

UE Plant Bulletin

UE Meter Wiring Diagrams for New and Photovoltaic (Solar) Embedded Generator Connections

1 INTRODUCTION

The introduction of AMI meters has resulted in changes to UE's meter installation requirements. To accommodate these changes, UE have reviewed and amended its current metering requirements as well as wiring diagrams.

The following document details UE's metering requirements and wiring diagrams for new connections and Photovoltaic (Solar) Embedded Generator metering.

2 PURPOSE

The purpose of this document is to provide a guide for UE's meter wiring requirements and should be read in conjunction with the current Service Installation Rules (SIR's) and AS 3000.

3 SCOPE

This document applies to a customer's REC engaged in providing the appropriate facilities for UE's metering installation requirements.

4 OBJECTIVE

The objective of this document is to assist the customer's REC in the correct identification and adherence to UE's specific metering requirements.

5 Metering Requirements for New and Photovoltaic (Solar) Embedded Generator Connections

The following sections detail the direct connect metering requirements and capabilities for new connections and Photovoltaic (Solar) Embedded Generator.

For low voltage current transformer (LVCT) connected metering, refer to the current Service and Installation Rules (SIR's) for all requirements including wiring diagrams.

UE metering will be installed to match the network tariff as requested by your retailer.

5.1 Load Control (Switching)

Subject to the network tariff selected by the customer/retailer, the meter will control the customer's load accordingly. UE will utilise single and/or multiphase meter(s) in order to meet the corresponding network tariff.

Load control is not available to low voltage current transformer (LVCT) or Gross Co-Generation meter installations.

5.1.1 Electric Hot water

- Meters used to control electric hot water have a 30A maximum current rating.
- UE will only provide a meter to control the customer's electric hot water system where the customer has the appropriate network tariff.
- Only Single Phase hot water systems can be wired directly to UE meters with load control capabilities.
- Meters with load control capabilities have provisions for a manual boost of the customer's hot water.

5.1.2 Storage Heating

- Meters used to control storage heating systems have an integrated 240Vac/2A maximum control relay.
- UE will only provide a meter to control the customer's storage heating system where the customer has the appropriate network tariff.
- Load control is provided for both single and multiphase storage heating systems.
- Manual boost functionality is not available for storage heating units.
- Where UE is required to control the customers storage heating system, the customer is required to install their own appropriate contactor and 2 amp circuit breaker on their switch board and supply a 2.5mm cable to control the contactor. Refer to the corresponding wiring diagrams below.

5.2 Photovoltaic (Solar) Embedded Generator Metering

UE has a regulatory obligation to install a bi-directional meter where customers have chosen to install a Photovoltaic Embedded Generator. Bi-directional metering consists of either Net or Gross metering and must be specified by the system installer. A bi-directional meter is necessary to measure energy exported into the electricity grid.

For further information regarding additional requirements refer to Guideline: Photovoltaic (Solar) Embedded Generator Connection Obligations that is contained on UE's website. http://www.uemg.com.au/media/14799/ue_gu_0004_photovoltaic_solar_embedded_generator_connection_obligations_v2_1.pdf.

5.2.1 Net Metering

- Load control for direct connect Net metering is provided (and is **NOT** separately measured). Refer to section 5.1.1 and 5.1.2 for additional information associated with load control.
- Net metering consists of the **ONE** meter only (Existing Multi metered sites will need to be consolidated to **ONE** meter where there is a request for Net metering)
- Customer's REC will be required to wire their inverter directly to the customer's switch board.

5.2.2 Gross Metering

- No load control is provided. Customer's to control their own load via their own time switch that is installed on their switch board.
- **ONE** 2 element Single phase meter for single phase installations to be installed.
- Multiphase installations require two meters to be installed.
- Customer's inverter to be wired directly to UE's meter.

6 METER CONFIGURATION AND WIRING DIAGRAMS

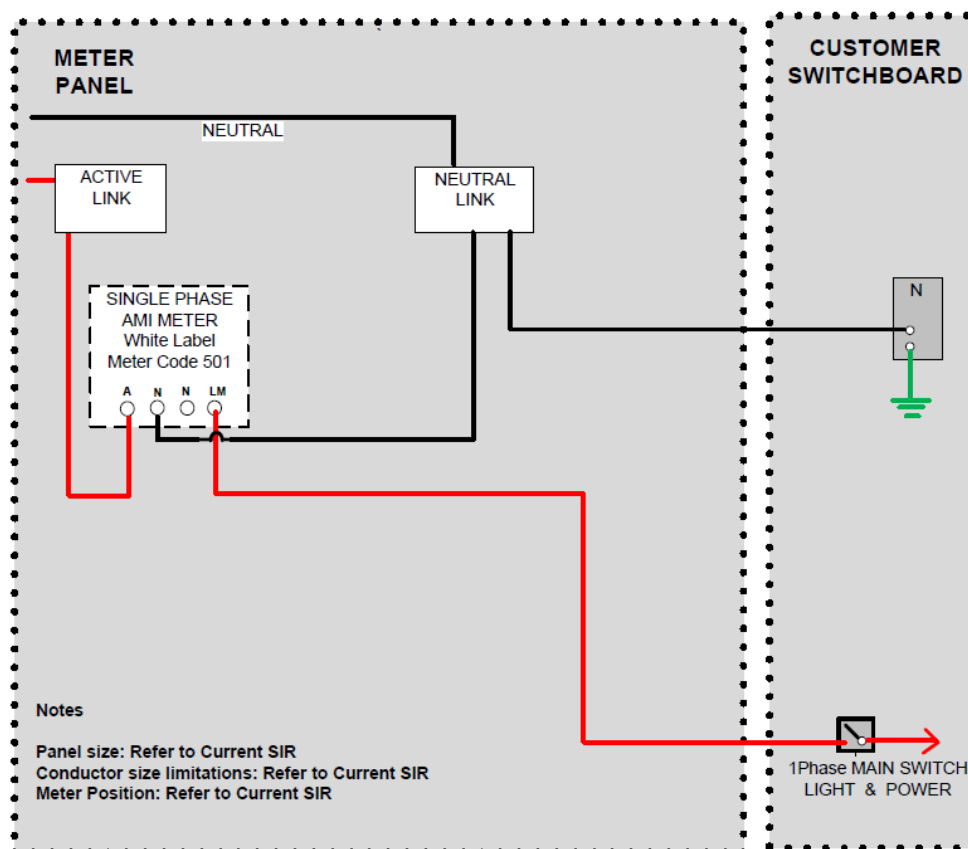
6.1 Single Phase Single Element Meter Installation

Meter Type	How to Read Meter
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Item	Description
88	Test Display
01	Date
02	Time
03	Total kWh Consumption
13	Total kWh Generation
60,62,63 and 64	Utility Use Only

Typical Wiring Diagram



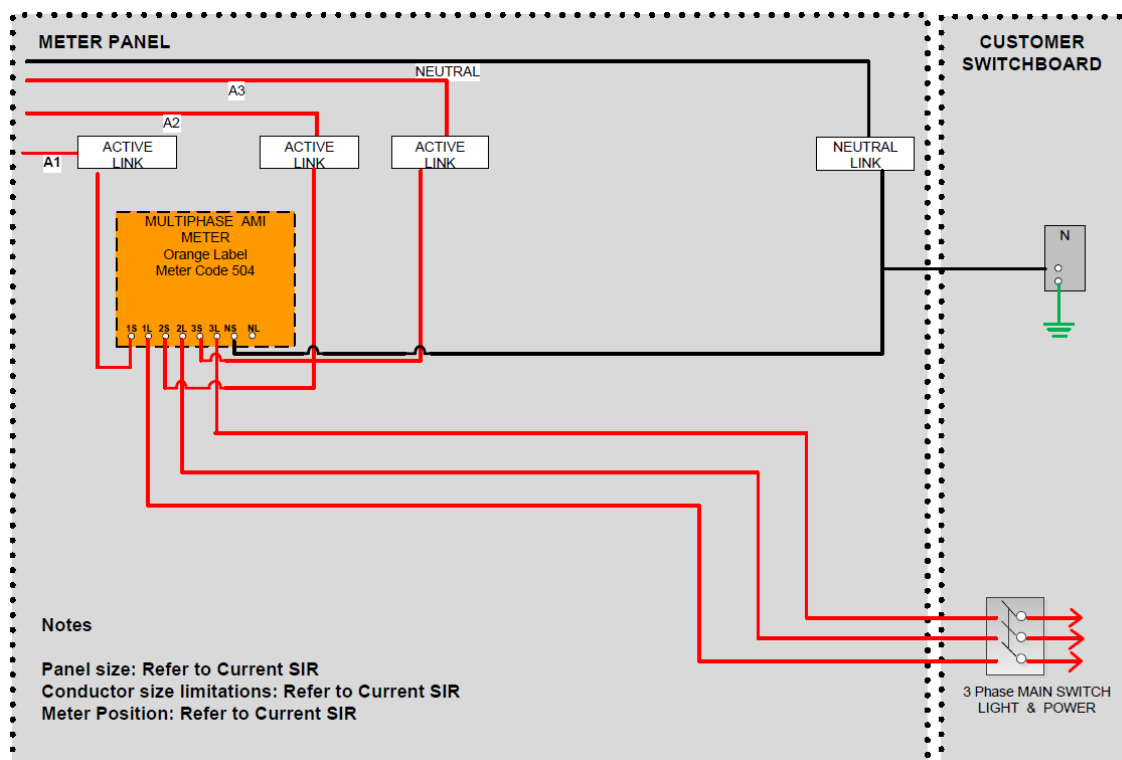
6.1.1 Multiphase Meter Configuration Wiring Diagram

