QuickServer Industrial Protocol Gateway

Startup Guide





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Introduction

The QuickServer is an external, high performance building automation multi-protocol gateway that is preconfigured to automatically communicate between Veeder-Root's products (hereafter called "device") connected to the QuickServer and automatically configures them for BACnet MS/TP, BACnet/IP, Modbus RTU and Modbus TCP/IP.

It is not necessary to download any configuration files to support the required applications. The QuickServer is pre-loaded with tested profiles/configurations for the supported devices.

The QuickServer ProtoNode is compatible with:

TLS-3XX Consoles hardware/software requirements:

• RS-232/RS-485 Dual Interface Module

TLS-4XX Consoles hardware/software requirements:

• RS-232/RS-485 Dual Interface Module

Contractor Certification Requirements

Veeder-Root requires the following minimum training certifications for contractors who will install and setup the equipment discussed in this manual:

Installer Certification (Level 1): Contractors holding valid Installer Certification are approved to perform wiring and conduit routing; equipment mounting; probe, sensor and carbon canister vapor polisher installation; wireless equipment installation; tank and line preparation; and line leak detector installation.

Technician Certification (Level 2/3): Contractors holding valid Technician Certifications are approved to perform installation checkout, startup, programming and operations training, system tests, troubleshooting and servicing for all Veeder-Root Series Tank Monitoring Systems, including Line Leak Detection. In addition, Contractors with the following sub-certification designations are approved to perform installation checkout, startup, programming, system tests, troubleshooting, service techniques and operations training on the designated system.

- Wireless 2
- Tall Tank

Warranty Registrations may only be submitted by selected Distributors.

Safety Precautions

The following safety symbols may be used throughout this manual to alert you to important safety hazards and precautions



AWARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



READ ALL RELATED MANUALS

Knowledge of all related procedures before you begin work is important. Read and understand all manuals thoroughly. If you do not understand a procedure, ask someone who does.

Safety Warnings

	 This console contains high voltages which can be lethal. It is also connected to low power devices that must be kept intrinsically safe. FAILURE TO COMPLY WITH THE FOLLOWING WARNINGS AND SAFETY PRECAUTIONS COULD CAUSE DAMAGE TO PROPERTY, ENVIRONMENT, RESULTING IN SERIOUS INJURY OR DEATH. 1. Turn off and tag power at the circuit breaker. Do not connect the console AC power supply wires at the breaker until all devices are connected. 2. Attach conduit from the power panel to the console's Power Area knockouts only. 3. Comply with all applicable codes including: the National Electrical Code; federal, state, and local codes; and other applicable safety codes. Connecting power wires to a live circuit can cause electrical shock that may result in serious injury or death. Routing conduit for power wires into the intrinsically safe compartment can result in fire or explosion resulting in serious injury or death. 			

Related Documents

576013-879	TLS-3XX Console Site Prep And Installation Manual
577014-073	TLS-450PLUS Console Site Prep And Installation Manual
577013-879	TLS-450 Console Site Prep And Installation Manual
577014-110	TLS-450PLUS/TLS4 Operator's Manual

Precautions Against Static Electricity

If necessary to install electronic components in the ATG to implement this feature, read the following static electricity precautions:

- 1. Before handling any components, discharge your body's static electric charge by touching a grounded surface.
- 2. Do not remove parts from their anti-static bags until you are ready to install them.
- 3. Do not lay parts on the anti-static bags! Only the insides are anti-static.
- 4. When handling parts, hold them by their edges and their metal mounting brackets.
- 5. Avoid touching comm board components or edge connectors that plug into slots when handling.
- 6. Never slide parts over any surface.
- 7. Avoid plastic, vinyl, and Styrofoam in your work area.

QuickServer Gateway.



Figure 1. QuickServer ProtoNode Connectivity Diagram (TLS450PLUS Shown)

