Application Note:
Integrating Accuenergy RGM (Revenue Grade Meter) with Sol-Ark 3-Phase Hybrid Inverters

Disclaimer: It's important to carefully read and follow all local code, manufacturer's instructions, and safety guidelines. Sol-Ark LLC disclaims all liability for any personal injury, property damage, or other damage that may result from misapplying the information in this document.

Overview

The Acuvim RGM metering solution, when properly configured, overrides the internally integrated metering of Sol-Ark's **30K-3P-208V** and **60K-3P-480V** Hybrid Inverters. Within a project installation, this metering solution:

- *Extends the metering measurement* beyond the CT distance limitation of the inverter's integrated metering.
- *Meets the revenue grade metering requirement* for applicable market incentives / utility metering agreements.

Scope

This document covers selecting, installing, and programming the **Acuvim EL** and the **AcuPanel 9104X** RGM systems, as well as integrating them with Sol-Ark 30K-3P-208 and 60K-3P-480 Hybrid Inverters.

IMPORTANT! Refer to the Accuenergy meter manual for instructions relevant to the AcuPanel interconnections.

Recommended Hardware

These Accuenergy RGMs have been tested with **Sol-Ark 30K-3P-208V** and **60K-3P-480V** inverters:

Manufacturer	Model	Compatible CTs	Communication Protocol	Voltage
Accuenergy	Acuvim EL	333 mV CT Rogowski Coil CT	Modbus RTU	208V / 480V
Accuenergy	AcuPanel 9104X	333 mV CT Rogowski Coil CT	Modbus RTU	208V / 480V

Notes

- The installer is responsible for choosing the correct CT sensor for the intended application.
- Rogowski coils are not recommended for zero export due to low accuracy in low power applications. PCS certification may be compromised with use of external meters.

Required Firmware

The inverters must be on the following firmware:

- MCU version **1110**
- COMM version **104F**

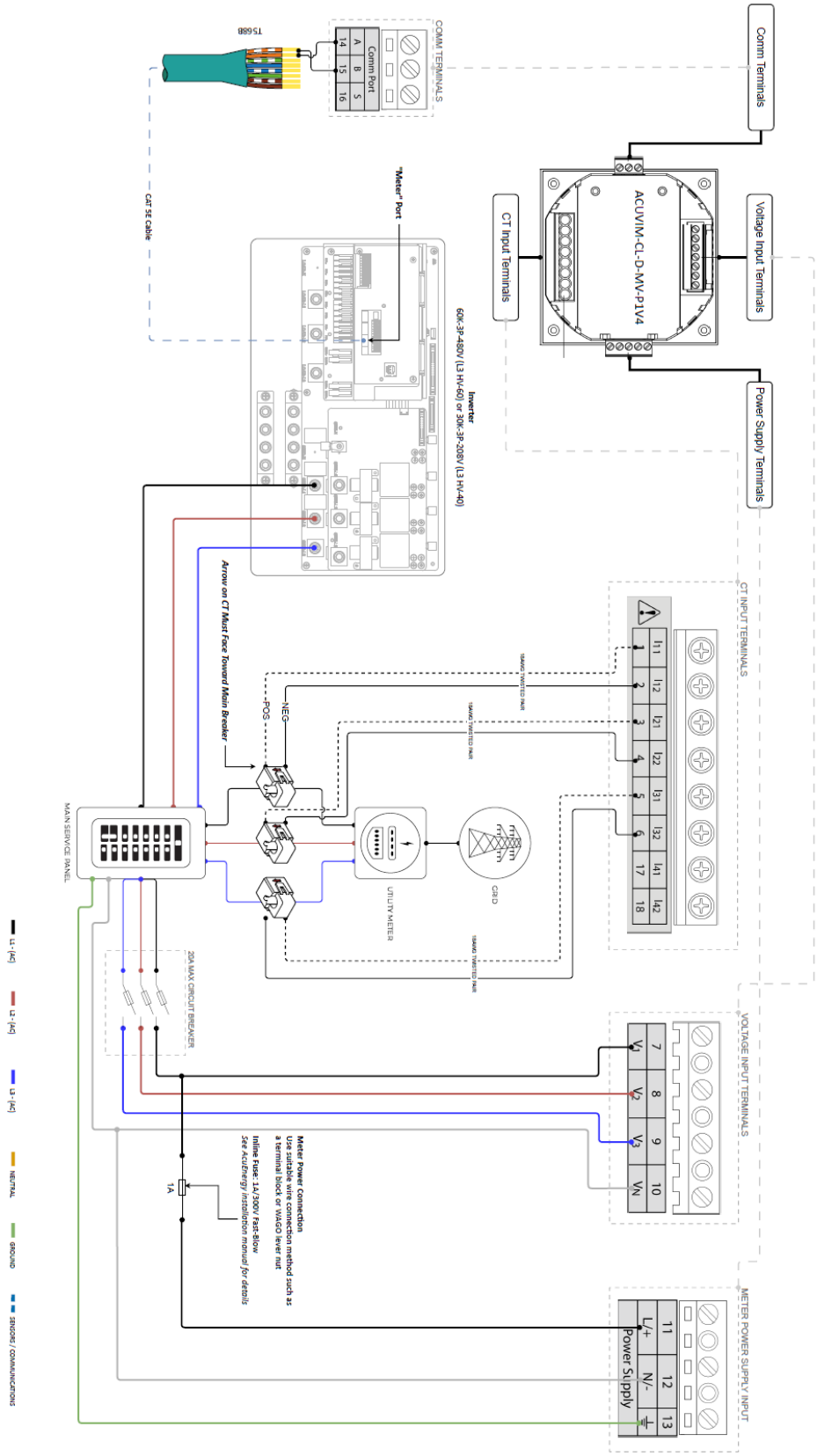
Connecting and Installing the RGM Systems

