



Occupational Licensing (Electricity Consumption Metering) Code of Practice 2022

I, Narelle Butt in my capacity as Administrator of Occupational Licensing, hereby establish the following Code of Practice under section 53 of the *Occupational Licensing Act 2005*.

Title	Occupational Licensing (Electricity Consumption Metering) Code of Practice 2022
Description	This Code of Practice sets minimum standards for electricity consumption metering installations.
Version	Version number 1.0
Application	This Code of Practice supersedes the Electrical Standards and Safety Advisory Note 3 – Electricity Consumption Metering Installation Requirements and the Electricity Consumption Metering Safety Requirements (Tasmania) 2017
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Document Development History

Document Title	Version	Application Date	Sections amended
Occupational Licensing (Electricity Consumption Metering) Code of Practice 2022	I	2 May 2023	New Code of Practice
Electricity Consumption Metering Installation Requirements Advisory Note	0.B	1 October 2020	Non-mandatory advisory note supplementing the Electricity Consumption Metering Safety Requirements (Tasmania)
Electricity Consumption Metering Safety Requirements (Tasmania)	I	1 November 2017	Original version

I. Definitions

“Accessible” has the same meaning as per AS/NZS 3000;

“Act” means the *Occupational Licensing Act 2005* (Tas) as amended or superseded from time to time;

“AS/NZS 3000” means Australian Standard AS/NZS 3000 “Electrical Installations” (known as the Wiring Rules) as amended or superseded from time to time;

“AS/NZS 61439.1” means Part 1 of Australian Standard AS/NZS 61439 “Low-voltage switchgear and control-gear assemblies” as amended or superseded from time to time;

“Common property” means land within a strata scheme that is not within the boundaries of a lot and can be accessed without passing through a lot;

“Electrical installation” has the meaning as per the *Occupational Licensing (Electrical Work) Regulations 2018* as amended or superseded from time to time;

“Electricity consumption metering equipment” means all the equipment supplied, owned and installed by or on behalf of the electricity retailer, the metering coordinator or the metering provider, or their respective agent, for the purposes of recording the electricity consumption and other associated functions including controlling, isolating, testing and connecting of the recording device (meter);

“Electricity entity” has the same meaning as in the *Electricity Supply Industry Act 1995* as amended or superseded from time to time;

“Electricity infrastructure” means any electrical equipment that is owned and operated by an electricity entity and used for the generation, transmission, distribution or storage of electricity;

“Electricity retailer” means a person or business authorised by the Australian Energy Regulator to engage in the retail sale of electricity;

“High voltage” has the meaning as per AS/NZS 3000;

“Installation protection device” has the meaning given by clause 22 of this Code of Practice;

“Like for like” means the replacement of an item of electrical equipment or a component part, with another item of electrical equipment or component part, that performs substantially the same function and located in the same position and does not require alteration to the existing supply conductors nor circuit protection;

“Low voltage” has the meaning as per AS/NZS 3000;

“Meter enclosure” means an enclosure that is designed and installed to contain the electricity consumption metering equipment;

“Meter panel” means the backing panel to which the electricity consumption metering equipment is fixed;

“Metering provider” means a person or business that meets the requirements of the National Electricity Rules and is accredited by and registered with the Australian Energy Market Operator (AEMO);

“Multiple title electrical installations” means two or more individual electrical installations on separate land titles that as a group have one point of supply, such as those for strata schemes;

For the avoidance of doubt, this does not include separately metered electrical installations on one land title e.g. water pumps, teenager retreats, parents’ flats etcetera (these are single title electrical installations as defined below).

“Owner” means the person with a legal responsibility for the safety of the electrical installation;

“Point of supply” means the demarcation of ownership between the electricity entity’s electricity infrastructure and the owner’s electrical installation;

“Regulations” means the *Occupational Licensing (Electrical Work) Regulations 2018* as amended or superseded from time to time;

“Single title electrical installations” means two or more separately metered individual electrical installations that are located on one land title and as a group have one point of supply;

For the avoidance of doubt:

- *Examples include water pumps, teenager retreats, parents’ flats etcetera all situated on the same land title which are separately metered.*
- *Electrical installations for separate lots within a strata scheme are multiple title electrical installations as defined above.*

“Service protective device” has the meaning as per AS/NZS 3000;

“Switchboard” has the same meaning as per AS/NZS 3000.

