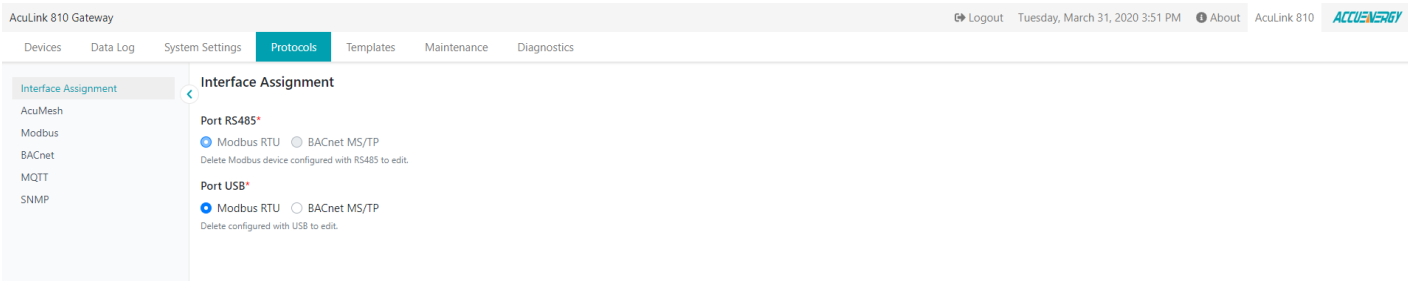
How to Add a Modbus Device to AcuLink 810

Adding Modbus RTU Device

By default the RS485 and USB port of the AcuLink 810 and configured for the Modbus protocol. Users can configure the protocol of the RS485 and USB ports from the ***Interface Assignment*** page under the ***Protocols*** tab.

NOTE: *Users will not be able to change the Interface assignment of the USB or RS485 port if there is a device added on the 810 with one of the selected protocols. The device must be deleted from the AcuLink in order to change the protocol of the ports.*



With the Modbus RTU protocol selected, add a Modbus RTU device via RS485 or USB navigate to the ***Modbus Devices*** page under the ***Devices*** tab. Click on ***Add Device***, the following fields will need to be configured:

Device Name: Enter the device name.

Serial Number: Enter the serial number of the device being added, the serial number must be unique consisting of only letters and numbers.

Template: The user will need to select the Modbus template for the device. For information regarding the Modbus Device template see section 7.3 of the user manual.

Protocol: Select RTU as the protocol

Port: Select either RS485or USB

Modbus ID: Enter the device address (Modbus Slave ID) of the device, the range is from 1-247

Baud Rate: Select the baud rate of the device, the range is from 9600-115200

Data Bit: Select the number of data bits, either 7 or 8

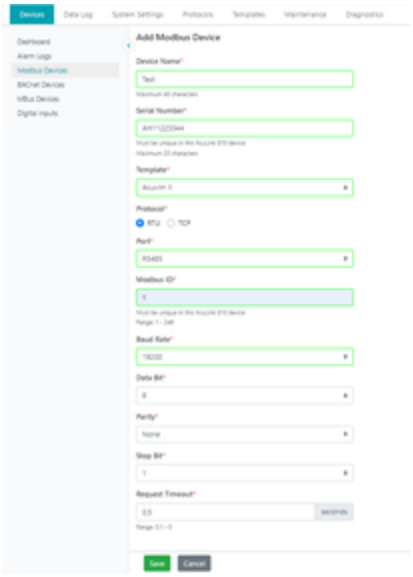
Parity: Select the parity of the device from the drop-down list

Stop Bit: Select the number of Stop Bits

Request Timeout: Select a timeout period for the AcuLink 810 to wait for a response from the device, the range is 1-60 seconds, default for Modbus RTU is 0.5.