Acuvim EL

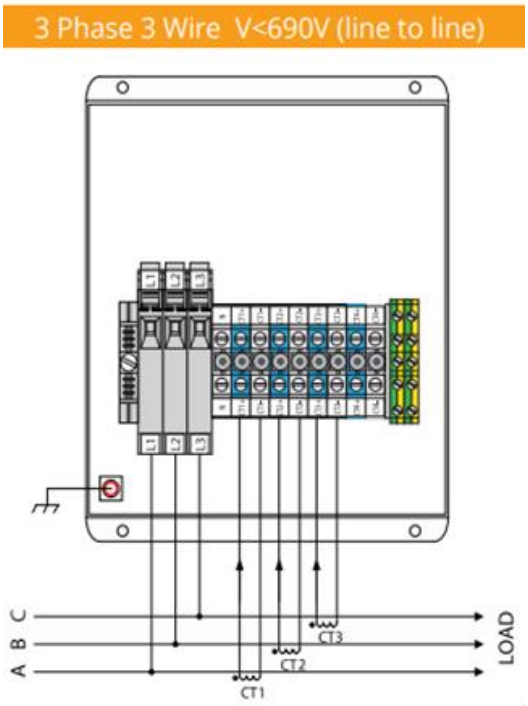
Note: Please verify the manufacturer's installations recommendations.

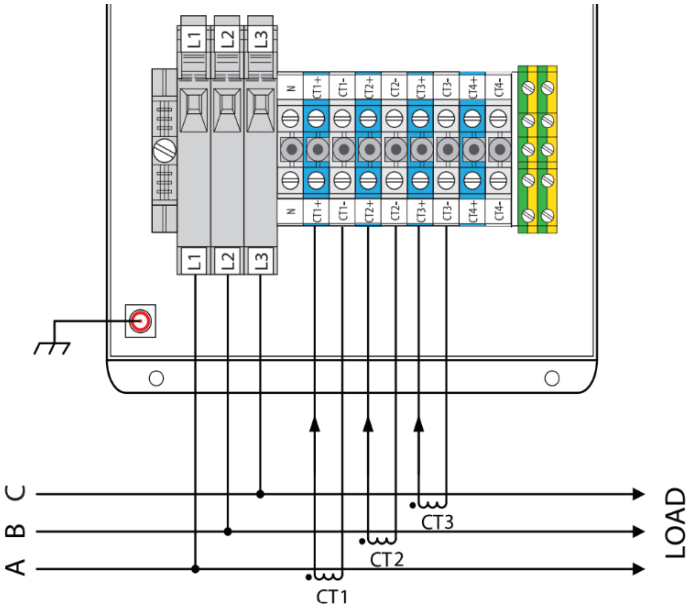
RS 485 Communication Wiring

1. Use a Cat6 UTP communication wiring using a **T568B RJ45 standard**
2. Connect the RJ45 end to the inverter's **Meter** port
3. Connect the other end of the communication wire to the RGM's **COMM** terminal as shown in the diagram on the next page
4. Connect the **white-orange cable** to terminal **B**
5. Connect the **orange cable** to terminal **A**


