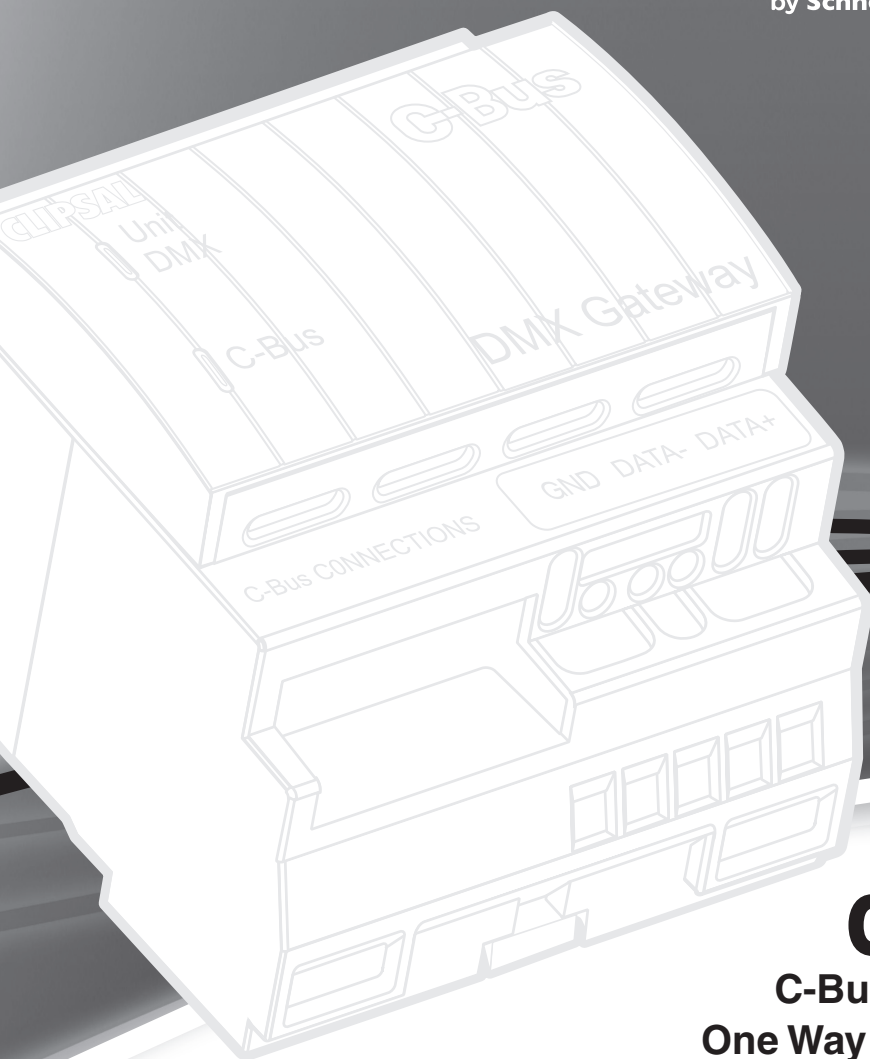




by Schneider Electric



C-Bus®
C-Bus to DMX
One Way Gateway
5500DMX

Installation Instructions



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November 2009

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1 Product Range

The 5500DMX C-Bus to DMX One Way Gateway is a DIN rail mounted unit that maps C-Bus group addresses and levels to a DMX data stream and sends these commands over a DMX-512-A interface.

Model No.	Description
5500DMX	C-Bus to DMX One Way Gateway, DIN rail mounted, DMX-512-A protocol DMX interface cable, 300 mm length

Table 1. Product catalogue number and description

1.1 Description

The 5500DMX C-Bus to DMX One Way Gateway can convert up to twelve received C-Bus lighting group addresses/levels to DMX-512-A data that is then transmitted to a connected DMX-512-A network.

