

The logo consists of the letters 'SAJ' in a bold, white, sans-serif font, set against a solid red rectangular background.

**SAJ**

# 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



**S&P Global**



# 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](#)

R5 – 1 & 3 Phase



R6 – 1 & 3 Phase



CHS2 – 3 Phase C&I



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

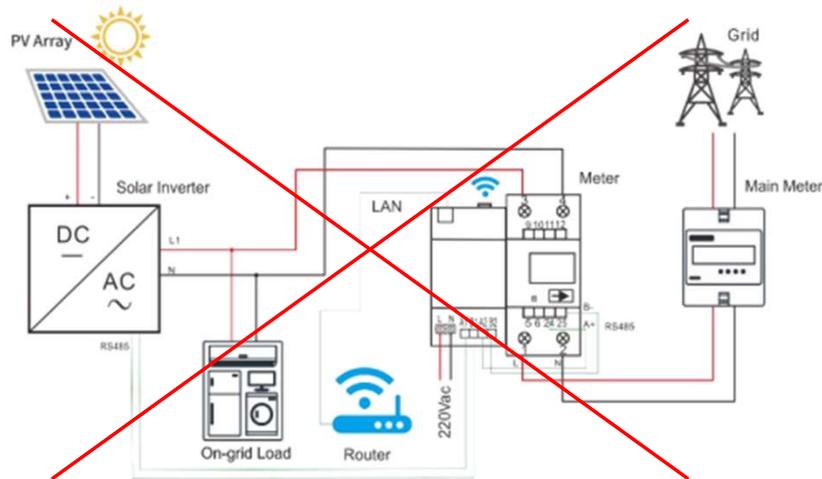


Figure 2.1.1 Single-phase connection diagram

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

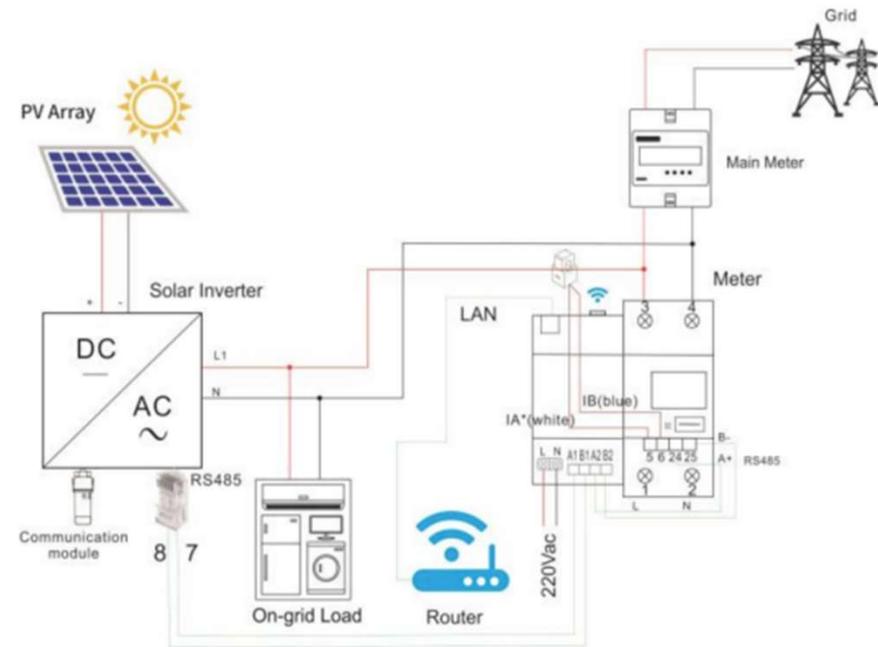


Figure 2.1.2 Single-phase connection diagram with CT

Diagram with current Chint meter & CT coil



**Important** – All SAJ Chint meters now utilise CT coils

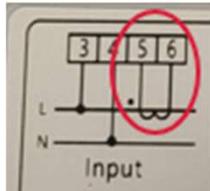
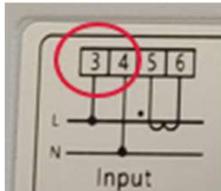
**Important** – check the meter diagram to ensure correct meter is supplied

