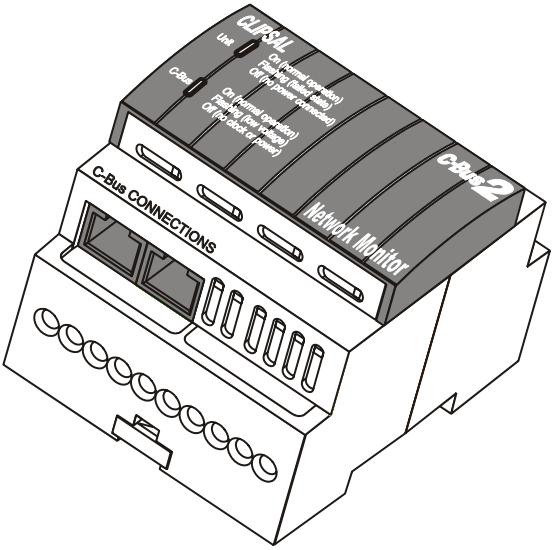
CLIPSAL

CLIPSAL C-Bus Control and Management System

C-Bus Network Monitor

Installation Instructions

5500NMA



CE

V1.1 Nov 2004

Contents

1.0 Description

The 5500NMA C-Bus Network Monitor is used to detect a failure of the C-Bus network. When a failure is detected, the unit activates the C-Bus Remote ON override.

As a passive device, the 5500NMA monitors the C-Bus network but does not transmit any data onto the network.

2.0 Installation

2.1 Location and Network Topology

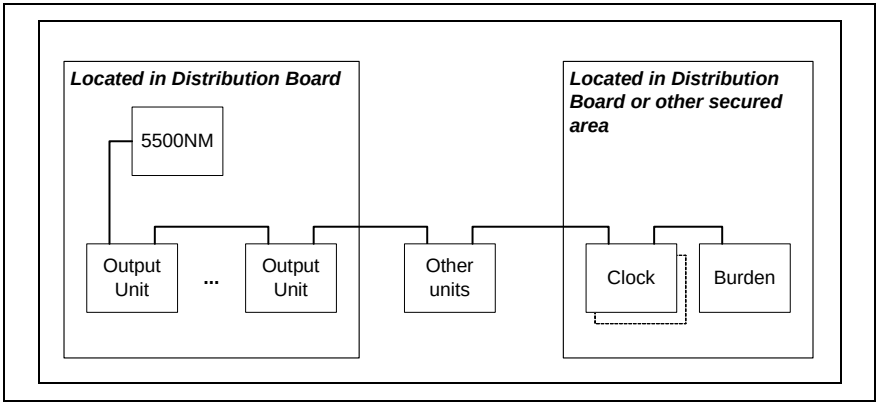


Figure 1 – Simple example of acceptable topology

In order for the C-Bus Network Monitor to perform correctly, it is important that the C-Bus network meets certain requirements. These are listed below.

1) Locate the C-Bus clock generator at one end of the C-Bus network. Locate all redundant clock generators at the same location.
2) If a C-Bus network burden is required, place it at the same location as the clock generator.
3) Place the C-Bus Network Monitor at the opposite end of the C-Bus network to the clock generator. Figure 1 and Figure 2 show examples of suitable network topologies.

