

Comfort, the Intelligent Home System

Comfort II Supplementary Installation Manual

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THE UPDATED VERSION OF THIS MANUAL

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SECTION 1 GENERAL INFORMATION

This manual supplements the Comfort II Quick Installation Guide which is supplied with every Comfort Panel. The Quick Installation Guide gives installation instructions while the Supplementary Installation Guide (this manual) has specifications, Testing & Commissioning instructions, Troubleshooting and other useful information.

Specifications

Zones

- 8 programmable zones on Control Panel, expandable to 16 with Local Expansion Module (LEM) and 96 with Slave Expansion Modules (SEMs). Remote Input/Outputs (RIO01) provide further expansion of non-alarm zones
- Each zone configurable for 0 or 2 end-of-line resistors
- Up to 32 predefined Zone types to simplify zone configuration
- Surge/Over voltage protection for each zone

Power Supply

- US: 16.5 V 40VA Class II UL Listed transformer should be used.
- 230V transformer 15V AC 2.5A Secondary.
- Minimum Standby Battery requirement: 12V, 7 AH sealed lead-acid battery.
- 1.5 A regulated DC supply/battery charger with Resettable Fuse protection
- Supervised for Mains failure and low battery
- Battery charger with built-in protection against deep discharge of battery shuts down system when battery falls below a threshold, preventing damage to the battery.
- Current-limited (400 mA) battery charging allows system to work while charging a very weak battery
- Detection of Disconnected Battery.

Auxiliary Supply Outputs

- 12V unswitched supply
- 12V switched supply (programmable reset for latched detectors)
- Note: Both switched and unswitched auxiliary supplies and 8 Outputs have a combined continuous current limit of 1A. (500 mA for UL applications)

Alarm Outputs

- Speaker Drive with 20 siren patterns
- Siren Output with programmable siren pulse patterns.
- Strobe output (12v)
- Combined Alarm Output current of 1.5 A max (with battery)

System Supervision

- Low Battery/ Disconnected battery
- Mains failure
- Telephone Line cut
- Individual Zone tamper (open-circuit or short-wiring) with 2 end of line resistors
- Dedicated 24 hour Tamper input (used for cabinet and siren tamper)

Memory

- Nonvolatile memory maintains configuration during total removal of power
- Event log with 600 events (Comfort II Ultra) which can be accessed remotely or locally.

Alarm Types

- 32 programmable alarm types including user-definable alarm types

- Predefined alarm types include Intruder, Fire, Panic, Duress, Arm , Disarm etc.. Each alarm type selects a siren pattern, telephone combination, can trigger a user-defined response, which turns on/off appliances, lights etc.. Each alarm type can be set to report to any combination of the telephone numbers

Dialer / Digital Communicator

- 8 programmable telephone numbers. Each alarm type activation can be programmed to dial to any combination of telephone numbers.
- Each number can be assigned to Central station, voice phone, SMS (with UCM/GSM Option)
- 2 Central Monitoring station numbers with individual account numbers.
- Digital communicator formats supported include all major pulse formats (3x1, 4x1, 3x2, 4x2 at 10 pps, 20 pps and 40 pps), and Contact ID.
- UCM/GSM Module allows dial out by SMS or to other phones by GSM network

Outputs

- 8 open collector outputs on main board, expandable to 16 with Local Expansion Module, and 64 with Slave Expansion Modules
- Each output can drive external relay or infrared LED for remote control appliances. RLY02 Relay Modules with 8 or 4 relays are available.
- Selectable Pulsed or Latched output activation.
- Infrared codes can be sent to any output.
- Maximum combined output current of 300 mA for all 8 outputs, 150 mA max for any one output.
- Over voltage and Surge-protected outputs.

X10 Compatibility

- Built-in two-way interface to X10 network via PSC05 (110V 60 Hz) TW7223 or XM10E (230V 50 Hz) module. X10 modules not supplied

Keypad / Door Station

- Up to 8 Keypads and 3 Door Stations per system (Require auxiliary Power Supply for more than 4 Keypad/Door station combinations)
- Keypad/Door Station current consumption : 15 mA (idle), 120 mA with siren
- KP04, KP05, KP06 with LCD, KP03 without LCD. KT03 with Touchscreen with speaker, microphone, Infrared Receiver
- Keypad Indicator LEDs: Home/Trouble, Armed/Alarm, Power Failure/Low Battery, New Message, Microphone on.
- Voice and siren sounds
- Built-in microphone for recording, intercom and alarm verification
- Two way Intercom between telephone and Keypads and Door Stations, and Keypad to Door Station.
- Tamper switch

Telephone Answering machine

- Digital Answering machine with 10 minutes of recorded messages
- 8 programmable mailboxes with individual sign-in codes , or common mailbox.
- Recorded messages with individual time/date stamps.
- Answering machine is accessible from any phone in the house .
- Call screening option on Keypad
- Recordable greeting message and user names for each mailbox.
- Messages are automatically played back when the mailbox user signs in , or may be accessed from any telephone. New messages can be forwarded to a phone or pager for each mailbox.
- Automatically erases the oldest saved message when a new message is recorded and recording memory is full.

False Alarm Filtering Features

- 2 way voice Intercom on Keypad
- Voice Alarm History with Date and Time of zone activation.
- Voice Alarm Tracking in real time of activated zones
- Alert zone types require activation of another zone to trigger a confirmed alarm
- Local alarm warning option for delay entry time-out prior to full alarm.
- Open- or short-circuit zone condition produces a trouble condition (when 2 end-of-line resistors are used)
- Night Mode Delay zone setting.
- Double sign-in of duress code required to generate duress alarm.

Sign-in Codes

- 16 user codes with individual authorization for arm and disarm, local and remote access, and disarm after alarm. First 8 user codes for mailboxes
- Engineer code for system and security settings.
- Sign-in Tamper alarm for protection against repeated sign-in code attempts.

Emergency Buttons

- Quick activation of Fire and Panic on keypad.

Test Features

- Battery Test - Immediate or at programmed intervals
- Security Check (walk test) zone activation is announced on Keypad
- Dial test - dials to all programmed telephone numbers, pagers, Central Stations, audible on Keypad
- Siren Test - Momentary activation
- Strobe Test. - turns on and off the strobe.
- Engineer Test Mode - allows engineer to work on the system without triggering tamper or 24 hour alarms.

Event Log

- Event Log accessible by keypad, telephone or Configurator software with UCM with date/time stamp (600 events for Comfort II Ultra, 250 events for Comfort II Optimum)
- Local or remote access by telephone.
- Select 1st event, last event, previous event , next event , next day, previous day for quick navigation.
- Uploadable to PC using CONFIGURATOR for Windows, may be printed or saved

Other Features

- Door Station intercom with home or remote phones (requires Door Station and RGR Ringer)
- Voice Reminder Messages.
- Time Programs
- User-programmable Timers
- Vacation programs in Vacation Mode.
- Sunrise/Sunset Times depending on location or City with automatic Daylight saving time changes.
- Remote Programming from any phone with Engineer Sign in code.