Meter Type	How to Read Meter
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Item	Description
88	Test Display
01	Date
02	Time
03	Total kWh Consumption
13	Total kWh Generation
60,62,63 and 64	Utility Use Only

Typical Wiring Diagram



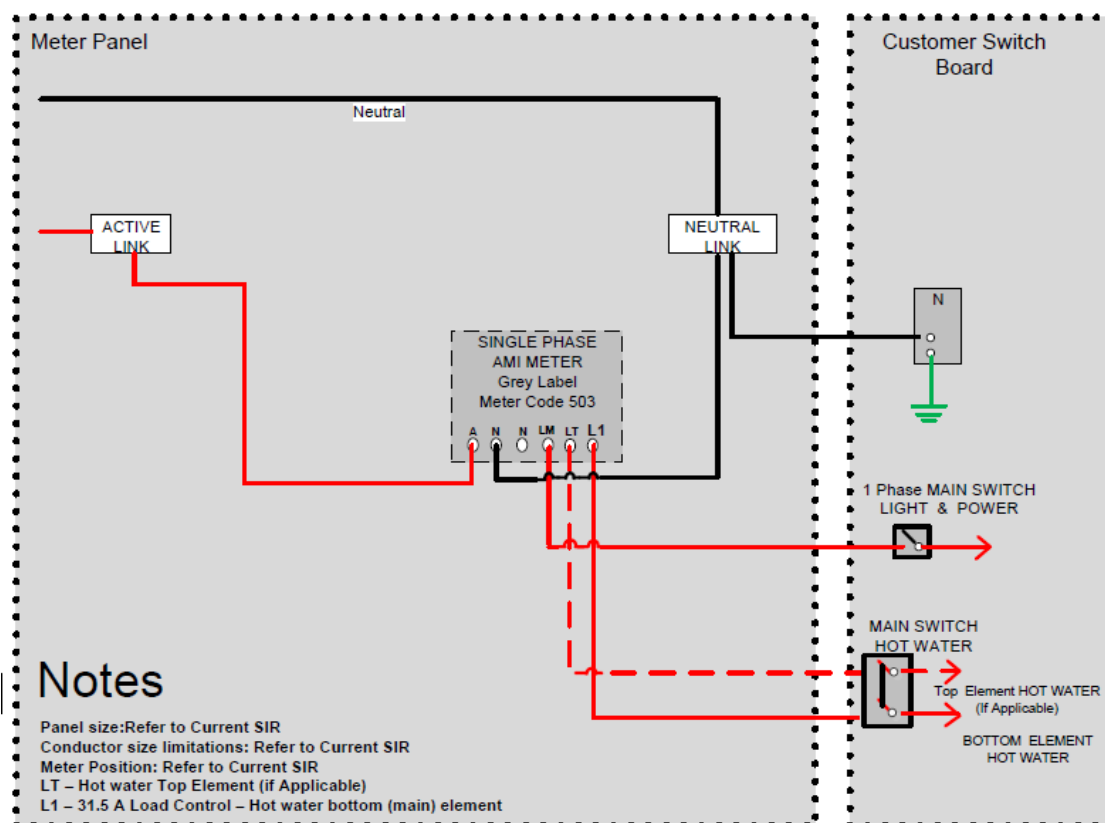
6.1.2 Single Phase 2 Element Meter with Dedicated Single Phase Off Peak Hot Water

Meter Type	How to Read Meter
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Item	Description
88	Test Display
01	Date
02	Time
03	Total kWh Consumption
07	Total kWh Consumption How Water
13	Total kWh Generation
60,62,63 and 64	Utility Use Only

Typical Wiring Diagram



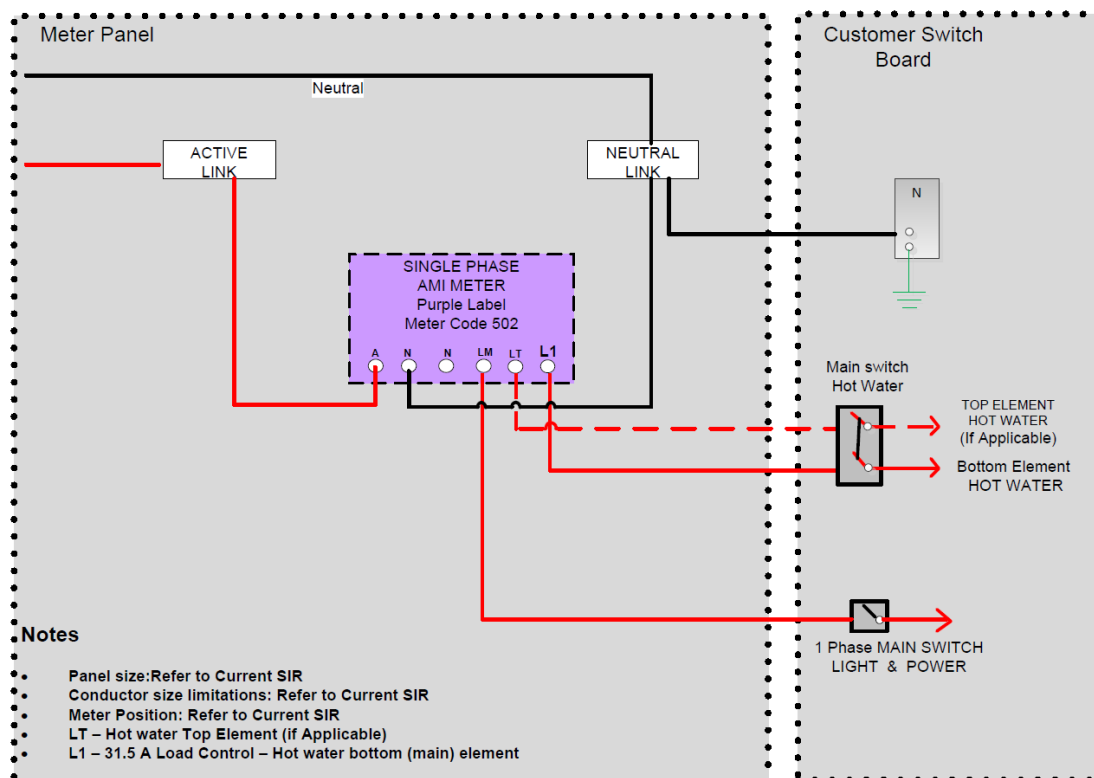
6.1.3 Single Phase with Non Dedicated Single Phase Hot Water

Meter Type	How to Read Meter
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Item	Description
88	Test Display
01	Date
02	Time
03	Total kWh Consumption
13	Total kWh Generation
60,62,63 and 64	Utility Use Only

