RGB Submeter Installation and Troubleshooting Guide

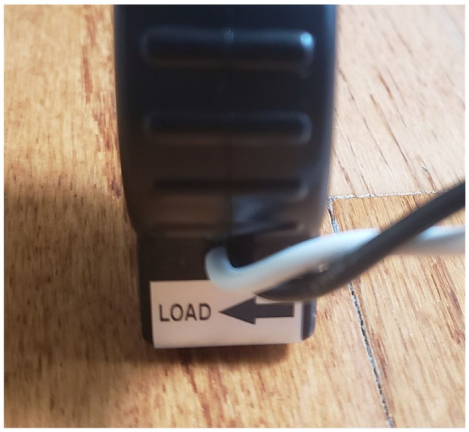


Unllike standard Utility socket style meters, Submeters are designed to provide flexibility and diversity in style and function. The EZ Meter **RGB** meter is in this category and provides the installer/user with numerous options as to where and how to install it.

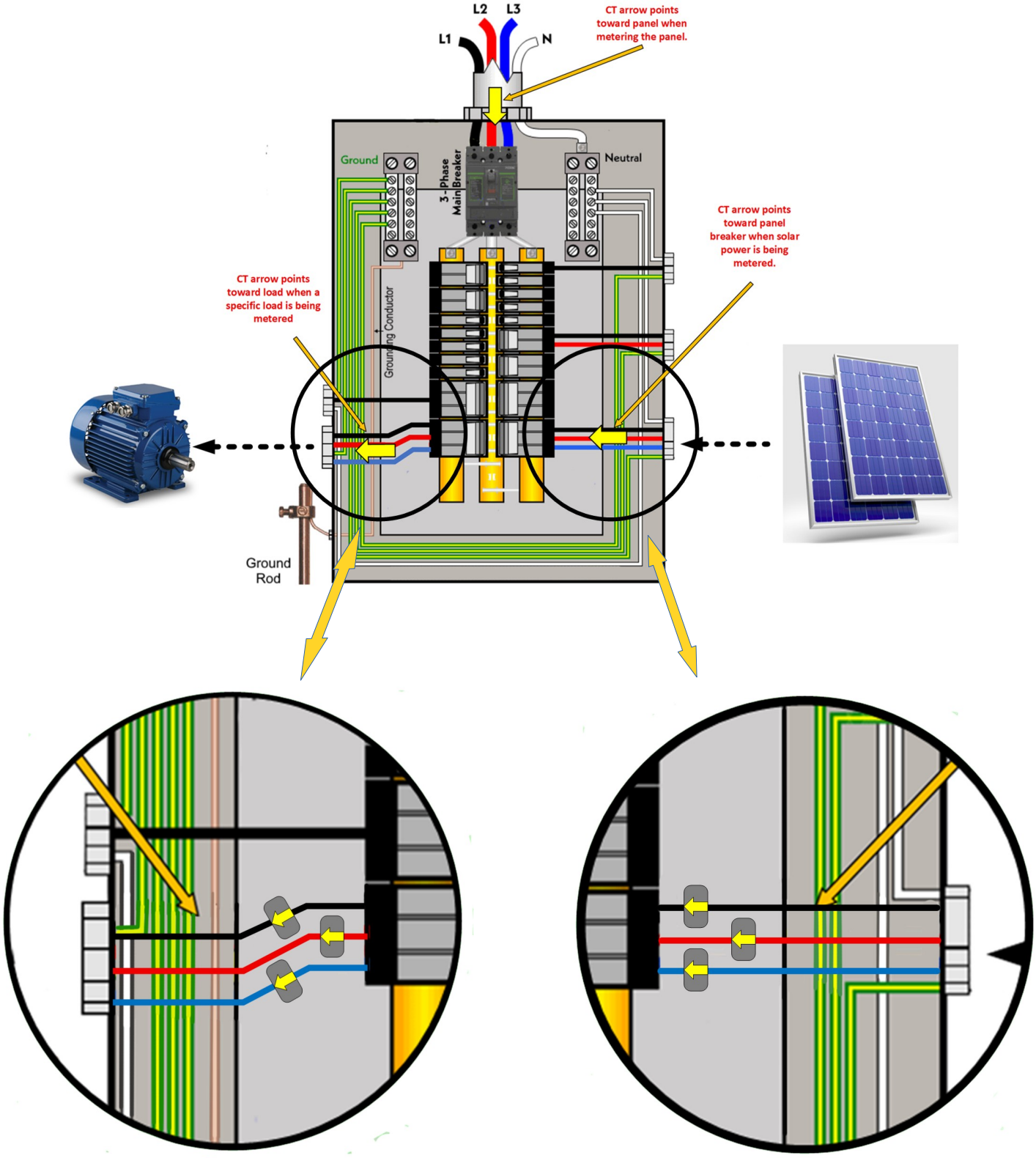


The meter utilizes external Current Sensors (CTs) that provide the amperage information to the meter. These CTs give the installer flexibility in placement and come in many amperage sizes to accurately monitor any given load or circuit. The CTs are available in solid core or split core design. Solid core CTs require that the monitored conductor is disconnected so that they can be slid on to