EN50131 Compliance (Europe)

The product CP9000-ULT/EN03 with firmware version 5.106 and above is suitable for use in systems designed to comply with EN50131 (Europe) and PD6662:2004 (United Kingdom) at grade 2 and environmental class II

Ordering Information - Products and Accessories

- CP9000-ULT : Comfort II Ultra with Enclosure, Transformer and User Manual

- LEM01-M2 - Local Expansion Module (8 inputs, 8 Outputs)
- LEM02-M2 - Local Expansion Module (8 inputs, 0 outputs)
- KP04 - LCD Keypad with IR receiver
- KP05 - LCD Horizontal Keypad with IR receiver
- KP06 - LCD Horizontal/Vertical Keypad with IR receiver
- KT03 - Touchscreen keypad Monochrome 4 inch LCD
- DP03 - Door Station
- DS01 - Door Station, Aluminum with or without camera, flush or surface mounting options
- DS02 - Door Station, Stainless steel with or without camera, flush or surface mounting options
- DM02 - Door Station Interface Module, interface to Fermax Intercom, DS01, DS02 and DP03X Door Station
- SEM01-M2 - Slave Expansion Module with built-in battery charger
- UCM/Eth03 - Universal Communications Module with IR Learner with Ethernet interface for Configurator upload/download
- UCM/USB - Universal Communications Module with IR Learner and USB interface for Configurator upload/download
- UCM/CBUS2 - C-Bus Interface Module
- UCM/KNX2 - KNX Interface Module
- UCM/GSM4 - GSM Interface
- UCM/Velbus - Velbus Interface Module
- UCM/ZWave - Z-Wave Interface Module
- UCM/Universal - with RS232, RS485 or Ethernet interfaces for 3rd party products.
- LP01 12 V lamps for testing
- RLY02/8 8 way Reed Relay Module
- CSM03/PCB - Dual Current Sensor PCB supports 2 CSM03-CT sensors
- CSM03-CT - Current Transformer, 2 CSM03-CT are connected to 1 CSM03-PCB
- RC01/YE (Yellow) or RC01/PU (purple) Handheld Remote Control (Yellow) with 50 keys
- HIO01 Hotel Input/Output Controller
- IRIO01 - Intelligent Remote I/O with 8 Inputs, 8 Outputs
- RIO01 - Remote Input/Output Module with 8 Digital inputs and 8 open-collector Outputs. Up to 8 SCS/RIO combination in a Comfort Pro or Ultra system
- IRR01 - Infrared Receiver for RIO.
- TWS01 (single) or TWS02 (double) Lighting Control Module (for two way switching)
- IR01W Infrared transmitter cable assembly for short range (round led)
- IR03W Infrared transmitter cable assembly for short range (flat led)
- IRD01 Infrared Dome with Infrared transmitters and Infrared Receiver. Requires RIO01.
- RGR05 Ringer Module (required for Door Station)
- ZTS01 Zone Test Switch
- TB02 - 2 way Terminal Blocks
- TB03 - 3 way Terminal Blocks
- CA01-485 - 4 way cable for Rs485 connection to UCM module 1 meter
- CA02-485 - 4 way cable for Rs485 connection to UCM module 330 mm.

Comfort Documentation

Hookup Diagram

Shows connections from Comfort to modules and security sensors. Affixed to the door of the Comfort enclosure

Quick Installation Guide

The Quick Installation Guide supplied with the Comfort panel includes the installation, setup, and wiring requirements

Programming with Comfigurator

Shows how to use the Comfigurator software tool to program Comfort. Discusses the programming concepts, techniques and programming strategy.

Programming by Engineer Menu

This shows how to program Comfort using the Engineer Menu by keypad or telephone.

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

You can get the system up and running with the default settings, but it is likely you will want to do some of the clever things which attracted you to Comfort in the first place. You will need a good grasp of Action Codes and how they are used in Responses.

Training Materials

Check <http://www.cytech.biz/training.html> for Training Materials, like presentations, tutorials, exercises etc. which are updated from time to time.

For Users

User Manual with Quick Start Guide

The Quick Start Guide gives simple instructions on how to get started with Comfort. The rest of the User Manual is a detailed users guide for those who want to make full use of Comfort's unique capabilities.

Quick Reference Card

This folded card is handy reference to Comfort which can be kept in a purse or wallet.

Cytech Technology Web site

Our Web site at <http://www.cytech.biz> has all the manuals and other documentation, FAQs, applications, brochures, as well as software which can be downloaded. Other sections include News, Features, Products, Distributors, and an interactive demonstration.

Comfort User Groups

Join our user forum at <http://www.comfortforums.com>

This user group is a forum for discussion, comments, problems, new product announcements and technical support for Comfort Users

Comfort II Features

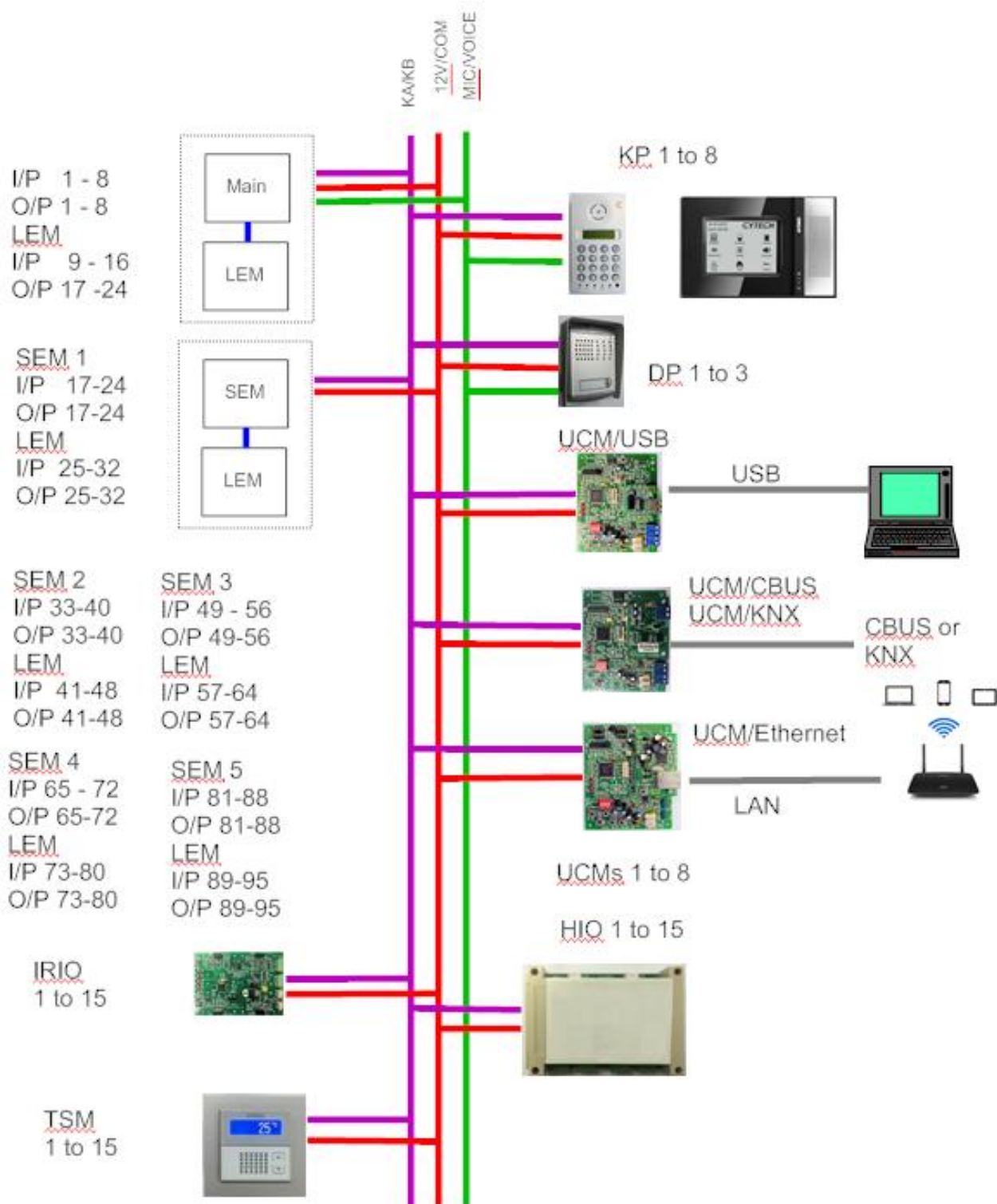
The table below shows the features of Comfort Ultra and Optimum models (available in certain regions only)

Model	Comfort II ULTRA	Comfort II Optimum
Firmware announcement (U1)	"Week"	"Help"
File System Memory (U4)	FS24 (256 k)	FS31 (64k)
Max Alarm Inputs	64	64
Max Non-alarm Inputs (RIO)	64	0
Max Outputs	128	16

