



Solar Analytics Billing Hardware Complete Installation Guide

Three Phase NMI Billing Bundle

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1 Before you begin

It is vital that you read this manual before specifying or installing this hardware bundle.

Please take particular note of the following:

- **Required software** – You will need the PMC Set-Up software downloaded and installed on a web connected laptop before attempting to correctly install and configure this hardware bundle. **Download the software [here](#).**
- **Required Dashboard** – You will need a Solar Analytics Fleet Dashboard login to configure and commission this hardware bundle.
- **Required Serial to USB converter** – You will need a serial to USB converter to commission the CET meter on site and utilise the PMC Set-Up software. **[This device](#)** from Jaycar has been tested as suitable.
- **Required Phase Rotation Tester** - You are required to test and confirm correct phase rotation as part of this installation and will require a Phase Rotation Tester.
- **Site definitions** – Please note that if you are installing NMI Hardware Billing Bundles *and* standard KR63 devices on the same site, you may need to register the devices as separate sites. Please refer to your supplier or Solar Analytics sales team for advice.
- **MB63 familiarity** – You need to be familiar with the installation, testing and commissioning procedures applicable to standard MB and KR hardware from Solar Analytics before attempting this installation.
- **Assure isolation** – For testing purposes, you will need to ensure there is a way to isolate the MB63 voltage inputs. An existing or new circuit breaker (not supplied) can be used depending on the regulations in your jurisdiction.
- **Installation order process** – The order in which components are installed and commissioned is critical for successful installation. Please ensure the process in this manual is strictly adhered to.

2 Introduction

The Solar Analytics NMI Billing solution has been designed specifically for applications where NMI approved billing data is required such as Power Purchase Agreements (PPAs), EV charger disaggregation, embedded networks and microgrids.

This manual applies to the Three Phase NMI Billing Bundle SKU MB-63-120-3-100-3P and SKU MB-63-600-3-600-3P

Support and Contact Information

All contents of this document are made available online at

<https://www.solaranalytics.com/au/support/>

If you have any technical questions or feedback, please do get in touch. Our support phone line is open Monday to Friday 9:00 AM to 5:00 PM AEST (excluding public holidays) on 1300 651 137 or support@solaranalytics.com.au.

To help with the support request, the following information is necessary to provide you with the assistance needed:

- Solar Smart Monitor Serial number e.g. D704206001234
- Product Type/Code e.g. MB-63-120-3-100-3P or MB-63-600-3-600-3P
- Site Installation Address (if available)

3 Compliance Information

Please note that the rules and regulations for metering of energy in various applications in Australia are covered by numerous State and Federal regulatory bodies. These rules and regulations change from time to time and it is the responsibility of the purchaser and installer to ensure that they are fully aware of their legal and statutory obligations for the given application.

Specifically, purchasers and installers should be aware that the rules and regulations apply not only to the type of hardware used but also potentially the application, system size, annual energy consumption, who installs and or maintains the hardware and who manages the data. Significant penalties may apply for breaches of National Electricity Rules.

Solar Analytics billing solutions provide a compliant hardware solution. However, you are specifically advised that it is your responsibility to ensure that the applications and methods used for the collection of billing data are compliant with the relevant rules and regulations.

Our compliance and approval specifications are referenced in the appendices.

4 Safety caution

CAUTION

The installation of the Solar Analytics billing hardware bundle should only be performed by qualified, competent personnel that have the appropriate training and experience with high voltage and current devices. The metering must be installed in accordance with all local and national codes. During the operation of the meter, hazardous voltages are present at the input terminals.

FAILURE TO OBSERVE SAFETY PRECAUTIONS CAN RESULT IN SERIOUS OR EVEN FATAL INJURIES AND EQUIPMENT DAMAGE.

5 Three Phase hardware bundle

Solar Analytics provides two versions of the three-phase MB-63 bundle, one used in direct connect applications and one for use in CT based applications.

The Bundles include the following components:

MB-63-120-3-100-3P – Direct Connect 100A bundle

- 1 x Solar Analytics Modbus-enabled 6 channel Solar Smart Monitor MB-63
- 1 x Set of 3 x 120A CTs
- 1 x 'CET' three phase PMC-340-BA 35XAE direct connect meter
- 1 x Modbus connection cable

MB-63-600-3-600-3P – CT Connect 600A bundle

- 1 x Solar Analytics Modbus-enabled 6 channel Solar Smart Monitor MB-63
- 1 x Set of 3 x 600A CTs
- 1 x 'CET' three phase PMC-340-BB 35XAE CT meter
- 1 x Set of 3 x 600A CTs
- 1 x Modbus connection cable

NOTE: CTs for the MB63 are different from the CET meter and MUST be installed appropriately to the correct device. MB63 CTs are 100mA secondary, CET CTs are 5000 mA secondary.

Optional CTs for connection with the Solar Smart Monitor MB-63 are available separately in the following sizes:

- 60A
- 120A
- 200A
- 400A
- 600A

The Solar Smart Monitor MB-63 will have additional functionality of switching two independent circuits when paired with Solar Analytics external contactors (coming soon).

Reporting intervals for the CET meter billing data is daily. Standard reporting intervals (up to 5 seconds) apply for the Solar Analytics Smart Monitor. Refer to Section 7 Billing Data for information on data intervals.

SA Billing Bundle	DIN Rail Width Requirements
MB-63-60-3-63-1P	72mm = 36mm + 36mm
MB-63-120-3-100-3P	162mm = 36mm + 126mm
MB-63-600-3-600-3P	162mm = 36mm + 126mm
Additional contactors	17.5mm per 1 phase contactor 25mm per 3 phase contactor

The following guide can be used to help with selecting and ordering the correct bundled option for the Solar Analytics billing solution.

Product Code	Description				
MB-63 Solar Analytics Modbus Smart Monitor					
	CT Rating				
	60	Rated current for 60 CTs provided in bundle			
		Number of CTs			
		3	3 x CTs provided in bundle		
			CET Meter Rating		
			63	63A rating for Pattern Approved CET Meter	
				CET Meter Channels	
				1P	1 Channel pass through current CET Meter
MB-63	60	3	63	1P	MB-63-60-3-63-1P

5.1 Billing for Net Consumption Data

Each CET meter is only capable of a single data feed through a single Solar Smart Monitor (it is not possible to daisy-chain them). With that, to bill for Net Consumption data i.e. solar self-consumption you will require two bundles to measure the Grid Consumption and Solar PV Production separately. The net billing calculations have to be performed manually after obtaining the Billing Data.

6 Hardware installation

6.1 Positioning of the PMC340 Meter for correct measurement

Determine a location for the installation of the hardware bundle such that the MB64 and PMC340 are installed directly adjacent to each other and alongside suitably rated circuit protection.

The selected position for installing the PMC Meter depends on what loads are required for the billing measurement. For billing Solar Production, the PMC meter should be installed just upstream of the Solar Supply Main Switch to capture the full AC output of the solar PV system.

To measure import/export from the grid, it is advised to install the PMC meter upstream of the Main Switch i.e. in between the Mains Meter and Main Switch.

After fitting the hardware in a suitable location, terminate the power supply such that power is supplied from: Supply to Circuit protection to PMC340 to MB63.

NOTE: In some cases, fitment will require replacement of older service fuses. You should ensure that you are fully aware of and compliant with all State based rules and regulations relating to the installation of metering equipment and service fuses before proceeding

6.2 PMC-340 power connections

Please consult the serial number label to ensure that the voltage and current input is less than or equal to the CET Meter's input specification.



