



SAJ GROUP

Smart Communications, Inverters, energy meters & data platforms

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CONTENTS

01 Short company introduction

02 Communication & smart meters

03 Commissioning & data platform

Vision

Becoming a Global Leader
in Smart Energy Storage

Mission

Creating a Green Environment For
a Fulfilling Life Together

Values

Customer Oriented Initiative & Innovative
Strive for Excellent Open & Inclusive

Growing the Value of Energy Storage

Three Value-addings

- Higher Safety
- Higher Efficiency
- Higher Profitability

Five leading Technologies

- Advanced Battery Management Technology
- Advanced Energy Conversion Technology
- Advanced Energy Storage Equipment Integration Technology
- Advanced Smart Energy Storage Management Technology
- Advanced Smart Energy Storage Operation and Maintenance Technology

19 Years of Dedication and Professionalism

Becoming a Global Leader in Smart Energy Storage



2005

Established in Guangzhou with Core Business of VFD

2013

Installed the first grid inverter in Australia. So far the device is running properly

2015

Launched Sunbrid, the First SAJ Residential Hybrid Solar Inverter

2018

► More than 10,000 SAJ OEM inverters installed in Australia
► SAJ was rated as the global top 10 inverter brands

2021

- Headquarter Phase 2 Building
- Launched the new version of eSAJ Home
- Wuxi R&D Center

2011

Established the Renewable Energy Division Focusing Development of PV Inverters

2014

Guangzhou Headquarter Phase 1 Building

2016

Inverters account for 25% of the Chinese market

2019

Established subsidiaries in Australia: SAJ Digital Energy Australia

2023

- European Marketing & Sales Center-Frankfurt
- Established subsidiaries in five European countries
- Changsha R&D Center
- Production of Manufacturing Plant 2 (Ganzhou, Jiangxi)

01

Strong Focus on R&D to Meet the Evolving Needs of Clients



28%+

R&D Professionals

294

Patents

105+ Sophisticated Testing Devices

118+ Tests and Analyses Ensuring
Reliability



Prestigious Honors and Awards: Industry-leading Excellence and Innovation



2023 – Top 3 Installers' Favorite and Trusted Brands

2022 – Top 4 Global Shipping Volume of Household Energy Storage Among Chinese Brands

2022 – iF Design Award & Red Dot Design Award

2022 – Top 10 Distributed PV Inverter Brands (China)

2022 – SOLAR SOLUTIONS DÜSSELDORF – Best Innovation Award

2022 – Most Influential PV Inverter Enterprise – SOLARBE

2022 – Excellence Residential Energy Storage Solutions of the Year

2021 – TÜV Rheinland – PV Grid-connected Inverter (R5 Series)

2020 – China Distributed Solar PV Conference Top 10 Influential Inverter Brands

2019 – TÜV: All Quality Matters Award 2018



Inverters, smart meter's & data platform

October 2024

SAJ Tech training objective –

Generate installer confidence & reduce the reliance on tech support via:-

- Inverters & smart metering RS485 and mod bus framework.
- Product programming via online apps
- product support material - localised ppt, online manual access, training updates, face book installer group.

SAJ – Doing it differently

- Man on the ground in most states, all states covered – tech team operate from a van, not an office.
- Free phone number 1800 888725 – free site visits – free remote config & monitoring device.
- SAJ Tech - capture and note inbound support topics, dissect the data build training around this

What does the data reveal

- Over 98% - is not product failure - < 1.5% comprehensive fail rate. Not a disastrous for any manufacturer ensures repeat business & customer retention
- 90% of inbound calls are communication related

Which areas produce most inbound calls (no particular order)

- 1) Data comms – RS485 – Cat 5 connections – RJ45 pin selection – modbus
- 2) Batteries - communication inverter to BCU
- 3) Wifi connection
- 4) Smart meter settings & CT coils
- 5) Programming
- 6) App usage
- 7) Firmware upgrades
- 8) RTFM fail ... [\(stipulate - read the flipping manual\)](#)

Inverter smarts are getting smarter & product reliance on them is greater than ever

- Can you even buy an inverter today that does not connect to home wifi?

Coming soon - or here already

- Home automation
- Artificial intelligence
- Energy trading
- [Never been a greater need to understand communication & data platforms](#)