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Model	Comfort II ULTRA	Comfort II Optimum
Control Menu Groups	6	1
Control Devices per Group	10	10
Control Actions per device	10	10
Commands on Home Control Menu	600	100
Dialout for Alarm	8 phone numbers, incl 2 CMS	
SMS	UCM/GSM	UCM/GSM
Voicemail	8 Mailboxes	8 Mailboxes
Record Time	10 minutes	10 minutes
X10 House Codes (Send)	16	16
Receive X10 (House codes)	16	1
Extended X10 codes (Send)	Yes	Yes
Reminder Messages	16	8
Time Programs	32	16
Sunrise/Sunset , Daylight saving	Yes	Yes
User Sign-in Codes	16	16
Remote Phone Access	Yes	Yes
Local Phone Control	Yes	Yes
Alarm Types	31	31
Zone Types	31	31
Vacation Programs	8	8
IR Code Memory (Send)	4096 bytes (typ 120 codes)	540 bytes (typ 16 codes)
Event Log (events)	600	250
Responses	1,023	128
Codes per Response	8	6
Full Duplex Intercom Phone/KP/DP	Yes	Yes
Branch Instructions	Yes	Yes
IR Receive Codes	128	0
RC01 Rooms/Scenes	Yes	No
Counters	256	128
Flags	64	64
User Timers	64	16
Keypads	8	8
DP	3	3
SEM	5	3
RIO/SCS	15	0

Comfort Architecture



The above diagram shows how Comfort can be expanded in relation to its architecture.

The Main Comfort panel contains 8 inputs and 8 open-collector Outputs with dedicated Tamper Input and Siren, Strobe and Speaker outputs. A Local Expansion Module provides another 8 inputs and 8 outputs (LEM01) or 8 inputs (LEM02) in the same enclosure, to give a maximum of 16 Inputs and 16 Outputs. The Outputs are open-collector transistors, capable of driving 12V relays or infrared transmitter LEDs.

The Slave Expansion Module (SEM01) with its own battery charging circuit provides another 8 Inputs and 8 Outputs with dedicated Tamper Input and Siren, Strobe and Speaker outputs. A Local Expansion Module can be connected to the SEM to provide another 8 inputs and 8 outputs (LEM01) or 8 inputs (LEM02) in the same enclosure, to give a maximum of 16 Inputs and 16 Outputs with the Slave.

Up to 5 Slaves (SEM) with their own Local Expansion Module can be connected to the Main Comfort panel for a maximum of 96 Inputs and 96 (open-collector) Outputs.

Remote Input/Output Modules (RIO) each provide 8 digital or Infrared Inputs. These RIO digital Inputs cannot be used as alarm inputs like those of the Main and Slave Expansion Modules. Infrared Receivers (IRR01) can be connected to any RIO input to allow Remote Controls like Comfort RC01 to send commands to Comfort (received Infrared Responses). Normally Open switches can also be connected to each RIO input to activate Responses. Up to 15 RIOs can be connected to Comfort II Ultra to provide 120 Digital/IR inputs and a further 120 open-collector outputs.

The Universal Communications Module UCM/USB or UCM/ETH provides Interface to PCs. It is used for upload/download programming using the Comfigurator software tool, and for interfacing to third-party software like WizComfort and other systems with serial interfaces like AMX, Crestron, and Homevision.

Other types of UCM include UCM/KNX for interface to KNX bus, or Instabus; UCM/CBUS for interface to Clipsal by Schneider C-BUS; . Up to 8 UCMs can be connected to a Comfort system.

Design Considerations and Applications

Run Additional Cables

If you require a 6-core cable to a part of a building, run an extra 6 core cable as well, you never know what may be needed in the future! If possible, use screened cables for trouble-free installations. .

Current Consumption

It is very easy to underestimate the load which can be placed on a system unintentionally. Before starting to run cables, find-out the current draw from all the devices to be attached to the system FIRST. It may be that supplementary power supplies will be needed sooner than you think. If the standby current is over 850 mA install a Power Supply Unit (PSU) or SEP01 which has its own power supply and backup battery

Plan for the Future

Comfort is highly expandable. Installers can benefit from ongoing upgrades and modifications as there is so much add-on potential. Selling to an existing customer is always easier than finding new customers. A customer may wish to connect to a Central Station or add security lighting. They may require to operate the curtains, or they may just want more detection points, a camera or Keypad, additional intercoms or even flood detection!. A little forethought during the initial installation can make upgrading a system in the future so much easier. Future-proof every installation for Comfort.

Always allow for extra capacity in the cables. If more zones or outputs are required, run extra cables to the other end of the building so you can install Keypads. Customers may have already shown an interest in these things and plan to add them at a later date. If you are already taking cables in a certain direction, increase the capacity. You may need to estimate what a customer might need in the future. Some companies prefer to install Comfort as a basic system and take a planned approach to their marketing by sending special offers throughout the year to stimulate the interest in time for their annual inspection and do the update at the same time.

End of Line Resistors

Use 2 End of Line resistors for added security and to allow detection of broken wires via Zone Trouble alarms. You only need a pair of conductors per zone to give both zone information and tamper protection. The resistors should be fitted into the detector, not at the Comfort zones/inputs,

Lighting Control Linked to Security

When someone enters the property through the front door when the system is armed, the hall or front lights can be switched on if the light level, (determined by a photocell) or time of day is low. Comfort has Sunrise/Sunset schedules which can be used to tell when it is night.

If an Intruder Alarm occurs, the lighting in the violated area can be turned on so the owner can quickly identify the areas of possible intrusion.

If a fire is detected, lights in the exit route can be turned on.

Monitoring Outside Movement

Outside PIRs can trigger announcements of programmed words e.g. "Front Garden", "Garage", "Driveway" on the Keypads.

External movement can be programmed to trigger user-recorded warning messages like "Please leave the area at once or else..." In stores, movement in certain aisles may also trigger more friendly messages.

Several CCTV cameras may be positioned outdoors, connected to a common monitor, switched by relays depending on which outside PIR detects movement. Relay Modules with 4 relays are available. When the Doorbell is pressed, the front door camera could be switched through.

For lighting, the same external PIRs could be used to operate lighting. The prevailing light level can be determined by using a photocell connected to a zone, and the corresponding light turned on if it is dark. One of the 8 timers could be used to switch off the lights a few minutes later if no further movement is detected. You may also wish to start a time lapse video machine using a different output (set the record time to 3 minutes at a time).

Automatic Gate Control

Comfort can be connected to control automatic gates using the outputs and the 12 Volt RLY01 relay board. Often these are triggered by a pulsing a normally open contact for 1 second using action code 130. The gate may close after a preset time or when another Pulse command is given. The Open Gate or door command can be given from the Door Station menu when used in conjunction with the Door Station

Curtain Control

Comfort can be used to operate some curtain controllers via the IRIO. This can be achieved using two outputs per curtain controller, one to open and one to close'. Usually the output is pulsed for about 1 second to trigger the curtain controller.

Using Test Lamps for Output Testing

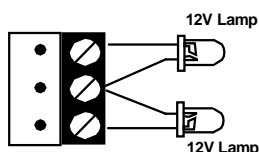


Figure 2.18- Output Connection to Test Lamps

A valuable tool for testing output programming are 12V lamps connected to the Output terminal Blocks. Unlike LEDs, these lamps do not have polarity, and can be connected directly to the Output terminals without the need for a series resistor. These lamps take around 80 mA current so they impose a real load on the outputs, similar to relays.

SECTION 2 TESTING AND COMMISSIONING

Installation of Comfort and programming using the worksheet and/or Configurator software should have been completed. The following steps divided into sections will help you to successfully test and commission a Comfort system. If any of the steps do not have the intended result, refer to the next section on troubleshooting.

Security/ Zones

- 1 Go into the Test Menu (Engineer Menu 8 or User Menu 3,4), or Keypad F3.
- 2 Activate the Security Check menu and do a walk test. Activate every detector, panic button, and open and close every door or window which has a magnetic contact, and ensure that the zone is announced on the Keypad. Press any key on the Keypad to end this test mode. There is no time-out for Security Check, so remember to turn it off. If a 24 hour zone like tamper was activated during Security check, it will cause an alarm upon getting out of Security Check.
- 3 If home appliances have current sensors connected to the zone inputs for feedback status, activate these appliances and listen for the programmed words.
- 4 Activate the Siren Test. The speaker and siren are activated for a few seconds.
- 5 If a Strobe Light is connected, activate the Strobe Test. Ensure that the strobe is switched on and off as directed.
- 6 Arm the security system to away mode. Check that the system arming procedure is completed once the entry door is opened and closed. Any programmed Away Mode response should be activated (eg turn off all lights).
- 7 Open the Entry Door. The Speaker and Keypad should give a slow beeping tone, and any programmed Entry Alert Response should be activated. Entry path zones should be announced but not cause an alarm. Sign in to disarm to Security Off.