	Terminal	Description
A	L1, L2, L3, N	L1, L2, L3, N from Source
B	1, 2, 3, 4	Voltage Inputs: V1, V2, V3, VN (CT Inputs Option only)
C	5, 6	Pulse Outputs: +, -
D	-	LCD Display
E	-	Energy Pulse and Comm. Indicators
F	-	Buttons
G	7, 8, 9, 10	Digital Inputs: DI1, DI2, DI3 (PMC-340B only)
H	11, 12	RS-485: D+, D-
I	L1', L2', L3', N	L1', L2', L3', N' to Load

Power connections

The active circuits and neutral must be wired to the terminals on the PMC-340 in the following configurations:

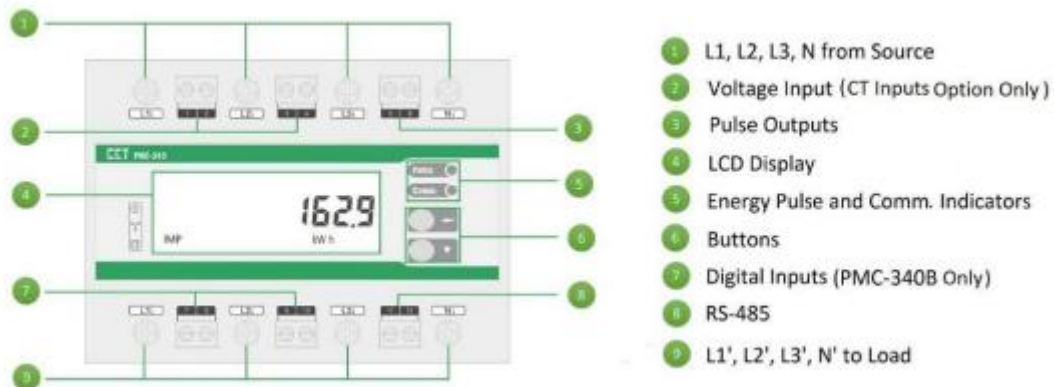
CET Meter configuration	
Neutral	Terminal 4
Phase 1	Terminal 1
Phase 2	Terminal 2
Phase 3	Terminal 3

6.3 PMC340 Display and controls

The meter's front panel is used for both display and configuration purposes. The LCD display screen and two buttons allow quick access to view measurements and meter information, configure the parameters and perform maintenance.

The PMC-340 front panel and display can be used as directed in the [PMC-340 User Manual](#), so long as the Modbus communications parameters are not changed.

The COMM LED flashes when the Modbus is active. The PMC-340 is shipped with the front panel password set to the default 000.



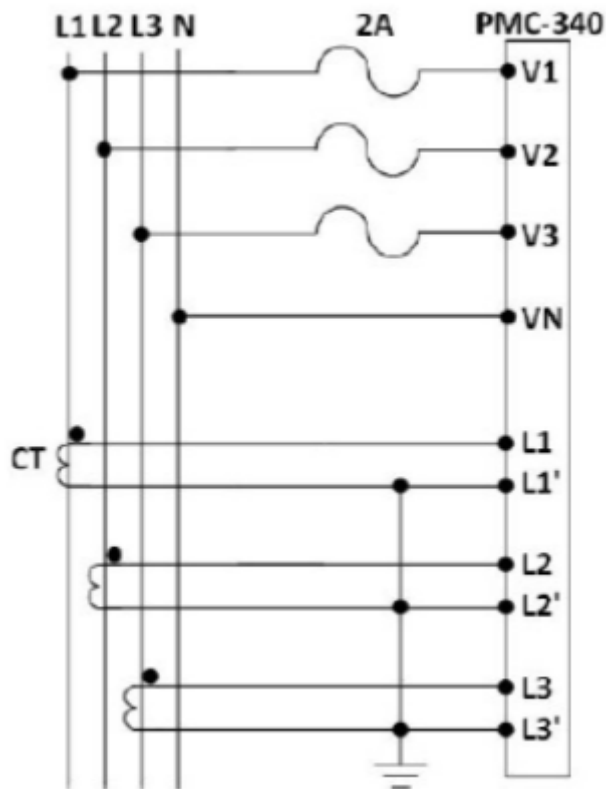
6.4 PMC 340 CT connections

In the event you are using the PMC340 "B" (CT version), the CTs should be connected in accordance with the following table and diagram.

NOTE: The CT's used by the MB63 and PMC340 are different and cannot be interchanged.

NOTE: The CT termination in the PMC340 is suitable for large cables. When fitting CTs ensure a crimp lug or ferrule is used for a reliable connection.

CT	PMC 340B terminal
Phase 1	L1 to L1'
Phase 2	L2 to L2'
Phase 3	L3 to L3'
Neutral	N to N



6.5 PMC 340 Configuration

6.5.1 Connection

Utilise the Set-Up software to correctly configure the PMC 340. Using this application will enable real time verification of the installation whilst on site.

Connect the PMC 340 to your laptop using the serial to USB converter.



6.5.2 Starting PMC set-up

NOTE: The PMC-340 Modbus settings are preconfigured and must not be changed.

To run the PMC Setup program, double-click the PMCSetup icon or

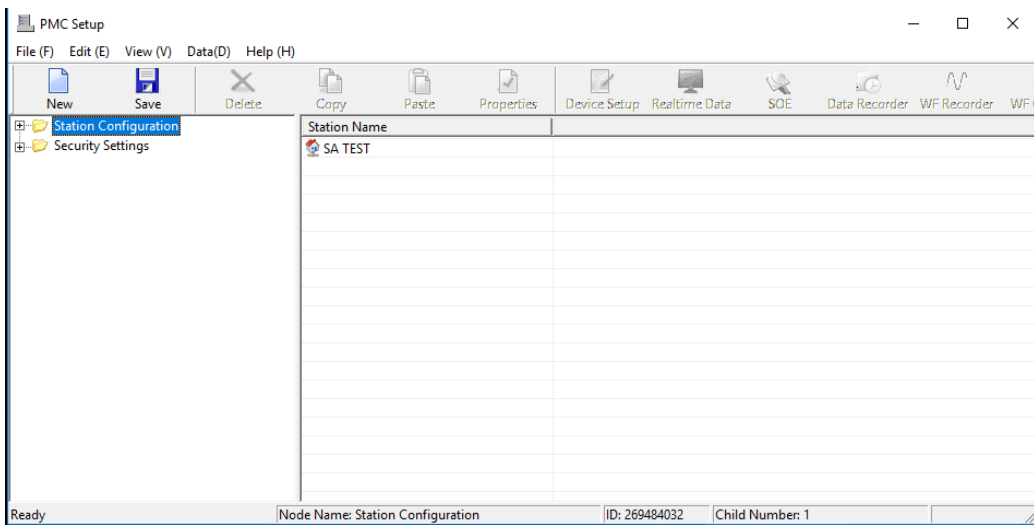
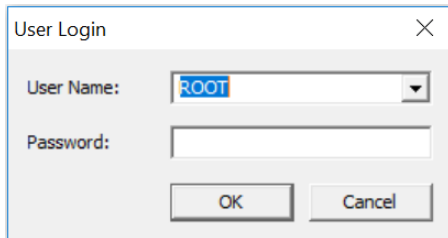
For Windows XP, click Start => Programs => PMC Setup => PMCSetup or

For Windows VISTA or Windows 7, click => All Programs => PMC Setup => PMCSetup.