Quick Start Guide

- 1. Record the information about the unit. (1) page 5)
- 2. Set the device's COM settings for each of the devices that are to connect to the QuickServer. (2) page 6)
- 3. Select the protocol configuration on the S Bank DIP switches. (3) page 6)
- 4. BACnet MS/TP: Set the MAC Address on the A Bank DIP switches. (4) page 7)
- 5. Modbus RTU or Modbus TCP/IP: Set the Node-ID. (5) page 7)
- BACnet MS/TP or Modbus RTU: Set the baud rate of the field protocol on the B Bank DIP switches. (6 page 8)
- 7. Connect the QuickServer 6-pin RS-232 connector to the Veeder-Root ATG. (7) page 9)
- 8. Connect the QuickServer ProtoNode 3 pin RS-485 port to the field protocol cabling. (8) page 10)
- 9. Connect power to the QuickServer 6-pin connector. (9) page 11)
- 10.Use a web browser to access the QuickServer Web Configurator page to select the profiles of the devices attached to the QuickServer and input the Node-ID from each device. Once the devices are selected, the QuickServer automatically builds and loads the appropriate configuration. (10) page 12)
- 11.BACnet MS/TP or BACnet/IP: Set the BACnet Device Instance. (11) page 15)
- 12.Ethernet Network: Use a web browser to access the QuickServer Web Configurator page to change the IP Address. No changes to the configuration are necessary. (12) page 17)

Setup For QuickServer

Record Identification Data

The QuickServer has a unique part number located on the side or the back of the unit. This number should be recorded, as it may be required for technical support. The numbers are as follows:

Table 1. QuickServer Part Number

Model	Part Number
QuickServer ProtoNode	330020-840 / 330020-841

QuickServer ProtoNode units have the following 3 ports: RS-232, Ethernet and RS-485.

Point Count Capacity And Registers Per Device

The total number of points presented by the device attached to the QuickServer ProtoNode-1504 cannot exceed 5000.

The total number of points per QuickServer profile is shown in Table 2:

Table 2. Registers Per Device

Profile	Points Per Device
System	29
Unknown Type	3
Tank	56
Liquid Sensor	9
Input	6
Type A Sensor	5
Type B Sensor	6
Vapor Sensor	9
Groundwater Sensor	9
MAG Sensor	14
Smart Sensor	17
PLLD	19

Input COM Settings on the device connected to the QuickServer

- The connected serial device MUST have the same baud rate, data bits, stop bits, and parity settings as the QuickServer.
- To set the QuickServer's COM settings, See "Connecting to QuickServer Web Configurator" on page 13.
- Table 3 specifies the device serial port settings required to communicate with the QuickServer.

Port Setting	TLS-3XX/TLS4XX		
Protocol	V-R Interface		
Baud Rate	9600		
Parity	Odd		
Data Bits	7		
Stop Bits	1		

Table 3. COM Settings

3 Selecting The Desired Protocol Configuration

QuickServer ProtoNode units use the 'S' bank of DIP switches (S0 - S3) to select the protocol configuration (see Figure 2).



Figure 2. QuickServer S Bank (Profile Selections) DIP Switches

See Table 4 for the S Bank DIP switch settings.

Table 4. Profile Settings For QuickServer

QuickServer ProtoNode	S Bank DIP Switches			
Profile	S0	S1	S2	S3
BACnet/IP	Off	Off	Off	Off
BACnet MS/TP	On	Off	Off	Off

QuickServer ProtoNode	S Bank DIP Switches			
Profile	S0	S1	S2	S3
Modbus TCP/IP and Mod- bus RTU	Off	On	Off	Off

BMS Network Settings: MAC Address Node-ID And Baud Rate

4 BACNET MS/TP: SETTING THE MAC ADDRESS FOR BMS NETWORK

- Only 1 MAC Address is set for QuickServer regardless of how many devices are connected to QuickServer.
- Set the BACnet MS/TP MAC Address of the QuickServer to a value between 1 to 127 (Master MAC Address); this is so that the BMS front end can find QuickServer via BACnet Auto-Discovery.

NOTICE Never set a BACnet MS/TP MAC Address of the QuickServer to a value from 128 to 255. Addresses from 128 to 255 are Slave Addresses and can not be discovered by BMS front ends that support Auto-Discovery of BACnet MS/TP devices.

 Set "A" bank DIP switches A0 – A7 to assign a MAC Address to the QuickServer for BACnet MS/TP (see Figure 3).



Figure 3. QuickServer A Bank DIP Switches

• Refer to Appendix C for the complete range of MAC Addresses and DIP switch settings.

5 MODBUS RTU AND MODBUS TCP/IP: SETTING THE NODE-ID

- The Modbus RTU and Modbus TCP/IP Node-IDs are assigned by setting the A-bank dip switches. (see Figure 3).
- Node-ID's range from 1-255. Refer to Appendix C for the full range of addresses for setting Node-ID.

.

BACNET MS/TP OR MODBUS RTU: SETTING THE BAUD RATE FOR BMS NETWORK

DIP switches B0 – B3 can be used to set the field baud rate of the QuickServer to match the baud rate required by the BMS for BACnet MS/TP (see Figure 4).



