

## MAINTAINING SEPARATION BETWEEN 240 V MAINS WIRING AND C-BUS CAT-5 UTP CABLE

The C-Bus DIN range of products has proved to be very popular. They offer cost effective performance. Their small 'footprint' and DIN clip mounting was designed to allow them to be mounted into switchboards and consumer units.

With all C-Bus units that have mains as well as 36 V DC bus connections care must be taken to adequately separate the 240 V AC wiring from the bus wiring. Within the confines of a switchboard this will require the use of the C-Bus pink Cat-5 UTP which has mains rated insulation in its outer sheath.

Wiring practices vary from installer to installer, some times the mains cable entering the switchboard is double insulated sometimes it is single insulated. Even where it is double insulated, the outer insulation must be stripped back to allow the connections of the mains wires to the DIN units power supply and output terminals.

Where the Pink C-Bus Cat-5 cable enters the switchboard, if it then plugs straight in to a DIN module no problems with isolation between it and any single insulated mains cable can be expected. The 300 mm pink Cat-5 patch leads supplied with all DIN units should then be used to loop in and out of any other DIN units in the enclosure.

Where more than one pink Cat-5 cable enters the switchboard care must be taken to ensure that any join made between multiple Cat-5 cables is effectively insulated with no exposed terminal screws etc.

It may be worth considering terminating multiple C-Bus Cat-5 cables outside the switchboard so that you can bring just one pink Cat-5 straight in to the RJ socket on one of the DIN units.

The Mains rated pink insulation will allow the C-Bus Cat-5 cable to be run closer to mains wiring than would be allowed under normal circumstances. It is still good practice to keep them as far apart as possible and cross at 90 degrees to give the greatest margin of noise immunity both within the confines of the switchboard and around the installation.

Most importantly, securely anchoring both pink Cat-5 and mains cables in switchboards will give additional safety margin against inadvertent contact between loose mains conductors and the C-Bus 36 V DC wiring.

All of these issues are covered by the wiring regulations, there is an obligation for an installer to ensure that wiring is not carried out in a dangerous manner. While the safety and protection of equipment users is of the highest importance the product warranty will also be effected should a failure be found to be caused by poor wiring practice. In addition the isolation between mains and C-Bus wiring is one of the key checks made during a CIS Approved Installer site visit.

Regards

**CLIFF SHIRRA**

Manager Training  
&  
Technical Support

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