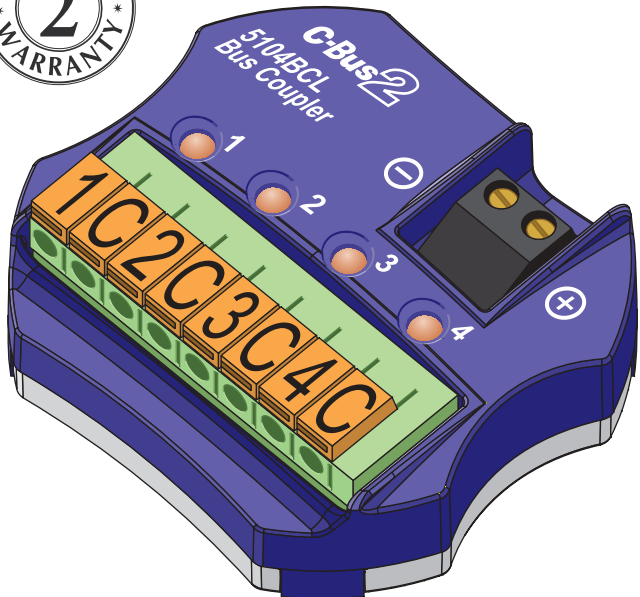


## C-Bus Four Channel Bus Coupler

Installation Instructions

**5104BCL**



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## 1.0 Description

The 5104BCL C-Bus Four Channel Bus Coupler is an input device which enables mechanical voltage free switches to connect to a C-Bus network. Such mechanical switches can then be used in place of regular C-Bus wall switches, to control C-Bus devices such as dimmers and relays, or be used in logical input applications.

Virtually any type of voltage free switch can be connected to the 5104BCL (momentary or latching). This includes standard wall switches such as the 2000 Series, Heritage, and Slimline range, and specialised switches such as reed and pressure switches.

The unit is learn enabled, allowing it to be programmed without a computer (using learn mode).

## 2.0 Important Notes

- Do not connect mains to the 5104BCL C-Bus Four Channel Bus Coupler.
- The input channels of the 5104BCL are NOT isolated from the C-Bus network. Ensure that all cables connected to C-Bus are well separated from mains wiring, earthed metal structures and electrical noise sources.
- A maximum of 1 metre of wire may be used to connect an individual switch to a 5104BCL input channel.
- A maximum of 10 metres of wire in total may be used to connect switches to all 5104BCL units present on an individual C-Bus network. Examples of this are 10 channels at 1000 mm each or 24 channels at 415 mm each. Exceeding this length may adversely affect C-Bus network communications. If longer connections are required, it is recommended that an L5104AUX Auxiliary Switch Input be used.
- Dimming operations are best achieved using momentary, normally open switches.
- The use of any software not provided by Clipsal Integrated Systems (CIS) in conjunction with the installation of this product may void any warranties applicable to the hardware.

### 3.0 Wiring Instructions

The 5104BCL C-Bus Four Channel Bus Coupler is designed to fit within a wall box, behind a wall switch.

Virtually any type of insulated wire with a diameter between 0.2 mm<sup>2</sup> and 2.0 mm<sup>2</sup> may be used to connect the voltage free switches to the 5104BCL input channels (up to 1 metre of wire per switch/channel).

The diagram in Figure 1 shows two wiring methods. To minimise the amount of wiring required, a single common wire may be used (as in the unit on the right).

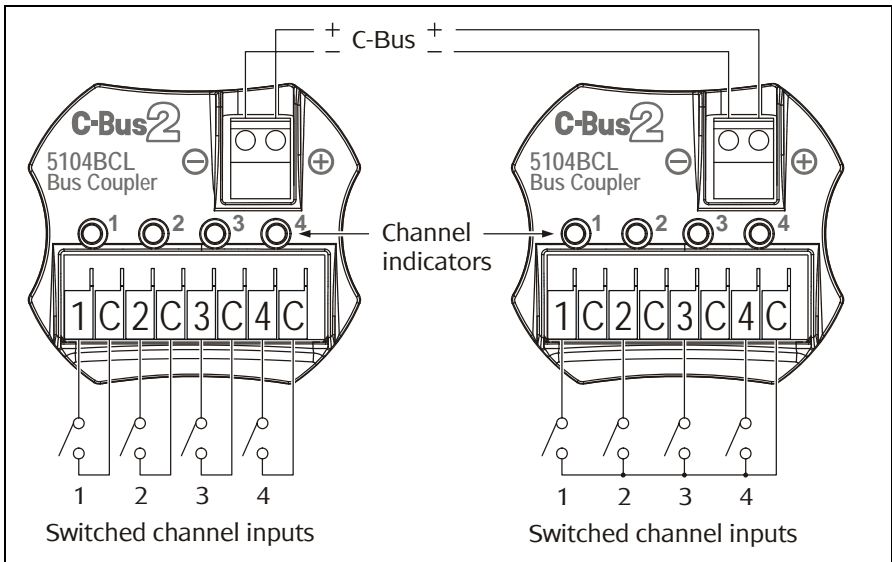


Figure 1 – 5104BCL wiring



**NOTE** The Common (C) terminals are internally connected to C-Bus negative.

## 4.0 C-Bus Network Connection

Connection to the C-Bus network is made via the two terminal connector on the top of the 5104BCL unit. Use Cat-5 Unshielded Twisted Pair (UTP) C-Bus cable. The use of bootlace ferrules (crimps) is recommended for a reliable connection.

