Comfort, the Intelligent Home System

Engineer Menu Programming

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SECTION 1 INTRODUCTION

Comfort Documentation

Comfort Installation and Programming manuals are organized into several manuals for easy reference. These include;

Installation Manual

- Specifications and Ordering Information
- Comfort Models - Entry, Pro and Ultra
- Installation and Wiring
- Testing and Commissioning
- Troubleshooting
- Frequently Asked Questions

Programming with Comfigurator

Shows how to program Comfort using the Comfigurator software. Describes Comforts Programming Model and programming strategy.

Comfigurator Reference Manual

This describes the Comfigurator software and shows how to use each screen and feature. It is essentially the HELP file for Comfigurator.

Engineer Menu Programming

How to program Comfort using the telephone or Keypad by means of Comfort's Engineer Menu. (This manual)

Worksheets

Worksheets are used as an aid in for Engineer Menu programming. These consists of design tables of programming data which are to be entered into the various locations. There is a worksheet for each Comfort model.

Action Codes Reference

A Complete list of Actions and how they are used. Action codes are commands for Comfort. These are assembled into Responses (sometimes called "Macros") to produce multiple operations. Master these and you can make your Comfort system do what no other system can. Action Codes can be specified in Comfigurator's Response Wizard

Applications Manual

The applications manual shows how to use Action codes and Responses to program Comfort in commonly used scenarios. This is updated as new applications and solutions are added.

Training Materials

Check with your Comfort distributor or Cytech Technology for new Training Materials, like presentations, tutorials, exercises etc.. which are updated from time to time.

2 Ways to Program

Comfort can be programmed in one of the following ways;

1 Comfigurator for Windows. This can be downloaded from http://www.cytech-technology.com/software.html. The software requires the Universal Communications Module (UCM) with RS232 Interface. The booklet "Comfigurator Reference Manual" has instructions on how to use the software.

2 Programming in Engineer Menu by Keypad, Local or Remote Telephone. Keypad and telephone programming is convenient when small changes have to be made. Remote telephone programming can be done without having to be on site.

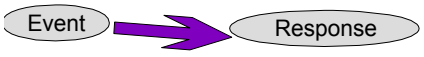
This manual will show how to program Comfort using the Engineer Menu. To learn about programming using Comfigurator, refer to "Programming with Comfigurator".

Comfort Programming Model

Comfort is a highly programmable system able to perform many tasks in the home. It requires some time and effort to learn how to program Comfort to make use of its full power, but the time spent will be worth while, as Comfort is a powerful tool which is able to handle almost any automation application. The key to understanding the operation and programming of Comfort lies in the concept of Event-triggered Responses, Inputs and Alarms.

Event Triggered Responses

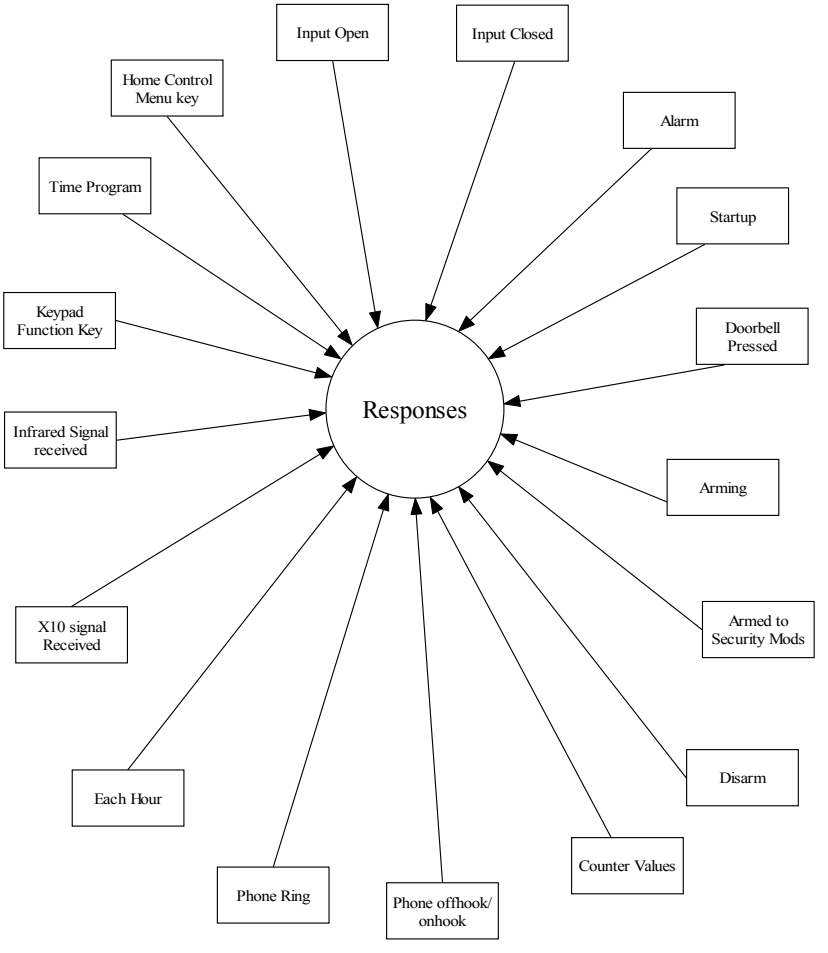
Comfort is an event-driven system. This means that events monitored by Comfort can be programmed to trigger ***Responses*.**



A Response is a program (sometimes called ***macros*** by other home automation systems) which performs a series of commands called ***Actions***. An Action can switch on/off a light, draw your curtains, open the garage door, arm the security system, make an announcement, play a recorded message, check the time, turn up the temperature etc.... You can combine a series of actions to make up a Response to do what you need to. Actions can be conditional, ie they can do different things depending on the conditions, for example, if the front door is opened between 7 PM and 7 AM, then turn on the light for 2 minutes.

An Event is what triggers Responses. Events include Inputs (zones) opening or closing, activation of any of 31 alarm types, Time Programs, arming or disarming of the security system, an X10 signal received from the power line, an infrared signal from a handheld remote, a home control key, a keypad function key, the phone ringing, going offhook or onhook, and many others.

The key to programming Comfort is in knowing what events to monitor, and choosing or creating responses to be activated when these occur. Responses are like programs in a computer and Actions are the commands or statements in the program.



Comfort Events

Comfort has a comprehensive list of Actions which may be used for programming. Refer to the booklet "Programming with Action Codes", for the actions and their descriptions. There are actions for turning outputs on and off, or pulsing outputs, sending Infrared codes from any

output, sending X10 codes, starting Timers, arming and disarming the security system, bypassing zones, activating sirens, and conditional actions which allow different results based on conditions.

Zone-Activated Responses

Each zone or Input can start a Response when it goes ON (activated), and another Response when it goes off (deactivated). These Responses may be used to turn on and off lights and appliances, cause announcements or do other functions as required. See Worksheet Table 4.

Alarm-Activated Responses

Each Alarm Type can start a Response when the alarm is activated. These Responses may be used to perform supplementary functions in the event of alarm activation. See Worksheet Table 19.

Time Programs

16 Time Programs enable functions to be activated automatically at programmed times and days of week. See Worksheet Table 28.

Each Time program consists of an Activation Time, days of the week for activation, and a Response. A Time program can be specified for any combination of days of the week (Monday to Sunday) as well as Holidays. A Time program is activated if the current day of week is selected and the time matches the programmed time (to the minute). When this happens, the programmed Response is activated.

For example, in an office, Time Program 1 may be programmed for 9:00 am on Monday, Tuesday, Wednesday, Thursday, Friday to activate a Response which disarms the security system and turns on the lights, air-conditioning and photocopying machine. Time Program 2 may be programmed for 7 PM on the same days to arm the system to Away mode and turn off the lights, photocopying machine and air-conditioning. However, on Holidays, Time Program 1 should not take place. The Response for Time Program 1 should check that the day is not a holiday, and if it is, to exit without performing the other actions. Up to 24 Holidays in a year can be defined to handle situations like this.

Time Programs can also handle automatic Daylight Savings Time Adjustments.

Vacation Programs

The system has the ability to control lights and home appliances at semi-random times during the day or night in Vacation Mode. This is made possible by Vacation Programs. There are 8 Vacation programs available. See Worksheet Table 29.

Each Vacation Program consists of a Start Time in hours (0-23), a Duration in hours (0-23) , an ON Response, and an OFF Response.

The Start Time is when the ON Response is activated. Only the Start Hour (0 to 23) is specified in the Vacation program. The actual time within the hour is generated randomly by the system, and is different for

each day that it is activated. The duration is specified in hours in the Vacation Program, but the actual duration minutes is also generated randomly, and is different each time that the Vacation program is activated. At the end of the Duration, the OFF Response is activated.

For example, Vacation Program 1 is programmed for Start Time of 7 PM, a duration of 1 hour, ON Response to turn on a light, and OFF Response to turn off the light. Each day, the light will turn on between 7 PM and 8 PM, for a duration of 1 hour to 1 hour 59 minutes. With this randomized pattern, it will not appear to be a programmed or automatic operation. All Vacation Programs may run simultaneously and overlap in time.

Security Mode Responses

When the system is armed to one of the Security Modes (Away, Night or Day) or Disarmed to Security Off, a Response may be activated. For example, when the system is armed to Away Mode, lights and appliances can be programmed to turn off. For Security Off Mode, heating or air-conditioning may be turned on or set to a comfortable temperature. See Worksheet Table 30A.

Home Control Menu

The Home Control Voice Menu is used to control home appliances as well as perform other home automation and security functions.

The Home Control Menu can be programmed as 1 group for Comfort Entry, 3 groups for Comfort Pro and 6 groups for Comfort Ultra. Each group consists of 10 Control Keys which may correspond to a light or appliance. Within each Control Key, there are 11 programmable Action Keys, for example ON, OFF, LOUD, SOFT, UP, DOWN, BRIGHT, DIM).

Hence the Control Menu allows access to 10 appliances or menu items for Comfort Entry, 30 appliances or menu items for Comfort Pro, and 60 appliances or menu items for Comfort Ultra.

Each Control Key consists of a Description which is made up of up to 4 words from the Wordlist and up to 11 Action Keys (0 to *).

Each Action key for a Control Key is made of a description of up to 3 words which describes the Action (e.g.. ON, OFF, Channel 1, Channel 2, High, Low), and a Response. It is the Response which performs the function for the Control Menu. Hence any item in the Home Control Menu can perform any function depending on the Response, not only for Home control.

Control Keys may be used for:

- Direct Control of Home appliances via X10, Relays or Infrared signals
- Activating Scenes which program a combination of lighting, music and mood for various occasions, like Party, Sleep, Work, Movie, etc.....

The status of the appliance being controlled can be announced, based on Comfort's Inputs, Outputs, Counters, or Flags.

Keypad Responses (for Function keys)

Each key on the Keypad when prefixed by the F key can activate a Response. Thus, each key can be programmed to a wide variety of functions including

- Shortcut to frequently used Menus
- Activate Intercom Function to other Keypads
- Turn on another Keypad microphone as a Baby Monitor
- Change Sign-in code
- Activate home appliances or combinations of appliances
- Arm to any mode
- Trigger sirens and other alarm outputs
- Play Reminder Messages

The possibilities are almost endless!

X10 Received Commands

Comfort can receive X10 commands from any X10 transmitter, if a two way X10 interface (TW523/TW7223/PSC05) is connected to the X10 socket. Comfort can be programmed to recognize one of the 16 housecodes A to P. Any Unit code ON or OFF will trigger a Response. See Worksheet Table 32.

Received Infrared Responses

The KP02 keypad with IR receiver is able to receive IR codes from any universal handheld remote control like the Philips Pronto. Each received code is able to activate a Response. See Worksheet Table 36A. The Scene Control Switch SCS/IR and RIO Input is also able to receive Comfort IR codes which can activate the Responses in Table 36A.

SCS/RIO Responses

The Scene Control Switch has 4 buttons which can activate Responses to set any scene or control any appliance or group of appliances. Each button activates a Response in the location specified in Table 36B, depending on its ID.

Each Remote Input/Output Module (RIO) has 8 Inputs, each of which activates a Response. The corresponding inputs of the RIO and SCS activate the same set of Responses, shown in Table 36B.

Other Event Triggered Responses

Other events which activate Responses are

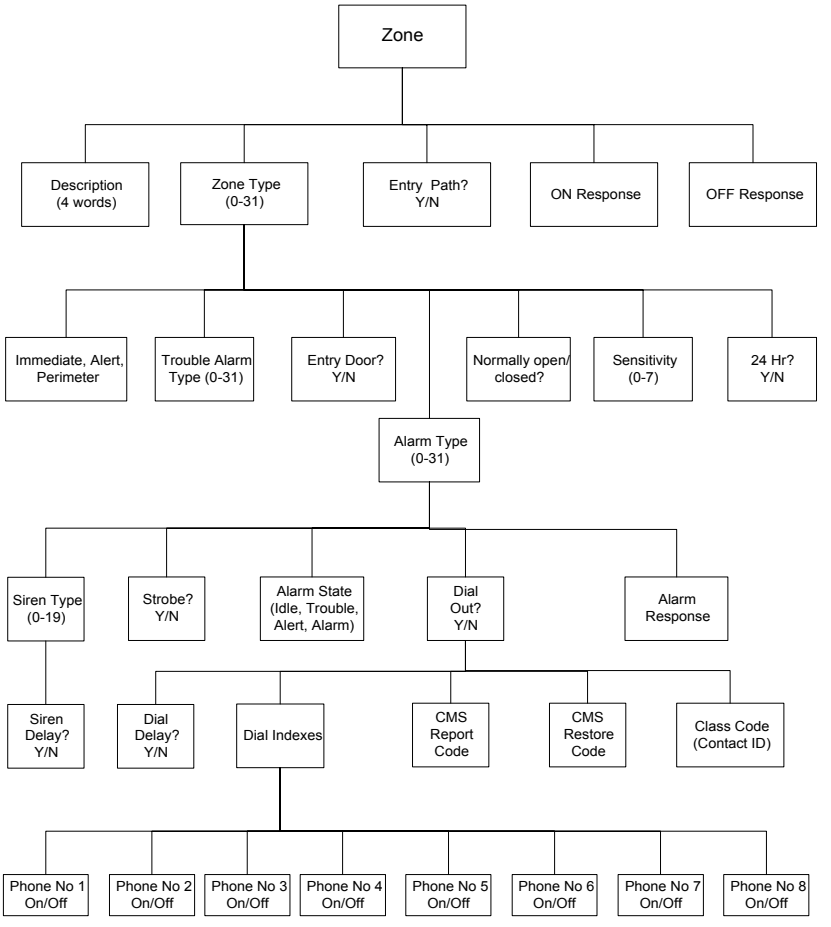
- Incoming Call/ Phone ringing
- Phone Onhook
- Phone Offhook
- Doorbell pressed
- Hourly
- System Reset/ Power On
- System Arming.

See Worksheet Table 30B for the Locations of these Responses.

Comfort Inputs and Alarms

The basic Comfort system includes 8 Inputs, also called Zones, expandable to 64. Each Input can be programmed as Normally Open or Closed, and it may be an alarm input which can cause alarms, or a switch which does not cause an alarm in the traditional sense, or a Digital Input, which is either On or Off with no Trouble states (short-circuit or open-circuit). Each Input is programmed as a selectable *Zone Type*. It can be programmed with up to 4 descriptive words*,* it may activate Responses when it is open and closed. Zone Types are a collection of properties which can be assigned to a zone for easy programming. Each Zone Type is associated with an *Alarm Type* which determines the behavior of the system during this alarm.

The above table shows the key relationship between **Zones, Zone Types, Alarm Types and Siren Types**.



Zones, Zone Types, Alarm Types, Siren Types

Each **Zone** has settings for Description, Entry Path, Responses, and also belongs to a **Zone Type,** which determines the basic behaviour of the zone, like whether it is Normally Open or Normally Closed, if it is a 24 hour zone, if it is an Entry Door etc...., and its Alarm Type. The **Alarm Type** determines the actions taken by the system during alarm activation, like whether it dials out, and if so to which numbers, whether the siren and strobe is turned on etc.... The **Siren Type** determines the pattern and duration of the sound.

This highly configurable system allows great flexibility in programming a system, but it also simplifies programming because of default settings. Programming consists of assigning words and Zone Types to each zone.

Zone Types, Alarm Types and Siren Types have defaults which do not need to be changed unless there are special requirements.

☎ **The RIO/SCS Inputs are not alarm inputs, ie their zone type is fixed, as Normally Open switches.**

Program and Engineer Menus

There are 2 levels of programming access,

1 Program Menu - This is for User-level programming. It allows a master user (User 1) to change settings pertaining to the answering machine, home automation and certain security features. Program Menu is accessible from the user Master Code (User Menu 9) as well as Engineer Menu 9. This is described in detail in the Program Menu Reference (User Manual)

2 Engineer Menu - Allows change in security, zone, home automation and alarm settings. This is described in detail in the Engineer Voice Menu Reference. Engineer Access is enabled by setting the Engineer Sign-in Option ON in the User Program Menu (3 - Security Settings, 4 - Engineer Sign-in option*)*. If this setting is OFF, the Engineer code will not be allowed to gain access to the Engineer Menu. This is automatically disabled each day at midnight and when the system is armed, as a safety precaution.

Programming Modes can be accessed from the Keypad, any house phone, or remotely, by dialing from any tone-dialling telephone.

COMFIGURATOR for Windows is also available to do programming from a PC connected locally. There is no facility for remote PC programming, because Comfort (unlike other alarm systems) has a very large amount of memory to be programmed which would require a long time to program at the low speeds typical of remote downloading systems.

Accessing Engineer Menu

If no Engineer Code has been programmed, the default code is 6789#. The Engineer Sign-in Option must be enabled on the Program Menu in order to gain access using the Engineer Code.