02

R5 – 1 & 3 Phase



R6 – 1 & 3 Phase



CHS2 – 3 Phase C&I



SAJ

Download on the
App Store

GET IT ON
Google Play

H2 – 1 & 3 Phase



C6 – 3 Phase



EleKeeper 1 * app for all product

02

Avoid possible confusion



Do not assume anything when it comes to data communication

Single-phase Connection

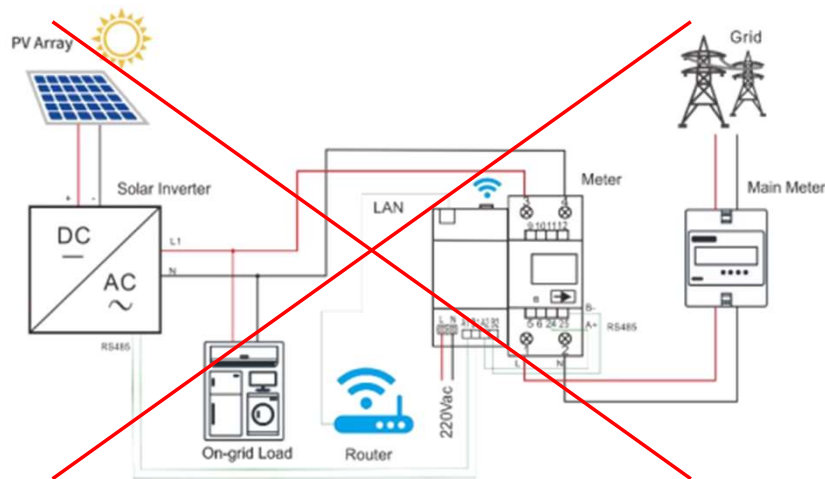


Figure 2.1.1 Single-phase connection diagram

Diagram without CT using a Previous model Chint smart meter – now updated

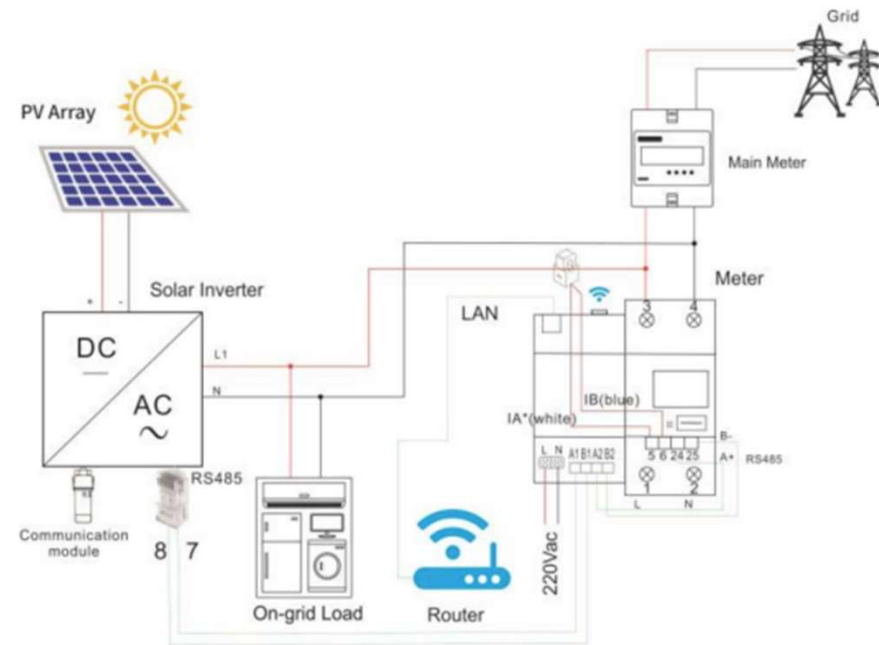


Figure 2.1.2 Single-phase connection diagram with CT

Diagram with current Chint meter & CT coil

02

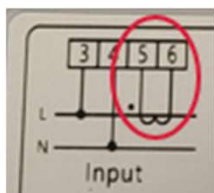
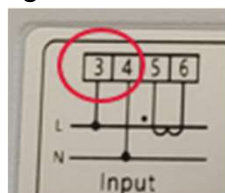


Important – All SAJ Chint meters now utilise CT coils

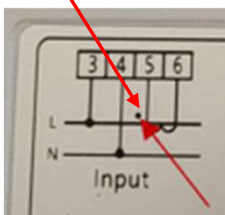
Important – check the meter diagram to ensure correct meter is supplied

Via supplied label
- Locate correct grid terminals

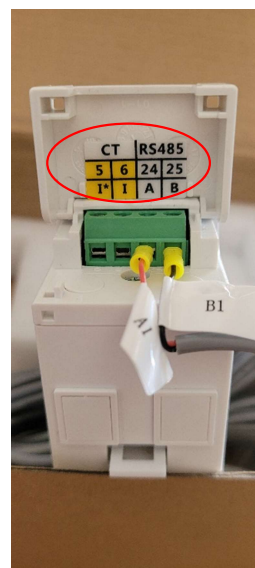
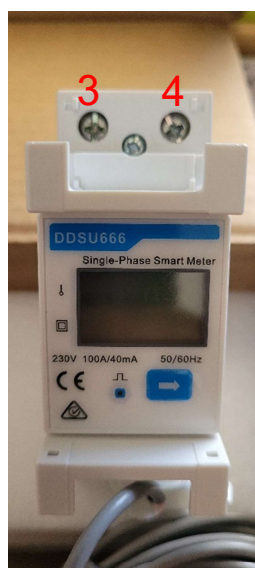
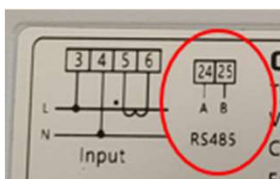
Determine CT terminals



Dot is white wire



Determine RS485 terminals



1 Phase "meter kit" includes – Chint meter, RS485 to inverter, 1 x CT coil

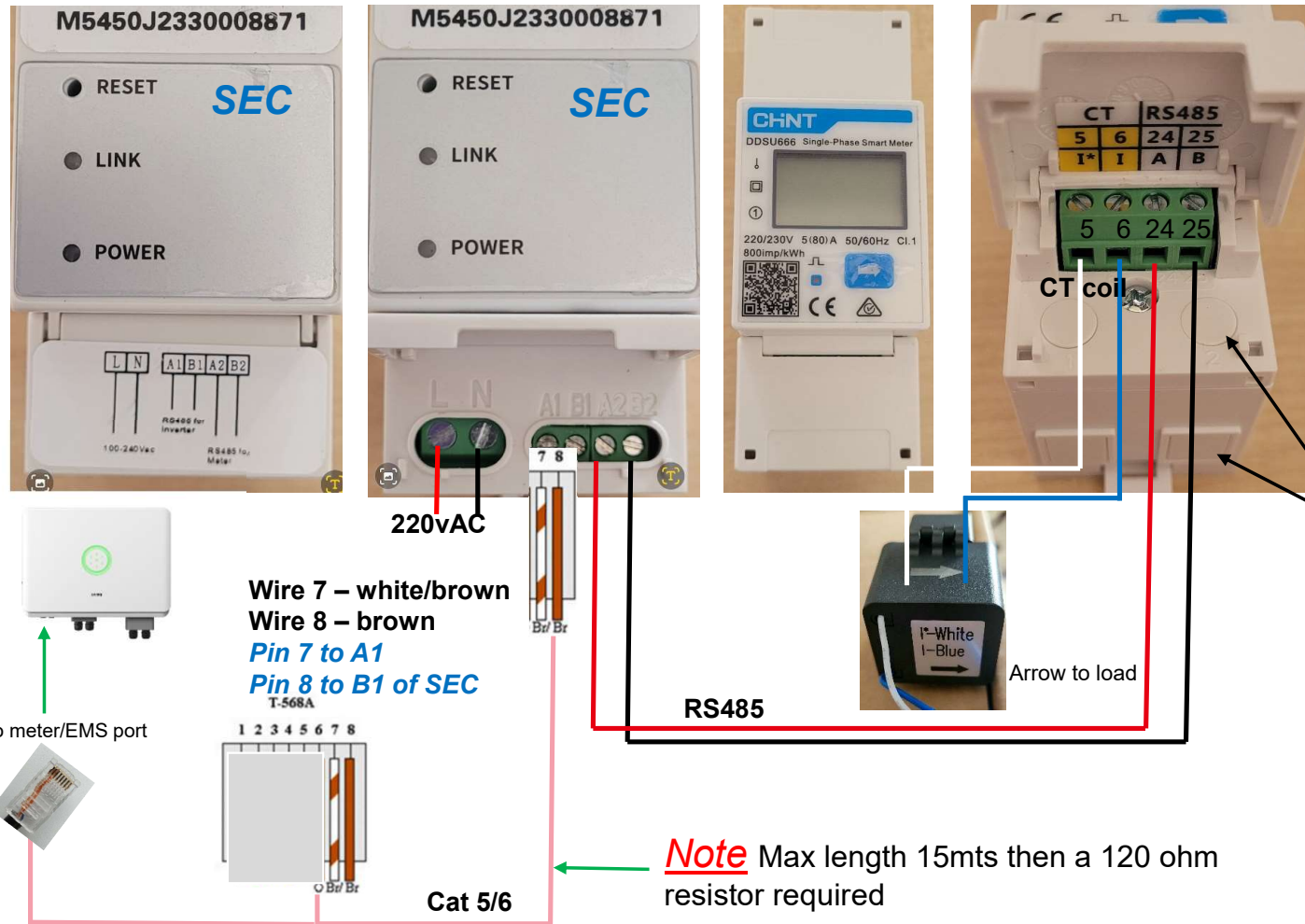
1 Phase "SEC kit" includes – Same plus 1 x SEC-C unit

