op2  | Off | On | On             |

Outputs are configured with the same command structure as inputs.

Enter the Admin password first, followed by the command **POINT** and the output name followed by any settings you wish to change. Then send the message to the phone number of the MesCom.

**Example:** 9876 POINT op1 PNAME lights LEVELS Off On NA NA NA

In this example:

- **Op1** is the current name of the input.
- **Lights** is the new name of the output.

- **Off** is the label for OFF or output de-energised.
- **On** is the label for ON or output energised.
- The 3 x **NA** part of the message is required as all outputs have 5 levels but the top three are not used with digital outputs.

**Please note:** Inputs and outputs **MUST** each have their own unique name or confusion and unpredictable output behaviour will occur.

An additional **THRES** (threshold) command allows you to configure the power-up state of an output. Unless you are fully conversant with these requirements, we recommend that you do not use this feature. Details are contained in MesCom Workshop Manual or appropriate MesCom specialist application notes.

#### 4.6 Confirm settings

You should always check the setting you have made on your MesCom before completing the installation. To do this you should use the **VIEW** command.

The **VIEW** command can be used with the separate Control password. The default **Control** password is 5566. The Admin and Control (see below) passwords can also be used.

Enter the Control password first, followed by the command **VIEW** and the sequence of keywords for the setting which you wish to view. Then send the message to the phone number of the MesCom.

To check the name of the MesCom and Pullup state

**Enter: 5566 VIEW OPTION IDENT PULLUP**

To check the names of an input or output

**Enter: 5566 VIEW POINT Intruder PNAME LEVELS**

Where **Intruder** is the current name of a point, you have to send one message per input

#### 4.7 Default passwords

You should improve your system's security by changing your passwords once you are happy that your MesCom system is working correctly.

To change any or all of these values use the **PASSWORD** command. The password used to precede the **PASSWORD** command depends on the password you want to change.

Enter the password you wish to change first, followed by the command **PASSWORD** and the new password TWICE. Then send the message to the phone number of the MesCom.

**Example: 5566 PASSWORD 4321 4321**

Where **4321** is the new password replacing the current 5566 password (typically the Control password).

The new password can contain numbers and characters and is case sensitive, with a maximum length of 8 characters.

| Command       | Default Password | New Password |
|---------------|------------------|--------------|
| Control       | 5566             |              |
| Administrator | 9876             |              |

## 5 Normal Operation

### 5.1 LEDs

The MesCom has three LEDs:-

|            |  |
|------------|--|
| Yellow (1) | <ul style="list-style-type: none"><li>• Flashes every 2 seconds when everything is normal</li><li>• Flash twice a second when sending a text</li></ul>                 |
| Green (2)  | <ul style="list-style-type: none"><li>• Indicates that there is a radio module activity (serial communications)</li></ul>  |
| Red (GSM)  | <ul style="list-style-type: none"><li>• Quick flash shows the unit is attempting to register</li><li>• Slow flash (every 3 seconds) - unit is now registered</li></ul> |

### 5.2 Receiving a call from the MesCom

When the MesCom detects that one of its inputs has changed state, i.e. your alarm has activated or has been switched ON/OFF, it will send a text message to all those phones that have been programmed to receive it showing what has happened.

#### Checking when the children come home from school

The MesCom can provide parents with the reassurance that their children have returned safely from school and are now at home. Using the ON/OFF monitoring, the MesCom will send a text message to tell you when the children have entered the home and turned off the alarm system.

### 5.3 Switching an output after activation

When a MesCom text message has been received, the recipient can SWITCH on/off or PULSE one or more of the unit's outputs by sending a command in a text message from their mobile phone. These commands require the use of a separate Control password. The default **Control** password is **5566**. The normal Admin password can also be used.

To change an output use the **SWITCH** or **PULSE** command depending on how you want the output to function.

#### SWITCH Command

Enter the Control password first, followed by the command **SWITCH** and the output name followed ON or OFF. Then send the message to the phone number of the MesCom.

**Example:** 5566 SWITCH OP2 ON

Where **OP2** will be switched **ON**.

#### PULSE Command

**PULSE** requires 4 values:-

- 1<sup>st</sup> = point name.
- 2<sup>nd</sup> = initial value to set point to.
- 3<sup>rd</sup> = delay before changing to final value.
- 4<sup>th</sup> = final value to set point to.