Figure 4. QuickServer B Bank DIP Switches

BMS baud rate dip switch selections are shown in Table 5.

Table	5.	BMS	Baud	Rate	

Baud Rate	B0	B1	B2	B3
9600	On	On	On	Off
19200	Off	Off	Off	On
38400*	On	On	Off	On
57600	Off	Off	On	On
76800	On	Off	On	On

*Factory default setting.

Interfacing QuickServer To Devices



QuickServer ProtoNode Showing Connection Ports

Figure 5. QuickServer ProtoNode Connections

Device Connections To QuickServer

QUICKSERVER 6-PIN PHOENIX CONNECTOR

- Pins 1 3 are for Veeder-Root ATG input (see Figure 6).
- Pins 4 6 are for QuickServer power. QuickServer accepts either 9-30V DC or 12-24V AC on pins 4 and 5.





Figure 6. QuickServer ATG RS-232 and Power Inputs

8 SERIAL NETWORK WIRING FIELD PORT TO RS-485 NETWORK

• Connect the RS-485 network wires to the 3-pin RS-485 connector on QuickServer ProtoNode as shown in Figure 7.



Figure 7. QuickServer Connection To RS-485 Field Network

- See "Ethernet Network Setting IP Address For Field Network" on page 17. for information on connecting to BACnet/IP network.
- If the QuickServer is the last device on the trunk, then the End-Of-Line Termination Switch needs to be set to the **On** position (the EOL Termination **default setting is Off**). If necessary, set the switch to the On position (see Figure 8).



Figure 8. QuickServer RS-485 BMS Network EOL Switch Settings

Power Up QuickServer

Verify QuickServer nominal power requirements in Table 6.

Table 6. QuickServer Current Draw

		Current Draw	
QuickServer ProtoNode	12V DC/AC	24V DC/AC	30V DC
Typical	170 mA	100 mAʻ	80 mA
Maximum	240 mA	140 mA	100 mA

NOTICE These values are 'nominal' and a safety margin should be added to the power supply of the host system. A safety margin of 25% is recommended.

After verifying power source and with frame ground connected as shown in Figure 6. apply power to QuickServer.

Using QuickServer Web Configurator To Setup The Gateway

10 Connect The PC To QuickServer Via The Ethernet Port

- Connect a CAT5 Ethernet cable (Straight through or Cross-Over) between the local PC and QuickServer.
- The Default IP Address of QuickServer is 192.168.1.24, subnet mask is 255.255.255.0. If the PC and QuickServer are on different IP Networks, assign a static IP Address to the PC on the 192.168.1.xxx network:

For Windows 10, Right click on Image: Then click on Network Connections>Change Adapter Options. Double click on Local Area Connections. When the Local Area Connections Status box appears click Properties. Click on Internet Protocol Version 4 (TCP/IPv4) then click Properties. When the Internet Protocol Version 4 (TCP/IPv4) then click Properties. When the Internet Protocol Version 4 (TCP/IPv4) Properties dialog box appears, click, 'Use the following IP address' radio button and enter the 'IP address' and 'Subnet mask' entries shown in Figure 9, the click the OK button , then the Close buttons to exit.

General			
Connection IPv4 Connectivity:	Local Area Connection	n Properties	X
IPv6 Connectivity:		in openies	
Media State:	Networking Sharing		
Speed:	Connect using:		
Details	Intel(R) 82579LM C	Sigabit Network Connection	
Details	This connection uses the	Configure following items:	
Activity ———	Elient for Microso General File and Printer S General QoS Packet Sch Internet Protocol	oft Networks Sharing for Micro Networks eduler Version 4 (TCP/IPv4)	
Bytes: 14	Microsoft Networ Microsoft LLDP Internet Protocol	rk Adapter Multiplexor Protocol Protocol Driver Version 6 (TCP/IPv6)	
Properties 9	<	Vninstall Properties	- .
	Description Transmission Control F wide area network pro across diverse interco	Internet Protocol Version 4 (TCP/IP	/4) Properties X
		You can get IP settings assigned aut this capability. Otherwise, you need for the appropriate IP settings.	tomatically if your network supports to ask your network administrator
		Obtain an IP address automatic	cally
		• Use the following IP address:	
		IP address:	192.168.1.11
		Subnet mask:	255.255.255.0
		Default gateway:	· · ·
		Obtain DNS server address aut	tomatically
		Use the following DNS server a	ddresses:
		Preferred DNS server: Alternate DNS server:	

Figure 9. Assigning Static IP Address To The PC

After disconnecting from the QuickServer return to the PC's Internet Protocol Version 4 (TCP/IPv4) Properties dialog box and click the Obtain an IP Address Automatically' radio button to return the PC to its original Local Area Connection settings.

