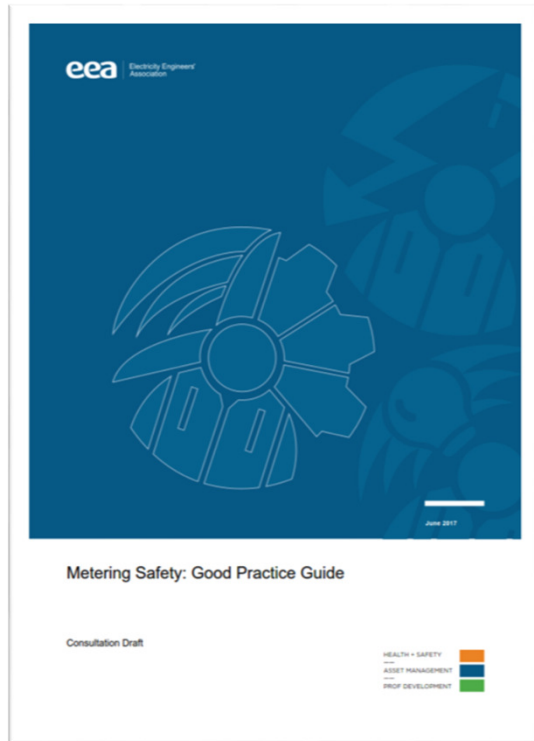




Metering Safety: Good Practice Guide

Steering Group Report





Review triggered as part of the ongoing five yearly guide review process

Steering group members:-

- Guy Marquet – SmartCo
- Grant Batchelor – Vircom EMS
- Murray Keating – Counties Power
- Rodger Griffiths - Westpower



Key Focus Areas

- Alignment with new safety regulations and other updated legislation
- Removal of prescriptive work method requirements
- Changes to support new metering technology
 - Exterior meter box is no longer required
 - Smart meters require good communication paths
- Clarification of correct method of connecting neutrals
- Addition of an Isolation Point
- Reinforcing the need for overload protection on consumers mains



New Safety Regulations

- Health And Safety At Work Act (2015)
- Explanation of PCBU
- New legislative hierarchy introduced
- Many workplace practices are now dealt with internally by Authorised Test House (ATH) procedure manuals
- Safety consideration expanded to include upgrades to existing installations (flammability, asbestos, etc)



New Metering Technology

- Smart meters were not common when the original document was prepared
- Many meters are installed on indoor meter boxes or switchboards
 - Require good signal strength, so an exterior wall is still preferred



Neutral Connections

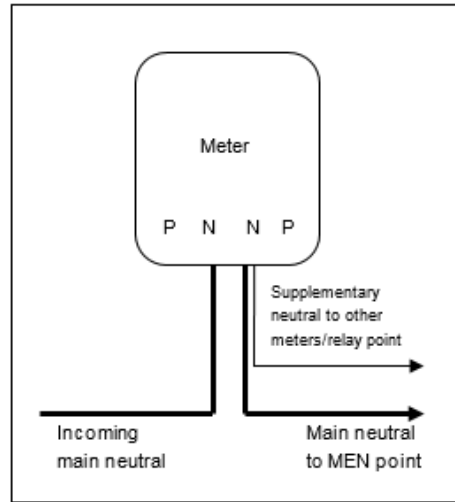


Figure 1: Split neutral

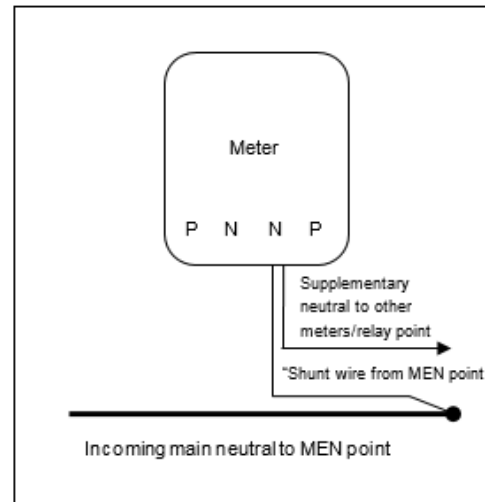


Figure 2: Good practice: shunt neutral



Neutral Connections

- Problems with Split Neutrals
 - Phase and neutral can be transposed during meter changes
 - The neutral conductor acts as a combined protective earth and neutral (PEN) conductor in the TN-C-S (or MEN) system used in New Zealand and its integrity is critical
 - Water ingress can occur through the neutral screen



