SIMPLICITY CO

CARBON MONOXIDE DETECTION & VENTILATION PANEL

USER MANUAL

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1 SAFETY INFORMATION

1.1 SAFETY PRECAUTIONS DURING NORMAL OPERATION OF PANEL

NOTE: When the SIMPLICITY CO panel is operating normally, i.e. not being tended by service personnel, the front cover should be screwed closed with the hex screws provided.

1.3 BATTERY INFORMATION

This C.I.E. uses 2 x 12V Sealed Lead Acid (SLA) batteries up to 7.2 Ah.

CAUTION:
RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.

DISPOSE OF USED BATTERIES ACCORDING TO BATTERY MANUFACTURERS INSTRUCTIONS

IMPORTANT NOTES ON BATTERIES:

DANGER: Batteries are electrically live at all times. **NEVER short circuit the battery terminals**.

WARNING: Batteries are often heavy; take great care when lifting and transporting batteries. For weights above 24 kilos, lifting aids should be used.

DANGER: Do NOT attempt to remove the battery lid or tamper with the internal workings of the battery. Electrolyte is a highly corrosive substance, and presents significant danger to yourself and to anything else it touches. In case of accidental skin or eye contact, flush the affected area with plenty of clean, fresh water and seek immediate medical attention.
Valve Regulated Lead Acid (VRLA) batteries are "low maintenance", requiring no electrolyte top-up or measurement of specific gravity.

1.4 PRODUCT DISPOSAL AT THE END OF ITS WORKING LIFE

Like all electronic equipment, at the end of its working life this unit should not be disposed of in a refuse bin. It should be taken to a local reprocessing site as per the guidelines of the WEEE directive, for correct disposal.

2 DESCRIPTION OF THE SYSTEM

The Simplicity CO carbon monoxide detection panel is a 1 to 8 zone analogue addressable system, using the Standard Zeta Addressable protocol.

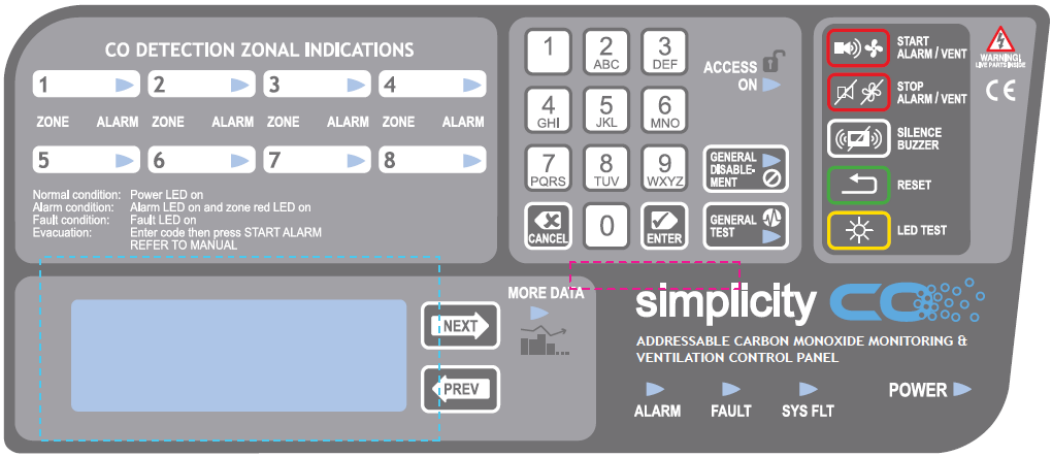
The devices can be connected as a single loop, or as separate radially connected circuits.

The system uses global thresholds that apply to all zones. There are thresholds for first ventilation, second ventilation and alarm. these 3 thresholds can be individually adjusted.

Any zone can be disabled through the menus if required.

The system can run with either individual ventilation relays for running systems with several ventilation fans, or with a single set of ventilation relays, configured as common acting.