02

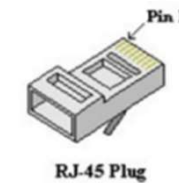
Electrical connection 1 phase



R5 & R6 1 phase – adding an SEC unit will provide PV generation data



Important – 1 phase RJ45 R5 & R6 inverters use pin 7&8 – brown & brown/white



Pin 1 on left of RJ45 with contact pins facing up

Important – 3 phase RJ45 R5 & R6 Inverters pins 7&8 **only**
H2 Inverters pins 1&2 **only**

Note the blocked off terminal – no cable access

Electrical connection 3 phase

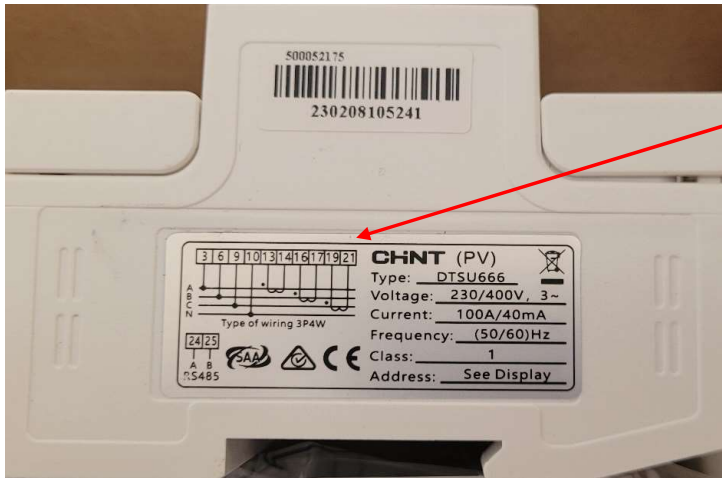
Know your product



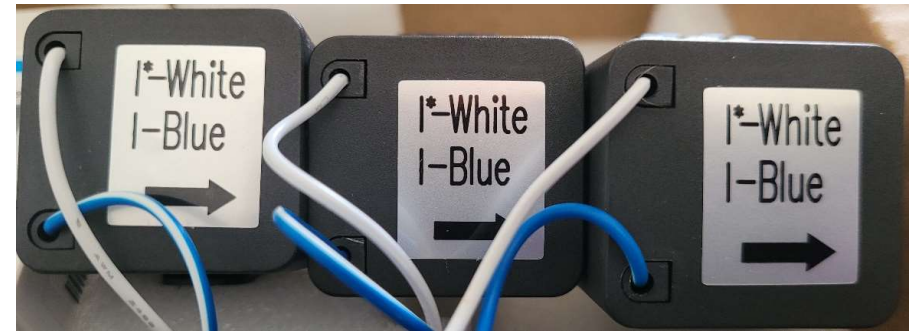
3 phase meter kit includes
1 x 3 phase Chint meter
3 x CT coils
1 x RS485 meter to inverter cable



3 phase Meter & SEC kit includes
1 x 3 phase Chint meter
1 x SEC-C module
3 x CT coils
1 x RS485 meter to inverter cable
1 x external WIFI antenna



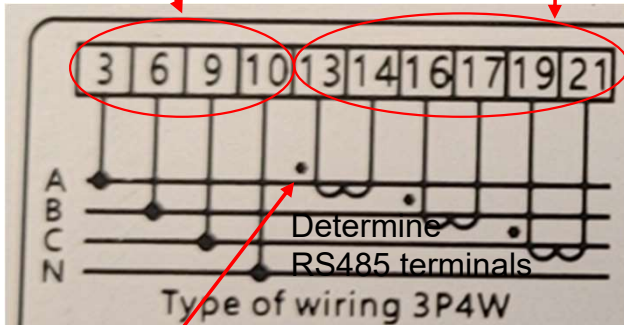
Important – check the meter diagram to ensure correct meter is supplied



Important – ensure CT coils are monitoring the correct phase, cross phasing will provide incorrect readings