Comm Terminals
Voltage Input Terminals
CT Input Terminals
Power Supply Terminals
ACUVIM-CL-D-MV-P1V4
COMM TERMINALS
Comm Port
T568B
CAT 5E Cable
"Meter" Port
Inverter
60K-3P-480V (L3 HV-60) or 30K-3P-208V (L3 HV-40)
Arrow on CT Must Face Toward Main Breaker
POS
NEG
MAIN SERVICE PANEL
UTILITY METER
GRID
CT INPUT TERMINALS
I11
I12
I21
I22
I31
I32
I41
I42
VOLTAGE INPUT TERMINALS
V1
V2
V3
VN
20A MAX CIRCUIT BREAKER
1A
Meter Power Connection
Use suitable wire connection method such as
a terminal block or WAGO lever nut
Inline Fuse: 1A/300V Fast-Blow
See Accuenergy installation manual for details
METER POWER SUPPLY INPUT
L/+
N/-
Power Supply
L1 - (AC)
L2 - (AC)
L3 - (AC)
NEUTRAL
GROUND
SENSORS / COMMUNICATIONS

AcuPanel 9104X

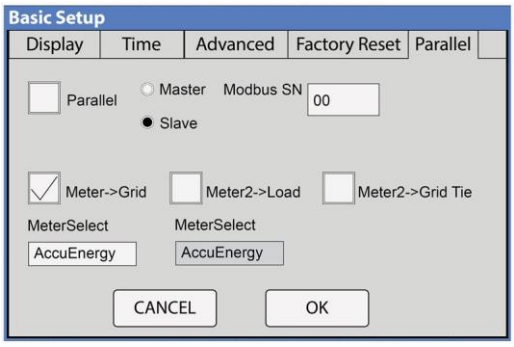


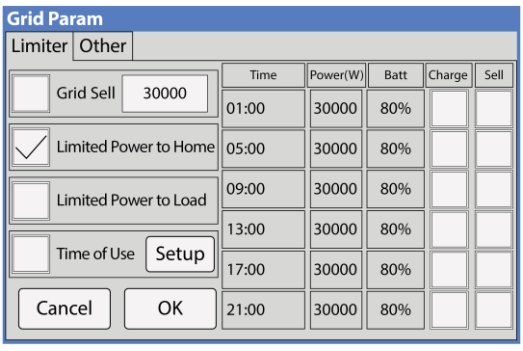


Programming

Sol-Ark Inverter Settings

1. Enable **Meter > Grid**.
2. Specify the **Meter Select** setting on **Accuenergy** (use Up and Down arrows to set the RGM).
3. Program the inverter to **Limited Power to Home** mode to collect readings from the Accuenergy RGM.





Program the Accuenergy RGM

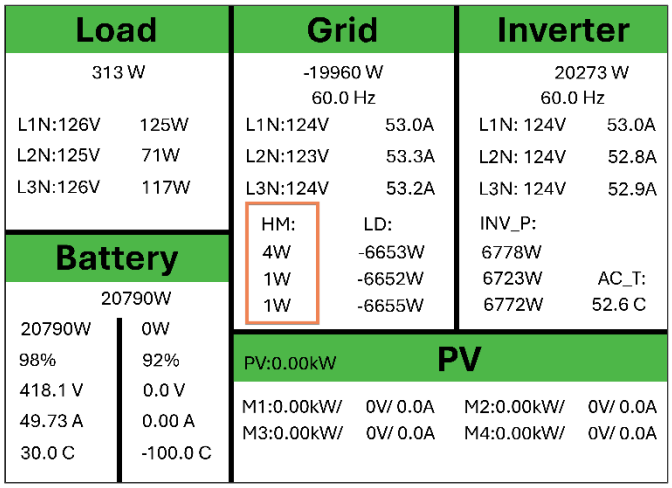
On the **SYS settings** screen, specify these settings to communicate readings to the inverter:

Setting	Required Value
S01: Modbus SN	1
S02: Baud Rate	19200
S04: Voltage Wiring Mode	3LN
S05: Current Wiring Mode	3CT
S08: Primary rating of CT	As established on the CT used
S09: Secondary rating of CT	333 mV or 120 / 60 (when using Rogowski Coil)
S033: Parity	NON1