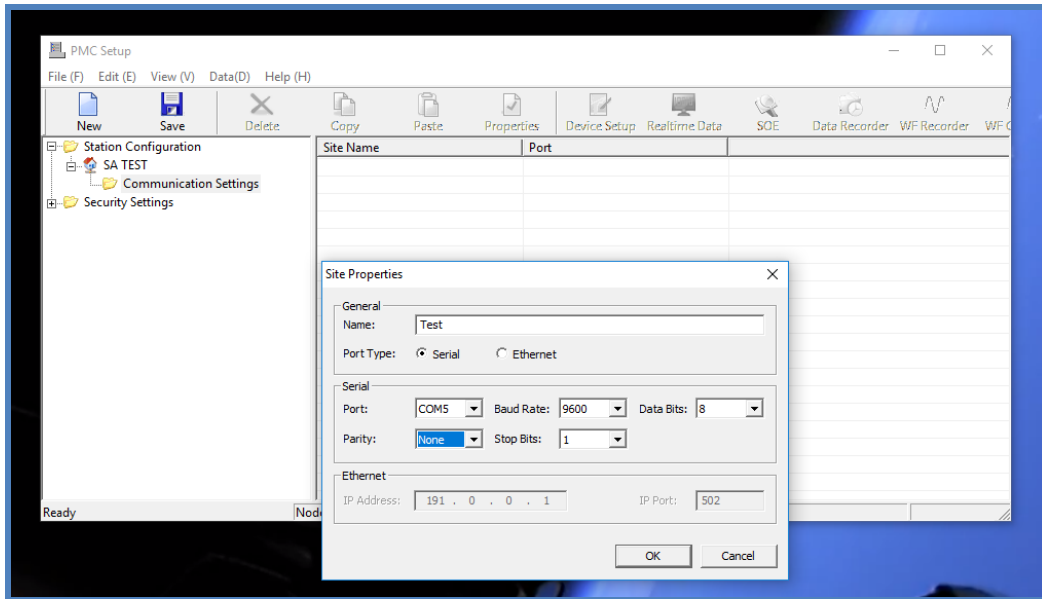
The following User Login dialog box appears.

Username – ROOT

Password – “Leave Blank”

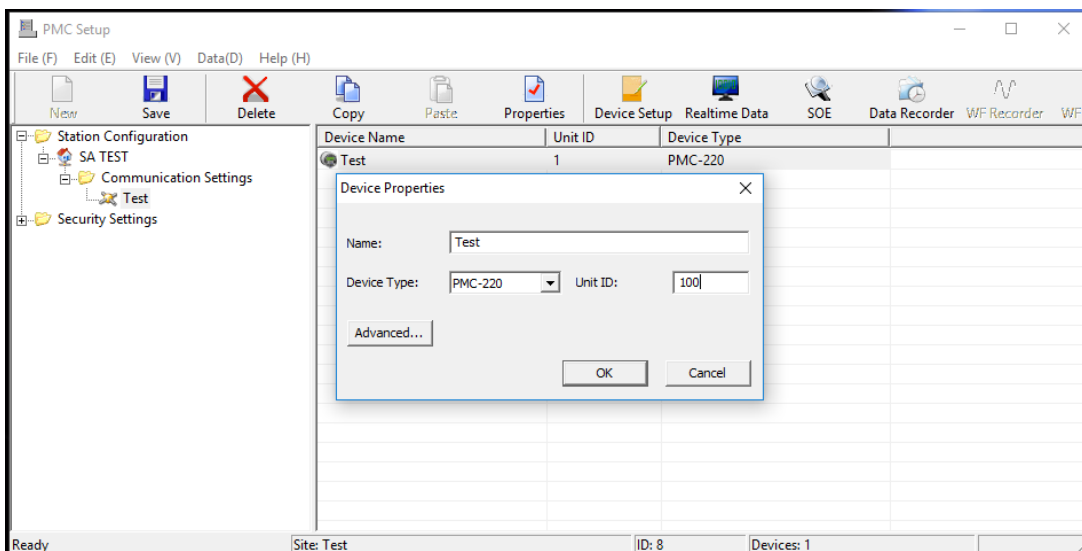


To insert a new Site, select Communications Settings under Station Configuration on the left-hand pane and then click on the 'New' Icon on the Tool Bar and the Site Properties dialog box will appear. Alternatively, you can right-click on Communications Settings and then select New from the pop-up dialog box.



Confirm 'Port Type' is Serial, Change 'Parity' to Even, Click OK.

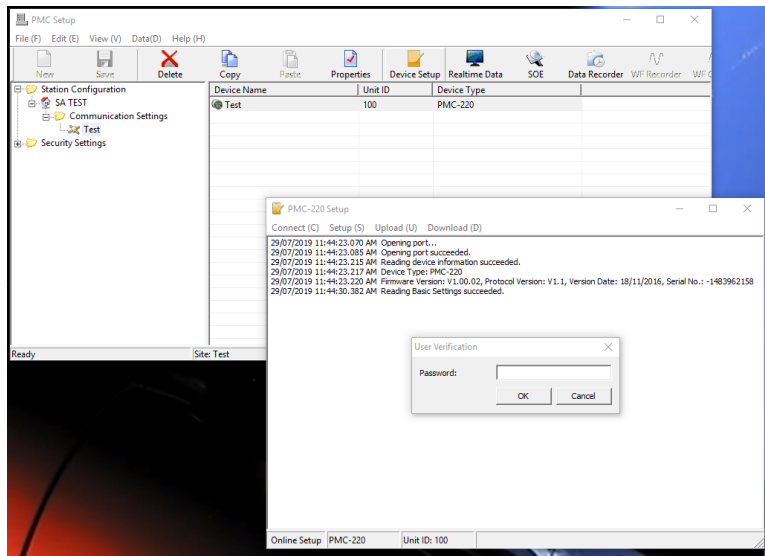
Select the Site under which you want to insert a Device on the left-hand pane then click on the New icon on the Tool Bar or move your mouse cursor over the Site Name column, right-click on it and then select New to bring up the Device Properties dialog box.



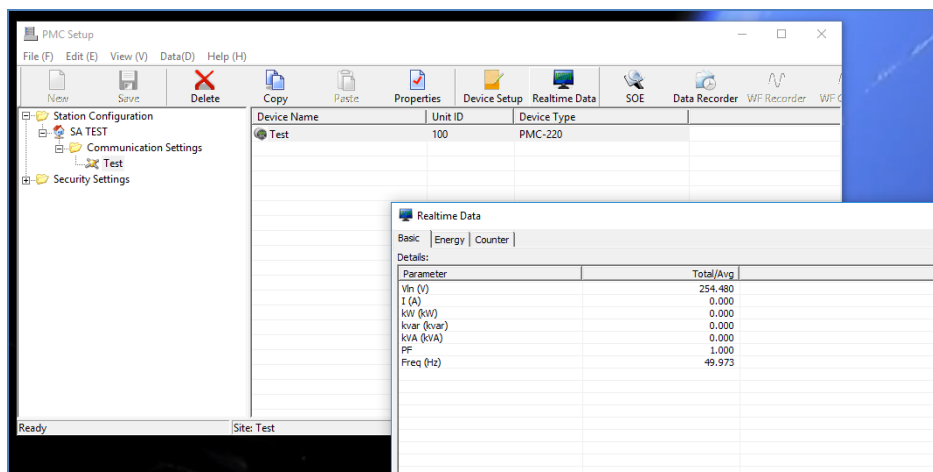
Configure the Device Properties according to your actual situation. The following is a description of the configurable parameters in the Device Properties dialog box. After configuration, click OK to save or Cancel to exit without saving your changes.

