building PLUS 3 Phase IoT Energy Meter Instruction Manual

Contents

building PLUS 3 Phase IoT Energy Meter

This document outlines the steps involved in installing the Smart Energy Meter/Analyzer for 3 phase (star type) load systems. For 1-phase, 2-phase and 3-phase delta loads, the installation process stays the same. Contact **info@buildingpulse.org** for more info.

Hardware installation

STEP 1 Identify the 3 Phase load you'd like to monitor, along with the terminal connecting it to the Mains Supply. The phase wires (phase 1, phase 2, and phase 3) and the neutral wire must be connected to this terminal. These connection points are represented as T1, T2, T3 and TN in the diagram below. Place the 3-Phase IoT Energy Meter close to this terminal.

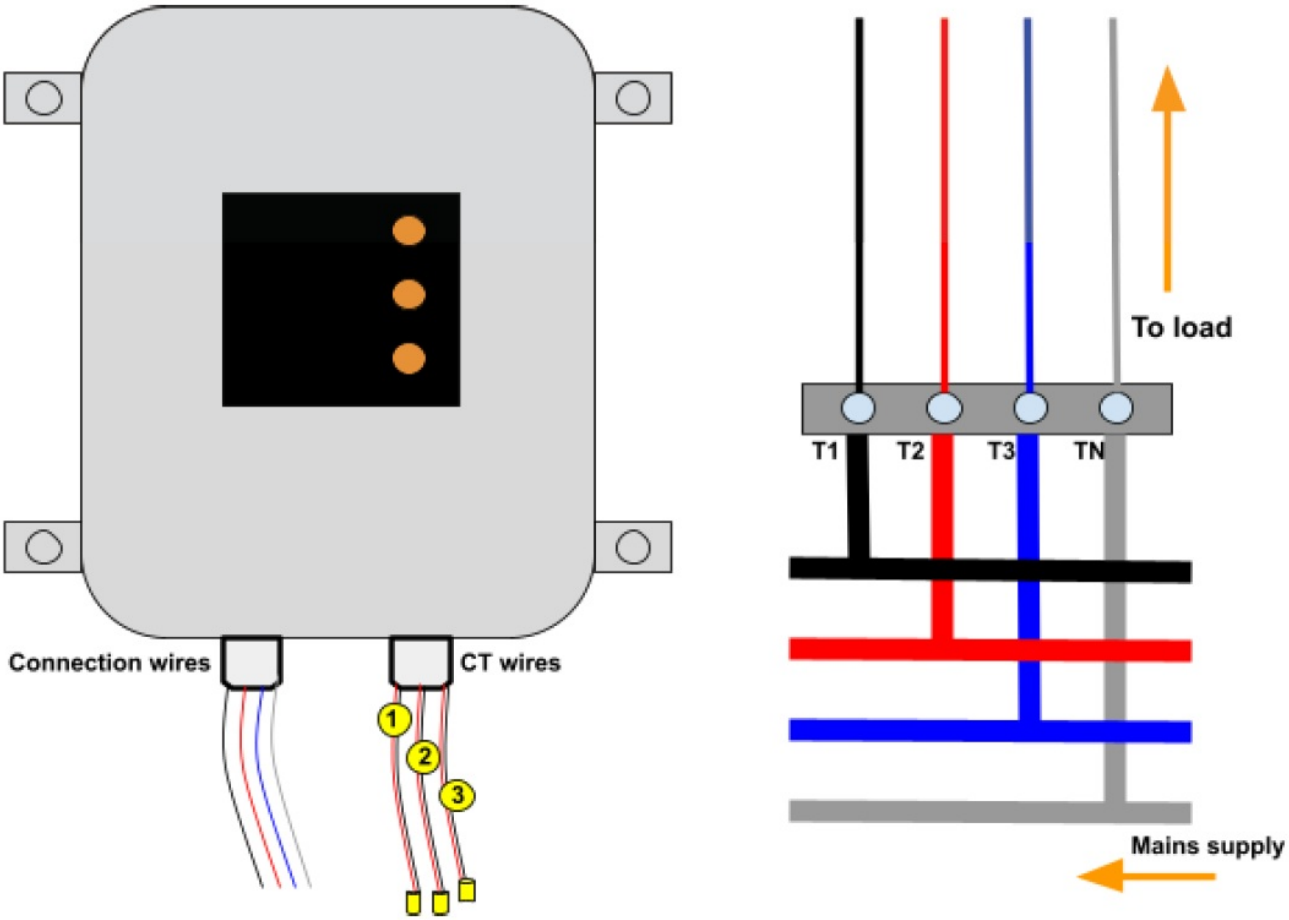


Diagram 1

STEP 2 : After identifying the terminal, switch off the load connected to that terminal. Also, as a precaution, switch off the mains supply entering into that terminal. Please use a tester screwdriver to ensure there's no current flowing through the terminal. Next, carefully remove the load wires from the terminal – remove only those wires that are directly connected to the load you wish to monitor, ie. phase 1, phase 2, phase 3 and neutral wire going into the load. Please refer to the diagram below :