them. Split core CTs can be opened up so that they can be installed on the conductor without having to open it up. In either case, the power must be turned off for safety.

CTs are directional and it is important that the installer is aware of this when placing them on the conductor. The arrow on the CT is there to indicate the direction of the “LOAD”. The arrow points toward the load. For a correct installation, awareness of what is considered the load is also important. Some CTs may utilize the word “load” printed on the side that faces the load instead of an arrow. The following page will address what is considered as a load.



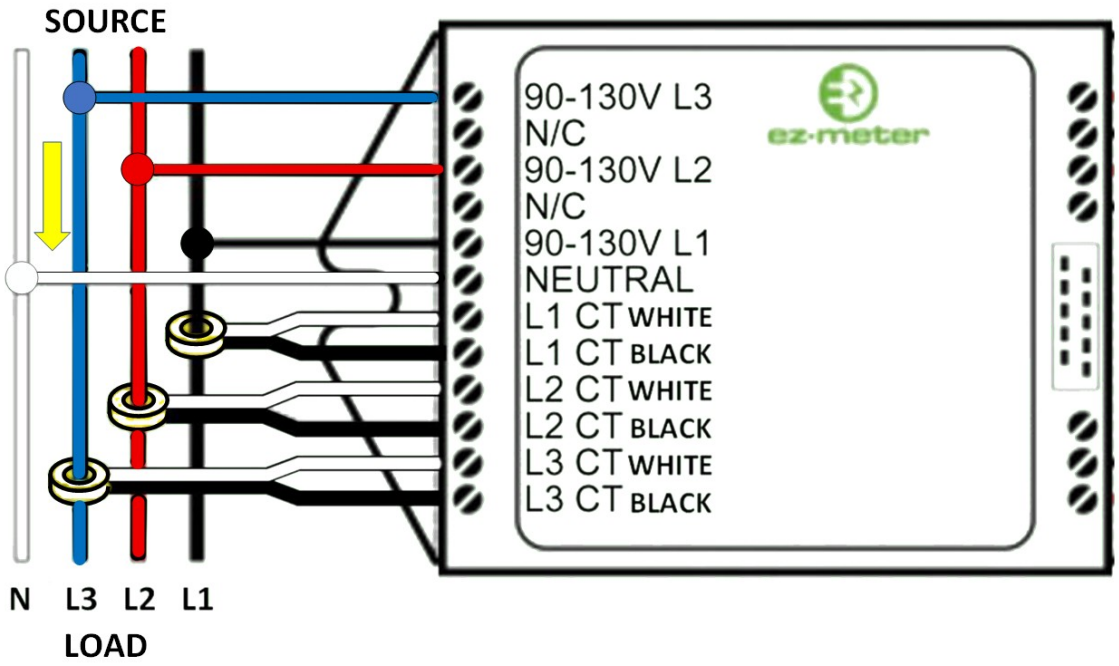
The picture below indicates the proper direction for CTs installed in relation to most common circuits and their loads.



