



AQUA - TRONICS, INC.

SETTING THE STANDARD FOR SERVICE

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CABLE IDENTIFICATION 101

THIS IS FOR JACKETED PRIMARY ONLY

Fig. 1. Phase B --- Position #1 is the transmitting coupler. The transmitting inductive coupler is placed around the neutral and conductor at position #1. #2 & #3 are receiving coupler positions. The signal being picked up at position #2 will be much greater than #3 due to the shielding effect of the Neutral. All comparison measurements should be taken at position #2 on each phase. **NOTE:** This is the preferred method for Jacketed Primary.

Fig. 2. Phase B --- This is a different situation. The transmitting coupler is now around the conductor only at position #1. At receiving coupler position #3 you will have a very strong signal with a lesser amount on the other two conductors, A & C. Do not take comparison measurements at position #2 when the transmitting coupler is placed around the conductor only. Due to signal cancellation and shielding by the neutral, taking measurements at position #2 will lead to an error.

In other words, when you are using an Inductive Coupler as a receiving antenna, the signal should be measured under the same conditions. If the transmitter is around the cable below the neutral pigtail, all received measurements should be taken around the cable below the neutral pigtail. If the transmitter is on the conductor, all received signal should be measured on the conductor.

This method only works on jacketed primary and/or secondary. Direct buried primary without a jacket has its own problems. The neutrals are touching each other over the entire route of the cable so the signal starts dividing down right at the transmitting coupler. You can use this method on direct buried if you always place the signal on the conductor and measure the conductor. When measuring signal on a conductor, you are placing a coupler ahead of the safety neutral zone and this can create other problems. **Always** use proper live-line tools and safety procedures when working above the neutral.

THE TRANSMITTING INDUCTIVE COUPLER SHOULD ALWAYS BE SET TO LOW POWER. SINCE CABLES ARE CLOSE TOGETHER IN A TRENCH, HIGH POWER CAN INDUCE SIGNAL FROM ONE CABLE TO ANOTHER AND THIS WILL NOT ALLOW A CABLE IDENTIFICATION TO BE MADE.

CABLE IDENTIFICATION 101

ON DIRECT BURIED NON-JACKETED CABLE

Fig. 3. The concentric neutral is in contact with the soil over the entire length of the cable. If more than one phase is in the same trench, the neutrals are touching each other over the entire length and this creates a problem in trying to identify one phase from another using two inductive couplers.

Always place the transmitting coupler at position #1. Comparison measurements are always taken at position #3. You will get the wrong reading if you use position #2 on Non-Jacketed Cable.

Fig. 4. To make sure of the measurement in an area where the conductor is not exposed, a shunt should be placed over the area to be measured. Once the shunt is in place, neutral strands need to be cut inside the shunt so the receiving coupler can read the signal on the conductor. This shunt will be required on each cable to make sure the strongest signal has been found.