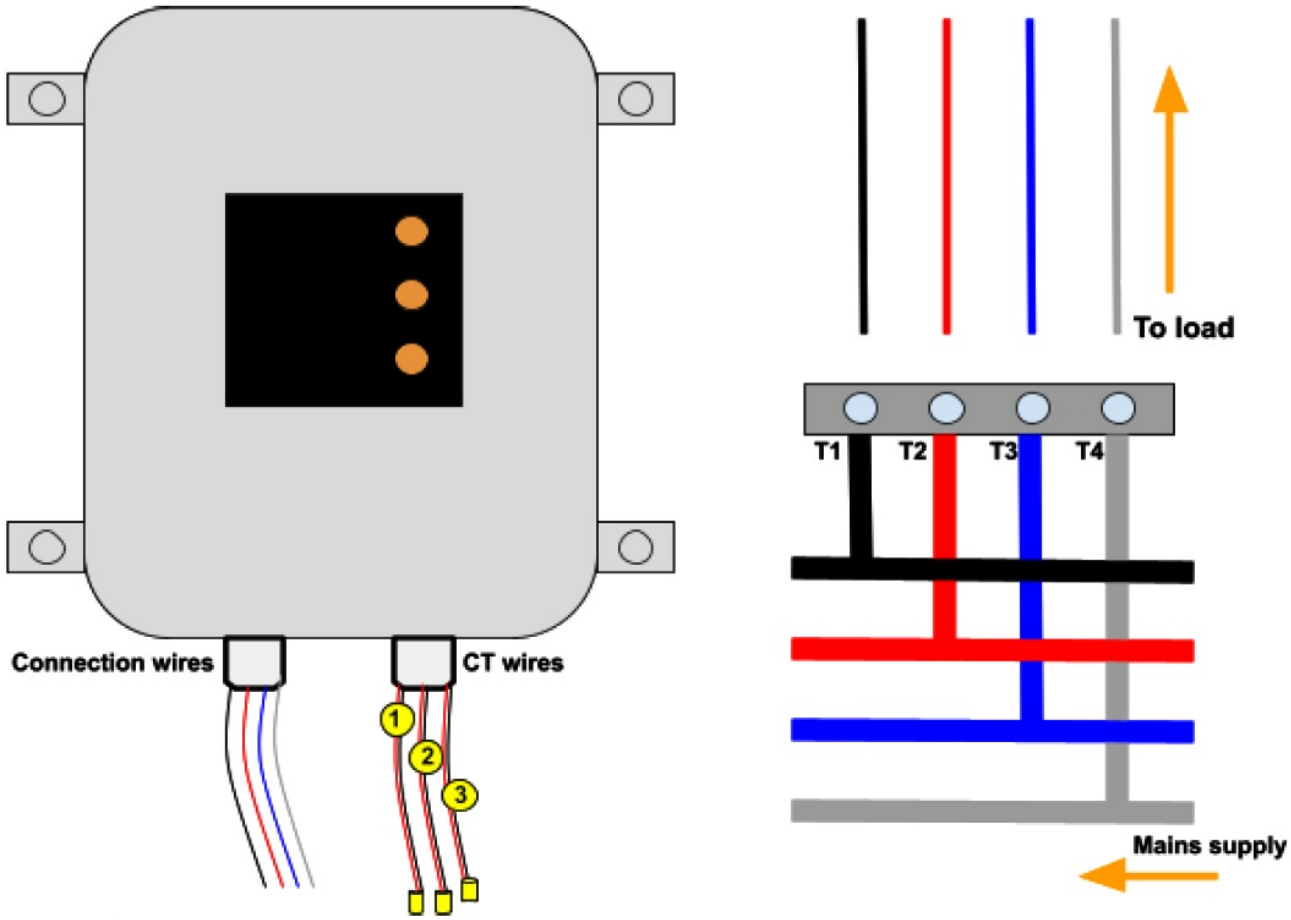


Diagram 2

STEP 3 : Insert the Current Transformers (CTs) provided into each of the phase wires – a CT should be inserted into the phase 1 wire, another CT should be inserted into the phase 2 wire, and a third CT should be inserted into the phase 3 wire. Each CT will have 2 faces – a P1 face and a P2 face (as mentioned on the CT). Each CT must be placed in such a way that the P1 face will experience the flow of current through the wire first once the load operates (please refer to the diagram below). The CTs can be made to rest on any surface, but each CT should only contain one phase wire within.