Dialout/ Telephone Numbers

- 1 Program the telephone numbers for dialout, and activate the dial test using Keypad F3,3. The dial test is audible on the Keypad. The dialed digits, busy and ringback tones, as well as pager tones, Monitoring Station handshake and kissoff tones are audible. Ensure that the dial outs are successful. If a cellular phone is programmed, check that it can sign in and access the system. Note that a Central Station Kissoff or a Voice phone sign-in will stop further dialouts to the group of telephones which it is in, i.e.. Phones 1,2 or 3 to 8. If the system is unable to dial out successfully, see the next section on troubleshooting.
- 2 Arm the system and trigger an alarm. Ensure that the siren and strobe turns on, and that the system dials to the programmed numbers. When the system dials to a Voice phone, check that the alarm voice menu is heard, and do alarm history, alarm tracking, and disarm.
- 3 Disconnect the Tamper input. A tamper alarm should be generated. (24 hour alarm). Reconnect the tamper input and disarm to turn off the alarm.

Home Control Menu

- 1 Activate the programmed home control menus to control the programmed appliances.
- 2 Check that the feedback status is announced on the Control Menu, if programmed for feedback.

Answering Machine

- 1 Record a memo using F+4. End the recording by pressing any key. The Message LED should come on steady to show that there is a new memo message. Sign in to hear the

new message. Messages recorded on the Keypad will not be as clear as recordings from the telephone, because of background noise.

- 2 Dial in from another phone to record a message on the answering machine. The recording should end automatically when silence is detected for around 10 seconds.
- 3 Sign on the keypad to listen to the recorded message. Check that the message is sufficiently loud. If the message is too soft or if Comfort cuts off the recording before it is finished, the recording level may be set too low. The recording level can be adjusted in Comfigurator via Configuration > Voice Settings > Record Level. The slider should normally be set to maximum value of 3 (from Version 4.121). The valid values are 0 to 3 with 3 being the maximum value and the default. Any value higher than 3 will be treated as 3 (maximum) Reset is not required. This setting does not affect keypad recording level (which is set by the VR1 trimmer).

Local Phone Access

- 1 Use the local phone to sign in by pressing * code #. Each key pressed should be followed by a short beep tone to indicate that it has been recognized. The voice menu should be heard, and the DTMF keys should be able to select the various menus.

Remote Phone Access

- 1 Dial into the system. Ensure that the system answers the call after the designated number of rings. Ensure that the system recognizes the DTMF keys, which should be able to select the various menus. Each key pressed should be followed by a beep tone to show that the key has been recognized

Voice Station

- 1 If there are more than 1 Keypad, press F+8 to activate Intercom mode. All other Keypads should hear voice from the originating Keypad. Any keypress on another Keypad will shut off other Keypads and allow that Keypad to talk with the originator. Any Keypad can talk by pressing and releasing any key. Press F to end.
- 2 Using the local phone, sign in and press 5 for Voice Station to do two way communication with the Keypad. You should be able to talk to the person at the keypad and vice versa in full duplex mode, which means that both sides are able to talk and listen at the same time

Door Station

- 1 If there is a Door Station, pressing the button when Security is OFF should cause the Keypad to give a door chime tone. Use the local telephone to answer and talk with the Door Station. Check that both sides can be heard clearly. If a Response has been programmed into Location 52, press 7 to open the door or gate.
- 2 The Keypad can also be used to talk to the Door Station in full-duplex mode which means that both sides are able to talk and listen at the same time
- 3 Program Alarm Type 25 to dial to a mobile phone Arm to Away Mode, and press the Doorbell. The system should call to the mobile and allow it to talk to the Door Station.

Remember to set Time and Date

Before leaving, remember to set the Time and Date, using Program Menu 2 or when writing from Comfigurator, there is an option to set Date and Time.

SECTION 3 TROUBLESHOOTING

It is our experience that 80 to 90% of the problems typically encountered are described here and can be solved according to the instructions give here. It is advisable to carry this guide around whenever going on site for installation, testing & commissioning, or troubleshooting.

Troubleshooting Kit

When installing Comfort or attending to problems on site, it is advisable to have the following tools in the tool kit:

- 1 Multimeter for checking continuity and resistance.
- 2 A hands free telephone for checking telephone voice menu operation
- 3 12V Test lamps for checking outputs
- 4 ZTS01 Zone Test Switches for input simulation
- 5 UCM with default programmed U4 EEPROM Nonvolatile Memory IC, in case certain settings have been corrupted or wrongly programmed. Pressing the DOWNLOAD button on the UCM will transfer the default program on the U4 EEPROM on the UCM to Comfort. Pressing the UPLOAD button will transfer the program in the U4 EEPROM into the UCM EEPROM for later download to Comfort.
- 6 Infrared LED with resistor wired up a long cable and terminated in terminal block. This can be connected directly to the output to check transmission of Infrared signals to remote-controlled appliances

Startup Problems

When power is first applied or the Reset button is pressed, the system goes through a self-test sequence. Observe the red and green leds on the Comfort panel (not the Keypads). Refer to the Indicator LEDs table in the previous section The correct sequence should be:

- 1 Both Leds turn on
- 2 The Red LED goes off after 1 second, with the green LED remaining on
- 3 The Green LED turns off after 5 seconds and immediately comes on again
- 4 The Keypads announce "Security Off"

If the above sequence does not happen, check the following:

The Green LED does not blink once after Reset

The Voice may be corrupted or the Voice Chip U7 may not be programmed correctly. Enter code on the keypad and see if the voice menu is heard. If not, using Comfigurator Vocabulary Download or a Voice Programmer Board VPG03 to program the voice.

The Red and Green LEDs both remain on

This means that there is an incompatibility between the Comfort firmware and the File System which has been downloaded to the U4 Nonvolatile Memory. To fix this, download a default file with the correct File System. In Comfigurator, select File > New. And select the correct template for the firmware. eg Comfort II Ultra or Comfort II OPT. Check that the File System displayed on the lower right corresponds to your Comfort (Ultra II = File System 34, Optimum II = File System 31). Download with Transfer > Download (PC -> Comfort). There may be a warning message that the File System is incompatible with the Comfort version; ignore this and proceed with the download). However once the correct file system has been downloaded, do not ignore this warning as it means that you are about to download the wrong file system, which caused the problem in the first place.

The Red and Green LEDS are Off

This could mean

1. There is no power applied
2. The UCM Firmware programming cable is connected to PP1. This cable should be connected between UCM05 and PP1 only for firmware upgrade operation. The cable can be left connected to PP1 in normal operation only if it is not connected to the UCM at the same time.
3. The 12V supply is shorted by external devices or wiring and heatsink is hot (see next item)

System does not work, and Heatsink is very hot

This is probably due to a short on one of the wires connected to the system or an external device drawing too much current, causing the power supply to shut down to protect itself. Unplug all the terminal blocks from inputs, outputs, 12V auxiliary out, keypads and other terminals. It may be necessary to switch off and leave the power off for several minutes to allow the resettable fuses to cool down and reset. Check the correct sequence of red and green leds as described above when the power is switched on Then connect one keypad and other devices one by one. This will help discover the cause of the short or excessive current

Communications Failure

The keypad Home LED blinks and "Communication Failure, ID " followed by the ID number is reported upon user sign-in. This means that a slave device, ie Keypad, Door Station, SEM, UCM, or RIO/SCS is not communicating with the Comfort panel. The ID address of the device which is not communicating is reported. This ID identifies which device is giving the problem, according to the table below"

UCM	ID	SEM (Slave)	ID
1	Not Reported	1	33
2	18	2	34
3	19	3	35
4	20		
5	21	Door Station	ID
6	22	1	49
7	23	2	50
8	24	3	51
Keypad	ID	RIO/SCS	ID
1	65	1	81
2	66	2	82
3	67	3	83
4	68	4	84
5	69	5	85
6	70	6	86
7	71	7	87
8	72	8	88

The name of device causing the communications failure is displayed on the KP04 LCD keypad

- 1 Check the wiring to the unit concerned.
- 2 If Communications Failure happens each time on Security Off, the power to the device may have been connected to S12V. Power to the devices should be connected to 12V terminals, except in the case of SEM01 which have their own power supply.
- 3 The problem could also be due to one of the devices on the RS485 bus (eg SEM, Keypad, Door Station, UCM) putting a fault on the bus. Remove each device from the KA/KB line and see if the communications failure problem disappears.