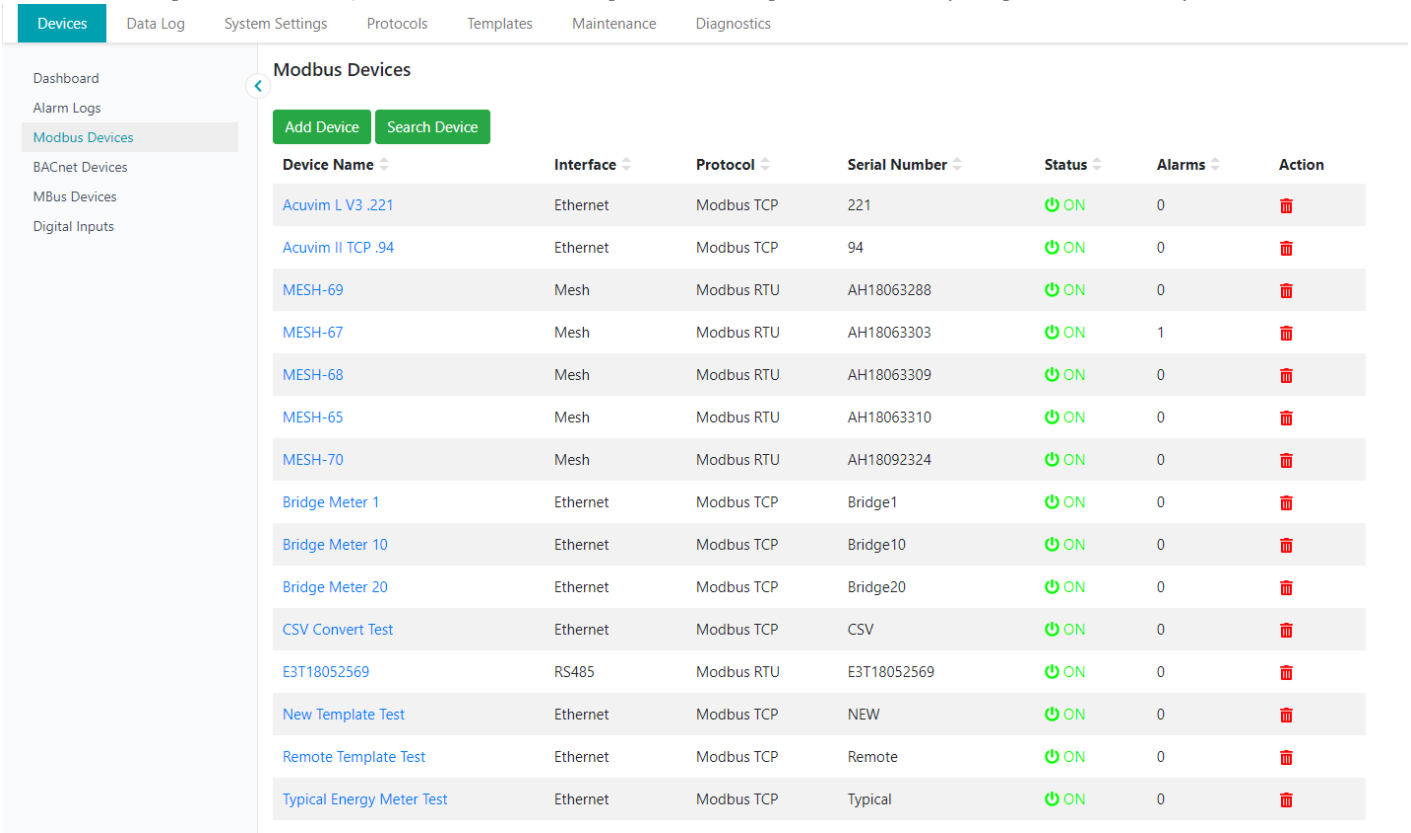
NOTE:*Users cannot add a device with the same device address (Modbus Slave ID). The device address must be unique for each device in the RS485 network.*

Click ***Save*** once all settings are entered correctly.