3 PANEL CONTROLS & INDICATIONS



3.1 INDICATIONS

Name	Colour/State	Indicates...
Zones (1-8) Power	Red Green (On)	Alarm condition Normal power
	Green (Flashing)	A fault has occurred on either the mains or battery backup system
Alarm	Red	General alarm condition. Refer to the individual zone indicators and LCD readout for further information.
Fault	Yellow	General fault condition with the panel. Refer to the LCD readout for further information.
Sys FLT	Yellow	Indicates a serious fault that has stopped the panel from operating correctly.
Access On	Yellow	User or engineer level access to the panel controls.
General disablement	Yellow	Disablements present
General Test	Yellow	Zones in test mode
More Data	Yellow	More data is available on the LCD readout. Press [NEXT> and <PREV] to navigate through the panel events.

3.2 CONTROLS

Button	Description
START ALARM/VENT	Manually starts the alarm and ventilation
STOP ALARM/VENT SILENCE BUZZER	Manually stops the alarm and ventilation Silences the panels internal buzzer
RESET	Resets the panel from an alarm
LED test	Tests the functionality of the panel indicators. Additional panel information is displayed on the LCD allowing testing of the membrane keyboard and displaying electrical current usage.

3.3 SILENCING ACOUSTIC SIGNALS

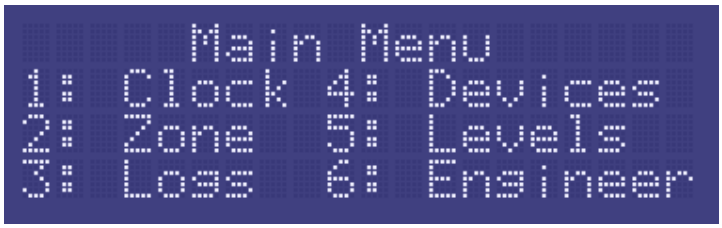
The Simplicity CO panel will not give an audible signal for ventilation events. This is part of its normal operation, so it does not need to give an audible warning signal. It will make an audible signal for a fault condition, or for an alarm condition.

To silence a fault signal, enter the user access code 123 and press the silence tone button.

To silence an alarm condition, enter the access code 123 and press stop/start sounders. This will turn off any sounders which are connected to the system. Then Press the Silence tone to turn off the panel's buzzer. Press the reset button after the CO has cleared.

4 CONFIGURING THE SIMPLICITY CO PANEL

4.1 ACCESSING THE MENUS

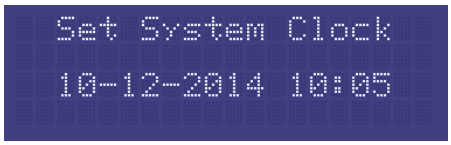


The user level menu can be accessed using the access code '123'

4.2 SETTING TIME AND DATE

To set the time & date, enter the Main menu by typing in the access code and select Clock (Option 1).

The Clock Menu is now displayed.



Enter the Day, Month, Year, Hour & Minutes as prompted, and press enter to save, or Cancel at any time to exit.

4.2.1 DISPLAYING THE THRESHOLD LEVELS

On the Simplicity CO Analogue Addressable CO panel, there are 3 levels of ventilation. They are First Ventilation Level, Second Ventilation Level (for use with equipment with 2 speed fans), and alarm.
The ventilation level programmed will apply to all 8 zones

The default threshold values are :-

first ventilation level 50ppm,
second ventilation level 75ppm,
alarm level 100ppm,

The various threshold levels can be displayed from option 5: Levels of the main menu

4.2.2 VENTILATION MODES

The Simplicity CO Panel has the following operation modes for ventilation:-

- Automatic ventilation mode: This is the normal operating mode of the panel. Ventilation is controlled by the CO detector readings
- Manual ventilation mode-first speed: Manual ventilation is selected by pressing the [START ALARM/VENT] button. The panel will activate the first ventilation level relay for all zones. When a Manual start is performed, the relay will stay energised for the programmed ventilation latch time.
- Manual ventilation mode-second speed: Second speed Manual ventilation is selected by pressing the [START ALARM/VENT] button a second time. the panel will activate the second ventilation level relay for all zones.
- Disablement mode: pressing general disablement button brings p a menu to disable any zone. While a zone is disabled. the zone will be turned off, and will not react to any signals from detectors. The LCD will show the zone as disabled

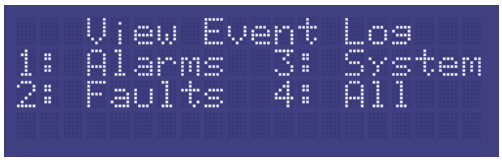
5 VIEWING PANEL INFORMATION

5.1 MENU STRUCTURE

To help locate the different features available, the menu structure of the Simplicity CO panel is shown here.

