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RELAY

A newsletter for Electrical Contractors

December 2010, No. 9

Welcome to another edition of our RELAY newsletter, which has been produced to provide information to Electrical Contractors across Ergon Energy's distribution area.

Common Inverter Energy System examination defects

Strong demand for the installation of Inverter Energy Systems (IES) across the State has resulted in an increased number of contractors engaging in this work. Coinciding with this strong demand is an increase in the number of defects/non conformances with the Queensland Electricity Connection & Metering Manual (QECMM), AS/NZS 3000:2007 and AS4777 found by Ergon Energy Connection Officers when the IES examination is carried out.

The following is a list of the most common defects found, although not limited to only IES examinations.

No Meter Isolation Link (MIL) fitted

MILs are required to be fitted on the line side of metering in every instance for single customer installations. (QECMM 7.2.1 & 7.2.3) A MIL may not be required for multi-tenancy installations that meet the prescribed criteria. (QECMM 7.2.3 Exception 2)

Meters mounted on flammable material and not on a fire resistant hinged panel

Surface wiring of meters is not permitted. All metering shall be mounted on a hinged panel. (QECMM 6.1, 7.5.2 & 7.6)

MIL surface mounted and front wired

All MILs must be back wired (QECMM 7.15a).

Black coloured MILs being installed

The use of black coloured MILs is not permitted (QECMM 7.1.5a). The three (3) MILs currently approved for use in Ergon Energy are clear cased and back wired. They are:

- Flowline E1036/SL
- Dore Electrics 125amp
- Alstrom S71125BWQ

IES connection to switchboard made on the line side of the principal tariff main switch

All IES systems compliant with AS4777 shall be connected to the switchboard on the customer's (load) side of the of the principal tariff main switch. (QECMM section 10 drawing notes)

MIL installed with main switch left connected on line side of meter

When work at an existing installation requires MILs to be installed, the connectivity of the consumer mains must be re-routed to the MIL > Metering > Main Switch/es. (QECMM section 8 drawings)

Main switches not marked

Each main switch must be marked MAIN SWITCH. AS/NZS 3000:2007 also imposes the additional condition of readily

distinguishing the MAIN SWITCH/SWITCHES from other switches by using one or a combination of means such as grouping, contrasting colour or other suitable methods mentioned in the clause. (AS/NZS 3000:2007 2.3.3.4)

No "Main Switch HW" on the main switchboard

When the connectivity of the main switch is changed to the load side of metering, it will be necessary to ensure that, where applicable, there is a main switch for the hot water at the main switchboard, which is correctly marked as "Main Switch HW". (AS/NZS 3000:2007 2.3.3.2)

Number of main switches not compliant with AS/NZS 3000

When the connectivity of the main switch is changed to the load side of metering, it will be necessary to have a main switch for each separately metered supply.

In installations that have load supplied from ripple control relays, it will be necessary to have a single main switch on the outgoing supply from each relay switch, or a single multi pole main switch that isolates the outgoing supply from all relay switches.

In situations where the outgoing supply from a relay switch feeds more than one circuit, eg: air conditioning and/or other eligible load, it will be necessary to install an additional main switch that controls ALL of the load supplied from that relay switch. (AS/NZS 3000:2007 2.3.3.2)

Insufficient space allowed to install new meter/s

Ergon Energy meters and control equipment can vary in size depending on application, type and manufacturer. Minimum space requirements must be maintained to allow Ergon Energy Connection Officers to install the correct metering and maintain correct clearances. (QECMM 7.13 & Table 7.1)

Connection of Inverter neutral

The IES neutral must be connected to the neutral link under a separate terminal/connection. In many instances, instead of replacing the neutral link with one that has more connection terminals, the IES neutral connection has been incorrectly connected in the same terminal/tunnel as another circuit. (AS/NZS 3000:2007 2.9.4.3)

Hinged switchboard panel not secured after completion of work

Electrical Contractors must ensure hinged panels are secured by screws or nuts to prevent access to live parts without a tool. Instances where the panel is found unsecured and allowing access to live parts will be reported to the Electrical Safety Office.



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Info on metering work and metering inspections

Electrical contractors are advised that the only work they should perform on Ergon Energy meters is load side wiring.

All work to remove, install, change or move revenue meters should be undertaken by Ergon Energy under its Metering Provider accreditation. Other work that is to be undertaken by Ergon Energy includes recording of final reads, terminating line side wiring, and application of meter seals.