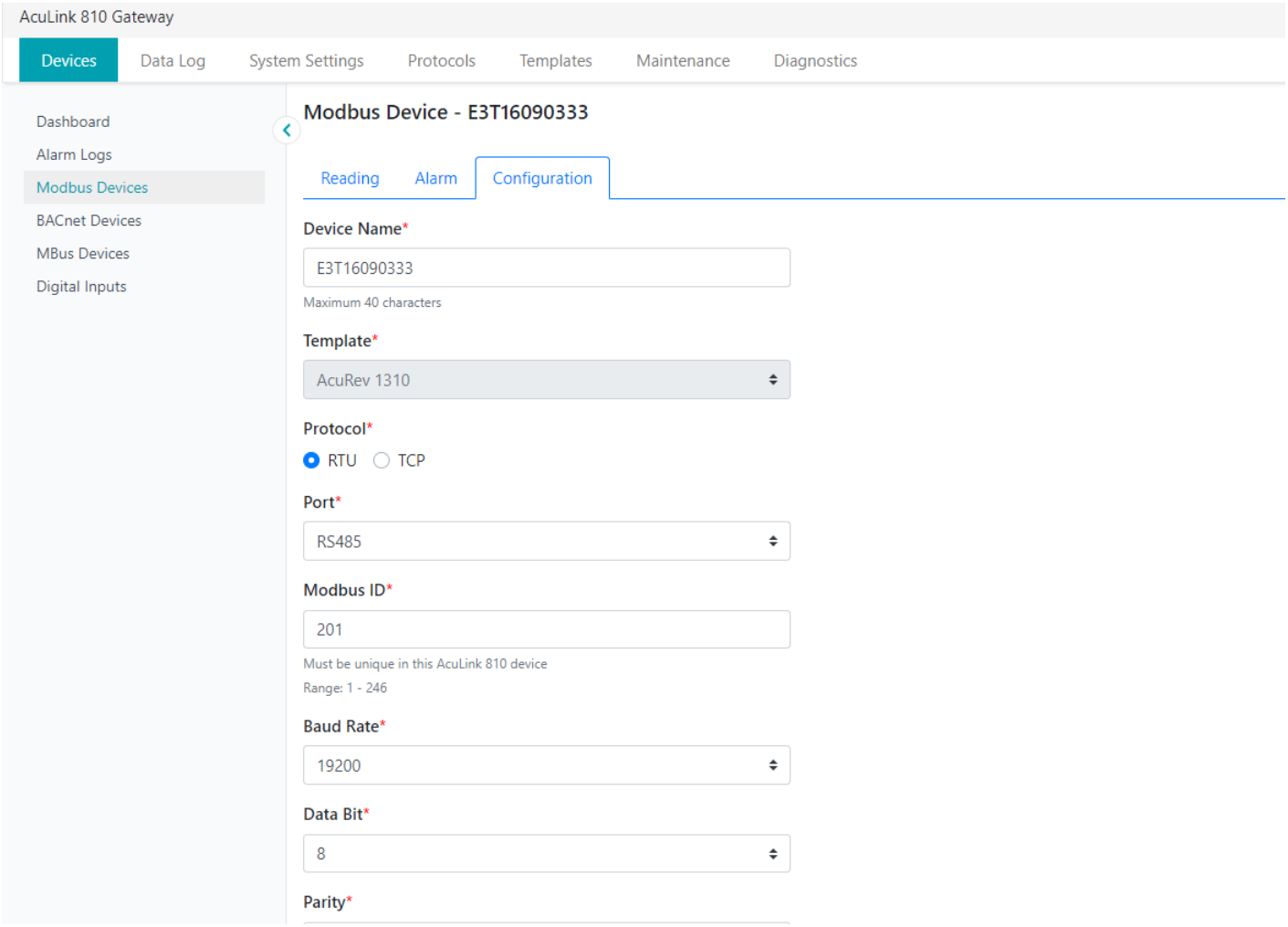


After the device is added, it can be found in the ***Modbus Devices*** pages. A device that is successfully connected and communicating with the gateway will have display a green ***ON*** status under the Status column. Whiles a device that is offline will display a red ***OFF*** warning symbol under the status menu.