**Important**  
Arrow points to the load



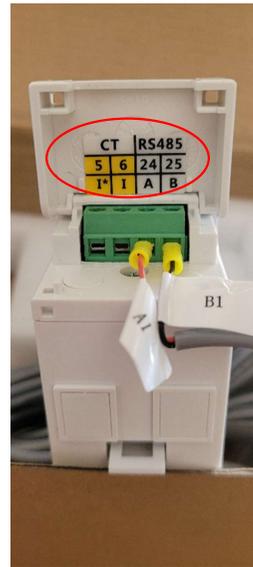
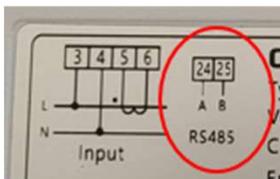
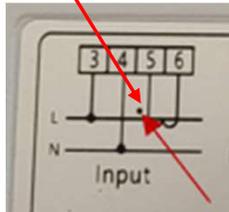
Via supplied label - Locate correct grid terminals

Determine CT terminals



Dot is white wire

Determine RS485 terminals



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

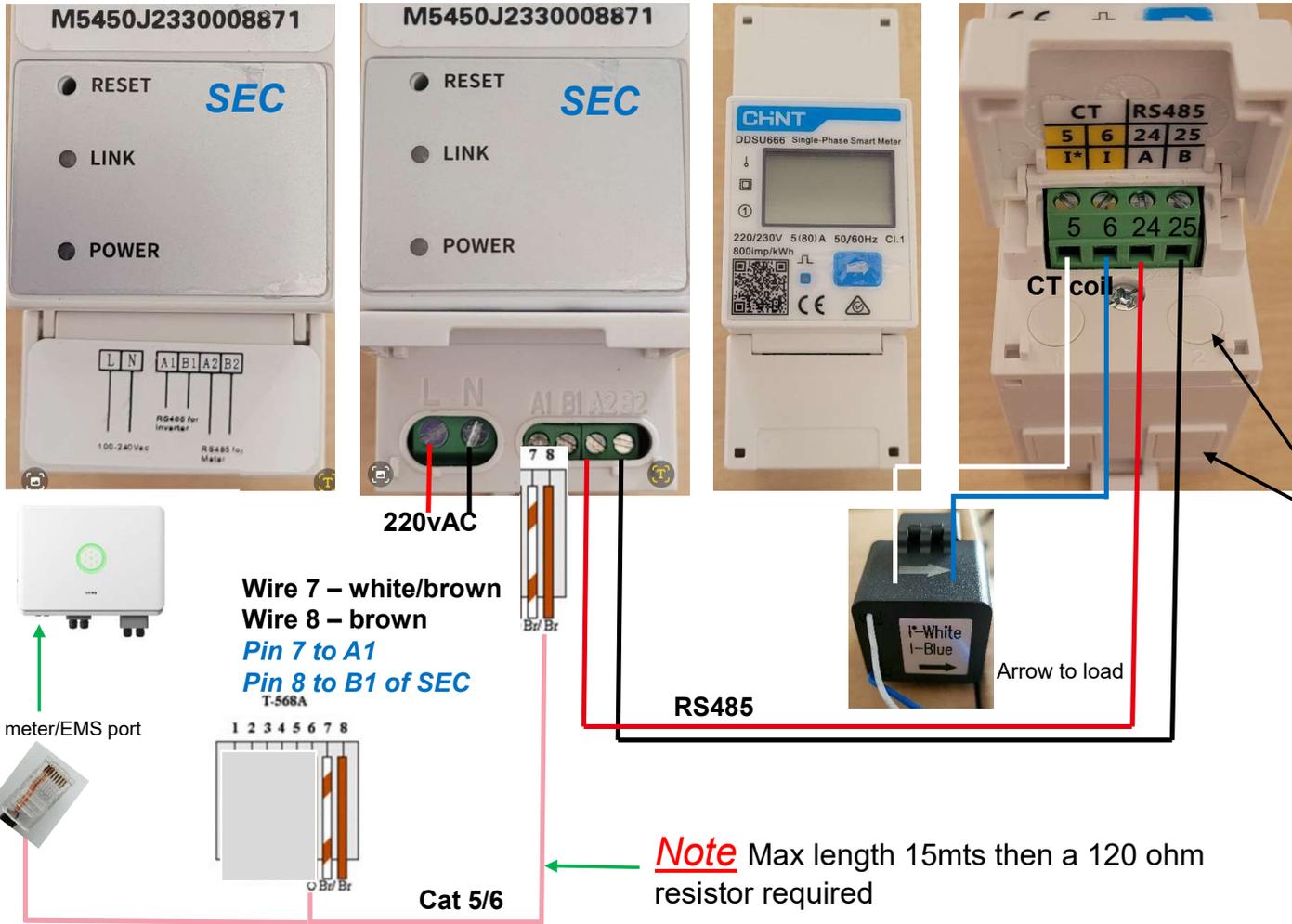
1 Phase **"SEC kit"** includes – Same plus 1 x SEC-C unit