RGB METER WIRING

The picture below shows the correct wiring of the voltge and current inputs for the EZ Meter RGB meter.

The CTs must be on the equivalent voltage input phase and oriented correctly by facing the load. (see arrows or LOAD label on the CTs)



NOTE: If the CT phase and the voltage phase are not the same, the meter will not provide accurate readings.

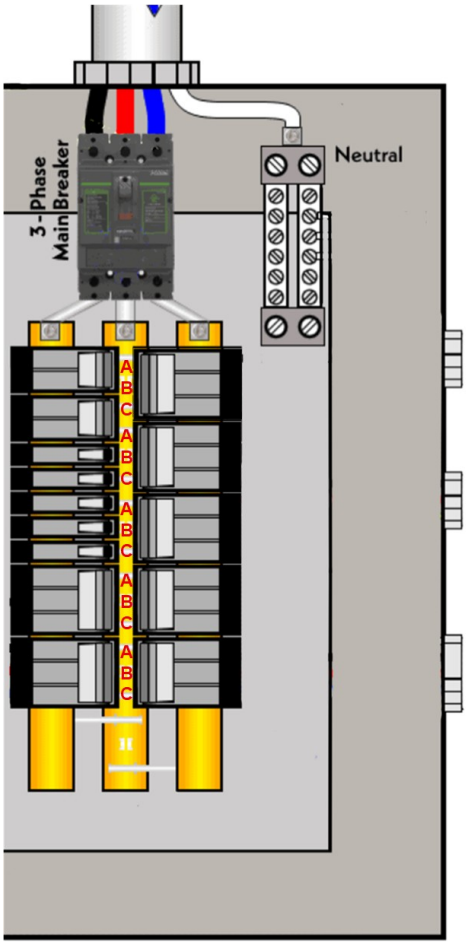
NOTE 2: Voltage conductors to meter must be protected with approved overload protection (fusing or circuit breaker).

ELECTRIC PANEL CONFIGURATIONS

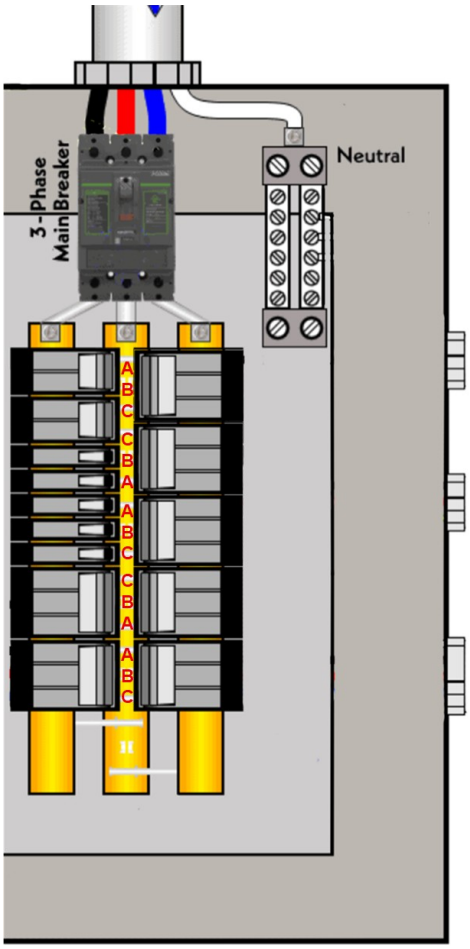
Not all electric panels are the same. This can sometimes result in wiring errors and must be taken into consideration.

The pictures below show a configuration that could result in a meter wiring error.

The “normal” panel is configured that every 3-pole position phasing is the same order (ABC, ABC, etc.). The “flip” configuration reverses every 3-pole position resulting in a reverse order for the phases (ABC, CBA, etc.). Although this is not very common, it can be the source of improper wiring based on which breaker supplies the meter’s voltage input vs the conductors that the CTs are monitoring.