NOTE:*After adding a newdevice to the gateway it may take up to 3-4 minutes for the status to show 'ON'. If after 3-4 minutes the device is showing an 'OFF' status, double-check the configuration settings to ensure everything is set correctly.*



If users need to change the configuration of an added device, they can simply click on the device and then select the ***Configuration.*** From this page, users can re-configure the device name, port type, baud rate, parity, etc.



Adding Modbus TCP Device

To add a Modbus TCP device click on ***Add Device*** from the ***Modbus Devices*** page under the ***Devices*** tab. The following fields will need to be configured:

Device Name: Enter the device name of the TCP device

Serial Number: Enter the serial number of the device, the serial number must be unique and consisting of only letters and numbers.

Template: Select the Modbus template for the TCP device, for more information regarding Modbus templates see sections 7.3 of the user manual.

Protocol: Select TCP as the protocol

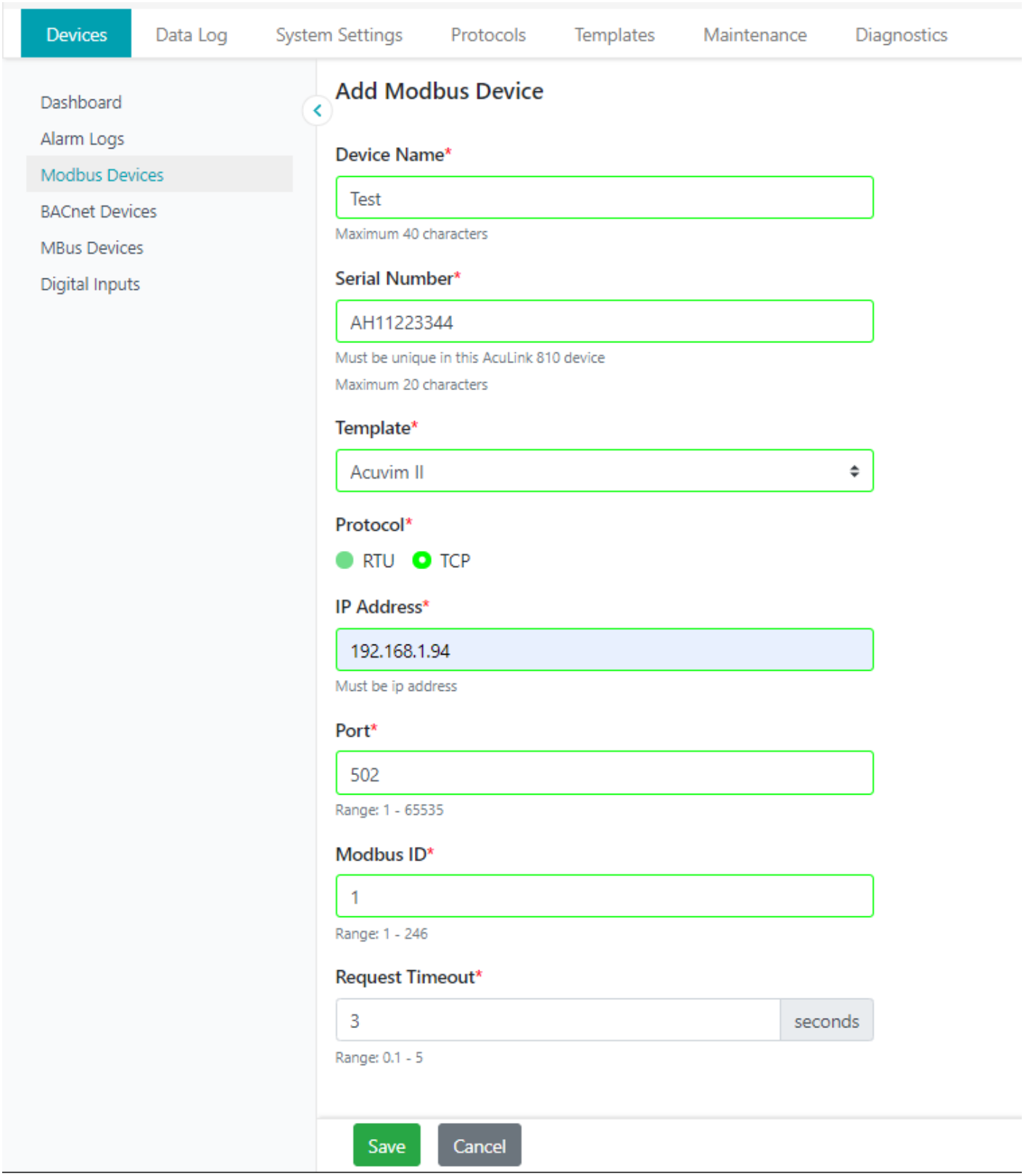
IP Address: Enter the IP address of the device