To enable Engineer Code,

- Enter the Program Menu, press 3 for Security Options, 4 for Engineer Sign-in Option, and 1 to set it to ON.
- Alternatively, on the Keypad, press F+ 0 which is default-programmed to enable Engineer Sign-in Option. This key can be programmed to dial to one of the programmed phones, i.e. the Engineers telephone number, to allow remote programming. This is done by enabling the dialout option in Alarm Type 30, and turning on the required phone index 1 to 8

The Engineer Sign-in Option is OFF by default, and is turned off when System is Reset (pressing Reset button, not rearm), and is automatically disabled each day at midnight, and also when the system is armed This

option gives the user assurance that installers cannot access their system without their authorization.

To enter Engineer Programming mode, either

- Use any Keypad or house phone and enter * (Engineer Code) #, or
- Dial the phone number where the system is installed. When the system answers the call and plays the Greeting message, enter * (Engineer Code) #. This is possible provided the phone is not answered by anyone on the premises.

When the correct code has been entered, the system enters the Engineer Menu.

Engineer Menu
Press 1 for Zone
2 for Alarm
3 for Control
4 for Security
5 for Event Log
6 to Change Sign-in code
7 for System
8 for Test
9 for Program Menu
Press # to End

To select a submenu or option from the voice menu, enter a number on the telephone keypad as instructed (digits 0-9,*,#). It is not necessary to wait until the voice menu is completed before entering the digit to select a submenu or option.

The Engineer Menu Flowchart is at the end of this manual.

Programming by Locations

Most programming settings are available on one of the Engineer submenus. Refer to the Engineer Menu Reference for a full description of the menu required. However, there are many settings which are not accessible by submenus, but can be programmed in the Location Menu which is accessed from Engineer Menu 7 for System, 4 for Star, 1 for Locations.

Enter Location Number and # Key

Enter the Location given in the worksheet followed by the # key. The system announces the Location entered, and the value of the code at the locations, for example,

Location 1675, Code 1
Enter New Code and # key

To change the code at the location, enter 0 to 255 and the # key. To correct a wrong entry, press * and the new data, and # key. The system will announce the new value entered.

Remote Programming

Comfort allows remote programming from any telephone, by dialing and entering Engineer code when Comfort answers the call. The Engineer code has to be enabled from Program Menu 3,4,1. Comfort does not support remote PC programming, but telephone programming is (arguably) more useful, as it allows programming from anywhere, without having to be in the office with a PC. While not many people would program the whole Comfort system from a telephone, it is easy to make changes to an existing program from the telephone.

How to use the Voice Menus

The general sequence of the voice menus (User, Program, Engineer) is:

1 The Voice Menu gives the options or submenus which can be selected.

2 The system waits for entry of a number key from the keypad. If no number key is pressed within a time limit, the menu is replayed. If no keys are pressed for some time, the system exits this mode and returns the phone to normal operation or turns off the Keypad.

3 When the number key is pressed either (a) the selected menu item is activated, (b) a new submenu is selected with a new voice menu or (c) the system requests the entry of a number to change an existing setting. In the case of (c), when a new number is to be entered, the system will say the current value of the parameter, and ask for a new number and # key. After the number is entered followed by the # key, the new value entered will be announced as confirmation. If the current value is not to be changed, just enter #. The previous voice menu will be played. Entering * clears the digits entered, for example 1234*5678# will enter 5678.

☎ **When using the telephone, to avoid mistakes when entering numbers during programming, press * before the number. This stops the voice menu and clears any numbers entered. If the voice menu is talking, make sure that it stops when the key is pressed. This is useful if you do not wait for the menu to finish before keying in the new number.**

4 At any voice menu, entering just # alone will return to the previous menu.

5 Pressing F on the active Keypad ends the menu.

6 If an invalid digit is entered in response to a voice menu, the menu will be repeated. Hence to repeat a menu (if you do not want to wait a while) , just press an invalid digit; usually 0 or 9 will do.

7 When asking for input, the voice menu will say "Press .. for.." or "Enter new ... number (or code) and # key". In the first case, you only press a number key **without** the # key, to make a selection from among the options given. In the second case, more than 1 digit is pressed, followed by the # key, to enter a number.

8 When pressing keys on the telephone, **press firmly and release normally without keeping your finger on the button**. When entering a number and hex key during programming, all keys pressed will be confirmed by a short beep tone.

Using the Worksheets

The Program Worksheet consists of a series of forms containing the programming parameters which are required for Comfort. This is a very important tool in designing a program.

The Worksheet applicable to the Comfort model being programmed must be used together with this manual, as many of the Tables will be referred to.

Programming Strategy

For those who are new to programming Comfort, the prospect of having so many things which can be programmed may seem daunting, but in practice, most settings can be left as default and need to be changed unless necessary, normally in very big jobs. To help the newcomer, the following sequence is recommended.

Modules

Enter the numbers of Keypads, Door Stations, Slave Expansions, Scene Control Switches and UCMs in the respective Locations (see Comfort Modules in the Basic Configuration section).

Zones/Inputs

Program Zones/Inputs is in Engineer Menu 1. For each Zone, determine the Zone Type, the Description (words), and if the zone is on the Entry/Exit path. The Description is assigned to the zone for any announcements during alarm or in the event log. If some of the Zones require an On or OFF Response, ie a behaviour which is triggered by activation of restoral of the input, note it down for later programming.

Control Menu

Determine the structure of the Control Menu. This is found in Engineer Menu 3,0 for Control Groups and 3,1 for Control Menu The Control menu can be ordered into 3 Groups (depending on your firmware version), like Lights, Heating/Airconditioning, and Entertainment. Each group has 10 Control keys e.g. Living Room Lights, Master Bedroom Lights etc... Each Control key has up to 10 actions, e.g. On, Off, dim, bright, open, close, up, down etc.. For now enter the words for each Control group, control

menus for each group and the actions in each control menu. List the Responses which will be needed for each action, to be programmed later.

Events

Determine which events need to activate Responses. Such events (apart from Zone Responses) which can trigger Responses include Alarm types, IR Received Codes, X10 received Codes, SCS/RIO (SCS) buttons, and Miscellaneous Events . List the Responses which need to be programmed.

Responses

Much of Comfort's behaviour is determined by Responses which are triggered by Events. From the list of required Responses that you have compiled from the screens mentioned earlier, determine which default Responses can be used. You can also refer to the handy Programming Worksheet for your firmware version for a list of default Responses. Many of the default Responses can be applied directly for your application. The Applications Manual is also a good source of applicable responses for many scenarios. Use the Response Wizard to create your Responses. Have a copy of the booklet "Programming with Action Codes" handy to refer to the actions available. Responses are programmed in Engineer Menu 3,6.

Phone Numbers

Do not program the telephone numbers for alarm dialout until you have downloaded and tested the operation of the system. It can be annoying for dialouts to be occurring when you are trying to test the system. However you can device the assignment of the phone numbers for the 8 slots, and program the Alarm Types dialout behaviour in Engineer Menu 2 for Alarm Types. Set the dial settings to ON if the alarm is required to dialout and the indexes 1 to 8 to dial to for each alarm. As long as the actual phone numbers are not entered in Engineer Menu 4,1 for Phone Numbers, there will be no dialout when alarms occur.

Time Programs

Determine the Time Programs needed and the Responses which need to be programmed.

Comfort Modules

The number of modules in the Engineer Menu is programmed by Locations. The Locations corresponding to the modules are shown;

Module	Location	Range
UCM	1672	0-8
Slaves (SEM01/02)	1673	0-3
Door Stations	1674	0-3
Keypads	1675	0-8
SCS/RIO	1676	0-8

Note that Comfort Entry does not accept Slaves and SCS/RIO. The number of these modules should be set to 0.

The number of Comfort Peripheral (UCMs, SEMs, Door Stations, Keypads, RIOs in the system are in Locations 1672 to 1676 respectively. Their IDs are set according to the switch settings given in the respective installation manuals. The IDs of each device is the same type must be consecutive, i.e. starting with 1, with no missing IDs in between, otherwise a Communications Failure Trouble alarm will be reported. Comfort must be reset by pressing the RESET button to make this setting effective.

Only UCM ID 1 does not cause a trouble alarm when Comfort loses communications with it. UCM ID 1 is reserved for use with Comfigurator and any PC Interface software. This UCM can be removed at any time without causing a Communications Failure alarm. Other UCM Ids from 2 to 8 will report Communications Failure when communications is lost.

Configuration Flags

In Engineer Menu, many of the configuration flags must be programmed using Locations according to the table below. The flags are contained in Locations 39 and 40. In each location, add up the corresponding values for each parameter desired. For example, if the settings PABX Extension, Force arm Option, and Incoming Call screening on keypad are required, Location 39 must be programmed with 2 + 4 + 32 = 38. Reset the system after changing the Locations for the settings to take effect.

Location 39 and 40 contain certain **flags** which determine some behavior of Comfort. Add up all the value in the ADD VALUE column for the flags to be enabled, and enter the sum in Location 39 or 40. RESET the system by the Reset button or Eng Menu 7,4,2 for the settings to take effect. Some of these flags are accessible in Engineer or Program Menu, in which case the menu reference is given in the last column. Always use

the Engineer or Program Menu to change these configuration flags whenever possible.

When changing flags which are not in Engineer Menu, you must take into account the values of all the flags in the Location, which include flags which are changed from Engineer or Program Menu.

Flag Setting Location 39	Location	Add Value	Default	Engineer Menu
Connected as PABX extension	39	2		7,2 (Table 1)
Force Arm Option		4	4	4,3,1 (Table 16)
Local Phone voltage from RGR02 (4.107)		8	8	On for Australia only
Reserved		16	16	
Incoming Call Screening on Keypad		32	32	User 2,6,6
Pulse Dialing (removed V4.81)		64		
Wait for Dial Tone before dialing		128	128	Not Available
Total			188	

Flag Settings Location 40	Location	Add Value	Default	Engineer Menu
Siren Reverse (Self-actuated siren)	40	1		4,3,3 (Table 16)
Ignore Line Cut		2		
RGR02 Ringer		4	4	1 if RGR02 ringer
Seize Phone Line for all dialout (4.101)		8		
Disable Voice on Door Station		16	16	
LEM 16 input 0 output		32		0 if SEP installed
Repeat Alarm Zone announce on keypad		64	64	
Ext Answering machine bypass (v4.139)		128		Program 1.0
Total			84	

Connected as PABX Extension

This should be programmed using Engineer Menu 7,2. When changing the value of Location 39, the value of this setting should be maintained.

Force Arm Option

This should be programmed using Engineer Menu 4,3,1. When changing the value of Location 39, the value of this setting should be maintained.

Local Phone Voltage for RGR02

Local Phone voltage for RGR02 is used for Australian systems only. Set this flag On to generate the voltage for the local phone in the Voice

Menu. This can be turned off for other countries, but will not cause any ill effects if left on.

Call Screening on Keypad

This should be programmed using User Menu 2,6,6. When changing the value of Location 39, the value of this setting should be maintained.

Pulse Dialing

This is no longer used from firmware version 4.81 onwards, and is ignored by the system.

Wait for Dial Tone

When enabled, Comfort will wait for a dial tone before dialing. If a dial tone is not detected, Comfort tries a Hook Flash to try to get dial tone (this works if 3rd party or Conference call) is available on the telephone line. If there is still no dial tone , it will wait for the Incoming Call Release time in Location 47 (See Table 34) before trying again. During this time, if an alarm is on, it does not answer any calls.

Siren Reverse

This should be programmed using Engineer Menu 4,3,3. When changing the value of Location 40, the value of this setting should be maintained.

Ignore Line Cut

Set Ignore Line Cut ON when it is not possible to connect the incoming telephone line to Comfort TEL IN and the house phones to TEL OUT. With this setting, house phones can be connected in parallel to TEL IN. The system will ignore Line Cut and will not report Phone Trouble. If there is a line cut, the house phones cannot be used to access the system. There is a loss of security, as the system will not be able to dial out if any house phone is offhook. **This is not to be used for UL installations or for a monitored system. It is only for Home Automation installations where security is not a concern.**

RGR02

Set to 1 if RGR02 ringer is used in the system instead of RGR01. If RGR03 is used, this setting is ignored. RGR01 and RGR02 are for older systems only, as they have been replaced by RGR03.

Seize Phone Line for all Dialouts:

This causes the house phones to be cut off for all Comfort dialouts, including non-alarm situations like reporting system armed, disarmed, Dial Test and new messages. If this flag is not set, the house phones are cut off only for alarm dialouts. Set the flag if the number of phones in the premises causes Dial test to be unsuccessful, and removing the phones from the TEL OUT connector allows the Dial test to complete.

Disable Voice on Door Station

This prevents the announcement of zones and "Away Mode" during away arming. If the flag is ON, the Door Station is only used for 2 way conversation. There will be no zone and armed announcements in Night or Day Mode irrespective of the flag.

LEM03 (16 Inputs/No Outputs)

This flag tells Comfort that a 16 zone (no outputs) Local Expansion Module (LEM) is installed. This means that the system capacity is 24 zones and 8 outputs. If a 8 zone 8 output LEM or no LEM is installed, this flag should be Off. Slave Expansion Panels (SEP) may not be used with the 16 input LEM

Repeat Alarm Zone on Keypad

This setting will keep announcing an activated zone until system is disarmed or another zone is activated.

External Answering Machine Bypass

This should be programmed using Program Menu 1,0. When changing the value of Location 40, the value of this setting should be maintained.

SECTION 3 ZONE PROGRAMMING

Zone Menu

In Engineer Menu, press 1 for Zones. The Zone menu is announced..

Enter Zone Number and # key

The menu announces the current settings for the zone selected. Valid Zone numbers are 1 to 64 (24 for Entry)

When the zone number and # key are entered, the following menu is played e.g..

Zone 2, Bedroom window **Zone Type 2, Entry Path Off,** **Zone Response 0, OFF Response 0** **Press 1 for Description,** **2 for Zone Type,** **3 for Entry Path** **5 for Zone Response** **6 for Off Response**

Select the submenus to program the following:

- 1 - Description, up to 4 words from the Wordlist. If less than 4 words are needed, enter 255# to terminate. If no description is entered for a zone, the Zone number is used as the default description.
- 2 - The Zone Type, which defines the type of detector or input. This is the only mandatory setting for a zone. Unused zones are set to Zone Type 0
- 3 - The Entry path setting (on/off). A zone on the Entry path does not cause an alarm when it is triggered after the Entry Door is opened when the system is armed. Set the Entry path for a Motion Detector (PIR) Zone which covers the area between the keypad and the Entry Door.
- 5 - The On Response (the optional Response or program which is activated when the Zone goes on). ON means open for a normally closed zone type and closed for a normally open zone type.
- 6 - The Off Response (the optional Response or program which is activated when the Zone goes off). OFF means closed for a normally closed zone type and open for a normally open zone type.

When the zone number and # key are entered, the following menu is played e.g.

Zone 2, Bedroom window
Zone Type 2, Entry Path Off,
Zone Response 0, OFF Response 0
Press 1 for Description,
2 for Zone Type,
3 for Entry Path
5 for Zone Response
6 for Off Response

☎ **In programming the above settings and all settings in general, the currently programmed setting is announced. The new setting can be entered followed by the # key. If a Yes or No response is required, press 1 for ON and 0 for OFF - # is NOT required. If the current setting is not to be changed just press #.**

1 for Zone Description

(zone description) -
Enter Word number and # key

Press 1 for Description : The currently programmed description is announced, followed by "enter new number and # key". Enter each word followed by the # key. Refer to the Word List (Program Table 1) for assigned word numbers. A maximum of 4 numbers may be programmed. If there are less than 4 numbers, enter 255 # to terminate. The description is used in zone announcements event log, alarm history, alarm tracking.

☎ **If no words are assigned to a zone, the Zone number will be used for reporting and announcements.**

2 for Zone Type

The voice menu says the current zone type and asks for a new number and # key. Up to 32 zone types can be entered. (See Table 2 - Zone Types) e.g..

Zone Type 2, Enter new number and # key

The currently programmed zone type (0 to 31) is announced followed by "enter new number and # key". Assign each zone in the premises to one of 32 Zone Types 0 to 31 (See Program Table 2 - Zone Types for a description of the predefined zone types). The Zone Type defines the key characteristics of the zone and simplifies programming. The door(s) to be used for entry and exit should be designated as Entry Door Type (Zone Type 2). If a zone is not used, program it as Zone Type 0, which means it will be ignored.

3 for Entry Path

Entry Path ON
Press 1 for ON, 0 for OFF

The voice menu says current entry/ path setting (on or off) and asks for a new setting 1 for on, 0 for off. If the zone is on the entry path, the zone can be activated during entry without causing an alarm, **provided the Entry Door is opened first.**

5 for Zone On Response

Voice Menu says the current ON response (0 to 99) and asks for a new response number and # key. The ON response is executed whenever this zone is activated. A response can perform home automation actions, or arm and disarm the security system etc... Enter 0 if no ON response is required. e.g..

Zone Response 3,
Enter new number and # key

Enter the new response and #, or just # to leave the response unchanged. Refer to the Default Responses List.

Zone ON definition depends on the Normally Open/Normally Closed setting of the Zone Type, i.e. Closed contact for N.O zones and open contacts for N.C zones.

☎ **The Zone Response is activated even if the zone is Inactive (e.g.. in Security Off), and before any Alarm Response triggered by the zone.**

6 for Zone Off Response

System says the current OFF response when this zone is deactivated and asks for a new response number and # key. The OFF response is executed whenever this zone is deactivated. A response can perform home automation actions, or arm and disarm the security system etc... Enter 0 if no OFF response is required. e.g..

OFF Response 16,
Enter new number and # key

Enter new response and #, or # to leave the response unchanged. Refer to the Default Responses list.

Zone OFF definition depends on the Normally Open/Normally Closed setting of the Zone Type, i.e. Closed contact for N.C zones and open contacts for N.O zones.

The Zone Off Response is activated even if the zone is Inactive, e.g.. in Security Off Mode

Common Zone Responses

Some useful Zone Responses are described below;

53 Cancel Entry Delay in Night Mode

Zones with this On response will perform an immediate alarm if activated during Night Mode and respond as normal when in Away Mode

54 Entry Delay in Night Mode

Zones with this On response will initiate the entry procedure when the system is in Night Mode and respond as normal when in Away Mode. It is commonly used to change a Hall movement detector's behaviour.