2. Interpretation

- A.** Words and phrases in this Code of Practice have the same meaning as in the Act and Regulations unless otherwise stated.
- B.** Additional Advice and Compliance Advice are not a mandatory part of this Code of Practice and are for the purpose of clarification.
- C.** The requirements in this Code of Practice apply in addition to the standards of electrical work specified in the *Occupational Licensing (Standards of Electrical Work) Code of Practice 2017* as amended or superseded from time to time.
- D.** In the event of any inconsistency, the requirements in the standards specified in the *Occupational Licensing (Standards of Electrical Work) Code of Practice 2017* as amended or superseded from time to time prevail over the requirements in this Code of Practice.

- E.** The person performing the relevant electrical work is responsible for ensuring compliance to the requirements in this Code of Practice. However, depending on the circumstances, the electrical contractor's licence holder, their nominated manager or other parties may be held responsible for non-compliance if appropriate.

PART I – APPLICATION OF CODE OF PRACTICE

3. Purpose

The purpose of this Code of Practice is to ensure a safe and consistent approach for the connection of electrical installations to electricity infrastructure and for the provision of electricity consumption metering equipment. The requirements in this Code of Practice are intended to supplement the requirements contained within AS/NZS 3000.

4. Scope – general

This Code of Practice provides specific requirements to accommodate electricity consumption metering equipment for electrical installations that are to be connected to electricity infrastructure.

In order to facilitate this metering and other connection requirements of the electricity entity, this Code of Practice includes additional requirements between the point of supply and the electrical installation main switch.

Part 7 of this Code of Practice specifies additional requirements that apply to electrical installations exceeding 100A per phase.

This Code of Practice does not include any requirements for high voltage installations.

This Code of Practice does not remove or limit the duty to comply with the relevant work health and safety legislation or any other applicable law.

5. Application

- A.** This Code of Practice applies in all of the following circumstances:
 - i.** Electrical installations that are to be energised for the first time;
 - ii.** The replacement of a meter enclosure that is due to either:
 - a)** damage caused by fire, deterioration, degradation or another cause; or
 - b)** the need for expansion of the meter enclosure in order to accommodate additional or separate electricity consumption metering equipment;
 - iii.** Relocation of the meter enclosure; and

- iv. Upgrading of the supply arrangement from single phase to multi-phase.
- B. Part 3 of this Code of Practice applies in all of the following circumstances:
 - i. The circumstances listed in clause 5(A)(i)-(iv) above;
 - ii. The replacement of electricity consumption metering equipment that is necessary to accommodate the export of electricity upstream of the point of supply (alternative energy export);
 - iii. The replacement of a switchboard that is contained within the meter enclosure;
 - iv. The replacement of the consumer's mains for any reason; and
 - v. The alteration or addition to the meter enclosure.

6. Exclusions from this Code of Practice

This Code of Practice does not address requirements for the following:

- A. Electricity supply arrangements;
- B. Unmetered supplies (approved by the Distribution Licence Holder);
- C. High voltage metering; or
- D. Tariff changes.

Additional Advice

For information on connection arrangements prior to the point of supply, please contact the relevant electricity entity.

It is recommended that persons seeking connection to the electricity infrastructure familiarise themselves with those separate requirements before commencement of work.

7. Date of commencement

This Code of Practice commences on 2 May 2023.

8. Departures from requirements

This Code of Practice does not preclude alternative methods, innovation or technology provided that an equivalent or superior level of safety and reliability has been achieved.

Prior to departing from the requirements of this Code of Practice, the responsible electrical contractor, or in the absence of an electrical contractor, the person responsible for the electrical work must obtain written acceptance for the departure from the:

- A. Owner of the electrical installation;
- B. Relevant electricity retailer, and their appointed metering coordinator and metering provider; and

C. Electricity entity.

The departure must be clearly documented in a format that describes the alternative method, innovation or technology and include a declaration from a competent person that the design of this alternative method achieves an equivalent or superior safety and reliability outcomes as the requirements specified in this Code of Practice.

The electrical contractor must keep the above records for 10 years.

Electrical installations within a historic or heritage listed building may require elements of the requirements in this Code of Practice to be varied, modified and/or waived (for example, meter positions and panel design and sizing etcetera).

This clause does not permit any departure from the requirements of the standards specified in the *Occupational Licensing (Standards of Electrical Work) Code of Practice 2017* as amended or superseded from time to time.

9. Non-compliance with this Code of Practice

Where an electrical installation does not comply with the requirements of this Code of Practice, or to an accepted alternative method as per the process in clause 8 above, the following may occur:

- A.** The electricity entity may refuse, suspend or discontinue supply until the requirements have been met; and/or
- B.** The Department of Justice or its agent may require the person responsible for the electrical work to facilitate rectification as appropriate.

10. Ownership and responsibility

A. Electrical installation

The owner of an electrical installation is responsible for ensuring that the electrical installation is maintained in a safe and fit for purpose condition. This includes the provision of safe and unrestricted access to the electricity consumption metering equipment as required by this Code of Practice.