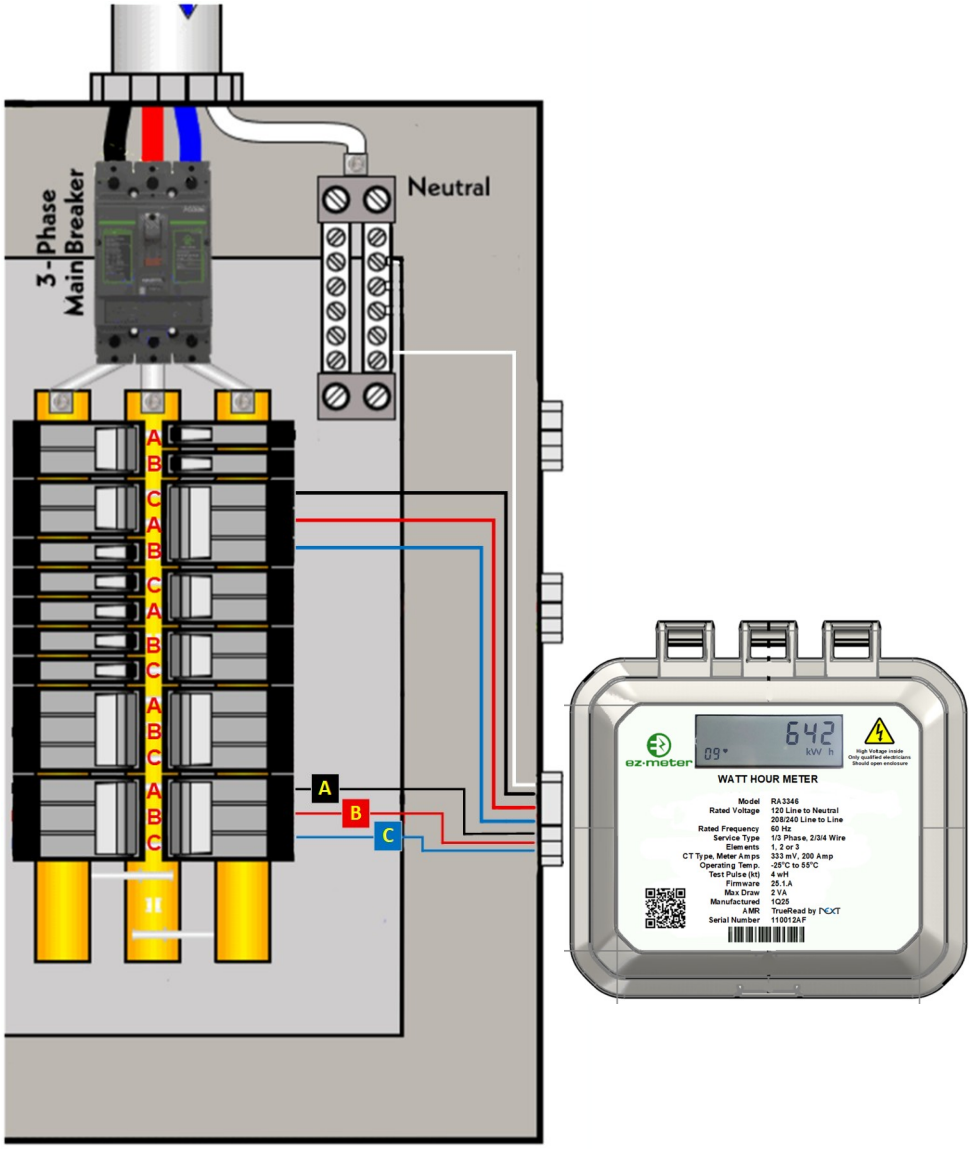
NORMAL



“FLIP”

A panel that consists of mixed single, 2 phase, and 3 phase breakers can also be a source of incorrect wiring. Even though the panel is a normal configured one (ABC, ABC, etc.), the breaker installation can be an error source in the meter wiring.