59 Announce Zone Name

Zones with this On Response will announce their zone name description from the Keypads on the system when they are opened. If this response is assigned to the Zone Off Response, the system will announce (Zone Name) OFF when the zone is deactivated. The word number for "OFF" (i.e. 229) should be programmed in Location 1689. Alternatively, word number 70 ("Close") may be suitable.

75 Chime

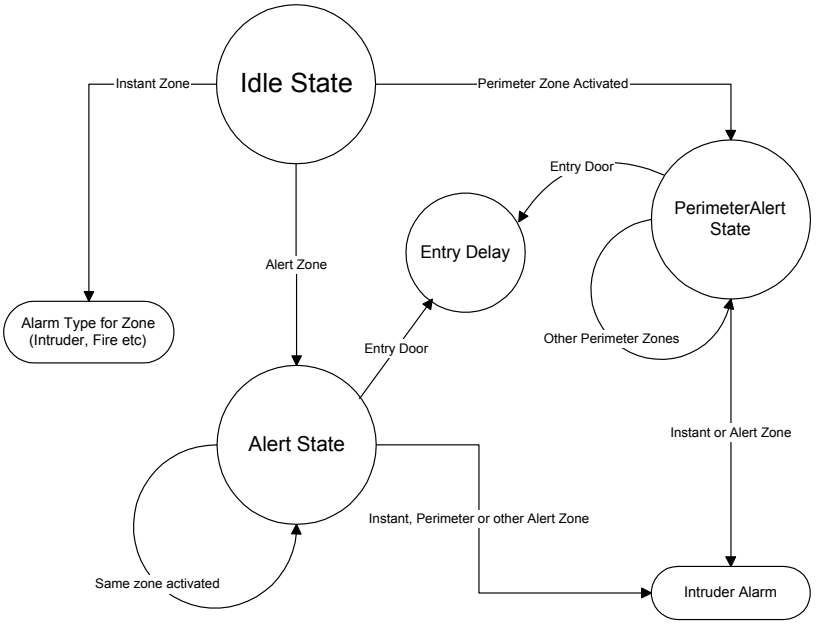
Circuits with this On response will cause a long two-tone 'chime' sound at the Keypads and speakers . This may be disabled by the user in Alert Menu 6 in Home Control.

116 Play Reminder Message 1 on Keypads

When the circuit is activated (normally an exterior movement detector), the recorded reminder message 1 is played on all keypads. This can be used to play a warning message to potential trespassers. This response can be changed to play the message on one particular keypad by specifying the keypad ID. See Application Manual 5.6 for more details

Instant/Alert/Perimeter Zoning for False Alarm Filtering

Comfort has an advanced mechanism to help filter false alarms. Each Zone Type has one of 4 zone activation modes - Inactive, Instant, Alert and Perimeter. An Inactive Zone setting does not cause any alarm when tripped. An Instant Zone activates its assigned Alarm Type when it is tripped. An Alert Zone causes the system to go into Alert State when tripped. If another non-Inactive zone is tripped (but not the same zone) within the next 10 minutes, an Intruder Alarm is activated. A Perimeter Zone causes the system to also go into Alert State. Tripping of an Alert or Instant zone, but not another Perimeter zone within the next 10 minutes will cause an Intruder Alarm to be activated. Each zone type can be assigned to any one of these filter settings for each security mode (Security off, Night, and Away/Vacation). The use of Alert and Perimeter Zones is a useful tool in preventing false alarms, but requires careful planning and design on the part of the installer. Refer to the table below for the flowchart which explains the sequence of zone activation to trigger an alarm.



Flowchart for Instant, Alert and Perimeter Zone Activation

Zone Types

There are 32 Zone Types available in the system, numbered 0 to 31. Zone Types define the characteristics of the Zone, what type of zone it is, how it is activated and in which security mode it is active, and what alarm it triggers if it is activated when it is active. Zone Types make it easy to program the system.

The 3 Zone Types tables (Table 8,9,10) show the default settings and how to change them using Locations. It is rarely necessary to change default Zone Types settings, unless there is a special requirement which is not catered for by the default values. It is necessary to Reset the panel after changing Zone Types, by pressing the reset button on the Comfort PCB. Press the Reset button after all changes are completed, rather than after each change

Zone Types cannot be programmed from the Engineer Voice Menu. They can be using Comfigurator. Alternately, they can be programmed sing Locations as shown in Tables 8 to 10.

☎ **It is normally not necessary to change Zone Types from their default settings.**

Zone Types Characteristics Table

Characteristic	Value	Remarks
Away Mode	Instant, Alert, Perimeter, Inactive	Each zone type has a setting in each mode: Off, Night, Day and Away. This gives flexibility in defining the behaviour of the zone types. For example, a Zone Type may be Inactive in Off or Day Modes, Alert in Night Mode and Instant in Away Mode. See Flowchart for Instant, Alert and Perimeter Zone Activation (figure 3.2). Note: Inactive Zone types will trigger their ON/ OFF responses but not their alarm types. Thus, switches and other input devices which have no security function should be set to Inactive in all security modes. The only purpose of switches is to activate responses
Night Mode		
Day Mode		
Off Mode		
Trouble Alarm Type	0 to 31	The Trouble condition Alarm Type is activated when a non-Null (Instant, Alert or Perimeter) zone is in trouble condition (short circuit or open circuit) when the system is armed. When the system is not armed, the Zone Trouble alarm as programmed in the Non Detector Alarms is activated. For example, if the wiring for a door magnetic contact is broken or cut, in SECURITY OFF activates a Trouble Alarm, while in Away mode activates an Intruder Alarm as specified in table 9
Alarm Type	0 to 31	The Normal Alarm type is the Alarm which is triggered when the zone is activated when it is not Inactive (i.e. it is Instant, Alert, or Perimeter).
Entry Door	Yes/No	Determines if the zone type is an Entry Door, i.e. used for entry and exit for the premises. Closing an Entry door ends the exit sequence during arming, and opening the entry door starts the entry sequence when the system is armed for Final Door Away Arm.

Characteristic	Value	Remarks
Normally Open/Closed	NO or NC	Defines the behaviour of the sensor contacts to the zone. Most Security sensors are Normally Closed.
Sensitivity	20 ms to 850 ms	The Sensitivity setting determines how long a zone has to be activated before it is considered a genuine trip. A higher setting prevents false alarms, while a lower setting allows for detection of short action sensors like vibration sensors.
24-hour	Yes/No	A 24 hour zone is always active irrespective of the Off, Away, Night, Day settings. The Instant, Alert, Perimeter and Inactive settings do not apply if a Zone is defined as 24-hour. 24 hour zones cannot be bypassed. A zone type can be Instant in all 4 modes, but still have the 24 hour setting OFF to allow bypassing

☎ **There is normally no need to change the default settings for Zone Types, unless there is a special requirement which cannot be met by the default Zone Types.**

Standard Zone Types

The term 'Instant' zone type is sometimes referred to as an immediate, burglar, night or intruder zone by other panel manufacturers.

0 Not Used

A totally disabled circuit for Alarm triggering. It cannot be used to activate responses

1 - Door / Window (NC, Intruder Alarm)

A circuit that will generate a full alarm in Away, Night and Day modes and is particularly intended for perimeter protection.

2 - Entry Door (NC, Entry Alert)

When armed, activation of the circuit will start the entry delay. The function of this circuit is determined by the type of Away Arming Method selected. If Final Door arming is programmed, then the system will not complete arming until the door is closed on the way out and all other protected circuits are clear.

3 - Alert Night/Away (NC, Alert)

A circuit that can be used to dial-out silently if activated during Night, Away Modes generating an Alert Alarm 'type 6'. A full alarm will be generated only when another alert zone, perimeter or immediate zone is activated within the next 10 minutes.

4 - Alert Away (NC, Alert)

This circuit is the same as zone type 3 except it is not active during Night and Day Mode.

5 - Instant Night/Away (NC, Intruder Alarm)

A circuit that will generate a full alarm during Night and Away Modes and not Day Mode. It is intended for PIRs in interior zones.

6 - Alert Vibration Night/Away (NC, Alert Alarm)

This circuit is the same as zone type 3 except it has an operating sensitivity of 50ms and is suitable for use with non-electronic (mechanical) inertia shock detectors. A zone response may be needed to act as an analyser.

7 - Instant Vibration Armed (NC, Intruder Alarm)

A circuit that has an operating sensitivity of 50ms which is suitable for use with non-electronic (mechanical) inertia shock detectors and will generate a full alarm in only Night , Day and Away Modes.

8 - Switch (N.O. Null Alarm)

A normally open circuit which will not activate an alarm but can be used to activate a response at all times. Responses may be activated when closing, opening or both. The circuit operating sensitivity is 500ms and is suitable for use with detectors with a negative applied trigger output such as light sensors and some external movement detectors.

9 - Monitor (N.O, Alarm Type 14)

This is used to dial out to programmed phones whenever the zone is triggered. It can be used either to check detectors which cause false alarms ("soak test") or to monitor machinery breakdown. It activates Alarm Type 14, which must have the appropriate dialout settings. A similar N.C zone type is Zone Type 17

10 - Fire (N.O. Fire Alarm)

A normally open 24-Hr circuit which is usually connected to a smoke or heat detector. When activated it will generate a fire alarm sound from the speakers and pulse the 12v sirens for 10 minutes. A programmed response may be triggered in the zone setting or fire alarm type to switch lights on aiding an escape or to open an automatic gate to enable easier access for the fire services. Cannot be bypassed.

11 - Gas (N.C, Gas Alarm)

A 24-Hr circuit which will generate a gas alarm sound on the speakers and operate the siren for 10 minutes. A programmed response may be triggered in the zone setting or gas alarm type to switch the gas supply 'OFF' or open doors and windows. This zone type can be bypassed by default, but bypass can be disabled by setting 24 Hour ON in Table 10.

12 - Panic Alarm (N.C, Panic Alarm)

(N.C, 24-Hr circuit) A 24-Hr circuit that will generate a full audible alarm condition when activated. Can be bypassed, but bypass can be disabled by setting 24 Hr ON in Table 10.

Panic Silent

(Siren Type 0 in Alarm Type 9) To select a silent Panic alarm type that will just remotely signal to the Central Monitoring Station and other

phone numbers, change the siren type in alarm type 9 to '0' (no siren sound). This is found in Eng Menu 2,9,5.

13 - Tamper Armed (N.C, Tamper Alarm)

A circuit that will generate a full tamper alarm only when the system is armed.

14 - Perimeter Away (N.C, Perimeter Alarm)

A circuit that can be used to dial-out silently if activated during Away Modes generating a perimeter alert 'Alarm Type 15'. A full alarm will be generated only when an alert zone, or immediate zone is activated within the next 10 minutes. A perimeter circuit response may be programmed to operate lighting sequences, camera switching, video recording or voice announcements.

15 - Glass-break (N.C, Intruder Alarm)

A 24-Hr circuit which is connected to a glass-break detector.

16 - Perimeter Vibration (N.C, Perimeter Alert)

This circuit is the same as zone type 14 being active only while the system is 'set' except it has an operating sensitivity of 50ms and is suitable for use with non-electronic (mechanical) inertia shock detectors. A zone response may be needed to act as an analyser.

17 - Monitor (N.C, Alarm Type 14)

Similar to Zone Type 9, except it is Normally Closed

18 - Instant Away (NC, Intruder Alarm)

A circuit that will generate a full alarm during Away Modes only. It is commonly used where access is required to areas during night time such as a bedroom or landing.

19 - 24-Hr Vibration (NC, 50 ms, Intruder Alarm)

A circuit that has an operating sensitivity of 50ms which is suitable for use with non-electronic (mechanical) inertia shock detectors and will generate a full alarm in all Modes. A zone response may be needed to act as an analyser. This circuit is active in only while the system is 'set'.

20 - 24-Hr Tamper (N.C, Tamper Alarm)

A circuit that will generate a full tamper during all modes. System cannot be armed when this zone type is active. Can be bypassed by default, but bypass can be disabled by setting 24 Hr ON in Table 10.

21 Doorbell (N.O., Door Station)

The doorbell of an independent intercom system can be linked to the Door Station by providing a normally open contact to a zone of this type. This can activate the Door Station which is mounted next to the intercom system so that the user can talk to the visitor at the door from a mobile phone when the system is armed to Away.

22 - Spare

23 - Fire (N.C, Fire Alarm Type 12)

A normally closed 24-Hr circuit which is usually connected to a smoke or heat detector. When activated it will generate a fire alarm sound from the speakers and pulse the 12v sirens for 10 minutes. A programmed response may be triggered in the zone setting or fire alarm type to switch lights on aiding an escape or to open an automatic gate to enable easier access for the fire services. Cannot be bypassed.

24 - Switch (N.C., Null Alarm Type 0)

This zone type is the same as type 8 except the switch used should be normally closed type circuit.

25 Vibration 100 ms (N.C, Intruder Alarm Type 1)

Similar to Zone Type 7, except that sensitivity is 100 ms

26 - 24 Hour Zone (N.C Intruder Alarm Type 1)

A circuit which will cause an Intruder Alarm in all modes

27 24-hour (N.O., Intruder Alarm Type 1)

A circuit which will cause an Intruder Alarm in all modes

28 - Away/ Night 100 ms (N.C. Intruder Alarm Type 1)

Similar to Zone Type 7, except that sensitivity is 100 ms and it is inactive in Day Mode.

29 - Away/Night 50 ms Vibration (N.C. Intruder Alarm)

Similar to Zone Type 7, except that it is inactive in Day Mode.

30,31 - Digital (Digital, Null Alarm))

The Digital Zone type is either Normally Open or Normally Closed. It does not cause any alarm when triggered. EOL shunts on the zone shield be set to Double End-of-line. No Trouble alarm is activated if there is an open circuit or short circuit. An open/close contact can be connected. A 5 V logic-level signal can also be connected. Applicable from 4.166

Zone Sensitivity

Sensitivity No	Sensitivity (ms)	Sensitivity No	Sensitivity (ms)
0	10 ms	4	200 ms
1	20 ms	5	70 ms
2	50 ms	6	500 ms
3	100 ms	7	850 ms

Each Zone Type has an assigned Sensitivity setting, as shown in Table 10. Zone Sensitivity numbers are from 0 to 7. Zone Sensitivity is the minimum time for a zone to be activated before it is recognized by the system. If the sensitivity is 500 milliseconds (Sensitivity No 6), it means

that the zone must be activated for at least 500 milliseconds before it is considered to be a valid activation. Vibration and shock sensors which do not have built-in analyzers require low values of sensitivity, around 20 to 100 milliseconds.

SECTION 4 ALARMS AND DIALOUT

Alarm Types

There are 32 Alarm Types in the Comfort System, numbered 0 to 31. Each Alarm Type is triggered by activation of a Zone or other events like low battery, Power Failure, New message etc... The Alarm Type settings determine the behaviour of the Alarm, like whether the system dials out, and to what combination of the 8 phone numbers, whether the strobe turns on, which of 4 alarm states the alarm is in, one of 20 siren types, the alarm phrase, the Alarm Response (to trigger lights and appliances), whether there is a Dial Delay or Siren Delay, and the CMS Report codes.

The List of Alarm Types are in Worksheet Table 18.

To change Alarm Type settings, from Engineer Menu, press 2 for Alarm Type. The Alarm Type Menu is;

Enter Alarm Type and # key (0-31)

The subsequent menu is;

(Alarm Description)
Press 1 for Dial Settings
2 for Response
3 for Description
4 for Strobe
5 for Siren Type
7 for Trouble Arm Option
8 for Alarm State

1 for Dial Settings

Dial Setting ON (or OFF)
Press 1 for ON
0 for Off
2 for Dial Delay
3 for Alarm Report Code
4 for Alarm Restore Code
6 for Monitoring Station Code

For each alarm type, the dial out setting can be enabled or disabled. If the dial setting is on, i.e. 1, the system will dialout to the assigned numbers in the event of this alarm occurring. If the dial setting is 0 (off), no dialout will be made.

Dial Settings > ON

Pressing 1 for On in the above menu will allow each of the 8 phone indexes to be enabled or disabled individually.

Dial Setting 1,2,3,4,5,6,7,8
Enter Dial setting 1 to 8

Up to 8 numbers can be dialed in the event of alarm activation. Any combination of the 8 phone numbers can be selected for dial out for each Alarm Type. The voice menu will announce the Phone Indexes (1 to 8) of each phone index selected. For example, "Dial Setting 1,3,6,7" means dial out will be made to the numbers programmed in Phone Indexes 1,3,6,7 whenever this Alarm Type is activated.

Enter 1 to 8 to select a Phone Index. The current setting (1 or 0) may be changed by pressing 1 for ON or 0 for OFF to turn on or off the setting for the phone index. If the setting for the phone index in ON, activation of the selected alarm type will trigger a dialout to the phone index.

This menu assigns dial settings to the Alarm Type. The assignment of phone types and numbers to the dial settings is done in Change Phone Numbers menu (Engineer menu 4,1).

Dial Settings > Dial Delay

Dial Delay OFF
Press 1 for ON, 0 for OFF

If dial delay is on for an Alarm Type, the system will start to dial out only after the dial delay time. The Dial Delay setting is seconds (0 to 255) in the Dial Delay Location 161. The value entered for Dial delay has a variance of -1 second, i.e. a value entered of 10 seconds means an actual delay of 9 to 10 seconds. If the Dial Delay is off for an Alarm Type, the system will dial out immediately when the alarm is activated. The Dial Delay time is common to all Alarm types that have Dial Delay enabled. If the system is already dialing out due to another activation, Dial delay will not be applied for the new activation.

☎ **For UL installations, Dial Delay should be left off.**

Dial Settings > Alarm Report Code

Alarm Report Code (digit 1), (digit 2),
Enter new number and # key

This is the 2 digit Report Code which is sent to the Central Monitoring Station when this alarm type is activated. Report Codes for Contact ID are preprogrammed. If it is required to change the default report codes, enter the first digit of the new report code followed by # or just # to leave the first digit unchanged. The range allowed is 0 to 15. Numbers 10 to 15 represent a hexadecimal code of A to F respectively. When the

first digit is entered, the voice menu says the value entered, and the value of the 2nd report code digit e.g..