Meter enclosures, meter panels and other electrical equipment supplied and installed on behalf of the owner or developer is a part of the electrical installation.

B. Electricity consumption metering equipment

Electricity consumption metering equipment must be installed and maintained by the relevant metering provider in accordance with this Code of Practice.

Additional Advice

The electricity entity must install electricity consumption metering equipment in accordance with the requirements of the National Electricity Rules.

11. Record of electrical work and Certificate of Electrical Compliance

A person responsible for electrical work, including the installation of, or work on, electricity consumption metering equipment, must ensure that the work is recorded and notified when required by the Regulations.

Additional Advice

The electrical work recording and notification requirements are specified in the Regulations and further explained on the CBOS website.

Notifiable electrical work is defined in the Occupational Licensing (Classification of Electrical Work) Code of Practice 2018 as amended or superseded from time to time.

12. Licensing

Work on the installation, addition, alteration or repair of the low voltage components of electricity consumption metering equipment is prescribed electrical work under the *Occupational Licensing Act 2005*.

Additional Advice

The licensing requirements for electrical work in Tasmania are contained within the Occupational Licensing Act 2005, and are explained in detail on the CBOS website.

PART 2 – WORK PRACTICES

13. Work process

- A.** The person responsible for the installation of the meter enclosure and/or meter panel is responsible for installing, testing and verification of the following:
- i.** The installation protection device;
 - ii.** The consumer's mains from the point of supply location to the electrical installation main switch, including the following:
 - a)** If the consumer's mains are not colour-coded by the manufacturer, use heat shrink sleeving or other similar material to identify the consumer's mains active as red, white or blue and the neutral as black in accordance with the requirements of AS/NZS 3000. Insulation tape must not be the sole means of identification;
 - b)** Install sufficient length of consumer's mains and load conductors to enable the meter panel to open no less than 90 degrees with the mains/load ends connected;
 - iii.** Installing the metering neutral (see clause 20(B) of this Code of Practice);
 - iv.** The tariff load conductor, with the ends installed through the appropriate terminal holes in the meter panel. Each conductor must be clearly marked to identify the tariff to be connected to and have sufficient length provided for meter installers to connect to meter terminals;
 - v.** The appropriate testing to ensure correct consumer's mains polarity; and
 - vi.** Fixing the meter panel securely in place with conductors left unconnected at the point of supply.
 - a)** For multiple title electrical installations, the conductor must be left unconnected at the load side of the installation protection device.

Compliance Advice

For the meanings of the terms discussed above, including “point of supply”, “installation protection device” and “multiple title electrical installations”, see the definitions clause.

PART 3 – EXISTING ELECTRICAL INSTALLATIONS

Compliance Advice

This part 3 applies in the circumstances specified in clause 5(B) of this Code of Practice.

14. Asbestos

Materials or products that contain asbestos may not be re-used if removed from the meter enclosure for any reason.

Compliance Advice

It is recommended that existing materials and products that contain asbestos be replaced with alternative products by a competent person whenever conducting work on or in an existing meter enclosure. In circumstances where the replacement of an existing asbestos meter panel is not undertaken, then work that may disturb the integrity of asbestos products (for example, drilling or cutting) must not be undertaken without suitable precautions being considered and implemented as necessary.

All persons working on or in meter enclosures should be able to identify the presence of asbestos.

Information relating to asbestos is available from the WorkSafe Tasmania website (www.worksafe.tas.gov.au) which lists relevant industry safety guidelines and model procedures.

15. Fireproofing of existing timber structures

All combustible surfaces such as timber, plasterboard and the like within an existing meter enclosure must be lined with a fibre-cement sheet of thickness of 3mm or more.

PART 4 – REQUIREMENTS OF THE ELECTRICITY ENTITY

16. Connection arrangements

For information on connection arrangements prior to the point of supply, please refer to the relevant electricity entity.

Persons seeking connection to the electricity infrastructure should familiarise themselves with the entity's separate requirements before commencing work.

For electrical installations in Tasmania, except the Bass Strait Islands, contact TasNetworks: www.tasnetworks.com.au Their Service and Installation Rules has further information.

For electrical installations on the Bass Strait Islands, contact Hydro Tasmania: www.hydro.com.au

17. Service protective device (SPD)

The service protective device is installed, owned and maintained by the relevant electricity entity. The operation of this device may be restricted by the relevant electricity entity in certain circumstances. Please consult directly with the relevant electricity entity for further clarification.