Port: Enter the Modbus port of the device

Modbus ID: Enter the Modbus address of the device

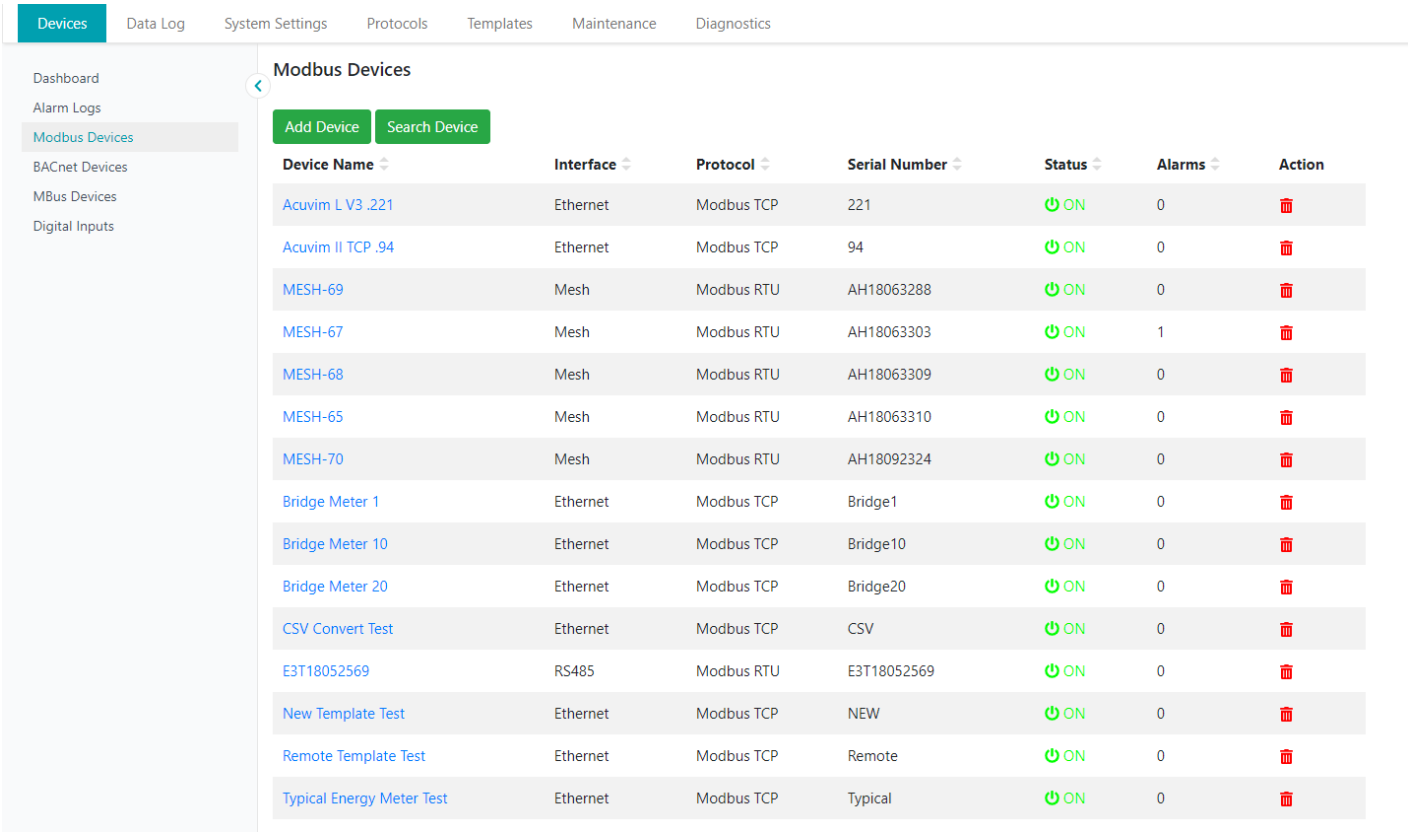
Request Timeout: Enter the timeout setting, default for TCP is 3 seconds