# 02

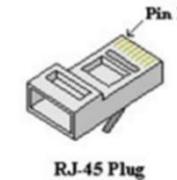
## Electrical connection 1 phase



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



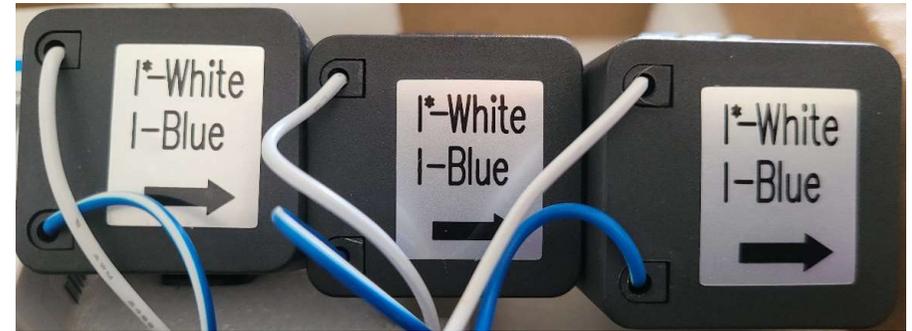
3 phase meter kit includes  
*1 x 3 phase Chint meter*  
*3 x CT coils*  
*1 x RS485 meter to inverter cable*



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*



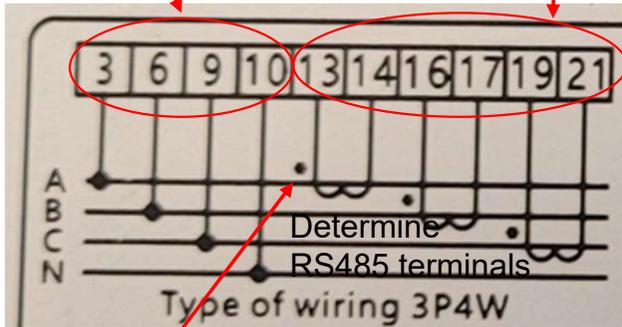
**Important** – check the meter diagram to ensure correct meter is supplied



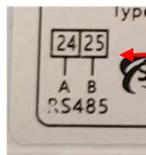
**Important** – ensure CT coils are monitoring the correct phase, cross phasing will provide incorrect readings