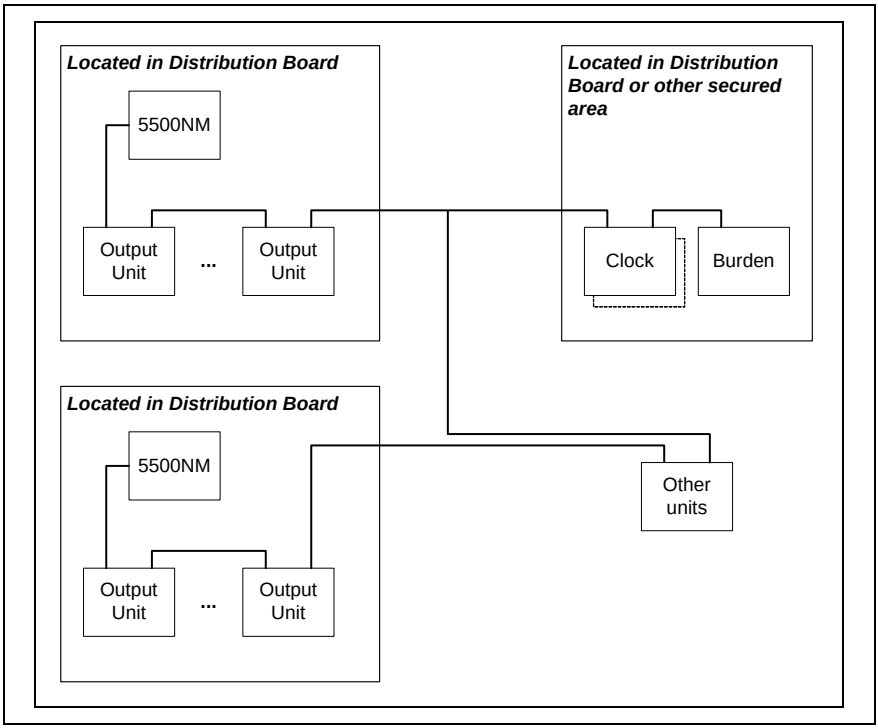


Figure 2 – A more complex example of acceptable topology

4) Where a C-Bus network is branched, locate the C-Bus Network Monitor at the end of the branch run (ideally in a distribution board with the output units).
5) It is best to locate C-Bus power supplies at either or both ends of the network (with the C-Bus Network Monitor and/or the clock generator).
6) Do not include spur runs with no output units, on the C-Bus network. (A spur is a segment of C-Bus cabling which leads off from the main network, as shown in Figure 3).
7) For increased security, only locate output units at the end of a branch run (with the C-Bus Network Monitor), and ensure the C-Bus remote override wires are isolated at the point where the C-Bus cable exits from the distribution board. This reduces the likelihood that a remote override can be activated by an act of vandalism or by tampering with the C-Bus cable.

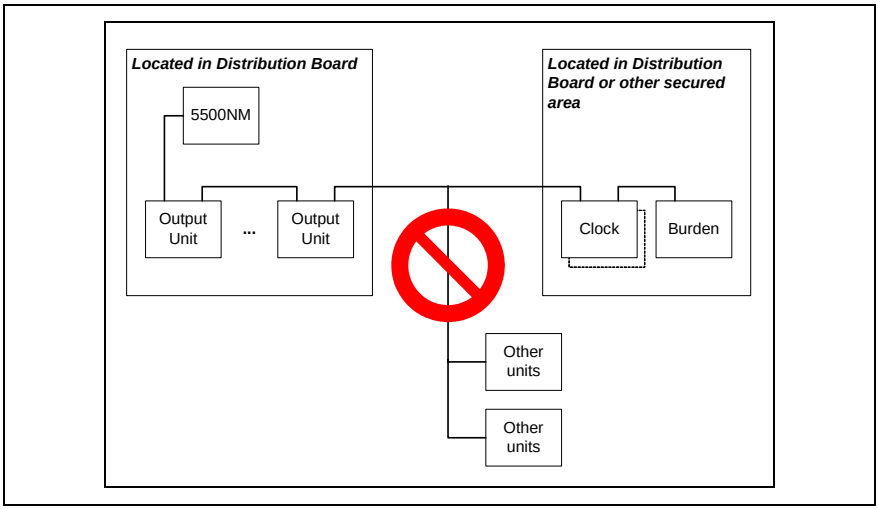
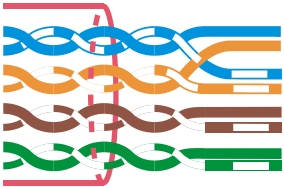


Figure 3 – Do not include spur runs with no output units

2.2 Connection to the C-Bus Network

Connection to the C-Bus network is made via one of the RJ45 sockets. Use Cat-5 Unshielded Twisted Pair (UTP) C-Bus cable, and an appropriately wired RJ45 plug. Pinouts and cable conductor assignments are provided in Figure 4 and Table 1. The RJ45 sockets are internally connected. The Clipsal catalogue number for the C-Bus Cat-5 UTP cable is 5005C305B.