Using the gateway, C-Bus controls DMX-512-A based devices, such as LED lighting controllers that include control inputs (for dimming and RGB colour mixing), and devices such as strobes, fibre optic lighting, fog machines, animated characters and motorised fixtures. The gateway can be used with the C-Bus Architectural Dimmer.

The twelve C-Bus group addresses map to up to 512 DMX-512-A slots. Note that some DMX devices require multiple slots. For example, some luminaires require separate slots for Red, Green and Blue intensity levels. Fibre optic luminaires usually require two slots, one for colour and one for intensity.

The gateway output is immune to common mode voltage transients. Also, the C-Bus circuits are electrically isolated from the DMX-512-A network (some early versions of DMX products did not require isolation between mains voltages and the network).

The gateway has two C-Bus connections and one wired terminal block for the DMX-512-A interface connection. The unit has two clearly marked RJ-45 sockets for C-Bus connections that are internally connected in parallel.

The unit has C-Bus, Unit and DMX indicator LEDs. The Unit and DMX indicators are combined in a multicoloured LED. The DMX gateway is powered from the C-Bus network and requires no external power supply.

A DMX interface cable is included with the gateway. The cable is 300 mm long. It has bootlace connectors on one end and a female XLR panel fitting connector on the other.

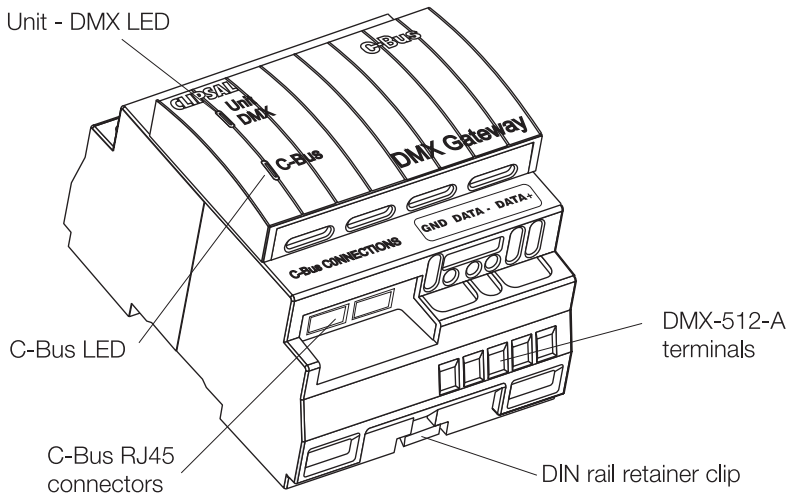


Figure 1. C-Bus to DMX One Way Gateway product features

1.2 Indicators

Unit/DMX Indicator

The Unit indicator shows the status of the individual unit. When C-Bus is connected, the indicator illuminates as a solid orange light. If the Remote Override is active, the orange light flashes with a 90% duty cycle. When both C-Bus and DMX are active, the orange and blue lights illuminate alternately.

Indicator Mode	Meaning
Off	Not connected to C-Bus
Orange	C-Bus connected, but no DMX activity
Orange flashing (90% duty cycle)	Remote override is active
Orange and Blue (alternate flashing)	C-Bus and DMX are working

Table 2. Unit/DMX indicator meanings

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 are present, the indicator illuminates (as a continuous orange light). If the network voltage is marginal, the indicator flashes. If no C-Bus clock is present, or if no C-Bus power is present, the indicator remains off.

Indicator Mode	Meaning
On	Power is on and C-Bus clock is present.
Flashing	The C-Bus network power is marginal (15 V < voltage < 20 V)
Off	No C-Bus clock signal is present and/or no power is present.

Table 3. C-Bus indicator meanings

2 Installing the Gateway

The DIN rail unit is normally installed inside an enclosure near other C-Bus units. The C-Bus to DMX gateway is powered from the C-Bus network connections and sinks 65 mA from the network. Two C-Bus RJ-45 connectors are provided to allow DIN rail mounted devices to be daisy chained.