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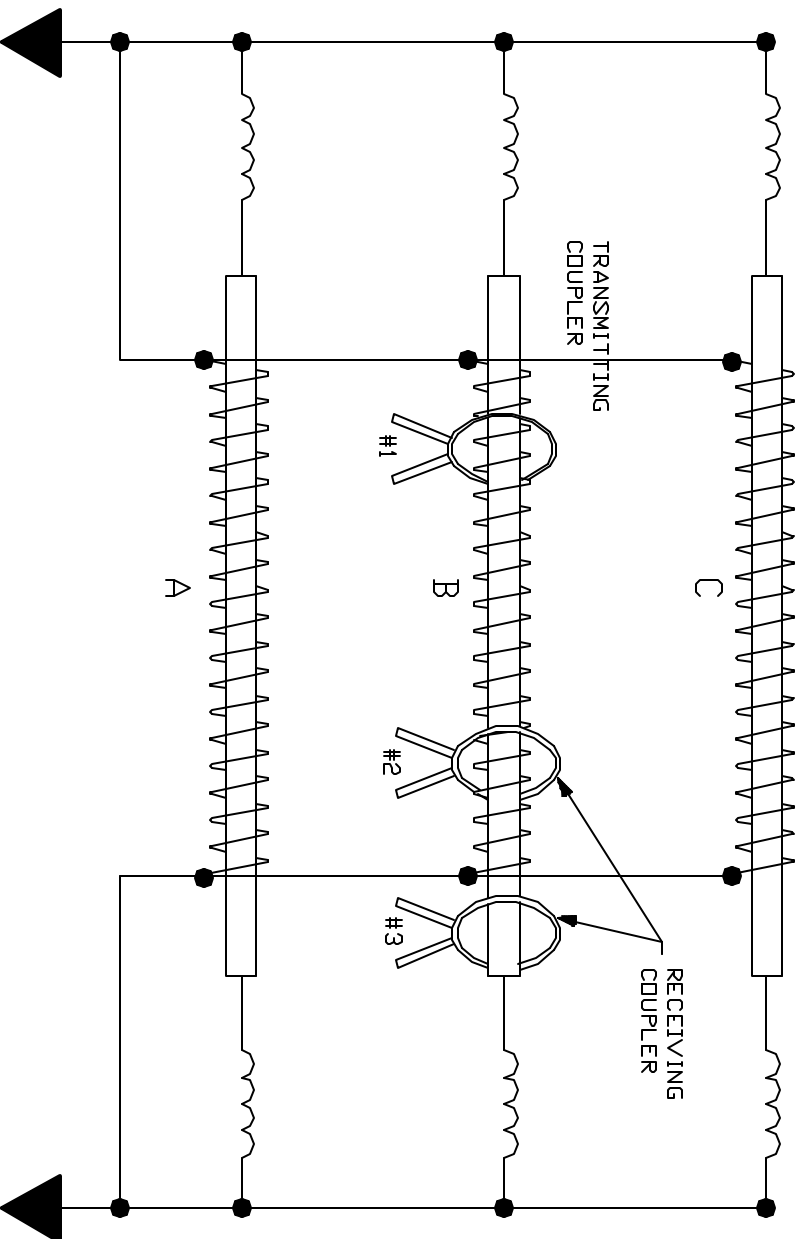