Locate 3 phase correct grid terminals

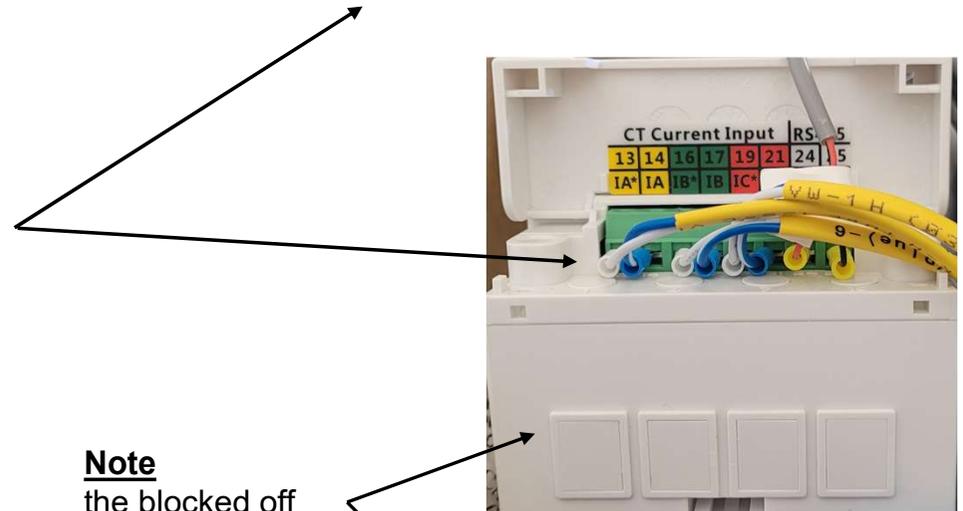
Determine the 3 x CT terminals



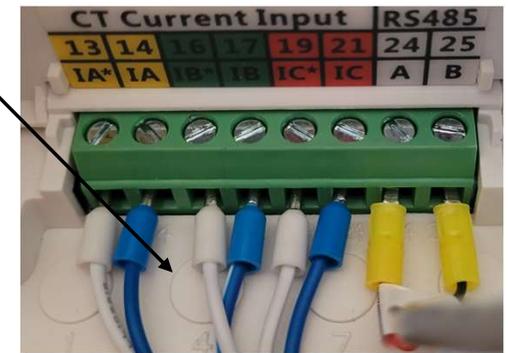
Dots are white wire connections



Determine RS485 terminals



**Note**  
the blocked off terminal access



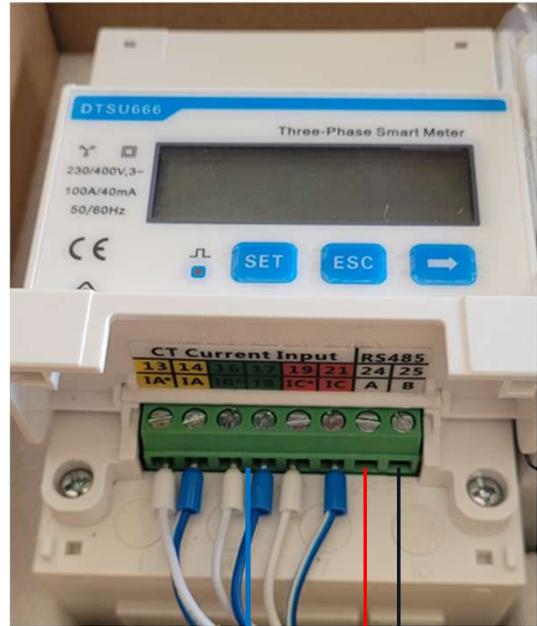
02



To meter/EMS port



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



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