Keypad/ Door Station Problems

Keypad Beeps continuously

If a Keypad is beeping continuously, it means that it has not received any RS485 communications on the KA/KB lines for the last 6 seconds. The beeps will continue until any key is pressed or if communication resumes. The beeping does not occur if the unit can receive communications but is not addressed by the Control panel, due to settings in Locations 1674 and 1675.

- 1 Check that the KA/KB are connected to KA/KB on the Comfort panel.
- 2 Check that the U5 IC (LTC1487) on the Comfort PCB close to the KA/KB terminal block is installed, and in the right orientation.
- 3 If all Keypads and Door Stations beep continuously, it means that the problem lies on the Comfort panel. Check that the U5 IC s inserted in the socket, and there is voltage 12V to 14V on the 12V terminal. Check the state of the RED (D1) and Green (D2) leds and refer to the section above on Startup problems.

Keypad keys do not beep when pressed

If the keypad keys do not give a beep tone when pressed, but there is no continuous beeping tone as described above, the keypad is receiving communications from the control panel, but its id is not being polled. If there are 10 keys pressed without a poll of that id, further key presses will not produce beeps.

- 1 Check that the Keypad/ Door Station selection (JP5) is correctly set to 1-2 (upper position) for Keypad, and 2-3 (lower position) for Door Station.
- 2 Check that the ID selection switch SW1 is set to the correct id according to the ID selection table in Chapter 2.
- 3 Check that the Number of Keypads (Location 1675) and Number of Door Stations (Location 1674) are correctly set to the number of keypads and Door Stations respectively. The Comfort system must always be reset after changing these parameters.
- 4 Check that the KA and KB connections are not reversed.

Pressing any key gives a long beep

This means that another keypad is being used, intercom or menu mode. Pressing F will end use of the other keypad, ("thank you, Goodbye").

Cannot Sign in on Keypad

- 1 Check that the MIC and Voice are connected to JP15 on the Control Panel. If voice is not heard, the problem is in the Audio path.
- 2 Check that the CONFIGURATOR interface is not still connected.
- 3 Check that the Keypad/Door Station ID (SW1) and Keypad/ Door Station selection (JP5) is correctly set for each Keypad and Door Station.
- 4 Check that the Volume Control knob on the Keypad (or the internal trimmer in the Door Station) is not all the way down.
- 5 Check that all other Keypads are not in use, for example in Security Check which does not time out. Press F on the active Keypad to exit.

None of the Indicator LEDs on the Keypad are on

At least one LED should always be on steady or blinking.

- 1 Check that the 12V and Ground are connected to the corresponding terminals on the Comfort panel, and the wires are not reversed.
- 2 Use a multimeter to check that 12V is actually coming to the Keypad

Playback of Recording from the Keypad is Distorted

Usually, this is because the KPMIC Microphone trimmer is set to too high a gain. Reduce the gain by tuning the KPMIC trimmer lower (clockwise) on the Control panel. This trimmer is fixed at the factory from July 2008.

Door Station cannot Ring the Telephone

If pressing the Door station button cannot ring the local telephone, but the keypad can answer the door station, the problem could be in the Ringer Module. Check that the ringer cable from the Ringer Module to Comfort main PCB is connected correctly.

The problem could also be caused by a telephone or too many telephones connected in parallel. The Ringer cannot drive an unlimited number of telephones. See Too many Telephone/Faulty Telephones below.

Doorbell Chime is too loud

Remove the shunt from header JP6 on the DP03 PCB to soften the doorbell chime.

No Voice on Keypads or Telephones

If there is no voice menu heard on the keypads, use the local phone to sign in by pressing * and user code and the # key. If the voice menu is not heard, then the voice may be corrupted. The system still operates normally and can be armed and disarmed except that the announcements cannot be heard. Intercom mode and recording and functions which do not depend on the words and sentences can still work. This has been known to occur in some systems due to unknown reasons which are being investigated. To restore the voice, use Comfigurator to do a Vocabulary Download, selecting the voice file kate28.bin for English. The UCM05 is required for this. If you are uncertain about which voice file to use, contact support@cytech.biz. The Vocab Upgrade takes more than 20 minutes.

Voice Station/Door Station Intercom Problems

There is a Comfort II Tuning Parameter Adjustment Guide on the Cytech web site on the Technical Info page. This gives instructions on how to adjust the tuning parameters to solve many common intercom problems

Telephone cannot hear Voice Station or Door Station

In Voice Station or Door Station mode, if you cannot hear sounds on the keypad or Door Station even if you keep silent, (i.e.. cannot switch to Listen Mode), but the KP or Door Station is able to hear the telephone, try the following steps:

- 1 Does the problem occur only for 1 unit (keypad or Door Station)? If so it is a problem with the wiring of the MIC wire from the affected Keypad or Door Station, or a faulty microphone on the unit. You can check the MIC and Speaker on all keypads by using the Keypad Intercom mode (F+8). Check that all other keypads can hear. Press a key on other keypads to put that keypad into talk mode and check that the microphone on that unit is working.
- 2 Too much background noise around the telephone can prevent the keypad or door station from being heard. Try moving to a quieter area.

Door Station or Keypad cannot hear voice from telephone

The converse of the previous problem is the telephone voice cannot be heard on the keypad or door station, but the keypad/Door station voice can be heard on the telephone. Try the following steps:

- 1 If only 1 Keypad or Door Station is unable to hear the telephone voice, the volume control on the keypad or Door Station may be set too low. The SPK wire on the affected unit may be not connected properly, or the speaker may be faulty. A noisy environment around one of the units may also prevent the telephone from getting through.
- 2 If all the keypad/door stations are not able to hear voice coming from the telephone, check "Phone Intercom Voice Level" in Comfigurator > Voice Settings. This can also be programmed in Location 1700. This sets the gain level of the voice from the telephone to the speakers. The values range from 0 (minimum) to 3 (maximum). Any value higher than 3 is taken to be 3 (maximum). Reset is not required. The default level is 2.

- 3 Of the above does not work, the KPMIC trimmer (DPMIC for Door Station) for the Microphone circuit on the Comfort PCB may be set too high. Reduce it by turning it anti clockwise. If this solves the problem, the trimmer can be adjusted back (clockwise) for higher MIC gain if required.
- 4 Too much background noise around the keypad or Door Station may prevent the voice on the telephone from being heard on the keypad/Door Station. Do not install a Door station in a noisy environment like beside busy road

Telephone hears only Noise from Keypad/Door Station

In this case, you can hear noise on the telephone from the keypad or Door Station. The keypad and Door Station will not be able to hear voice from the telephone because the telephone will always be in Listen Mode. This may happen if the wire run from the Comfort PCB to the keypad or Door station is very long or is running close to the AC mains.

- 1 Adjust the KPMIC (DPMIC for Door Station) trimmer on the Comfort PCB to the minimum by turning it anti clockwise. If this solves the problem, the trimmer can be adjusted back (clockwise) for higher MIC gain if required. The KPMIC and DPMIC trimmers are set at the centre at the factory

Phone Problems

House Telephones do not Ring

Each telephone's ringer circuitry presents a load to a ringing signal called the Ringer Equivalence Number (REN). If the sum of the RENs of all the phones exceeds the limit, some or all of the phones may not ring. Adding Comfort to a home containing a number of phones may push the total REN beyond the limit, causing ringing problems. Removing one or more telephones may correct the situation.