Click ***Save*** once all settings are entered correctly.



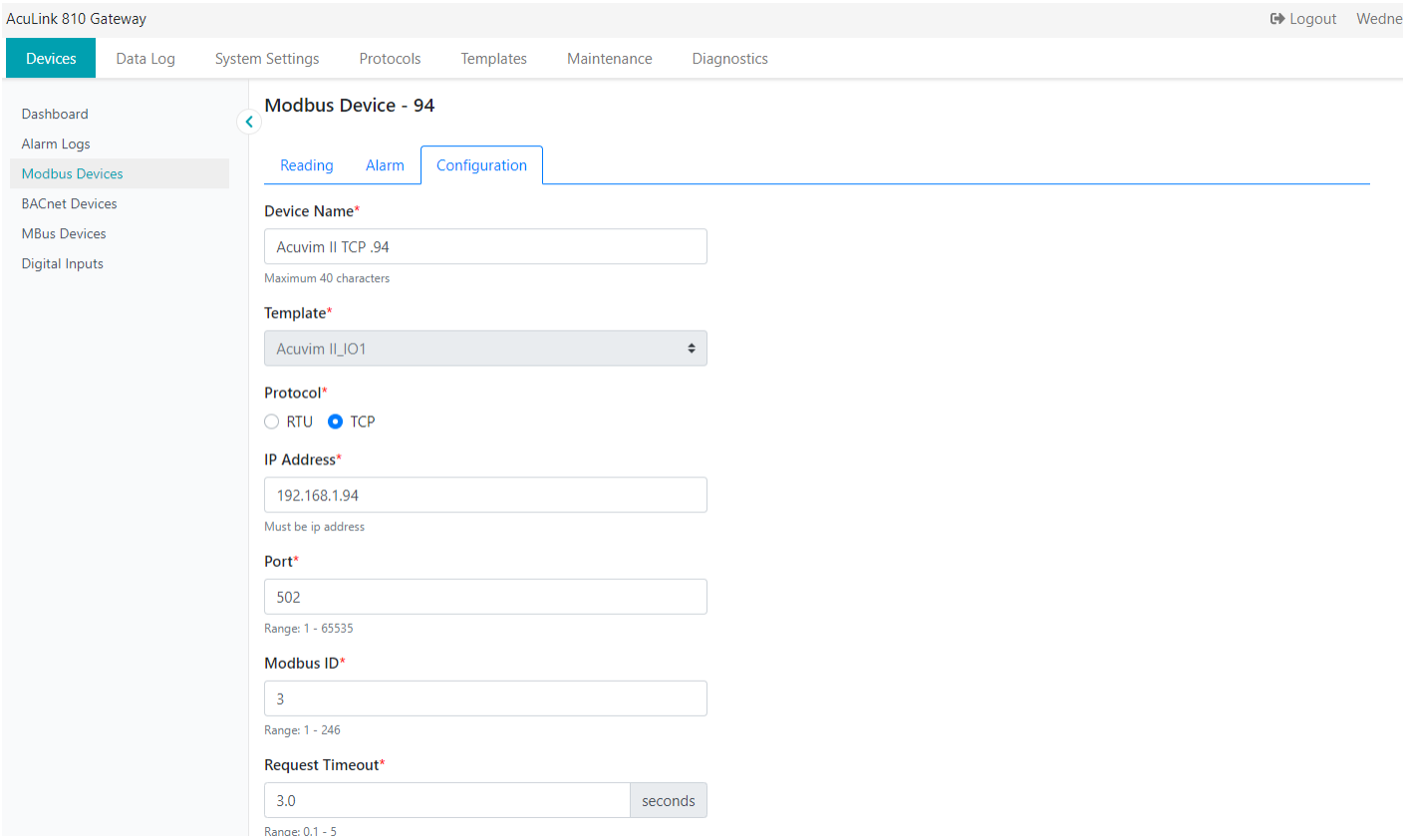
After the device is added, it can be found in the ***Modbus Devices*** pages. A device that is successfully connected and communicating with the gateway will have display a green ***ON*** status under the Status column. Whiles a device that is offline will display a red ***OFF*** warning symbol under the status menu.

