CLIPSAL®

LIVING ELECTRICAL
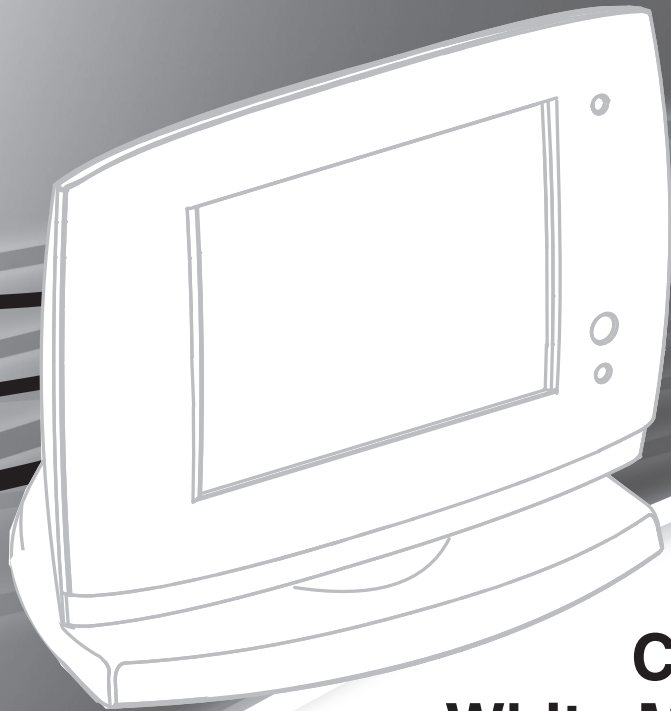
C-Bus®

C-Bus Black & White MK II Desktop Touchscreen

5000CTD2
Series

TWO YEAR WARRANTY 2

FC ✔ CE

Installation Instructions

REGISTERED DESIGN • REGISTERED PATENT

CONTENTS

1.0   Product Range

Product	Fascia Color	Logic Engine	Catalogue Number
C-Bus Black & White MK II Desktop Touchscreen	white	no	5000CTD2
		yes	5000CTDL2
	black	no	5000CTD2
		yes	5000CTDL2
	grey	no	5000CTD2
		yes	5000CTDL2
Infrared Remote Control	—	—	5035TX2
RS232 Cable	—	—	5000CT2RS232

Table 1. Product range description

Refer to Electrical Specifications and Mechanical Specifications at the back of this document for more details.

2.0   Requirements

- The touchscreen is for indoor use only. Do not install it where there is moisture or direct sunlight or a direct source of heat.
- Using any non-C-Bus software with C-Bus hardware without the written consent of Clipsal may void any hardware warranties.
- Changes or modifications not expressly approved by Clipsal could void the user's authority to operate the equipment (under FCC rules).
- To comply with EMC regulations the included ferrite filter must be fitted to the C-Bus cable connected to the touchscreen.

3.0   General Description

The C-Bus Black & White MK II Desktop Touchscreen displays pages of graphical information to control an entire C-Bus system from one location. Using appropriate software, the unit can be configured to look and operate in a manner convenient to the user. Refer to Programming Requirements for further details.

3.1   Packing List

The touchscreen product includes:

- desktop unit, consisting of touchscreen, base, pedestal and silver coloured accent strip
- 5 metre extendable C-Bus cable with RJ45 connectors
- USB type B cable, for programming
- stylus
- 1 ferrite filter
- *C-Bus Black & White MK II Desktop Touchscreen Installation Instructions,* 1038828 (this booklet)
- *C-Bus Black & White MK II Desktop Touchscreen User's Guide,* 1038827

The items shipped are subject to change without notice.

3.2   Features

The touchscreen's features include:

- a touch-sensitive 4.7 inch active black & white LCD screen
- C-Bus network port, using an RJ45 connector
- inbuilt infrared (IR) receiver
- inbuilt light level sensor
- real time clock for automatic scheduling of events
- logic engine (specified models only), providing the ability to perform control functions based on programmed algorithms
- 1 USB programming port

- 1 RS232 serial port (logic engine models only) The serial port is used to interface to third party products using the logic engine. It is not used for programming the unit.