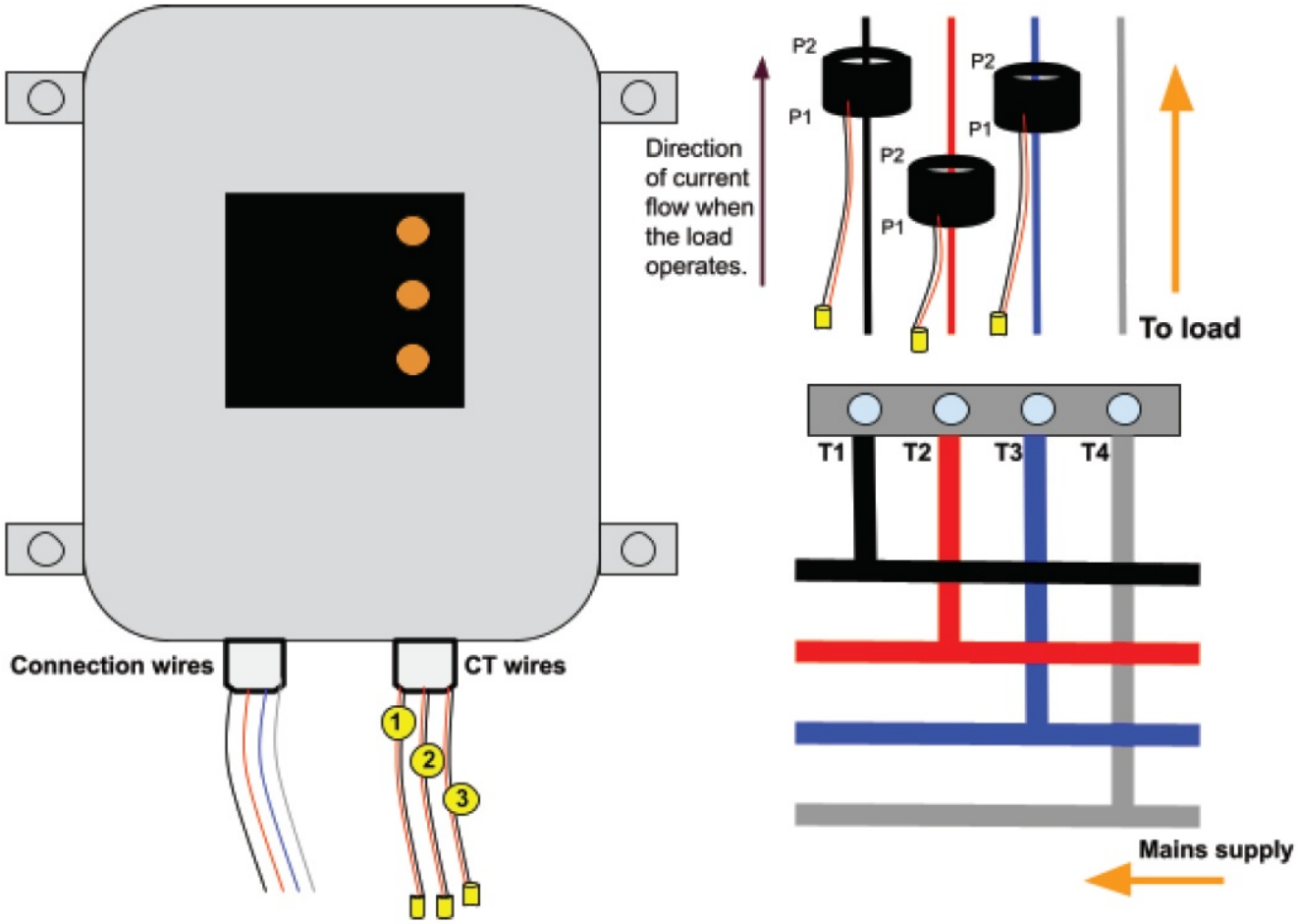


Diagram 3

STEP 4 ; The 3-Phase IoT Energy Meter will have two sets of wires – a set of four connection wires (a black connection wire, a red connection wire, a blue connection wire and a white connection wire), and a set of CT wires. The CT wires are paired in groups of two – there are three such groups in total. Each group is labelled as either “1”, “2” or “3”.