- Name – Not required
- Device Type – PMC-220, PMC-340A or PMC-340B
- Unit ID – Default is '100'
- Click OK
- Click on your Device
- Click on the Device Setup icon to access Device Configuration. In this case, the PMC-340 Setup dialog box appears.

Leave the Password blank and click OK



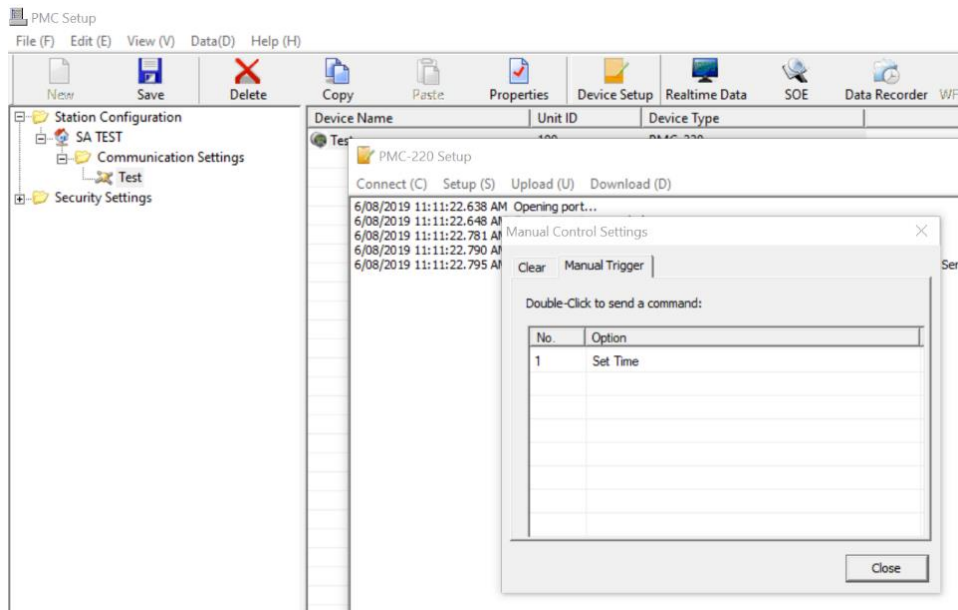
After PMC Setup has been properly configured, it is now ready to communicate with the PMC-340 power meter. To view the real-time data, click on the Realtime Data icon on the Tool Bar and the Realtime Data dialog box appears that shows 3 tabs: Basic, Energy & Counter.



This enables you to verify correct installation whilst on site.

The final step is to Set time.

Click on the device, then click Device Setup. The PMC-340 Setup dialog box appears. Click on Connect the Connect again. The connect will be tested and results displayed. Click on Setup (s), choose Manual Control Settings. Leave password 'blank', Click OK. Select Manual Trigger tab, Double-Click on Set Time & acknowledge, OK



6.5.3 Face Plate Configuration

In the event that Set-Up software is unavailable or non-functional, the face plate can be used as an emergency configuration method noting that it has limited capabilities compared to the software set up. Date & Time set up

Press <⏏> for two seconds to enter Setup Configuration, and the LCD displays PROGRAM.

Press <▼> to advance to the Password page.

A correct password must be entered before changes are allowed. The factory default password is 0000 (zero). Press the <⏏> button to select the parameter for modification. Use <▼> and <⏏> to enter the correct password.

Use <▼> to scroll to the desired sub-menu or setup parameter.

Press <⏏> to enter a sub-menu or select a setup parameter for modification.

Once a parameter has been selected, its value will blink.

Use <⏏> and <▼> to make modification to the selected parameter.

Press <⏏> for two seconds to return to the main menu

Press <⏏> for two seconds again to exit the Setup Configuration mode.

Note, the Setup Configuration will be automatically exited if there is a period of inactivity of 3 minutes or longer

Once confirmed, you can disconnect the device from your laptop and progress to the installation (commissioning of the MB-63).

The PMC 340 should now be powered down before proceeding to MB64 set up.

6.6 MB63 Installation

The Solar Smart Monitor provided as part of the billing solution is practically identical to the standard Solar Analytics Smart Monitor with the exception of the additional Modbus and Load Control port.

All installation steps and procedures are identical for the installation of this version of the Solar Smart Monitor. Please refer to the Solar Smart Monitor – Complete Installation Guide for full details.

The PMC-340 provides one standard RS-485 port that supports the Modbus RTU Protocol. The overall length of the RS-485 cable connecting the devices should not exceed 1200m.

Install the Modbus cable between the PMC340 and the MB63. A two-core, double insulated cable is supplied, to be cut to the required length.

- One end of the cable is stripped and connects to screw terminals on the PMC-340 or PMC-340A/B. These connections must be torqued to 0.45 Nm.
- The other end is terminated in a three pin Terminal Block connector at the Solar Smart Monitor.

The table below provides a guide for each corresponding terminal.

Device	PMC-340	MB-63
Common	Terminal 11	Terminal A
Signal	Terminal 12	Terminal B

Connect the Solar Smart Monitor CTs so that they duplicate the CET Meter allowing data to be displayed on the Dashboard. The Solar Smart Monitor CTs are required to feed highly granular data to the Solar Analytics dashboard.

Additional CT channels on the MB63 can be used to monitor and display other AC loads or sub circuit data on the Dashboard.

Ensure that the voltage reference for the MB63 is supplied from the PMC340.

Here are a few quick notes as a general guideline for installing the Solar Smart Monitor

Voltage Connections

- 1 Phase or 3 Phase wiring tails are provided for ease of installation
- Connect P1, P2, P3 and N to the appropriate phases being measured

- i.e. P1 = Phase A

Current Transformer Connections

- Only Solar Analytics supplied CTs are supported by the Solar Smart Monitor
- Directional arrows for CT placement are printed on the CTs
- 3 x CTs are provided as standard with the bundle
 - An additional 3 x CTs can be purchase through Solar Analytics
- CT Connections are labelled ≡, 6+, 5+, 4+, ≡, 3+, 2+, 1+ The white wires connect to terminals labelled "≡".
- The pink wires connect to the terminals labelled "+"
- The CTs and voltage phases must match as stated below
-

Place the CT connected to:	On cables connected to:
1+ and 4+	Phase 1
2+ and 5+	Phase 2
3+ and 6+	Phase 3

6.7 Final Commissioning

The PMC-340 provides one standard RS-485 port that supports the Modbus RTU Protocol. Once the preceding PMC 340 commissioning procedure has been completed, all CT's are fitted and the voltage reference is connected to the MB63, final commissioning can take place.

Power up both devices and follow the standard Solar Analytics commissioning procedure to register and commission the MB64.

The first 3 steps in the registration process for the sites on the Solar Analytics dashboard all remain the same.

1. Log in to my.solaranalytics.com.au
2. Click "Add New Site" at the bottom of the page
3. Fill in the following details stepped pages:
 - (i) Customer Details (Name, Email Address etc)
 - (ii) Site Details (Site Name, Location etc)
 - (iii) Solar PV System Details (Panel and Inverter Brand and Manufacturer)

What's different

Ensure the Solar Smart Monitor is powered on and communicating before attempting this step.

In step 4, the “Monitoring Hardware” page, enter the serial number of the device to attach it to the site. An option for 7 channels will appear for channel assignment. Through here, select “Billing Data” for channel 7 which corresponds to the data from the CET Meter.