4.0   Installation Procedure

4.1   Location

It is important to select the right position for the touchscreen.

- The unit has a typical viewing angle of 45° to the left and right. The screen tilts from10° to 45° (illustrated in Figure). Take this into account when choosing the mounting height.

- Provide easy access to the unit for switching lights and selecting scenes.

- The touchscreen is designed for indoor use only. Keep the touchscreen clear of places subject to water, humidity, direct sunlight and heavy dust.

- Avoid obstruction to the reception of infrared signals from a remote control.

- Do not mount opposite windows or other sources of bright light, as the reflections make viewing difficult.
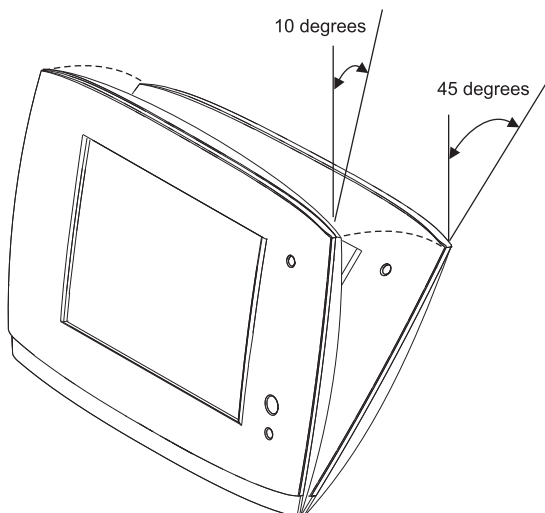
Figure 1. Consider viewing angles when mounting the unit

4.2   Multiple Units

Multiple touchscreens can be installed on a C-Bus network. These units may be programmed to operate cooperatively or independently of each other. Take care not to mount units where a single IR remote control transmission can be received by multiple units (illustrated in Figure 2). Otherwise, multiple units may trigger a scene, with unpredictable results.

Figure 2 . Take care not to overlap IR transmission/reception zones

4.3   Permanent Mounting Option

As an option, the touchscreen can be permanently mounted on a tabletop, desk or shelf using the two mounting holes provided in the baseplate. You do not need to disassemble the touchscreen to mount the unit permanently.

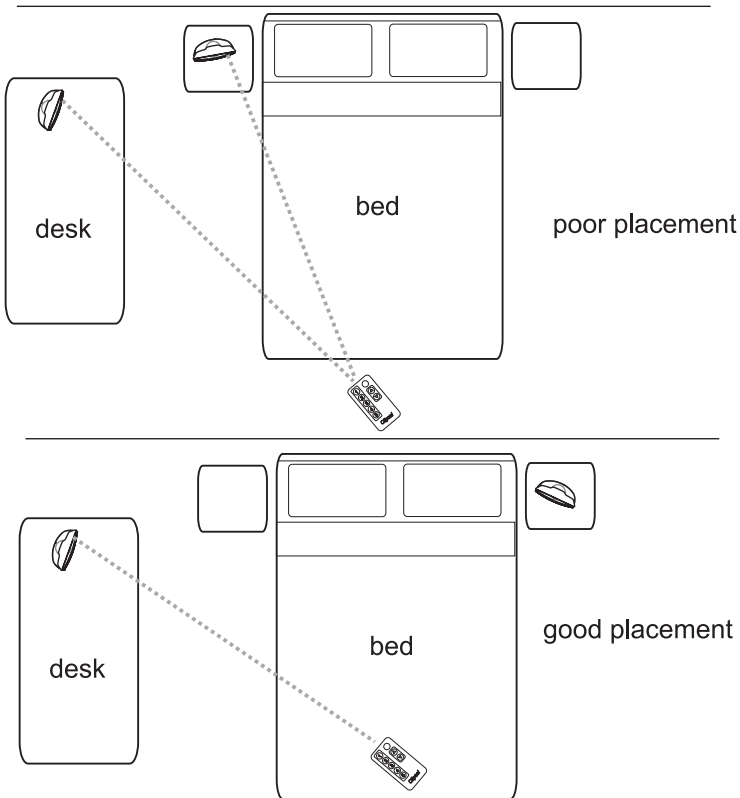*Note:* Connect the logic wiring before permanently attaching the touchscreen to any solid surface. After mounting the unit, you will have difficulty changing the wiring connections at the bottom of the baseplate.

