5 OPTIONAL FAILSAFE

Each equipment control may be fitted with a failsafe option.

SIGMA PC

Installation Manual USB Versions

Issue 3

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Clean Mode

If clean mode is required **option 10** should be selected by pressing the clock button on the keypad and CLEAN is displayed followed by REM No. Enter the number of the equipment control being configured. Press *enter* and the display reads SAVING while storing data in memory. The clean option is cancelled by re-programming option 5 (over-run time).

WARNING!. If the over-run time is altered and clean mode is still required then option 10 must be re-programmed or the clean function will be deleted.

Finalising Set-up Procedures

When all the required options have been programmed press reset [R] and the console runs through the initial check routine interrogating each remote in turn. On completion of the check routine the display reads READY. The Sigma PC system is now complete.

If an equipment control has not been installed correctly the display reads ERROR. If this occurs press reset [R] and the display shows the number of the malfunctioning equipment control/ Pressing reset [R] again will return the display to READY and the system may be used (with the exception of the faulty unit which must be corrected first.

4 ANCILLARY FUNCTIONS

4.1 Smart Card

Each console is fitted with a smart card reader as standard. The smart card provides a simple back-up medium for all programmed data held in memory. After the Sigma PC has been programmed as required insert the master smart card provided into the reader (on the right hand side of the console) chip side down. Press the hidden reset key (or switch off and then switch on again) and after the initial start up the console display reads VAL CARD followed by 1 - RD 2 - W. Press numeric key 2 and all programmed data will be stored on the smart card. In the event of data corruption, or if a new console is installed, the system may be restored quickly by inserting the master card, pressing the hidden reset key and when the display shows 1 - RD 2 - W pressing numeric key 1 to read the data held on the smart card into memory.

In addition the smart card function enables third party software providers to offer many innovative solutions using smart cards, such as loyalty schemes and pre-payment offers.

4.2 Computer Interface

The Sigma system may be controlled directly from a PC loaded with appropriate third party software. The nine way “D” connector on the rear of the console is linked to the computer serial port with a nine way serial mouse extension lead, and computer mode initiated directly from the third party software. When linked to the computer the console display reads COMPUTER and manual operation is disabled.

3.4 Set-up Procedures

On successful completion of the address configuration the equipment control units should be individually programmed to suit the installation. Enter the options menu by entering 63410 on the console keypad and the display reads OPTION. The display will show SAVING while storing data in memory and then revert to OPTION for the next instruction.

Start mode and Pre-time

If the appliance should only start when the remote display *start* button is pressed then **option 2** should be selected by pressing 2 on the keypad. The display shows STRT2. Enter the number of the equipment control being programmed (eg 1) and press enter. The display will show SAVING while storing data in memory.

If a pre-time or immediate start is required **option 1** should be selected by pressing 1 on the keypad. The display will read STRT1. Enter the number of the equipment control being programmed (eg 1) and press enter. The display will show SAVING while storing data in memory. **Option 4** selects a valid pre-time to be used with option 1. A choice of minutes or seconds is available. To access pre-time option press 4 on the keypad and PRETIME is displayed followed by REM No. Enter the number of the equipment control being programmed and press enter - the display reads MINS 1. Press numeric key 1 to programme in minutes and the display reads ENT MINS followed by TIME *or* press numeric key 2 to programme in seconds. (when the display reads ENT SECS followed by TIME). Enter the pre-time required and press the *enter* key. The display will show SAVING while storing data in memory. **NOTE** For an immediate start option 4 should be programmed with zero time.

Over-run and Lockout Times

To programme an over-run time on the secondary output **option 5** needs to be selected. Press numeric key 5 and FAN TIME is displayed followed by REM No. Enter the number of the equipment control being configured. Press *enter* and the display reads TIME. Enter the over-run time required and press *enter*. The display will show SAVING while storing data in memory. **NOTE**. If over-run time is set to zero then the secondary output is disabled.

To programme a lockout time **option 6** needs to be selected. Press numeric key 6 and LOCK TIM is displayed followed by REM No. Enter the number of the equipment control being configured. Press *enter* and the display reads TIME. Enter the lockout time required plus one and press *enter*. (Eg for a maximum time per session of ten minutes set TIME to be 11).The display will show SAVING while storing data in memory.

Installation Manual

CONTENTS

1 INTRODUCTION

1.1 Introduction

This installation manual gives all the information necessary to install the system. It includes all the set-up information to configure the Sigma PC. Operating instructions are given in the Operators Manual supplied separately. For any queries please go to the support section ofour web site (www.lci.gb.com). If you cannot find the answer then contact our support desk.