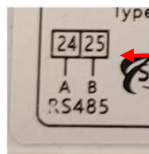
Locate 3 phase correct grid terminals

Determine the 3 x CT terminals

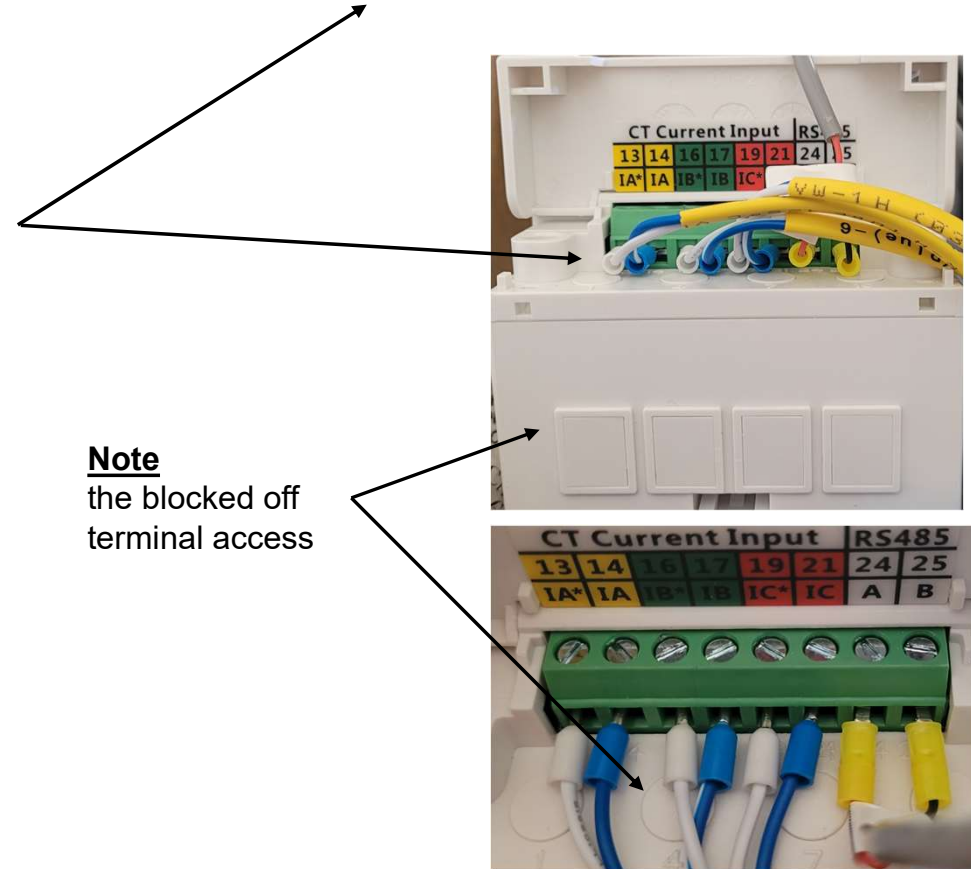


Determine RS485 terminals

Dots are white wire connections



Determine RS485 terminals



02



To meter/EMS port

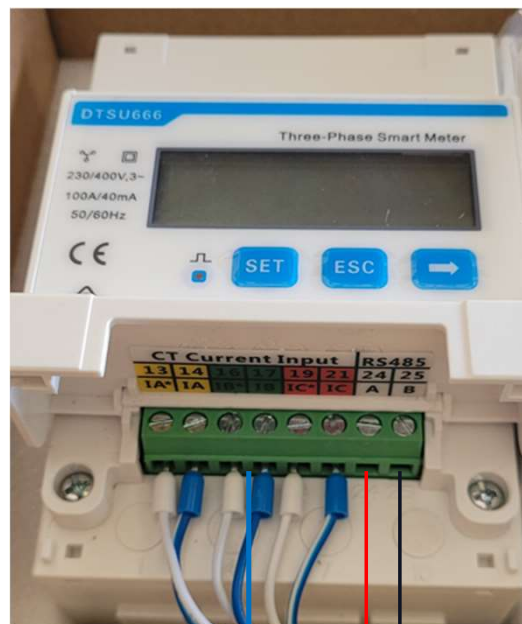


Wire 1 – white/brown
Wire 2 – brown
Pin 1 to A1
Pin 2 to B1 of SEC



220vAC

RS485



Note Max length 15mts then a 120 ohm resistor required



SAA - ATTENTION only – Slide not part of PPT

- Observation questions are interactive via Kahoot platform and cell phone app.

<https://youtu.be/7XzfWHdDS9Q>

- We run Kahoot alongside this ppt via a monthly subscription applied during the training months
- All questions are multi choice via a phone app
- Prizes are awarded to the winning installer or winning team in team events.



Observation Questions



- Q) A major stipulation from one of the training slides earlier is
(a) app usage (b) RTFM (c) firmware upgrades (d) leave site asap
- Q) In 2025 SAJ will achieve an age milestone of
(a) 5 years (b) 10 years (c) 15 years (d) 20 years
- Q) Over 90 % of all tech support call are related to
(a) On line manuals (b) firmware upgrades (c) communication issues (d) choice of lunch
- Q) The arrow of the reporting CT coil points towards
(a) load (b) grid (c) the battery (d) winning lotto numbers
- Q) SAJ 1st Australia grid connected inverter was in the year
(a) 2011 (b) 2013 (c) 2015 (d) 2030
- Q) SAJ R5 & R6 string Inverter will produce PV generation data from the energy meter only
(a) True (b) False (c) sometimes (d) not in WA

