CLIPSAL ®

INTEGRATED SYSTEMS

C-Bus USB PC Interface

Installation Instructions

5500PCU

TWO YEAR WARRANTY
2

FC ℅ ⊂ CE

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Contents

1.0　Description

The 5500PCU C-Bus USB PC Interface provides an isolated communication path between a C-Bus network and a PC. The unit is DIN rail mounted, measuring 4 modules wide (1 module = 17.5 mm).

The unit is fitted with a USB type B socket. A 1 metre Type A to Type B USB cable is provided, to connect the 5500PCU to a PC. C-Bus connection is achieved through the use of RJ45 connectors.

2.0　Important Notes

·　Use a USB cable with a maximum length of 5 metres to connect from the 5500PCU to a PC.
·　A software driver must be installed before you can communicate with the 5500PCU using C-Bus Toolkit, Schedule Plus or HomeGate. Refer to Section 12.1 (Page 10).
·　The use of any software not provided by Clipsal Integrated Systems (CIS) in conjunction with the installation of this product may void any warranty applicable to the hardware.

3.0　Capabilities

The 5500PCU provides a gateway between C-Bus and a PC. It enables a C-Bus network (or multi-network installation) to be:

- · programmed with the C-Bus Toolkit software
- · monitored and data logged using appropriate software
- · controlled by C-Bus automation software such as Schedule Plus or HomeGate.

The unit contains a C-Bus network burden, and is capable of generating a C-Bus system clock signal.

4.0   Wiring Instructions

The 5500PCU is powered by the C-Bus network and has no mains power connection. All connections are made via RJ45 and USB sockets. Refer to the connection diagram in Figure 1.
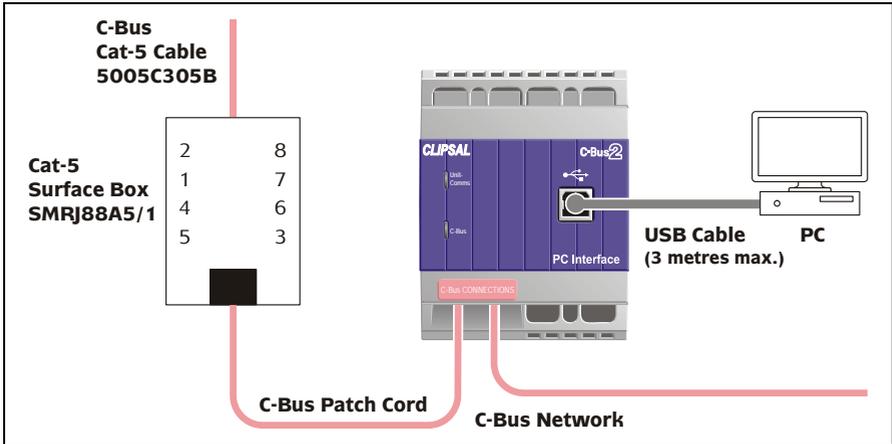
Figure 1 − 5500PCU onnections

5.0   C-Bus Network Connection

Connection to the C-Bus network is made via the RJ45 sockets. Use Cat-5 Unshielded Twisted Pair (UTP) C-Bus cable, and an appropriately wired RJ45 plug. Pinouts and cable conductor assignments are provided in Figure 2 and Table 1. The RJ45 sockets are internally connected. The Clipsal catalogue number for the C-Bus Cat-5 UTP cable is 5005C305B.

It is recommended that the Remote Override (On/Off) connections be maintained for correct operation of these services across the C-Bus network, even if they are not intended to be used.

A Clipsal RJ5CB300PL Cat-5 UTP patch cord is included with the unit for easy interconnection. Rubber bungs are supplied (×3) for unused RJ45 connectors, to stop foreign bodies from entering the unit. Always ensure these bungs are installed when the unit is mounted inside a mains rated enclosure.

C-Bus Positive: blue + orange

C-Bus Negative: blue & white + orange & white

Remote OFF: brown + brown & white

Remote ON: green + green & white
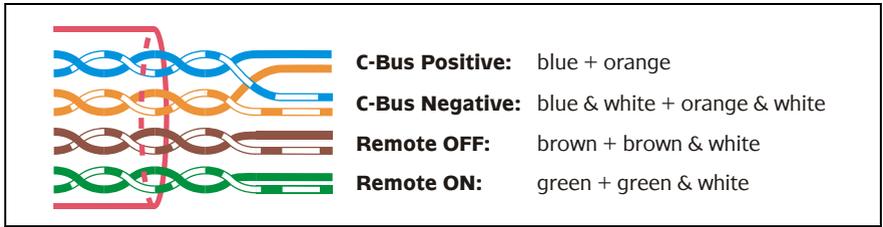
Figure 2 — C-Bus cable conductor assignments