PART 5 – METER ENCLOSURES AND PANELS

18. Meter enclosure requirements

A. General requirements

Each electrical installation that is, or is intended to be, connected to the electricity infrastructure must be provided with a meter enclosure that is suitable to contain all of the required electricity consumption metering equipment in a configuration that is approved by the electricity retailer's metering provider.

B. Number of metering positions per property

Only one metering position may be installed for each individual land title unless written permission is obtained from the:

- i. Electricity retailer's metering provider; and
- ii. Property owner.

If this written permission is obtained, the electrical contractor should keep a record of this for 10 years.

C. Locations

Meter enclosures must be installed in a location that ensures they can be readily and safely accessed for the initial installation and subsequent meter reading, testing, adjustment and repair.

Access to the meter enclosure must not be obstructed in any way, including by the structure, surrounding vegetation, contents, fittings or fixtures of a building or any other structure.

i. Individual domestic and residential installations

Meter enclosures must be located external to the building(s) and should be located as close as practicable to the public roadside frontage of the property.

ii. Commercial and industrial installations

Meter enclosures must be located external to the building(s) where possible and should be located as close as practicable to the public roadside frontage of the property.

iii. Multiple title electrical installations

The meter enclosure must be located in an area designated as common property.

iv. Alternate meter enclosure locations

If exceptional circumstances exist which necessitate a meter enclosure to be located in a position which does not comply with this Code of

Practice, this may occur provided that written permission is obtained from the electricity retailer's metering provider and the property owner prior. If this written permission is obtained, the electrical contractor should keep a record of this for 10 years.

Additional Advice

The responsible contractor should discuss the meter enclosure location with the owner to ensure that future plans regarding vegetation and building additions have been considered and will not negatively impact the location.

The responsible contractor should inform the owner that re-energising the installation following a fault on the electricity infrastructure or meter fault may be delayed if access to the meter is in any way restricted.

The removal or disconnection of communication equipment that enables remote reading may require the relocation of the metering equipment or removal of the gate to facilitate the required access.

Meter enclosures may be freestanding. See clause 18(j) of this Code of Practice for further requirements for freestanding meter enclosures.

D. Clearances

i. Meter enclosure clearances

There must be a minimum unimpeded clearance space of:

- a)** 600mm measured from the edge of the meter enclosure door in any open position; and
- b)** 1000mm measured horizontally from the front of the meter enclosure.

ii. Clearance limitations

The clearance dimensions stipulated in clause 18(D)(i) above are limited by the:

- a)** Property boundary, irrespective of whether a boundary fence or wall exists or not; and
- b)** Railing, balustrade, guardrail or edge of a deck or platform that is raised above normal ground level.

iii. Meter enclosure door

A meter enclosure door must, without the need for a tool or a key, be removable or able to open on a hinge no less than 120 degrees to enable unhindered and safe access.

Compliance Advice

AS/NZS 3000 provides specific clearance requirements for switchboards. If the meter enclosure contains a switchboard, the clearance dimensions for the meter enclosure must comply with AS/NZS 3000.

E. Meter enclosure sizes

This clause must be read in conjunction with clauses 19 and 26 of this Code of Practice (Meter panel requirements)

For all meter enclosures:

- i. A minimum depth of 175mm must be provided from the front of the meter panel to the inside back of the meter enclosure door to allow for the meters and associated equipment. This distance excludes any door stiffening;
- ii. Meter enclosures must be appropriately sized to accommodate a meter panel(s) that complies with the relevant size requirements in clauses 19 and 26 of this Code of Practice;
- iii. The responsible contractor or, in the absence of an electrical contractor, the person responsible for the electrical work, must ensure that non-standard meter panels will meet the requirements of the metering provider.

Additional Advice

Contractors and customers should consider future needs when planning an electrical installation.

F. Meter enclosure locking devices

All meter enclosures that are locked in order to prevent unauthorised interference with equipment, must be locked or secured in a manner that is approved by the relevant metering provider and electricity entity.

Locking or securing of a meter enclosure must not diminish the ability of a person to access the protective devices for their particular installation.

G. Environment protection

To ensure adequate protection against external influences such as foreseeable mechanical damage and the ingress of moisture and dust, meter enclosures must be selected and installed in accordance with the requirements within AS/NZS 3000.

Construction of the meter enclosure and associated supports must be from appropriate materials that resist degradation and corrosion. Locations that are in close proximity to salt laden atmospheres may require additional corrosion protection.

Compliance Advice

AS/NZS 3000 requires a meter enclosure to have a minimum rating of IP 23. This rating may not always be adequate for the particular environment. The installer needs to carefully consider the installation environment and the effects of external influences.

H. Mechanical protection

All meter enclosures must be electrically and mechanically protected in accordance with the requirements of AS/NZS 3000.