Connect each connection wire to the terminal in the following manner :

- The black connection wire should be connected to the phase 1 wire terminal (T1), where the load’s phase 1 wire connects.
- The red connection wire should be connected to the phase 2 wire terminal (T2), where the load’s phase 2 wire connects.
- The blue connection wire should be connected to the phase 3 wire terminal (T3), where the load’s phase 3 wire connects.
- The white connection wire should be connected to the neutral wire terminal (T4), where the load’s neutral wire connects.

Connect each CT wire group, using the connectors provided, to the CTs in the phase wires, as follows :

- The CT containing the phase 1 wire must be connected to the CT wire group labelled “1”.
- The CT containing the phase 2 wire must be connected to the CT wire group labelled “2”.
- The CT containing the phase 3 wire must be connected to the CT wire group labelled “3”.

Please refer to the diagram below.

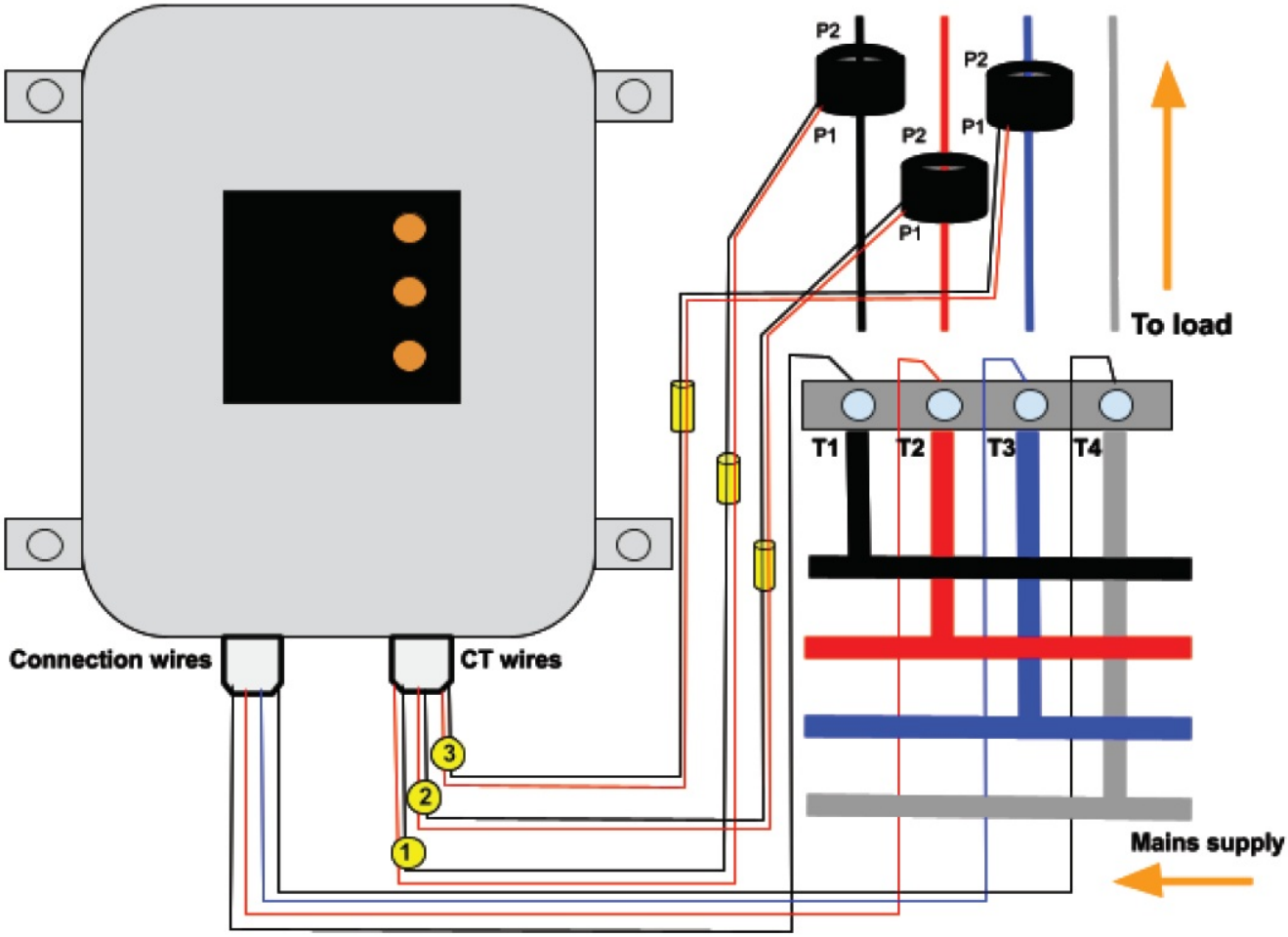


Diagram 4

STEP 5 : After all connections have been securely made, re-connect the load to the terminal by connecting the load's phase 1 wire to terminal T1; the load's phase 2 wire to terminal T2; the load's phase 3 wire to terminal T3 and the load's neutral wire to terminal TN. Make sure all connections are tightly secured. The final setup should look like this (please refer to the diagram 5 and diagram 6 below) :