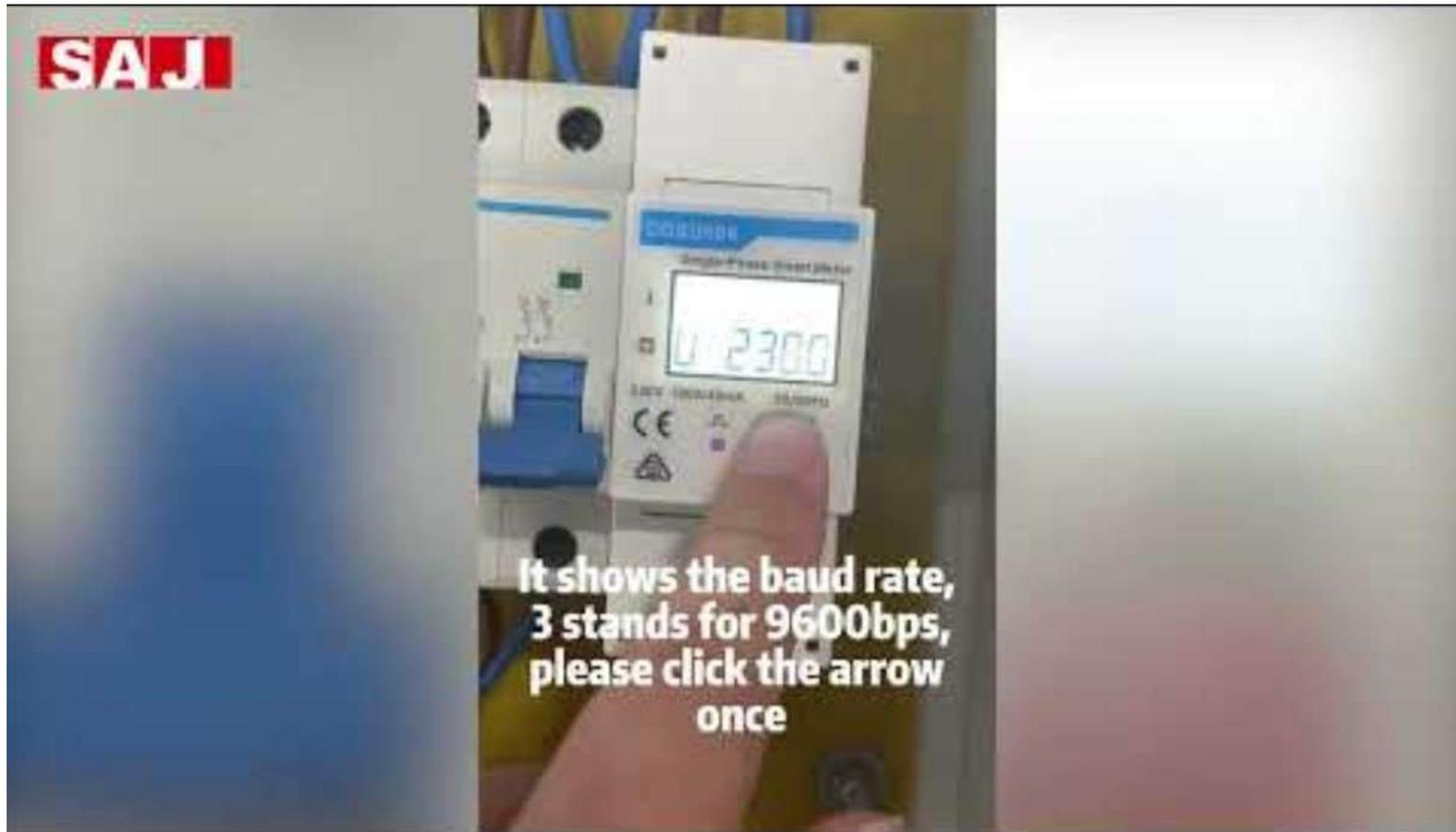


- Q) The SAJ Elekeeper app is for use with  
(a) Residential product only      (b) Commercial CHS2 only  
(c) Both as one app for all product      (d) Battery connected systems only
- Q) The max length of the cat 5/6 cable between energy Inverter & smart meter / SEC unit  
(a) 10Mts      (b) 15Mts      (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)