To attach the baseplate to a solid surface, follow these steps:

1. Using a small flat-blade screwdriver, pry the cover from the baseplate at the two slots at the back of the base. See Figure 3.
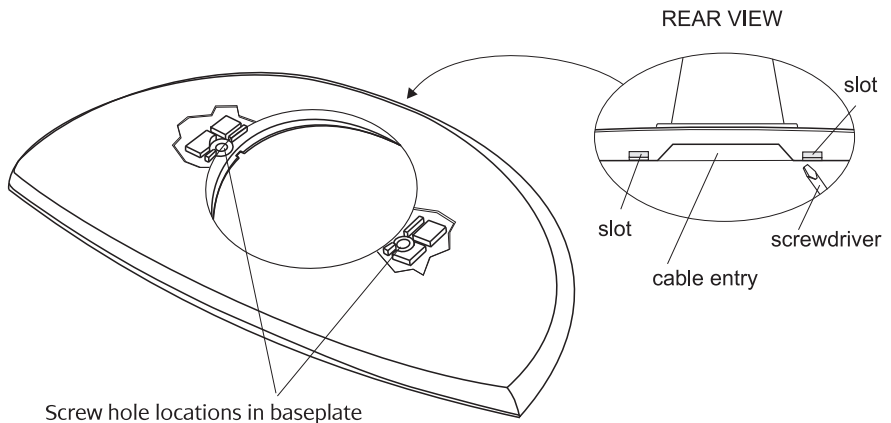
Figure 3. Mounting screw hole locations

2. Separate the base cover from the baseplate and rotate the cover to reveal the mounting screw holes.

3. You should use mounting hardware appropriate for the surface where the unit is attached.

5.0   Wiring Connections

5.1   Logic Connections

The C-Bus and RS232 logic connectors are located on the bottom of the touchscreen base (Figure 4). The USB programming connector is located on the right side of the touchscreen.

Purpose	Type	Location
C-Bus	RJ45	base bottom
RS232 Logic	3.5 mm	base bottom
USB	USB type B	right side of touchscreen

Figure 4. Base bottom connectors

Note: The RS232 connector is present on all units. It does not have any effect on touchscreens without the logic engine feature.

5.2   C-Bus Network Connection

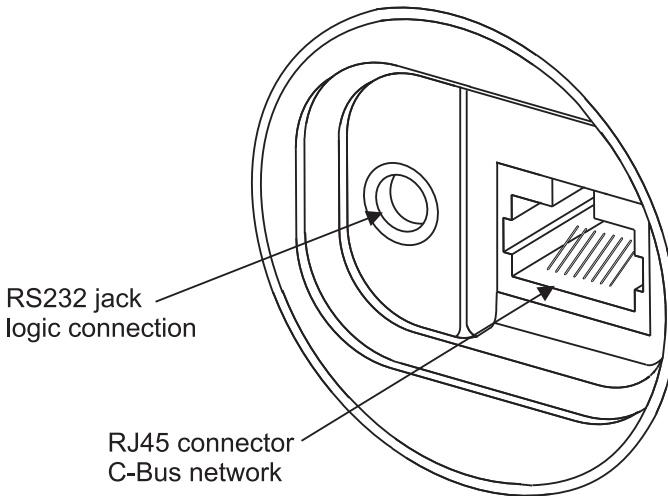An expandable network cable with RJ45 connectors is supplied with the touchscreen. Connect one end of the C-Bus network cable to the base of the unit. Connect the other end of the cable to the network.