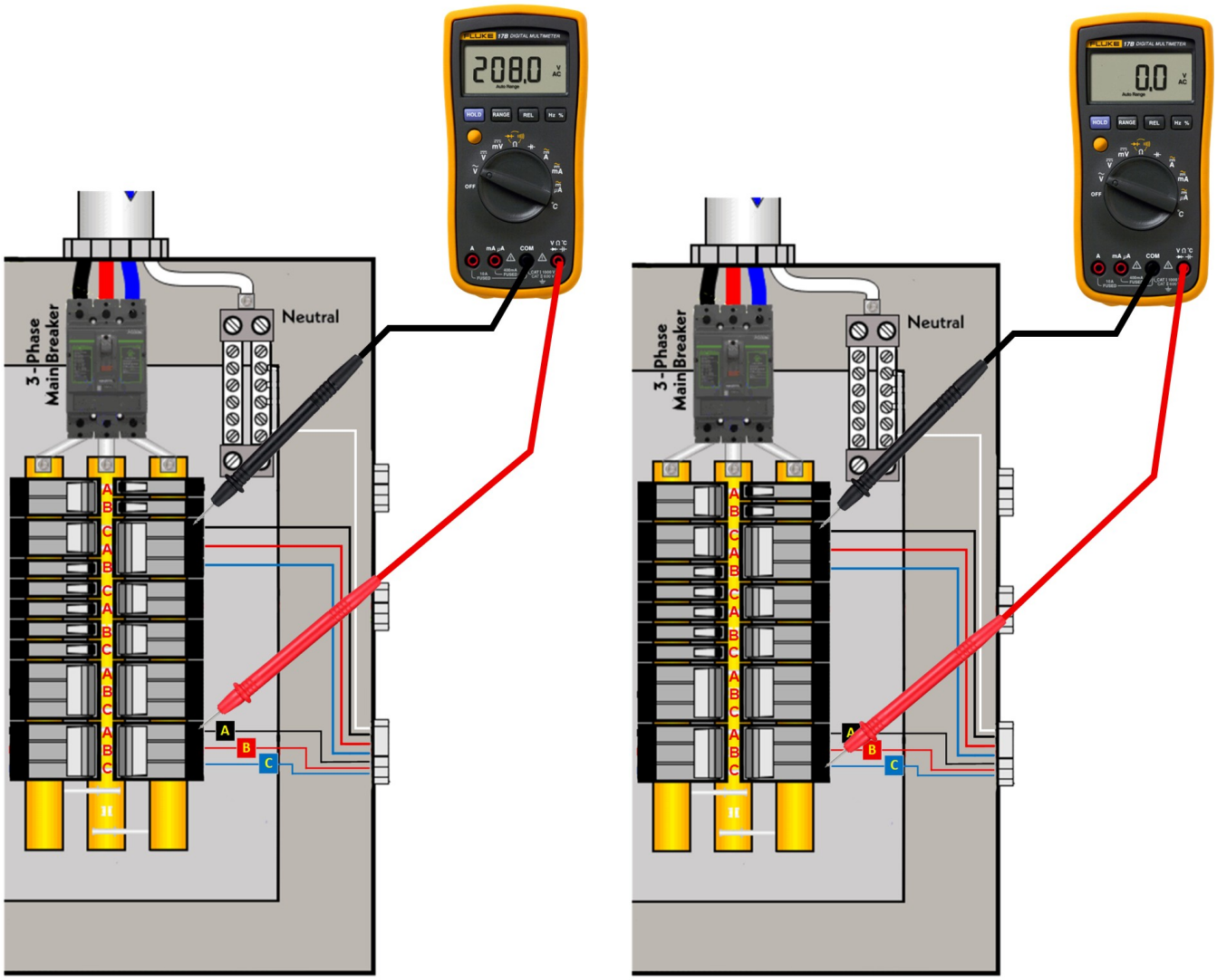
The example below shows the meter voltage source breaker and the CT monitored load breaker wiring that can create an error. The top breaker which feeds the meter's voltage input is not the same phasing as the one that is monitored by the CTs. In this example, you can see that even though nthe wiring is color coded correctly, phase "C" supplies the voltage to the meter's phase 1 voltage input and the meter's voltage inputs to phase 2 and 3 will also be incorrect in regard to the conductors that the CTs are monitoring.