Main Menu			Description
	1: Clock		Adjust Date/Time
	2: Zone		Display Zone Information
	3: Logs		Display event logs
		1: Alarms	Display Alarm events
		2: Faults	Display Fault events
		3: System	Display System events
		4: All	Display All events
	4: Devices		Shows Device information
	5: Levels		Display threshold levels
	6: Engineer Menu 1		Engineers menu
		Not accessible to user-level access	

6 USING THE EVENT LOG



The SIMPLICITY CO has a 1000 entry event log. In the event of the log being full, it will wrap around, and overwrite the earliest entries. The event log can be viewed through Configuration Menu 1 by
selecting Option 3 - View Event Log. The screen prompts for which events to display: Alarms, Faults, System or All.

If the alarm option is shown, only alarms will be displayed. The screen will show the event number, the date, the time, the type of event (in this case, a DEVICE ALARM), and the Zone, and address. Next & Previous buttons will cycle through the list.

Selecting this option will display all the faults recorded on the system, both device faults and general faults. The screen will show the event number, the date, the time, the type of event (in this case, a
DEVICE CHANGED fault), and the Zone, and address, if appropriate. <PREV] & [NEXT> buttons will cycle through the list.

The Simplicity CO also records other non critical items, such as User access, clock change, configuration changed, event log erased etc. These can be used to help determine the chain of actions before or after an event.

The types of events recorded are: -

Power On/Startup	Panel Reset	Evacuate	Access Level 2
Access Level 1	Sounders Silenced	Configure Loops	Time & Date Set
Zone Disabled	Zone Enabled	Device Disabled	

7 VIEWING INDIVIDUAL DETECTORS

7.1 VIEWING DEVICE STATUS

On the Simplicity CO, all Zone devices can be viewed from the Main Menu, or viewed & edited from Engineer Menu 1.

Enter Engineer menu 1 as described above, and select option 3: ID Device.

The screen is divided into the following sections:-

<Device Type> This shows the Device that was at this address during the last loop configuration.

<Val> Shows the analogue value the device is reporting

<Status> Shows the status of the device (eg. Normal, Fault or Alarm)

<User define label> Shows the label that the device can be set with

<Zone> Shows the zone the device is configured on

<Address> Shows the address of the device.

7.1.1 FAULTS

If the device is in a fault condition, a description of the fault will appear in the <status>. It will show one of the following messages:-

FAULT	MEANING
Changed	The device had been changed with one of a different type since last configuration. The message will flash between Changed, and the new type of device seen (eg. Ion).
Missing	The device is not communicating (ie removed , damaged or Address setting changed)
DetRmvd	A Detector has been removed
Side A Only	There is a break in the cable, and the device is only seen from Side A – Loop Mode Only
Side B Only	There is a break in the cable, and the device is only seen from Side B – Loop Mode Only
2-ADDR	Two devices have the same ID switch setting
No message	This device is signalling an internal fault by returning a value of less than 8.

8 THE VENT AND ALARM CONDITIONS

8.1 VIEWING A VENT OR ALARM EVENT

When a detector reports an increase in carbon monoxide levels above the threshold levels, the panel will report the zone as well as the levels in that zone.

Multiple events may be displayed and these can be cycled through with the <PREV] and [NEXT> buttons.

8.2 VIEWING FAULTS DURING A FIRE ALARM CONDITION

In the event of multiple alarms, and multiple faults on the system at the same time, the LCD screen will give priority to alarm events. The screen will show the first alarm, and the Prev/Next scroll buttons will cycle through alarm events only.