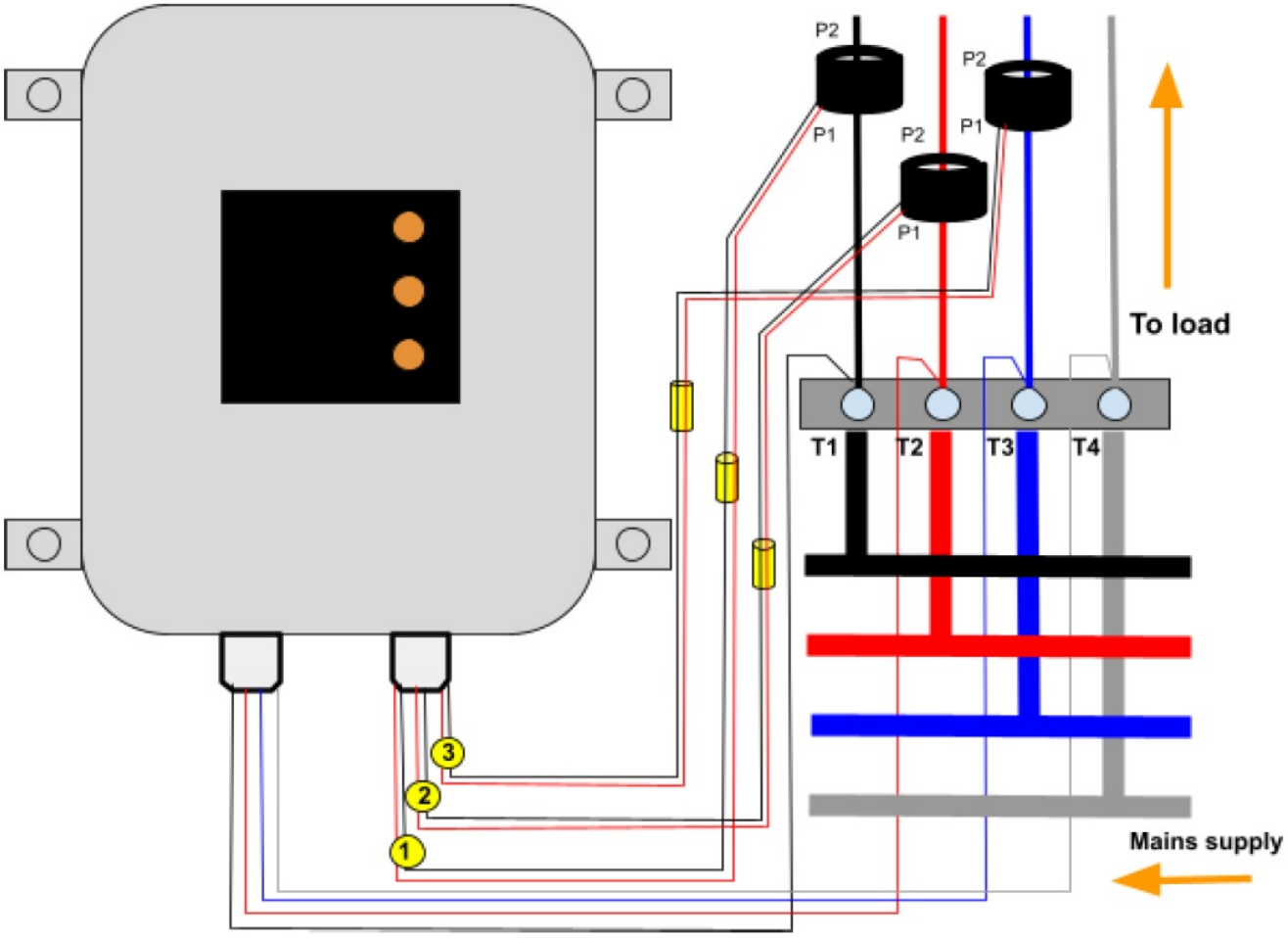


Diagram 5