If the installation requires a longer cable, use Cat-5 unshielded twisted pair (UTP) C-Bus cable, and an appropriately wired 8-pin RJ45 plug. Refer to Figure 5 for wiring details. The Clipsal catalogue number for the C-Bus Cat-5 UTP cable is 5005C305B.
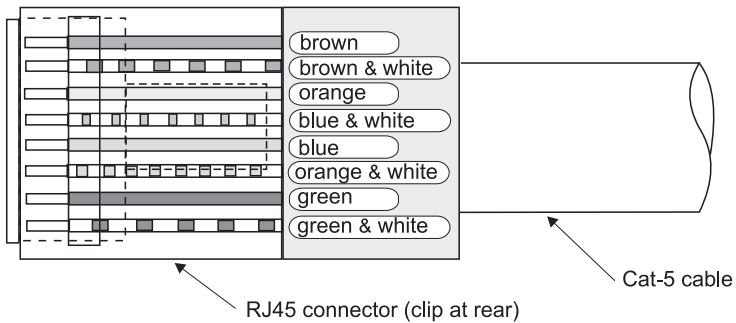

Figure 5.   C-Bus cable conductor assignments

The Remote On/Remote override functions are optional. However, if more than one C-Bus cable is connected to the unit, the Remote Override connections should be maintained across the cables to ensure correct operation of these services as shown in Figure 6.
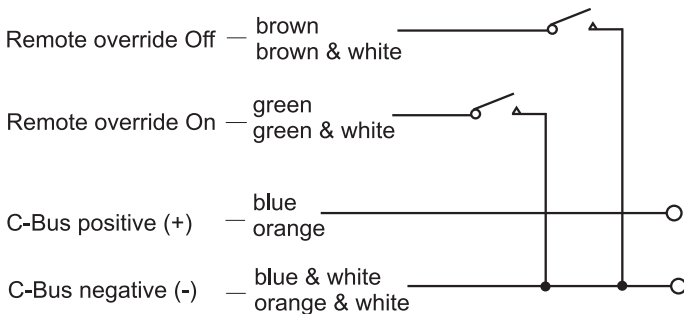

Figure 6. Remote On/Remote Off wiring diagram

5.3   RS232 Connection (logic engine models only)

The RS232 port allows you to connect external devices to the touchscreen. The RS232 serial port connection consists of a 3.5 mm stereo socket with pinouts for RxD, TxD and GND. Pinouts are provided in the following table.

	Pin	**Name**	**Description**
	tip	TxD	Transmit Data
	ring	RxD	Receive Data
	sleeve	GND	Ground

Table 2. RS232 connector jack pinouts

Note: If using the RS232 port,cable length should be limited to 15 metres for communication at up to 19,200 bps, or 7.5 metres at 38,400 bps. An RS232 cable is available (Clipsal cat. number 5000CT2RS232).

5.4   Installing the Ferrite Filter

The ferrite filter clamps around the C-Bus network cable. The filter reduces electrical interference for compliance with EMC regulations. Install the filter after installing the C-Bus cable connections.
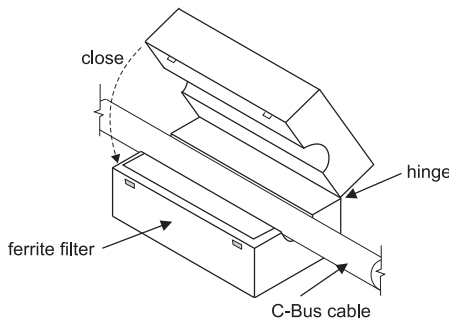
Figure 7. Close the ferrite filter around the C-Bus cable

6.0   Removing the Fascia

The following steps are illustrated in Figure 8. To remove the fascia:

   1) Pull the accent strip from the lower part of the fascia using your fingers only. No tools are needed.