Report Code 2,.. zero
Enter new number and # key

Enter the 2nd digit of the report code and #, also in the range 0 to 15. If only 1 digit is required by the Communicator format, the second digit is ignored by the system, and is not sent. If the second digit of the report code digit is set to 0, Comfort will automatically put in the zone number or the user number, depending on the alarm type, as the second digit. For DTMF Communicator formats e.g.. Surgard and Contact ID, refer to the Communicator formats table in Worksheet Table 14.

☎ **If this alarm is not to be reported, enter 15 in both digits, i.e. 15#,15#, corresponding to FF**

Dial Settings > Alarm Restore Code

Alarm Restore Code (digit 1), (digit 2),
Enter new number and # key

This is the 1 or 2 digit Report Code which is sent to the Central Monitoring Station when this alarm type is restored. If it is required to change the default restore codes, enter the new restore code here or # to leave the value unchanged. The first number to be entered is the first digit of the restore code. The range allowed is 0 to 15. Numbers 10 to 15 represent a hexadecimal code of A to F respectively. When the first digit is entered, the voice menu says the value entered, and the value of the 2nd restore code digit e.g..

Restore Code 2,.. zero
Enter new Number and # key

Enter the 2nd digit of the restore code if required, also in the range 0 to 15. If only 1 digit is required by the Communicator format, the second digit is ignored by the system, and is not sent. Setting the second restore code digit to 0 will cause the Comfort system, to put in the zone number or the user number, depending on the alarm type, as the second digit. For DTMF Communicator formats e.g.. Surgard and Contact ID, refer to the section on Communicator formats in Worksheet Table 14.

Not all alarm types will send the restore code when restored. For example, Intruder alarm (alarm type 1) will not send a restore code, as the alarm is restored by disarming.

Zone-triggered alarms may be set to report restores by entering a restore code. Trouble conditions like Low Battery, power failure, Zone Trouble, may also send restore codes.

☎ **If the alarm restore is not to be reported, enter 15 in both digits, i.e. 15#,15# corresponding to FF.**

Dial Settings > Monitoring Station Code

Code 1, Enter New Number and # key

This refers to the Contact ID Class Code, which is a single digit number from 0 to 9. This is sent with the Contact ID report to Central Monitoring Station. It is ignored for other Central Station formats.

2 for Alarm Response

Response (0 to 255), Enter Response number and # key

An Alarm Response or program may be performed when the alarm is activated. For example, a response may be assigned to Entry Alert (alarm type 10) to turn on a light when the entry door is opened in Away Mode. Enter 0# if no response is to be performed.

3 for Alarm Description

Intruder Alarm, Enter New number and # key

Each Alarm type has an Alarm Phrase which is reported to Voice Phone and Alarm Voice Message Phone Types. The sentence number 0 to 254 is programmed here. Refer to the Worksheet for a list of applicable sentences.

4 for Strobe

Strobe ON, **Press 1 for ON, 0 for OFF**

If the strobe is to be activated during this alarm, press 1 for ON, else press 0 for OFF.

5 for Siren Type

Siren Type (0 to 20), Enter new number and # key

Each alarm type is associated with a Siren Type. Each siren type has characteristics which determine whether the siren is activated and the cadence (continuous or pulsed), the sound pattern on the speaker and the duration of the siren activation. Refer to the table of Siren Types.

☎ **For UL installations, Siren Type 2 (Temporal 3) must be used for Fire Alarm (Alarm Type 12). This is the default setting.**

Siren Delay Off
Press 1 for ON, 0 for OFF

A Siren Delay may be selected for Each Alarm Type.

If Siren Delay is on for an Alarm Type, the Siren will be activated only after the Siren Delay. The Siren Delay setting in minutes (0 to 255) is in the Siren Delay location 51. The value entered for Siren delay has an variance of -1 minute, i.e. entering a value of 2 minutes means the siren delay is actually 1 to 2 minutes. If the Siren Delay is OFF for an Alarm Type, the siren will be activated immediately without any delay. The Siren Delay time is common to all Alarm Types which have Siren delay enabled.

☎ **For UL installations, Siren Delay should be left off.**

7 for Trouble Arm

Trouble Arm OFF,
Press 1 for ON, 0 for OFF

This setting determines if the user is allowed to arm the security system when this alarm type is active. This only applies to alarm types which have Trouble state, e.g.. Zone trouble, Phone Trouble, Power Failure, Low Battery, Home Tamper etc.... Selecting 1 (for ON) allows the system to be armed when this alarm type is active, and selecting 0 will prevent arming. If the Alarm Type is not a Trouble Alarm, this setting is ignored.

8 for Alarm State

Alarm State, 1
Enter new number & # key

This setting assigns an alarm state to the alarm. The Alarm states are Idle (0) , for non-alarm conditions like New Message, Arm, Disarm, Dial Test etc..., Trouble (1) for all system trouble conditions, Alert (2) for Alerts triggered by Alert and Perimeter zones and Entry Alert, Alarm (3) for full alarm conditions.

Siren Reverse

The Siren Reverse setting is used for self-actuated sirens which require a 12V voltage to be applied to prevent the siren from sounding, and a loss of power to cause the siren to sound.

To program Siren Reverse, go to Engineer Menu 4 for Security, 3 for Security Options, 3 for Siren Reverse.

Siren Reverse Option OFF **Press 1 for ON, 0 for OFF**

Press 1 for ON and 0 for OFF. If the setting is OFF (0), which is the default, the Siren Output is turned on (i.e. 12 V applied between SRN- and 12VF) to turn on the siren. If ON, the voltage to the siren is applied when there is no alarm and cut off for alarm. This is used to drive self-actuated sirens with a built-in backup battery. Default is OFF.

Normally, 12V is applied to the Siren Terminals (JP9) to activate it. For Self-actuating sirens which sound when voltage is removed and are silenced when voltage is applied, the Siren Reverse Option must be set to ON.

Programming Telephone Numbers for Dialout

In Engineer Menu, press 4 for Security and 1 for Phone Settings. This menu is also available in Program Menu 4 for Phone Settings, and using the keypad shortcut F6 to allow the user to program their own phone numbers.

Select Phone

Press 1 to 8.

Pager 92117893 **Press 0 for No Phone** **1 for Voice Phone** **2 for Pager** **4 for Monitoring Station**

Up to 8 phone numbers may be assigned for dialout during alarms. The phone numbers may be assigned as Monitoring Station (1st 2 numbers only), Voice Phone (land line or cellular phone), numeric pager or Alarm Voice Message.

Voice Phone refers to any telephone or cellular phone, where a voice message will be played, and the user listen to the message and acknowledge or sign in to access the system.

The Pager Phone Type displays the 4 digit Pager ID code, the alarm type and zone or user number on the pager. See the Quick Reference Guide for a list of pager codes for each Alarm type.

Set the unused dial settings to phone type 0.

If 1 (voice phone) or 2 (pager) is selected, the voice menu says

Voice Phone (or pager)
Enter new number and # key

Enter the new number and #, or just # to leave the number unchanged.

If you make a mistake while entering the phone number, press * or the AWAY key on the keypad to clear and start again.

To enter the * or # keys in a telephone number (which may be needed for calling card access or phone unlocking), press the DAY key on the keypad followed by the desired key.

For example, 1234 <DAY> # 5678 enters 1234#5678, whereas if <DAY> was not used, the # would terminate the key entry. (Applicable to firmware version 4.45 and above)

To enter a pause or delay within a phone number, press the NIGHT key on the keypad followed the pause in seconds. For example, 1234 <NIGHT>35678 will insert a pause of 3 seconds during dialing between the numbers 1234 and 5678. (Applicable to firmware version 4.45 and above)

Central Monitoring Station Dialout

Central Monitoring Station phone numbers may only be assigned to Phone 1 and 2. Any backup or alternative Central Station must be assigned to Phone 2. If no monitoring is required, all 8 Phone settings may be assigned to other phone types.

If Phone Type 1 or 2 is set to Monitoring Station Type in Engineer menu, the User Program Menu 4 will not be able to change it. The User Program menu is not able to set Monitoring Station phone type in Phones 1 and 2.

Each Alarm Type can be programmed to dial to any combination of the 8 telephone numbers. To do this, go to the Alarm Types menu (Engineer Menu 2).

The assignment of phone types must be coordinated with the Dial Settings for the Alarm Types. Determine what phones or pagers are to be programmed for each alarm type, and program the phone types and numbers before programming the Dial settings for the Alarm Types. If an Alarm Type Dial Setting points to an index which has Phone Type 0 (No phone) programmed, no dial-out will be done for that number.

In Comfort, unlike most other alarm panels, the Report and Restore codes are programmed for each Alarm type, not by Zone.

When the Monitoring Station Phone Type is selected, the following menu is announced.

Press 1 for Monitoring Station Code
2 for Monitoring Station Type
3 to Change Phone Number

1 for Monitoring Station Code

Monitoring Station Code is the Account number, which may be 3 to 4 digits. The voice menu will say the current Account Number for the customer e.g..

> **1234**
> **Enter new number and # key**

Enter the new 3 or 4 digit account number and #, or just # to leave the number unchanged.

2 for Monitoring Station Type

This menu sets the CMS Communication Format. The voice menu will say the current type (i.e., the Communication format) e.g..

> **13**
> **Enter new number and # key**

Enter the new communication format 1 to 16, (see Communicator Formats - Table 10, Programming Tables) for the communication format numbers) or just # to leave the current format unchanged.

The CMS Formats are chosen from the following list (part of Table 14)

Format	Description
1	Ademco Slow
2	Ademco Slow
3	Ademco Slow
4	Silent Knight
5	Franklin
6	Radionics
7	Radionics
8	Radionics
9	Radionics
10	Surgard
11	Surgard
12	Ademco Express
13	Contact ID

Use Contact ID format (Type 13) if possible as the Report and Restore Codes in all Alarm types are defaulted to this format. Contact ID is able to provide more information in its reporting, and being a DTMF format, is faster than traditional pulse type formats.

3 to Change Phone Number

The voice menu will say the current Monitoring Station phone number e.g..,

> **8725742**
> **Enter new number and # key**

Enter the new phone number for the Monitoring Station and #, or just # to leave the number unchanged.

Dialout Grouping

The 8 phone numbers are divided into 2 dial out groups. These are phones 1 and 2 in the first (Monitoring station group) and phones 3 to 8 (Normal phones group). In the normal phones group, a valid sign-in from a Voice Station will stop further dial outs in that group. In the Monitoring Stations group, a kissoff from a Monitoring Station or a valid sign-in from a Voice Phone will stop further dial outs in the group. If the called Voice Phone acknowledges the dialout by pressing # instead of signing in, this does not end dialouts to the whole group - it stops further dialouts to that number only. Similarly, dial outs to Pagers do not stop dial outs to other phones, but end dial outs only to that particular number. The sequence of dial outs is from phone 1 to 8. If a dial out is not acknowledged or if the called number is busy or does not answer, the system dials to the next number in the list, and returns to the failed number in the next cycle.

Away Arming Methods

Final Door Arm

The system will complete arming to Away Mode when the Entry Door (Zone Type 2) is closed on the way out. After 6 seconds, the Exit Delay is terminated, the system will be armed, and the keypad will announce "Away Mode". If the Exit Delay completes before the Entry Door is closed, there will be an Arm Failure. The user must enter the user sign in code to clear the alarm before the system can be armed.

This only applies to Local arming. If Away Arming via remote telephone, exit is not needed, as Comfort is intelligent enough to know that the user is not on the premises. This is the default setting. It is more secure and convenient than "After Exit Delay" as the user does not have to wait for the expiration of the Exit Delay.

After Exit Delay

The system will arm after the Exit Delay if all zones are not active. This setting should be used only when an Entry Door zone is not available due to wiring and connection restrictions.

Exit Terminator (UK Only)

This is a requirement for some UK installations. After the Entry Door is closed, the Doorbell on the Door Station must be pressed to complete arming the system.

The away arming method is programmed in Location 1692 according to the table below.

Away Arming Method	Location 1692	Remarks
Final Door Arm	0 (Default)	Arm after Final Door closed
Arm After Exit Delay	1	Arm after exit delay
Exit Terminator (UK Only)	2	Arm after Exit Terminator push button

Entry and Exit Times

The Entry and Exit times can be programmed. Go to Engineer Menu 4 for Security, 2 for Entry/Exit Time.

Press 0 for Entry Time, **1 for Exit time,** **2 for Entry Warning Time** **3 for Night Exit Time**

0 for Entry Time

20 seconds, enter new number and # key

Enter new entry time in seconds and #, or just # to leave the value unchanged.

The **Entry time** is the time allowed after entering the designated Entry Door when the system is armed to allow the user to sign-in. If the entry time expires without a valid sign-in, a local Warning Alarm (Alarm Type 6) will be generated for the duration of the Entry Warning Time. This produces a warning alarm on the Speaker only. If the Entry Warning Time is set to zero, the Entry Warning Alarm is bypassed, and the system will go into a full Intruder Alarm when the Entry Time expires.

☎ **For UL installations, the combined Entry Time plus Entry Warning Time should not exceed 45 seconds.**

1 for Exit Time

20 seconds, enter new number and # key

Enter new exit time in seconds and #, or just # to leave the value unchanged.

The **Exit time** is the time in seconds allowed after arming the system locally for the user to exit through the designated Entry Door when the system says "Please Exit" after passing the Security Check. If the Exit Time expires without closing of the Entry Door, the system will not be armed, it will remain in Security Off Mode. An Arm Failure Alarm (Alarm Type 4) is generated. As with all alarm types, this may be programmed to dialout and activate a response if needed. The default Arm Failure alarm generates a series of beeps on the speaker and does not do a dial out. If during arming the Security Check finds some protected zones not closed, and these open conditions are not cleared, there is a time-out of 5 minutes to clear these zones after which the Arm Failure alarm is generated.

- ☎ **For remote arming, it is not necessary to leave by the front door in order to arm. The system will arm after a short delay if all zones are closed.**
- ☎ **For UL installations, the Exit time may not exceed 60 seconds.**

2 for Entry Warning Time

20 seconds, enter new number and # key

Enter new entry warning time and #, or just # to leave the value unchanged.

The **Entry Warning Time** is the time in seconds after the Entry Time has expired to allow for a valid sign-in before an Intruder Alarm is generated. This feature reduces the incidence of false alarms generated by users while disarming. If the Entry Warning Time is set to 0, an Intruder Alarm will be generated immediately upon expiry of the Entry Time, without any Entry Warning.

- ☎ **For UL installations, the combined Entry Time plus Entry Warning Time should not exceed 45 seconds.**

3 for Night Exit Time

5 seconds, Enter new number and # key

The **Night Exit Time** is the time in seconds allowed for people to leave the protected zones during Night Arming. During this delay time, the system produces a slow beeping tone on the speaker. If zones are open, a faster beeping tone is heard, as well as the names of the open zones on the Voice Station or the telephone.

Enter new entry time in seconds and #, or just # to leave the value unchanged.

Minimum value for Night Exit Time is 4 seconds.

Unlike arming to Away or Vacation mode, the user is not required to leave the home.

Force Arm Option

Force-arming is the operation of automatically bypassing all open zones when the system is being armed. This allows the system to be armed when certain doors or windows or detectors are not secured because they are not closed or because of a fault. Force-arming also allows users to arm the system before closing all doors and windows. When the doors or windows which have been auto-bypassed are closed later, they will be monitored so that they will cause an intruder alarm if opened later.

☎ **Force-arming may not be allowed by Monitoring stations for Police Response. Check the police or Central Monitoring Station regulations in your specific area.**

To program the Force Arm setting, go to Engineer Menu 4 for Security, 3 for Security Options, 1 for Force Arm Settings.

Force Arm Option ON **Press 1 for ON, 0 for OFF**

Set the option to ON (1) to allow force-arming by the user (default ON). The user force-arms the system by pressing # during Security Check. The zone which is auto-bypassed in this manner reverts to protected status if it is subsequently closed. If the Force Arm setting is OFF, pressing the # key during Security Check causes the arming to be canceled.

If an Auto-arm response is activated and Force arming is enabled, the system will force arm and automatically bypass any open zones.

Sign-In Codes and User Authorization

16 Users with their own sign-in codes can be specified. The first 8 users have mailboxes for Voicemail. Users 9 to 16 do not have mailboxes, but can access other functions, like arming/disarming and home control. User 18 is the Engineer.

Comfort comes by default with 1 sign in code for User 1, ie 1234. Additional users can be added from Program Menu 5, 1.

Each of the 8 User Codes may be assigned authorization for Local Disarm, Local Arm, Remote Disarm, Remote Arm, Disarm on Alarm only, Security Menu (User Menu 3) Access, Home Control Menu (User Menu 4) Access, and Program Authorization. These User authorizations settings can also be programmed in the Comfigurator software.

User Authorizations for each user are set using Locations according to the table below. For example, to set user 5 to allow Home Control, Local arm and disarm only, add the values under Home Control (64) Local Arm (2) and Local Disarm (1). The sum obtained (64+2+1 = 67) is entered into the location for User 5 (2106).

User	Location	Local Disarm	Local Arm	Remote Disarm	Remote Arm	Alarm Disarm	Security Menu	Home Control	Program	Value
		Add 1	Add 2	Add 4	Add 8	Add 16	Add 32	Add 64	Add 128	
1	2102	1	2	4	8	16	32	64	128	255
2	2103	1	2	4	8	16	32	64	0	127
3	2104	1	2	4	8	16	32	64	0	127
4	2105	1	2	4	8	16	32	64	0	127
5	2106	1	2	4	8	16	32	64	0	127
6	2107	1	2	4	8	16	32	64	0	127
7	2108	1	2	4	8	16	32	64	0	127
8	2109	1	2	4	8	16	32	64	0	127
9	2110	1	2	4	8	16	32	64	0	127
10	2111	1	2	4	8	16	32	64	0	127
11	2112	1	2	4	8	16	32	64	0	127
12	2113	1	2	4	8	16	32	64	0	127
13	2114	1	2	4	8	16	32	64	0	127
14	2115	1	2	4	8	16	32	64	0	127
15	2116	1	2	4	8	16	32	64	0	127
16	2117	1	2	4	8	16	32	64	0	127

SECTION 6 EVENTS AND RESPONSES

Responses and Actions

A Response consists of a series of Action Codes, each of which performs a specific function, like turning an output on or off, sending an X10 command or an Infrared code to a certain output, or arming and disarming the security system. Responses may be assigned to Zone activation and deactivation, Time Programs, Vacation Programs, Alarm types, Control Menu, Security Mode Responses, Keypad Responses, X10 received codes etc... Comfort Entry has a maximum of 99 Responses, while Comfort Pro has 255 Responses and Comfort Ultra has 1023 Responses.