Typical Wiring Diagram



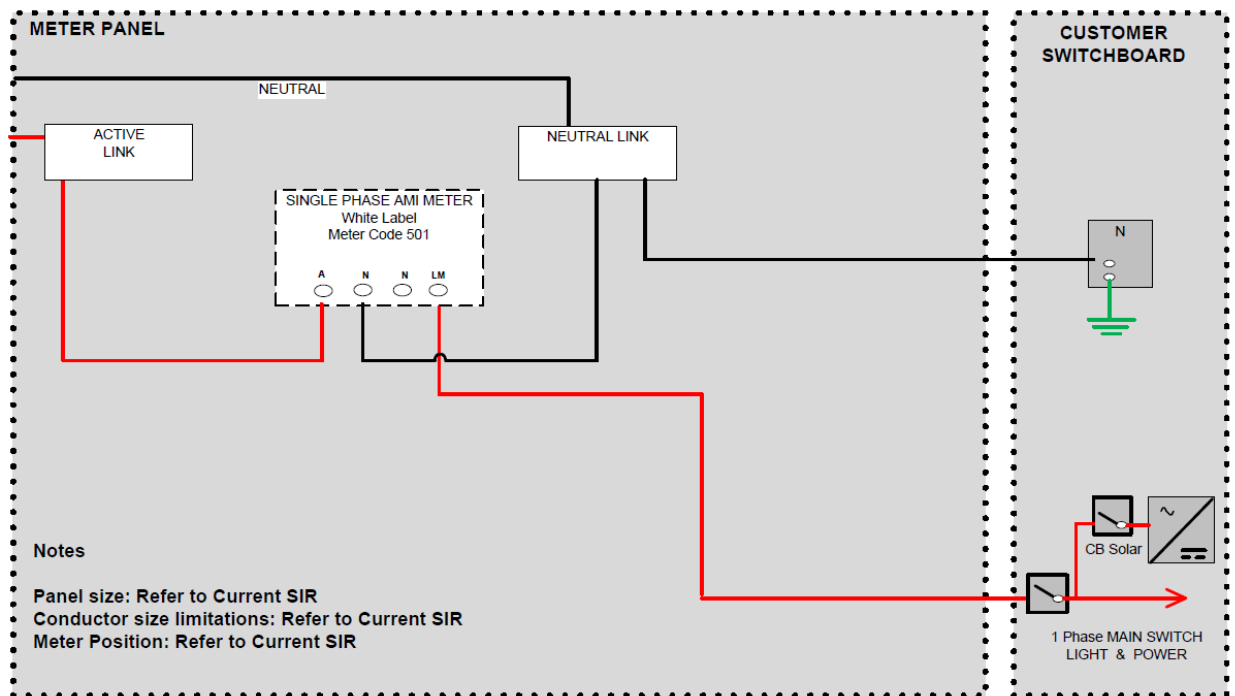
6.1.4 Single Phase NET Co-Generation without Single Phase Hot Water

Meter Type	How to Read Meter
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Item	Description
88	Test Display
01	Date
02	Time
03	Total kWh Consumption
13	Total kWh Generation
60,62,63 and 64	Utility Use Only

Typical Wiring Diagram



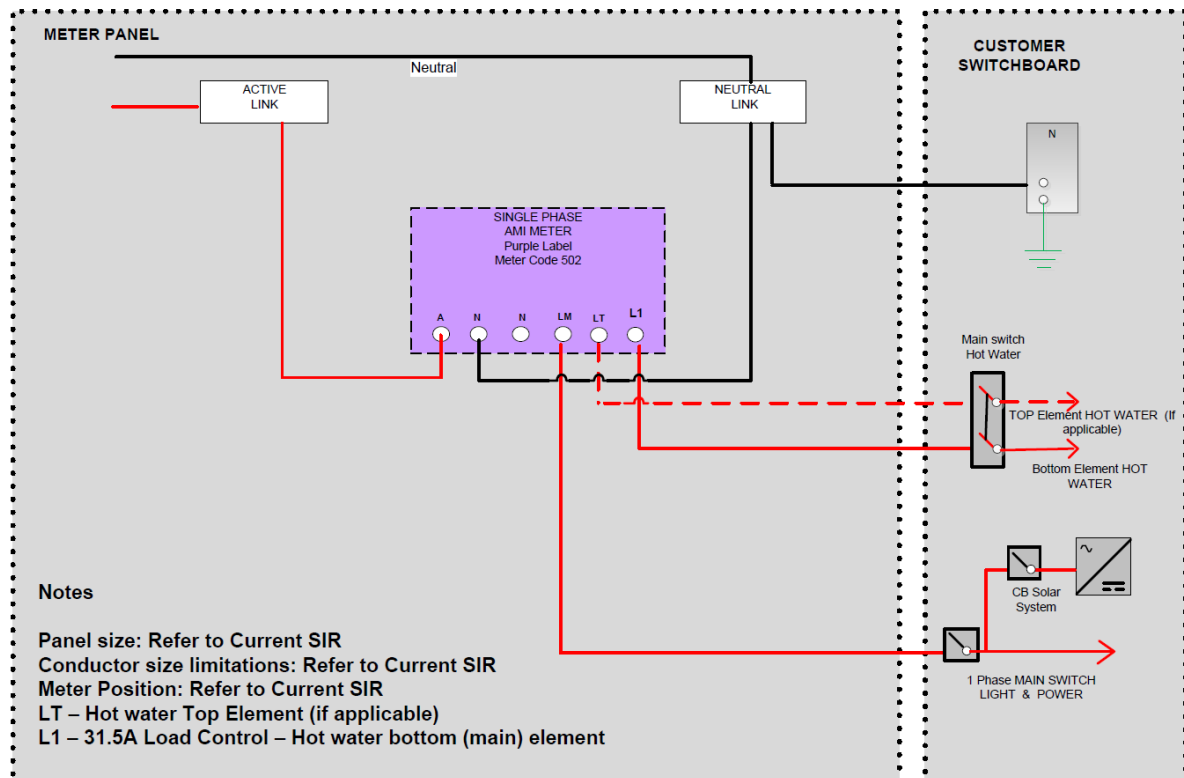
6.1.5 Single Phase NET Co-Generation with Single Phase Hot Water

Meter Type	How to Read Meter
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Item	Description
88	Test Display
01	Date
02	Time
03	Total kWh Consumption
13	Total kWh Generation
60,62,63 and 64	Utility Use Only

Typical Wiring Diagram



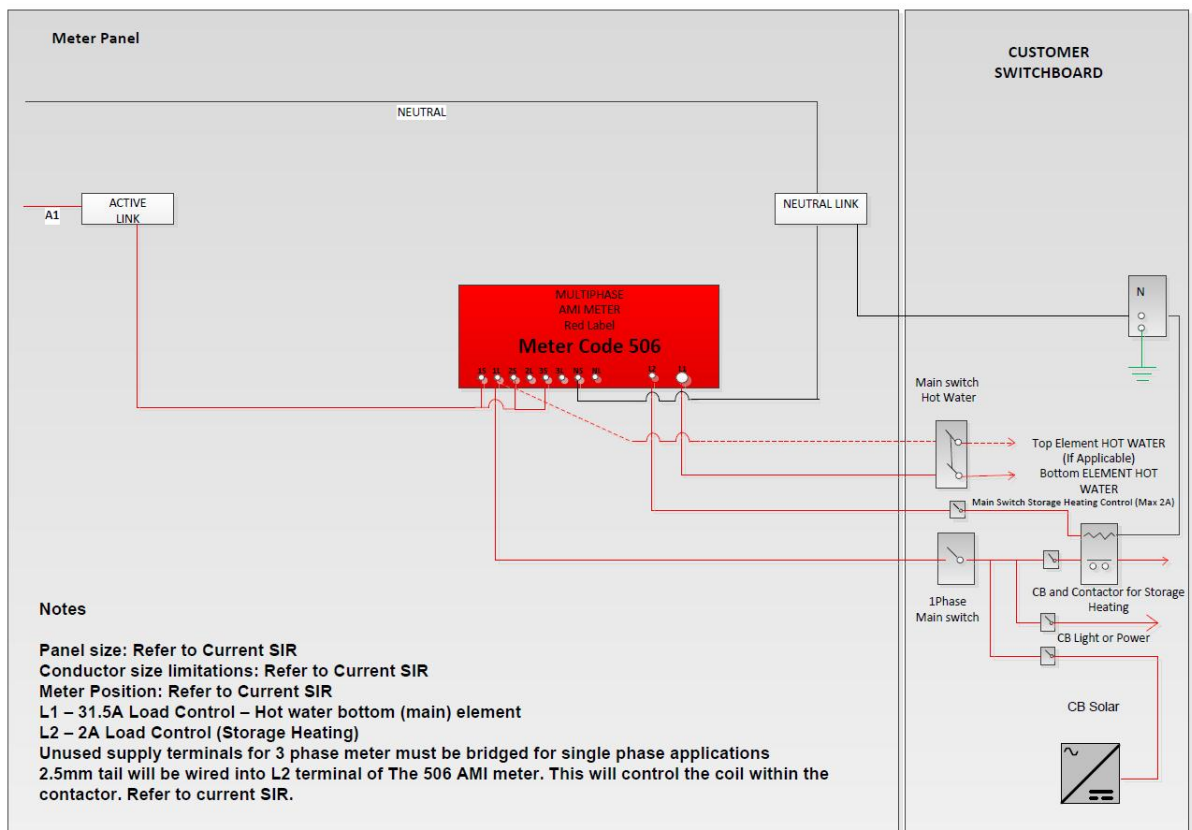
6.1.6 Single Phase Co-Generation Net with Single Phase Hot Water and Storage Heating (Hot Water or Storage Heating not separately measured)

