



C-Bus Four Channel Bus Coupler

Installation Instructions

5104BCL

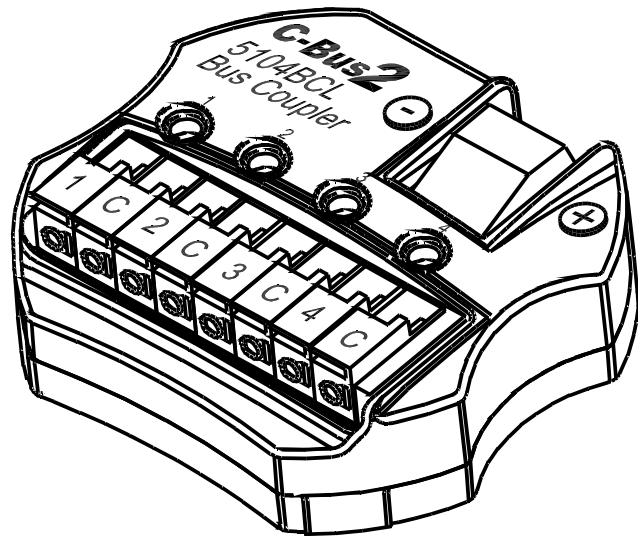


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1.0 Product Range

5104BCL C-Bus Four Channel Bus Coupler

2.0 Description

The Four Channel Bus Coupler unit is a Key Input device allowing connection of voltage free mechanical switches into the C-Bus system. The Learn Mode feature is also incorporated in this device, allowing a quick and easy way to program mechanical switches, to achieve various control functions, such as: on/off, dimmer or timer.

3.0 Capabilities

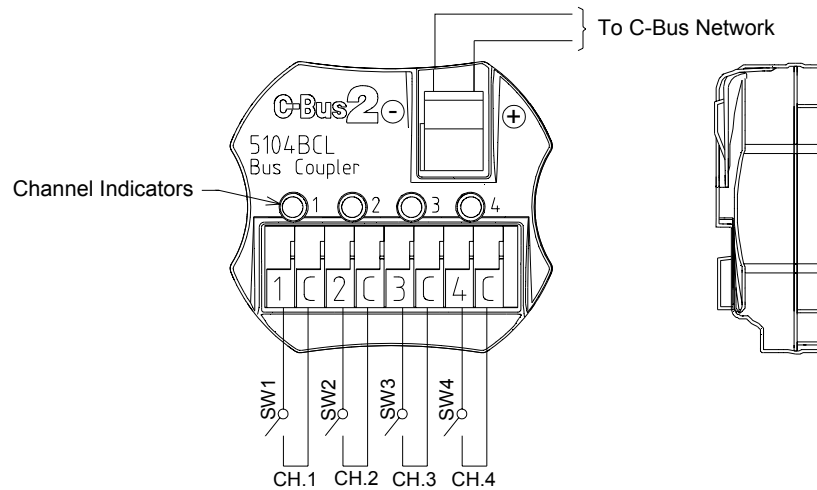
The Four Channel Bus Coupler facilitates remote access to C-Bus via any voltage free switch mechanism, such as the Clipsal 30M range. In this way the user can mix and match 2000 Series, Standard Range, Heritage Range, Metal Plate or Prestige Series style switch plates and products with C-Bus. Alternatively, reed, pressure, micro or other switches may be used to enhance the system flexibility.

Being an input device, the unit transmits messages to output devices to control load states. All C-Bus switching commands are available, including: on, off, toggle, timer and dimming functions etc. **Dimming operations are best achieved using a spring return type switch such as the Clipsal 30MBPR Bell Press mechanism.**

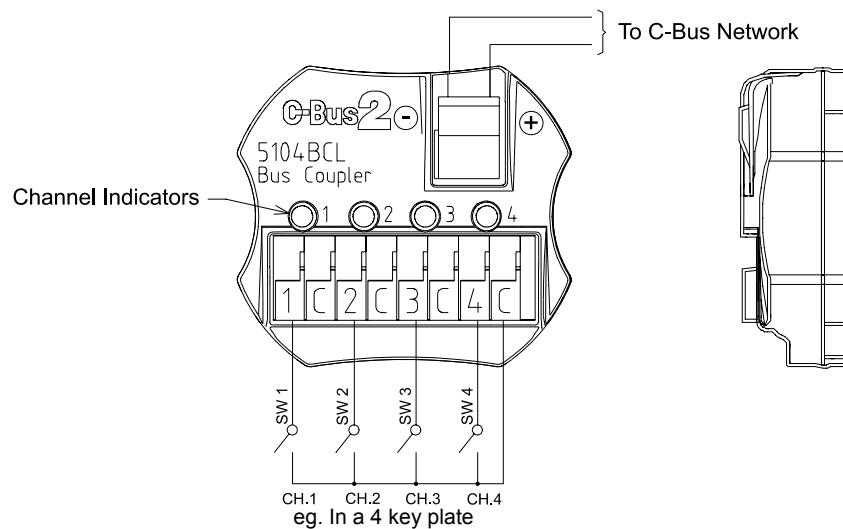
The Four Channel Bus Coupler consumes 16mA of current and is counted as one C-Bus unit when considering the number of units connected to a Power Supply on the Network.