Ergon Energy must undertake this work following any changes to metering installations as part of its legal responsibility to ensure all metering installations connected to its network are functioning correctly and registering energy to the prescribed accuracy requirements.

Customer-initiated work that involves metering changes may attract a fee/s. Where an Electrical Contractor nominates that a customer is to be charged for any fees, they must ensure the customer is aware of these fees prior to undertaking the work and submitting the Form A.

Ergon Energy charges the regulated fees approved by the Australian Energy Regulator. Further information on prices and product codes that apply in Ergon Energy's supply area in relation to Alternative Control Services (including customer-initiated metering work) is available on Ergon Energy's website under the [Contractors and Suppliers section](#).

Grid Connected Inverter Energy Systems

The connection of small scale PV systems to Ergon Energy network requires the customer to sign an Inverter Energy System (IES) Network Agreement (<http://www.ergon.com.au/your-home/connections/renewable-energy-system-connection>). Although this contract is between the customer and Ergon Energy, there are technical requirements which the installer/contractor needs to be aware of.

Particular attention is drawn to Schedule 2 - Technical Conditions for the Connection of Small Scale Photovoltaic Inverter Energy Systems. There are specific voltage and frequency settings that must be programmed into the inverter. (Refer to the inverter manufacturer as to how this may be required to be done):

Voltage: Maximum voltage trip point (V_{max}) shall be 255V for a single phase system or 440V for a three phase system.

Frequency: (i) Minimum frequency trip point (F_{min}) shall be 48Hz
(ii) Maximum frequency trip point (F_{max}) shall be 52Hz

The Clean Energy Council has released updated best practice guidelines for the installation of grid connected photovoltaic systems. Of particular note are the earthing requirements for transformerless inverters:

<http://www.cleanenergycouncil.org.au/cec/accreditation/Solar-PV-accreditation/forms.html>

Go to **Grid-Connect Install and Supervise Guidelines** - Issue 6 Sept 2010

Metering requirements for multiphase IES installations

Where a customer has a single or multiphase installation and they apply for the Solar Bonus Scheme (FIT), then a NET metering arrangement is required to be installed and wired in accordance with the requirements for direct connected whole current metering as per clause 7.1, 7.2, 7.2.1, 7.2.2, 7.2.3, 10.1 and drawings 10.2, 10.3, 10.4 & 10.5 of the Queensland Electricity Connection & Metering Manual (QECMM).

Note: All multiphase installations will require the installation of an electronic polyphase meter.

Submitting a 2nd Form A for a revisit

If a contractor submits a Form A and the installation is **not ready**, or defects are found which result in the requested work not being able to be completed when the Ergon Energy work crew arrive onsite to perform the work, the service order will be cancelled and the contractor will have to submit another Form A and will be charged for a **'Wasted Truck Visit'**.

Correct bridging procedure for faulty hot water relays

Electrical Contractors who attend to cold water complaints and find the relay is faulty are expected to bridge out the faulty relay so that the customer will have hot water until Ergon Energy staff are able to replace it.

For installations with Ripple Control Receivers, the following procedure should be used:

- Break the seal on the relay terminal cover and bridge out the line and load terminals. (Note: Bridging hot water load to the principal tariff is not permitted.)

For installations in non ripple areas with two-element (integrated) meters with no ripple control receiver:

- Break the seal on the meter terminal cover and relocate the hot water load cable to terminal No. 5 (far right terminal).

It is the Electrical Contractor's responsibility to notify Ergon Energy as soon as possible after the seal is broken for bridging purposes (QECMM 2.4).

Note: Breaking a seal to bridge out a relay or meter as described above is the only instance where a Form A is not required to be submitted.

PLEASE NOTE: The fax number to send invoices for bridged relays has changed. The new fax number is 07 4932 7261. Please amend your records with this updated fax number to avoid unnecessary delays in getting your invoices paid.

Have your say

With regard to enquiries on information in the RELAY newsletter, or issues you may like to have considered for inclusion in future editions, contact your regional representative:

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Or telephone them through our National Contact Centre on 13 10 46. When asked for information about your call, say CONTRACTOR ENQUIRY and your call will be directed to the appropriate person.

Go to the Contractors site at ergon.com.au to access information, download forms, register for Alerts, and much, much more.