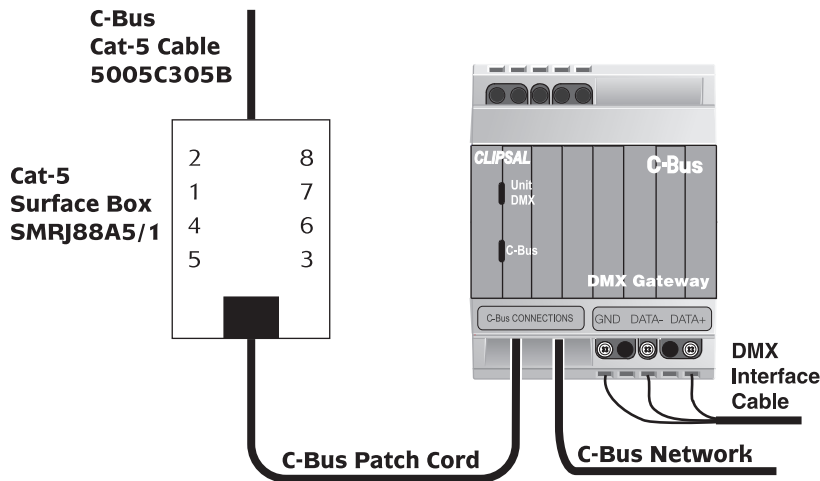


Figure 2. Typical mounting configuration

3 C-Bus Network Connections

Two RJ45 connection points are provided for upstream and downstream network attachment. The C-Bus network uses pink Cat-5e, polarised 15-36 Volt, twisted-pair cables.



Never connect the C-Bus interface to Ethernet or telephone equipment networks. Damage to equipment could result.

CAUTION

RJ45 pin	Signal name	Wire 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 4. C-Bus network wiring colour codes

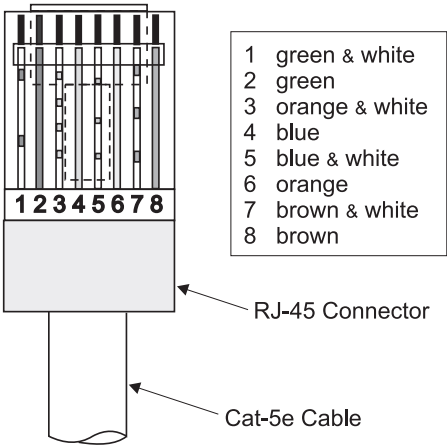


Figure 3. C-Bus network cable pin assignments

4 DMX Connections

The DMX Gateway is a master device for transmission only. Therefore, it must be at Position 1 on the DMX network. DMX topology only supports daisy chain connection. DO NOT use a star or parallel configuration. If you use a DMX Desk unit, it should be installed between the DMX Gateway and the controlled devices. Be sure to provide proper termination for the network.

You can use the provided 300 mm DMX Cable Assembly to connect the load or DMX desk unit as shown in Figures 4 and 5 and Table 5.