Installation is now complete.

7 Billing Data

There are several methods available to access the billing data from the CET Meter. The data obtained through the CET Meter will be a cumulative value of the measured billing load/s.

Note that in a Gross configuration (ie one hardware bundle) the data will represent either Gross Generation or Gross Consumption depending on what is being measured. In a NET configuration, the PV data will represent Gross Generation and the Consumption data will represent Net Consumption (ie load net of generation).

NOTE: PMC340 meter data is supplied as cumulative daily data only.

7.1 Daily data download

The CET Meter billing data is available via the Data Download page in a CSV format.

7.2 Connecting to the Solar Analytics API

You can connect directly to the Solar Analytics API with the right credentials and knowledge of accessing data through a REST API. The response format will be in JSON.

7.3 External Billing Service

You can connect us to your external billing service if you wish to direct the data feed from the Solar Analytics API directly to them. If you require, we can provide recommendations on our preferred external billing service providers.

8 Appendix 1 MB63 Data sheet

Solar Smart Monitor
with Modbus
MB-63



solar analytics



Features

- ✓ Solar PPA compliant billing solution
- ✓ Pattern approved data stream for billing
- ✓ Single phase & three phase compatible in field
- ✓ Direct current and CT options available
- ✓ Expandable and flexible CT sizing on Solar Smart Monitor
- ✓ Simple two wire Modbus communication between devices
- ✓ 4G communications to the cloud
- ✓ Compact and rapid DIN Rail mounting
- ✓ Load Control outputs

Typical Configuration

Single Phase Pass Through Bundle



Suitable for up to 60A single phase applications. Solar Smart Monitor supplied with 3 x 60A CTs (expandable to 6 CTs). CET meter supplied in direct current configuration.

Three Phase Pass Through Bundle



Suitable for up to 100A three phase applications. Solar Smart Monitor supplied with 3 x 120A CTs (expandable to 6 CTs). CET meter supplied in direct current configuration.

Three Phase CT Bundle



Suitable for up to 600A three phase applications. Solar Smart Monitor supplied with 3 x 600A CTs (expandable to 6 CTs). CET meter supplied with 3 x 600A CTs.

Please note that wiring diagrams can be found on the installation manual on our online Support Centre.

Application Information

Introduction

The Solar Analytics billing solution has been designed specifically for applications where pattern approved billing data is required such as Power Purchase Agreements (PPAs), EV charger disaggregation, embedded networks and microgrids.

There are 3 hardware bundles offered as part of the Solar Analytics billing solution. All bundles come with:

- Solar Analytics Smart Monitor with Modbus (MB-63)
- Optional switching circuits
- Modbus cable
- Wiring tail for voltage reference frame (single or three phase)
- Quick Set Up Guide
- 3 x current transformers for Solar Smart Monitor
- 3 x current transformers for CET meter (CT bundle only)
- 1 x CET Pattern Approved Meter (size may vary)
- Option to purchase 3 additional CTs & contactors

Compliance

The Solar Smart Monitor meets all relevant compliance and safety requirements for non Pattern Approved hardware in Australia. The CET Meters meet all relevant compliance and safety requirements for Pattern Approved hardware in Australia including NMI M-6 Revenue Metering Approval.

Refer to our detailed manuals for full hardware compliance information. Please note that you may need to undertake specific additional activities to ensure you are using our data in a compliant manner for your application.

Data Streams

Data from up to six channels via Solar Smart Monitor is used for Dashboard displays and performance monitoring.

Data from CET Meter is used for billing purposes only and is available via CSV and API.

Other Information

For Gross solar billing applications one bundle is required. For Net billing applications two bundles are required.

Solar Smart Monitor & CET meters are supplied pre-configured for Modbus communications.

Please note that where additional or different sized CTs are used on Solar Smart Monitor, remote recalibration may be required.

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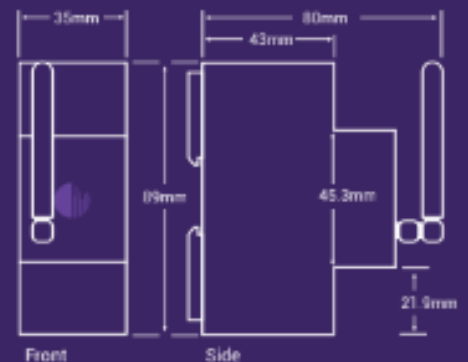
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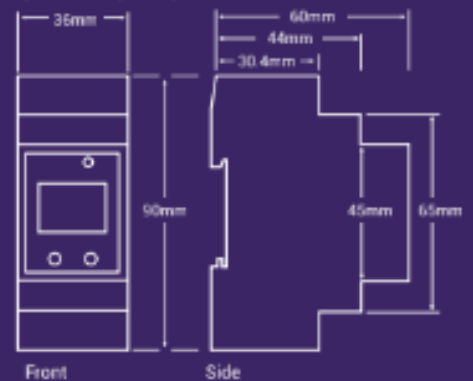
sales@solaranalytics.com

Dimensions

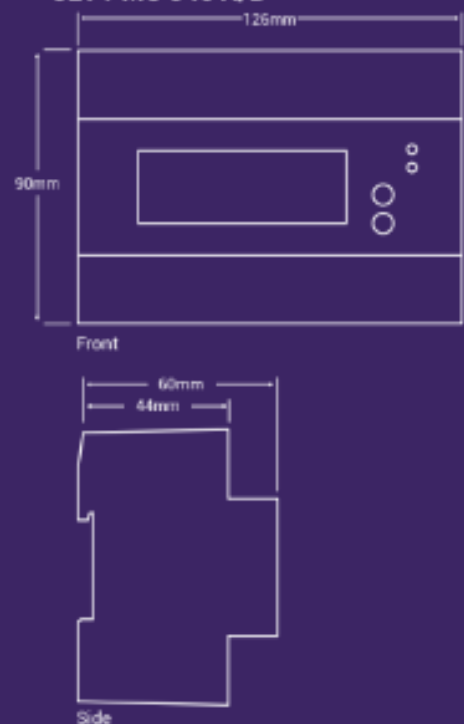
Solar Smart Monitor



CET PMC 220



CET PMC 340 A/B



9 Appendix 2 PMC340 Data sheet

PMC-340

Digital Three-Phase Energy Meter



Typical Applications

- DIN rail mount energy metering
- Industrial and commercial metering
- Substation, building and factory automation
- Sub-metering
- Power quality monitoring

Features Summary

Ease of use

- Easy to read 7-segment LCD
- Two LED indicators for energy pulsing and communication activities
- Password-protected setup via front panel or free PMC Setup software
- Easy installation with DIN rail mounting, no tools required
- 3-phase power supply, no external control power required

Basic Measurements

- Multifunction measurements
 - Voltage, Current, kW, kvar, kVA, PF and Frequency
 - kWh and kvarh Imp/Exp/Tot/Net and kVAh
 - Per phase kWh and kvarh Imp/Exp/Tot/Net and kVAh
 - Voltage/Current THD, THOD, THED, Unbalance and K Factor
 - Individual harmonics up to 31st
 - kW/kvar/kVA Total Demands and Max. Demands
 - Per Phase Current Demands and Max. Demands
 - Min/Max Log
- Two TOU schedules, each providing
 - 12 Seasons
 - 20 Daily Profiles, each with 12 Periods in 15-minute interval
 - 90 Holidays or Alternate Days
 - 4 Tariffs, each providing the following information
 - kWh/kvarh Import/Export
 - kW/kvar/kVA Total Demands and Max. Demands
- 12 monthly recording of all Energy parameters