FIGURE #1
 JACKETED PRIMARY CABLE

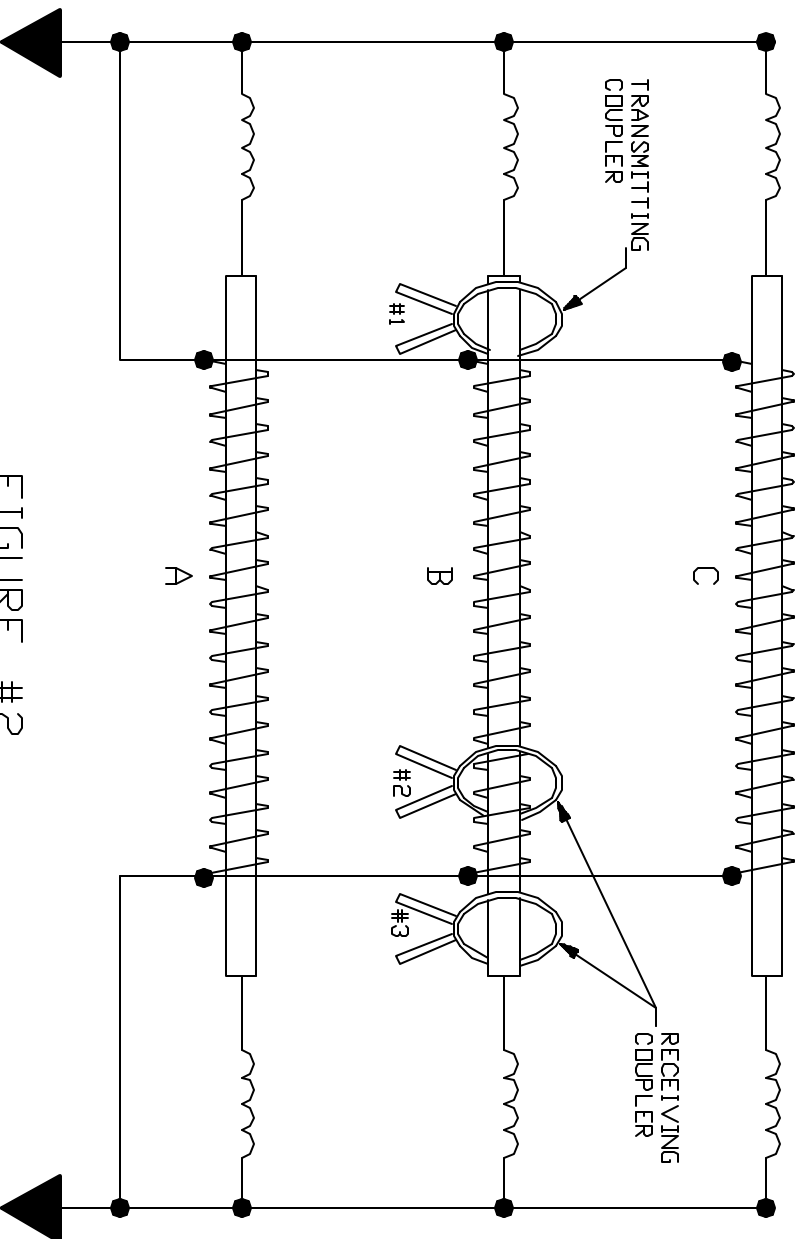


FIGURE #2
 JACKETED PRIMARY CABLE

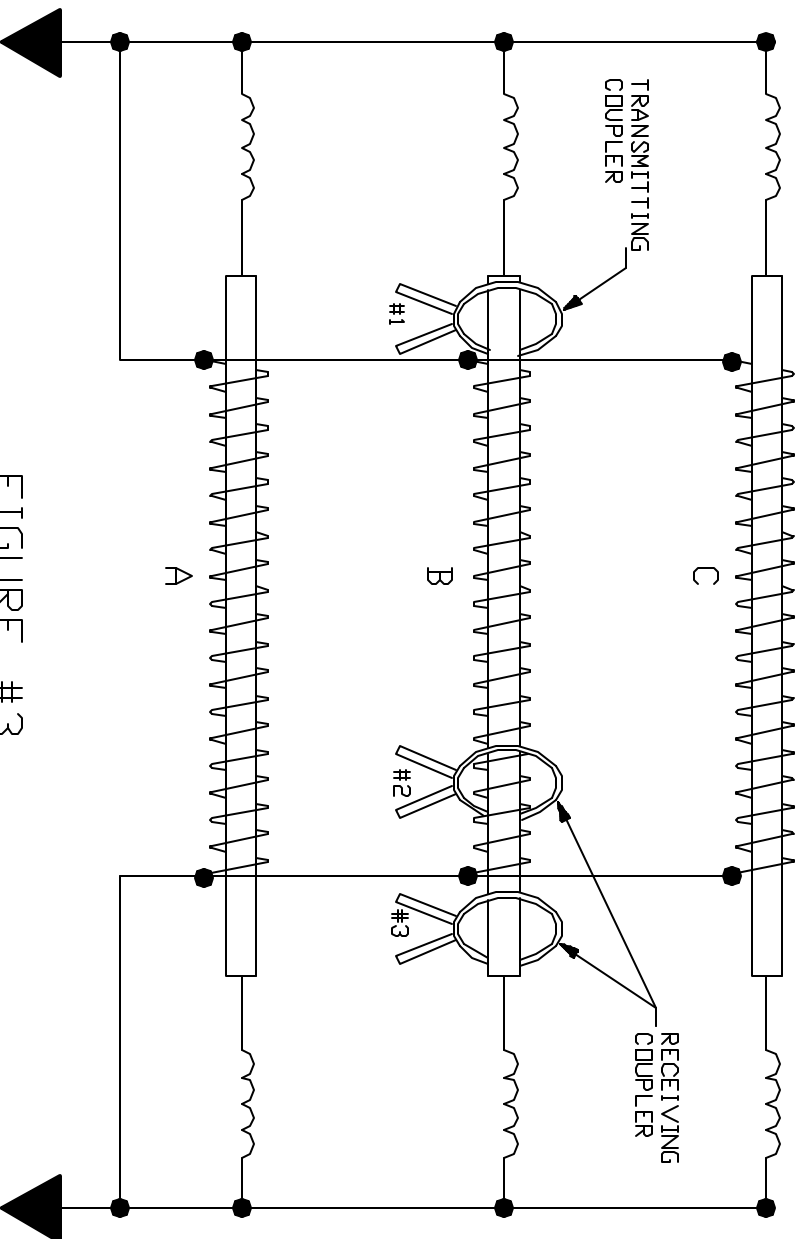