Meter Type	How to Read Meter
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Item	Description
88	Test Display
01	Date
02	Time
03	Total kWh Consumption
13	Total kWh Generation
60,62,63 and 64	Utility Use Only

Typical Wiring Diagram



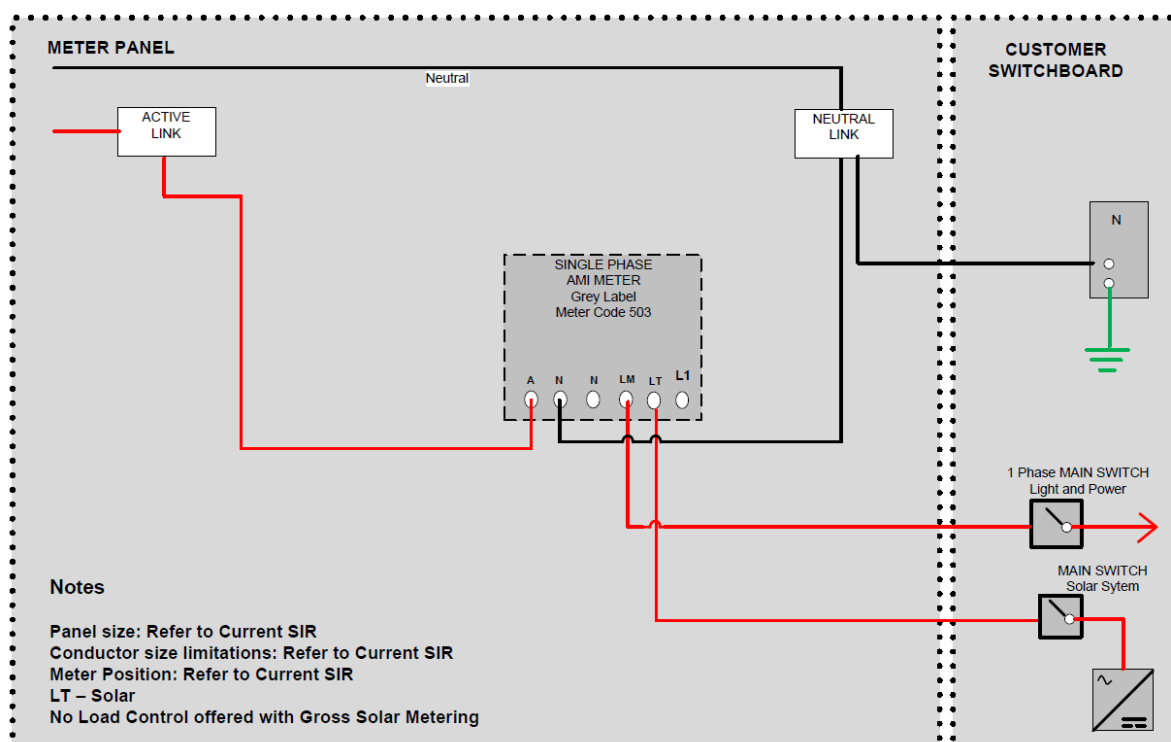
6.1.7 Single Phase Gross Co-Generation (No Load Control Provided with Gross Co-Generation Metering)

Meter Type	How to Read Meter
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Item	Description
88	Test Display
01	Date
02	Time
03	Total kWh Consumption
13	Total kWh Generation
60,62,63 and 64	Utility Use Only

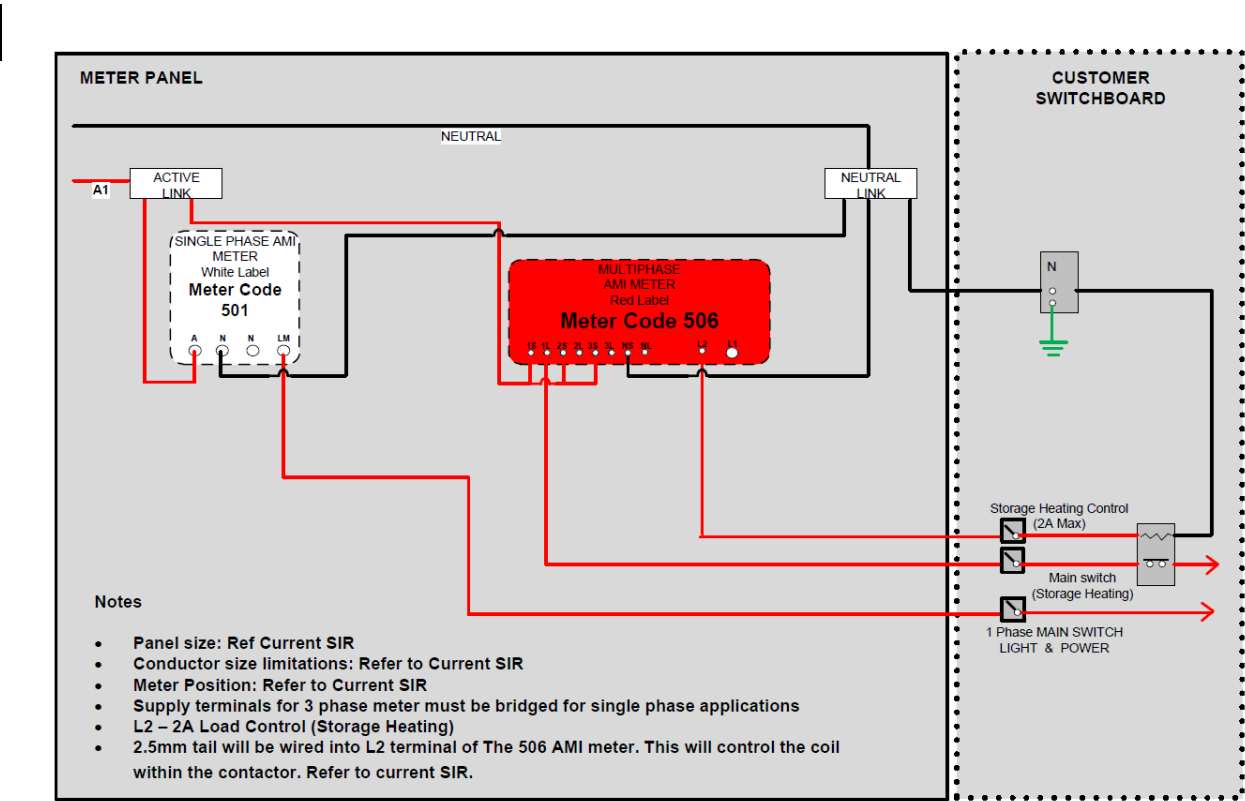
Typical Wiring Diagram



6.1.8 Single Phase with Dedicated Single Phase Storage Heating

Meter Type	How to Read Meter														
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Typical Wiring Diagram



