

**C-Bus**<sup>®</sup>

## C-Bus Temperature Sensor

Installation Instructions

5031RDTSL C-Bus Temperature Sensor (AUS)

E5031RDTSL C-Bus Temperature Sensor (UK)



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## 1.0 Product Range

**5031RDTSL** C-Bus Temperature Sensor Unit (Australian Pattern)

**E5031RDTSL** C-Bus Temperature Sensor Unit (British Standard Pattern)

## 2.0 Important Notes

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.

## 3.0 Description

The Temperature Sensor is a C-Bus input device that measures the ambient temperature levels and converts this information into: command messages (ON/OFF as in the 5031TS mode); information messages broadcast to a set Group Address (6031TS mode); information messages from applied zones with temperature readings (HVAC Mode, use in association with a C-Bus Thermostat); temperature measurement messages (Measurement Mode). These messages are then send across the C-Bus Network. C-Bus output units (relays and dimmers) can be configured to respond to such messages, allowing automatic regulation and control of temperature levels.

## 4.0 Capabilities

The C-Bus Temperature Sensor monitors the surrounding temperature, and can be used to control either heating or air-conditioning equipment in order to maintain a comfortable temperature. The Temperature Sensor continuously monitors ambient temperatures in the range 0 to 50 °C (32 to 122 °F) providing a comparison with the user defined Target temperature. Control instructions are then subsequently issued to output units on the C-Bus Network, controlling heating/cooling equipment as required.

The Temperature Sensor incorporates adjustable hysteresis; so that the installer can define a “dead band” (Margin) in order to compensate for rapid fluctuations in temperature. The minimum hysteresis for the Temperature Sensor is 0.5 °C (32.9°F) degrees. By allowing a greater temperature variation, the daily number of ON/OFF heating or cooling cycles can be reduced.

The Temperature Sensor also incorporates a selectable Offset temperature of up to 16 °C (60 °F). Energy savings can be realised during periods where

the dwelling is unoccupied for example, simply by selecting the Economy mode. The Economy mode can be enabled and disabled by issuing a command from any other C-Bus input unit.

The C-Bus Temperature Digital Sensor is capable of operating in four separate modes of operation. These must be programmed using the C-Bus toolkit software.

- 5031TS – allows the unit to monitor temperature and issue C-Bus commands if temperature falls outside user defined margin in the same way as the earlier model C-Bus Temperature Sensor (5031TS) unit,
- 6031TS – allows the unit to operate on the Temperature Broadcast application. Sensor information can then be programmed to broadcast messaging across this application,
- HVAC – allows the unit to operate on the Air Conditioning application. Sensor information can then be programmed to broadcast messaging across this application. The Air Conditioning application messaging can then be used by the C-Bus thermostat units for temperature control,
- Measurement – allows the unit to operate on the Measurement application, where the Temperature Sensor information can be broadcast across the measurement application.

It is recommended that Installers refer to further information regarding programming these modes of operation provided in the C-Bus Toolkit User Guide. The C-Bus Toolkit Help files may also be accessed for further information.

## 5.0 C-Bus Network Connection

Installation of the Temperature Sensor to the C-Bus Network requires a two-wire connection to the safe extra low voltage unshielded twisted pair C-Bus Network Cable. This connection is polarity sensitive, and is clearly marked on the terminal block of the Unit.

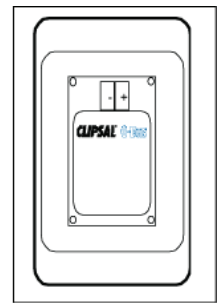


Figure 1 - C-Bus Terminals, rear view

The illustration below shows the recommended technique for cable termination giving the best electrical performance. Bootlace crimps may also be used to provide a highly reliable connection.

It is recommended that Category 5 data cable is used, Clipsal catalogue number 5005C305B.

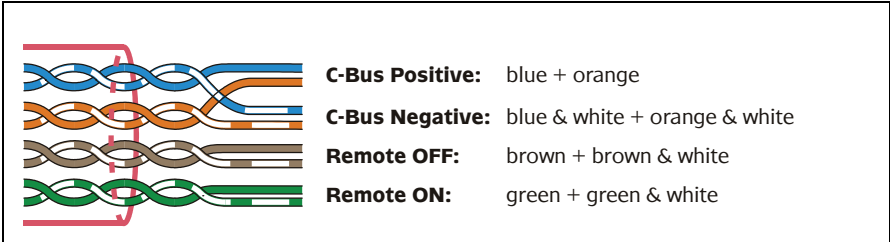


Figure 2 - C-Bus cable connector assignments

Note the mutual twist of solid and dotted conductors of opposing coloured conductors. This ensures a good electrical termination, with favourable common mode noise characteristics.

## 6.0 Location Recommendations

When installing the Temperature Sensor, it is recommended that the user attempt to observe the following guidelines...

- Position the Sensor as far away as practicable from heating or cooling sources (natural or artificial);
- Avoid dead or drafty areas of any room;
- Position at a sensible height (not less than 500mm from the ceiling), so as the sensor element will not give artificially high / low readings (remember – hot air rises);
- Use for indoor applications only.