C-Bus cable conductor assignments are provided in Figure 2. The Clipsal catalogue number for the C-Bus Cat-5 UTP cable is 5005C305B.

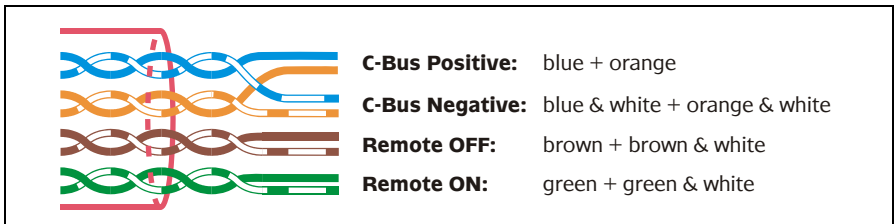


Figure 2 – C-Bus cable conductor assignments

The 5104BCL C-Bus connector pinouts are provided in Table 1. The Remote ON and Remote OFF conductors are not connected to this unit.

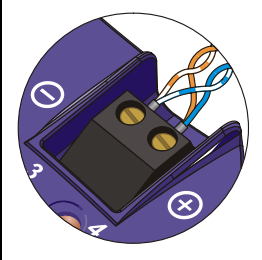
	Terminal	C-Bus Connection	Conductors
⊖	⊖	C-Bus Negative (-)	orange & white
			blue & white
⊕	⊕	C-Bus Positive (+)	blue
			orange

Table 1 – C-Bus connector pinouts

## **5.0 C-Bus Power Requirements**

The 5104BCL C-Bus Four Channel Bus Coupler draws 18 mA from the C-Bus network. Adequate C-Bus Power Supply Units must be installed to support the 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.

## **6.0 Megger Testing**

Megger testing of a mains electrical installation that has C-Bus units connected, will not damage the units. Since C-Bus units contain electronic components, this should be taken into account when interpreting megger readings. Never perform megger testing on the pink C-Bus data cabling or terminals, as this may degrade the performance of the network.

## **7.0 Programming Requirements**

The 5104BCL C-Bus Four Channel Bus Coupler must be programmed before it will function as part of a C-Bus network. This can be accomplished using Learn Mode. However, using the C-Bus Toolkit software provides a greater level of flexibility and customisation.

The C-Bus Toolkit software can be downloaded from the Clipsal Integrated Systems web site ([www.clipsal.com/cis](http://www.clipsal.com/cis)). Further information about programming C-Bus units is provided at this site.

## 8.0 Electrical Specifications

Parameter	Description
C-Bus supply voltage	15 to 36 V DC, 18 mA for normal operation
C-Bus AC input impedance	100 k $\Omega$ @ 1 kHz
Voltage across input	External switch open: 5 V DC External switch closed: 0 V DC
Current through closed external switch	< 50 $\mu$ A
Isolation between inputs	Not isolated
Isolation between inputs and C-Bus	Not isolated
Control functions	Load switching, dimming, timers
Status indicators	Orange, one indicator per channel
Warm-up time	5 seconds
Operating temperature range	0 to 45 °C
Operating humidity range	10 to 95% RH

## 9.0 Mechanical Specifications

Parameter	Description
Dimensions (W×H×D)	55 × 49 × 19 mm
Weight	33 g
Input terminals	Spring loaded terminal block accommodating 0.2 to 2.0 mm <sup>2</sup> (24 to 14 AWG)
C-Bus connections	Terminal block accommodating 0.2 to 1.5 mm <sup>2</sup> (24 to 16 AWG)

## 10.0 Standards Complied

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### ***DECLARATIONS OF CONFORMITY***

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#### ***Australian/New Zealand EMC & Electrical Safety Frameworks and Standards***

The model 5104BCL product complies with the following:



<b>Regulation</b>	<b>Standard</b>	<b>Title</b>
EMC (C-Tick)	AS/NZS 1044	RFI Emissions Standard

#### ***European Directives and Standards***

The model 5104BCL product complies with the following:



<b>European Council Directive</b>	<b>Standard</b>	<b>Title</b>
EMC Directive 89/336/EEC	EN 61000-3-2	Limits for Harmonic Current Emissions
	EN 60669-2-1	Switches for Household and Similar Fixed Electrical Installations Part 2-1

#### ***Other International Directives and Standards***

The model 5104BCL product complies with the following:

<b>Regulation</b>	<b>IEC Standard</b>	<b>Title</b>
EMC	61000-3-2	Limits for Harmonic Current Emissions
	60669-2-1	Switches for Household and Similar Fixed Electrical Installations Part 2-1

## **11.0 Warranty**

The 5104BCL C-Bus Four Channel Bus Coupler 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](mailto:techsupport.cis@clipsal.com.au)

Sales support email: [sales.cis@clipsal.com.au](mailto: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/>

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