No Dial Tone on Local Phones, incoming call does not ring phones

This means that the telephones are not connected to the Telephone Line. This is usually due to the telephone wiring or a fault on the incoming telephone line.

Switch off Comfort at the mains and disconnect the battery. In this condition, the telephone line is connected directly to the telephones through the normally closed contacts of a relay. If the problem persists, it is not caused by Comfort - it is caused by the telephone wiring or telephone line fault. Do not forget to set the system Date and Time after power on

Cannot Sign in on Local Phone

When * is pressed on the local phone within 6 seconds of lifting the handset, there should be a relay click on the panel. Subsequent keys should have beep tones as acknowledgment that the system has detected the key presses.

- 1 If no relay click is heard, it could mean that the Keypad is being used. Press F on the Keypads to end the Keypad operation and try again.
- 2 Use a telephone which you know does work. The customers telephone may not be compliant with telecom requirements even though it may seem to work.
- 3 Check Telecom > Dialing > Time to Detect * for Menu (Location 1849) which is the time in seconds allowed for * to be pressed after going offhook. This is usually set to 6 (seconds). If the value set is too low, it could prevent you from signing in. (From v4.88).
- 4 If the relay clicks when the * key is pressed, but the phone goes dead, check that the TEL IN and OUT connections have not been interchanged.
- 5 Download a default template for the file system . If Locations relating to DTMF detection have been changed inadvertently, it may cause this problem. If the default works, reprogram according to the customers settings.
- 6 We have found that in rare occasions, certain telephones may not be able to sign in locally, because they require a higher voltage to operate than other phones. These are normally not type-approved models. In such cases, another model of telephone on the premises may be able to work.


- 7 Reverse the connection of the telephone line on TEL IN (i.e.. Reverse TIP and RING). This may make a difference as to the detection of DTMF tones on local phones.
- 8 See Too many Telephones/ Faulty Telephones above
- 9 Check if the Voice has been corrupted (see "No Voice on Keypads and Telephones" above)

"Phone Trouble"

If the voice says "Phone Trouble" when the handset is lifted, it means that the phone line is cut or not working. Check the incoming telephone line connection. Comfort detects low voltage on the telephone line and supplies its own power to the local telephone so that it can still be used to operate the system. The speaker produces a beeping sound for 10 seconds to indicate the trouble condition, and the green led on the PCB flashes. The condition is cleared when the line is restored and the user signs in with their code to acknowledge. The speaker volume for the trouble beep can be adjusted using the trimmer next to the speaker terminals. During an alarm, the speaker volume is at the maximum and not affected by the trimmer adjustment. Phone Trouble is also detected if telephone equipment is connected in parallel to the TEL IN terminal and the parallel telephone is offhook. (See section on Parallel Phones below)

Parallel Phones at TEL IN

There should be no telephones or faxes connected in parallel to the incoming line to the panel, otherwise when the parallel line is used, Comfort will detect a Phone Trouble. Also the system may not be able to seize the line to dial out in the event of an alarm. There can be parallel phones connected to the TEL OUT connector. If due to existing wiring constraints, it is not possible to avoid telephones connected in parallel to TEL IN, it is possible to set "Ignore Line Cut" setting in Location 40 (See Table 35)

-  Setting Ignore Line Cut results in a loss of security as the System is unable to dial out if the parallel phone is offhook. This cannot be used for UL systems or monitored systems, and is meant for systems concerned mainly with Home Automation only

Telephone Relays click every 10 seconds without getting "Phone Trouble"

This symptom is probably caused by a faulty connection of the telephone line to TEL IN where one of the telephone wires is not connected.

Customer has their own Answering Machine

If the user prefers to use their own answering machine, set the number of rings much higher than their answering machine in each mode (Home, Away, Night, Vacation). This is done in User program menu 1,1. The user can still access the Comfort system by calling, letting the phone ring exactly once, and then hanging up, and dialing again within 10 to 25 seconds. Comfort will answer the call immediately and play the Greeting message if there is one, or say "Please Sign in". The "Answering Machine Bypass" Option must be set in Configurator -> Modules and Settings. Program menu 1,0 will enable or disable this setting.

Customer's Caller ID Does not work

Comfort has been tested to be compatible with Caller ID adjuncts and telephone sets. However, it is not possible to test with every Caller ID models available. The caller ID set may be connected either at the TEL IN or TEL OUT input. If there are problems,

- 1 Check that the caller ID is type-approved for the country of use.
- 2 We have found that actual telephone cable should be used to connect the caller ID set to the telephone line. Cables used for security wiring may not be suitable.

The Users Line is always Busy

Try the following tests:

- 1 One of the phones in the house could be faulty, presenting a low impedance which holds up the line, possibly due to lighting. Disconnect all the telephones by unplugging the TEL OUT Connector and try to dial in again. If you hear a ringback tone on the telephone, it means that one of the telephones is faulty.

- 2 If the line is still busy, Comfort could be holding onto the line because it is always trying to dial out or because of some other fault. Remove the battery connection and switch off power to Comfort, and put back the TEL OUT terminal block so that the phones are connected to the telephone line. The telephone line is connected to TEL OUT through the closed contacts of a relay. Dial in again. If the phones ring, the Comfort PCB is faulty and must be replaced. If the line is still busy, the telephone line is faulty.
- 3 Switch off Comfort at the mains and disconnect the battery. In this condition, the telephone line is connected directly to the telephones through the normally closed contacts of a relay. If the problem persists, it is not caused by Comfort - it is caused by the telephones or telephone line fault. Do not forget to set the system Date and Time after power on

Special Telecom Services (e.g. Call Forwarding and Voice Mail)

Call Forwarding and Answering services on the subscribers' line may give a broken dial tone when in operation. Comfort waits for up to 9 seconds for a continuous dial tone before dialing out. If the broken dial tone does not restore to a continuous tone after a few seconds, disable the detection of Dial Tone in Location 39 (See Table 35) by subtracting 128 from the value at that location. Push the reset button on the Comfort panel. Comfort will dial after 5 seconds in the absence of dial tone.

System Does Not Answer Incoming Call

This could be caused by having too many telephones connected to TEL OUT, or the use of telephones which are not type-approved. The ringing signal may be detected as a falls offhook indication, thus preventing Comfort from answering an incoming call. It may also prevent the Door Station from ringing the telephone, or prevent other telephones from signing in, or cause a dialout in a non-alarm state (e.g., System armed or disarmed reporting) to be aborted as Comfort thinks the phone is offhook. The telephone may otherwise seem to be working properly, able to make and receive calls.

System Cannot Dial Out

- 1 Check that J3 header is shorted with a shunt. If J3 is not shorted Comfort will not be able to dial out. J3 is located on the left edge of the Printed Circuit Board, near to the two relays K1 and K2. On later versions of the board PC01-0001E (4), J3 is not present.
- 2 Check that the relevant Alarm Types have the Dial Settings on (Eng Menu 2,1) and the dial settings are enabled for the phones which are to be dialed (1 to 8).
- 3 Does the telephone line have Call forwarding or Voice Answering (provided by the phone company)? This may prevent a dialout because Comfort may not detect a dial tone. See "Special Telecom Services".
- 4 Do a Dial Test (F3,3 or User menu 3,4,3 or Engineer menu 8,3). This dials to all programmed telephones from 1 to 8. The dialing tones, busy tones, ringback tones, as well as handshake and kiss-off tones from the Monitoring Station receiver are audible on the Keypad. This is very useful in troubleshooting dialing problems. If the system cannot detect dial tone, it will say "Please hang up" in case an incoming call is holding the line, and wait for the caller to hang up. If dialing to the CMS or pager or voice phone, the system cannot detect the handshake or pager tones or voice answer, you can hear this.
- 5 Disconnect all the local telephones by removing the TEL OUT terminal block. See Too Many Telephones/Faulty Telephones above. A Faulty telephone may prevent a Dial test (non-alarm situation) from working, but in alarm Comfort cuts off the local telephones. Setting the flag "Always Cut Local Phones during dialout" in Location 40 (Table 35) may fix this problem by cutting off the local phones when dialing out even in Idle and Trouble States.
- 6 If the dialout is still unsuccessful, check the following. If any of the locations are changed, RESET the system.