Pin	C-Bus Connection	Colour
1	Remote ON	green & white
2	Remote ON	green
3	C-Bus Negative (-)	orange & white
4	C-Bus Positive (+)	blue
5	C-Bus Negative (-)	blue & white
6	C-Bus Positive (+)	orange
7	Remote OFF	brown & white
8	Remote OFF	brown
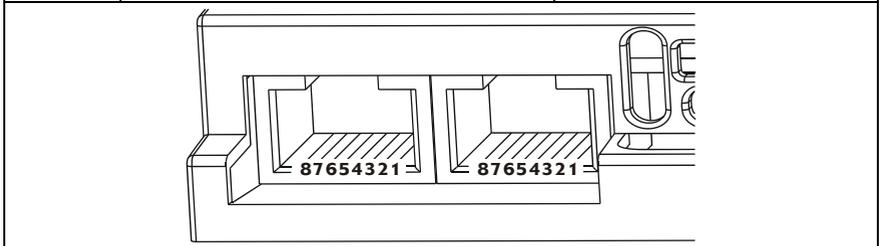
Table 1 – C-Bus RJ45 sockets and their pinouts

6.0   Status Indicators

6.1   Unit/Comms

The "Unit/Comms" indicator shows the status of the 5500PCU unit. When C-Bus power is present, the indicator illuminates (as a continuous orange light). The indicator flashes erratically when data is transferred over the USB port.

Indicator Status	Meaning
On	Normal operation
Erratic Flash	Data exchange in progress (USB port)
Off	No C-Bus power is connected

Table 2 − The "Unit/Comms" indicator

6.2   C-Bus Indicator

The "C-Bus" indicator shows the status of the C-Bus network at the unit. If sufficient network voltage and a valid C-Bus clock signal are present, the indicator illuminates (as a continuous orange light). If a network is connected which has a higher current load than the power supplies support, the indicator flashes to show a marginal network voltage. If no C-Bus clock is present, the indicator remains off.

Indicator Status	Meaning
On	Power is on and functional
Flashing	There is insufficient power to support the C-Bus network
Off	No C-Bus clock signal is present

Table 3 − The "C-Bus" indicator

Further debugging of possible network problems can be achieved using the Clipsal C-Bus Network Analyser tool (5100NA).

7.0   C-Bus System Clock

The 5500PCU C-Bus USB PC Interface incorporates a software selectable C-Bus system clock. The system clock is used to synchronise data communication on a C-Bus network. At least one active C-Bus system clock is required on each C-Bus network for successful communication. No more than three units on a C-Bus network should have their clock enabled, so this option is normally disabled using the C-Bus Toolkit software.

If a system clock is required, it can be enabled from the unit's programming interface in the C-Bus Toolkit software.

8.0   C-Bus Network Burden

The 5500PCU incorporates a software selectable network burden. The network burden can be enabled from the unit's programming interface in the C-Bus Toolkit software, but only if the C-Bus system clock is also enabled.

One network burden is normally required to ensure correct operation of each C-Bus network. The Network window of a C-Bus Toolkit project provides a summary of a C-Bus network according to the units added to the Database. This can be helpful in determining how many burdens are required on a particular network.

9.0   C-Bus Power Requirements

The 5500PCU C-Bus USB PC Interface draws 22 mA from 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 according to the units added to the Database. This can be helpful in determining the power supply requirements of a particular network.

10.0 Power Surges

Each unit incorporates circuitry to provide protection from C-Bus network transients. External power surge protection devices should be used to enhance system immunity to mains power surges. It is strongly recommended that overvoltage equipment such as the Clipsal 970 be installed at the switchboard.

11.0 Megger Testing

Important points when megger testing an electrical installation:

- · Only megger test when mains cabling is disconnected from C-Bus output units.
- · Do not megger test the C-Bus cable.

12.0 Configuration

12.1 Driver Installation

Before you connect the 5500PCU to a PC you must install the USB PCI Driver. This is available from the downloads section of the Clipsal Integrated Systems (CIS) web site (www.clipsal.com/cis/).

The USB PCI Driver software can also be installed from C-Bus Toolkit (V1.6 or higher). Choose "Install USB PCI Driver" from the File menu.

After the USB PCI Driver has been installed, connect the 5500PCU to a USB port of the PC. The PC will assign a serial COM port (such as COM3) to use with the 5500PCU. This is the port you must specify as the network connection device within C-Bus Toolkit, in order to use the 5500PCU to communicate with a C-Bus network.