Action Codes are commands in Comfort's programing language which tell Comfort what to do. For example, Action 128 is a command for output on/off. Action codes 128, 2,1 means Output 2 On and 128,2,0 means Output 2 Off. The parameter 2 after 128 is for output number and the last parameter is 1 for on, 0 for off.

An action code consists of 1, 2, 3 or 4 parameters or action numbers. For example, action code 128 requires 3 action numbers (128, output, 1=on or 0=off). Other examples of action codes usage;

71, 1 - Arm to Away Mode

79, 5 - Get State of Zone 5

129, 2, 5 - Infrared Code 2 to Output 5

66, 1 - Strobe Output ON

The list of Action Codes and their meaning and usage can be found in the booklet "Programming with Action Codes".

A Response consists of one or more action codes. For example Response 100 to turn on Outputs 1,2 and 3 would be

Response 100: 128, 1, 1, 128, 2, 1, 128, 3, 1, 255

The action 255 is a terminator for the Response. A standard Response line has 6 action numbers for Entry and Pro, and 8 for Ultra. The above action is made up of 10 action numbers so would require 2 Response lines. In the example, Response 100 runs over into Response 101 which is allowed, but that means that Response 101 could not be used by itself.

The range of Response Numbers depend on the Comfort Model;

Entry: 1 to 99

Pro: 1 to 254

Ultra: 1 to 1023

Once the Responses necessary for the operation of the system have been programmed, they can be used by Events.

Programming Responses

To program a Response, go to Engineer Menu 3 for Control, 6 for Responses.

Enter Response Number and # key

Enter the Response number, for example Response 1.

Response 1,
Action.. 128, 1, 1
Enter New Code and # Key

The Actions programmed in the Response are announced as shown above. Response 1 actions 128,1,1 means Output 1 On.

To exit without changing the Action codes on this Response, just press the # key.

To change the Response, enter the new code numbers followed by the # key, for example, to change the Response to Output 5 On, enter numbers 128, 5, 1.

"Enter New Code and # Key"
128#
"128, Enter new Code and # key"
5#
"5, Enter new code and # Key"
1#
"1, Enter New Code and # Key"
255#
"Action 128,5,1"
"Enter Response number and # key"

In the example above, terminator code 255# is entered after 128,5,1 to end the Response.

Each Response Number takes up 6 action codes or bytes. However, you may enter more than 6 action codes for a Response. This takes the allocated memory from the next Response, which means the next Response may not be used. For example, if you enter the following action codes for Response 80: 195,65,01,05 (X10 Code A1 ON), 128,02,01 (Output 2 on), 255, this takes up 8 bytes. Response 80 will turn on the X10 device with address A1 and Output 2. Response 81 cannot be used as its memory slot has been used by Response 80. More than 1 Response may be affected depending on the number of action codes used for a response. If 24 action codes are used, the next 3 Responses cannot be used.

Zone Responses

Each Zone has a Zone (ON) and Off Response. The ON Response is activated when the zone is activated, while the OFF Response is activated when the zone is closed. "Activated" in this context means Open for a Normally Closed zone and Closed for a Normally Open zone.

To assign On and Off Responses for a zone, go to Engineer Menu 1 for Zones,

Enter Zone Number and # key

The zone menu announces all the settings for the selected zone, for example

Zone 2, Bedroom window
Zone Type 2, Entry Path Off,
Zone Response 0, OFF Response 0
Press 1 for Description,
2 for Zone Type,
3 for Entry Path
5 for Zone Response
6 for Off Response

After the zone is selected, press 5 for On Response or 6 for Off Response. The voice menu will announce the current response number. e.g.

Response 0
Enter Response Number and # key

Enter the selected Response and # key

For example, to have an announcement of the zone name when the window is opened, use Response 59.

Response 59 has the Announce zone action (action 1).

Alarm Responses

Each of the 31 Alarm Types can activate a Response. To program alarm type responses, from Engineer Menu, press 2 for Alarm types

Enter Alarm Type and # key

Enter the selected alarm type and # key, e.g. 1# for Intruder Alarm

Intruder Alarm
Press 1 for Dial Settings
2 for Response
3 for Description
4 for Strobe
5 for Siren Type
7 for Trouble Arm Option
8 for Alarm State

Press 2 for Response. The voice menu will announce the current response number. e.g.

Response 0,
Enter Response Number and # key

For example, to turn on a light on X10 A10 All Lights on enter 96#. Response 96 is X10 A1 All Lights On. This causes the lights to turn on in the event of an Intruder Alarm.

Security Mode Responses

When Comfort is armed to any mode (Away, Night, Day), or when it is disarmed to Security Off, a Response can be activated. To assign a Response to each security mode, go to engineer menu 3,5

Press 0 for Security off
1 for Away Mode
2 for Night Mode
3 for Day Mode

Press 0 to 3 to select the appropriate mode. The voice menu will announce the current response number. e.g..

Response 0,
Enter Response number and # key

If no response is required, enter 0#. To leave the value unchanged, enter just #.

To switch off all lights in Away Mode, enter response 66 in the Away Mode Response.

The Security mode responses work after the system is armed while the Start Arm Response works at the start of the arming process.

Other Events

Other Events which activate Responses are listed below. These are programmed using Locations (Engineer Menu 7,4,1).

Function	Location
Startup Response	1683
Phone Ring Response	1685
Offhook Response	1843
Onhook Response	1844
Hourly Response	1845
AC Restore Location	1847
Phone Trouble Restore	1848
Start Arming Response	1850
Doorbell Response	1691
7 to Open Door Response (Door Station Menu)	52
4 to Open Gate Response (Door Station Menu)	1686

Startup Response (Location 1683)

This response is activated when Comfort is reset or powered on.

Phone Ring Response (Location 1685)

This response is activated when the internal phones ring. This can be used to turn down the volume of the TV or music players. This works only for phones connected to Comfort's TEL OUT.

Offhook Response (Location 1843)

This Response is activated when the internal phone goes offhook. This can be used to turn down the volume of the TV or music players (instead of the Phone Ring Response). This works only for phones connected to Comfort's TEL OUT.

Onhook Response (Location 1844)

This Response is activated when the internal phone goes onhook. This works only for phones connected to Comfort's TEL OUT.

Hourly Response (Location 1845)

This Response is activated every hour on the hour. It can be used for example to announce the time using the announce Time action (Action 29).

AC Restore Response (Location 1847)

This Response is activated when the Mains Power is restored after a loss of power. This can be used to turn on appliances or set them to a known state. Loss of mains power gives the Power Failure Alarm (Alarm Type 8).

Phone Trouble Restore Response (Location 1848)

This Response is activated when the Telephone line is restored after a Telephone line disconnection or trouble. Phone Trouble activates the Line Cut/ Phone Trouble Alarm (Alarm Type 3).

Start Arming Response (Location 1850)

This Response is activated when the system begins the arming process to any mode. This can be used to control any lights or appliances before the system is armed. The Security mode responses work after the system is armed

Doorbell Response (Location 1691)

This Response is activated when the Door station button is pressed. It can be used for example to play a Reminder message to greet the visitor.

7 to Open Door Response (Location 52)

When the Door Station button is pressed, and the home phone is answered, the voice menu says

0 for Door Station
4 to Open Gate
7 to Open Door

This Response is activated in the Door station menu when "7 to Open Door is pressed" This response should open the door. This is usually done using a pulse, eg Response 79, which pulses Output 1 for 1 second. A Relay connected to the output would be connected to open an electronic lock.

4 to Open Gate Response (Location 1686)

This Response is activated in the Door station menu when "4 to Open Gate is pressed" This response should open the gate. This is usually done using a pulse, eg Response 80, which pulses Output 2 for 1 second. A Relay connected to the output would be connected to open an automatic gate.

Infrared Responses

The Comfort Keypad with Infrared receiver, KP02, Scene Control Switch SCS01/IR and RIO are able to receive any of 128 Comfort IR codes, numbered 0 to 127.

Each recognized Comfort IR code activates a Response. The Responses corresponding to the IR codes are found in Table 36A which is reproduced below;

IR No	Location	Resp	IR No	Location	Resp	IR No	Location	Resp	IR No	Location	Resp	IR No	Location	Resp
0	6,148		26	6,174		52	6,200		78	6,226		104	6,252	
1	6,149		27	6,175		53	6,201		79	6,227		105	6,253	
2	6,150		28	6,176		54	6,202		80	6,228		106	6,254	
3	6,151		29	6,177		55	6,203		81	6,229		107	6,255	
4	6,152		30	6,178		56	6,204		82	6,230		108	6,256	
5	6,153		31	6,179		57	6,205		83	6,231		109	6,257	
6	6,154		32	6,180		58	6,206		84	6,232		110	6,258	
7	6,155		33	6,181		59	6,207		85	6,233		111	6,259	
8	6,156		34	6,182		60	6,208		86	6,234		112	6,260	
9	6,157		35	6,183		61	6,209		87	6,235		113	6,261	
10	6,158		36	6,184		62	6,210		88	6,236		114	6,262	
11	6,159		37	6,185		63	6,211		89	6,237		115	6,263	
12	6,160		38	6,186		64	6,212		90	6,238		116	6,264	
13	6,161		39	6,187		65	6,213		91	6,239		117	6,265	
14	6,162		40	6,188		66	6,214		92	6,240		118	6,266	
15	6,163		41	6,189		67	6,215		93	6,241		119	6,267	
16	6,164		42	6,190		68	6,216		94	6,242		120	6,268	
17	6,165		43	6,191		69	6,217		95	6,243		121	6,269	
18	6,166		44	6,192		70	6,218		96	6,244		122	6,270	
19	6,167		45	6,193		71	6,219		97	6,245		123	6,271	
20	6,168		46	6,194		72	6,220		98	6,246		124	6,272	
21	6,169		47	6,195		73	6,221		99	6,247		125	6,273	
22	6,170		48	6,196		74	6,222		100	6,248		126	6,274	
23	6,171		49	6,197		75	6,223		101	6,249		127	6,275	
24	6,172		50	6,198		76	6,224		102	6,250				
25	6,173		51	6,199		77	6,225		103	6,251				

When the IR code is received and recognized, the Response programmed in the Location in Table 36A is activated. For example, if IR code no. 89 is received by any KP02, SCS01/IR, or RIO with an Infrared Receiver, the Response in Location 6237 is activated. Any universal remote control can be used to learn and transmit Comfort IR codes.

The RIO with Infrared Receiver IRR and the SCS/IR are able to receive X10 IR codes for any housecode. X10 IR Codes will cause the X10 code to be sent by Comfort to the Powerline through the XM10E two way interface. No programming is required for this.. The KP02 is not able to receive X10 IR codes.

X10 Received Response

Comfort is able to receive X10 codes through the TW523/TW7223/XM10E X10 transceiver and activate Responses for 1 selected Housecode. This allows X10 switches or Controllers to trigger Comfort Responses.

Location 1851 is for the X10 House code which is recognized and will activate Responses.

The Housecodes A to P are coded as shown in the table below. The codes used to represent the housecodes are the same as used in Action Code 195

Housecode	Value	Housecode	Value	Housecode	Value	Housecode	Value
A	65	E	69	I	73	M	77
B	66	F	70	J	74	N	78
C	67	G	71	K	75	O	79
D	68	H	72	L	76	P	80

For example, if Housecode P is required, program Location 1851 with 80. For the selected housecode, unit codes 1 to 16 ON and OFF commands as well as ALL Lights On and All Units Off may activate a Response. For example if Unit Code 5 ON and OFF is to switch Output 1 on and off respectively , program Location 1274 with Response 1 (Output 1 ON) and Location 1275 with Response 2 (Output 1 Off).

X10 codes received with the programmed house code can activate programmed responses for each unit code off and on, as well as All Lights on and All Units Off, according to the table below.

X10 Unit Code	Location	Response	X10 Unit Code	Location	Response
1 On	1,852		9 Off	1,869	
1 Off	1,853		10 On	1,870	
2 On	1,854		10 Off	1,871	
2 Off	1,855		11 On	1,872	
3 On	1,856		11 Off	1,873	
3 Off	1,857		12 On	1,874	
4 On	1,858		12 Off	1,875	
4 Off	1,859		13 On	1,876	
5 On	1,860		13 Off	1,877	
5 Off	1,861		14 On	1,878	
6 On	1,862		14 Off	1,879	
6 Off	1,863		15 On	1,880	
7 On	1,864		15 Off	1,881	
7 Off	1,865		16 On	1,882	
8 On	1,866		16 Off	1,883	
8 Off	1,867		All Units Off	1,884	
9 On	1,868		All Lights On	1,885	

SECTION 7 HOME CONTROL MENU

Home Control Menu

For Outside version 1.20 and above, the Control menu can be organized into 3 "Control Groups", for example,

0 for Lights,
1 for Air-conditioners,
2 for Appliances

When one of the groups say "0 for Lights" is selected, another level of control keys is announced, eg.

0 for hall light
1 for master Bedrooom Light
2 for dining room light
...

9 for garage light

When a control key is selected, the next menu level i.e. Operation, is announced

0 for Off
1 for On
2 for (dim)
...

9 for ..

This selects the operation intended for the device, i.e. on, off dim, bright, high, cool etc..

This 3-level menu structure allows 30 control keys 00 to 29, with each control key having a maximum of 10 operations, giving a maximum of 300 operations for the home control menu.

This 3-level Control menu applies only to Outside firmware (O4.120 and above) and not to Master or Entry versions which only have a 2-level menu structure without Control Groups

You can program up to 30 control keys 00 to 29. These Control keys can be grouped into 3 groups. Group 0 for Control keys 0 to 9, group 1 for Control keys 10 to 19, and Group 2 for Control keys 20 to 29. For each group, you can enter 4 words from the word list to describe the group, eg "Lights", "Heating and air-conditioning", Home entertainment", "appliances" etc... If a description is programmed for the control groups, the Home Control Menu will announce the group menu eg "Press 0 for Lights, 1 for air-conditioning, 2 for Appliances". When the group number 0 to 2 is selected, the menu will announce the control keys in that group, e.g. for the Lighting group, "0 for Hall Lights, 1 for Bedroom Lights, 2 for

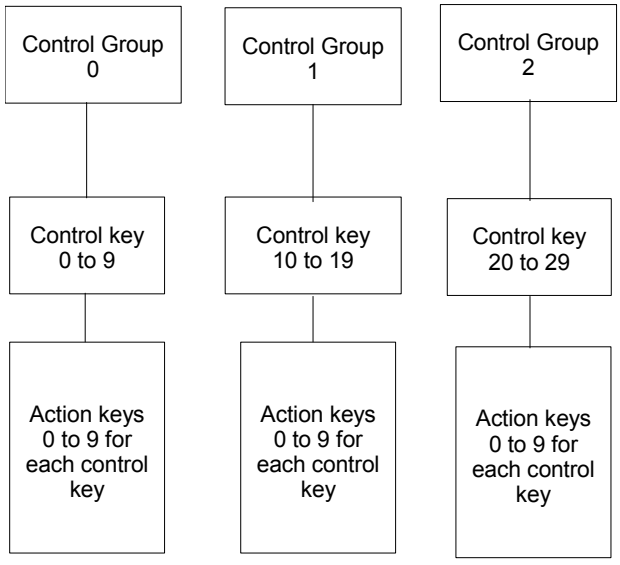
kitchen light, ...” Selecting the control key will lead to the action keys e.g.. “0 for Off, 1 for On, 2 for dim, 3 for Bright,...” This allows 3 levels of control menu - Group, device and action.

If the words for the Group are not programmed (i.e. terminator only), then the selection for the group will not be announced. For example, if Control group 2 is not programmed, the group menu will be (e.g..) “0 for Lights, 2 for appliances”.

If none of the groups have words programmed, the control menu will announce control keys 0 to 9 only, i.e. Group 0. This corresponds to the old Home control menu with only 1 set of control keys 0 to 9.

Even if there are less than 10 devices to be controlled, splitting up the devices into 3 groups makes it easier to select the device, without having to listen to the whole list of devices from 0 to 9.

The diagram below illustrates the relationship between Control groups, Control keys and Action keys.



Programming Control Groups

To program Control Group words, go to Engineer menu 3,0 for Control groups (This is a new menu).

Select Control Group

Press 0 to 2 (without the # key). The menu will announce either the programmed words for the control group, or if there are no words programmed,

Enter New Word and # Key

Each Control Group can be described by up to 4 words from the Wordlist (Table 40). To enter a word, enter the word number 0 to 254 and # key. The menu announces the word after each # key. If less than 4 words are used, enter 255 # as a terminator. Once a terminator or 4 words have been entered, the menu will announce the words entered, e.g..

"Lights"

If there is to be no words in the group, or to erase the words from the group, enter 255# as the first word. The group with no words programmed will not be announced in the Group menu.

Programming Control Keys

Go to Engineer Menu 3,1 for Control Key

This menu allows the control keys from 00 to 29 to be programmed.

You can program up to 30 control keys 00 to 29. Control Keys 00 to 09 belong to Group 0, Control Keys 10 to 19 belong to Group 1, Control Keys 20 to 29 belong to Group 2.

The control keys programmed are for the individual devices to be controlled by Comfort.

The third level of the menu, for Action Keys selects the action to be performed once the Control Key is selected, for example "Press 0 for OFF, 1 for ON, 2 for Low, 3 for High".

The Control Menu is as follows:

Enter Control Code and # key

Enter control key 00 to 29 and # key. These control settings program the assignment of digits on the telephone keypad with the descriptions e.g.. Digit 1 for "Living Room Lights", the control action description (e.g.. "on", "off") and the Control response required to perform the action.

