

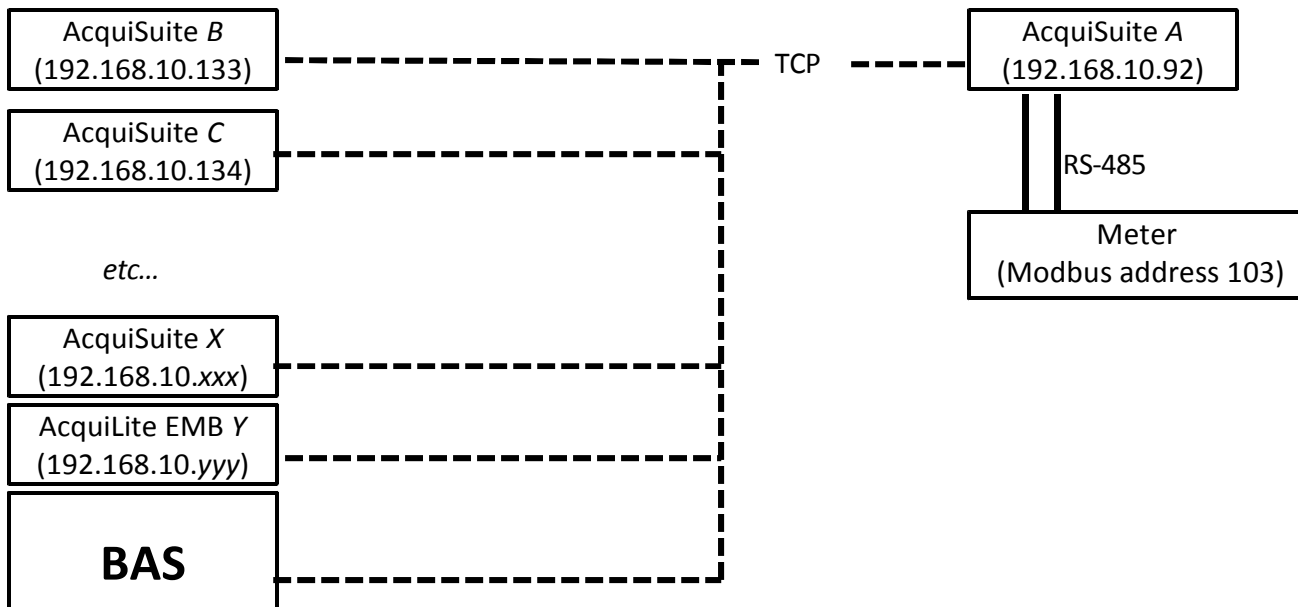
Application Note: Using Modbus/TCP with BAS Systems

The Obvius Data Acquisition Servers (DAS) AcquiSuite EMB A8810, AcquiSuite A8812, and AcquiLite EMB A7810 can be used as effective gateways for customers wishing to integrate into new or existing Building Automation Systems (BAS). The DAS can be connected to downstream RS485 devices or devices which provide dry contact pulse outputs. Connected through the RJ45 LAN port, they can also then connect to an upstream Modbus/TCP Master. The Modbus Master will locate the Data Acquisition Server(s) by IP address. The Modbus Master will still need the ability to map to the registers of the downstream Modbus devices. This Master device could be a piece of hardware, such as a PLC or any number of BAS servers, like Honeywell EBI or Power Logic software. Using Modbus/TCP with a Data Acquisition Server is very easy to do.

Using Modbus TCP with the AcquiSuites or AcquiLite EMB provide several advantages, including:

- Ability to connect to Modbus/TCP equipped meters, either locally or at extremely remote locations.
- Ability to use the existing infrastructure of network cabling to connect to Modbus/TCP devices, such as in a data center.
- Ability to 'mirror' one AcquiSuite to another. Examples:
 - Large multi-site operators desiring to see all remote sites in just one AcquiSuite.
 - Multiple AcquiSuites monitoring the same equipment, using differing alarm and log cycles.
 - Multiple AcquiSuites monitoring the same equipment, using different device drivers (mbt).

Illustration of Data Acquisition Servers acting as servers and as gateways.



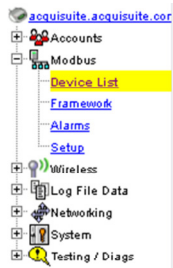
To begin using Modbus TCP with the AcquiSuite, login and navigate to the Modbus Setup page of the AcquiSuite, as shown in picture #1 below. Configure the Modbus TCP Access which is appropriate for your needs. Modbus/TCP can be blocked, limited to the local subnet, or allowed or from any IP address. The default is no remote access.

Next, add Modbus/TCP devices on the Modbus Device List page. On the Device List page, select the Add link, as shown in picture #2 below.

Device	Status	Name and Purpose	Type
001	Ok	Test	Obvius, A8332-8F2D, IO Module, 8-Flex, 2-DO
005	Ok	Test	Obvius, A89DC-08, DC Current Sensor, 8 channel
006	Ok	Test	Obvius, A8911-23, pulse counter, 23 channel
Add	Troubleshoot	Rename all devices	List all supported devices

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The next screen will prompt you to choose typical device-specific details. Choose the appropriate driver, as shown in picture #3 below. This could be a custom driver you have created in the Modbus Framework of the AcquiSuite or one of the built-in drivers. Also specify the Modbus Address (RTU address of the remote device), the IP address (IP address of the gateway), and assign the Device Name that you prefer. When done, select Create Configuration. The Modbus Device List will now show the new device connected via Modbus/TCP.



Modbus device driver - Manual Setup

Modbus Address : (1-247)

Modbus/TCP Gateway IP:

Modbus/TCP Gateway Port: (default 502)

Device Name:

Device Type:

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- User Added Templates**
 - Template: Square D PM620
 - Template: Quadlogic-S20
 - Template: GE EPM 4000
- Built in drivers**
 - Acromag 902MB relay
 - Acuvim L
 - Acuvim II
 - Advantec ADAM 4018, 4019
 - Advantec ADAM 4051
 - Advantec ADAM 4068, 4069
 - Badger Meter, 340MB
 - Badger Meter, 380
 - Continental Control Systems, WattNode
 - Coyote DataComm, Rio-9F
 - Dent PowerScout 3
 - Dent PowerScout 18
 - Eaton IQ 250
 - Eaton IQ 260

Picture #3