Observation Questions

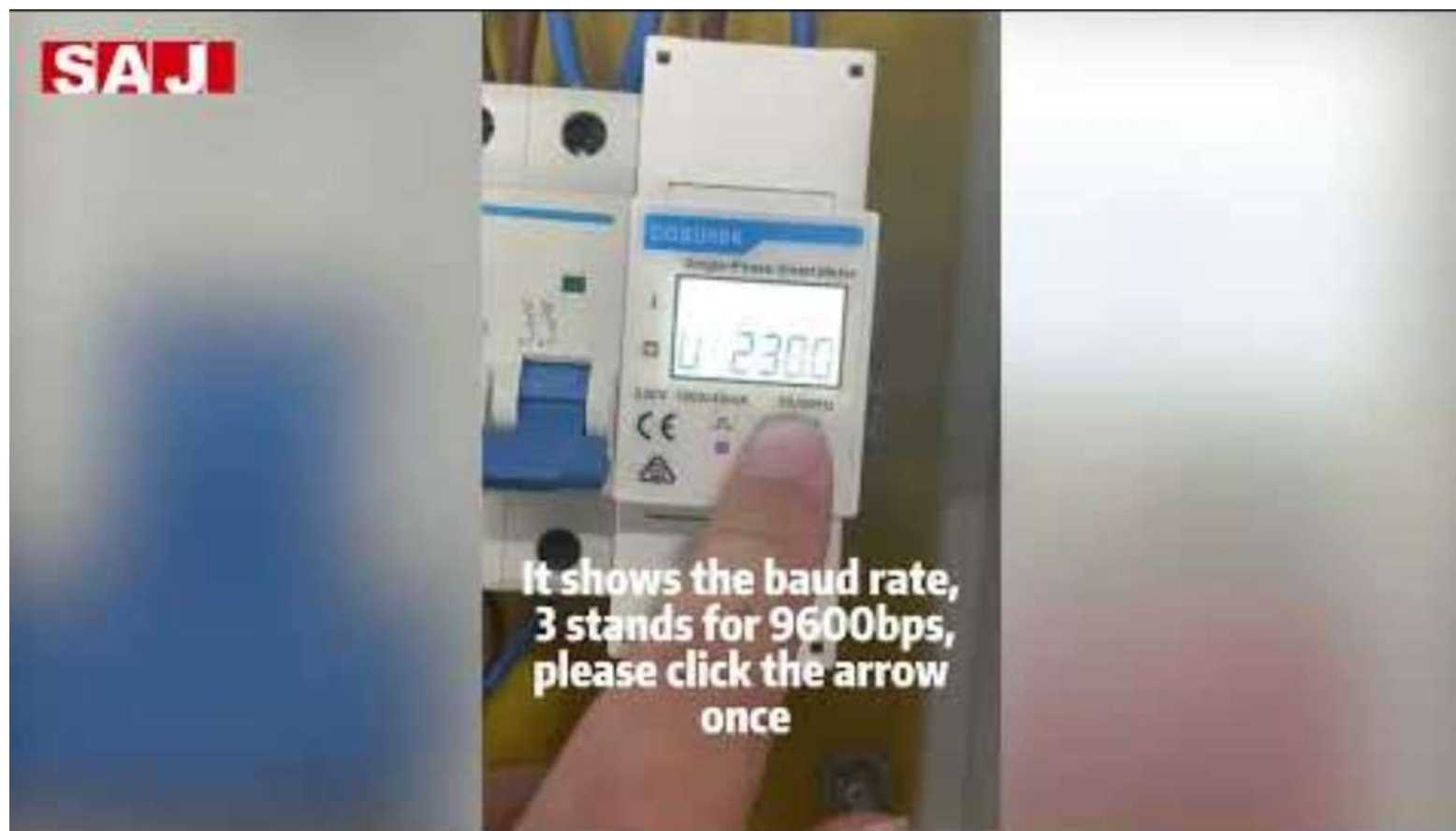


- Q) The SAJ Elekeeper app is for use with
(a) Residential product only (b) Commercial CHS2 only
(c) Both as one app for all product (d) Battery connected systems only
- Q) The max length of the cat 5/6 cable between energy Inverter & smart meter / SEC unit
(a) 10Mts (b) 15Mts (c) 20Mts (d) not required as cat5/6 has inbuilt resistance to match

Meter setting

Settings chint meter 1 phase

Modbus	(comms protocol)
8n1	(comms data bits)
001	(comms address)
baud 3	(rate - 9600)





How to set the
single-phase meter address
(CT Integrated)

2 Meter setting

Settings 3 phase

Code 701 (to enter settings interface)

001 (comms address)

n1-9600 (3) (baud rate)

3 phase manual link here > <https://wallboxcenter.de/wp-content/uploads/2022/10/Hoymiles-DTSU666-Smartmeter-Manual.pdf>





How to set the
three-phase meter address
(CT Integrated)