The Sigma PC consists of three units

i) The central console
ii) The Equipment Controller
iii) The remote Display

1.2 Communication Protocol

The Sigma PC communicates over a controlled area network (CAN). Each equipment controller and the central console are linked together using standard UTP Cat5E cable and RJ45 connectors either in a daisy chain configuration or, using the optional junction box, a star configuration. Each equipment controller is linked to its own remote display with RJ12 connectors and six core cable. Equipment controllers may be connected directly into the gear tray of the equipment being controlled, but in cases of severe electrical noise use a separate supply or filter the mains output from the gear tray. In manual mode the Sigma PC console is connected to the mains supply via the USB adaptor supplied but if used with third party software connect the USB lead directly into a suitable USB port on the computer.

2 ELECTRICAL CONNECTIONS

2.1 Wiring Details

Each piece of equipment being controlled requires an equipment control unit and a remote display. The equipment control, which can be discretely mounted out of immediate sight, should be easily accessible if the failsafe option is included. The remote display should be placed so that the customer can easily reach the *start* and *stop* buttons. Figure 1 shows a typical installation for a tanning salon but the same principles apply for all other installaions. Category 5E cable is used to make the network connections and should be concealed behind partitions or placed in suitable trunking. The remote display is linked to its equipment controller using RJ12 connectors and six core cable. Suitable cables may be purhased from Leisure Controls International Ltd or made to size by a competent technician or electrician.

3.2 System Options

In addition to the three address configuration options there are a further six options available to obtain maximum flexibility for the installation. Each equipment control may be individually programmed from the console.

Option 1
Use option 1 if the remote display *start* button is to over-ride pre-time (i.e. If the start button is pressed during pre-time the appliance turns on and all remaining pre-time is cancelled). For an immediate start pre-time is set to zero.

Option 2
Use option 2 so that the appliance only switches on when the remote display *start* button is pressed (i.e. Any pre-time programmed is ignored).

Option 3
Option 3 puts the system into group use if more than sixteen appliances are to be controlled manually. Note group control is not necessary in computer mode.

Option 4
Option 4 is used, in conjunction with option 1, to select the pre-time required *before* the appliance is activated.

Option 5
Option 5 is used to select the over-run time for the secondary output after the appliance has switched off. Typically used for fan run on control in tanning units or a security light in squash courts.

Option 6
Option 6 is used to select the lockout time - the maximum time allowable per session. If a session time greater than this maximum is entered the console display reads LOCK ERR.

Option 10
Option 10 provides a clean facility. When the clean option is turned on the remote display shows CLN when zero time is reached and remains until the remote display *start* button is pressed. This is a reminder to staff to clean the appliance, such as a tanning bed, before the next customer is allowed to use. If the console attempts to send time to an equipment control still in clean mode the console displays CLEAN and the transmission is aborted.

Option 7
Option 7 is not an option in the true sense but is used to obtain total hours of use for the equipment control and is fully described in the operators manual.

3.3 Hardware Options

In addition to the programmable options there is provision for two hardware options set by switch LKSW3. These options provide for a pulse output to start the appliance and for The over-run to be active during pre-time also.

Option 0 is used to set the unique ID for each equipment controller
Option 8 is used to set the number of equipment controllers being installed
Option 9 is used to set the unique for each installation

WARNING.!
To prevent accidental change to the address, option 9 is password protected with a code of 98981. **Note** this password may be changed in computer mode using appropriate third party software. The address is factory set to be the serial number of the console and should only be changed for security reasons.

Initially each equipment controller must be given its own unique ID and this is achieved by the use of options 8 and 0.
1. Switch on the console and at least one equipment control and when the console display reads WYVERN press and hold down any key (except *enter*) until the display reads READY.
2. Select the options menu by entering 63410 on the console keyboard and the display reads OPTION.
3. Select **option 8** by pressing 8. The display reads No REMS followed by a blank display. Enter the number of equipment controls being installed and press enter. Put the Equipment Control ID setup switch (LKSW4 - figure 2) into the OFF position with the unit switched off. Re-apply power and the remote display connected to the equipment control will then display ID00.
4. Select **option 0** on the console by pressing 0, the display will show ADR. Enter unit number being configured (eg 1 for first remote) and press enter and the display indicates which start option has been selected - start option 1 is the factory default. Return to the remote unit and the display should show IDXX where XX is the unit ID being transmitted. To accept this ID press the START button on the remote display and return the setup switch to ON. At this point the remote display shows the ID number for a short period, the console stops transmitting and the console display returns to OPTION.
5. Repeat for each equipment control in turn. On completion of address configuration press the reset key [R] on the console to initiate a check routine. The console interrogates each equipment control in turn and as each remote responds the appropriate cubicle indicator will illuminate. On completion of the check the console display should indicate READY.
6. If ERROR is displayed press the reset key [R] and the display shows the number of the malfunctioning equipment control. Pressing reset [R] again returns the console to the READY mode. If ERROR does occur check for loose electrical connections , that the setup switch has been returned to normal (on position), and that all network connections are correct with no crossed wires .
7. If the console displays CANERR there is either a catastrophic failure of the network or the console has become disconnected . Check console connections and if still an error check all network cable cabling. The console can only be reset by pressing the hidden reset button or removing and re-connecting the mains supply.