4.0 Wiring Instructions

Warning: The four channel inputs of the Bus Coupler are NOT isolated from the C-Bus Network. Take extra care when installing these devices ensuring all cables connected to C-Bus are well separated from mains.



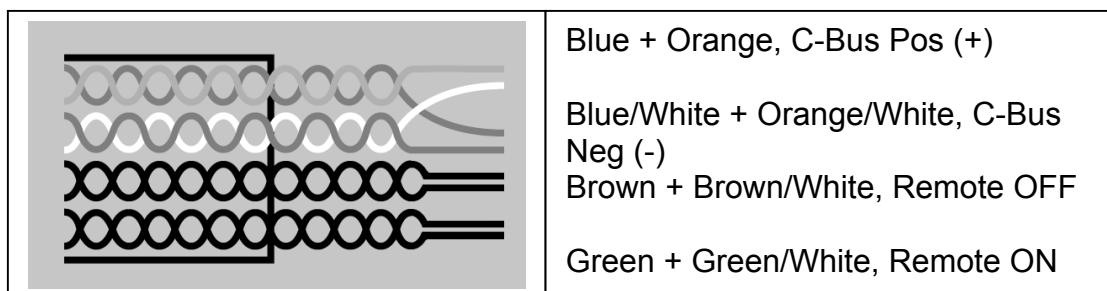
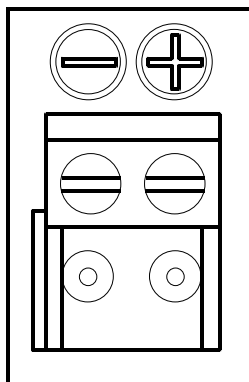
To minimise the amount of wire required (see section 4.2) a single common wire may be used as shown in the diagram below.



4.1 Connection to the C-Bus Network

Installation of the Four Channel Bus Coupler requires connection to the unshielded twisted pair C-Bus Network Cable. Connection should be made using Category 5 data cable, catalogue number 5005C305B.

The C-Bus Network Connection is polarity sensitive, and is clearly marked on the unit. One loop-in removable terminal block is provided for easy installation and maintenance. Ensure that correct colour coding (as shown below) is adhered to for trouble free operation.



C-Bus Connection	Colour	C-Touch
Remote ON*	Green/White	Not Connected
Remote ON	Green	Not Connected
C-Bus Neg (-)	Orange/White	C-Bus Neg (-)
C-Bus Pos (+)	Blue	C-Bus Pos (+)
C-Bus Neg (-)	Blue/White	C-Bus Neg (-)
C-Bus Pos (+)	Orange	C-Bus Pos (+)
Remote OFF	Brown/White	Not Connected
Remote OFF	Brown	Not Connected

* The Four Channel Bus Coupler does not have Remote Override (On/Off) functions, however correct connections must be maintained for these services across the C-Bus Network.

4.2 Connection to Remote Switches

The C-Bus Bus Coupler enables the use of a wide range of conventional dry contact switch mechanisms, chosen on the basis of appearance, to indirectly switch C-Bus loads. The C-Bus Bus Coupler is designed to fit within the wall box behind switches. A small length of wire is used to connect these switches with the inputs of the C-Bus Bus Coupler.

Any type of insulated wire with a diameter no greater than 2mm may be used to connect between the voltage free switches and channel inputs. The maximum cable length is 1 metre per channel, however the total length of cable connecting C-Bus Bus Couplers to the remote switches in a single network should be kept to 10 metres for good communications in a C-Bus system. (ie. 10 channels at 1m or 20 channels at 500mm etc)

If longer connections are required a 5104AUX, which has input isolation, should be used as this unit is specifically designed for such an application.

In all cases, switch input wires should be segregated from mains wiring, any electrical noise sources and earthed metal structures in accordance with C-Bus wiring rules.

Spring Loaded Terminal	Description
C	Switched Input Common †
1	Channel 1 Input
C	Switched Input Common
2	Channel 2 Input
C	Switched Input Common
3	Channel 3 Input
C	Switched Input Common
4	Channel 4 Input

† The switched input Common is internally connected to C-Bus negative.

5.0 Programming Requirements

The installer can program the unit in two ways, with the computer or using Learn mode. Whichever method is used, the Four Channel Bus Coupler must be assigned a unique unit address and a group address for each of the four channels.

5.1 Programming with a Personal Computer

When programming the Four Channel Bus Coupler with a personal computer, the C-Bus Installation Software 5000S/2 v2.1.5 or higher is used.

C-Bus Service Pack v2.1.5 is an additional piece of software which is installed on a computer running the installation software version 2.1.3 or 2.1.4. This additional software is designed to provide programming functions for the Four Channel Bus Coupler as well as other extra functions associated with C-Bus2. Many new features and enhancements are added, including programming support for latest release C-Bus products. (If you are working from v2.0 or v2.1 then an intermediate service pack to provide the functionality of v2.1.3 is required to install the further v2.1.5 (or higher) service pack, see the information provided with v2.1.5 for more details.)

