

ALPHA ESS TECHNICAL NOTICE

Date	28/10/2022
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Relevant to Models	B3 Plus, Smile G3, Smile S5, T10 (any system using a DTSU666 Meter)

REPROGRAMMING DTSU666 METER TO REMOVE THE “AUTOCORRECTING” CT FUNCTION.



The DTSU666 meters have a function which tries to detect when a CT is placed on the wrong phase. The DTSU666 meter tries to correct the problem by re-programming itself to re-allocate the CT data to the appropriate phase. *This auto-adjustment has been causing problems for installers*

THE PROBLEM

The DTSU666 meter re-programs itself only once, when it is first turned on. If an Installer has not completed the CT placement, or realises and corrects an error, the Meter will still have the “correction” internally, so will not adjust to the new CT configuration.

The result is that it will be *extremely difficult* for an installer to get the correct CT setup.

Even if the Installer is able to manually work out the appropriate configuration to along with the “corrected” meter setup, and future electrician will not be able to follow the solution.

As an example, we recently attended a site where the “corrected” Meter required grid CTs to be on alternate phases and two CTs to be reversed.

HOW TO SPOT THIS PROBLEM

The problem will not occur if the CTs are all correctly installed before the meter is switched on.

The problem can be observed on multi-phase properties when:

1. Some CTs appear to be wired in reverse – i.e. they will only display correct data if the CT is placed in the opposite direction to the label on the CT.
2. CTs are on the correct phases but, when a LOAD is applied, the load is not recording correctly.

This does not affect ACR10R meters.

THE SOLUTION (60 SECONDS)

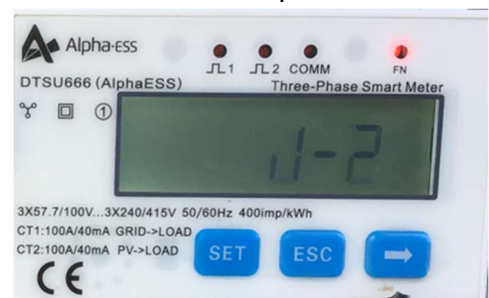
As a rule, ALWAYS turn off the Auto-correct function on the meters. This only needs to be done on DTSU666 meters.

Steps:

1. Press the SET button to bring up the “code” screen.
2. Press the SET button to bring up the password entry screen
3. Press the Arrow button to change the number on the screen to 701
4. Press the SET button to confirm the password.



5. Press the Arrow button to cycle past the screens that show
 - a. Prot
 - b. Addr
 - c. Baud
 - d. CLrE
6. Stop when the screen displays **J-1**
7. Press the SET button once
8. Change the Number displayed **to ZERO**
9. Press SET and then ESC.
10. Press the SET button to confirm that the setting is now ZERO and then press ESC.
11. Press the Arrow button to bring up **J-2**
12. Press the SET button once
13. Change the Number displayed to **ZERO**
14. Press SET and then ESC.
15. Press the SET button to confirm that the setting is now ZERO and then press ESC.
16. Press ECS to return to the main menu
- 17. Switch off power to the Meter for 15 seconds**
18. Switch power to the meter back on.



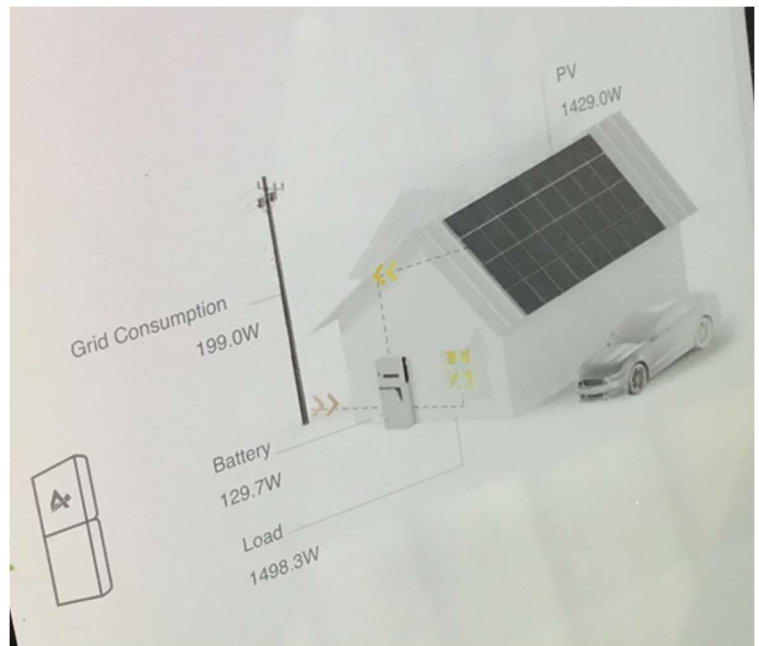
This should complete the re-programming of the meter to ensure it does NOT use the “autocorrect” function.