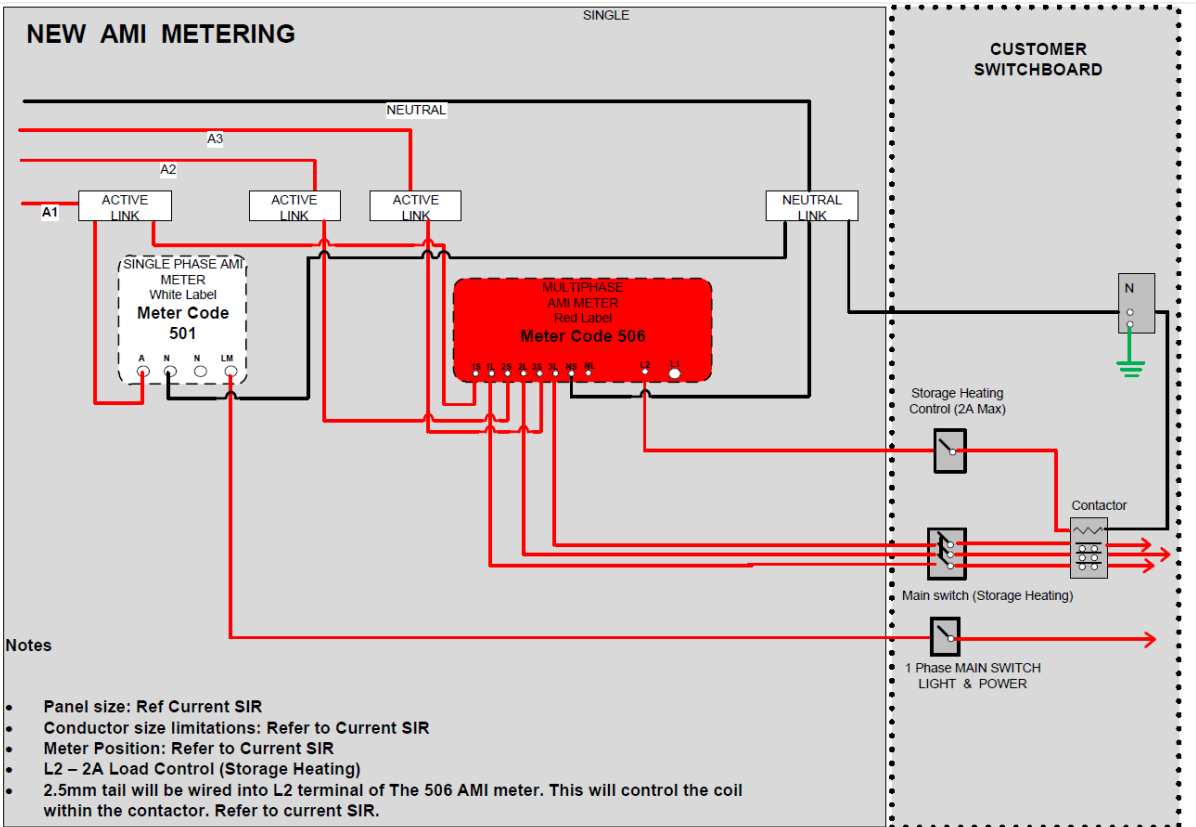
6.1.9 Single Phase with Dedicated Three Phase Storage Heating

Meter Type


How to Read Meter

Item	Description
88	Test Display
01	Date
02	Time
03	Total kWh Consumption
13	Total kWh Generation
60,62,63 and 64	Utility Use Only

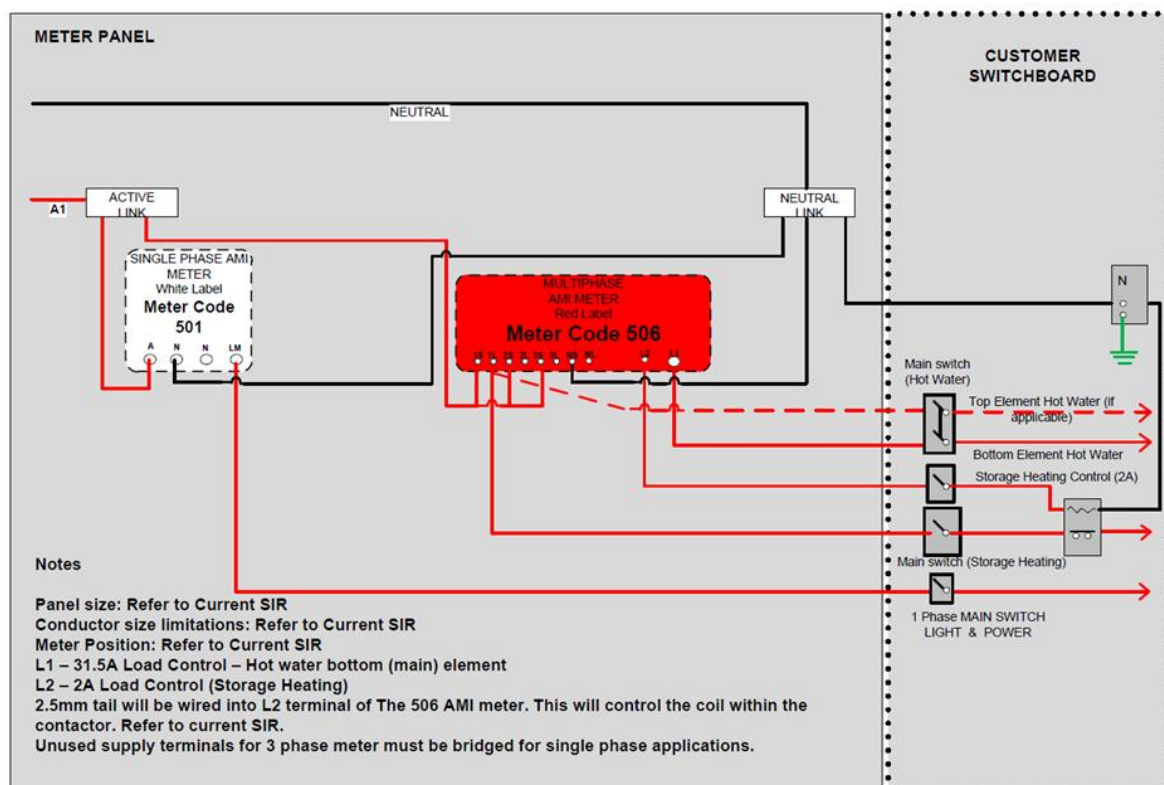
Typical Wiring Diagram



6.1.10 Single Phase with Dedicated Single Phase Hot Water and Storage Heating

Meter Type	How to Read Meter														
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88	Test Display														
01	Date														
02	Time														
03	Total kWh Consumption														
13	Total kWh Generation														
60,62,63 and 64	Utility Use Only														

Typical Wiring Diagram

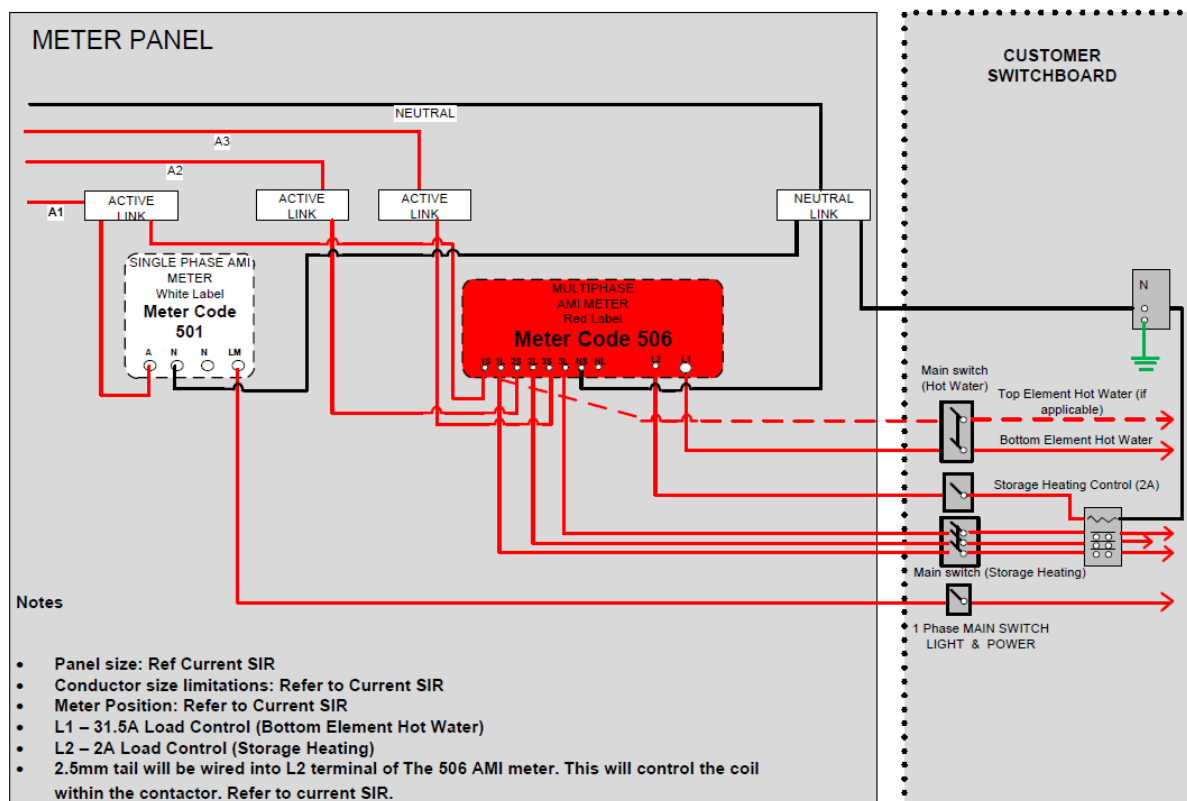


6.1.11 Single Phase with Dedicated Single Phase Hot Water & Multiphase Storage Heating

Meter Type	How to Read Meter
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Item	Description
88	Test Display
01	Date
02	Time
03	Total kWh Consumption
13	Total kWh Generation
60,62,63 and 64	Utility Use Only

