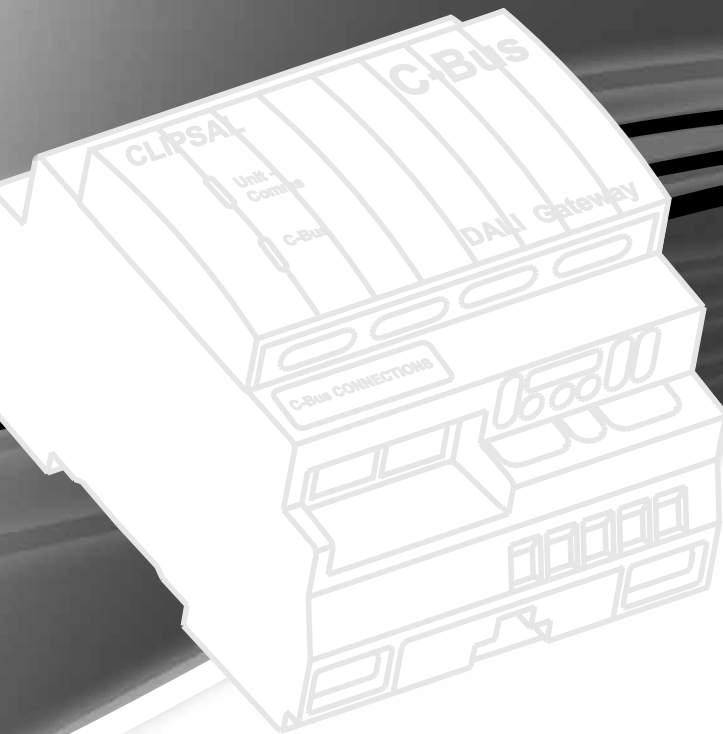


CLIPSAL[®]

by Schneider Electric



C-Bus[®]
DALI Gateway
5502DAL



Installation Instructions

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1.0 Product Range

5502DAL C-Bus DALI Gateway

2.0 Description

The 5502DAL C-Bus DALI Gateway unit is a C-Bus system support device, designed to provide an isolated communications path between a C-Bus network and two DALI networks. For ease of installation the unit is DIN rail mounted, measuring 4m wide (1m = 17.5 +0.5/-0.0mm).

3.0 Features

The DALI Gateway provides two C-Bus connections through the use of RJ45 connectors, allowing similar units to be quickly looped together. In normal operation, the unit draws 32mA from the C-Bus network. The DALI Gateway is capable of generating C-Bus clock signals. Each DALI network can have up to 64 addressable DALI devices, such as fluorescent ballasts and low voltage transformers. The DALI Gateway does not have its own DALI addresses. It is transparent and is not “visible” to other DALI devices.

The DALI Gateway provides two-way communication. Selected C-Bus messages are routed to an appropriate DALI network, and DALI lighting messages are routed to the C-Bus network. The DALI Gateway constantly monitors both DALI networks. It is capable of detecting and reporting C-Bus faulty lamps in fluorescent ballasts or failed DALI units. DALI networks are insulated from C-Bus and from each other by optocouplers. The insulation is capable of withstanding mains voltage.

4.0 C-Bus Indicators

4.1 Unit/Comms Indicator

If the unit is powered and functional, the unit/comms indicator will be illuminated and steady. During data transfer on the RS232 port the unit/comms indicator will flash.

C-Bus Group Address	DALI Address
ON	Power on and functional
Flashing	Data exchange in progress