2 Meter setting re-cap

1, Modbus protocol

Single phase



1, Data bits



3, Buad rate 9600



3, Address: 1



Three phase

1, Modbus protocol



2, Buad rate 9600

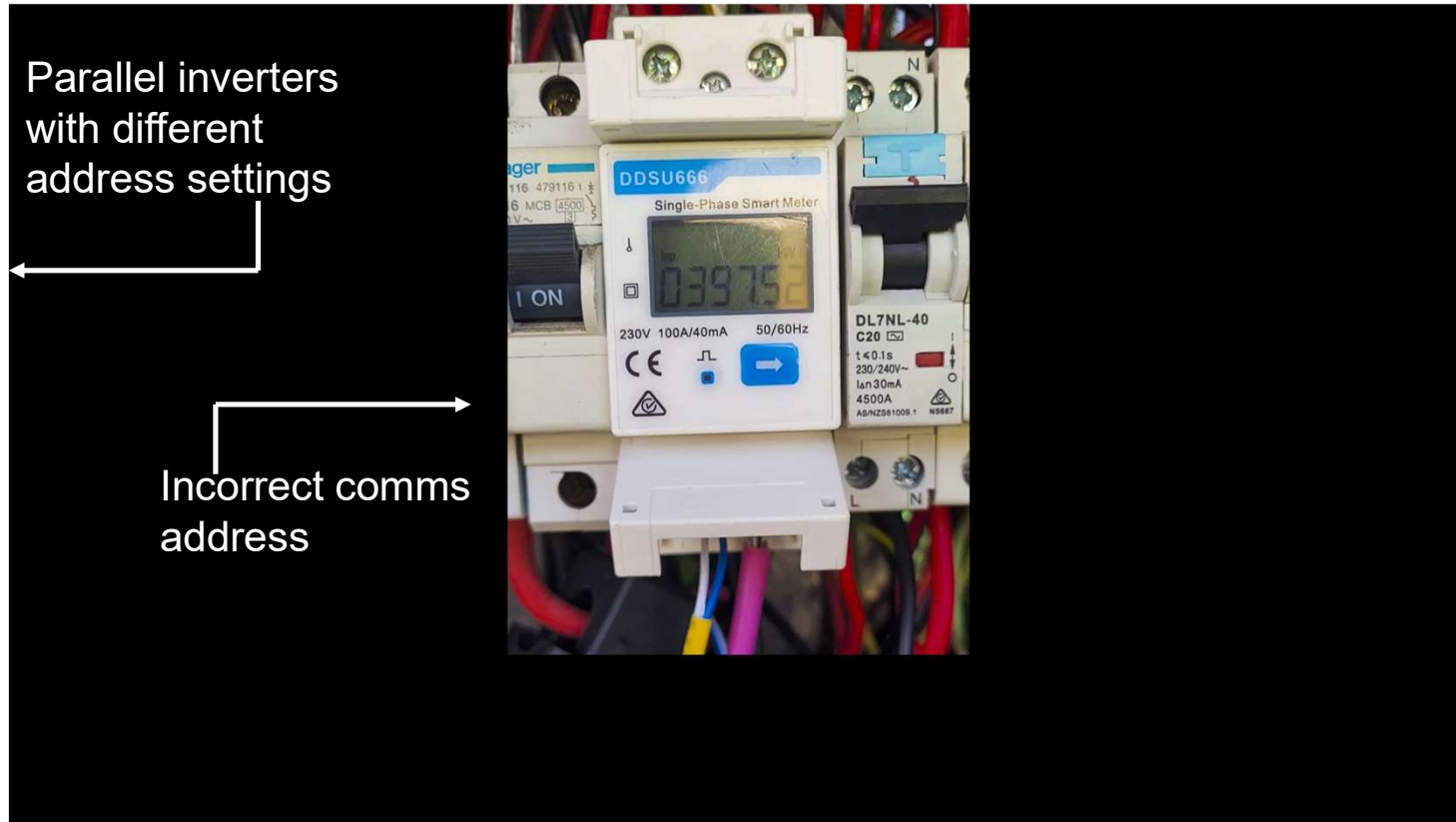


3, Address: 1





*Usually something simple to bring a system online
2 x examples here*



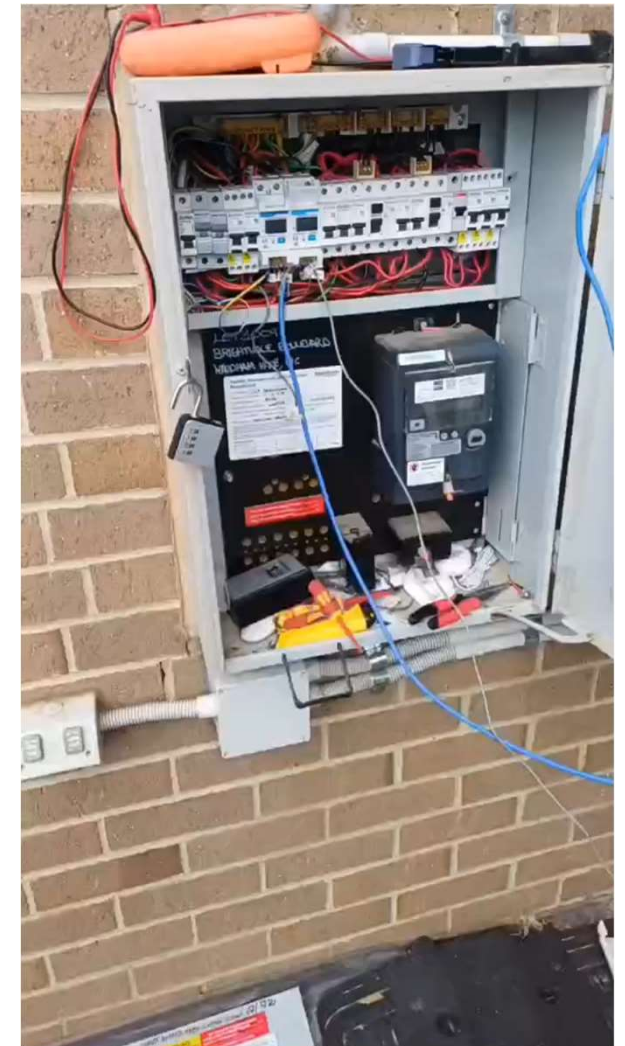
Help us to help you – prevent costly return to site visits



1 Simple zero test rig



2 Low cost LAN test meter



3 Length of CAT 5 pre made & tested

Observation Questions



- Q) On the single phase energy meter, the communication address setting is 100
(a) True (b) False (c) neither - it is the customers post code
- Q) Short press & hold the arrow button to reach 8n1, press and hold for 2 seconds allows the communication address to be set to 001
(a) True (b) False (c) 001 is binary & N/A
- Q) 3 phase energy meter programme settings are entered via code
(a) 007 (b) 701 (c) 1800 Tech support
- Q) Both 1 phase & 3 phase meter programming code is 701
(a) True (b) False (c) Neither as 701 is speed dial to tech support
- Q) A low cost LAN cable test meter is
(a) essential (b) useful (c) A waste of money I use tech support
- Q) A pre-made, tested & proved good length of cat 6 cable will
(a) prove product operation (b) slow the install (c) Test tech support patience

03

Always better to operate in a pro-active manner rather than re-active

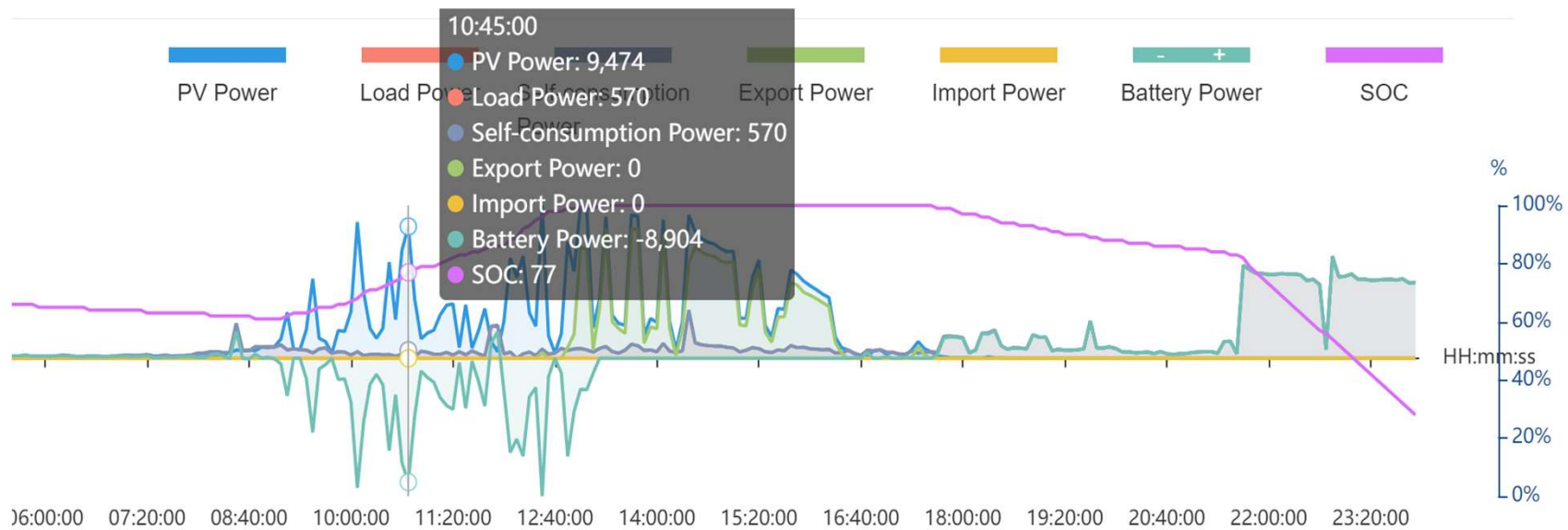
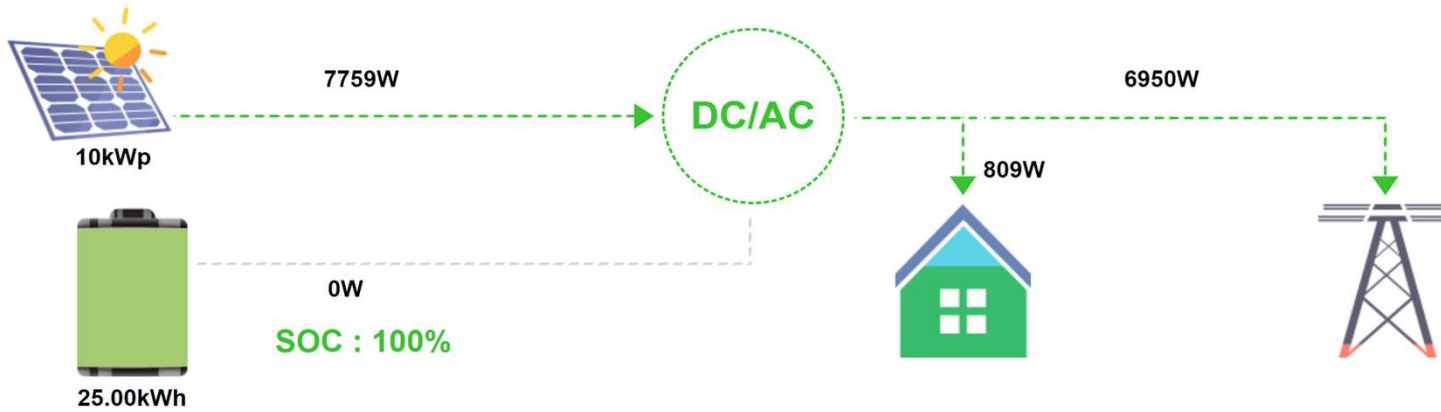
A quick reference check to confirm correct product →