The LEDs will show general fault information. To show fault event details on the LCD screen, press the CANCEL button. <PREV] and [NEXT> will now scroll through the faults. Press cancel to return to viewing the alarm information. (If the panel is left viewing a fault, after a short period of inactivity, the panel will revert to the alarm display)

A sounder fault is classed as an Indication that should not be suppressed, to the panel
reserved part of the bottom line of the LCD to indicate sounder faults.

8.3 VIEWING ZONE DISABLEMENTS DURING AN ALARM CONDITION

If zones are disabled, then by pressing the GENERAL DISABLEMENT button, information about disabled zones can be displayed on the LCD.

8.4 VIEWING ZONES IN TEST MODE DURING AN ALARM CONDITION

To view details of a zone in test during a general alarm (caused by an alarm from a zone not in test), Press the general test button. The panel will display details of the zone in test. The panel will time out to display the general alarm screen within 20 seconds of the last button press.

9 FAULT INDICATORS AND MESSAGES DISPLAYED

On the Simplicity CO panel, Faults are divided into 2 types, "Faults" and "Device Faults". Device Faults are any fault associated with a particular Device on the system. Faults are everything else, EG, power supply etc. In the event of multiple faults, the Faults are grouped together first, followed by the device faults. Next button will scroll to next fault.

9.1 GENERAL FAULTS

9.1.1 CABLE (LOOP) FAULT

This means that the panel has detected a fault (either open circuit or short circuit) in the cable loop. Check the cable systematically to locate the problem.

9.1.2 SUPPLY FAULT

Either mains power or battery backup power has been lost. Check the supply is present, and the relevant fuses are intact.

9.1.3 EARTH FAULT

This indicates that a short-circuit has occurred between part of the system wiring and earth. This usually means there is a short between the one of the cables in the detection loop and the cable screen.

(Note: connecting other equipment, eg an oscilloscope or a PC, to the panel can give an earth fault)

The Screen will indicate if it is a Positive or Negative voltage shorting to earth (Earth Fault Pos or Earth Fault Neg).

DO NOT DISCONNECT THE MAINS EARTH CONNECTION. THIS WILL CAUSE A PROBLEM WITH THE PANELS OPERATION

9.1.4 SUPPLY FAULTS

Supply faults will be indicated if the mains supply voltage drops too low or there are a problem with the battery backup.
If a battery fault is indicated, check that the battery fuse is intact.
Old batteries with a high impedance will generate a battery fault and will require replacing.
For mains faults, check that the mains wiring is secure and any mains fuse fitted is intact.

9.1.5 SYSTEM FAULT (SYS FLT)

A system fault is an abnormal microprocessor running condition due to various unexpected phenomena.

This will result in the panel attempting to correct itself. Should this fault occur, the System Fault LED, General Fault LED, General Fault relay and fault internal buzzer will be constantly active until the control panel is reset. This should cause the system fault condition to clear. If not, consult your supplier.

9.1.6 COMMON FAULT (FAULT)

This is a general indicator which lights whenever a fault is present. It doesn't refer to a specific fault.

9.2 ZONE FAULTS

This means that one of the devices in that zone has stopped communicating with the panel, or has detected an internal fault and is reporting this to the panel. Check that the device has not been removed, and that the device is communicating with the panel (check the detector in the device status menu- see next section)

9.2.1 ZONE CONTENTS FAULT FINDING

If the Zone contents are different to what was expected, then the probable causes are:-

1. Two or more devices may have the same address setting. This is referred to as a double address fault. If this occurs all devices with the same address will answer at the same time. The panel will not be able to understand the answer it receives. NOTE: If a panel detects a double address, it will light the LEDs of the devices with the problem. (NOTE: only detectors will light their LED. Sounders & interface modules will not be indicated).

2. There may be some reversed connections to devices (they are polarity sensitive). The Fyreye detectors should be connected Zone + to L2, Zone – to L1IN. Other devices will have their polarity marked by their connections.

If the panel reports any double addresses present, investigate these first as they are the easiest to find. The panel will turn on the LED of any incorrectly addressed detector. (See 19.6 DOUBLE ADDRESS)

If there are still less devices than expected, check the missing addresses for correct wiring polarity. If in doubt, contact your supplier.