12.2 C-Bus Programming

The 5500PCU C-Bus USB PC Interface must be programmed with a unique identification address (unit address). This is accomplished using the C-Bus Toolkit software, available from the downloads section of the Clipsal Integrated Systems (CIS) web site (http://www.clipsal.com/cis). C-Bus Toolkit is also used to enable the C-Bus system clock and burden if required.

13.0 Electrical Specifications

Parameter	Description
C-Bus supply voltage	15 to 36 V DC @ 22 mA Does not supply current to the C-Bus network.
C-Bus AC input impedance	100 kΩ @ 1 kHz
C-Bus system clock	Software selectable
Network burden	Software selectable
Operating temperature range	0 to 45 °C (32 to 113 °F)
Operating humidity range	10 to 95% RH

14.0 Mechanical Specifications

Parameter	Description
Dimensions (W × H × D)	72 × 92 × 63 mm
Weight	92 g
C-Bus Connections	2 × RJ45 sockets (in parallel)
PC Connection	1 × USB type B
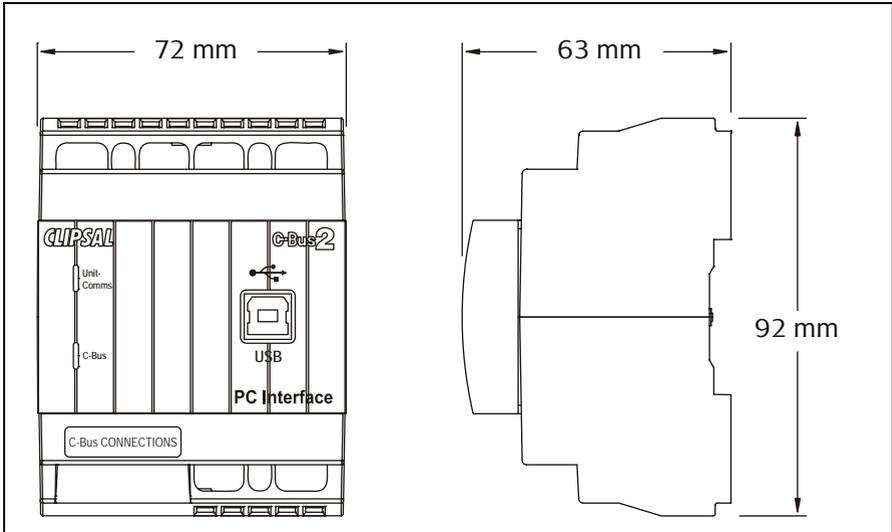
15.0 Standards Complied

DECLARATIONS OF CONFORMITY

Australian/New Zealand EMC & Electrical Safety Frameworks and Standards
The 5500PCU product complies with the following:

Regulations	Standard	Title
EMC (C-Tick)	AS/NZS CISPR 22	IT Equipment Emissions Standard
	AS/NZS CISPR 24	IT Equipment Immunity Standard

European Directives and Standards
The 5500PCU product complies with the following:

European Council Directive	Standard	Title
EMC Directive 89/336/EEC	EN 55022	IT Equipment Emissions Standard
	EN 55024	IT Equipment Immunity Standard

US and Canadian Product Safety Standards and US FCC Regulations
The E5500TPS product complies with the following:

Standard/Regulation	Title
Tested to FCC Standards for Home or Office Use	FCC Part 15

Supplemental Information
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation.

Class B Product

NOTE:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or

television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- · reorient or relocate the receiving antenna
- · increase the separation between the equipment and receiver
- · connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- · consult the dealer or an experienced radio/TV technician for help.

Warning: Any changes or modifications not expressively approved by Clipsal Integrated Systems could void the user's authority to operate this equipment.

Other International Directives and Standards
The 5500PCU product complies with the following:

Regulations	Standard	Title
EMC	CISPR 22	IT Equipment Emissions Standard
	CISPR 24	IT Equipment Immunity Standard

16.0 Warranty

The 5500PCU C-Bus USB PC Interface 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 of 12 Park Terrace, Bowden, South Australia, 5007. Telephone (08) 8345 9500. 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. The address and contact number of your nearest Clipsal Australia office can be found at http://www.clipsal.com/locations or by telephoning Technical Support (refer to the back page).

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

Worldwide contacts are provided at http://www.clipsal.com/locations/
Information and resources are provided at http://www.clipsal.com/cis/

**Product of Clipsal Integrated Systems
A Division of Clipsal Australia Pty Ltd**
ABN 27 007 873 529

Head Office
12 Park Terrace, Bowden, SA 5007, Australia
Telephone: (+61) 8 8345 9500
Facsimile: (+61) 8 8346 0845
Email: cis@clipsal.com.au
Web: http://www.clipsal.com/cis/

clipsal.com/cis

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