When the Sigma PC is correctly installed the system needs to be programmed for the correct operating parameters - see section 3.2

Figure 1 Typical Network Installation

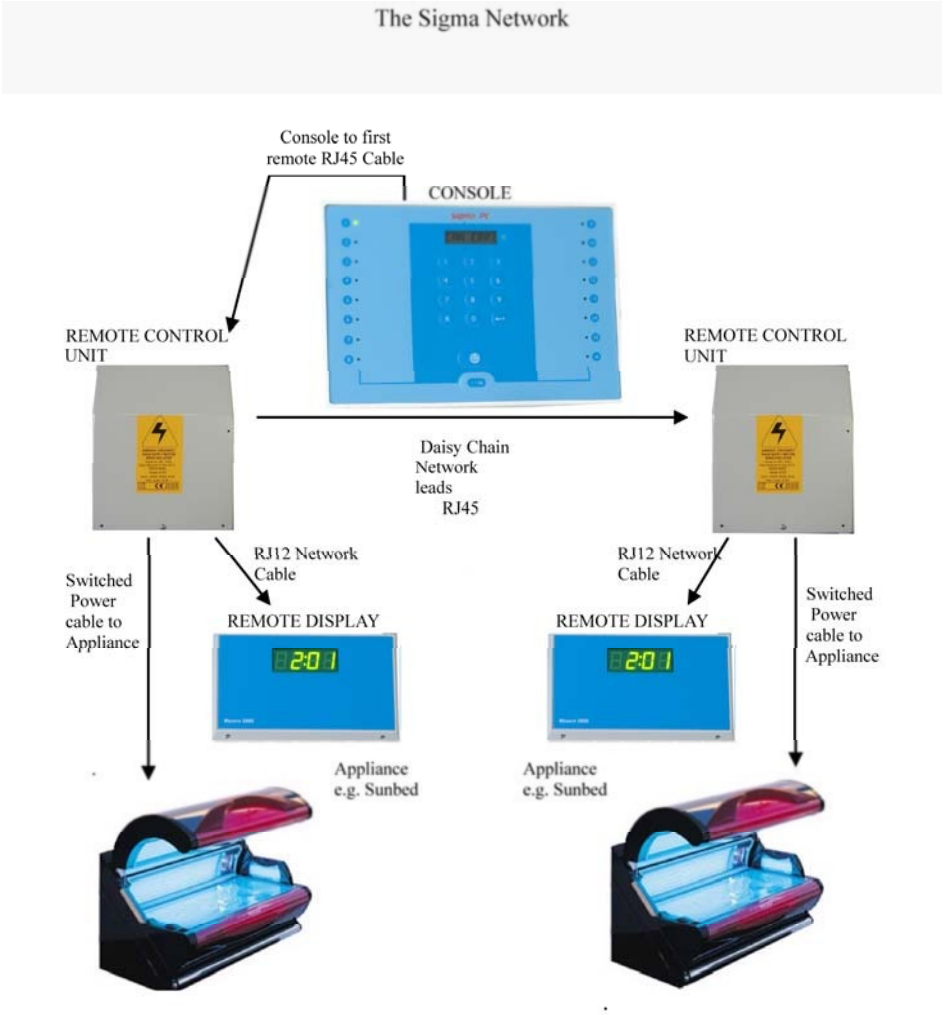
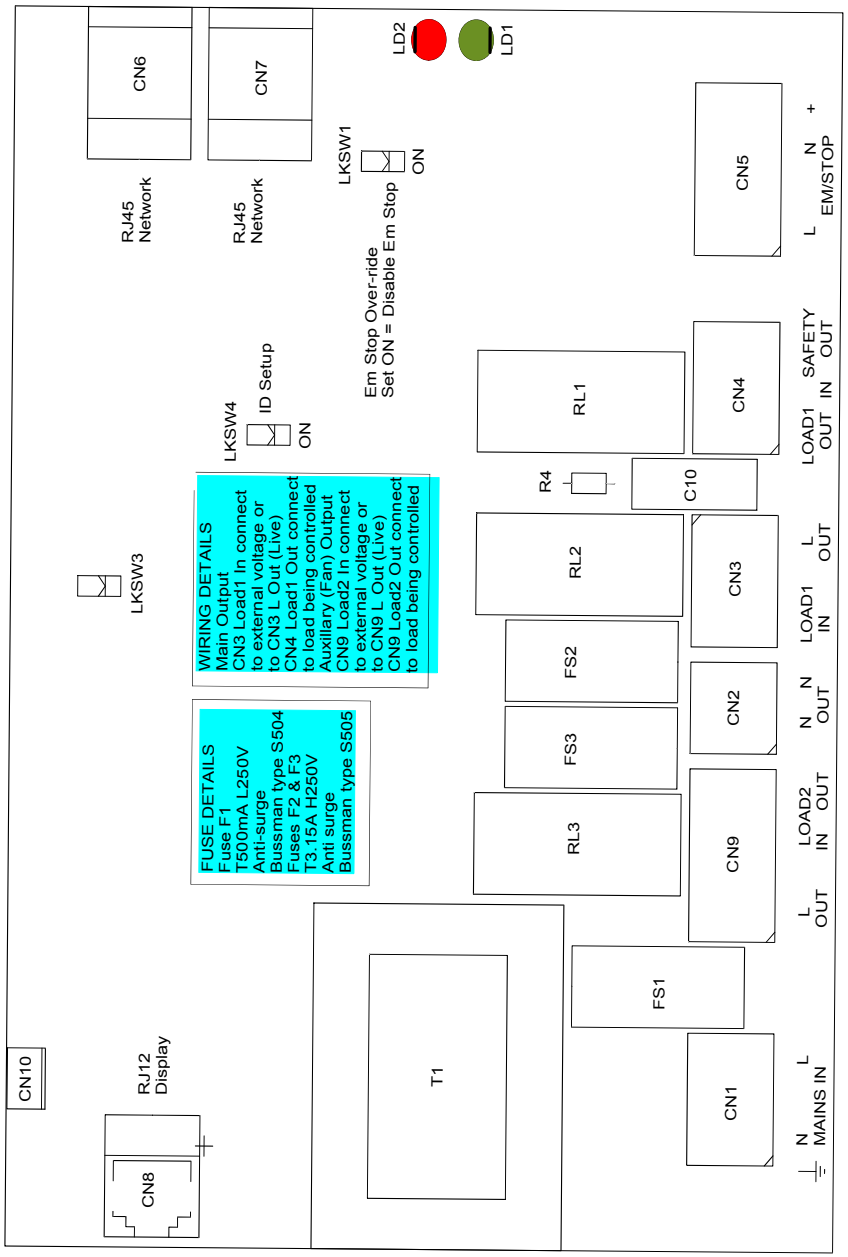