**SAJ**

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>



**SAJ**

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

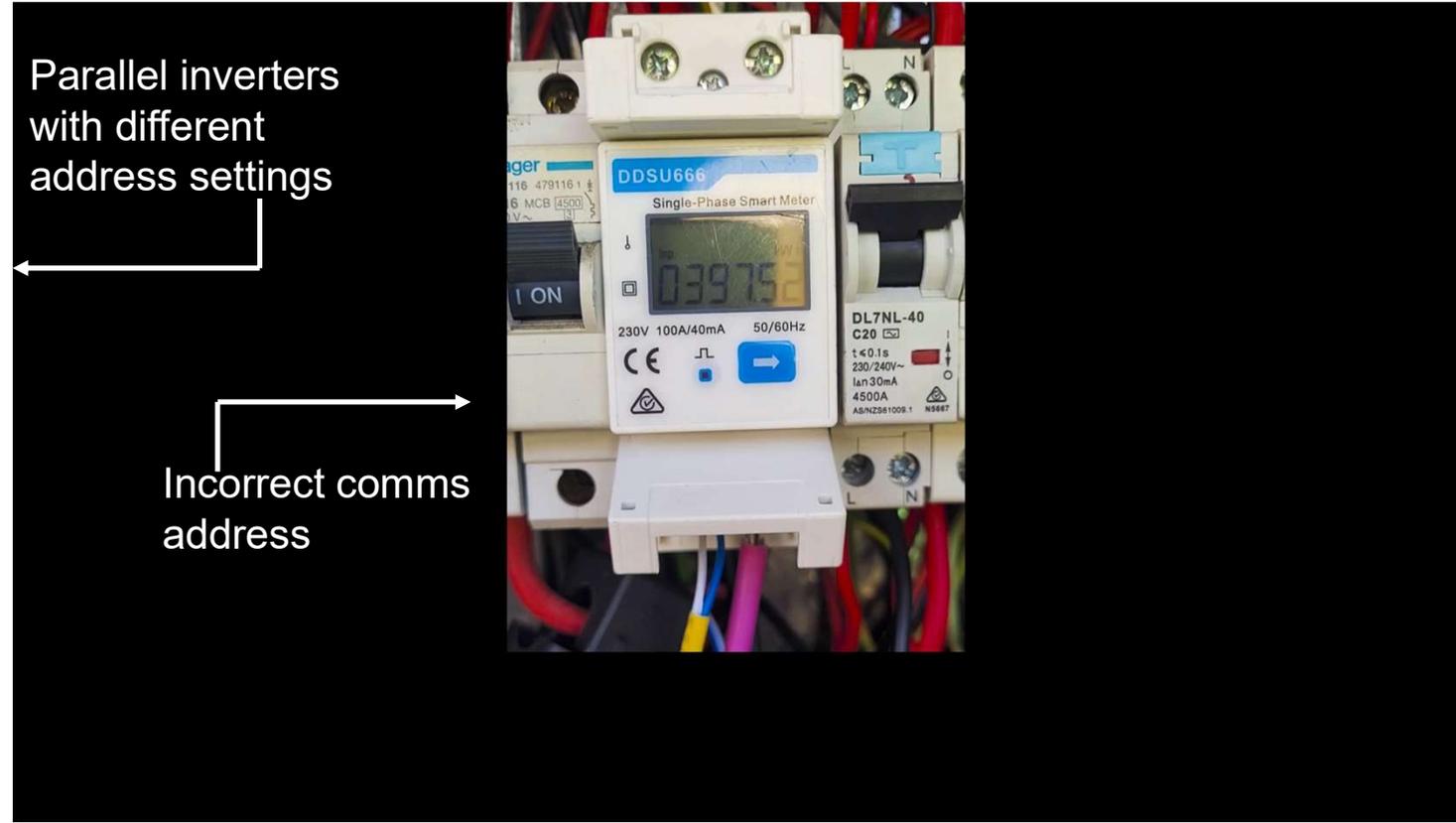


3, Address: 1





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



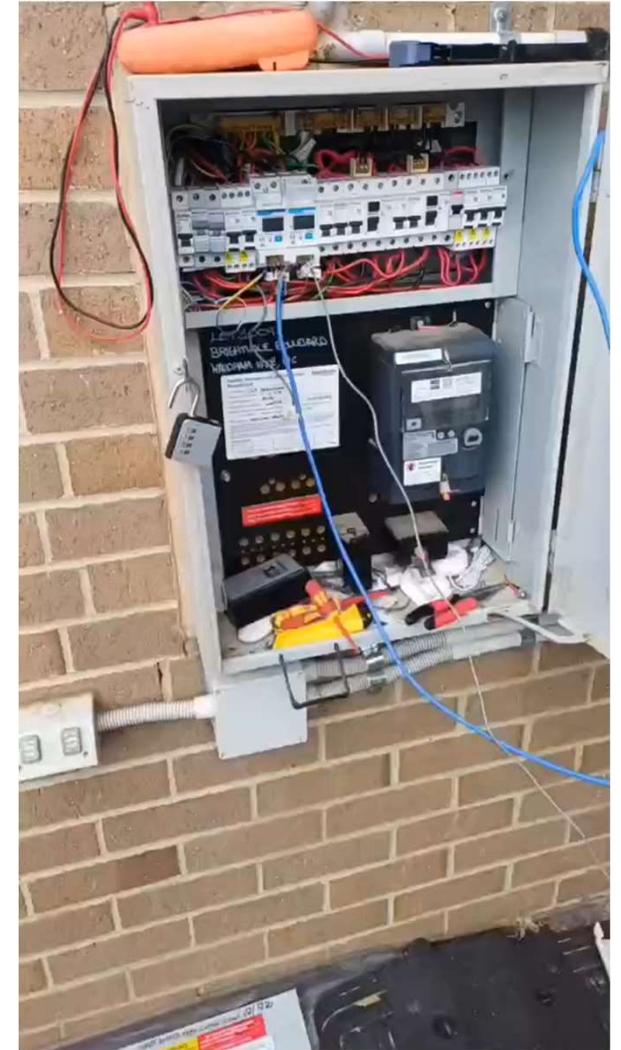
**Help us to help you – prevent costly return to site visits**