When the action code is selected, the system says the Description for the selected digit, e.g..

Living Room Lights , **Press 1 for Description,** **2 for Action Key**

1 for Description

e.g..

Living Room Lights - enter word number and # key

Enter each word (selected from the wordlist in Table 40) followed by the # key. If there are less than 4 words, enter 255# as the terminator. The voice menu repeats the words entered. In the example enter words 6# (bedroom), 34# (light) , 255# (terminator).

The voice menu repeats the words entered. For example, enter words 6# (bedroom), 34# (light) , 255# (terminator). Once a terminator or 4 words have been entered, the menu will announce the words entered.

The menu goes back to the previous level, i.e.

Control Key, (00 to 29), (programmed words) **Press 1 for Description, 2 for Action Key**

2 for Action Key

The Action Key refers to the assignment of digits on the telephone keypad to a word description of the action e.g.. 1 for "on" and 0 for "off" and the Response required to perform the action.

Select Control Action Key - press 0 to 9

This allows you to program the actions for each key , e.g.. "On", "off", "up", "down" etc... Enter 0 to 9 to program the Action Key. Usually 1 is for ON and 0 is for OFF.

To program 1 for ON, press 1 (without #). The menu says

No Action

if the Action key has not been programmed. Enter up to 3 words from the wordlist (Table 40). If less than 3 words are entered, enter 255# as

terminator. "ON" is 230#. Enter 255# for terminator. The menu announces the Actions words ("ON"), and asks for the Response

Response 0 **Enter Response and # key**

Enter the appropriate Response number from Table 33, which performs the desired function. If no suitable default Response is available, program an unused Response or reprogram a Response which is not required.

Repeat for other Action Keys for this Control Key

- **Make sure that for each group which is used, control key 1 has words programmed (Control key 1 for Group 0, Control key 11 for group 1 and Control key 21 for group 2, otherwise Comfort assumes it is an empty group.**
- **If the Control Menu is not programmed, (or more precisely, Control Key 1 is not programmed), the User Menu will not announce "4 for Home Control".**
- **If Control Key 11 is not programed, the user will not be able to access Control Keys 11 to 19. If Control Key 21 is not programmed, the user will not be able to access Control keys 20 to 29.**

Control Menu Feedback (O4.160)

From Outside 4.160, each Control key can be feedback as to the status of Zones (on/off), analog input values, Output (on/off) , Counter values or Flags (on/off). For example, if Control key 1 is programmed as

Living Room Light **Press 0 for Off, 1 for On**

If a Current Sensor (CSM) is connected to a Zone (Input) 15 as Zone Type 8 to determine the state of the light (on or off), the Feedback Type can be set to Zone/Input and the Feedback Value is set to 15 (zone 15). When these two locations are programmed accordingly, the control key will announce;

Living Room Light.. ON **Press 0 for Off, 1 for On**

The control menu will announce the state based on the words programmed in action keys 0 and 1. If the feedback status is off, the word for action key 0 will be announced (in this case "off". If the feedback status is on, the word for action key 1 will be announced (in this case "on".

Feedback Types

Feedback Type	Meaning of Feedback Value
0	No Feedback
1	Zone 1-64 on/off
2	Analog Input 1-64 value
3	Output 1-64 on/off
4	Counter 0-127 value
5	Flag 1-64
255 (compatible with O4.107-154)	1-64 = Zone 1-64 On/Off, 65-128 = Analog Input 1-64 value, 129-191 = Output 1-64 on/off, 192 -254 = Counter 0-62 value, 0,255 = no feedback

There are 5 Feedback Types as follows;

Feedback Type 0 - No feedback.

There will be no feedback status when the control key is selected. The Control menu will be announced without any feedback.

Feedback Type 1 - Input On/off

The feedback status will be for the selected zone input (on or off). The zone must be set up for the correct zone type, ie Normally open or closed. A Normally Open zone type which is closed is considered to be "ON" and vice versa. The Control key feedback will be announced as (controlkeyname) is (statusword) where (controlkeyname) is the 4 word description of the control key, and (statusword) is the action word description for action key 0 if off, and action key 1 if on.

Feedback Type 2 - Analog Input

The feedback status will be for the selected zone input value 0 to 255. The zone must be set up for the appropriate zone type, eg Normally Open Switch or Zone Type 8 which has no alarm function. The Control key feedback will be announced as (controlkeyname) is (analogvalue) where (controlkeyname) is the 4 word description of the control key, and (analogvalue) is the analog value of the selected zone/input in the range 0 to 255.

The values 0 and 255 are special cases, they are interpreted as binary values 0 and 1 respectively, so that they announce as action key 0 and 1 words. For example, if the counter 2 value is 255 in the heating example, the announcement will be

"Living Room Heat ***is ON,*** Press 0 for heat off, 1 for heat on".

☎ **Only Comfort Main panel zones and SEM zones have analog Inputs, not Local Expansion Module (LEM) zones.**

Feedback Type 3 - Output On/off

The feedback status will be for the selected output (on or off). The Control key feedback will be announced as (controlkeyname) is (statusword) where (controlkeyname) is the 4 word description of the control key, and (statusword) is the action word description for action key 0 if off, and action key 1 if on.

Feedback Type 4 - Counter Value

The feedback status will be for the selected Counter number 1 to 128. The contents of the counter is from 0 to 255. The Control key feedback will be announced as (controlkeyname) is (countervalue) where (controlkeyname) is the 4 word description of the control key, and (analogvalue) is the value of the selected Counter in the range 0 to 255. Outside version 4.160 and above have 128 counters.

The values 0 and 255 are special cases, they are interpreted as binary values 0 and 1 respectively, so that they announce as action key 0 and 1 words. For example, if the counter 2 value is 255 in the heating example, the announcement will be

"Living Room Heat ***is ON,*** Press 0 for heat off, 1 for heat on".

Counters can be changed from the UCM or from the C-Bus, EIB or Smartfit interfaces, providing feedback for the group addresses.

Feedback Type 5 - Flag On/off

The feedback status will be for the selected Flag 1 to 64 (on or off). The Control key feedback will be announced as (controlkeyname) is (statusword) where (controlkeyname) is the 4 word description of the control key, and (statusword) is the action word description for action key 0 if the selected flag is off, and action key 1 if the selected flag is on.

The Location for feedback on each control key specifies an Input, output or counter which is to be monitored for feedback announcement of the Control key device.

☎ **The Feedback Types feature is only available in Outside firmware (4.160 and above). The Comfigurator tool can be used to select feedback types and values for each control key.**

Feedback Types 1 for zone on/off, 3 for output on/off, and 5 for flags are binary, i.e. either on or off, and will take the words for action key 0 and 1. Feedback types 2 for analog input and 4 for counter are analog values ranging from 0 to 255 and will announce the value (0-255) instead of on/off. For example, if Counter 2 holds the temperature on degrees F, the control key can be programmed as

:"Living Room temperature ***is*** 85, Press 0 for heat off, 1 for heat on". For control key 1, the feedback type should be 4 in Location 6625, and the feedback value should be 2 (counter 2) in Location 4799.

The values 0 and 255 are special cases, they are interpreted as binary values 0 and 1 respectively, so that they announce as action key 0 and 1 words. For example, if the counter 2 value is 255 in the heating example, the announcement will be

"Living Room Heat ***is ON,*** Press 0 for heat off, 1 for heat on".

To program The Feedback Type and Feedback Value for each Control Key, refer to Table 26B in the worksheet. A small portion is reproduced below;

Key	Description				Actio	Action Words				Resp
					0 to 9	Description	(0-255)	(0-255)	(0-255)	(0-255)
0	Word 1	Word 2	Word 3	Word 4	0					
	(0-255)	(0-255)	(0-255)	(0-255)	1					
					2					
					3					
					4					
					5					
					6					
	Feedback Type				7					
	6624				8					
	Feedback value				9					
	4798				*					

The Feedback Type and Feedback Value Locations are shown for each Control key. Enter the Feedback type 0 to 4 in the Feedback Type Location and enter the appropriate Feedback Value for the chosen Feedback type in the location given.

SECTION 8 TIME PROGRAMS

Function of Time Programs

16 Time Programs are available which can be activated on a weekly basis at any time of day and for any combination of days of the week and holidays. These Time Programs can be used to turn appliances and lights on and off or for arming and disarming the security system.

Each Time program consists of an Activation Time, days of the week for activation, and a Response. A Time program can be specified for any combination of days of the week (Monday to Sunday) as well as Holidays. A Time program is activated if the current day of week is selected and the time matches the programmed time (to the minute). When this happens, the programmed Response is activated.

For example, in an office, Time Program 1 may be programmed for 9:00 am on Monday, Tuesday, Wednesday, Thursday, Friday to activate a Response which disarms the security system and turns on the lights, air-conditioning and photocopying machine. Time Program 2 may be programmed for 7 PM on the same days to arm the system to Away mode and turn off the lights, photocopying machine and air-conditioning. However, on Holidays, Time Program 1 should not take place. The Response for Time Program 1 should check that the day is not a holiday, and if it is, to exit without performing the other actions. Up to 24 Holidays in a year can be defined to handle situations like this.

Time Programs can also handle automatic Daylight Savings Time Adjustments.

Time Programs can be switched On or Off in the Time Program Menu (0 for Off, 1 for On).

Holidays in Time Programs

If a Time Program is set for days of week say Monday to Friday but not for Holiday, and a particular day is a Holiday (as defined in the Holidays table), the Time Program will be active on that day. If it is required that the Time Program/ Reminder should not be active on a Holiday then in the Time Program Response, the actions code sequence 73,19 (Get Holiday), 13 (Exit if NZ) should be used to bypass the Response on holidays (V4.21 above)

Programming Time Programs

Go to Engineer Menu 3,3.

Enter Time Program Number and # key

Enter Time program number 1 to 16.

When a valid Time program is selected, the voice menu says (e.g..)

Time Program (1 to 16) ON (or OFF)
Monday, Tuesday, Wednesday, Thursday, Friday, Holiday
11:45 PM, Response 3
Press 1 for ON
0 for OFF
2 to Change Time
3 for Day of Week
4 for Response

1 for Time Program ON and 0 for Off

Each Time Program can be turned on or off without affecting the programmed Times, Days of week and Response for that Time Program. This makes it convenient for temporarily turning off a Time Program, for example, when there are guests, to disable the auto-arming program in the evening.

☎ **From Version 4.109 onwards, Time Programs On/Off settings are maintained when Comfort is Reset or after power down.**

2 to Change Time

Change hours, 12, enter new number and # key

Enter new activation time (0 to 24) in 24 hour format and #, or just # to leave the value unchanged. For example, for 2 PM, enter 14#.

14
Change Minutes, 0, enter new number and # key

Enter new activation minutes and # key, or just # to leave the value unchanged. The time just entered is the activation time for the Time program, when the Time Program Response will be activated.

3 for Day of Week

Select Day of week
Press 1 for Monday
2 for Tuesday
..
8 for Holiday

Press 1 to 8 to select a day of week. Number 8 selects a Holiday, which takes precedence over other days of the week, i.e. if a day is a Holiday and a Monday, the Holiday setting will be in effect.

If 1 for Monday is pressed, the voice menu says (e.g..)

Monday, ON
Press 1 for on, 0 for off

Press 1 to select the day of week to be on, and 0 to select the day to be off. This determines whether the selected Time Program will be activated on that day of week.

The same procedure is repeated for each day of week

4 for Response

e.g..

Response 1, enter Response number and # key

Enter the new response number 0-255 and # key, or just # to leave the value unchanged. A value of 0 means that no response will be executed.

Programming Holidays

Holiday definitions are used in Time Programs and Reminders.

Go to Engineer Menu 3,2.

Enter Holiday Number and # key

Up to 24 Holidays may be specified. For each holiday, the month and day are programmed. These holidays are used in Time Programs and Reminder Messages, where the Time program or Reminder Message can be programmed to be activated for any combination of days of week and public holidays.

When the Holiday number (1 to 24) is entered, the voice menu says e.g..

January 1
Change Month, January, enter new number and # key

Enter the new month (1 to 12) and # key, or just # to leave the month unchanged. The voice menu will say the new month e.g..

March
Change Day, 1, enter new number and # key

Enter the new day (1 to 31) and # key, or just # to leave the day unchanged. The system will not allow the entry of an invalid day e.g.. April 31 or Feb. 29 for non-leap years.

Holidays are used in Time Programs and Reminder Messages as part of the Day-of-Week settings.

Note: This menu is also available in the User Program Menu under Change Date and Time (2 - Change Date and Time, 3 - Change Holiday)

SECTION 9 VACATION PROGRAMS

Function of Vacation Programs

Comfort has the ability to control lights and home appliances at semi-random times during the day or night in Vacation Mode. This is made possible by Vacation Programs. There are 8 Vacation programs available.

Each Vacation Program consists of a Start Time in hours (0-23), a Duration in hours (0-23) , an ON Response, and an OFF Response.

The Start Time is when the ON Response is activated. Only the Start Hour (0 to 23) is specified in the Vacation program. The actual time within the hour is generated randomly by the system, and is different for each day that it is activated. The duration is specified in hours in the Vacation Program, but the actual duration minutes is also generated randomly, and is different each time that the Vacation program is activated. At the end of the Duration, the OFF Response is activated.

For example, Vacation Program 1 is programmed for Start Time of 7 PM, a duration of 1 hour, ON Response to turn on a light, and OFF Response to turn off the light. Each day, the light will turn on between 7 PM and 8 PM, for a duration of 1 hour to 1 hour 59 minutes. With this randomized pattern, it will not appear to be a programmed or automatic operation. All Vacation Programs may run simultaneously and overlap in time.

Programming Vacation Programs

Enter Vacation program number and # key

Enter the vacation program number (1 to 8) and # key The voice menu says the current settings of the selected vacation program (e.g..)

6:00 am, 2 hours, ON response 3, OFF response 17
Press 1 for Start Time,
2 for Hours,
3 for ON Response,
4 for OFF Response

This means that the selected Vacation Program is set for 6 AM (6:00 to 6:59 AM), for a duration of 2 hours (2:00 hours to 2:59 hours), with On Response 3 and Off Response 17.

1 for Start Time

e.g.

6:00 am, enter new number and # key

Enter new Time (hours only) in 24 hours format, e.g.. 12 for 12 PM, or # to leave the time unchanged. This start time is randomized, i.e. the actual start time has 0 to 59 minutes added to it, e.g.. if 3:00 PM is programmed, the ON response may be activated at any time from 3 PM to 3:59 PM

2 for Hours

This parameter is the duration of the vacation program in hours.

e.g..

2 hours, enter new number and # key

Enter new duration in hours and #, or just # to leave the value unchanged. The actual duration of the vacation program will be randomized. e.g.. if 2 is entered, the actual duration will be between 2 hours and 2 hours 59 minutes.

3 for ON Response

e.g..

ON response 23, enter Response number and # key

Enter new ON response number and #, or just # to leave the value unchanged. Enter 0# if no response is required. This response is executed when the activation time is reached.

4 for OFF Response

e.g..

Off Response 23, enter new number and # key

Enter new OFF response number and #, or just # to leave the value unchanged. Enter 0# if no response is required. This response is executed after the duration specified above has expired.

SECTION 10 KEYPAD FUNCTION KEYS

Each of the 16 keypad function keys can be programmed to activate a Response. These Responses can be used to allow the keypad function key to control any appliance or scene, or to provide a shortcut to commonly menus in the Comfort Voice Menu system. Each function key can also be programmed to require a sign-in code in order to access the programmed Response or menu to provide additional security for sensitive functions.

Programming Keypad Function Keys

Go to Engineer Menu 4 for Security, 4 for Control Station.

Enter Control Key

Enter Key 0 to 9 or *.

These are the keys which can be programmed directly in this menu. The function keys Away, Night, Day and # must be programmed using Locations.

Response 0,
Enter Response number and # key

Enter the new response to be assigned to the Function Key. When the Function key is activated, F + Control key, the programmed Response will be triggered. The Response can give a shortcut to a commonly-used submenu. See Programming with Action Codes (Action 91) for a list of submenus. Any Response can be assigned to Keypad function keys. This means that the Keypad can be used to perform any function in the system!

Code OFF,
Press 1 for ON, 0 for OFF

Each Function key can be programmed to require a user sign in code or not. If a sign-in code is required, when the Function key is activated, the user will be asked to sign in. If the code is valid, then the programmed Response is activated. The user authorization settings are in effect here for arming, Security menu, and Home Control.

Programming Menu Shortcuts

Action 91 is used to program a shortcut to a menu to be used on any Keypad Function key.

The format of action 91 is 91, Menu number. The list of available menu numbers is shown below.

Menu No	Description	Menu No	Description
1	Arm Security Menu	20	Change Responses
2	Messages menu	21	Control Settings
3	Security menu	22	Mode Responses
4	Home Control Menu	23	Emergency Menu
5	Reminder Menu	24	Change Sign In Code
6	Event log	25	Baby Monitor (see action 93)
7	Test	26	Record Alarm message
8	Bypass	27	Record Memo
9	Answering Machine Settings	28	Assign Phone to Mailbox
10	Change Date	29	Change Entry Exit Time
11	Change Phone	30	Reserved
12	Program Mode Security Opt	31	User Menu
13	Reserved	32	Mailbox Options
14	Pager Id	33	Call Screening
15	Engineer Code Enable	34	Alarm Type Dial On/Off
16	No of Rings	35	Record Message Menu
17	Time Program	36	User Codes Menu (V4.46)
18	Vacation Program	37	Keypad Announce enable menu
19	Change Holidays	38	Home Control Menu Group 0 (V4.140)

For example, action 91, 8 means Shortcut to Bypass Menu. If a function key is programmed with a Response with this code, then this function key would give a shortcut to the Bypass Menu.