Figure 2 Wiring Details for Sigma Equipment Control



2.2 Electrical Connections

The console is supplied with a moulded plug and should be connected to the nearest accessible switched socket at the reception area. Each appliance to be controlled requires its own equipment controller which must be mounted near the relevant appliance. The equipment controller can be discretely hidden but should be accessible, especially if the failsafe option is included. Remove the most convenient cable knockouts for the installation and fit the equipment controller to the wall or ceiling and wire the unit as shown in figure 2. The use of 20mm conduit is recommended, alternatively fit 20mm nylon compression glands to provide strain relief. The mains supply is connected to CN1 and the earth stud as shown in figure 2. WARNING! The earth terminal MUST be correctly connected to a known earth and the cable securely anchored using the cable clamp bar provided (see figure 2). The appliance is connected to connectors CN3 (main) and CN9 (secondary). The output is voltage free to enable easy connection to appliances operating from three-phase supply or other voltages (eg 24V as found in some tanning units). Connector CN2 is internally connected to the neutral of the mains input and by linking CN2 to pin 1 of connector CN3 and pin 3 of CN9 a switched 230V output may be obtained. Alternatively connect pin 1 of connectors CN3 to any convenient output voltage from the appliance (eg 24V feed from tanning unit). Pin 1 of CN4 is taken to the main contactor of the appliance and pin 4 of CN9 to the secondary input of the appliance (eg fan input in a tanning unit or security light in a squash court). Both outputs are rated at 3.15Amp maximum. If CN2 is linked to CN3 and CN9 then the maximum current for both outputs is restricted to 3.15Amp. The equipment controller may be connected to an external emergency stop button if required. The stop button must be normally closed with a push to break action. Disconnect the wire link from CN5 in the equipment controller and connect the emergency stop switch to CN5.

WARNING.!
The Equipment Control is provided with a snubber circuit on the main output. With appliances with sensitive inputs the leakage current can cause incorrect operation. If the appliance can be switched on with a current less than ???mA then it is ESSENTIAL that either R4 be cut out (see Figure 2) from the Equipment Control or an intermediate control relay be fitted.

3 SETUP PROCEDURES

3.1 Address Configuration

When connected for the first time the equipment controller(s) and the console need to be configured for the installation. The equipment controllers are programmed from the console by entering the *options* menu using the special code number 63410. Note this password may be changed in computer mode using the appropriate third party software.

There are eleven choices in the options menu of which three are used for address configuration as follows.