Figure 8. Removing the fascia

   2) Remove the three machine screws from the bottom front of the fascia with a #2 cross-tip screwdriver.

   3) Release the fascia tabs from the touchscreen by carefully pulling the fascia away from the touchscreen body.

7.0   C-Bus Power Requirements

The touchscreen draws 65mA from the C-Bus network. The unit does not supply power to the C-Bus network.

Adequate C-Bus Power Supply Units must be installed to support connected devices. The Network window of a C-Bus Toolkit project provides a summary of a C-Bus network accord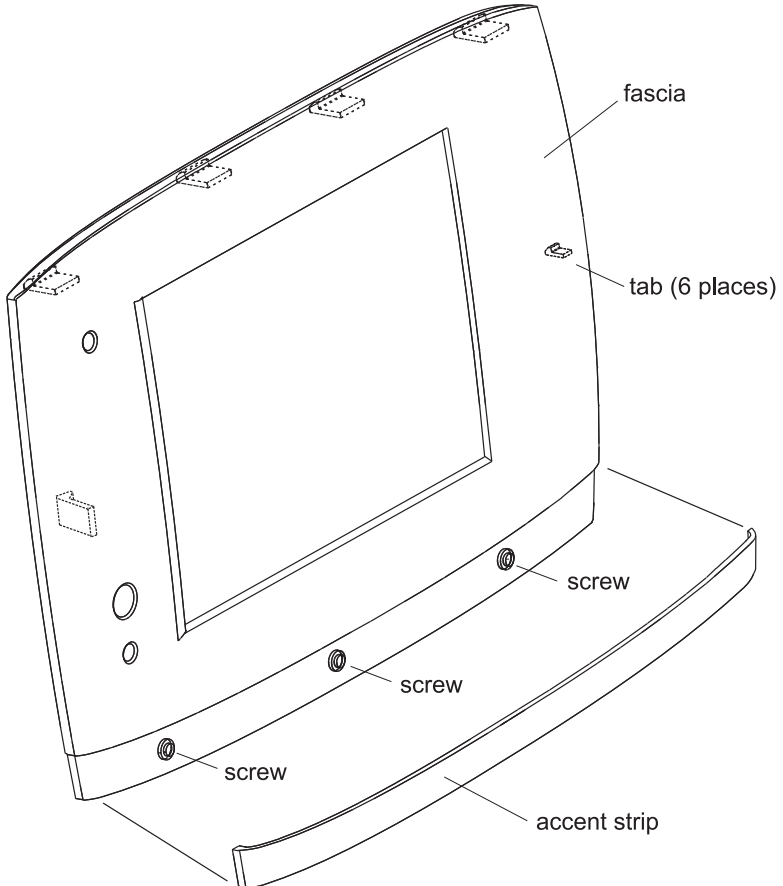ing to the units added to the Database. This can be helpful in determining the power supply requirements of a particular network.

8.0   Power Surges

Each unit incorporates transient protection circuitry. Additional external power surge protection devices should be used to enhance system immunity to power surges. It is strongly recommended that overvoltage equipment such as the Clipsal 970 be installed at the switchboard.

9.0   Megger Test Note

Do not megger test the C-Bus network cable.

10.0 C-Bus Programming Requirements

C-Touch Project

The touchscreen must be configured using a software project that has been customised for a particular C-Bus installation. A project is produced using the Programming Interface for C-Bus Embedded Devices (PICED) software. The PICED software is available from the Downloads section of the CIS web site (http://www.clipsal.com/cis). Documentation and help files are included with the software.

Once you have produced a project using the PICED software, connect the USB programming cable from the touch screen to your PC. Use the 'Transfer Project to unit' option to upload the project to the touch screen. This option is located in the PICED software Transfer menu.

Unit Address

The C-Bus Black & White Desktop Touchscreen must be pro-grammed with a unique unit address on the C-Bus network. C-Bus Toolkit is also used to change the state of the C-Bus system clock and burden, if required.