Digital Inputs (Optional)

- 3 channels for external status monitoring and pulse counting
- Self-excited, internally wetted at 24VDC
- 1000Hz sampling

Pulse Outputs

- 1 LED Pulse Output on the front panel for energy pulsing application
- 1 Solid State Digital Output for energy pulsing application

Communications

- Optically isolated RS485 port, baud rate from 1200 to 38400bps
- Modbus RTU protocol

Real-time Clock

- Battery-backed real-time clock @ 6ppm
- Clock error ≤ 0.5s/day
- Can be set through front panel or communications

System Integration

- Supported by our PecStar® IEMS and PMC Setup
- Easy integration into other Automation or SCADA systems via Modbus RTU protocol

The PMC-340 Digital Three-Phase Energy Meter is CET's latest offer for the low voltage power/energy metering market featuring DIN rail mount, high accuracy, multifunction measurements and a large, easy to read 7-segment LCD display. The PMC-340 complies with the IEC 62053-21 Class 1 and IEC 62053-22 Class 0.5S kWh Accuracy Standards for 100A Direct Input and 5A CT Input, respectively. The PMC-340 comes standard with a LED as well as a Solid State Pulse Output for energy pulsing. The standard RS485 port and Modbus protocol support allows the PMC-340 to become a vital component of an intelligent, multifunction monitoring solution for any Power and Energy Management Systems.

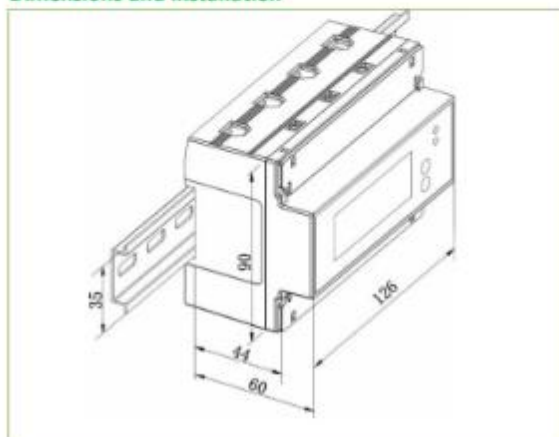
Accuracy

Parameters	Accuracy	Resolution
Voltage	±0.5%	0.1V
Current	±0.5%	0.001A
kW, kvar, kVA	±1%	0.001kW/kvar/kVA
kWh, kVAh	IEC 62053-21 Class 1 for Direct Input	0.1kWh
	IEC 62053-22 Class 0.5S for SA CT Input	
kvarh	IEC 62053-23 Class 2	0.1kvarh
P.F.	±1%	0.001
Frequency	±0.02Hz	0.01Hz
Harmonics	IEC 61000-4-7 Class B	0.1%

Terminals



Dimensions and Installation



Digital Three-Phase Energy Meter

Technical Specifications

Inputs (L1, L2, L3, N)	
Voltage (Un)	240VLN
Range	0.7 to 1.1 Un
Burden	<3VA/phase
Direct Input	
Current (Ib/I _{max})	20A/100A
Range	0.4% Ib to I _{max}
Starting Current	0.4% Ib
Burden	<4VA/phase
Wire Size	Maximum 35mm ² (3 AWG)
Torque for terminals	2.5 N.m
CT Input	
Current (I _n /I _{max})	5A/6A
Range	(0.1%-120%) I _n
Starting Current	0.1% I _n
Burden	<0.5VA/phase
Frequency	45Hz-65Hz
Solid State Energy Pulse Output (Selectable - kWh/kvarh)	
Pulse constant	1/10/100/1000/3200 imp/kWh (imp/kvarh)
Isolation	Optical
Max. Load Voltage	80V
Max. Forward Current	50mA
Pulse Width	60-150ms
Communications	
RS-485	Modbus RTU
Baudrate	1200/2400/4800/9600/19200 bps
Maximum Wire Size	1.5mm ² [16AWG]
Torque for Terminals	0.45 N.m
Environmental conditions	
Operating temp.	-25°C to +70°C
Storage temp.	-40°C to +85°C
Humidity	5% to 95% non-condensing
Atmospheric pressure	70 kPa to 106 kPa
Pollution Degree	2
Mechanical Characteristics	
Mounting	DIN Rail
Unit Dimensions	128x90x60mm
Shipping Dimensions	TBD
Shipping Weight	TBD
IP Rating	51

Ordering Information

Product Code	Description																																						
PMC-340	Three Phase DIN Energy Meter																																						
<table border="1"> <tr> <td colspan="2">Basic Function</td> </tr> <tr> <td>A</td> <td>3 phase real time multi-function parameters</td> </tr> <tr> <td colspan="2">Input Current</td> </tr> <tr> <td>A</td> <td>20A (100A), Direct Input</td> </tr> <tr> <td>B</td> <td>5A (6A), CT Input</td> </tr> <tr> <td colspan="2">Input Voltage</td> </tr> <tr> <td>3</td> <td>240VLN/415VLL</td> </tr> <tr> <td colspan="2">System Frequency</td> </tr> <tr> <td>S</td> <td>50Hz</td> </tr> <tr> <td>G</td> <td>60Hz</td> </tr> <tr> <td colspan="2">DO</td> </tr> <tr> <td>A</td> <td>1x5V Pulse Output for Energy Peking</td> </tr> <tr> <td colspan="2">DI</td> </tr> <tr> <td>X</td> <td>None</td> </tr> <tr> <td>A</td> <td>2xDI for Pulse Counting</td> </tr> <tr> <td colspan="2">Communications</td> </tr> <tr> <td>A</td> <td>1 RS-485 Port</td> </tr> <tr> <td colspan="2">Display Language</td> </tr> <tr> <td>E</td> <td>English</td> </tr> </table>		Basic Function		A	3 phase real time multi-function parameters	Input Current		A	20A (100A), Direct Input	B	5A (6A), CT Input	Input Voltage		3	240VLN/415VLL	System Frequency		S	50Hz	G	60Hz	DO		A	1x5V Pulse Output for Energy Peking	DI		X	None	A	2xDI for Pulse Counting	Communications		A	1 RS-485 Port	Display Language		E	English
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PMC-340 - A A 3 S A X A E	PMC-340-AA3SAXAE (Standard Model)																																						

Standards of Compliance

Safety Requirements		
CE LVD 2006/95/EC	EN61010-1-1-2001	
Insulation	IEC 60255-5-2000	
Dielectric test	2kV @ 1 minute	
Insulation resistance	>100MΩ	
Impulse voltage	6kV, 1.2/50μs	
Electromagnetic Compatibility CE EMC Directive 2004/108/EC (EN 61326: 2006)		
Immunity Tests		
Electrostatic discharge	IEC 61000-4-2:2001 Level IV	
Radiated fields	IEC 61000-4-3:2002 (10 V/m)	
Fast transients	IEC 61000-4-4:2004 Level IV	
Surges	IEC 61000-4-5:2005 Level IV	
Conducted disturbances	IEC 61000-4-6:2006 Level III	
Magnetic Fields	IEC 61000-4-8:2009 Level IV	
V dips, interruptions & variations	IEC 61000-4-11:2004 (?)	
Oscillatory waves	IEC 61000-4-12:2006 Level III	
Radio Disturbances	CISPR 22:2006, Level B	
Emission Tests		
Limits and methods of measurement of electromagnetic disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment	EN 55011: 2009 (CISPR 11)	
Limits and methods of measurement of radio disturbance characteristics of information technology equipment	EN 55022: 2006+A1: 2007 (CISPR 22)	
Limits for harmonic current emissions for equipment with rated current ≤16 A	EN 61000-3-2: 2006+A1: 2009	
Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current ≤16 A	EN 61000-3-3: 2006	
Emission standard for residential, commercial and light-industrial environments	EN 61000-6-3: 2007	
Electromagnetic Emission Tests for Measuring Relays and Protection Equipment	IEC 60255-25: 2000	
Mechanical Tests		
Vibration Test	Response	IEC 62052-11: 2003 Level I
	Endurance	IEC 62052-11: 2003 Level I
Shock Test	Response	IEC 62052-11: 2003 Level I
	Endurance	IEC 62052-11: 2003 Level I
Bump Test		IEC 62052-11: 2003 Level I