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

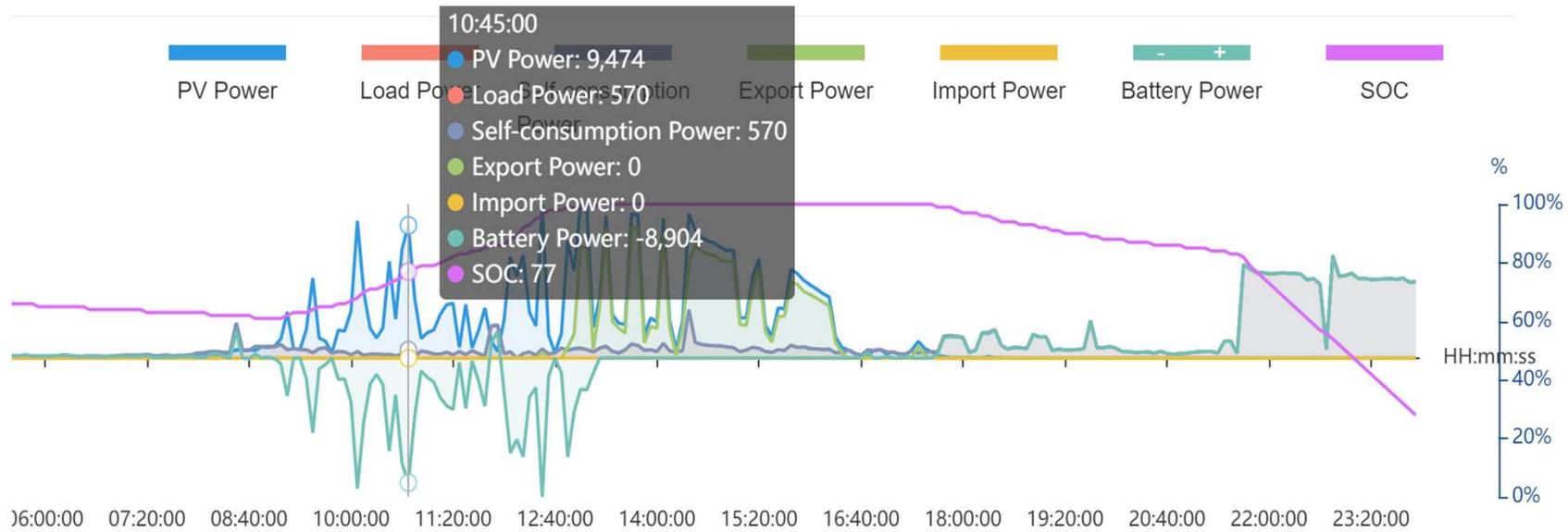
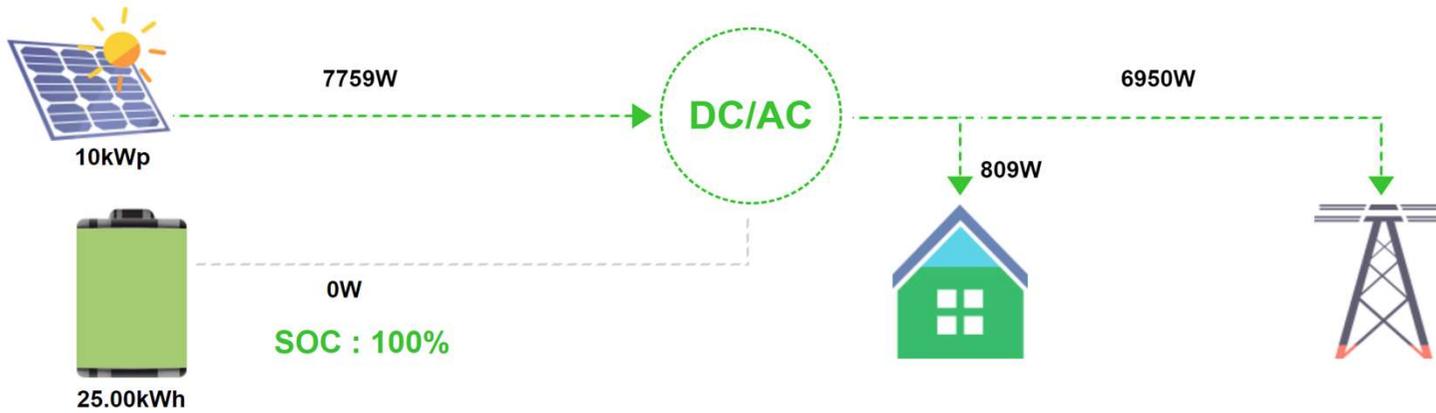
A quick reference check to confirm correct product →