Neutral Connections

- The guide requires that the supply neutral shall be configured as a **shunt neutral**
- Energy Safety has confirmed that converting an existing connection from split to shunt neutral does not require inspection as it is considered low-risk under ESR 6A, which allows “relocation or extension of a conductor to facilitate replacement of a fitting”.



Addition Of Isolation Point

- Previously, some companies installed the meter before the main switch, others after.
- The new HASWA requires that risks be assessed and eliminated where reasonably practicable.
- Accordingly, this guideline now requires an isolator prior to the meter to allow “dead” work on meter.



Addition Of Isolation Point

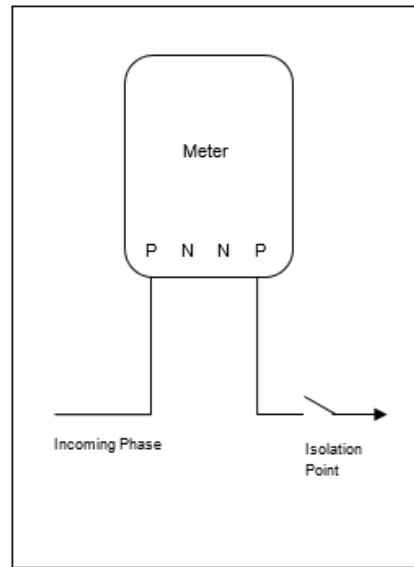


Figure 6: Metering not isolated

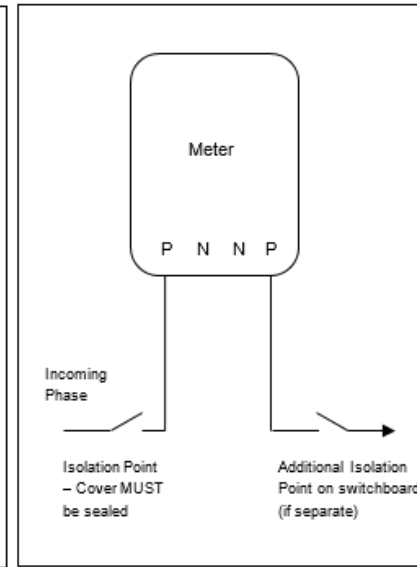


Figure 7: Good practice: metering isolated



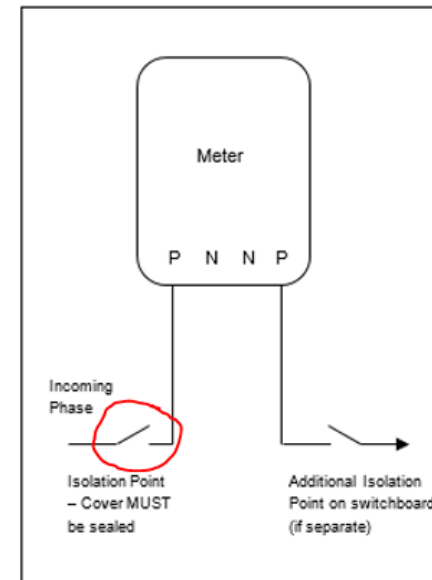
Overload Protection

- AS/NZS 3000 (the Wiring Rules) states:
 - 2.5.1 General**
 - Effective conductors shall be protected by one or more devices that automatically disconnect the supply in the event of overcurrent, ...
 - Protection against overcurrent shall consist of protection against
 - (a) overload current...
 - (b) short-circuit current...



Overload Protection

- EDBs are only required to provide short circuit protection in accordance with ESR 32(1)
- If this is the case, **overload protection must be installed for the consumers mains inside the installation**
- There is no reason that this cannot be combined with the isolation point in the form of a sealed MCB



Next Steps

- Industry consultation is now under way
- Please help the Steering Group improve the guide by sending your feedback in by the end of August