Connecting to QuickServer Web Configurator

After setting a local PC on the same subnet as the QuickServer (refer to above paragraph), open a web browser on the PC and enter the IP Address of the QuickServer (the default address is 192.168.1.24).

NOTICE If the IP Address of the QuickServer was changed, the assigned IP Address can be discovered using the FS Toolbox utility. See 'Lost Or Incorrect IP Address' (Appendix A, page A-1) for instructions.

Selecting Profiles for Devices Connected to QuickServer

- In the Web Configurator, the Active Profiles are shown below the Configuration Parameters.
- Fill in the parameter values as needed.
 - Enter the Veeder-Root PLC Type and COM settings.

NOTICE See "Input COM Settings on the device connected to the QuickServer" on page 6 for correct COM settings per PLC Type.

- Once a parameter value is changed as desired click Submit to save it.
- The Active profiles section lists the currently active device profiles, including previous Web Configurator additions. This list is empty for new installations, or after clearing all configurations (see Figure 10).
- To add an active profile to support a device, click the Add button under the Active Profiles heading. This will present a drop-down box underneath the Current profile column that lists all the available profiles (see Figure 11).
- Once the profile for the device has been selected from the drop-down list, enter the value of the Node-ID.

NOTICE The first entered Node-ID must be set to "1" and be followed by sequential values.

- Then enter the Address Parameter. The Address is used to specify the tank, sensor or input number. This information can be found in the Veeder-Root ATG Report.
 - Tanks are addressed from 1-12.
 - Sensors are addressed from 1-64.
 - Inputs are addressed from 1-64.
- Then press the "Submit" button to add the Profile to the list of devices to be configured.
- Repeat this process until all the devices have been added.

Configuration Pa	miniatars		_
Parameter Name	Parameter Description	Value	
veeder_plc	Veeder Root PLC Type This selects the Veeder Root PLC Type. Use TLS-450 or TLS-350 (for TLS-300c - use TLS-350)	TLS-450 Submit	
veed_route	Veeder Root Route The route is only required if security is enabled. The route must be set to contain the 6 digits that form the security code. <i>Example: 0.1.2.3.4.5</i>	- Submit	
veed_baud_rate	Veeder Root Baud Rate This sets the Veeder Root baud rate. (9600/19200/38400/57600/115200)	9600 Submit	
veed_parity	Veeder Root Parity This sets the Veeder Root parity. (None/Even/Odd)	Odd Submit	
veed_data_bits	Veeder Root Data Bits This sets the Veeder Root data bits. (7 or 8)	7 Submit	
veed_stop_bits	Veeder Root Stop Bits This sets the Veeder Root stop bits. (1 or 2)	1 Submit	
Aetiva arailtaa			

Figure 10. Web Configurator Showing No Active Profiles

Nr	Node ID	Current profile		Parameters	
		MOD Input		address:	Submit
		MOD_Input	T I I I I I I I I I I I I I I I I I I I		Cancel
		MOD_Liquid_Sensor MOD_Tank			

Figure 11. Web Configurator Showing Available Profiles For Selection

- Active profiles Node ID Current profile Parameters Nr Remove 1 1 BAC IP Tank address : 1 2 2 BAC_IP_Tank address : 2 Remove 3 3 BAC_IP_Tank address : 4 Remove 4 4 BAC_IP_Liquid_Sensor address : 1 Remove 5 BAC_IP_Liquid_Sensor 5 address : 2 Remove 6 6 BAC_IP_Liquid_Sensor address : 3 Remove 7 7 BAC_IP_Liquid_Sensor address : 4 Remove Add
- Completed additions are listed under "Active Profiles" as shown the Figure 12 example.

Figure 12. Web Configurator Showing Active Profile Additions

Figure 12 shows a console with 3 tanks and 4 liquid sensors. The node IDs are sequential, starting with 1; the addresses match the console numbering of the tanks (i.e., there is no tank 3 set up in the console). The Node ID is used for the BACnet Object or Modbus Register (see Appendix B) and its address must match the device number programmed in the console.

NOTICE System and Unknown Type points are automatically configured therefore no profile is required. Refer to Table B-1 and Table B-2 in Appendix B for a list of available points.