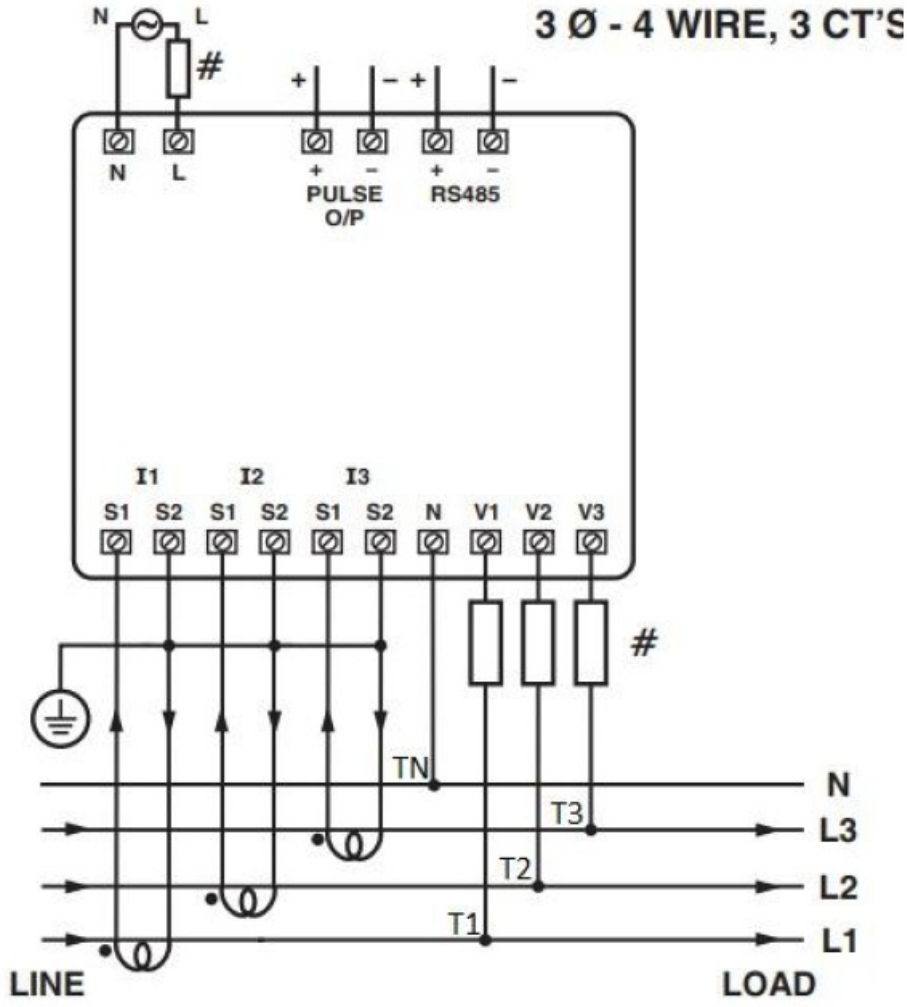
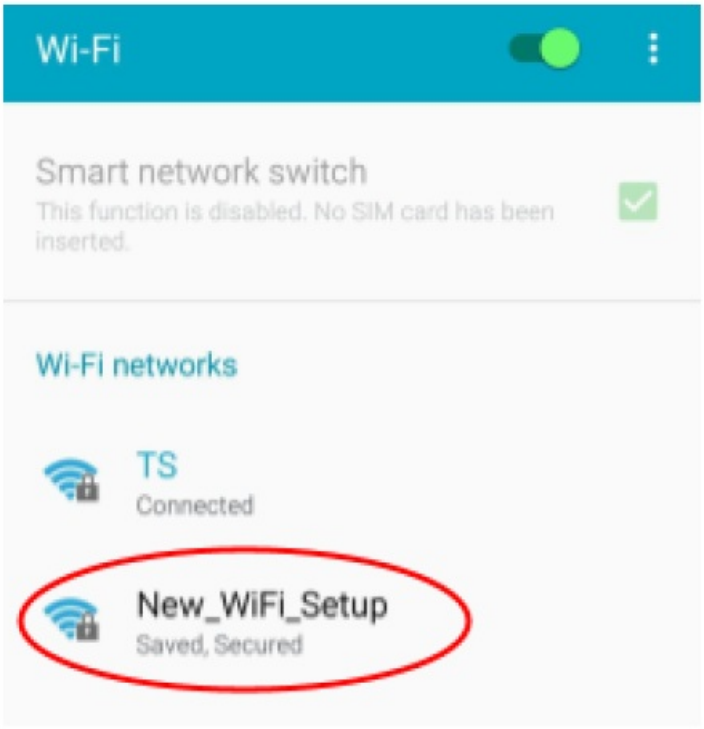