C-Bus Positive: blue + orange
C-Bus Negative: blue & white + orange & white
Remote OFF: brown + brown & white
Remote ON: green + green & white

Figure 4 – C-Bus cable conductor assignments

Pin	C-Bus Connection	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

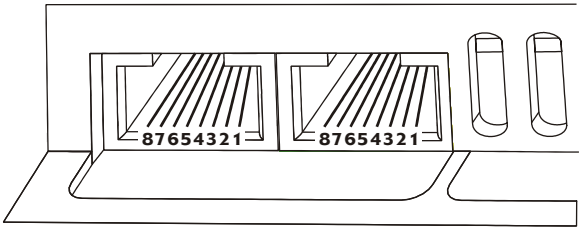


Table 1 – RJ45 sockets and C-Bus pinouts

3.0 Monitored Network Conditions

The 5500NMA unit monitors a C-Bus network and activates the Remote ON override under certain conditions. It:

- detects two failure conditions,
  - network voltage outside the range of 15 to 40 V
  - no C-Bus clock.
- detects a failure within five seconds of its occurrence
- notifies of a failure only when a failure condition has been continuously present for 10 seconds (this does not apply to a total removal of C-Bus power). This helps to ensure that only sustained genuine failures are notified
- ignores all failure conditions for two minutes after power-up (to allow the C-Bus network to stabilise)
- notifies of a failure immediately if the C-Bus power is removed completely.

The combination of the time to detect and the need for the condition to be continuously present, means the notification will take place between 10 and 15 seconds after a failure.

The 5500NMA unit continues to notify of a failure for 5 minutes after the failure condition has ceased, (except in the case of a total removal of power, in which case the 5500NM power-up delay applies).

4.0 Indicators

The C-Bus Network Monitor has two LED indicators (Unit and C-Bus), the meaning of which is provided in Table 2.

Indicator and state	Meaning
Unit LED on	5500NMA is operating
Unit LED off	5500NMA is not operating
Unit LED flashing	Notifying a failure condition
C-Bus LED on	Network appears normal
C-Bus LED off	Network appears abnormal
C-Bus LED flashing	Network appears marginal

Table 2 – Indicator LED states

5.0 Product Specifications

Parameter	Description
C-Bus supply voltage	15 to 36 V DC @ 18 mA required for normal operation. Does not provide current to the C-Bus Network
C-Bus connection	2 × Loop-in / Loop-RJ45 receptacles
Dimensions (W×H×D)	72 × 85 × 65 (vertically mounted)
Weight	95 g
Operating temperature range	0 to 45 °C
Operating humidity range	10 to 95% RH
Detected failure conditions	Network voltage outside the range 15 to 40 V No C-Bus clock

6.0 Limited Warranty

The C-Bus Network Monitor product carries a two year warranty against manufacturing defects (refer to Warranty Statement).

Technical Support and Troubleshooting

For further assistance in using this product, consult your nearest Clipsal Integrated Systems Sales Representative or Technical Support Officer.

Technical Support Hotline:	1300 722 247 (Australia) 0800 888 219 (New Zealand)
Technical Support Email:	techsupport.cis@clipsal.com.au
Sales Support Email:	sales.cis@clipsal.com.au

A list of worldwide contacts, additional product information and technical resources is provided at http://www.clipsal.com/cis/

Product of Clipsal Integrated Systems Pty Ltd
ABN 15 089 444 931

Head Office
12 Park Terrace, Bowden, SA 5007, Australia
Telephone: (+61) 8 8440 0500
Facsimile: (+61) 8 8346 0845
Email: cis@clipsal.com.au
Web: http://www.clipsal.com/cis/ 1036370