I. Heights

A meter enclosure must be installed at a height above the final finished ground level that allows the:

- i. Top edge of each of the meter(s) to be no higher than 2000mm; and
- ii. Bottom edge of each of the meter(s) to be no lower than 600mm.

Compliance Advice

The "final finished ground level" includes a permanent floor, platform or deck.

J. Freestanding meter enclosures

Meter enclosures that are freestanding and not fixed to a permanent structure must be adequately supported to ensure stability and protection against damage.

To meet this requirement, all of the following must be satisfied:

- i. An upright post(s) must be used to support the meter enclosure;
- ii. The upright post(s) and meter enclosure must not bend nor flex in any direction; and
- iii. The upright post(s) must be buried at a depth of no less than 500mm with stone based concrete backfill, e.g. rapid-set.

Electrical installations on construction sites must comply with the additional requirements of AS/NZS 3012 *Electrical installations – Construction and demolition sites* as amended or superseded from time to time.

Compliance Advice

Enclosure plinths are considered to be permanent structures.

All structures need to comply with AS/NZS 1170.2 Structural design actions - Wind actions.

19. Meter panel requirements

A. General

Meter panels are considered to be a part of an electrical installation and are owned by the electrical installation owner.

Meter panels must be:

- i. For the sole use of electricity consumption metering equipment and the installation protection device;
- ii. Constructed of a non-conductive, non-combustible and ridged material that conforms to the requirements of AS/NZS 61439.1; and
- iii. Able to open no less than 90 degrees from the closed position with all required equipment installed.

B. Equipment installed on meter panel

- i. All electrical equipment installed on a meter panel must be back wired only; and
- ii. All conductors connected to electrical equipment mounted on a meter panel must:
 - a) Be provided with sufficient free length to allow the panel to be moved into a position to enable work to be carried out;
 - b) Be suitably fixed or otherwise retained in position to avoid undue movement or stress at terminals of electrical equipment when the panel is moved or fixed in position; and
 - c) Arranged to prevent undue pressure on electrical equipment mounted on the panel.

Additional Advice

The responsible contractor or, in the absence of an electrical contractor, the person responsible for the electrical work should discuss with the owner the possibilities of future expansion of the electrical installation which may require additional metering or associated equipment.

C. Panel sizes (Whole current metering only)

- i. Meter panels must be appropriately sized to provide the minimum mounting and clearance spaces required for the necessary equipment as per Tables 19.1 and 19.2 below.
- ii. Meter panels must also comply with the following size restrictions:
 - a) Minimum size of no less than 300mm high and 350mm wide; and
 - b) Maximum size of no more than 1200mm high and 800mm wide unless approved by the metering provider.

Table 19.1 – Minimum space required per item of equipment

Equipment	Height (mm)	Width (mm)	Depth (mm)
Type 4 meter (per each)	255	150	135
Installation protection device (per each)	90	40	90

Table 19.2 – Minimum clearances required between equipment

Minimum clearance required	Height (mm)	Width (mm)	Depth (mm)
Around the installation protection device	20	20	N/A
Between other items of equipment	10	10	N/A
Between equipment and all outer edges of panel	20	20	N/A

Additional Advice

Consideration for future requirements or expansion is the responsibility of the installation owner (or their agent) and the electrical contractor.

Consideration should be given to the following:

- *Type of supply (single or multi-phase);*
- *Number of separately metered installations;*
- *Number of tariffs per customer;*
- *Commercial or residential tariffs involved; and*
- *The amount of space required for:*
 - *Metering control equipment; and*
 - *Installation protection device.*

Compliance Advice

For minimum space for meters which are not Type 4, consult the metering provider for specifications.

For meter panel sizing and equipment clearance requirements for high current metering, see Clause 26 of this Code of Practice.

D. Behind the meter panel

Wiring passing behind a meter panel that is not intended for the connection to metering equipment must be enclosed within a separate duct or conduit located in a corner of the meter enclosure.

Electrical equipment or connections, such as a multiple earthed neutral (M.E.N) connection, earthing terminal(s) or neutral terminal(s) that may require access for future inspection, testing, maintenance or repair must not be located behind a sealed panel or within any location that requires sealing by the electricity entity, electricity retailer or their metering provider.

The clearance behind a meter panel must be at least 50mm measured between the meter panel and meter enclosure to allow for the minimum internal radius of conductors as specified in AS/NZS 3000.

Compliance Advice

Cables larger than 35mm² may require additional clearance space.

For enclosures that contain a duct or conduit additional clearance space may be required.