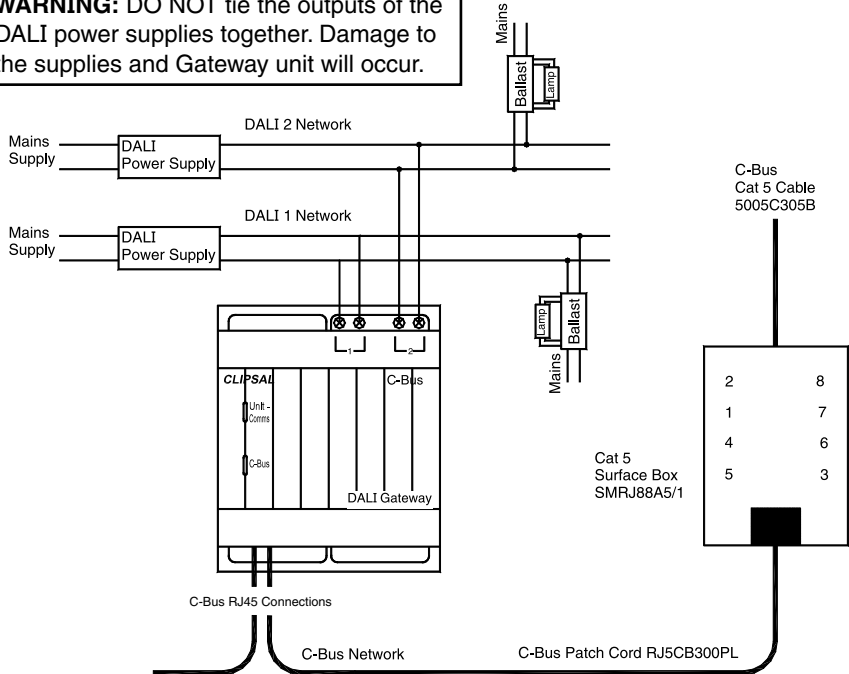
4.2 C-Bus Indicator

This indicator shows the status of the C-Bus network at this unit. If sufficient network voltage and a valid C-Bus clock signal are present then the "OK" signal will be displayed (steady on). If a network is connected, which has more current load than the power supplies can support, this indicator will flash to show a marginal network voltage. If there is no C-Bus network clock present this indicator will not light.

C-Bus Group Address	DALI Address
ON	C-Bus network operational
Flashing	Insufficient power to support network
OFF	No C-Bus clock present or insufficient power to support network or C-Bus not connected (check terminations)

5.0 Wiring Instructions

WARNING: DO NOT tie the outputs of the DALI power supplies together. Damage to the supplies and Gateway unit will occur.



NOTE:

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

- 64 DALI devices (max.) can be connected on a single DALI output channel.
- 50 DALI Gateway devices (max.) can be connected on a single C-Bus network.
- A maximum torque of 1.4Nm should be applied to the mains rated screw terminals.
- Each DALI network must be interconnected with a maximum total wiring of 300m.
- The wire used should be mains rated with double insulation and a minimum 1.5mm² cross section.
- Three rubber bungs are supplied (3 of) for unused RJ45 connectors, to stop foreign bodies from entering the unit. Always ensure these bungs are installed when the unit is to be mounted inside a mains rated enclosure.

DO NOT connect the DALI Gateway to mains power. The unit is powered from the C-Bus network. The Gateway unit does not supply power to the C-Bus network or to the DALI networks.

6.0 Connection to the C-Bus Network

Installation requires connection to the unshielded twisted pair C-Bus network cable. It is required that Category 5 data cable is used, Clipsal cat. number 5005C305B. Two RJ45 connectors are provided for upstream and downstream network attachment. The C-Bus network uses pink Cat.5e, polarised 15-36 Volt, twisted-pair cable, catalogue number 5005C305B (solid) and 5005C305BST (stranded).

RJ Pin	C-Bus Connection	Colour
1	Remote ON	Green/White
2	Remote ON	Green
3	C-Bus Neg (-)	Orange/White
4	C-Bus Pos (+)	Blue
5	C-Bus Neg (-)	Blue/White
6	C-Bus Pos (+)	Orange
7	Remote OFF	Brown/White
8	Remote OFF	Brown

Table 1. C-Bus network wiring colour codes

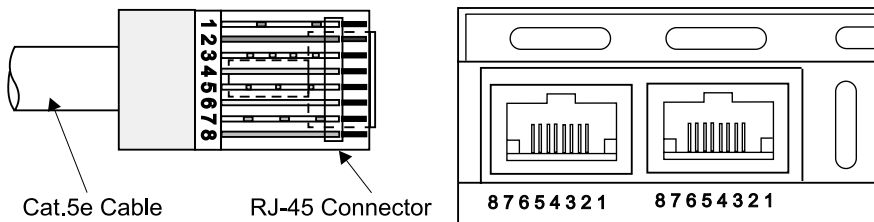


Figure 1. RJ45 pin assignments for plugs and sockets

7.0 Network Burden

The DALI Gateway product incorporates a software selectable network burden. The network burden can be enabled using the C-Bus Installation Software.

A network burden may or may not be required to ensure correct operation of the C-Bus network. If in doubt, consult the C-Bus calculator (Network Design Verification Software Utility) before proceeding with the hardware installation.

The graphical user interface (GUI) software is designed to prevent the burden from accidental selection.

8.0 C-Bus Side Programming Requirements

The DALI Gateway product incorporates a C-Bus PC interface module for communications to the C-Bus network. Programming of the C-Bus side of the network interface can be done in the same manner as programming a standard PC interface.

The DALI Gateway must be programmed to set a unique identification (unit address) and mode of operation on the C-Bus network. The C-Bus Installation Software can be used to configure all operational parameters.

The DALI Gateway is programmed using C-Bus Toolkit Software.

The C-Bus Toolkit is available for download from the Clipsal website (www.clipsal.com/cis).

9.0 Power Surges and Short Circuit Conditions

The 5502DAL C-Bus DALI Gateway is not directly connected to the mains. Each unit incorporates transient protection circuitry, but 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, be installed at the switchboard.

10.0 Megger Testing

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

Megger testing the mains wiring 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.

11.0 Important Warning

The use of any non C-Bus software in conjunction with the hardware installation, without the consent of Clipsal, may void any warranties applicable to the hardware.

12.0 Standards Complied

The 5502DAL C-Bus DALI Gateway meets the following standards.