Enter the Control password first, followed by the command **PULSE** and values for the above in a list. Then send the message to the phone number of the MesCom.

**Example:** 5566 PULSE OP2 ON 500 OFF

Where **OP2** will be pulsed **ON** for **500ms** and then **OFF** again.

Attempting to **PULSE** or **SWITCH** a point that isn't an output will have no effect.

#### **5.4 Switching an output remotely**

An authorised user can switch or pulse any of the MesCom's outputs without waiting for a text message. Just send the one of the above messages from a mobile phone.

Any changes in output state will notify all the registered phones by text message. EG. If a user sends the above **PULSE** example, they will receive 3 messages from the MesCom:

- an acknowledge of the command
- a notification of the output changing to On
- and finally a notification of the output changing to Off

All other registered users will just get the 2 notifications messages.

#### **5.5 Test Button**

- Pressing the test button triggers a notification text (this can be disabled) and forces the radio module to be powered for the next 15 minutes.
- The test button can also be used to reset to factory default by pressing the button at power up, see workshop manual for more detail.

## 6 Useful Additional Commands

### 6.1 Removing users

To remove a user you must use the **REMOVE** command.

Enter the Admin password first, followed by the command **REMOVE** and number of the phone to be removed from the user list. Then send the message to the phone number of the MesCom.

```
Example: 9876 REMOVE +447●●●●●●●●●●
```

The phone number must be in international format (i.e. starting with a + symbol). You must include the country code (+44 for UK) and omit the first 0 from any area code. The example shown above would be how to enter the code for the UK phone number 07000 123456.

- If a number is not in the user list, you will get a message saying failed.
- If you do not enter a number, the Mescom will remove the number of the phone being currently used for programming.

**This command will stop that phone from receiving any more notifications**

### 6.2 Reading the current status

To find out the current status of an input or output, use the **READ** command.

Enter the Control password first, followed by the command **READ** and the name on the point (input or output). Then send the message to the phone number of the MesCom.

```
Example: 5566 READ Intruder
```

This command supports a request for up-to 4 points at once.

```
Example: 5566 READ Battery Temperature P.A. OP1
```

The keyword **ALL** can also be used to return a state of all enabled points including inputs, system points and outputs.

```
Example: 5566 READ ALL
```

### 6.3 Disable a faulty input

To disable a faulty input use the **DISABLE** command.

Enter the Admin password first, followed by the command **DISABLE** and the name on the point (input or output). Then send the message to the phone number of the MesCom.

```
Example: 9876 DISABLE Intruder
```

### To re-enable an input

To reverse a **DISABLE** command, use the **ENABLE** command.

```
Example: 9876 ENABLE Intruder
```

## To Disable or Enable all input

Simply use the **ALL** keyword to disable/enable all points.

```
Example: 9876 ENABLE ALL
```

## To Lock an output

The **DISABLE** command can also be used on Output - this has the effect of locking the output, stopping it from being changed until it is **ENABLED**

```
Example: 9876 DISABLE OP2
```

## 6.4 Temporary **STOP/START** user's notification

This command is a universal command to stop receiving text messages from an automated system; it allows a person who has been accidentally added to a MesCom to disable further text messages.

Using this command will stop that phone receiving any notifications.

```
Example: STOP
```

Please note the **STOP** command is **NOT** preceded with a password.

The **STOP/START** command also allows a user to temporarily disable, and subsequently re-enable, messages to themselves - for example when they are out of the country.

```
Example: 5566 START
```

Please note the **START** command **IS** preceded with the Control password.

An administrator can view if a user has any messages on **STOP** with the **VIEW** command

```
Example: 9876 VIEW USER ALL
```

This will output a list of all users and their current notification format.

An administrator can force a change of the notification format with the **ADDNUM** command

```
Example: 9876 ADDNUM +447..... 2
```

Where the final '2' sets the given phone number to human-readable messages enabled.

To avoid regulation issues with regard to automated text services, the **REMOVE** command can also be used without a password to remove the sender from the MesCom's memory.

This command will stop a phone receiving any more notifications

```
Example: REMOVE
```