NOTE:*After adding a newdevice to the gateway it may take up to 3-4 minutes for the status to show 'ON'. If after 3-4 minutes the device is showing an 'OFF' status, double-check the configuration settings to ensure everything is set correctly.*



Device Name	Interface	Protocol	Serial Number	Status	Alarms	Action
Acuvim L V3 .221	Ethernet	Modbus TCP	221	ON	0	
Acuvim II TCP .94	Ethernet	Modbus TCP	94	ON	0	
MESH-69	Mesh	Modbus RTU	AH18063288	ON	0	
MESH-67	Mesh	Modbus RTU	AH18063303	ON	1	
MESH-68	Mesh	Modbus RTU	AH18063309	ON	0	
MESH-65	Mesh	Modbus RTU	AH18063310	ON	0	
MESH-70	Mesh	Modbus RTU	AH18092324	ON	0	
Bridge Meter 1	Ethernet	Modbus TCP	Bridge1	ON	0	
Bridge Meter 10	Ethernet	Modbus TCP	Bridge10	ON	0	
Bridge Meter 20	Ethernet	Modbus TCP	Bridge20	ON	0	
CSV Convert Test	Ethernet	Modbus TCP	CSV	ON	0	
E3T18052569	RS485	Modbus RTU	E3T18052569	ON	0	
New Template Test	Ethernet	Modbus TCP	NEW	ON	0	
Remote Template Test	Ethernet	Modbus TCP	Remote	ON	0	
Typical Energy Meter Test	Ethernet	Modbus TCP	Typical	ON	0	

If users need to change the configuration of an added device, they can simply click on the device and then select the ***Configuration.*** From this page, users can re-configure the device name, port type, IP address, Modbus ID, etc.



Search Modbus Device

There is a search device function in the AcuLink 810 gateway that allows the user to search for all Modbus devices. The search criteria are based on the template model, Modbus slave ID, baud rate, parity and port. The search function can be useful for adding several devices in a large RS485/USB daisy chain as well as a large Mesh network.

To access the search function click on ***Search Device*** on the ***Modbus Device*** page.

NOTE:*'Search Device' only supports the devices connected via Modbus RTU protocol.*

The following search criteria will need to be specified:

Template: Select the Modbus template for the device

Port: Select the port to scan for the Modbus search, users can select RS485, USB, and AcuMesh.

Modbus ID Start: Specify the starting slave address for the search

Modbus ID End: Specify the ending slave address for the search

Baud Rate: Select the baud rate(s) for the Modbus device search. Users can select multiple baud rates in the search.

Data Bit: Select the data bit, this can be set as 7 or 8.