C-Bus System Clock

The C-Bus Black & White MK II Desktop Touchscreen incorporates a software selectable C-Bus system clock. The system clock is used to synchronise data communication over a C-Bus network. At least one active C-Bus system clock is required on each C-Bus network for successful communication. It is recommended that three units on a particular C-Bus network have clock circuitry enabled, to provide redundancy.

The touchscreen's C-Bus system clock is enabled as default. Its state can be changed from the unit's 'Global' tab in the C-Bus Toolkit software.

Obtaining C-Bus Toolkit Software

Use the C-Bus Toolkit software, available from the downloads section of the Clipsal Integrated Systems (CIS) web site (http://www.clipsal.com.cis).

Both the touchscreen and C-Bus Toolkit project files should be backed up and kept in an archive at your premises. It is also recommended to give a copy to the customer.

11.0 Unit Reset

⚠️ **CAUTION**
The reset button erases **all** firmware and project data in the touchscreen. The unit will cease to operate until firmware and project data are reloaded.

The touchscreen has a button that can be used to recover the unit if the firmware becomes corrupt. The Unit Reset button is located behind the fascia, immediately above the USB connector. The button is pressed when the unit is powered, using a pin or paper clip to break the sticker through the white dot.

Figure 9. Unit reset button

Do not use the reset button if the unit is operating normally. Contact Tech Support before pressing the Unit Reset button.

Pressing this button erases ALL firmware and project data in the unit and reset it. Once pressed, the unit ceases operation and displays a blank (black) screen. The blue power LED remains on. Firmware can be reloaded using the 'Recover C-Touch 2' option from the Transfer menu in PICED.

12.0 Electrical Specifications

Parameter	Description
C-Bus supply voltage	15 to 36 V DC @ 65 mA required for normal operation. Does not provide current to the C-Bus network.
AC input impedance	13 kΩ @1 kHz
Warm up time	< 10 seconds
C-Bus connection type	RJ45
Programming port	USB type B
Third party interface	RS232 port (logic engine models only)
Processor	ARM7TDMI, 40 MHz
Display type	4.7 inch (119 mm) active black & white LCD
Display resolution	320 × 240 pixels
Display luminance	120 cd/m^2
Backlight type	white LED
Maximum number of controlled loads	255 group addresses on each of 10 applications
Network clock	software selectable
Network burden	software selectable

13.0 Mechanical and Environmental Specifications

Parameter	Description
Dimensions (W × H × D)	194 mm x 160 mm x 94 mm
Weight	860 g
Viewing Angle	left, right: 45 degrees from vertical: 10 degrees to 45 degrees
Operating temperature	0 to 45 °C (32 to 113 °F)
Operating humidity	10 to 90% RH, non condensing
Touch surface durability	1 million presses (typical)
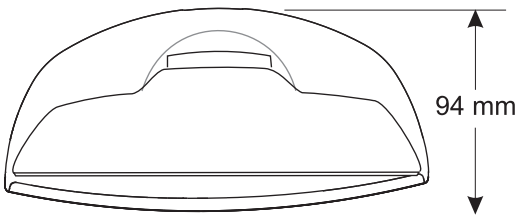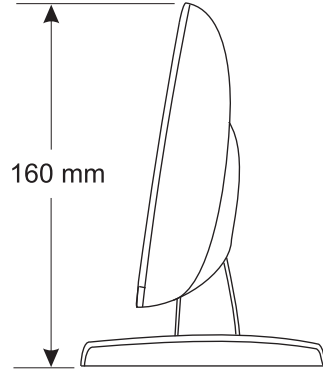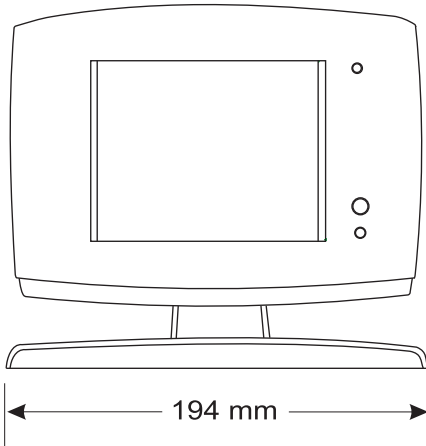
14.0 Definitions

