

Technote 02 – Basic Meter Install

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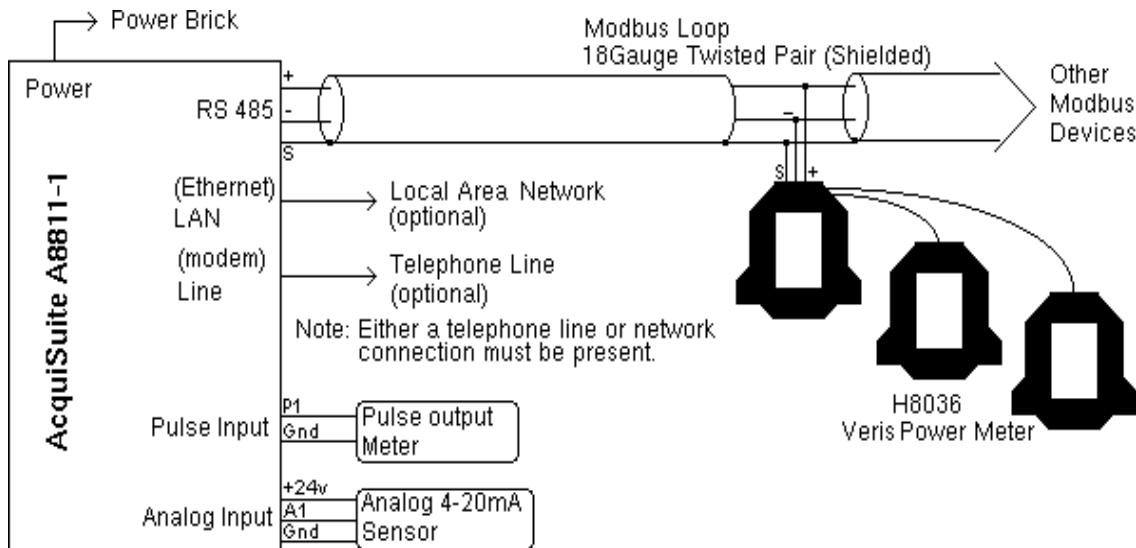
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Attaching meters or other devices to the AcquiSuite involves several steps depending on the type of the meter used. For basic pulse output meters, simply connect the pulse output terminals on the meter to the pulse input terminals on the A8811 AcquiSuite. More information about pulse output meters is available from www.obvius.com. When you get to the homepage, select the documentation link, and then go to technical notes and then Technote 1. Here you will find a more complete description of how to configure Pulse meters. For Modbus meters the process has several steps. Please read through the following section.

- Always begin by thoroughly reading the power meter manufacturer installation methods and become familiar with them before proceeding. You must review these and be a licensed and qualified electrician to install this type of equipment.
- The power meter current sensors or 'donuts' can be clamped around the conductors you are monitoring, this can be any three or single phase system, again verify that the meter you are installing has the capabilities for the type voltage service and equipment you plan on monitoring.
- The voltage taps will need to be connected in such a way that they adhere to NEC and or as required by local electrical codes.
- Once the meter is installed the RS485 plug on the meter has a (+) and (-) and shield connection. Please observe polarity, and make certain the shield is connected as well.
- Simple tools are needed for this installation including a small flat screwdriver, a pair of wire strippers, and some type of shielded communication wire.
- Once all meters have been connected, make certain all of them have unique address.
- Connect to the RS485 terminals on the AcquiSuite. Belden 1120A is a recommended type of communication wire to use. If you are planning to install more than one meter, the next meter(s) will be 'daisy chained' together.
- At this point there are two options for connecting to the AcquiSuite; Phone line or Ethernet. If you are installing this on a LAN, and the IT department has made provisions for DHCP addressing, then enable this on the AcquiSuite. Do this, before connecting the CAT 5e network cable to the RJ45 port on the AcquiSuite. Power the unit up and use the pushbuttons to enable DHCP. Connect the CAT 5e Ethernet cable, and then power down the unit from the LCD selection screen. When it boots back up, you will have a unique IP address for the AcquiSuite.

Review of Installation Tips

- Make certain that work being carried out is being done by a licensed and qualified electrician.
- Review and fully understand the power meter manufacture installation instructions.
- Always follow NEC or local electrical codes and guidelines for any wiring or connection requirements.
- Observe polarity when connecting the the communication line to the RS485 and make certain not to reverse the RS485 plug connector into the meter.
- Use shielded twisted pair for the communications. Belden 1120A is a good choice.
- Set the Modbus address on each device. This is usually a number between 1 and 64 although it may be as high as 247. Each device **MUST** have a unique address.
- Wire the Modbus devices together in a daisy-chain manner.
- Attach the Modbus communication loop to the AcquiSuite.
- Power up the AcquiSuite and wait about 3 minutes for the AcquiSuite to locate all the devices on the Modbus loop. Please review the diagram for and overview of a typical wiring installation.



The above illustration depicts a simple power meter installation. A Veris H8036 Full Data Stream meter is shown attached to an AcquiSuite. Note the illustration only shows one meter, additional meters can be attached in a daisy-chain manner. Up to 32 devices can be attached on the RS485/Modbus loop without any additional adapters. A terminating resistor may be required, see FAQ's for details.