Now put the CTs in their correct locations. (You MUST have switched off the meter and re-started it for this to work)

TESTING

The data on the Alpha App or Portal should be reviewed before leaving site;

1. Switch of any DC-connected PV which connects t the Alpha Inverter.
2. Ensure the PV reading on the Alpha site matches the PV reading on the AC-coupled inverter (if there is any)
3. Now *turn off the solar*.
4. Check that the Battery starts to discharge
5. *Turn of the DC isolator on the battery*
6. The App should show loads, no feed-in.
7. Use a Known Load (eg a hair dryer or kettle) to apply a load to each phase individually.
8. Observe the Alpha monitoring data to confirm that the Load in the house increases by the same amount regardless of which phase the hairdryer is connected to. If it does not, then you have some phases where the CT is NOT wrapped around the same phase as the reference connection on the meter.
9. Turn the Solar and Battery back on.



TIPS

A hairdryer or heat gun with probes or clips makes testing VERY fast.

Use a Multimeter between the Main Switch and the Meter and between the Main Switch and the Sola MCB to check that you have your phases consistent through the circuit. There should be zero voltage difference between two points on the same phase. If you see 400V, the two connections are not on the same phase.

You can set the meter address while you are in the Meter Menu.

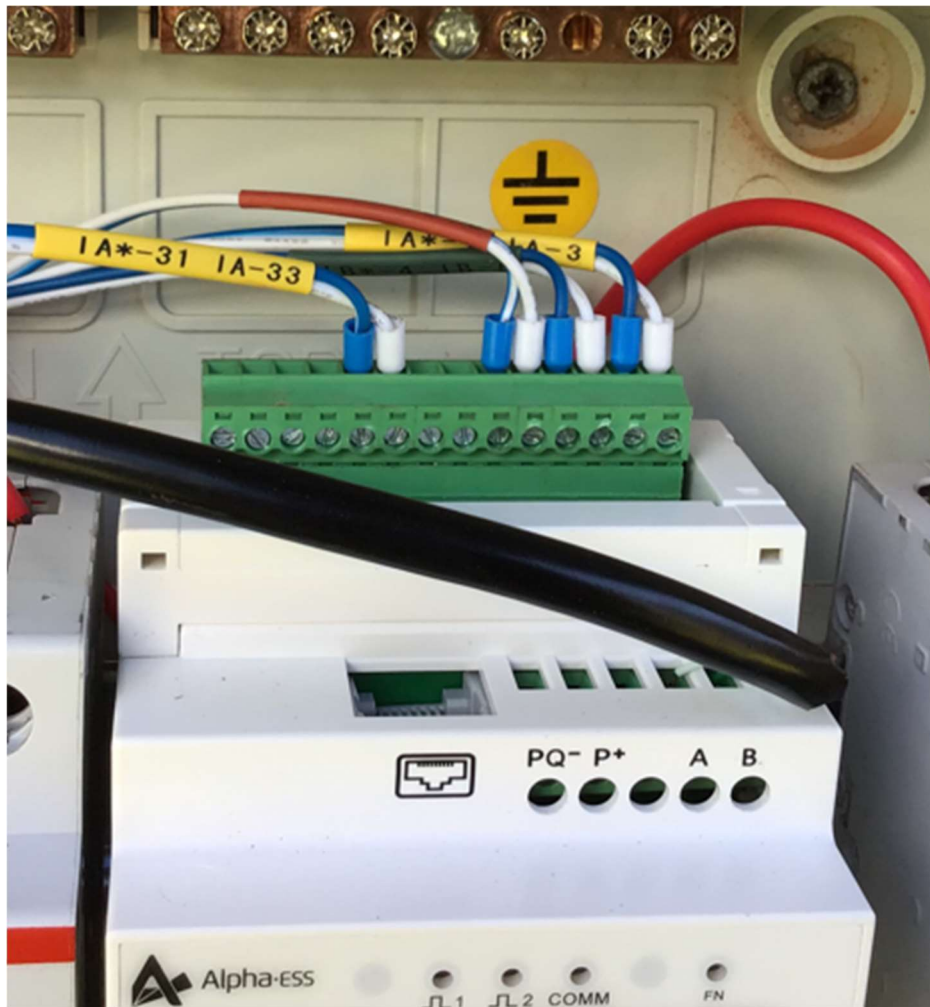
REFERENCE

Password for the Meter = 701

Meter Address: 1

J1 setting: 0

J2 setting: 0



Connections:

CT Group	Grid -> Load						PV -> Load					
Terminal	1	3	4	6	7	9	31	33	34	36	37	39
CT Phase	IA	IA	IB	IB	IC	IC	IIA	IIA	IIB	IIB	IIC	IIC
Colour	White	Blue	White	Blue	White	Blue	White	Blue	White	Blue	White	Blue

WARNING!

The connections flip 180° when the meter is installed and you are looking from the front of the meter (see below)