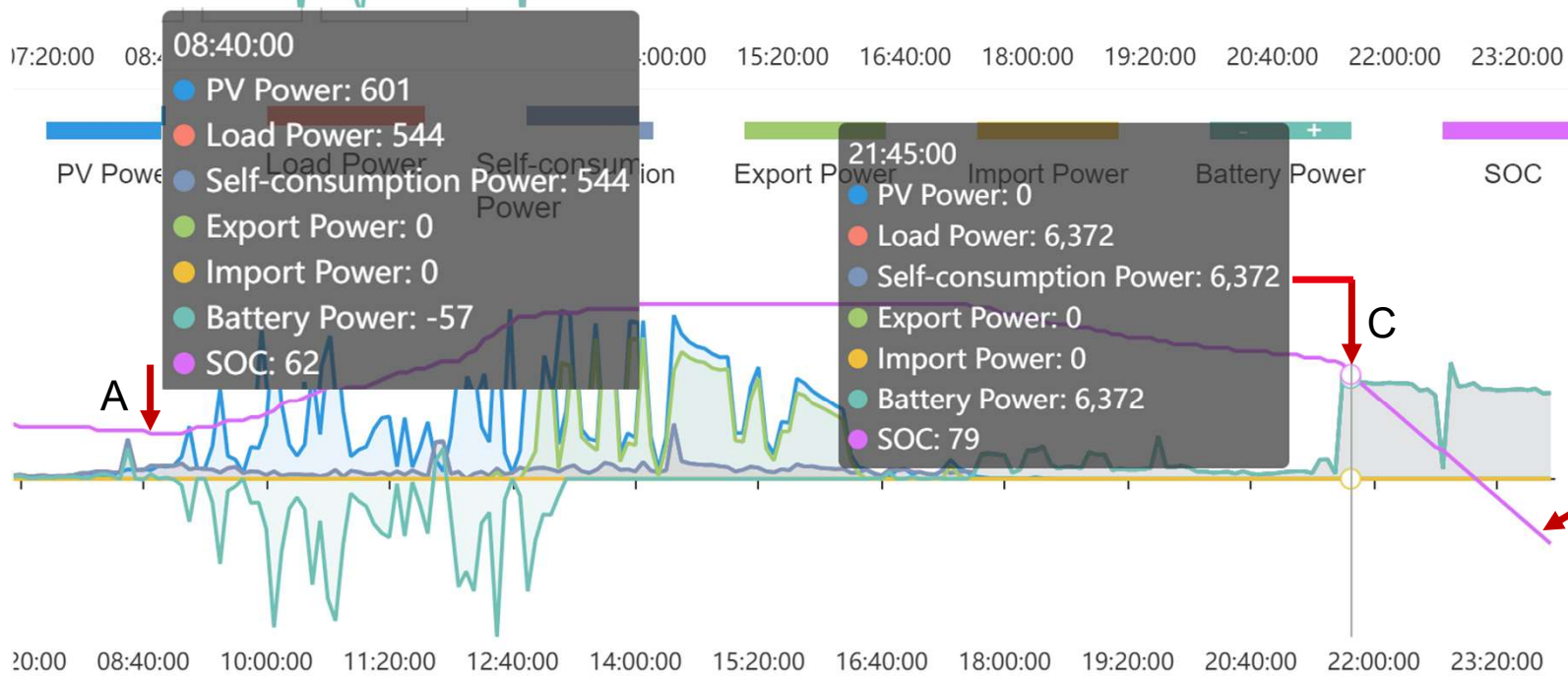
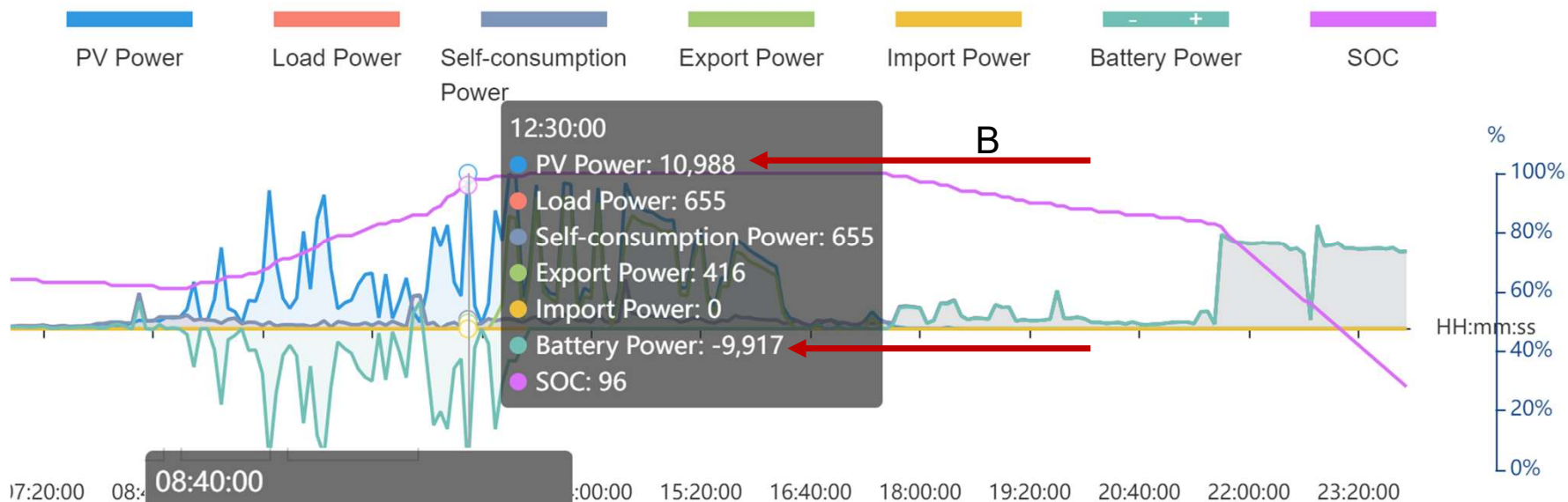
Cross check of completed testing for comms faults →