Setting BACnet Parameters

- Open the Web Configurator with the protocol set to BACnet in "Selecting The Desired Protocol Configuration" on page 6.
- Fill in the parameter values as needed (see Figure 13).
 - Enter the Veeder-Root PLC Type, COM settings and BACnet settings (Bac_device_id)

NOTICE See See "Input COM Settings on the device connected to the QuickServer" on page 6. for correct COM settings per PLC Type.

The Bac_device_id field will display the current value (default = 50,000). The BACnet Device Instance can range from 1 to 4,194,303.

- Once a parameter value is changed as desired click Submit to save it.

Configuration Pa	ramatars		
Parameter Name	Parameter Description	Value	
veeder_plc	Veeder Root PLC Type This selects the Veeder Root PLC Type. Use TLS-450 or TLS-350 (for TLS-300c - use TLS-350)	TLS-450	Submit
veed_route	Veeder Root Route The route is only required if security is enabled. The route must be set to contain the 6 digits that form the security code. Example: 0.1.2.3.4.5	-	Submit
veed_baud_rate	Veeder Root Baud Rate This sets the Veeder Root baud rate. (9600/19200/38400/57600/115200)	9600	Submit
veed_parity	Veeder Root Parity This sets the Veeder Root parity. (None/Even/Odd)	Odd	Submit
veed_data_bits	Veeder Root Data Bits This sets the Veeder Root data bits. (7 or 8)	7	Submit
veed_stop_bits	Veeder Root Stop Bits This sets the Veeder Root stop bits. (1 or 2)	1	Submit
bac_device_id	BACnet Device Instance This sets the BACnet device instance. (1 - 4194303)	50000	Submit
bac_ip_port	BACnet IP Port This sets the BACnet IP port of the Gateway. The default is 47808. (1 - 65535)	47808	Submit
bac_cov_option	BACnet COV This enables or disables COVs for the BACnet connection. Use COV_Enable to enable. Use COV_Disable to disable. (COV_Enable/COV_Disable)	COV_Disable	Submit
bac_bbmd_option	BACnet BBMD This enables BBMD on the BACnet IP connection. Use BBMD to enable. Use - to disable. The bdt.ini files also needs to be downloaded. (BBMD/-)	-	Submit
Selliorq eviteA			

Figure 13. Web Configurator with Protocol Set to BACnet

Ethernet Network - Setting IP Address For Field Network

- After setting a local PC to the same subnet as the QuickServer (See "Connect The PC To QuickServer Via The Ethernet Port" on page 12., open a web browser on the PC and enter the IP Address of the QuickServer; the default address is 192.168.1.24.
- The Web Configurator is displayed as the landing page (see Figure 14).
- To access the FS-GUI, click on the "Diagnostics & Debugging" button in the bottom right corner of the page.

Configuration Pa	aramatars		
Parameter Name	Parameter Description	Value	
veeder_plc	Veeder Root PLC Type This selects the Veeder Root PLC Type. Use TLS-450 or TLS-350 (for TLS-300C - use TLS-350)	TLS-450	Submit
veed_route	Veeder Root Route The route is only required if security is enabled. The route must be set to contain the 6 digits that form the security code. <i>Example: 0.1.2.3.4.5</i>	-	Submit
veed_baud_rate	Veeder Root Baud Rate This sets the Veeder Root baud rate. (9600/19200/38400/57600/115200)	9600	Submit
veed_parity	Veeder Root Parity This sets the Veeder Root parity. (None/Even/Odd)	Odd	Submit
veed_data_bits	Veeder Root Data Bits This sets the Veeder Root data bits. (7 or 8)	7	Submit
veed_stop_bits	Veeder Root Stop Bits This sets the Veeder Root stop bits. (1 or 2)	1	Submit
Aetiva profilas			

Figure 14. Web Configurator Screen With Active Profiles

• From the FS-GUI landing page, click on "Setup" to expand the navigation tree and then select "Network Settings" to access the IP Settings menu (see Figure 15).

vigation	Network Settir	ngs	
N1504 Veeder Root v2.00a About	IP Settings		
File Transfer Network Settings Passwords Jime Settings	Note Updated settings of browser to the new	nly take effect after a System Restar	rt. If the IP Address is changed you will need to di
User Messages			
		N1 IP Address	192.168.3.13
		N1 Netmask	255.255.255.0
		N1 DHCP Client State	DISABLED V
		Default Gateway	192.168.3.1
		Domain Name Server1	8.8.8
		Domain Name Server2	8.8.4.4
		Cancel	Update IP Settings
	MAC Address		

Figure 15. Changing IP Address Via FS-GUI

- Modify the IP Address (N1 IP Address field) of the QuickServer Ethernet port.
- If necessary, change the Netmask (N1 Netmask field).
- If necessary, change the IP Gateway (Default Gateway field).