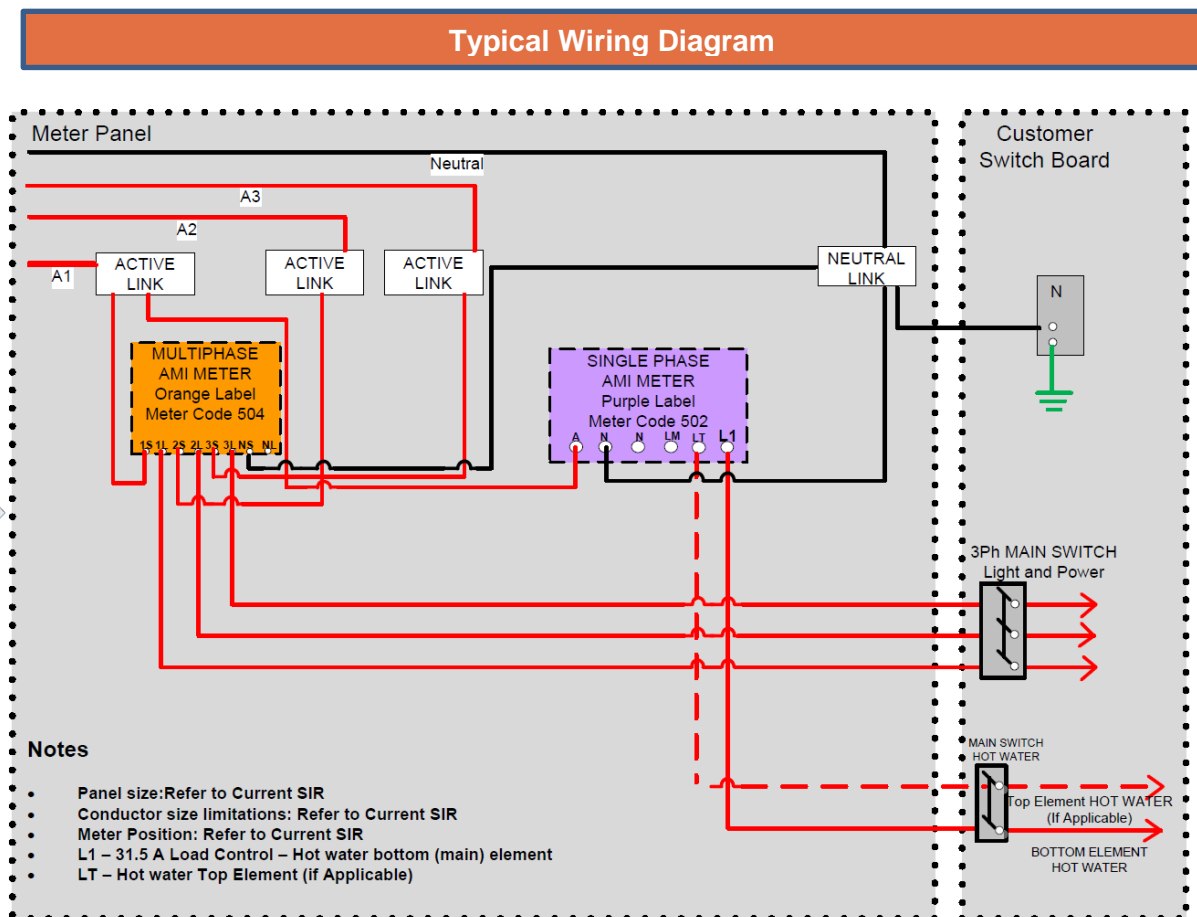
Typical Wiring Diagram



6.1.12 Multiphase with Dedicated Single Phase Hot Water

Meter Type	How to Read Meter
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Item	Description
88	Test Display
01	Date
02	Time
03	Total kWh Consumption
13	Total kWh Generation
60,62,63 and 64	Utility Use Only

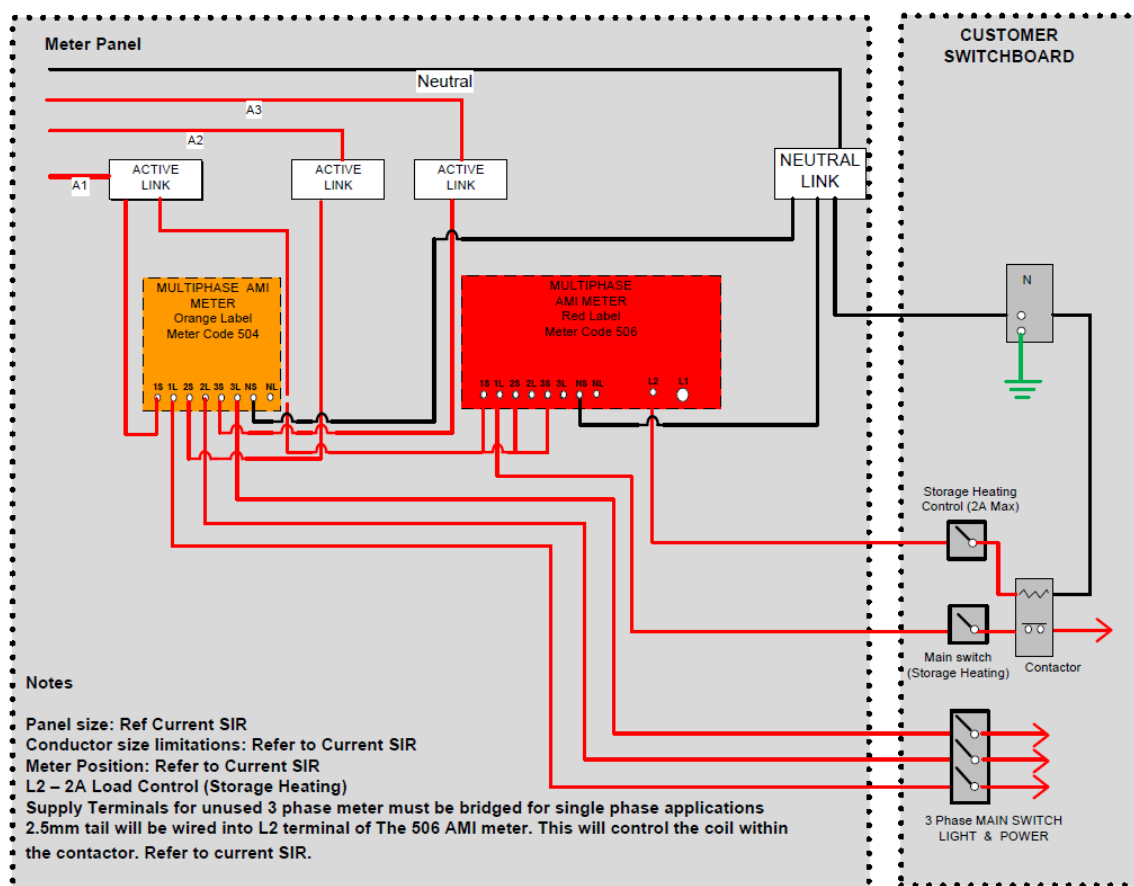


6.1.13 Multiphase with Dedicated Single Phase Space Heating

Meter Type	How to Read Meter
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Item	Description
88	Test Display
01	Date
02	Time
03	Total kWh Consumption
13	Total kWh Generation
60,62,63 and 64	Utility Use Only