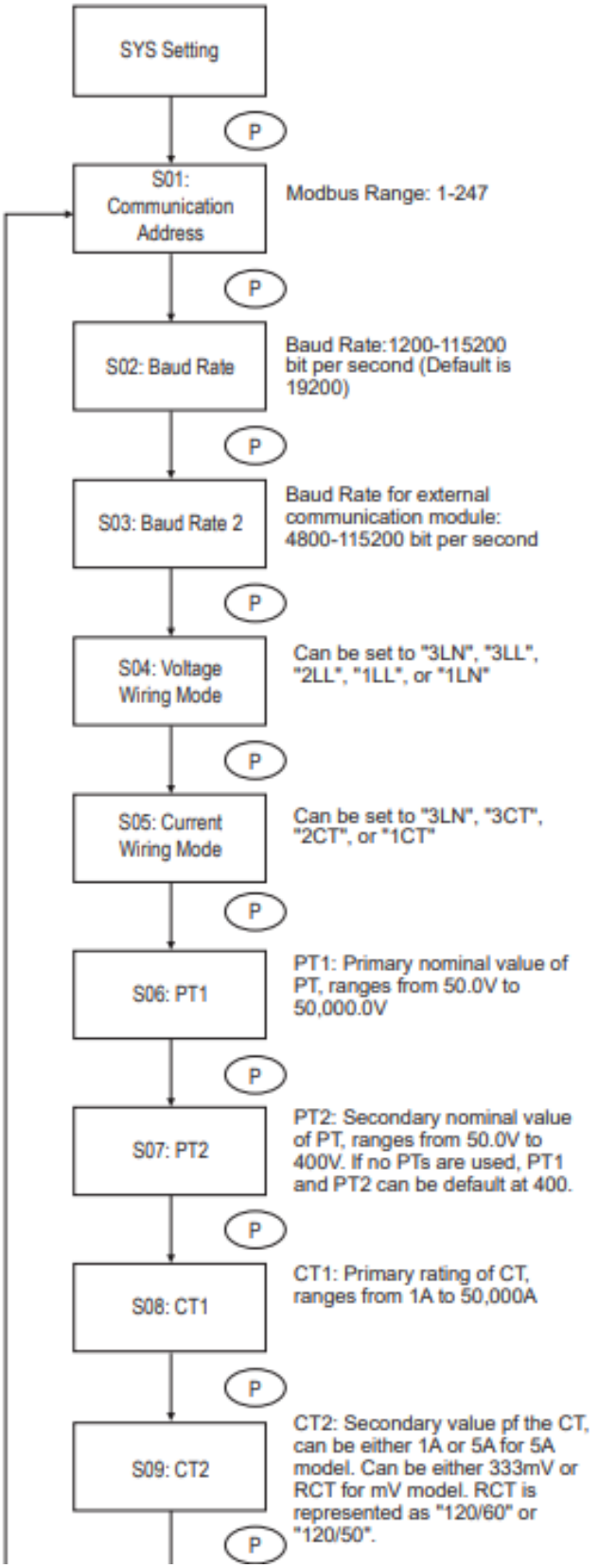
Verify RGM Functionality

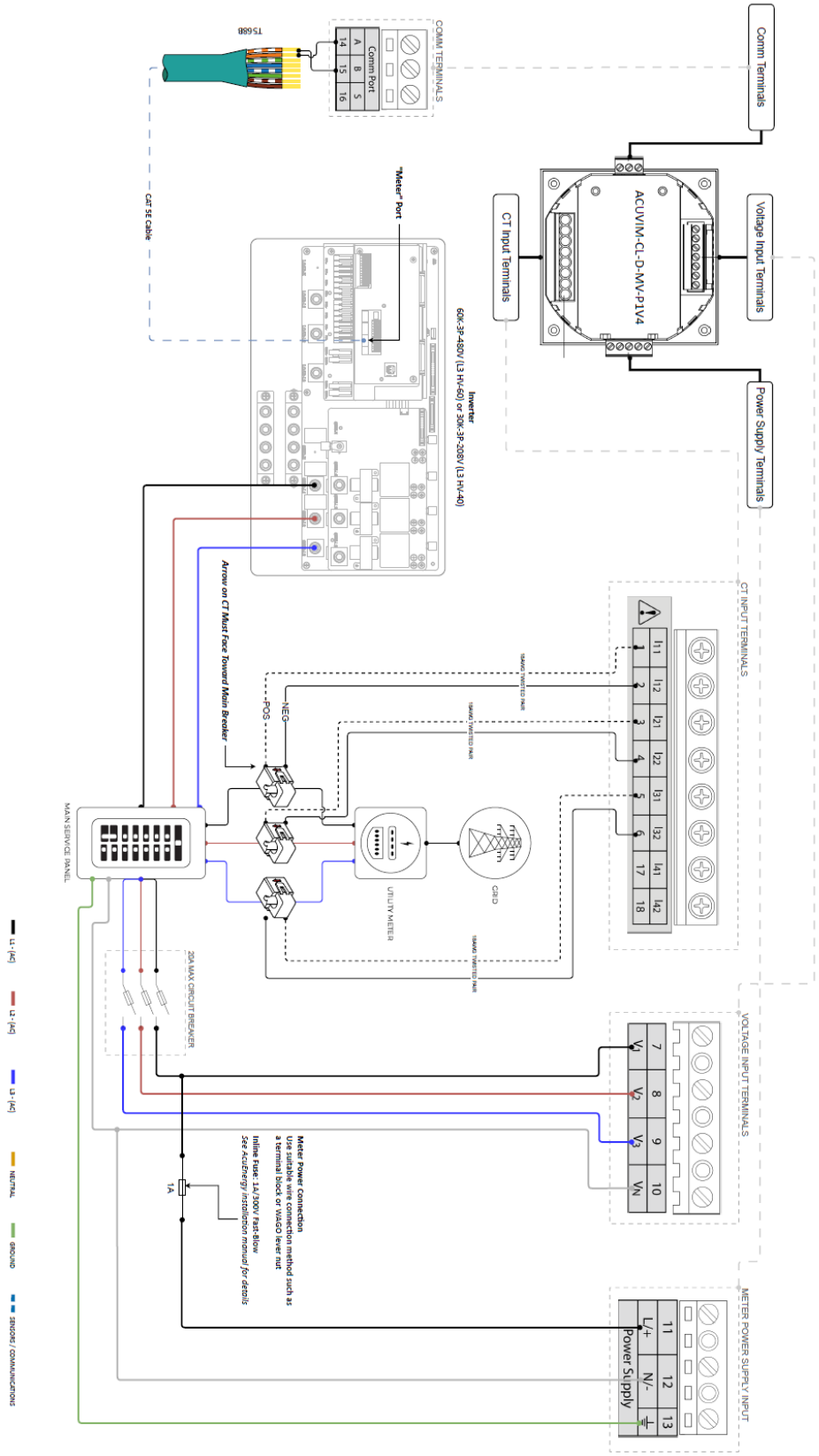
To verify that the RGM is communicating properly, follow these steps.

1. Make sure the inverter does not have the **W04_Meter _Comm _Fail** alarm active.
2. Verify the magnitude of the readings:
   a. On the inverter screen, tap the battery icon --> **Detail volt view**
   b. Check the values under **HM** to verify that they're populated correctly and correspond to the amount of power imported from or exported to the grid



Appendix


SYS Setting
P
S01: Communication Address
Modbus Range: 1-247
P
S02: Baud Rate
Baud Rate:1200-115200 bit per second (Default is 19200)
P
S03: Baud Rate 2
Baud Rate for external communication module: 4800-115200 bit per second
P
S04: Voltage Wiring Mode
Can be set to "3LN", "3LL", "2LL", "1LL", or "1LN"
P
S05: Current Wiring Mode
Can be set to "3LN", "3CT", "2CT", or "1CT"
P
S06: PT1
PT1: Primary nominal value of PT, ranges from 50.0V to 50,000.0V
P
S07: PT2
PT2: Secondary nominal value of PT, ranges from 50.0V to 400V. If no PTs are used, PT1 and PT2 can be default at 400.
P
S08: CT1
CT1: Primary rating of CT, ranges from 1A to 50,000A
P
S09: CT2
CT2: Secondary value pf the CT, can be either 1A or 5A for 5A model. Can be either 333mV or RCT for mV model. RCT is represented as "120/60" or "120/50".
P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VOLTAGE INPUT TERMINALS
METER POWER SUPPLY INPUT
Power Supply
L1 - (AC)
L2 - (AC)
L3 - (AC)
NEUTRAL
GROUND
SENSORS / COMMUNICATIONS

Document Revision History

Rev.	Date	Author	Description of Changes
1	04/14/2026	Jose Rubio	Document Created