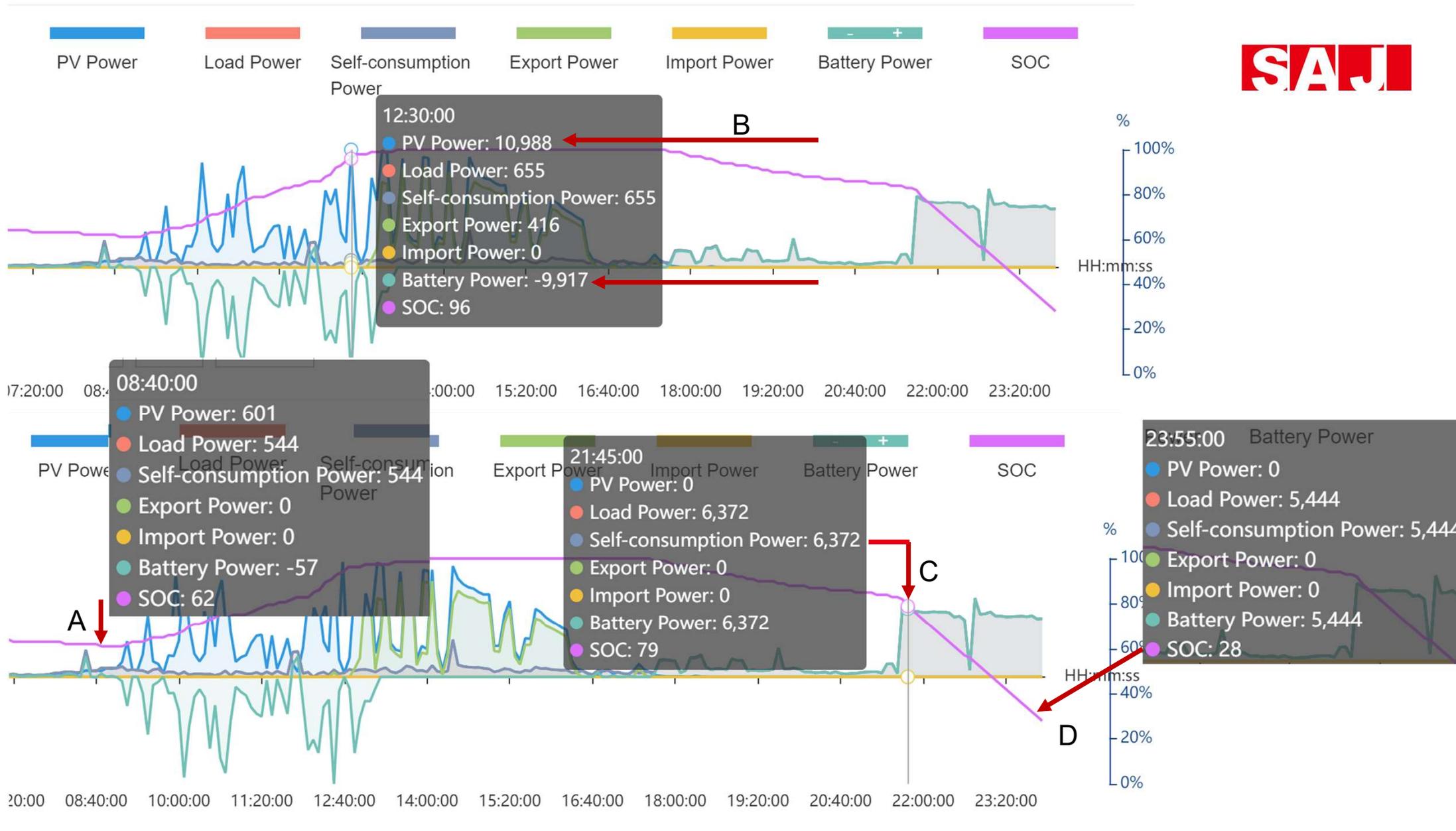
Cross check of completed testing for comms faults →

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						
<b>smart meter type installed</b>				Yes		
Meter only						
Meter kit						
SEC-C kit						
<b>Energy Storage type</b>				Yes	no	
AS1						
B2						
<b>Comms fault</b>				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						
<b>Solar Company &amp; address</b>						
Installer						
Inverter serial number						
Address of installation						
<b>contact details</b>						
<b>Fault in a few words</b>						

Overview





Energy Production

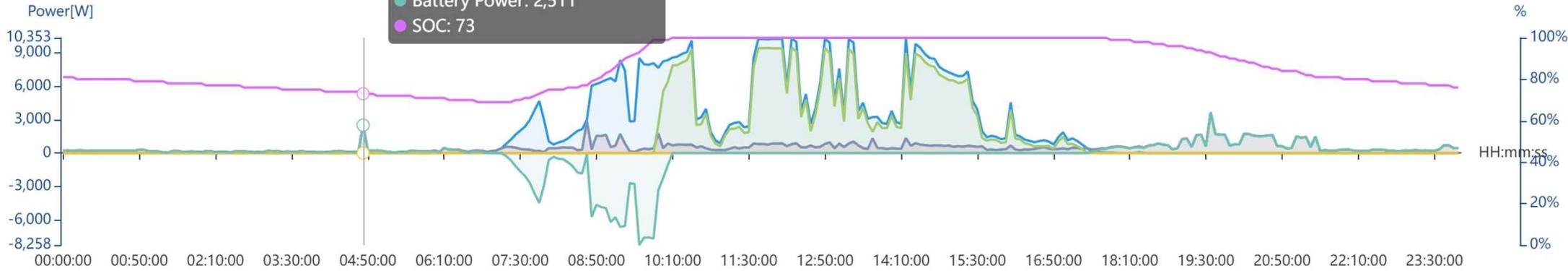


04:45:00 Day Month Year Total Export

Select Categories

04:45:00  
● PV Power: 0  
● Load Power: 2,511  
● Self-consumption Power: 2,511  
● Export Power: 0  
● Import Power: 0  
● Battery Power: 2,511  
● SOC: 73

Load Power Self-consumption Power Export Power Import Power Battery Power SOC



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

Guangzhou Sanjing Electric Co., Ltd.

Add: SAJ Innovation Park, No.9, Lizhishan Road, Science City, Guangzhou High-tech Zone, Guangdong, China.

E-mail: [marketing.drive@saj-electric.com](mailto:marketing.drive@saj-electric.com) Tel: +86 400-960-0112 Fax: +86 020-66608589 Web: [www.saj-electric.com](http://www.saj-electric.com)