Term	Definition
load	An electrical device (such as a light) connected to a C-Bus output unit (such as a dimmer).
scene	A series of actions across multiple outputs, triggered by a single button. For example, on arrival home you could use a scene to switch on lights in the hallway, kitchen and lounge, and switch on a heater.
schedule	A sequence of events to occur at particular instances in the future.
backlight	The light behind the LCD screen providing visibility in varying lighting conditions.

15.0 Standards Complied

DECLARATIONS OF CONFORMITY

The 5000CTD2 Series C-Bus Black &White MK II Desktop Touchscreen complies with the following:

Australian/New Zealand EMC & Electrical Safety Frameworks and Standards

Standard	Title
AS/NZS CISPR22	Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement

European Standards

Standard	Title
EN 55022	Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement
EN 55024	Information technology equipment – Immunity characteristics – Limits and methods of measurement

USA Standards

Standard
FCC Part 15 Radio Frequency Devices, Subpart B for unintentional radiators.

Other International Standards

Standard	Title
CISPR 22	Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement
CISPR 24	Information technology equipment – Immunity characteristics – Limits and methods of measurement

16.0 Two-Year Warranty

The C-Bus Black & White MK II Desktop Touchscreen carries a two-year warranty against manufacturing defects.

Warranty Statement

1) The benefits conferred herein are in addition to, and in no way shall be deemed to derogate; either expressly or by implication, any or all other rights and remedies in respect to Clipsal Integrated Systems Product, which the consumer has under the Commonwealth Trade Practices Act or any other similar State or Territory Laws.

2) The warrantor is Clipsal Australia Pty Ltd. With registered offices in all Australian States.

3) This Clipsal Integrated Systems Product is guaranteed against faulty workmanship and materials for a period of two (2) years from the date of installation.

4) Clipsal Australia Pty Ltd reserves the right, at its discretion, to either repair free of parts and labour charges, replace or offer refund in respect to any article found to be faulty due to materials, parts or workmanship.

5) This warranty is expressly subject to the Clipsal Integrated Systems Product being installed, wired, tested, operated and used in accordance with the manufacturer's instructions.

6) All costs of a claim shall be met by Clipsal Australia Pty Ltd, however should the product that is the subject of the claim be found to be in good working order, all such costs shall be met by the claimant.

7) When making a claim, the consumer shall forward the Clipsal Integrated Systems Product to the nearest office of Clipsal Australia Pty Ltd with adequate particulars of the defect within 28 days of the fault occurring. The product should be returned securely packed, complete with details of the date and place of purchase, description of load, and circumstances of malfunction.

For all warranty enquiries, contact your local Clipsal sales representative.

Notes

This page is left blank for formatting purposes.

Technical Support and Troubleshooting

For further assistance in using this product, consult your nearest Clipsal Integrated Systems (CIS) Sales Representative or Technical Support Officer.

Technical Support Contact Numbers	
Australia	1300 722 247 (CIS Technical Support Hotline)
New Zealand	0800 888 219 (CIS Technical Support Hotline)
Northern Asia	+852 2484 4157 (Clipsal Hong Kong)
South Africa	011 314 5200 (C-Bus Technical Support)
Southern Asia	+603 7665 3555 Ext. 236 or 242 (CIS Malaysia)
United Kingdom	0870 608 8 608 (Schneider Electric Support)

Technical Support Email: techsupport.cis@clipsal.com.au

Sales Support Email: sales.cis@clipsal.com.au

clipsal.com

CLIPCOM 16574 June 2008, 1038828