Australian/New Zealand EMC and Electrical Safety Frameworks and Standards



Regulation	Standard	Title
EMC	AS/NZS CISPR 22	Information technology equipment – Radio disturbance characteristics (EMC)
Safety	AS/NZS 61347-2-11	Particular requirements - miscellaneous electronic circuits used with luminaires

European Directives and Standards



European Council Directive	Standard	Title
EMC Directive 2004/108/EC	EN 55022	Information technology equipment – Radio disturbance characteristics
	EN 55024	Information technology equipment – Immunity characteristics
Safety	EN 61347-2-11	Particular requirements – miscellaneous electronic circuits used with luminaires
Low voltage Directive 2006/95/EC		Lighting equipment – Electrical, mechanical, chemical and all other risks
RoHS 2002/95/EC		Reduction of hazardous substances

European Directives and Standards

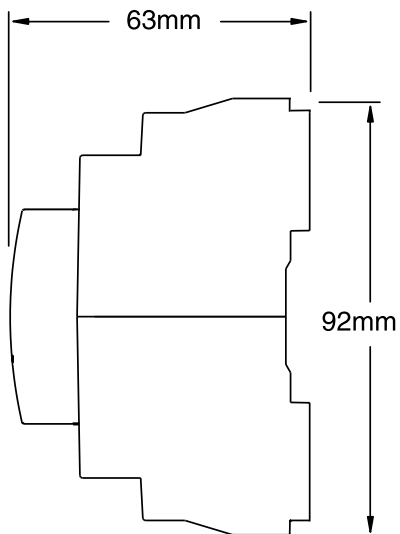
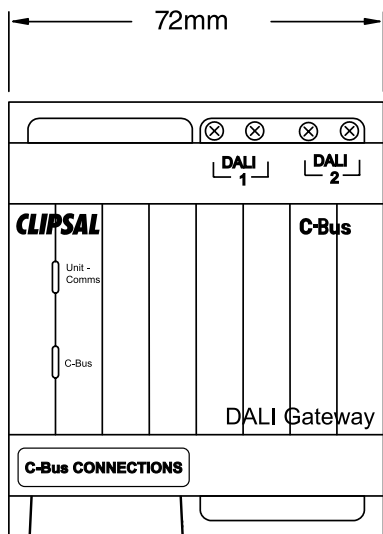
European Council Directive	Standard	Title
EMC	CISPR 22	Information technology equipment – Radio disturbance characteristics
Immunity	CISPR 24	Information technology equipment – Immunity characteristics
Safety	IEC 61347-2-11	Particular requirements – miscellaneous electronic circuits used with luminaires

13.0 Product Specifications

Parameter	Value
Catalogue No.	5502DAL
C-Bus Input Voltage	15 – 36V d.c.
C-Bus Current Drawn	32mA from the C-Bus network. The Gateway does not provide power to the network.
C-Bus AC input impedance	50 k Ω at 1 kHz
Electrical isolation	3.75 kV RMS for 1 minute between C-Bus and the DALI networks
C-Bus Side Terminal	RJ45 connectors (2 of)
DALI Side Terminals	Screw terminals
Maximum Devices Connected to C-Bus Network	50 units
Mounting type	DIN rail
Max number of DALI addressable units	64 per DALI network
System clock and burden	Software selectable
Operating Temperature Range	0 - 45°C
Operating Humidity Range	10 - 95% RH
Weight	130g
Dimensions (mm)	72 (L) x 85 (W) x 65 (D)

14.0 Mechanical Specifications

All dimensions are in millimetres. No user serviceable parts inside.



15.0 Two Year Warranty

The 5502DAL C-Bus Dali Gateway carries a two year warranty against manufacturing defects.

Warranty Statement

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 another rights and remedies in respect to the Clipsal by Schneider Electric product, which the consumer has in the location where the product is sold.

The warrantor is Schneider Electric (Australia) Pty Ltd with offices worldwide.

This Clipsal by Schneider Electric product is guaranteed against faulty workmanship and materials for a period of two (2) years from the date of installation.

Schneider Electric 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.

This warranty is expressly subject to the Clipsal by Schneider Electric product being installed, wired, tested, operated and used in accordance with the manufacturer's instructions. Any alterations or modifications made to the product without permission of Schneider Electric (Australia) Pty Ltd may void the warranty.

Schneider Electric (Australia) Pty Ltd shall meet all costs of a claim. 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.

When making a claim, the consumer shall forward the Clipsal by Schneider Electric product to the nearest Clipsal by Schneider Electric office. Provide 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 or Schneider Electric sales representative.

The address and contact number of your nearest sales office can be found at www.clipsal.com/locations or by calling CIS Technical support on 1300 722 247.

16.0 Technical Support and Troubleshooting

For further assistance in using this product, consult your nearest Clipsal 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 (Schneider Electric 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: cis.support@clipsal.com.au

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

Information and resources are provided at <http://www.clipsal.com/cis/>

Schneider Electric (Australia) Pty Ltd

Contact us: clipsal.com/feedback

National Customer Care Enquiries:

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