

## **Clipsal C-Bus and standalone dimmers when used with Electronic Transformers**

There are two different types of transformer technologies used when installing safe extra low voltage (12V) tungsten halogen lighting, i.e. wire wound transformers and electronic transformers.

### **Wire-wound Transformers**

These transformers are also known as "ferro-magnetic" or "iron-core" transformers. They are constructed from copper wire wrapped around an iron core and have been used in the electrical industry for many years. They are generally suitable for dimming applications when used in conjunction with dimmers which use 'Leading Edge' phase angle control.

### **Electronic Transformers**

In the last few years the use of electronic transformers in conjunction with 12V tungsten halogen lighting has become popular. Electronic transformers are generally more suited for dimming applications when used with dimmers which use 'Trailing Edge' phase angle control. However, some electronic transformers can be used with Leading Edge type dimmers, usually with an appropriate de-rating of the dimmer.

### **Electronic Transformers – Compatibility with Clipsal Leading Edge Dimmers**

Clipsal have tested various manufacturers' electronic transformers to establish their compatibility with Clipsal leading edge dimmers and have historically published a list of 'compatible electronic transformers'.

As a result of the large number of electronic transformer models that are now available on the market and the on-going changes in product specifications made by manufacturers of electronic transformers, Clipsal are no longer able to provide this service effectively.

Please contact the electronic transformer manufacturer (or distributor) to establish the preferred dimming method of a particular electronic transformer (i.e., leading edge or trailing edge). When this is known, a suitable Clipsal dimmer can be sourced and used in conjunction with the transformer.

Alternatively, the method described below can be used to estimate the maximum number of specific electronic transformers that can be connected to a Clipsal Leading Edge dimmer.

(Note: in mid-2006 Clipsal will be launching a C-Bus dimmer which will be suitable for use with both leading edge or trailing edge transformers without any de-rating necessary).

### **Estimating the maximum number of trailing edge electronic transformers that can be connected to a Clipsal Leading Edge dimmer**

A limited number of trailing edge electronic transformers can generally be connected to a Clipsal Leading Edge dimmer, with appropriate de-rating of the dimmer. The quantity of transformers which can be connected to a dimmer varies and is dependant on the "input capacitance" of a specific transformer. This input capacitance value can be obtained from the electronic transformer manufacturer (or distributor). The value is then used to calculate the

maximum number of transformers which can be connected to a Clipsal Leading Edge dimmer using the method described in the document here. . .

<Hyperlink to the document describing the method for calculating how many electronic transformers can be used with a Clipsal Leading Edge dimmer>

### **Clipsal Dimmers which use Leading Edge control**

The following Clipsal dimmers use Leading Edge control

- C-Bus Dimmers
  - L5504D2U Universal Dimmer (to be released mid-2006).
  - L5508D1A DIN rail mounted Series
  - L5504D2A DIN rail Mounted Series
  - L510xDxA Professional Series
  - L5112Dxx High Power Professional Series
- C-Bus Wireless dimmers
  - 588xDxLx Series Wall Switches
  - 585xDxLx Series Wall Switches
  - 5812DxL1 Series Plug Adaptors
- Standalone dimmers
  - 32E450LM dimmer mechanism
  - 2031E1000L Push Button dimmer
  - 2032/1000 Remote wired dimmer
  - 2032/2400 Remote wired dimmer

### **Clipsal Dimmers which use Trailing Edge control**

- C-Bus Dimmers
  - L5504D2U Universal Dimmer (to be released mid-2006).
- C-Bus Wireless dimmers
  - 588xDxTx Series Wall Switches
  - 585xDxTx Series Wall Switches
  - 5812DxT1 Series Plug Adaptors
- Standalone Dimmers
  - 32E450TM dimmer mechanism
  - 31E800T Push Button Dimmer