Parameter	Should be	Menu	Remarks
PABX Setting	Off	Engineer 7,2	If not connected to PABX extension

Arming/Disarming Problems

Arm Fail after the Entry Door is closed

When Away Arming and the Entry door is closed, there is a 6 second delay for exit path PIRs to settle. If any zone is found to be open at the end of the 6 second period, there will be an "Arm Fail" alarm. Check that PIRs do not take more than 6 seconds to restore. There may be an adjustment on the PIR to shorten this. This applies to Final Door Arming method (See Worksheet table 3 for Away Arming methods).

Another reason for this problem may be misalignment of the final door contacts. When the door is closing the magnets may pass each other to detect a closure but when the door is fully closed, the sensor may give an open contact hence indicating a door open status.

Keypad Disarm announcement "Security Off" is delayed

When disarming by keypad, there may be a short delay before the keypad gives the usual "Security Off" announcement. This may happen especially when disarming after an alarm, when the system is dialing out. It may take a few seconds for Comfort to terminate the dialout and come back to announce on the keypad. Dialouts interrupted in this way will resume after the "Security Off" announcement, and are never lost.

"Call Engineer to Reset" announcement when trying to Arm

This is due to a previous Arm Failure alarm which has not been cleared. An Arm Failure alarm is triggered when the system fails to arm due to exit delay time out or a zone open after the entry door is closed. When this happens, the system must be disarmed before it can be armed again. Any attempt to arm when there is an alarm active will result in the message "Call Engineer to Reset".

When arming, the keypad beeps rapidly but no Zones are announced

This has happened when the installer has programmed Security Type > Non-Detector Alarms > Tamper = Null to disable tamper alarms and has left the Tamper terminal open. The Tamper Non-Detector alarm should NOT be set to NULL. Short the tamper terminal if you do not wish to monitor tamper alarm for any reason.

No Voice on Keypad when Arming or Disarming

Check if the Voice has been corrupted (see "No Voice on Keypads and Telephones" above)

For Firmware Versions 4.6X and older, announcements like "Please Exit", "Away Mode", "Security Off" are heard on the keypad when arming or disarming. If the local phone is taken offhook when arming or disarming, the voice will not be heard on the keypad. This is to allow the phone to arm or disarm. This may also be caused by a faulty telephone.

Sign-in Codes Lost

User Code Lost

Go To Program Menu (Engineer menu 9), 5 for User Codes and 0 to Erase all Users or 2 to Erase a single user by number. If all users are deleted, the default user code is reset to 1234, and all messages in mailboxes will be erased.

Individual users can be deleted in Program Menu 5,2 and selecting the user number. All the messages in that mailbox will be deleted. The user must be added using Program Menu 5,1 (Add User).

Engineer Code Lost

Use the Configurator cclx file and change the Engineer Code. Configuration > Modules & Settings > Write User Codes must be set to "YES". The user code is needed to write to Comfort.

If all user and Engineer codes are lost, use a UCM with a default EEPROM and press the Download button to transfer the default programmed settings to Comfort, including the sign in codes.

Tracing Alarms

Use Event Log

Most false alarms can be attributed to user error, improper selection or placement of alarm sensors especially PIRs and shock/vibration sensors. Comfort's Event log is a valuable tool in identifying the cause of such problems.

The last 250 events (125 events for Comfort ENTRY model) can be heard by going to the Event log F+5 on the keypad or User menu (3,3) or Engineer menu (8,3). You can navigate through the log by pressing 1 for next event, 2 for previous event, 0 for 1st event, 9 for last event, 3 for Next Day, 4 for Previous Day. See The Event Log can also be obtained by using the Comfigurator software > Transfer Menu > Upload Event Log. The events can then be printed or saved on file. The following table shows the events recorded and their meaning.

Event	Restore	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 voltage is low or the battery is disconnecte
"Zone Name" Bypassed	Zone No. Bypass Off	A zone was bypassed
Change Time	N/A	Date or Time Changed
18-24 Communications Failure	18-24 Restore	UCM IDs 2 to 8 Communication Failure. UCM ID 1 is used for Configurator UCM and does not report Communications Failure if not connected
33-40 Communications Failure	33-40 Restore	Slave Expansion Module 1-3 Communication Failure. ID 33=SEM 1, 34= SEM 2, 35= SEM 3
49-55 Communications Failure	49-51 Restore	Door Station 1-3 Communication Failure. ID 49 =Door Station 1, 50=Door Station 2, 51=Door Station 3
65-72 Communications Failure	65-72 Restore	Keypad 1-8 Communication failure. ID 65=Keypad 1, 66=Keypad 2, 67=Keypad 3, 68=Keypad 4 etc...
81-88 Communications Failure	81-88 Restore	RIO 1-8.Communication failure ID 81 = RIO1, 82 = RIO 2, ... 88 = RIO 8
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.

Comfort II Supplementary Installation Manual

Event	Restore	Description
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
Fire Alarm & Zone	Restore	Fire Alarm Activation followed by Zone number.
GSM Trouble	Restore	UCM/GSM Network problem
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.
Mailbox # Sign-in Code Changed	N/A	Sign-in code was changed for user number #
Mailbox/Mailboxes Erased	N/A	1 Mailbox/User was deleted or all mailboxes erased. Comfigurator upload of Event log will show the user deleted
Messages Erased	N/A	Messages were erased (either Greeting, Incoming, names or all). Parameter can be seen only by Event Log upload by Comfigurator
(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.
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 CONFIGURATOR.
Sign-In Tamper	Restore	More than six unsuccessful attempts to sign-in at the Keypad while the system is armed.
Tamper Alarm	Restore	Main Tamper, Bell tamper, Keypad, Door Stations or Zone with 24-hour tamper zone type.
33,49,65 Tamper Alarm	Restore	Main Tamper, SEM, Door Station or Keypad tamper activation, 33-35=SEM 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 .

False Alarm on Disarming

This may be caused by connecting PIRs or Keypads to the S12V output instead of the 12V terminals. S12V and 12V share the same terminal block. S12V is meant for detectors which need to be reset on disarming, and is switched off for 5 seconds when the system is

disarmed. PIRs programmed as 24 hour zones which have their supply connected to S12V will activate when disarmed. Also Keypads which are powered from S12V will report "Communication Failure".

- 🔊 S12V does not automatically reset upon system disarm. It has to be programmed using Action 90, to cater for latched shock detectors which are to be reset upon arming.

End of Line Resistors

If the zone is set for 2 EOL resistors, Check that the correct values of EOL resistors are used and that they are connected correctly, ie 2.7K in series with the contact and 4.7K in parallel with the contact as shown in Figure 2.11 of the Engineer Manual. Incorrect values or connection of EOL resistors may seemingly have no effect, but the threshold might be very close to being detected as Open. A change in temperature may cause the system to go into alarm.

Zone Trouble

Go into Security Check (Eng Menu 8,2) or F3,2 on Keypad. The names of the zones activated are announced. If 2 End-of-line resistors are used on zones, open-circuit and short-circuit wiring are announced as "Zone (N) Trouble". If zones are open on entering Security check, they are announced once at the beginning.

If the zone is configured for 2 EOL resistors, check that the proper EOL resistors are used and that the zone shunt is set for 2 EOL resistors.

Battery Warning

Comfort reports a battery Warning alarm if the backup battery voltage is low (11.0 to 11.5 volts). Usually this is detected only during a Battery Test (F3,1) or the Scheduled Daily Battery Test (Configuration > Modules & Settings > Misc Settings). Comfort switches off the AC power to the system during the battery test, and if the battery voltage is low, it switches on the AC again. Hence the system will report Battery Warning Restore after Battery Warning Alarm.

Slaves will also report their own battery warning alarm if the battery is low. This will be reported as Battery Warning Slave 1, 2 or 3 on the keypad and event log.