E. Labelling and identification

Electrical equipment mounted on the meter panel or within the meter enclosure must be clearly identified by means of a label to indicate its purpose.

The label must be fixed, durable and legible. Identification by marker pens is not acceptable.

With all multiple title electrical installations, labelling of the meter panel and switchboard must clearly identify the individual electrical installations and associated meter and installation protection devices.

20. Wiring for electricity consumption metering equipment

A. Conductors

- i. All conductors connecting metering or associated with electricity consumption metering equipment must be of a type that is acceptable by the metering provider and no less than 4mm² unless the relevant manufacturers' installation instructions permit a smaller size.
- ii. The maximum conductor size terminated on hinged or removable meter panels is 35mm². All larger conductors that are installed for the purposes of achieving voltage drop requirements must be terminated in sealable links or another acceptable tamper-proof method, located behind the meter panel or sealable panel.

B. Metering neutral conductor

- i. The neutral conductor of consumer's mains (between the point of supply and the electrical installation main neutral terminal) must not be broken except:
 - a) The connection between the transition from aerial conductors to underground conductors;

- b)** Connections between spans of aerial conductors on power poles;
 - c)** Connections between conductors at the point of attachment; and
 - d)** Where larger conductors have been installed for the purposes of achieving voltage drop requirements and have been terminated in accordance with clause 20(A)(ii) above to reduce the conductor size.
- ii.** For copper conductors, the neutral conductor for electricity consumption metering equipment must be soldered (sweated) to the consumer's mains neutral conductor and the insulation reinstated with appropriate black heat shrink sleeving.
- iii.** For aluminium conductors, the neutral conductor for electricity consumption metering equipment must be connected to the consumer's mains neutral conductor by a suitable mechanical clamp or crimp connection and the insulation reinstated with appropriate black heat shrink sleeving.
- iv.** Where more than one metering neutral is required, a separate sealable metering neutral link must be installed. The supply neutral to this neutral link must be sweated to the unbroken main neutral.
- v.** The neutral of each metering instrument must be connected to its own terminal of a sealable metering neutral link. Looping of the metering neutral between metering instruments is not permitted.

Compliance Advice

Neutral conductors that are damaged may be repaired using approved methods such as crimp links and the reinstatement of adequate insulation

21. Communication equipment associated with metering

Customer owned communication equipment, other than that approved and installed by the metering provider, may not be contained within the meter enclosure or any other enclosure that contains metering provider communication equipment.

PART 6 – GENERAL REQUIREMENTS

22. Installation protection device (IPD)

Compliance Advice

This clause 22 does not apply to high current (>100A) installations unless they incorporate whole current metering.

- A.** Each individual electrical installation that is, or is intended to be, connected to the electricity infrastructure must be provided with an installation protection device (IPD) that complies with all of the following requirements:
- i.** Compliant to AS/NZS IEC 60947.2;
 - ii.** Has a maximum rating of 100A;
 - iii.** Has a minimum of 6kA short circuit capacity;
 - iv.** Is a resettable non-adjustable circuit breaker;
 - v.** Is capable of being secured in the open and closed position;
 - vi.** Is fitted immediately upstream of the whole current meter;
 - vii.** Is installed in a sealable non-consumer section or compartment of the meter enclosure;
 - viii.** Has all live parts (i.e terminals) adequately shrouded from direct contact; and
 - ix.** Is labelled as follows:

INSTALLATION PROTECTION DEVICE
Isolate for switchboard maintenance only

These labels must be:

- a)** Of traffolyte type;
- b)** Permanent;
- c)** Secured adjacent to the device; and
- d)** Have lettering no less than 5mm in height.

- B.** The installation protection device will perform the following functions:
- i.** Enable persons to isolate the downstream electricity installation when required;
 - ii.** Ensure appropriate overcurrent protection of the electricity consumption metering equipment; and
 - iii.** Ensure current limiting (overload protection) of the individual electrical installation.

23. Main switchboards in multiple title electrical installations

Compliance Advice

For the meaning of “multiple title electrical installations”, see the definitions clause.

Multiple title electrical installations must have one main switchboard that:

- i.** Is situated on common property and is accessible by all relevant owners within the multiple title arrangement;
- ii.** Contains a main switch that provides suitable overcurrent protection for the total maximum demand of the installation;
- iii.** Contains the overcurrent protection devices for each individual sub-main circuit;
- iv.** Contains the first multiple earthed neutral (M.E.N) of the installation;
Note: This requirement does not prevent the use of the TN-S system of earthing;
- v.** Complies with the requirements of AS/NZS 3000; and
- vi.** Has a barrier (escutcheon) covering all connections and live parts that has the capability to be sealed by the electricity retailer or their agent.