TROUBLESHOOTING

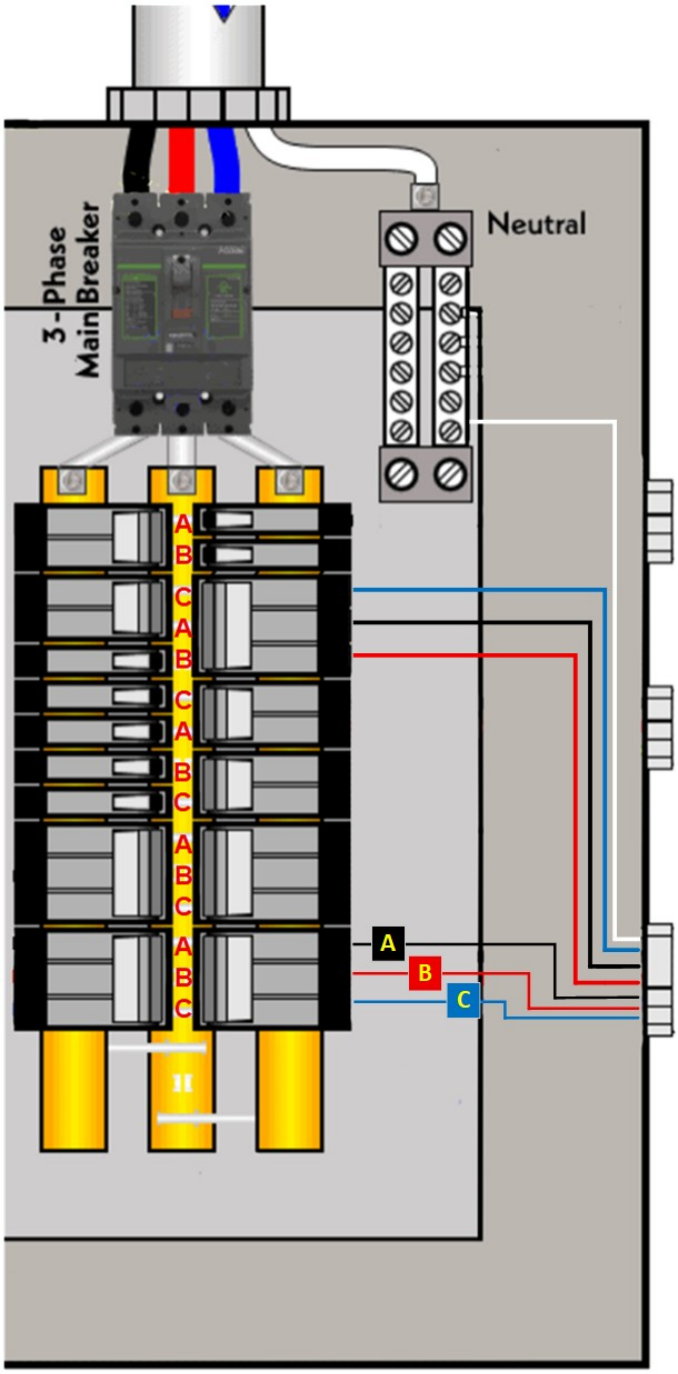
A Digital Multi-Meter (DMM) makes it easy to verify the phasing of the voltage and current signals going to the RGB meter. By comparing the breaker that feeds the voltage signal to the meter against the one that the CTs are monitoring will verify that the meter is – or isn't – wired correctly.

The pictures below show how the DMM will reveal the correct phases. When the DMM reads zero volts, the correct phase on each breaker can be determined. If the DMM reads the line-to-line voltage, that is incorrect. Moving the blue voltage wire to the top position of the meter's voltage breaker, moving the red wire to the meter's voltage breaker to the bottom position, and moving the black voltage wire to the middle position on the meter's voltage breaker would correct the phasing in this example. The corrected wiring is shown on the next page (8).



CORRECTED WIRING FROM PREVIOUS PAGE

Note that the newly positioned voltage wiring color codes match the phases of the breaker where the CTs are monitoring the load.





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