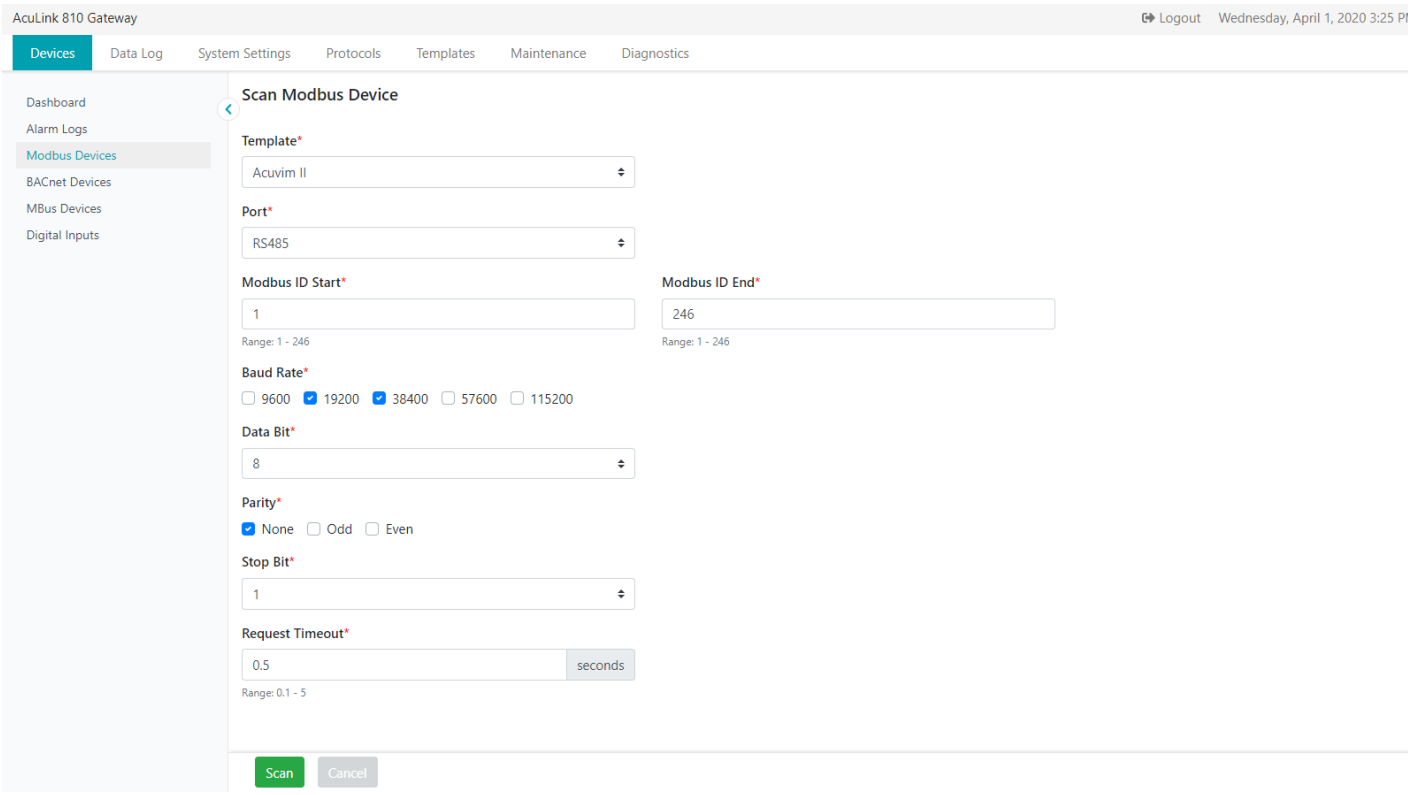
Stop Bit: Select the number of stop bits, can be set as 0 or 1.

Parity: Select the parity for the Modbus search. Users can select multiple parity in the search.

Request Timeout: Select the request timeout, for RS485 and USB the default timeout is 0.5 seconds, for AcuMesh the timeout is 10 seconds.

Click on ***Scan*** once the search credentials are configured.

NOTE: *Depending on the range of Modbus IDs, baud rate and parity selected the search may take several minutes to complete.*



When the scan is complete all devices found will be displayed. Users have the option to individually add each found device and can also add all devices found by clicking on the add all button.

If a device is found that is already added to the AcuLink 810 it will be displayed as ***Added*** in the search.

If a device is found with the same Modbus ID as a device that is already added on the AcuLink 810 it will be displayed as ***Conflict*** in the search.

The search results show the device serial number and Modbus slave ID associated with the device. If the search is done on an AcuMesh network the AcuMesh MAC address is also displayed in the search.