Compliance Advice

The requirements in clause 23 above do not negate, remove nor alter the need for each individual installation to be separately metered in accordance with the requirements of this Code of Practice.

The requirements in clause 23 above do not permit the installation of conductors across land title boundaries except consumer mains that cross a boundary from private strata title property to common property or where otherwise permitted by legislation.

24. Main switchboards for single title electrical installations

Compliance Advice

For the meaning of “single title electrical installations”, see the definitions clause.

- A.** Single title electrical installations must have a separate main switchboard that:
 - i.** Is installed and located in accordance with the requirements of AS/NZS 3000; and
 - ii.** Has a barrier (escutcheon) covering all connections and live parts that has the capability to be sealed by the electricity retailer or their agent.
- B.** This switchboard must contain the following electrical equipment and components:
 - i.** A main switch that provides:
 - a)** Suitable overcurrent protection for the total maximum demand of all of the separately metered electrical installations; and
 - b)** A single point of isolation that enables a means to isolate all of the separately metered electrical installations from the network.
 - ii.** A suitable neutral terminal;
 - iii.** Overcurrent protection devices for each individual sub-main circuit; and
 - iv.** The first multiple earthed neutral (M.E.N) of the installation.

Note: This requirement does not prevent the use of the TN-S system of earthing.
- C.** This switchboard, and the electrical equipment and components contained within it, must comply with the requirements of AS/NZS 3000.

PART 7 – HIGH CURRENT METERING (Above 100A)

Compliance Advice

This part 7 only applies to high current (>100A) metering installations.

25. General

The installation of meter panels and accessories associated with metering, such as components to disconnect, isolate, test or short-circuit current transformers (CTs) must comply with the relevant parts of AS/NZS 3000 and the manufacturer's instructions.

A switchboard must not be energised unless CTs are either connected to a meter or short-circuited.

The responsible electrical contractor, or in the absence of an electrical contractor, the person responsible for the electrical work, must discuss CT installation requirements with the metering provider and verify that the proposed CTs are appropriately certified. The responsible contractor must keep a written record of this for 10 years.

26. Meter panel sizes and clearances for meter panels containing current transformer metering equipment

Meter panels containing current transformer metering equipment must be appropriately sized and provide the minimum clearance spaces below:

- i. 20mm between equipment and the meter panel external perimeter; and
- ii. 50mm between installed equipment.

27. CT chambers

All of the following requirements apply to the chambers where CTs are located:

- i. A separate chamber of the meter enclosure must be provided in every electrical installation that requires a full load current greater than 100A. This chamber must only contain the required CTs and associated equipment;
- ii. The internal dimensions of the above chamber must be sufficient to accommodate all of the equipment required within the chamber and spaced no less than the minimum clearance requirements stipulated in the manufacturer's instructions;

- iii. CTs must be mounted behind an access panel that is removable by a tool and has a label fixed to the front of the access panel with the words "CURRENT TRANSFORMERS BEHIND". This label must be permanent;
- iv. All access panels must have provision for sealing by the metering provider;
- v. A sealable or lockable isolation device must be provided for CT metered installations. This isolation device is to be located on the line side of the CTs and allows each individual tariff and/or customer to be isolated. An appropriately rated circuit breaker is a suitable device for this purpose;
- vi. Keyed locks are not permitted as a means of securing current transformer chambers due to the difficulty in obtaining access;
- vii. Access panels must be provided with either a hinge on one vertical side or handles on two opposite sides to enable removal of the access panel;
- viii. To enable appropriate testing, the removal of the access panel to the CTs must not be restricted by the need to first operate a device such as a main switch or other circuit breaker;
- ix. The removal of an access panel must not be restricted by conductors or other equipment;
- x. All live low voltage parts within CT chambers are to be individually insulated in order to prevent inadvertent contact with live parts during inspection, testing or other maintenance operations. A non-conductive insulated barrier alone (removable transparent (Perspex) cover over the CT chamber) is not an acceptable method of insulation; and
- xi. Metering neutral conductors must be in accordance with clause 20(B) of this Code of Practice.