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w: www.cetameter.com

Your Local Representative



Preliminary Revision Date: November 20, 2015

10 Appendix 3 PMC 340 Certificates

NMI 14/2/102
Rev 2



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval NMI 14/2/102

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the instruments herein described.

Ceiec Electric Technology Inc model CET PMC-340-BA35XAE Class 1 Direct connected Electricity Meter

submitted by CETA Australia Pty Ltd
38B Douglas Street
Milton QLD 4064

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval has been granted with reference to document NMI M 6-1, *Electricity Meters, Part 1: Metrological and Technical Requirements, July 2012*.

This approval becomes subject to review on **01/04/23**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern and Variant 1 approved – certificate issued	05/12/17
1	Variant 2 & 3 approved – certificate issued	07/03/18
2	Figures for pattern and variants amended	11/09/18

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 14/2/102' and only by persons authorised by the submitter.

It is the submitter's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

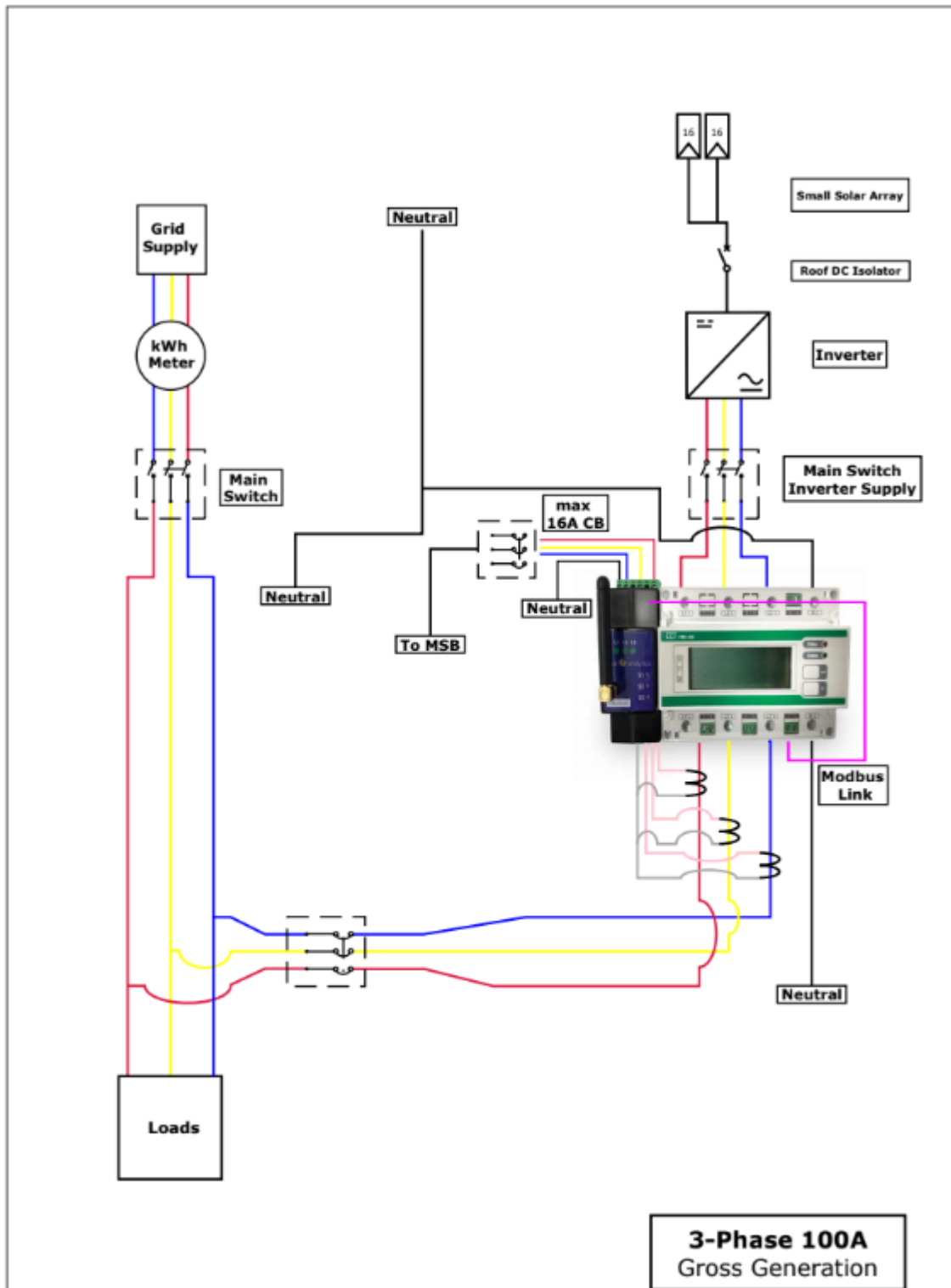
Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificates No S1/0B.

Signed by a person authorised by the Chief Metrologist
to exercise their powers under Regulation 60 of the
National Measurement Regulations 1999.