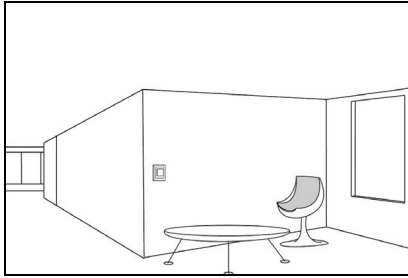


Figure 3 - Correct Installation

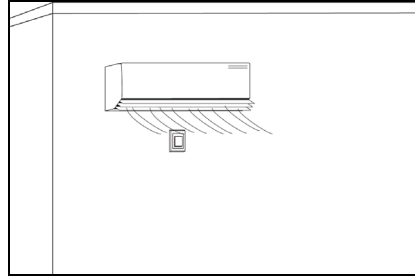


Figure 4 - Incorrect installation

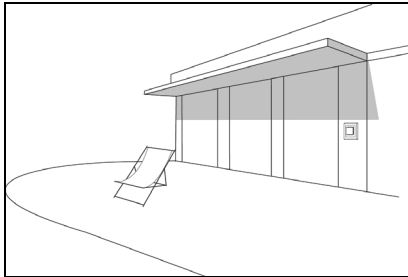


Figure 5 - Incorrect Installation

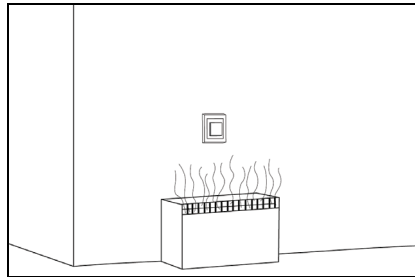


Figure 6 - Incorrect Installation

## 7.0 Programming Requirements

As with other C-Bus units, the Temperature Sensor Units must be programmed to set their unique identification and the modes of operation on the C-Bus Network. The C-Bus Installation Software can be used to configure all operational parameters including the specification of target temperature levels. Please refer to the C-Bus Installation Software User's Guide for information relating to the programming of Temperature Sensor Units.

## 8.0 Product Specifications

### Electrical Specifications

Parameter	5031RDTSL / E5031RDTSL
C-Bus Input Voltage	15 - 36Vd.c. @ 18mA Nominal
Resolution	$\pm 0.5$ °C
Accuracy	$\pm 1$ °C
Operating Temperature	0-50 °C (32 - 122 °F)
Temperature Measurement Range	
5031TS Mode	
Degrees Celsius	0 °C to 50 °C
Degrees Fahrenheit	32 °F to 122 °F
6031TS Mode	
Degrees Celsius	0 °C to 50 °C
Degrees Fahrenheit	32 °F to 122 °F
HVAC Mode	
Degrees Celsius	0 °C to 50 °C
Degrees Fahrenheit	32 °F to 122 °F
Measurement Mode	
Degrees Celsius	0 °C to 50 °C
Degrees Fahrenheit	32 °F to 122 °F



### Mechanical Specifications

Parameter	503 1RDTSL/E503 1RDTSL
C-Bus Connection	Screw Terminals accommodate 6 x 0.2mm <sup>2</sup>

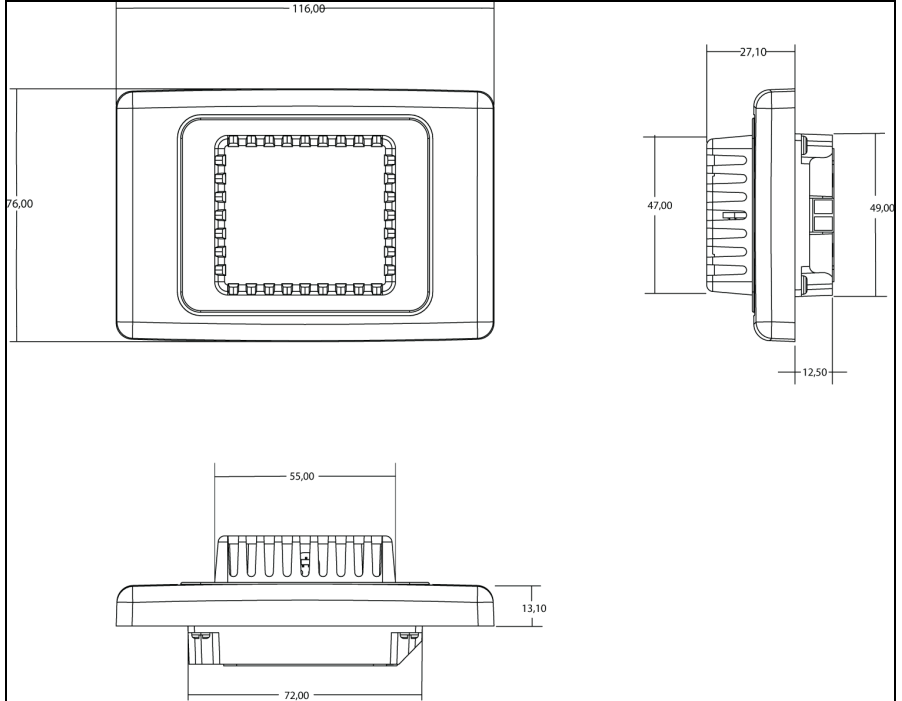


Figure 7 - Mechanical Specifications

## 9.0 Warranty

The 5031RDTSL C-Bus Remote Digital temperature Sensor 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 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. 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 1 300 722 247 (CIS Technical Support Hotline).



## 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: [tech.training@clipsal.com.au](mailto:tech.training@clipsal.com.au)

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**Fax 1300 2025 56**

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