Action 99 (Set User Authorization) will set the user authorizations for the user to be allowed to access this menu. Action 99 works in conjunction with and should precede Action 91 in the same Response.
Action 99 has the format 99, authorization value where the authorization value is defined below;

User Authorization	Add Value
Local Disarm	1
Local Arm	2
Remote Disarm	4
Remote Arm	8

User Authorization	Add Value
Disarm after Disarm	16
Security Menu	32
Home Control	64
Program Menu	128

Each of the user authorization settings has a value defined in the above table. Action 99 sets a combination of the user authorization settings. Action 99, 32 means allow users with Security Menu authorization to access this menu. Action 99, 128 means allow users with Program Menu authorization to access this menu.

Action 99, 255 means that any user with any of the authorizations will be allowed access to the menu, as 255 is the sum of all the user authorizations.

As an example, Keypad Function key 6 is programmed as a shortcut to the Change Phone Menu. This uses Response 106, which is 99, 128, 91, 11, 255.

99, 128 means allow users with Program Menu authorization.

91, 11 means shortcut to Change Phone Menu.

Response 106 is programmed into Function Key 6.

If user 1 only has Program menu authorization and other users do not, then only User 1 can press access the Change Phone Menu in Function Key 6. This function key requires the user to enter his code after pressing F6. If he enters the code for user 1, then the Change Phone Menu will be accessed. If the code is for other users without Program Menu authorization, there will be a long beep to indicate wrong code.

☎ **To program User Authorizations for each User, see Worksheet Table 38 or the Sign in Codes and User Authorization section of this manual.**

SECTION 11 ENGINEER MENU REFERENCE

Engineer Menu
Press 1 for Zone
2 for Alarm
3 for Control
4 for Security
5 for Event Log
6 to Change Sign-in code
7 for System
8 for Test
9 for Program Menu
Press # to End

Zone(1)

Enter Zone Number and # key

When the zone number and # key are entered, the following menu is played e.g..

Zone 2, Bedroom window
Zone Type 2, Entry Path Off,
Zone Response 0, OFF Response 0
Press 1 for Description,
2 for Zone Type,
3 for Entry Path
5 for Zone Response
6 for Off Response

☎ **In programming the above settings and all settings in general, the currently programmed setting is announced. The new setting can be entered followed by the # key. If a Yes or No response is required, press 1 for ON and 0 for OFF - # is NOT required. If the current setting is not to be changed just press #.**

Zone Description (1,1)

(zone description) -
Enter Word number and # key

☎ **If no words are assigned to a zone, the default description for reporting and announcements will be the zone number.**

Zone Type (1,2)

Zone Type 2, Enter new number and # key

Entry Path (1,3)

Entry Path ON **Press 1 for ON, 0 for OFF**

If the zone is on the entry path, the zone can be activated during entry without causing an alarm, **provided the Entry Door is opened first.**

Zone On Response (1,5)

The ON response is executed whenever this zone is activated. A response can perform home automation actions, or arm and disarm the security system etc... Enter 0 if no ON response is required. e.g..

Zone Response 3, **Enter new number and # key**

Enter the new response and #, or just # to leave the response unchanged. Refer to the Default Responses List.

Zone ON definition depends on the Normally Open/Normally Closed setting of the Zone Type, i.e. Closed contact for N.O zones and open contacts for N.C zones.

☎ **The Zone Response is activated even if the zone is Inactive (e.g.. in Security Off), and before any Alarm Response triggered by the zone.**

Zone Off Response (1,6)

The OFF response is executed whenever this zone is deactivated. A response can perform home automation actions, or arm and disarm the security system etc... Enter 0 if no OFF response is required. e.g..

OFF Response 16, **Enter new number and # key**

Enter new response and #, or # to leave the response unchanged. Refer to the Default Responses list.

Zone OFF definition depends on the Normally Open/Normally Closed setting of the Zone Type, i.e. Closed contact for N.C zones and open contacts for N.O zones.

☎ **The Zone Off Response is activated even if the zone is Inactive, e.g. in Security Off Mode.**

Alarm(2)

Enter Alarm Type and # key (0-31)

Up to 32 Alarm Types can be selected. (See Alarm Types in Table 4).

(Alarm Name) **Press 1 for Dial Settings** **2 for Response** **3 for Description** **4 for Strobe** **5 for Siren Type** **8 for Alarm State**

Dial Settings (2,1)

Dial Setting ON (or OFF)
Press 1 for ON
0 for Off
2 for Dial Delay
3 for Alarm Report Code
4 for Alarm Restore Code
6 for Monitoring Station Code

Dial Settings (2,1,1)

Pressing 1 for On in the above menu will allow each of the 8 phone indexes to be enabled or disabled individually.

Dial Setting 1,2,3,4,5,6,7,8 **Enter Dial setting 1 to 8**

Dial Delay (2,1,2)

Dial Delay OFF **Press 1 for ON, 0 for OFF**

☎ **For UL installations, Dial Delay should be left off.**

Alarm Report Code (2,1,3)

Alarm Report Code (digit 1), (digit 2), Enter new number and # key

Report Code 2,.. zero Enter new number and # key

☎ **If this alarm is not to be reported, enter 15 in both digits, i.e. 15#,15#, corresponding to FF**

Alarm Restore Code (2,1,4)

Alarm Restore Code (digit 1), (digit 2), Enter new number and # key

Restore Code 2,.. zero Enter new Number and # key

☎ **If the alarm restore is not to be reported, enter 15 in both digits, i.e. 15#,15# corresponding to FF.**

Monitoring Station Code (2,1,6)

Code 1, Enter New Number and # key

This refers to the Contact ID Class Code, which is a single digit number from 0 to 9. This is sent with the Contact ID report to Central Monitoring Station. It is ignored for other Central Station formats.

Alarm Response (2,2)

Response (0 to 255), Enter Response number and # key

An Alarm Response or program may be performed when the alarm is activated.

Description (2,3)

Intruder Alarm, Enter New number and # key

Each Alarm type has an Alarm Description which is reported to Voice Phone and Alarm Voice Message Phone Types. The sentence number 0 to 254 is programmed here. Refer to the Worksheet for a list of applicable sentences.

Strobe (2,4)

Strobe ON, **Press 1 for ON, 0 for OFF**

If the strobe is to be activated during this alarm, press 1 for ON, else press 0 for OFF.

Siren Type (2,5)

Siren Type (0 to 20), Enter new number and # key

☎ **For UL installations, Siren Type 2 (Temporal 3) must be used for Fire Alarm (Alarm Type 12). This is the default setting.**

Siren Delay Off **Press 1 for ON, 0 for OFF**

☎ **For UL installations, Siren Delay should be left off.**

Alarm State (2,8)

Alarm State, 1 **Enter new number & # key**

Control (3)

Press 0 for Control groups
1 for Control Menu
2 for Holiday
3 for Time Program
4 for Vacation Program
5 for Security Mode Response
6 for Response

Control Group (3,0)

The Home Control Menu is a 3 level menu. The first level consists of Control groups 0 to 2 for Comfort PRO, or 0 to 5 for Comfort Ultra. This is for selecting groups of devices for example, lights, airconditioners, home entertainment, heating etc. Once the Group is selected the control menu will announce the devices within the group, or the Control keys.

Select Control Group

Press 0 to 2 (without the # key). The menu will announce either the programmed words for the control group, or if there are no words programmed,

Enter New Word and # Key

Each Control Group can be described by up to 4 words from the Wordlist (Table 40). To enter a word, enter the word number 0 to 254 and # key. The menu announces the word after each # key. If less than 4 words are used, enter 255 # as a terminator. Once a terminator or 4 words have been entered, the menu will announce the words entered, e.g..

"Lights"

If there is to be no words in the group, or to erase the words from the group, enter 255# as the first word. The group with no words programmed will not be announced in the Group menu.

☎ **The Control Groups menu is Not available in Comfort Entry.**

Control Menu (3,1)

Enter Control Code and # key

These control settings program the assignment of digits on the telephone keypad with the descriptions e.g.. Digit 1 for "Living Room Lights", the

control action description (e.g.. "on", "off") and the Control response required to perform the action.

When the Control key is selected, the system says the Description for the selected digit, e.g..

Living Room Lights , **Press 1 for Description,** **2 for Action Key**

Description (3,1,1)

e.g..

Living Room Lights - enter word number and # key

Enter word number from the Word List (Table 40). A maximum of 4 words is allowed. If less than 4 words are required, end with 255 # or 0#

Control Action Key (3,1,2)

The Action Key refers to the assignment of digits on the telephone keypad to a word description of the action e.g.. 1 for "on" and 0 for "off" and the Response required to perform the action.

Select Control Action Key - press 0 to 9

Select which key to assign to the action for the appliance.

The action words are announced next.

Up to 3 Action words can be entered to describe the actions to take place by selecting this Action key.

When digit 0 to 9 is pressed, the voice menu says e.g..

On.. **Enter Word number and # key**

Enter the new word number and # key. Enter the next word in the same way. A maximum of 3 words is allowed. If there are less than 3 words, enter 255 as the terminator. The Response is announced next.

Response 12 - enter Response number and # key

Enter new response number and # key, or just # to leave response unchanged. Enter 0 if no response is required.

Holiday Settings (3,2)

Enter Holiday Number and # key

When the Holiday number (1 to 24) is entered, the voice menu says e.g..

January 1
Change Month, January, enter new number and # key

Enter the new month (1 to 12) and # key, or just # to leave the month unchanged. The voice menu will say the new month e.g..

March
Change Day, 1, enter new number and # key

Enter the new day (1 to 31) and # key, or just # to leave the day unchanged. The system will not allow the entry of an invalid day e.g.. April 31 or Feb. 29 for non-leap years.

Holidays are used in Time Programs and Reminder Messages as part of the Day-of-Week settings.

Note: This menu is also available in the User Program Menu under Change Date and Time (2 - Change Date and Time, 3 - Change Holiday)

Time Program (3,3)

Enter Time Program Number and # key

Enter Time program number 1 to 16.

When a valid Time program is selected, the voice menu says (e.g..)

Time Program (1 to 16) ON (or OFF)
Monday, Tuesday, Wednesday, Thursday, Friday, Holiday
11:45 PM, Response 3
Press 1 for ON
0 for OFF
2 to Change Time
3 for Day of Week
4 for Response

Time Program ON (3,3,1) and OFF (3,3,0)

Each Time Program can be turned on or off without affecting the programmed Times, Days of week and Response for that Time Program. This makes it convenient for temporarily turning off a Time Program, for example, when there are guests, to disable the auto-arming program in the evening.

Change Time (3,3,2)

Change hours, 12, enter new number and # key

Enter new activation time (0 to 24) in 24 hour format and #, or just # to leave the value unchanged. For example, for 2 PM, enter 14#.

14 **Change Minutes, 0, enter new number and # key**

Enter new activation minutes and # key, or just # to leave the value unchanged. The time just entered is the activation time for the Time program, when the Time Program Response will be activated.

Day of Week (3,3,3)

Select Day of week **Press 1 for Monday** **2 for Tuesday** **..** **8 for Holiday**

Press 1 to 8 to select a day of week. Number 8 selects a Holiday, which takes precedence over other days of the week, i.e. if a day is a Holiday and a Monday, the Holiday setting will be in effect.

If 1 for Monday is pressed, the voice menu says (e.g..)

Monday, ON **Press 1 for on, 0 for off**

Press 1 to select the day of week to be on, and 0 to select the day to be off. This determines whether the selected Time Program will be activated on that day of week.

The same procedure is repeated for each day of week

Response (3,3,4)

e.g..

Response 1, enter Response number and # key

Enter the new response number 0-255 and # key, or just # to leave the value unchanged. A value of 0 means that no response will be executed.

Vacation Program (3,4)

Enter Vacation program number and # key

Enter the vacation program number (1 to 8) and # key The voice menu says the current settings of the selected vacation program (e.g..)

6:00 am, 2 hours, ON response 3, OFF response 17
Press 1 for Start Time,
2 for Hours,
3 for ON Response,
4 for OFF Response

Vacation Program - Start Time (3,4,1)

e.g..

6:00 am, enter new number and # key

Enter new Time (hours only) in 24 hours format, e.g.. 12 for 12 PM, or # to leave the time unchanged. This start time is randomized, i.e. the actual start time has 0 to 59 minutes added to it, e.g.. if 3:00 PM is programmed, the ON response may be activated at any time from 3 PM to 3:59 PM

Vacation Program - Hours (3,4,2)

This parameter is the duration of the vacation program in hours.

e.g..

2 hours, enter new number and # key

Enter new duration in hours and #, or just # to leave the value unchanged. The actual duration of the vacation program will be randomized. e.g.. if 2 is entered, the actual duration will be between 2 hours and 2 hours 59 minutes.

Vacation Program - ON Response (3,4,3)

e.g..

ON response 23, enter Response number and # key

Enter new ON response number and #, or just # to leave the value unchanged. Enter 0# if no response is required. This response is executed when the activation time is reached.

Vacation Program - OFF Response (3,4,4)

e.g..

Off Response 23, enter new number and # key

Enter new OFF response number and #, or just # to leave the value unchanged. Enter 0# if no response is required. This response is executed after the duration specified above has expired.

Security Mode Response (3,5)

A response may be specified to execute when changing to one of the Security Modes (home, away, night, vacation). For example, when arming to Away mode, all lights and appliances may be programmed to turn off.

Press 0 for Security off
1 for Away Mode
2 for Night Mode
3 for Day Mode

Press 0 to 3 to select the appropriate mode. The voice menu will say the current response number. e.g..

Response 34, enter Response number and # key

If no response is required, enter 0#. To leave the value unchanged, enter just #.

Response (3,6)

Enter Response Number and # key

This menu allows you to change the Actions associated with any Response number. There are 255 Responses (128 for FS17) in the Comfort System. Most of these are assigned to default Actions, but may be changed according to your requirements. Refer to the Worksheet for the list of default Responses and Programming with Action Codes booklet for the list of Action Codes. Responses can be used to perform tasks when triggered by Zone activation, Time Programs, Vacation Programs, Alarm Types or Home Control. Each Response consists a series of Actions. An Action performs a single task, e.g.. switching an output on or off, sending an X10 code, or an infrared remote control code, arming or disarming the system. An Action consists of 1 to 4 bytes. The 1st byte is the Action number, and subsequent bytes are the parameters for the Action.

Enter the Response number and # key

The voice menu says the values of the bytes making up the Response, e.g.. for Response 1, which switches on output 1:

128, 1, 1, 0, 0, 0
Enter new action and # key

The 1st number 128, is the Action number, which controls an Output. The 2nd number refers to the output number 1, and the 3rd number ,1 is to turn on the output selected, whereas 0 will turn it off.

Enter the new values, 1 number at a time followed by #. Enter 255# to terminate the Response. The voice menu will say the action code numbers which are entered up to code 255 which terminates the Response and is not spoken. Press just # to leave the menu without changing the action codes. If you entered some action codes before pressing # by itself without the 255 terminator, the codes you entered will be part of the response, but the remaining codes in the Response will not be changed (assuming this Response was already programmed with action codes).

Each Response Number takes up 6 action codes or bytes. However, you may enter more than 6 action codes for a Response. This takes the allocated memory from the next Response, which means the next Response may not be used. For example, if you enter the following action codes for Response 80: 195,65,01,05 (X10 Code A1 ON), 128,02,01 (Output 2 on), 255, this takes up 8 bytes. Response 80 will turn on the X10 device with address A1 and Output 2. Response 81 cannot be used as its memory slot has been used by Response 80. More than 1 Response may be affected depending on the number of action codes used for a response. If 24 action codes are used, the next 3 Responses cannot be used.

Security (4)

Press 1 for Phone Settings
2 for Entry/Exit Time
3 for Security Options
4 for Control Station

Phone Settings (4,1)

Select Phone

Press 1 to 8 (without # key) to select the phone index.

Phone settings 1 and 2 may be assigned to Monitoring Stations, or to other phone types. Phone settings 3 to 8 may be assigned to Voice Phone, pager or Alarm Voice Message.

The primary or main Monitoring Station is assigned to Phone Setting 1, and the second or backup Monitoring Station is assigned to Phone Setting 2. The system will only dial to the second Monitoring Station if it fails to get connected to or receive a kissoff from the first Monitoring Station.

The voice menu says the current setting of the selected phone index, e.g..

Pager 92117893
Press 0 for No Phone
1 for Voice Phone
2 for Pager
4 for Monitoring Station

Voice Phone refers to any telephone or cellular phone, where a voice message will be played, and the user listen to the message and acknowledge or sign in to access the system.

The Pager Phone Type displays the 4 digit Pager ID code, the alarm type and zone or user number on the pager. See the Quick Reference Guide for a list of pager codes for each Alarm type.

Set the unused dial settings to phone type 0.

If 1 (voice phone) or 2 (pager) is selected, the voice menu says

Voice Phone (or pager)
Enter new number and # key

Enter the new number and #, or just # to leave the number unchanged.

If you make a mistake while entering the phone number, press * or the AWAY key on the keypad to clear and start again.

To enter the * or # keys in a telephone number (which may be needed for calling card access or phone unlocking), press the DAY key on the keypad followed by the desired key.

For example, 1234 <DAY> # 5678 enters 1234#5678, whereas if <DAY> was not used, the # would terminate the key entry. (Applicable to firmware version 4.45 and above)

To enter a pause or delay within a phone number, press the NIGHT key on the keypad followed the pause in seconds. For example, 1234 <NIGHT>35678 will insert a pause of 3 seconds during dialing between the numbers 1234 and 5678. (Applicable to firmware version 4.45 and above)

Phone settings 1 and 2 only may be programmed to dial to Central Monitoring Stations. Other phone types may also be assigned to the first two phone settings if not used for Monitoring Stations. When this is selected the Voice menu says:

Press 1 for Monitoring Station Code
2 for Monitoring Station Type
3 to Change Phone Number

Monitoring Station Code (4,1,4,1)

The voice menu will say the current Account Number for the customer e.g..

1234
Enter new number and # key

Enter the new 3 or 4 digit account number and #, or just # to leave the number unchanged.

Monitoring Station Type (4,1,4,2)

This menu sets the Communication Format. The voice menu will say the current type (i.e., the Communication format) e.g..

13
Enter new number and # key

Enter the new communication format 1 to 16, (see Communicator Formats - Table 10, Programming Tables) for the communication format numbers) or just # to leave the current format unchanged.