If the wiring polarity is correct, check that there is no cable break on the loop. (If there is a break, the panel will report the break after 60 seconds or so, and the break can be verified my measuring one side of the loop with a DVM. The loop will be on for aprox 20 sec, and then will power just one side for 5 sec, then power both for 20 sec, then power just the other side for 5 seconds. (So the voltage should be monitored for aprox 50 sec for a full cycle to confirm a cable break)

Some devices take a few seconds to power up, so may show as missing during the repeated Power Down / Power Up cycle that occurs during a line break.

9.3 DEVICE FAULTS

9.3.1 DOUBLE ADDRESS

This indicates that a double address has been detected. This usually happens during initial setup, where 2 detectors are given the same address, or if a head is replaced during maintenance and its address has been wrongly set. In the second scenario, the panel will report 2 fault addresses, one will be the double address, and the other will be a missing device. As a further aid to finding the fault, the panel will light the LEDs of any detectors with a double address (Sounders & I/O units will not be indicated as they have no panel controlled LED to light up)

1. Make a list of the double addresses reported (there may be more than one).
2. Go to view device screen in Configuration menu 1. Scroll through the devices, and make a list of any that are missing (Note: the panel skips over empty addresses when scrolling)
3. Go to the location of the missing device, and check if it has its LED on (Detector), or check the dip switch setting.
4. If this does not cure all double addresses, go to the known location, and temporarily remove the device. The panel will now report the type of device that was also configured to this address from the view device screen. This will help narrow down the search for the device. (eg if extra device is call point, check the address settings of all the call points)

9.3.2 MISSING DEVICE

This means that the panel can not see the reported detector. This could be caused by the detector being removed, or by a device that has malfunctioned and is no longer responding

10 SPECIFICATIONS

10.1 ENCLOSURE SPECIFICATIONS

DESCRIPTION	VALUE
ENCLOSURE SIZE	364 x 302 x 90 mm
TOP CABLE ENTRIES	15 x 19mm DIA ENTRIES

10.2 ELECTRICAL SPECIFICATIONS

ELECTRICAL DESCRIPTION	VALUE
MAINS VOLTAGE	230V AC +10% /- 15% @ 50/60 Hz
BATTERY VOLTAGE	24V DC (2 X 12V SLA BATTERY)
SYSTEM VOLTAGE	29V DC NOMINAL (19 – 30 V)
CHARGER SIZE	300mA
ZONE VOLTAGE	28V DC NOMINAL (+9V data) (19.5 – 29.5V DC)
TOTAL ZONE RATING	500mA Max (in Radial or loop mode)
SOUNDER ALARM OUTPUTS	LOOP POWERED SOUNDERS 2 x Conventional sounder circuits 28V nominal,150mA (20-30V DC)
AUXILIARY FAULT OUTPUT	1 x FAULT RELAY SELV@1A (NORM. ENERG)
AUXILIARY VENT/ALARM OUTPUT	1 x FIRE RELAY SELV@1A
MAXIMUM NUMBER OF ZONES	8 ZONES
MAXIMUM ZONE CAPACITY	15 DEVICES PER ZONE
MAX NUMBER OF DETECTION CIRCUITS	Radial mode – 8 Radial Circuits
	Loop mode – 1 loop Circuit
MAXIMUM LOOP SOUNDER QUANTITY	64 SOUNDERS
AUX POWER OUTPUT	28V Nominal (20 – 30V DC)
AUX POWER RATING	100mA
CHARGER VOLTAGE	27.6V @ 22-24°C (NO BATTERY CONNECTED)
BATTERY DEEP DISCHARGE PROTECTION	Batteries less than 21V DC
TOTAL PSU OUTPUT	2.5 Amp

10.3 MAXIMUM LOOP CABLE LENGTHS

Maximum Loop Current (in Alarm)	500 mA	400 mA	300 mA	200 mA
1mm CSA cable	500 m	625 m	830 m	1250 m
1.5mm CSA cable	750 m	930 m	1250 m	1870 m
2.5mm CSA cable	1000 m	1250 m	1660 m	2500 m