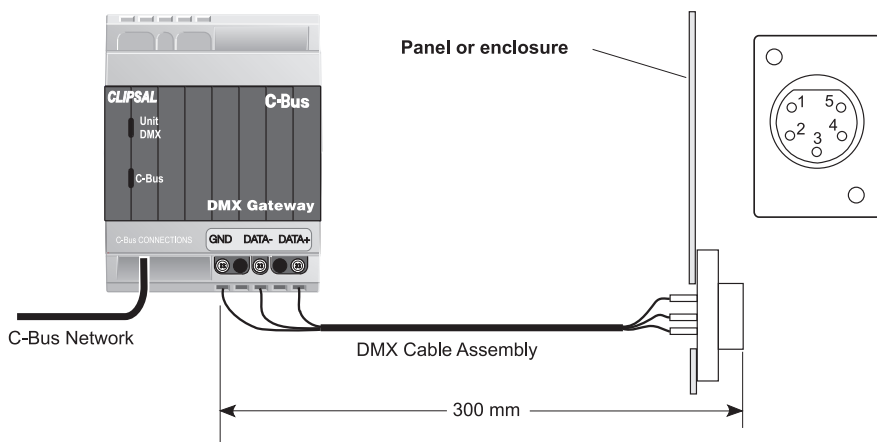


Figure 4. DMX Cable Assembly

Signal name	Wire Colour	XLR-5 Connector
Ground (GND)	Shield	pin 1
Control Data Minus 1-	White/Blue stripe	pin 2
Control Data Plus 1+	Blue/White stripe	pin 3
Not used	---	pin 4
Not used	---	pin 5

Table 5. DMX connector wiring

Use DMX network cable that meets the following specification:

ESTA ANSI E1.27-1-2006, Entertainment Technology - Standard for Portable Control Cables for use with ANSI E1.11 (DMX512-A) and USITT DMX512/1990 products.

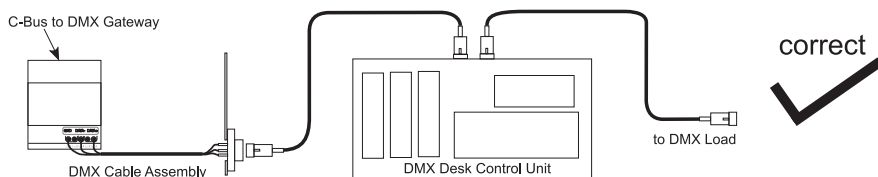
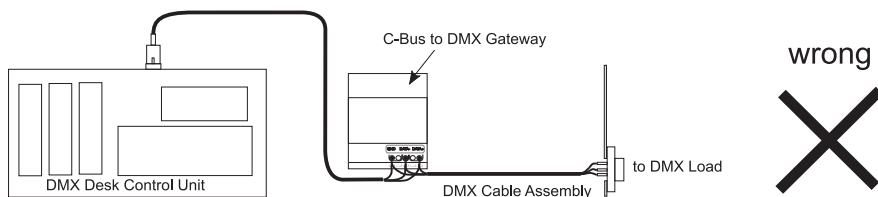


Figure 5. DMX Cabling diagram with DMX desk



Do not install the DMX Gateway between other devices

Figure 6. Incorrect method of wiring the unit

5 Programming Requirements

Use C-Bus Toolkit software to configure the gateway. The unit does not utilise C-Bus Learn Mode features. Using software not provided or approved by Clipsal could void the hardware warranty. The latest version of Toolkit software can be downloaded free of charge from <http://www.clipsal.com/cis/portal>, select Technical and then select Downloads.

When you access the Toolkit software GUI for the gateway, you will find twelve available C-Bus group addresses. It is possible to map any (single) C-Bus Group Address to any (single) DMX-512-A slot. By default, DMX-512-A slots 001 to 12 are available, but these slot numbers can be changed if needed.

You do not need to map all twelve DMX-512-A slots available in the GUI to C-Bus addresses. For example, if you require only one C-Bus group address to be mapped to one DMX-512-A slot, this is a valid configuration.

Toolkit software can map a single C-Bus group address to multiple DMX-512-A slots. You cannot map multiple C-Bus group addresses to a single DMX-512-A slot.

Additional Notes:

For compatibility with older DMX protocol revisions the unit transmits a full data string for a full 512 DMX slots.

The unit does not support more complex functions of DMX-512-A master units such as test packets, system information packets or 16-bit addressing.

Installation Examples

Example 1: The installer sets up a DMX-512-A controlled fibre optic luminaire such that:

DMX-512-A slot 005 controls the colour slot

DMX-512-A slot 006 controls shutter open/close

Example 2: The installer sets up C-Bus scenes so that:

C-Bus Group Address 005 level is the desired fibre optic colour

C-Bus Group Address 006 level is the shutter open/close

When the installer selects the scene on another C-Bus device that supports scenes, the gateway converts the new scene's Group Address Levels into DMX-512-A slot settings and the fibre optics automatically change colour and shutter open/close.