If the setting Comfigurator > Modules & Settings > Configuration Flags > Detect Battery Disconnected is checked, then Comfort reports a Battery Warning alarm when there is no battery in the main Comfort or Slave modules.

Support Resources

Register on the Comfort Forums at <http://www.comfortforums.com>

Frequently Asked Questions

For online FAQs go to <http://www.comfortforums.com/forum16/>

Is the Siren Duration restarted during Alarm by new zone activations?

The siren duration starts when a zone is triggered to cause an alarm. If another zone is triggered while the siren is still on, the siren continues but the timer is not restarted if the same siren type is activated. The siren will time out according to the programmed duration after the original activation. However, if a different siren type is activated, e.g.. a Fire Alarm Siren after an Intruder alarm siren, then the new siren duration will take effect.

Does the system rearm after an alarm?

When an alarm occurs, the siren turns on for the programmed time, depending on the Alarm type. When the siren turns off, the system is rearmed and remains in Alert state. Any

new intrusion will trigger a new alarm. If the entry door is opened, an entry delay will start, not an instant alarm, so the owner returning home will not cause an alarm.

Can a PIR be used as an Entry Door zone for Final Door Arming?

A PIR should never be set to Zone Type 2 (Entry/Exit Zone). When arming to away mode, any movement through the zone will cause the system to arm when the PIR restores and after a delay of 6 seconds. This may cause the system to arm prematurely and cause a false alarm. If a magnetic contact for the Entry door cannot be installed (retrofit), then set the Away Arming method to Arm After Exit Delay. This is shown in Table 3 of the worksheet. Set Location 1692 to 1. This will cause the system to arm after the Exit delay in Away Mode without waiting for Entry door. However, if there is no Entry Door, one of the PIRs must be programmed to cause an Entry Delay when armed. This can be done using Actions 73,0,12,5,255 (Get Security Mode, exit if Zero, Start Entry Delay).

How does Comfort handle Telephone line Cut?

When the telephone line cut is detected (after around a minute), a Phone Trouble alarm is activated. By default, this gives a fast trouble beep for 10 seconds. If there is a Line cut during or before an alarm with bell delay, the siren is activated immediately. Normally, it is not advisable for a line cut to turn on a full intruder alarm, because of the high possibility of false alarms due to intermittent telephone service, but it is possible to customize the Alarm type settings of the Phone Trouble alarm (Alarm Type 3) to turn on the siren. It is also possible to turn on the siren when the system is armed. This is done using the Alarm Response (Engineer Menu 2 for alarm type, 2 for Response). Program a response which checks the security mode, and if armed, activate one of the siren types.

How to disable Telephone Line Cut detection

In certain retrofit installations, where it is not possible to connect the incoming telephone line to the Control panel TEL IN, and there are other telephones connected in parallel, the telephone line cut detection must be disabled. If not, when the parallel telephone is used, a Phone Trouble alarm will be reported. To disable telephone line cut detection, refer to Worksheet Table 35 for Location 40 settings. One of the settings (add 2) is to ignore Line cut. After changing this location, the control panel must be reset by pressing the RESET button on the panel or remotely by Engineer menu 7,4,2.

How to recover lost User Codes

If users other than User 1 (Master code) forget their codes, go to Program Menu (5,2) to delete the user and add the user again. If the Master Code (for User 1) is lost, the Engineer can get into program Menu by Pressing F+0, then Engineer menu, and then 9 for Program menu. Then press 5 for User Codes and 2 to erase User 1 and add the user again.

Does the system remain armed after removal of power?

After a complete loss of power, including battery discharge, the system remembers its last state and restores it. If the system was armed to Away, Night or Day mode, it will re-arm to that mode when powered up again. The Date and Time will be reset to default after a complete power loss, and will need to be reprogrammed.

Can Announcements be disabled on certain keypads?

Yes, go to the keypad for which announcements are to be disabled, and go to Program Menu 3,1. Press 1 to enable announcements, 0 to disabled them on that keypad alone. This is also described in the User Manual.

Can Comfort be Partitioned?

Comfort does not have any partitioning feature, where the system can be subdivided into two or more independent partitions, able to be armed and disarmed independently. However, it is possible to use the OMIT action (from v4.96) to bypass a group of zones (programmed as immediate in all modes) usually using a key switch or a stand-alone access control keypad to achieve a similar function. Refer to the Application Manual for the programming and setup.

Telephone Line Operation

- 1 This equipment is approved on a direct exchange line for Tone (DTMF) dialing
- 2 Although this equipment can use either loop disconnect or DTMF signaling, only the performance of the DTMF signaling is subject to regulatory requirements for correct operation. It is therefore strongly recommended that the equipment is set to use DTMF signaling for access to public or private emergency services. DTMF signaling also provides faster call setup.

- 3 The Ringer Equivalence Number (or REN) value allows you to establish how many telephones or pieces of equipment, such as this equipment, you can connect to your line. To find out the REN value of the apparatus on your line, add up the REN values of each item of apparatus connected. Any B.T instrument is assumed to have an REN of 1, unless otherwise stated. If you connect apparatus such that the total REN value is more than 4, one or more pieces of equipment may not ring and/or answer calls correctly. The REN of this equipment is 4.0. It is not intended for connection in parallel with other terminal equipment.
- 4 The equipment has been approved for use of the following facilities:
- Auto Answering
 - Recording and Answering
 - Auto Dialing

It may help callers if your outgoing answering machine message includes your full telephone number.

This product must be installed in accordance with the installation instructions contained in this manual.

CE Marking (Europe)

This equipment complies with the requirements of the EMC Directive (89/336/EC) and the Low Voltage Directive (73/23/EC) provided that all equipment used also carries the CE Mark and the installation follows the instructions given in this manual. The equipment has been tested to EN55022 Part B; Conducted and Radiated Emissions.

Safety Status of Connecting Ports

The following circuits are present within the equipment with the safety status specified in the table below:

Connector	Safety Status
Incoming and Outgoing telephone lines (MJ1, MJ2)	TNV
Box headers connected to Expansion Modules (J7,J5)	SELV
Terminal Blocks to Outputs, Zones, Bell, Strobe, speaker	SELV
Battery Connector connected to standby battery (BATT)	SELV
Terminal Block to Transformer Secondary	SELV
Terminal Block with 12V supply for external circuitry	SELV
Terminal Block for X10 TW523 (MJ3)	SELV

Document Revision History

3.3.3 30 July 2016

Updated contents and diagrams

3.3.2 19 Feb 2014

revised zone connections

3.3.1 10 August 2013

General Update

3.3.0 29 November 2012

Rewrite as Comfort II Supplementary Installation Manual

3.1.6 10 June 2012

Updated products

3.1.5 6 February 2011

Revised Siren Connection diagram

3.1.41 October 2010

Added comment that 2K2 EOL resistor can be used instead of 2K7 and general update. Trimmer VR1 for Speaker volume adjustment instead of VR3. Deleted reference to VR1 for Recording volume adjustment

3.1.3 14 July 2010

General Update of part numbers and APB01

3.1.2 6 September 2008

Revised Siren/Bellbox, Backup Battery, Troubleshooting section
Rewrite of Quick Start Power On Checklist
Added Indicator LEDs Table

3.1.0 21 October 2007

Used Illustrations of Products instead of photos. Combined figure 2.7 included ADSL . KP01 /DP01 changed to KP03/KP03 and DP03

3.0.9 20 August 2007

Added EN50131 Compliance (Europe) to Specifications

3.0.7 25 March 2007

Rewrote FAQ for Red/Green leds remain on, Tuning Parameters, Updated Event Log

3.0.6 13 November 2006

Added section on MPU Firmware Upgrade and Photo, About Firmware warning about firmware replacements, and in Warranty statement

3.0.2 9 Jan 2006

Added telephone cord AWG 26

3.0.1 November 2005

Initial release for Comfort II

Important Note

The printed manual may not always be the most current version. Please check and download the latest version from <http://www.cytech.biz/manuals.html>

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Document Title:
Filename
Version:

Comfort II Installation Manual
supplnst.lwp
3.3.3

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RCB 199506853M