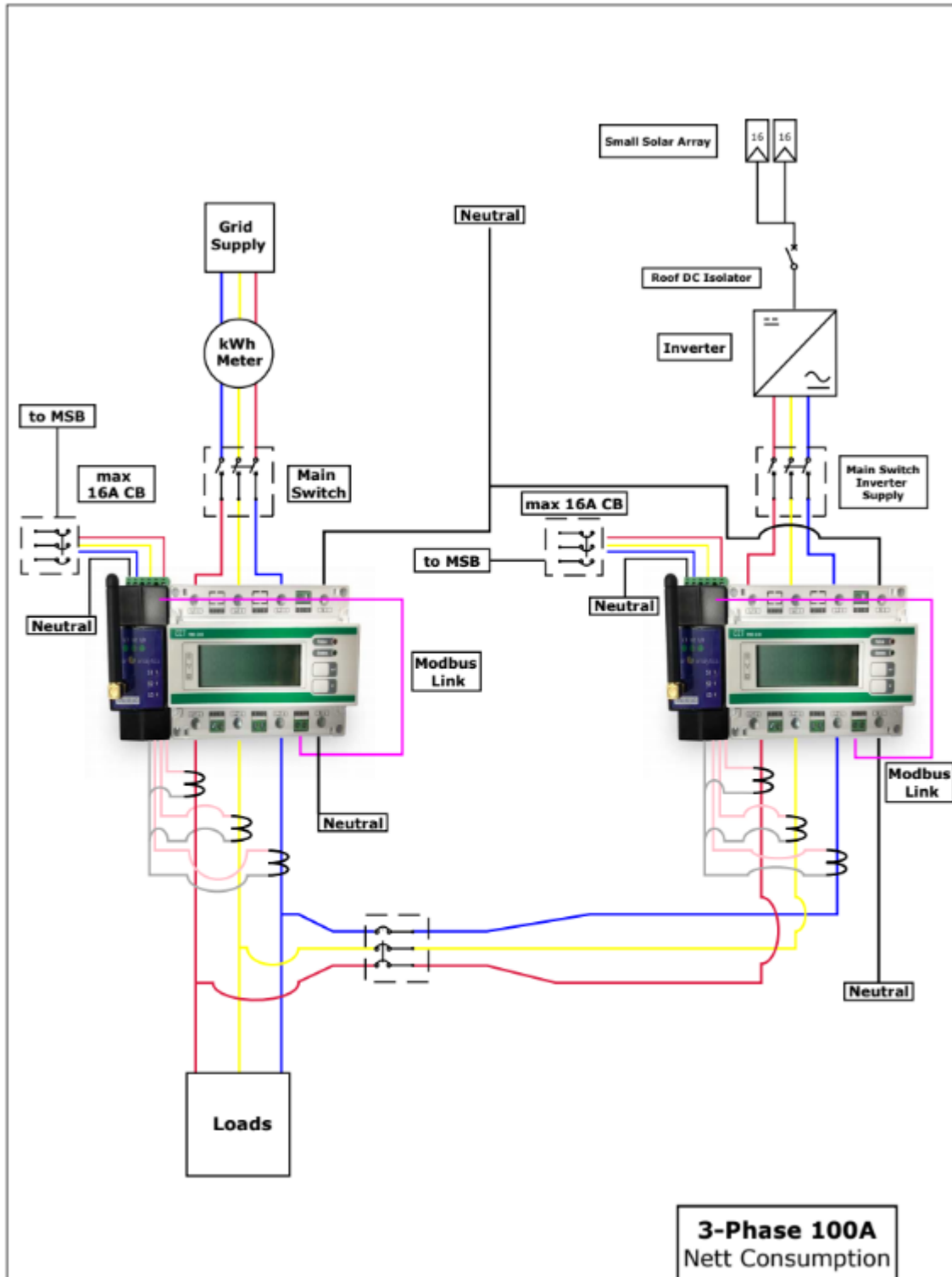
Darryl Hines
Manager
Pattern Approval, Policy and
Licensing Section

11 Appendix 4 - 3 Phase (Direct) Wiring Diagram Gross



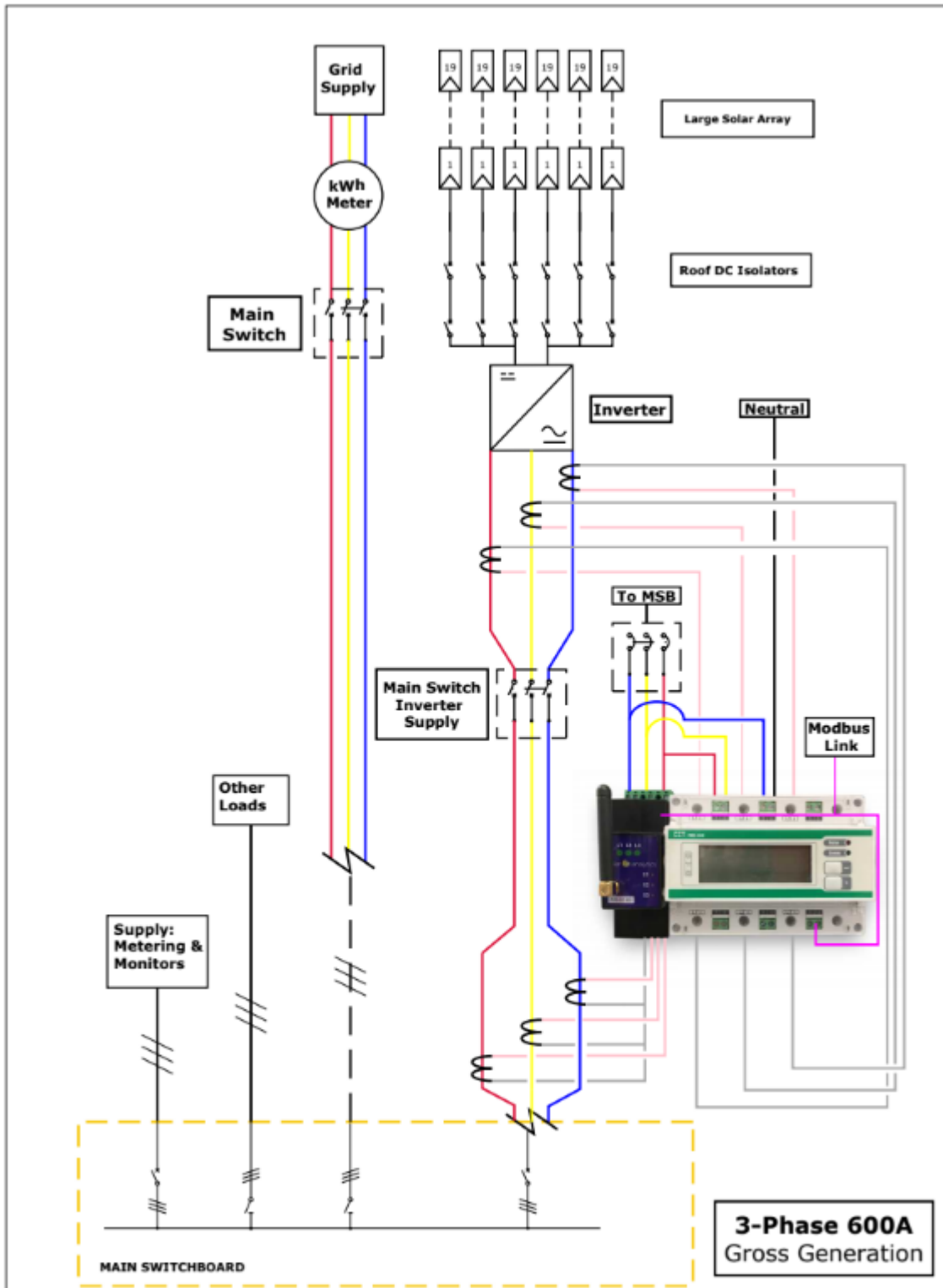
Drawing Number:	SLD001	Revisions								Project Name:	PPA - Gross Generation Model - 100A
Drawn By:	B.BIDWELL									Project Number:	###
Drawing Date:	19/08/2019	No.	Description	By	Date					Project Address	N/A

12 Appendix 6 - 3 Phase (Direct) Wiring Diagram Nett



Drawing Number:	SLD001	Revisions				Project Name:	PPA - Nett Consumption Model - 100A
Drawn By:	A.BUDWELL					Project Number:	###
Drawing Date:	16/08/2019	No.	Description	By	Date	Project Address	N/A

13 Appendix 7 - 3 Phase (CT) Wiring Diagram Gross



Drawing Number:	SLD001	Revisions:	---	---	---	---	Project Name:	PPA - Gross Generation Model - 600A
Drawn By:	B. BIDWELL	No.	---	---	---	---	Project Number:	###
Drawing Date:	16/08/2019	By:	---	---	---	---	Project Address:	N/A

14 Appendix 8 - 3 Phase (CT) Wiring Diagram Net