FIGURE #3
NON-JACKETED DIRECT BURIED

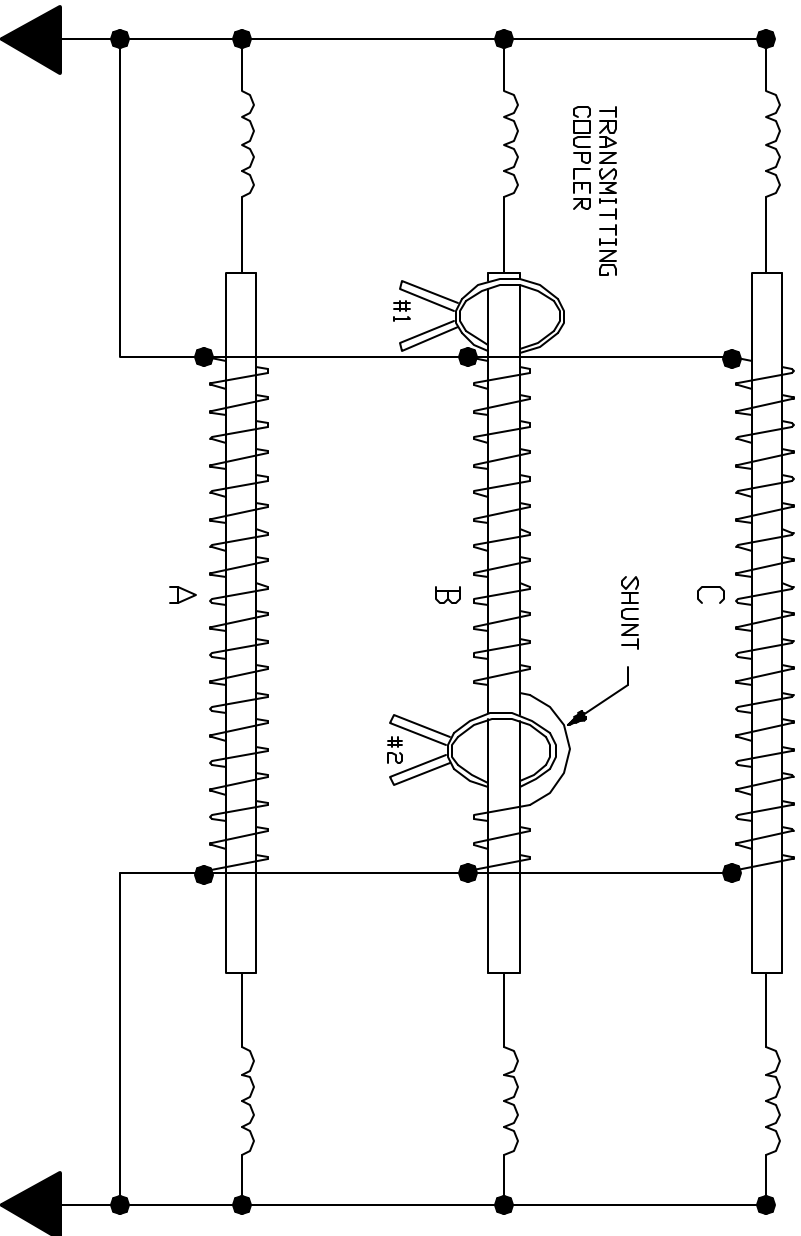


FIGURE #4
NON-JACKETED DIRECT BURIED