



Electricity Industry Bulletin No: 47 June 2002

ATTENTION COMPANY MANAGERS

Please ensure your nominated manager and electricians see this circular.

1. IXL BLACKWELL DOMESTIC ROOM HEATERS

Concerns were raised by a diligent electrical contractor regarding the installation instructions provided with IXL room heaters supplied with the new 240 volt thermostats.

IXL room heaters were previously supplied with an extra low voltage thermostat requiring only 0.5 – 0.75mm² cable to be installed for its operation.

The new installation instructions for the 240V thermostat states that the thermostat can be wired in 0.5 – 0.75mm² cable. This is incorrect, with the current arrangement the thermostat must be wired in the correct cable size in relation to the heater final sub circuit protective device.

For example if the heater final sub circuit is protected by a 32-amp circuit breaker then an appropriate rated cable is required for the thermostat.

It is not the intention of IXL to have 4mm² cable installed for the operation of the thermostat and they are now in the process of making modifications to the terminal block inside the heater to incorporate a 5 amp fuse, thus allowing the thermostat to be wired in 0.5 – 0.75mm².

2. CORRECT INSTALLATION OF CLIPSAL 4BB3 BUS BAR

Electricity Standards and Safety have been made aware of a safety issue with the installation of a Clipsal 4BB3 bus bar to the old style Clipsal terracotta colour circuit breaker that incorporates a metal din rail clip.

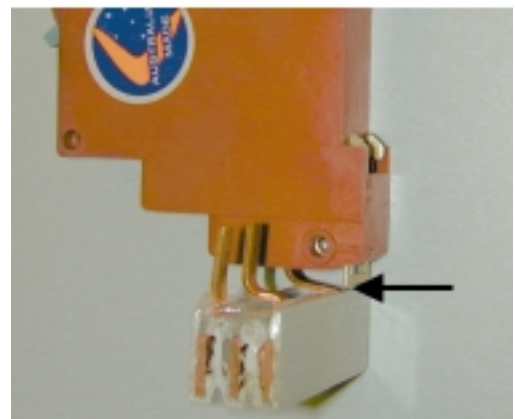
This issue was raised after an electrical contractor inadvertently energised the metal din rail mounted inside a plastic switchboard enclosure.

Electricity Standards and Safety advise that caution needs to be taken when installing the new 4BB3 bus bar to the old terracotta colour style circuit breakers. A reverse mounting of the bus bar assembly may cause contact between live bus bar and the circuit breaker's din rail clip.

Correct installation method



Incorrect installation method – note location of bus bar near metal din rail clip



3. UNLICENSED ELECTRICIAN FINED \$300 AND COSTS

In the Hobart Court of Petty Session Adrian James Jeffries, 29, of 12 Morrison Street, Brighton pleaded guilty through his lawyer on 26 April 2002 to a charge of unlicensed electrical work.

The presiding Magistrate, Mr Mike Hill, imposed a fine of \$300 and ordered court costs of \$35.65.

Mr Jeffries allowed his electrician's licence to expire but continued to perform electrical work. Aurora Energy Pty Ltd Authorised Officers identified the issue.

This prosecution was prepared at the Office of Electricity Standards and Safety, authorised by the Delegate of the Regulator and conducted by the Hobart Prosecution Section of Tasmania Police.

Electrical contractors can be prosecuted if they allow an employee to perform electrical work while unauthorised to do so under the *Electricity Industry Safety and Administration Act 1997*.

In addition they may put their licence at risk and they may not be covered by their insurer if the electrical work is defective.

4. ELECTRICAL INSTALLATION TESTING AUDIT

Electricity Standards and Safety has completed half of the current program of Electrical Installation Testing Audits. The second half of the program is due to be completed in the next two months. Those electrical contractors who have not yet been involved in the Electrical Installation Testing Audits, will be contacted by this office shortly. The majority of the remaining audits will be from the Launceston and Burnie areas.

5. CHANGE CONTACT DETAILS

Advise us of your changed contact details electronically at the URL address below or by returning the change of address form which came with this bulletin and forwarding to us.

http://www.wsa.tas.gov.au/ess/address_change.htm.



Desk lamp

Landia Architec Model LA 1012HG sold through Homeart stores.

The lamp does not comply with mandatory electrical safety requirements and may in some circumstances cause an electric shock. **Do not use the lamp**

Further enquiries contact Testrite International Pty Ltd 1800 501 735

6. BULK THERMAL INSULATION COVERING ELECTRICAL WIRING AND EQUIPMENT

A number of concerns have been raised with Electricity Standards and Safety regarding thermal insulation covering electrical equipment and in particular down lights installed in ceilings.