Typical Wiring Diagram

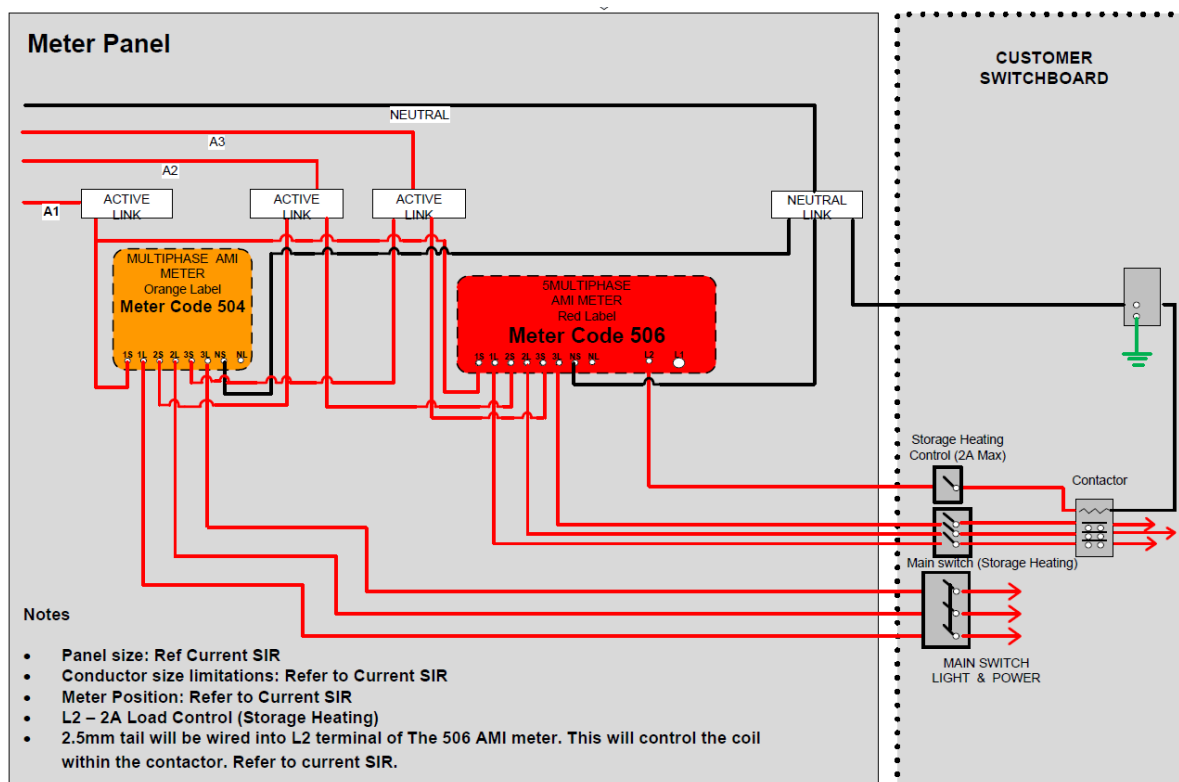


6.1.14 Multiphase with Dedicated Multiphase Space Heating


Meter Type	How to Read Meter
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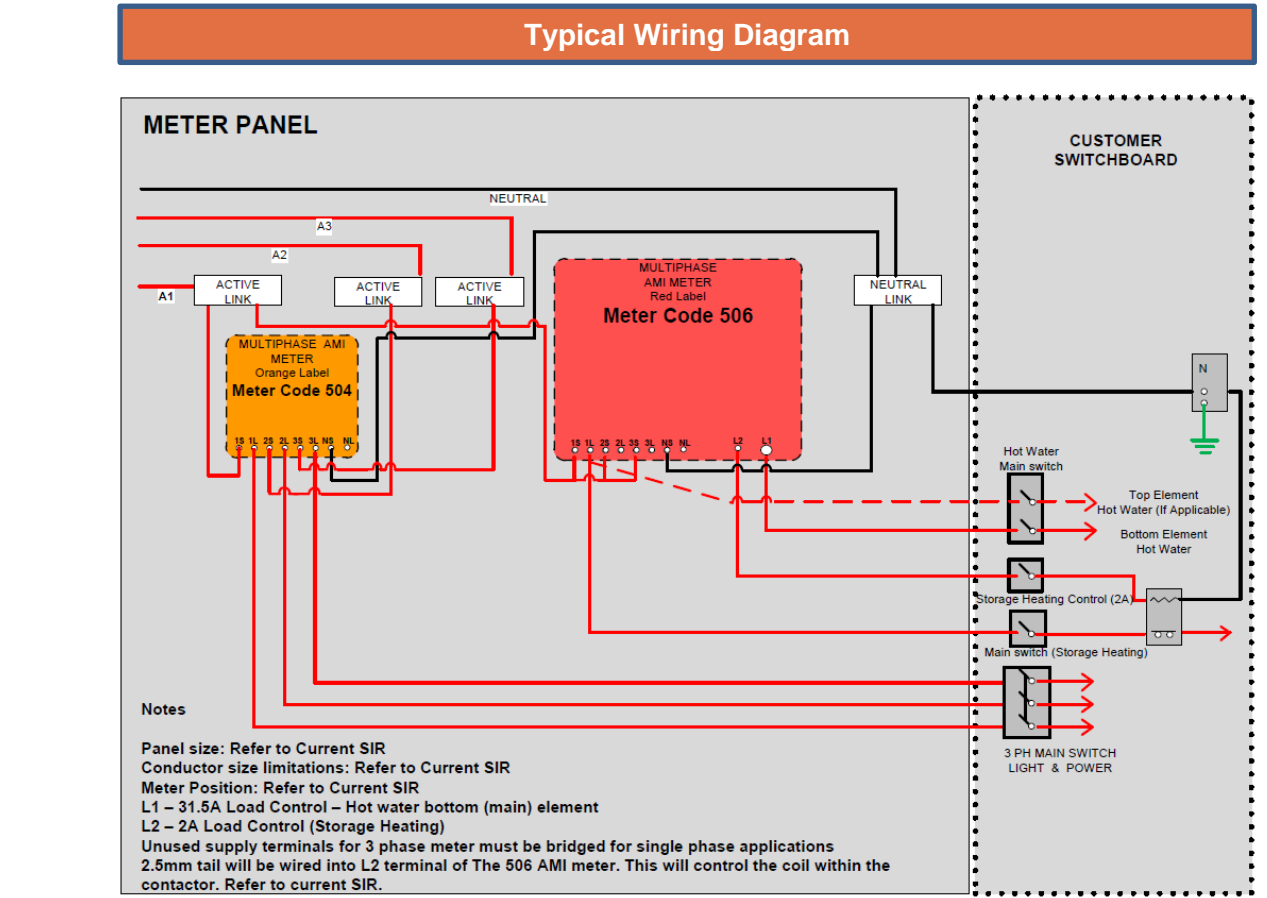
Item	Description
88	Test Display
01	Date
02	Time
03	Total kWh Consumption
13	Total kWh Generation
60,62,63 and 64	Utility Use Only

Typical Wiring Diagram



6.1.15 Multiphase with Dedicated Single Phase Hot Water and Storage Heating

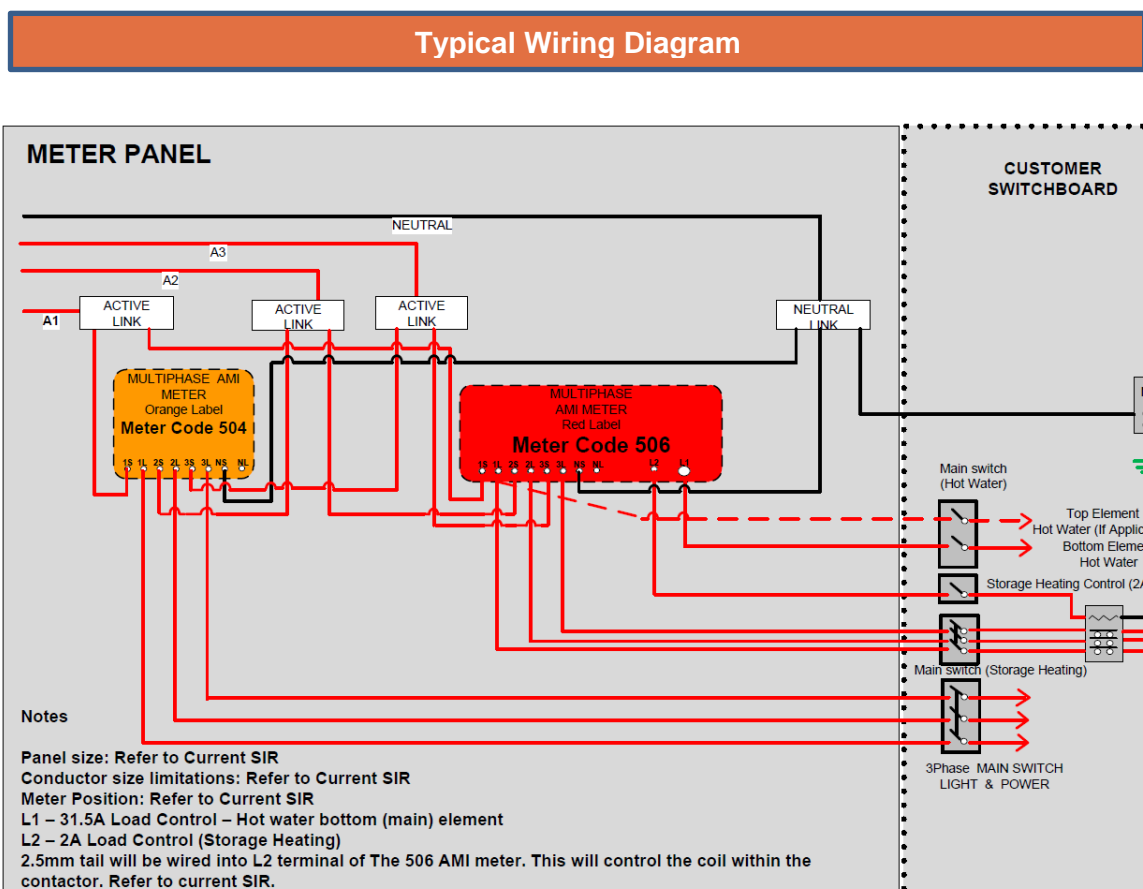
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01	Date														
02	Time														
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13	Total kWh Generation														
60,62,63 and 64	Utility Use Only														