Monitoring Station - Change Phone Number (4,1,4,3)

The voice menu will say the current Monitoring Station phone number e.g..,

8725742 **Enter new number and # key**

Enter the new phone number for the Monitoring Station (up to 20 digits) and #, or just # to leave the number unchanged.

- ☎ **There is a programmable delay of default 3 minutes after a kissoff from a Monitoring Station in an alarm state before the other phone numbers are dialed, to allow time for the Central Station to call the premises to verify the alarm. This delay in minutes is in Location 1687.**
- ☎ **Once phone 1 or 2 is set to a Monitoring Station, the user will not be able to change the phone setting to other phone types or make any other changes to the programmed phone in the Program Menu.**
- ☎ **If your system is connected to a PABX extension (not permitted for UL installations), do not include the PABX access digit as part of the phone number. You should use the PABX settings instead (7,2,1). Always connect the system to the default extension, which will have access to an outside line when there is a power failure. The system will not dial a PABX outside line digit if there is a power failure.**
- ☎ **The system should not be programmed to dial to the police station unless the number has been specifically assigned by the police station to provide such a service.**

Entry/Exit Time (4,2)

Press 0 for Entry Time, **1 for Exit time,** **2 for Entry Warning Time** **3 for Night Exit Time**

Entry Time (4,2,0)

20 seconds, enter new number and # key

Enter new entry time in seconds and #, or just # to leave the value unchanged.

- ☎ **For UL installations, the combined Entry Time plus Entry Warning Time should not exceed 45 seconds.**

Exit Time (4,2,1)

20 seconds, enter new number and # key

Enter new exit time in seconds and #, or just # to leave the value unchanged.

☎ **For remote arming, it is not necessary to leave by the front door in order to arm. The system will arm after a short delay if all zones are closed.**

☎ **For UL installations, the Exit time may not exceed 60 seconds.**

Entry Warning Time (4,2,2)

20 seconds, enter new number and # key

Enter new entry warning time and #, or just # to leave the value unchanged.

☎ **For UL installations, the combined Entry Time plus Entry Warning Time should not exceed 45 seconds.**

Night Exit Time (4,2,3)

5 seconds, Enter new number and # key

Security Options (4,3)

Press 1 for Force Arm Setting **3 for Siren Reverse**

Force Arm Setting (4,3,1)

Force Arm Option ON **Press 1 for ON, 0 for OFF**

Set the option to ON (1) to allow force-arming by the user (default ON). The user force-arms the system by pressing # during Security Check. The zone which is auto-bypassed in this manner reverts to protected status if it is subsequently closed. If the Force Arm setting is OFF, pressing the # key during Security Check causes the arming to be canceled.

If an Auto-arm response is activated and Force arming is enabled, the system will force arm and automatically bypass any open zones.

Siren Reverse (4,3,3)

Siren Reverse Option OFF **Press 1 for ON, 0 for OFF**

If the setting is OFF (0), which is the default, the Siren Output is turned on (i.e. 12 V applied between SRN- and 12VF) to turn on the siren. If ON, the voltage to the siren is applied when there is no alarm and cut off

for alarm. This is used to drive self-actuated sirens with a built-in backup battery. Default is OFF.

Normally, 12V is applied to the Siren Terminals (JP9) to activate it. For Self-actuating sirens which sound when voltage is removed and are silenced when voltage is applied, the Siren Reverse Option must be set to ON

Control Station (4,4)

This menu is for programming the Keypad Function keys

Enter Control Key

Enter Key 0 to 9 or *

Response 0, **Enter Response number and # key**

Enter the new response to be assigned to the Function Key. When the Function key is activated, F + Control key, the programmed Response will be triggered. The Response can give a shortcut to a commonly-used submenu. See Programming with Action Codes (Action 91) for a list of submenus. Any Response can be assigned to Keypad function keys. This means that the Keypad can be used to perform any function in the system!

Code OFF, **Press 1 for ON, 0 for OFF**

Each Function key can be programmed to require a user sign in code or not. If a sign-in code is required, when the Function key is activated, the user will be asked to sign in. If the code is valid, then the programmed Response is activated. The user authorization settings are in effect here for arming, Security menu, and Home Control.

Event Log (5)

Press 1 for Event Log
0 to erase Event log

Erase Event Log (5,0)

If this option is selected, the event log will be erased. This is only available on the Engineer Menu. The user menu allows the Event Log to be heard, but not erased.

Event Log (5,1)

The Event Log will be announced over the phone in the format

(Date), (Time), (event). e.g..

January 24, 11:53 PM Intruder Alarm

If any key other than 1,2,9,0 is pressed, the voice menu will say

Press 1 for next
2 for previous
0 for 1st
9 for last
3 for Next day
4 for Previous day
 # to end

Pressing 1, 2, 9, 0, 3 or 4 during the event log announcement will immediately interrupt the announcement and go to the specified event. In this way, you can go quickly to the event of interest.

Voice Event	Restoral	Description
Alarm Erased	N/A	Alarm activation aborted within the 'Abort Time'.
Alarm Voice Message OK	N/A	Dial-out acknowledged by recipient pressing # key.
Arm Failure	N/A	System failed to arm, returned to Security Off Mode.
Away Mode	N/A	System armed to Away Mode - Full Set
Battery Warning	Restore	The battery was tested with AC 'OFF' and found to be low
Zone 'Name' Bypassed	Zone No. Bypass Off	A zone was bypassed
Change Time	N/A	Date or Time Changed
33-40 Communications Failure	33 Restore	Slave Expansion Module 1-3 Data Failure. Prefix denotes ID.Address 33=SEP 1, 34= SEP 2, 35= SEP 3
49-55 Communications Failure	49 Restore	Door Station 1-4 Data Failure. Prefix denotes ID. 49 =Door Station 1, 50=Door Station 2, 51=Door Station 3
65-72 Communications Failure	65 Restore	Keypad 1-8 data failure. Prefix denotes ID 65=Keypad 1, 66=Keypad 2, 67=Keypad 3, 68=Keypad 4 etc...
Day Mode	N/A	The system is armed to Day Mode
Dial Test	N/A	System dial-test selected.
Doorbell	N/A	Doorbell pressed while system is armed
Duress Alarm	N/A	Duress Code entered by user adding or subtracting '2' from their code, it will be preceded by: (time) mailbox sign-in code OK.
Engineer Menu Phone Call Sign-In	N/A	System dialed engineer via a response linked to a function key
Entry Alarm	N/A	A valid user code was not entered within the entry timer duration.
Engineer Reset (UK Only)	N/A	The Engineer has reset the system following Alarm Activation, using * on Engineer Menu
Engineer Menu	N/A	The Engineer has entered the system using the Eng Access code.
Force Arm	N/A	During Exit, the # key was pressed to force arm the system.
Fire Alarm & Zone	Restore	Fire Alarm Activation followed by Zone number.
Key Arm	N/A	System armed using the one-touch key or a key switch
Intruder Alarm & Zone	N/A	Intruder Alarm Activation followed by Zone number.
(Name) Sign-In Code Ok	N/A	Valid user code 1-16 entered using local phone or Keypad.
(Name) Phone Call Sign-In	N/A	Valid user code 1-16 entered remotely using external phone.
Monitoring Station OK	N/A	Kissoff from Monitoring Station received
Night Mode	N/A	System Armed to Night Mode - Part Set.
Panic Alarm & Zone	Restore	Panic Alarm Activation followed by Zone number.

Voice Event	Restoral	Description
Pager Dial OK	N/A	Successful dialout to pager with correct acknowledgment
Perimeter Alarm & Zone	N/A	Perimeter Alarm Activation followed by Zone number.
Phone Trouble	Restore	Telephone line cut
Phone Number 1-8	N/A	System attempted to dial telephone number 1-8.
Power Failure	Restore	Mains Power Removed
Security Off	N/A	The system is disarmed and unset.
System Armed	N/A	System Armed to one of the three modes.
System Reset	N/A	System reset using Reset Button, Engineer Menu or COMFIGURATOR.
Sign-In Tamper	Restore	More than six unsuccessful attempts to sign-in at the Keypad while the system is armed.
Tamper Alarm	Restore	Panel (JP5), Bell tamper, Keypad, Door Stations or Zone with 24-hour tamper zone type.
33,49,65 Tamper Alarm	Restore	Panel JP5, SEP, Door Station or Keypad tamper activation, 33-35=SEP 1-3, 49-52=Door Station 1-4 and 65-68=Keypad1-4.
Vacation Mode	N/A	System is armed to Vacation Mode
Voice Reset	N/A	A problem occurred with the Voice Engine, which was reset to clear the problem.
Zone Alert & Zone	N/A	Zone with alert zone type activated
Zone Trouble	Restore	Zone tampered with followed by Zone number .

Change Sign-in Code (6)

Enter new code and # key

The system will not allow a sign-in code which is the same as another existing sign-in code or a sign-in code +/- 2 which is a duress code, in which case the voice menu will say

Invalid

A 4-digit to 6-digit number may be entered. When the new number is entered, the system will ask for confirmation

To confirm, enter new code and # key

If the number corresponds with the 1st number entered, the voice menu will say

Sign-in code OK

If the 2nd code entered is not the same as the 1st number entered, the 1st number will be discarded, and the 2nd number will be saved for comparison, and the system will ask to confirm the sign-in code again.

Sign-in codes ending with 0000 and 9999 are not allowed.

System (7)

Press 2 for PABX option **4 for Star Menu**

Pulse Dial Option (was 7,1)

Pulse dialing is not supported from v4.87

PABX option (7,2)

☎ **Use of the PABX Option is discouraged for new systems. If Comfort is connected as a PABX Extension, program the PABX Access digit (usually 9 or 0) as part of the telephone number to dial out.**

PABX Option OFF, **Press 1 for ON, 0 for OFF**

If the system is to be connected behind a PABX, i.e. it is connected as one of the extensions of an analog PABX, set this option to 1.

Warning: If the Comfort system is connected as one of the extensions of a PABX, it will not be able to detect a telephone line cut condition on the incoming telephone line, and may not be able to seize the telephone line to dial out in case of an alarm if all the outside lines are used by other extensions.

☎ **Do not connect the system to an extension of a PABX for UL installations.**

PABX Key (7,2,1)

PABX Key, 9, Enter PABX key

Enter the number (0-9, *) you use to access an outside line on your PABX. This is usually 9 or 0 in most systems.

☎ **Comfort handles the dialout through the PABX intelligently. If there is a power failure, Comfort will not dial the PABX access key to get an outside line. If the Comfort system is connected to**

an extension of a PABX, the extension should be one which has direct access to the telephone line in the event of a power failure. The PABX should be on the same power circuit as the Comfort system.

Star Menu (7,4)

```
Press 1 for Location Menu
2 for System Reset
3 for  System Control Number
```

This menu is for special configurations which are not available in the other menus.

Locations (7,4,1)

```
Enter Location and # key
```

Enter the Location which has up to 4 digits and the # key. The Locations Menu is used to program settings which are not available on the Engineer Menu. The Worksheet will give information on the Locations which may be changed and values to use.

For Example, Location 1692 sets the Away Arming Method. Enter 1692#

```
Location 1692
Code 0
Enter New Number and # Key
```

Value 0 in Location 1692 means Final Door Arming, i.e. system is armed after the Final Door is closed. To change to Arming after Delay, enter 1#

System Reset (7,4,2)

This causes the system to be reset. The programmed parameters and recorded messages are not erased by system reset. Reset the system after changing zone sensitivities using Locations, or using COMFIGURATOR to download zone settings.

System Control Number (7,4,3)

This menu gives the current software version e.g..

```
Airconditioner 4, 120, 11
```

The first word denotes a particular configuration for different applications. The 2 numbers following denote the version, in this example 4.120. The next number, in this case 11 is the Vocabulary version of the U7 Voice Chip.

Test (8)

This menu is also available in the User Menu (*3, Security Menu. 4, Test)*

Press 1 for Battery Check
2 for Security Check
3 for Dial Test
4 for Siren
5 for Strobe
6 for Engineer Test Mode

Battery Check (8,1)

Immediately activates a battery test by switching off the AC supply, and letting the backup battery supply power to the system for 2 minutes (default). If at any time during this test, a low battery condition is detected, the ac power will be turned on and a battery test fail report will be sent to the Monitoring Station (if a monitoring station is programmed), or to any designated phone number in the Low Battery Alarm Type.

The duration of the battery test in minutes (where the AC is off) is in Location 721. Valid values are 0 to 254, default is 2 minutes. If the duration is set to 0, the AC is off indefinitely until a low battery is detected.

A battery test is performed at regular intervals according to the setting in Location 720. The setting is in hours with a valid range from 0 to 254 hours. A value of 0 or 255 disables the automatic test. The automatic battery test is always done on the hour, except for the first one initiated by the Battery check menu.

☎ **An automatic Battery test at least once every 4 hours is mandatory for UL installations.**

Security Check (8,2)

The system does a Security Check similar to the one which is activated when the system is armed, except that any activated detector is announced once, until # is pressed to end this test mode. Any activated detector, even 24 hour zones will not activate an alarm during the duration of this test. This allows a walk test to be done on the premises.

When the Security Check is started, all zones which are already ON will be announced first. If a zone is in trouble condition, i.e. open or short circuit with double EOL resistors, the Zone Number will be announced, e.g.. "Zone 4 Trouble".

☎ **While in Security Check, if a zone does not announce when activated, exit from Security Check by pressing #, and then restart Security Check to hear if the zone is announced. If it is, that means the zone is always open.**

Dial Test (8,3)

When this menu is selected, the Voice Menu says..

Dial Test, Please hang up

After you hang up the phone, Comfort will immediately dial out to all the programmed phones, pagers and monitoring stations. It will not seize the telephone line immediately as this is an Idle state alarm. On pagers, the Dial Test alarm type is displayed. On voice phones, "Dial Test" is announced when the phone is answered. For Monitoring Station receivers, the Test report code is sent.

For Phone 1 and 2, any Voice Phone Sign-in or CMS kissoff will stop the dial test to this group. For Phones 3 to 8, any Voice Phone sign-in will stop the dial test to this group of phone numbers.

Siren Test (8,4)

Selecting this option activates a short Siren test.

Strobe Test (8,5)

Strobe Test, **Press 1 for ON, 0 for OFF**

Press 1 to activate the strobe light, and 0 to switch it off after the test.

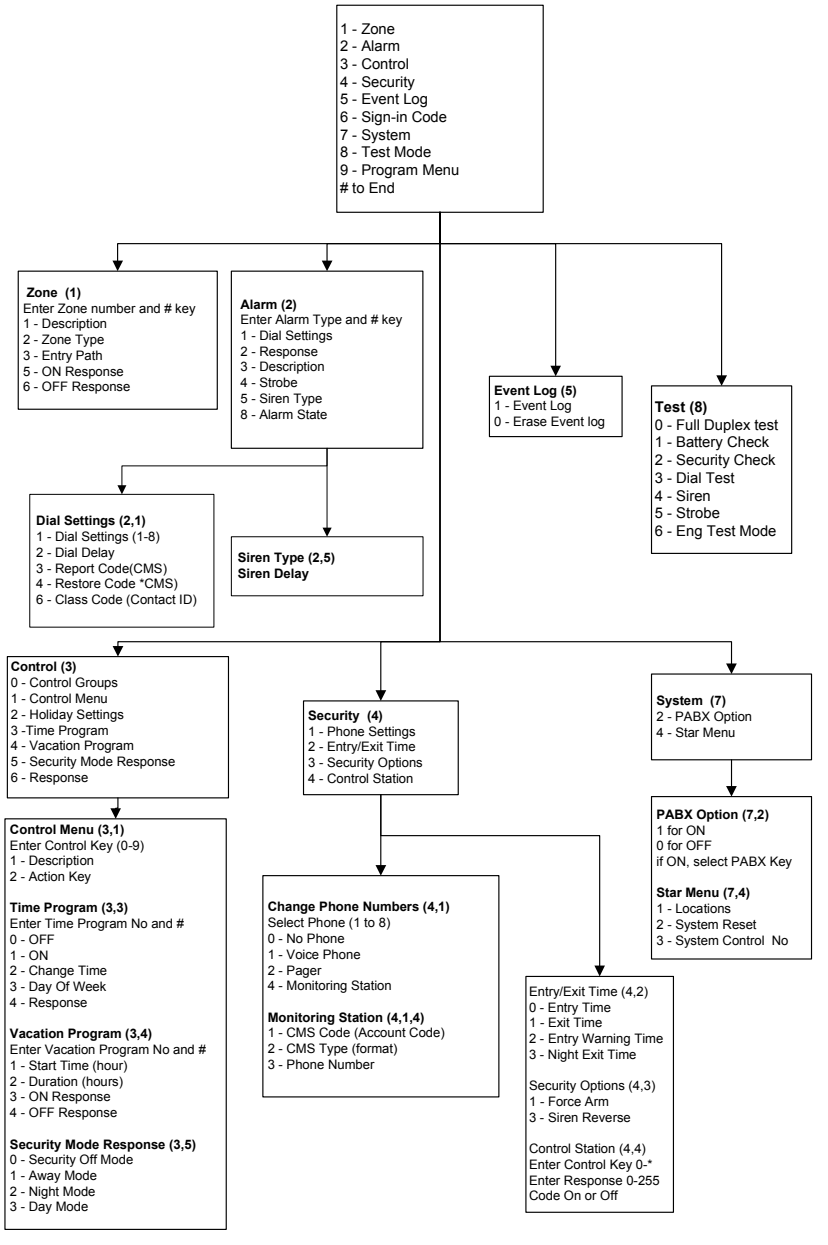
Engineer Test Mode (8,6)

Engineer Test Mode Option OFF **Press 1 for ON, 0 for OFF**

In Engineer Test Mode, no alarm or trouble signals or dial outs will be generated. This mode allows the Engineer to work on the system freely. The Telephone Line Cut detection is still active in this mode. When the system is armed, the Engineer Test Mode is automatically turned off, in case the Engineer has forgotten to turn it off.

When the Engineer Test Mode is switched off, the system automatically goes into Security Check mode to prevent alarms caused by zone faults.

Engineer Menu Flowchart



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