The temperature rise effect on down lights fully covered by bulk thermal insulation can result in a fire.

The Australian Standard AS/NZS 3000:2000 *Wiring rules*, clause 4.3.6.3 sets out a requirement for the installation of down lights near bulk thermal insulation and in particular the requirement of providing separation.

Electrical contractors should install barriers around down lights regardless if bulk thermal insulation is installed in the ceiling space.

Installers of thermal insulation should be familiar with the Australian Standard AS 3999:1992 *Thermal insulation of dwellings- Bulk insulation- Installation requirements*. Clause 2.6 which also sets out the requirements for bulk thermal insulation near electrical wiring and equipment.

Please remind your technicians to take necessary precautions to prevent down lights being covered by thermal insulation.

7. MEN CONNECTIONS - WHERE AND HOW

The objective of “earthing” is to provide protection for persons against electric shock. An effective earthing system ensures that fault currents resulting from an electrical fault within equipment or installation will operate protective devices such as fuses and circuit breakers. Activation of the protective device must occur in a time that will reduce any potential rise on the earthing system to below “touch voltage”.

The MEN system of earthing is widely accepted for its effectiveness as it combines:

- the earthing provided by the supply authority’s distribution system, where the LV neutral conductor is earthed at its source, the star point of transformer and other points on the supply system (hence the term multiple earthed neutral), and
- the earthing provided at the consumers installation via the earth stake and water pipe which is connected to the supply main neutral conductor, through the MEN connection point at the main switchboard.

Where a switchboard is installed for a separate installation (ie outbuildings, detached or fire isolated) particular attention must be given to the earthing and MEN connection.

Investigation of a recent fatality and serious electrical accident found unsatisfactory earthing to be a contributing factor.

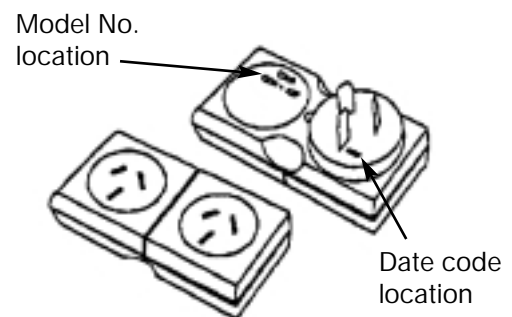
Inspections of electrical installations commonly find the MEN connection and/or the method of earthing is incorrect. Confusion still appears to exist over when and when not to connect the neutral conductor to the earth conductor.

An illustration of a typical installation MEN system is shown on the last page of this circular.

8. PUBLIC SAFETY WARNING “CLICK” AND “YUN” BRAND ELECTRICAL ARTICLES

‘Click’ double adaptors model Nos. CDA-102 series, CSB series, CSZ series and CCL series produced in the period between 1987 and 1995 have encountered numerous casing failures. The device casing was found to separate into two halves, exposing live 240V internal parts to its user.

It is possible to determine the manufacture date of the adaptor by inspecting the 4 digit date code located near the earth pin on the rear of the device. The final 2 digits of the date-code identify the year of manufacture of the adaptor.



If the date-code is pre-96, or not found, the use of the adaptor should be discontinued and the device disposed of immediately.