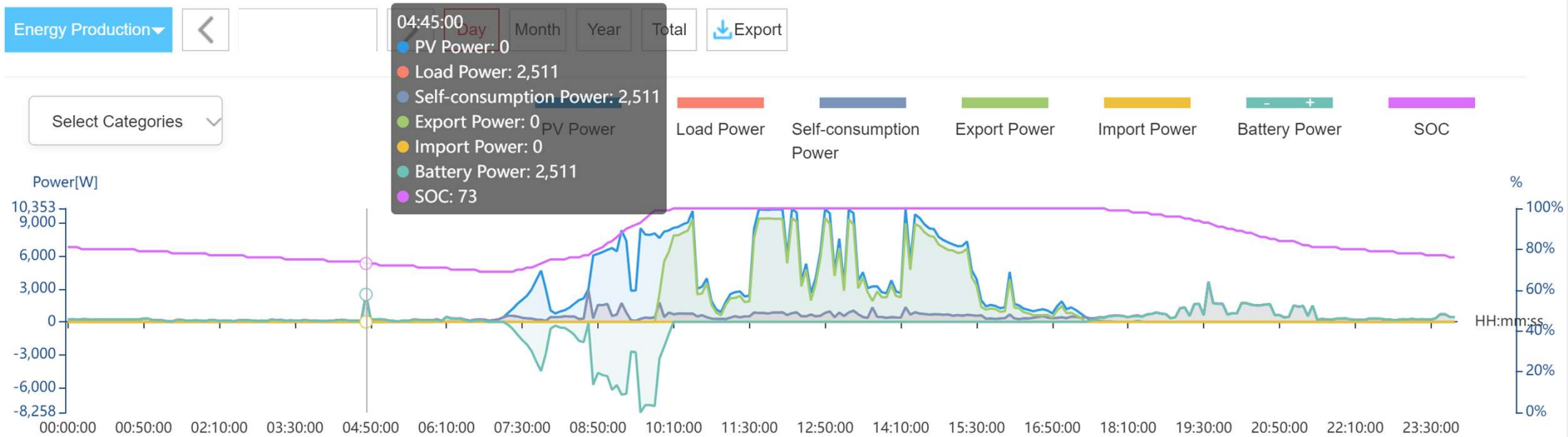
Info to assist SAJ when contact required →

SAJ system check list					
Inverter model	Tick	Qty	KW rating	Yes	No
R5					
R6					
H2					
HS2					
C6					
1 or 3 phase					
DC&AC voltage					
smart meter type installed				Yes	
Meter only					
Meter kit					
SEC-C kit					
Energy Storage type				Yes	no
AS1					
B2					
Comms fault				Yes	no
length					
RS485 run (meter to inverter) > 15mts + 120ohm resistor					
Is meter programming correct					
RS485 cable continuity					
check meter wiring - provide images of SEC & chint Mtr					
CT direction - arrow to load					
Wifi connection made					
local connection made					
strong wifi signal at inverter position					
Solar Company & address					
Installer					
Inverter serial number					
Address of installation					
contact details					
Fault in a few words					

Overview







After

Observation Questions



- Q) The commissioning system check list will
(a) determine faults (b) assist installer (c) assist tech support (d) get me to the pub quicker
- Q) The SAJ data platform when used pro-actively can
(a) prevent site visits (b) used as diagnostics tool (c) sell more systems (d) be used as a fish finder
- Q) System analysis data can
(a) educate the end user (b) reveal hidden loads (c) sell more systems (d) expose cowboys
- Q) A data analysis follow up call within a week to the end user will
(a) boost relationship (b) generate confidence (c) sell more systems (d) waste my time
- Q) From historical system data we can
(a) add batteries later (b) gain access to event logs (c) determine weather conditions (d) turn off data reporting
- Q) As an installer I found this training
(a) Of great use (b) Of little use (c) something in between a&b (d) I am off to join the Army

Winds of change



Winds of change are sweeping through the industries accreditation process.



Who We Are

Solar Accreditation Australia (SAA) has been established as a not-for-profit organisation to advance the effective accreditation of designers and installers in accordance with the [SRES Scheme](#), which covers both on and off grid solar, wind and hydro systems.

As established by [Master Electricians Australia](#) and the [Smart Energy Council](#), SAA is an independent and standalone organisation, with an independent chair and governance structure.

The [Clean Energy Regulator](#) appointed SAA the installer and designer accreditation scheme operator (ASO) in February 2024, with a three-month transition period.

Our Founders





THANK YOU

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