6 Specifications

Parameter	Value
DMX protocol	DMX512-A
Maximum length of DMX cable in network	455 metres
Maximum number of units on a C-Bus network	40
C-Bus input power	15-36 V d.c., 65 mA, class 2
DMX output	6.4 Vpp, 12 mA, class 2
C-Bus AC input impedance	40 k Ω at 1 kHz
Electrical isolation	2500 V between C-Bus and DMX
Mounting type	DIN rail, 4M wide
Connectors	2 RJ-45 for C-Bus network 1 Screw terminal block for DMX (see Note) 1 XLR 5-pin female panel connector on the DMX cable assembly
Dimensions	Unit dimensions: 93 x 72 x 65 mm DMX cable assembly length: 300 mm
Weight	121 grams
Operating temperature	0° to 45° C
Humidity	10 to 95%, non condensing

Note: Do not connect the DMX Gateway between other devices. The DMX Gateway must be at the Position 1 on the DMX network. Use a daisy-chain configuration. Star configurations are not allowed.

Table 6. Specifications

7 Dimensions

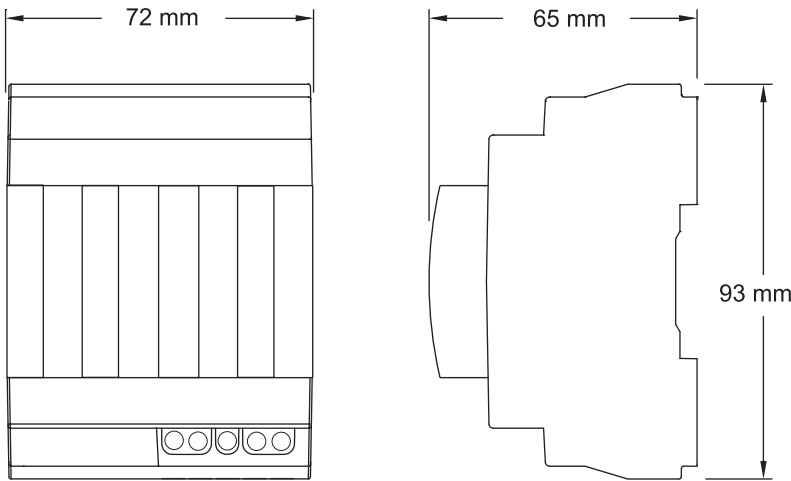


Figure 5. C-Bus to DMX Gateway dimensions

8 Standards Complied

Declarations of Conformity

The 5500DMX C-Bus to DMX One Way Gateway meets the following standards, including ANSI E1.11 2004.

Australian/New Zealand EMC & Electrical Safety Frameworks and Standards



Regulation	Standard	Title
EMC	AS/NZS CISPR22	IT equipment - Radio disturbance characteristics

European Directives and Standards



European Council Directive	Standard	Title
EMC Directive 2004/108/EC	EN 55022	IT equipment - Radio disturbance characteristics
	EN 55024	IT equipment - Immunity characteristics
RoHS 2002/95/EC		Reduction of hazardous substances

9 Two-Year Warranty

The 5500DMX C-Bus to DMX One Way Gateway 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 the Schneider Electric product, which the consumer has in the location where the product is sold.
2. The warrantor is Schneider Electric with offices worldwide.
3. This Schneider Electric product is guaranteed against faulty workmanship and materials for a period of two (2) years from the date of installation.
4. 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.
5. This warranty is expressly subject to the 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 might void the warranty.
6. Schneider Electric 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.
7. When making a claim, the consumer shall forward the Schneider Electric product to the nearest 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 sales representative. The address and contact number of your nearest sales office can be found at <http://www.clipsal.com/locations> or by telephoning Technical Support 1300 722 247 (CIS Technical Support Hotline).

Technical Support

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: cis.support@clipsal.com.au

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