28. Current transformers (CTs)

A. General

The following requirements apply to CTs:

- i. CTs must be manufactured and type tested to Australian Standard AS 61869.2 *Instrument transformers, Part 2: Additional requirements for current transformers* as amended or superseded from time to time;
- ii. CTs must be appropriately selected and installed in accordance with the applicable manufacturers' instructions;
- iii. All CTs must be mounted on the load side of the main circuit breaker unless approval has been given by the metering provider to do otherwise;

- iv. If busbars are used, the section passing through the current transformer window must be easily removable (minimum length of 300mm);
- v. If insulated cables are used to pass through windows, then joints or terminations must be made near the CT to allow for easy removal of the CT;
- vi. Metal cable sheaths must be terminated prior to conductors passing through the CT windows;
- vii. No cable joints may be made within the tunnel of the CT window;
- viii. The size of CT wiring must be matched to the CT, wire length and meter so as not to affect the accuracy of the meter recordings; and
- ix. The current circuit wiring must not exceed the maximum lengths specified in Table 28.1 below:

Table 28.1 – Maximum route lengths of current circuit wiring:

Cable size	Maximum route length of current circuit wiring (metres)		
	0.2 Ω	0.4 Ω	0.6 Ω
2.5mm ²	11	22	33
4mm ²	18	36	54
6mm ²	27	53	80

Compliance Advice

Special attention is required to ensure CT limitations, meter wire lengths, CT ratios and ratings appropriate to the maximum current rating of the main switch are adhered to.

B. Potential fuses

When installing and protecting line side equipment, each CT must be protected on the line side by a suitably rated fuse installed in an accessible location such as:

- i. On the busbar;
- ii. Adjacent to the busbar installation;
- iii. Adjacent to insulated cables that are used as the consumer's mains;
or
- iv. If the above methods are unsuitable, mounted on a meter panel.

Fuse holders mounted to a busbar should utilise the mounting hole provided in the holder for this purpose. Fuses should be able to be removed and replaced without disturbing the fuse holder.

Potential fuses must have provision for sealing. If these fuses are located behind an escutcheon, a suitable label with the words "POTENTIAL METERING FUSES BEHIND" must be fixed to the front side of the escutcheon.

C. Test blocks – general construction

The test block base, cover and insulated portions of the voltage slide links and insulated nuts must:

- i. Be of moulded insulating material or materials complying with the requirements of AS/NZS 61439.1;
- ii. Not be adversely affected by normal (operational) heat and abnormal heat. Glow-wire test principles of AS/NZS 61439.1 must be used to verify the suitability of insulating materials; and
- iii. All moulded material for the base must be black and the phases of the voltage links must be identified by red, white and blue coloured insulated nuts.

Unless otherwise specified, all current carrying metal parts must be suitable for electrical purposes. Any steel holding down screws must be suitably protected against corrosion.

Incorporate provision to isolate potential feeds and short circuit CTs to prevent voltages in excess of the equipment rating.

D. Test blocks – mounting

Test blocks must be:

- i. Mounted such that the voltage connection terminals are on the right-hand side when viewed from the front of the test block;
- ii. Arranged in order for the CT secondary links to fall closed and the voltage circuit links to fall open; and
- iii. Have all associated wiring enclosed under the test block cover (surface wiring is not permitted).

E. Safety services

Where control equipment for fire alarms, lifts and other similar equipment is connected from the line side of the metering CTs, the conductors must pass through the CT window as shown in Figure 28.2 below:

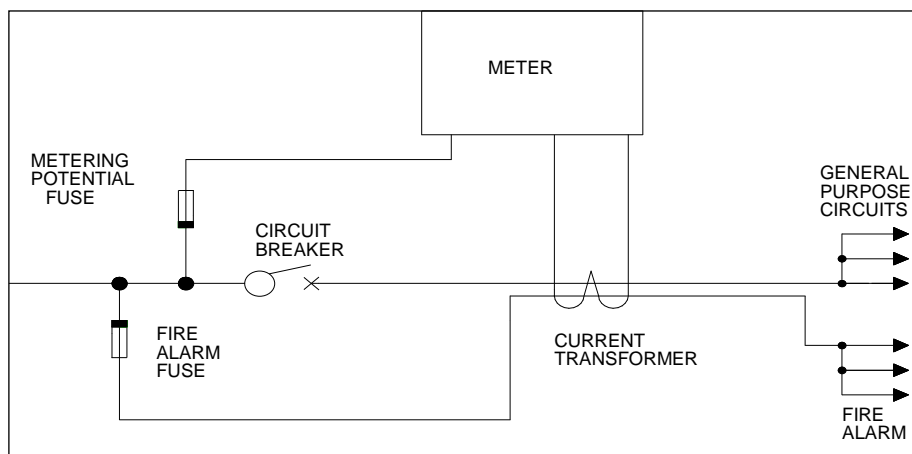


Figure 28.2: Metering for fire alarms

Compliance Advice

As conductors for fire alarms, lifts and similar are normally connected prior to the main circuit breaker, the person performing/energising the work and the responsible contractor should give special consideration to providing fault protection in the form of a fault current limiter or circuit breaker as well as mechanical protection, segregation and enclosure of cables.