C-Bus Service Pack v2.1.3, 2.1.4 and v2.1.5 are available for download from the Clipsal Integrated System's Web Site 'www.clipsal.com/cis' by selecting the "downloads" button on the left hand side of the screen.

5.2 Programming without a Personal Computer using Learn Mode

The Four Channel Bus Coupler is a C-Bus2 Input device, which allows users to set the relationships between Output Units and the Input Unit without a computer.

Note: Each output unit which is to be associated with the Four Channel Bus Coupler in this way must be a C-Bus2 unit as well.

Learn Mode provides a quick and simple way to program the C-Bus2 Input devices to provide basic functions. If more advanced functions are required see section 5.1 above.

To program the Four Channel Bus Coupler to turn on loads by means of Learn Mode connect each channel of the Four Channel Bus Coupler to a conventional switch. Then do the following for each channel:

- Enter Learn Mode on a C-Bus2 output unit by holding down a toggle key on that unit for 10 seconds until the Unit and C-Bus indicators flash alternately.
- Select the toggle keys on the output unit associated with the loads you want to control. The selected indicators will illuminate.
- Flick the (non C-Bus) toggle switch you want to associate with the selected load on. The light on the Bus Coupler associated with this switch will light.
- Exit Learn Mode by pressing any toggle switch on an output unit for 2 seconds.

6.0 Power Surges and Short Circuit Conditions

The mains voltage must be limited to the range specified for any unit which is mains powered. Each unit incorporates transient protection circuitry and additional external power surge protection devices should be used to enhance system immunity to power surges. It is strongly recommended that over-voltage equipment such as the Clipsal 970 series is installed at the switchboard.

7.0 Megger Testing

Megger testing of mains cabling of an electrical installation that has C-Bus units connected will not cause any damage to C-Bus units. Since C-Bus units contain electronic components, the installer should interpret megger readings with due regard to the nature of the circuit connection.

Megger testing must never be performed on the C-Bus data cabling or Bus Coupler input terminals as it may degrade the performance of the network.

8.0 Important Warning

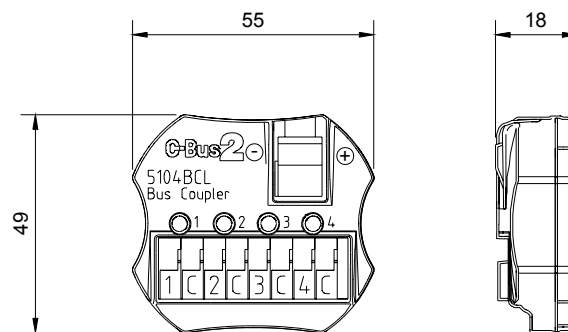
The use of any non C-Bus Software in conjunction with the hardware installation without the written consent of Clipsal Integrated Systems may void any warranties applicable to the hardware.

9.0 Standards Complied

Standard	Title
AS/NZS1044:1995	RFI Emissions Standard
AS/NZS 3260:1993 inc A4	Approval and test specification – Safety of information technology and business equipment
AS/NZS 3108:1994 inc A6	Requirements for Safety Extra Low Voltage
IEC60669-2-1:1996/A1:1997	Switches for household and similar fixed electrical installations - part 2 particular requirements - section 1 Electronic switches.
EN 61000-3-2:1995 A1, A2 IEC 61000-3-2:1995 A1, A2	Harmonic Current Emissions Standard
89/336/EEC	European Union Directive on Electromagnetic Compatibility

10.0 Product Specifications

Parameter	Description
Catalogue Number	5104BCL Four Channel Bus Coupler
C-Bus Supply Voltage	15-36V DC @ 18mA required for normal operation. Does not source current to the C-Bus Network.
Current Drain	18 mA
Voltage across Input when external switch opens	5V DC
Voltage across Input when external switch opens	0V DC
Switch closed current	Less than 50 μ A
Max cabling distance	1m
Isolation between inputs	Not isolated
Isolation between inputs and C-Bus	Not isolated
Operating Temperature	0 – 45°C
Operating Humidity Range	10-95% RH
C-Bus Terminals	Removable terminals for wire size 0.2 – 1.5 mm ²
Four Channel Input Side	Spring loaded terminals for wire size 0.2 – 2.5mm ²
Weight	32g
Dimensions	55 x 49 x 18mm (LxWxD)



All dimensions in millimetres.
No user serviceable parts inside.

Technical Support and Troubleshooting

For further assistance on this product please call the Clipsal Integrated Systems Pty Ltd call centre on:

Technical Support Email	Techsupport.cis@clipsal.com.au
Sales Support Email	sales.cis@clipsal.com.au
Clipsal Integrated Systems Website	clipsal.com/cis
Technical Support Hotline	1 300 722 247 (Cost 25¢ per call Australia Only)

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