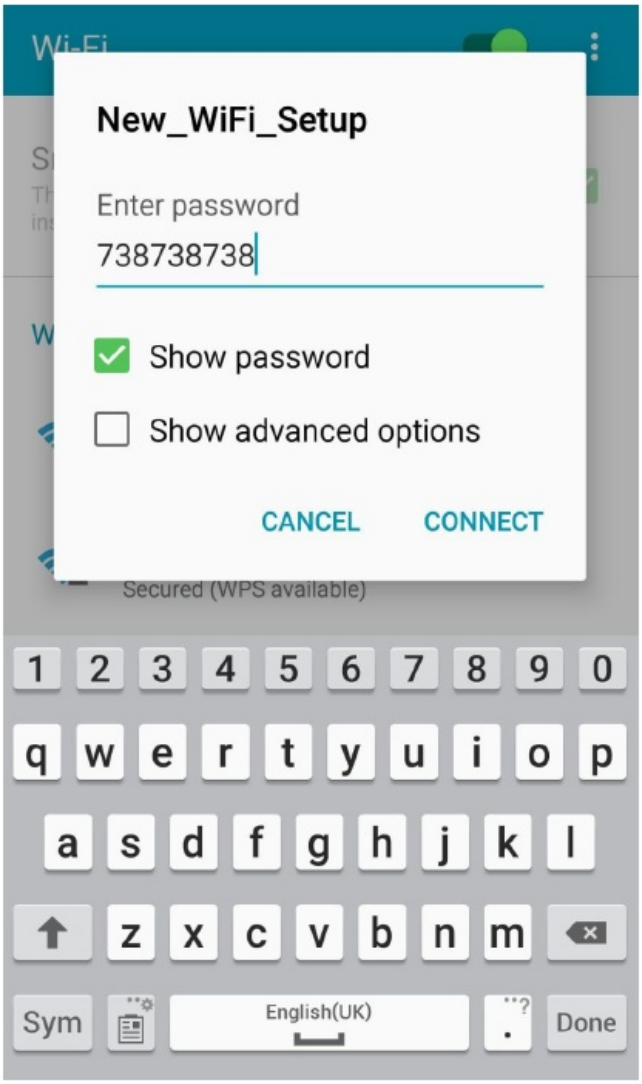
Diagram 6

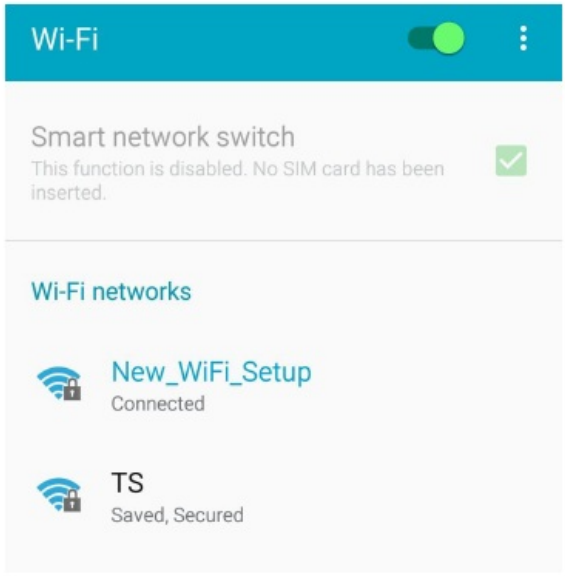
WiFi integration

1. After ensuring all connections are secure, turn on the mains supply and the load. After about 60 seconds, a WiFi network named “New_WiFi_Setup” will appear.

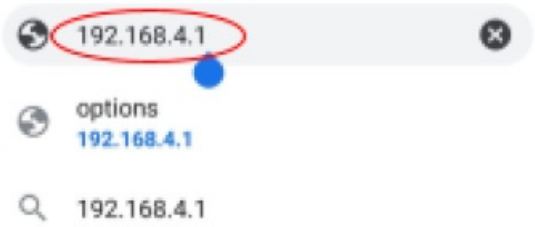


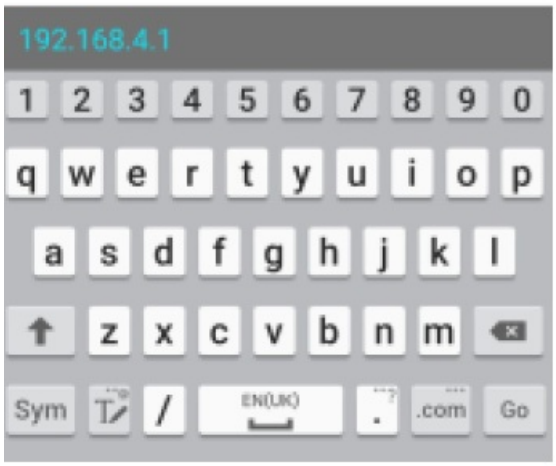
2. Connect to “New_WiFi_Setup”. If you’re prompted to enter a password, enter “738738738” as the password.’