6.1.16 Multiphase with Dedicated Single Phase Hot Water and Multiphase Storage Heating

Meter Type	How to Read Meter
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Item	Description
88	Test Display
01	Date
02	Time
03	Total kWh Consumption
13	Total kWh Generation
60,62,63 and 64	Utility Use Only



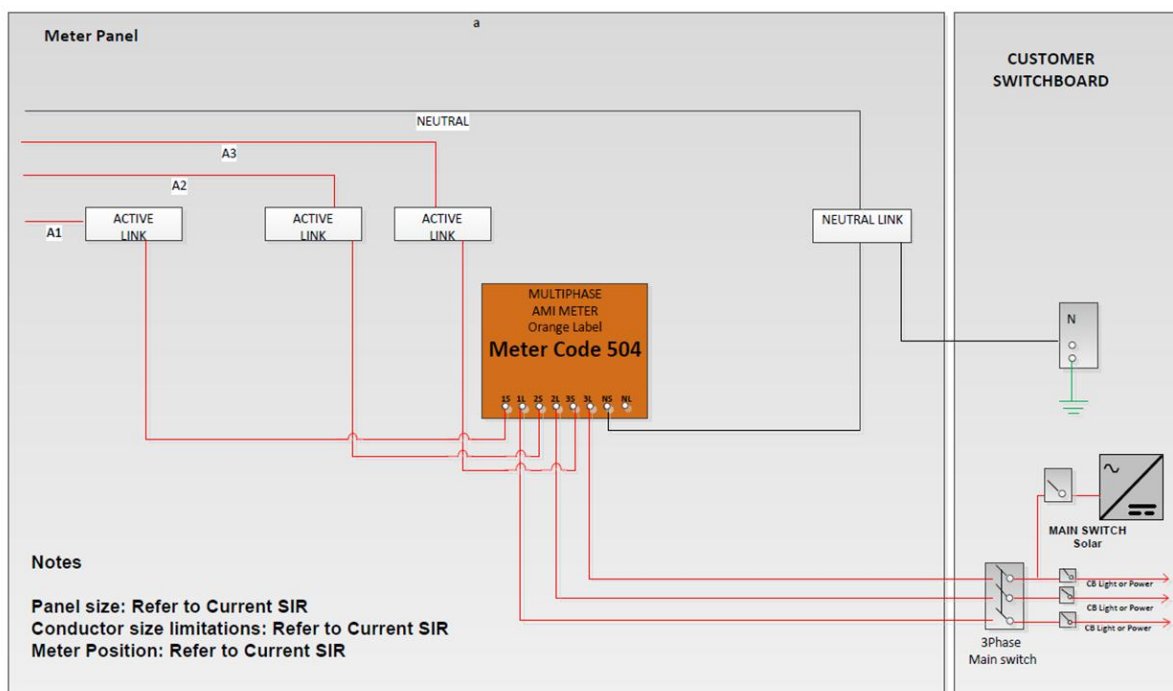
6.1.17 Multiphase Co-Generation Net Metering

Meter Type	How to Read Meter
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Item	Description
88	Test Display
01	Date
02	Time
03	Total kWh Consumption
13	Total kWh Generation
60,62,63 and 64	Utility Use Only

Typical Wiring Diagram



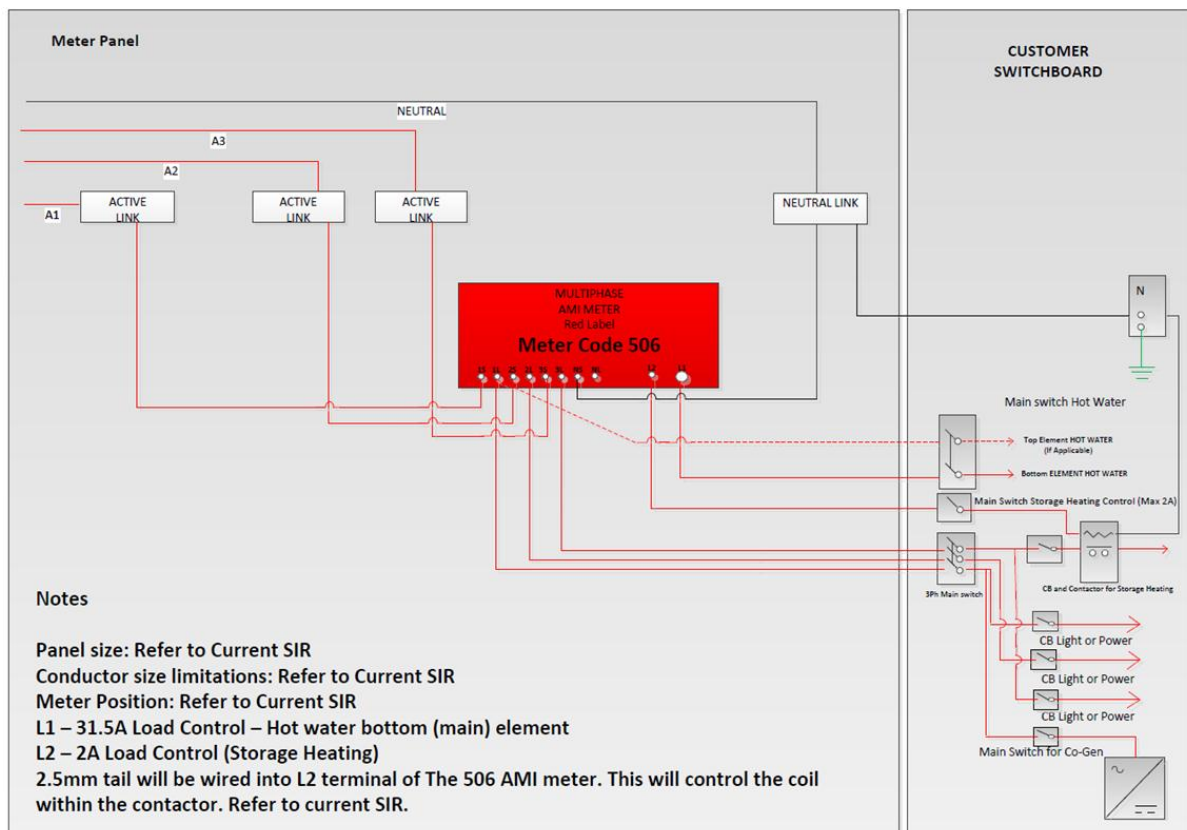
6.1.18 Multiphase Co-Generation Net Metering with Single Phase Hot Water and Storage Heating

Meter Type	How to Read Meter
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Item	Description
88	Test Display
01	Date
02	Time
03	Total kWh Consumption
13	Total kWh Generation
60,62,63 and 64	Utility Use Only

Typical Wiring Diagram



6.1.19 Multiphase with Single Phase Gross Co-Generation

Meter Type	How to Read Meter														
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Typical Wiring Diagram