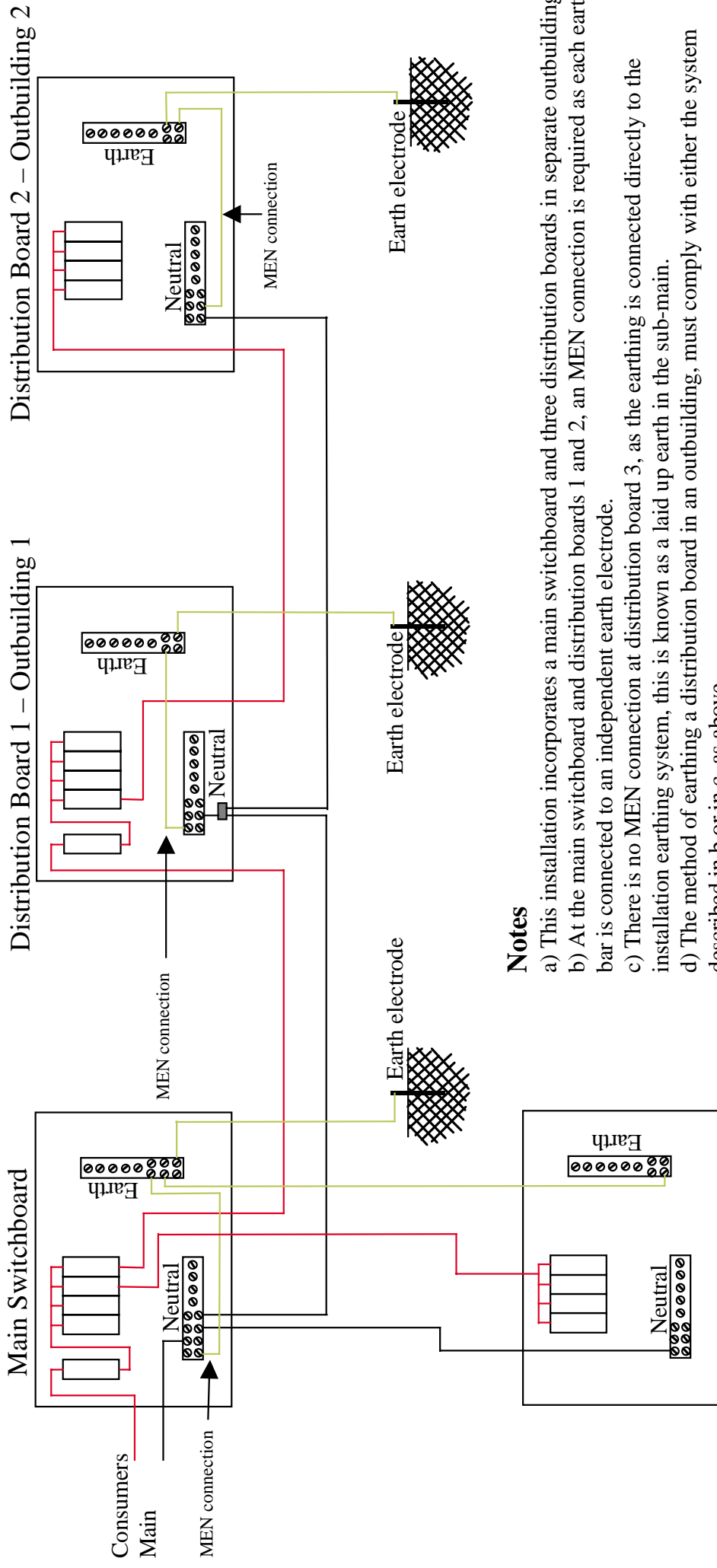
YUN YA3-Z 10 amp 240V cord extension sockets have been found with faulty socket contacts that do not adequately grip their corresponding plug pins. The problem causes an electrical fault that may result in overheating, melting and fire or electric shock.

The sockets were fitted to various extension cord sets and might differ slightly in appearance. However, most feature a white coloured enclosure with a protective skirt. The sockets feature the following markings: a logo of the manufacturer “Yun”, the model/catalogue number “YA3-Z”, approval number “N16180” or “N17533”.

9. STANDARDS AUSTRALIA COMMITTEE EL/1 – WIRING RULES

The main agenda item at the recently held meeting in Hobart, were the changes to be made to the revision of AS/NZS 3000 due in 2005. The committee will be arranging for a questionnaire to be sent to major stakeholders in the next few weeks canvassing issues such as; How the standard is used, expectations of the standard, size and style of book, is 3008 used, more illustrations? Standards Australia will be compiling your responses from an industry perspective.

Multiple Earthed Neutral (MEN) System



Notes

- This installation incorporates a main switchboard and three distribution boards in separate outbuildings.
- At the main switchboard and distribution boards 1 and 2, an MEN connection is required as each earth bar is connected to an independent earth electrode.
- There is no MEN connection at distribution board 3, as the earthing is connected directly to the installation earthing system, this is known as a laid up earth in the sub-main.
- The method of earthing a distribution board in an outbuilding, must comply with either the system described in b or in c, as above.
- The neutral conductor supplying distribution board 2, does not rely on a terminal at distribution board in outbuilding 1 for it's continuity.

Wiring Rules Clauses (specific to this diagram)

- 1.4.62 Definition of the MEN system
- 5.5 Size of Earthing Conductors
- 5.6.3.1 Main Earthing Conductors
- 5.6.6 Earthing in Outbuildings and Detached Portions of an Electrical Installation

Distribution Board 3 – Outbuilding 3