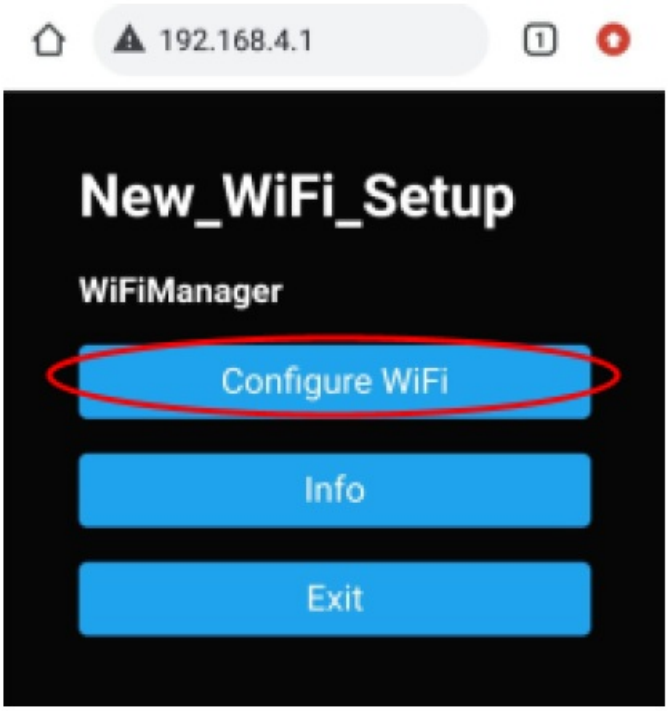


3. Next, open a web browser, such as Chrome or Firefox, and enter “192.168.4.1” in the address bar.

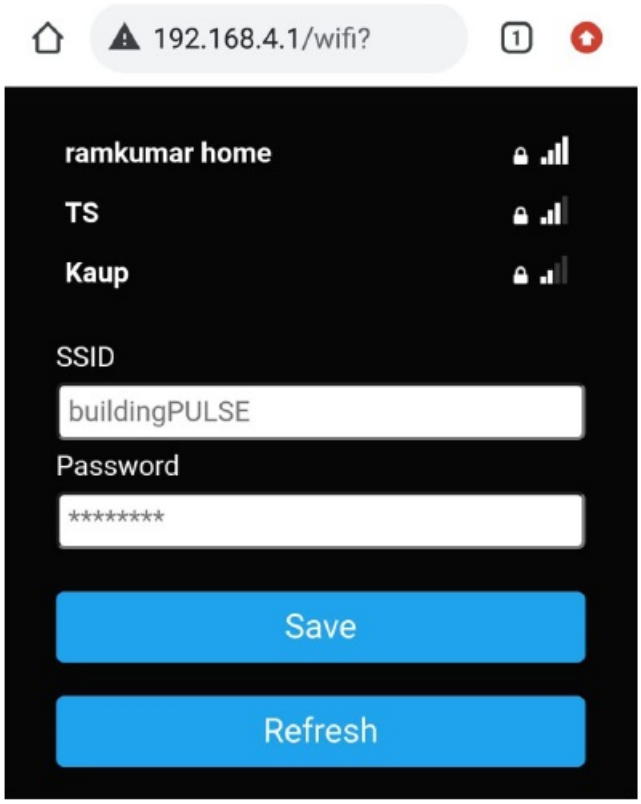




4. The “WiFiManager” page will open upon pressing enter. Select “Configure WiFi”.



5. Select the WiFi network you wish to pair the IoT Energy Meter with. Enter the password for the network. The IoT Energy Meter will transmit its energy readings to the bpulse web-portal via this particular WiFi network.

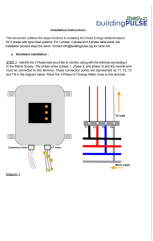


6. Once you hit “Save”, the “New_WiFi_Setup” network will disappear. The IoT Energy Meter is now successfully installed.

Note : Please do not press any of the buttons on the IoT Energy Meter’s display screen. This might change the meter’s configuration/settings.

You may view all energy readings from the meter at : **http://bpulseportal.com/admin/**
You may write to **info@buildingpulse.org** if you’re unable to log into the portal or if you wish to modify your login credentials.

Documents / Resources

	**building PLUS 3 Phase IoT Energy Meter** [pdf] Instruction Manual 3 Phase IoT Energy Meter, IoT Energy Meter, Energy Meter, Meter

References

- Login