NOTICE If the QuickServer is connected to a managed switch/router, the IP Gateway of the QuickServer should be set to the IP Address of that managed switch/router.

•Click the "System Restart" button at the bottom of the page to apply changes and restart the QuickServer.

•Unplug Ethernet cable from PC and connect it to the network switch or router.

•Record the IP Address assigned to the QuickServer for future reference.

NOTICE The FieldPoP[™] button FieldPoP[™] (see Figure 15) allows users to connect to FieldPoP, Sierra Monitor's device cloud solution for the IIoT. FieldPoP enables secure remote connection to field devices through a FieldServer and its local applications for configuration, management, maintenance. For more information about FieldPoP, refer to the FieldPoP[™] Device Cloud Start-up Guide.</sup>

How To Start The Installation Over: Clearing Profiles

- 1. After setting a local PC to the same subnet as the QuickServer ("Connect The PC To QuickServer Via The Ethernet Port" on page 12), open a web browser on the PC and enter the IP Address of the QuickServer.
- 2. If the IP Address of the QuickServer has been changed by previous configuration, the assigned IP Address must be gathered from the network administrator.
- 3. The Web Configurator is displayed as the landing page.
- 4. At the bottom-left of the page, click the "Clear Profiles and Restart" button.
- 5. Once restart is complete, all past profiles discovered and/or added via Web configurator are deleted. The unit can now be reinstalled.

BACnet EXPLORER NG

A typical working example of a BACnet Explorer NG on a BACnet Network (see Figure 16).



Figure 16. BACnet Explorer NG On A BACnet Network

- For additional details related to the BACnet Explorer NG, go to the Sierra Monitor website's Resource Center and download the <u>BACnet Explorer NG Start-Up Guide</u>.
- For purchasing information, look up the BACnet Explorer NG page on the Sierra Monitor website and click on the "BUY NOW" tab.

Appendix A: Troubleshooting

Lost Or Incorrect IP Address

- 1. Ensure that FieldServer Toolbox is loaded onto the local PC. Otherwise, download the FieldServer Toolbox.zip via the Sierra Monitor Resource Center at *https://www.sierramonitor.com/content/fieldserver-toolbox-0*
- 2. Extract the executable file and complete the installation.



Figure A-1. Ethernet Port Location

- 3. Connect a standard CAT5 Ethernet cable between the user's PC and QuickServer.
- 4. Double click on the FS Toolbox Utility and click Discover Now on the splash page.
- 5. Check for the IP Address of the desired gateway.

FieldServer Too	DIDOX			5	sierr
Setup Help					
DEVICES 🕒	IP ADDRESS	MAC ADDRESS	FAVORITE CO	ONNECTIVITY	
ProtoNode	192.168.3.110	00:50:4E:10:2C:92	*	•	Connect

Figure A-2. Check IP Address

6. If correcting the IP Address of the gateway: click the settings icon in the same row as the gateway (see Figure A-2), then click Network Settings, change the IP Address and click Update IP Settings to save.

Viewing Diagnostic Information

- 1. Type the IP Address of the QuickServer into the web browser or use the FieldServer Toolbox to connect to the QuickServer.
- 2. Click on Diagnostics and Debugging Button, then click on view, and then on connections.
- 3. If there are any errors showing on the Connection page, refer to "Check Wiring And Settings" below for the relevant wiring and settings.

avigation	Cor	nnections					
CN1504 Veeder Root v2.00a D About Setup	Over	view					
View	Conne	ctions					(
- 🛄 S1 - Veeder	Inde	Name	Tx Msg	Rx Msg	Tx Char	Rx Char	Errors
- I - Modbus/TCP	0	S1 - Veeder	15	0	105	0	15
Data Arrays	1	N1 - Modbus/TCP	0	0	0	0	0
5- Jodes							
)	2	R1 - MODBUS_RTU	0	0	0	0	0

Figure A-3. Error Messages Screen

Check Wiring And Settings

- No COMS on Veeder-Root Interface side. If the Tx/Rx LEDs are not flashing rapidly then there is a COM issue. To fix this, check the following:
 - Visual observations of LEDs on QuickServer (See "LED Diagnostics For Communications Between QuickServer And Devices" on page A-3.)

- Check baud rate, parity, data bits, stop bits
- Check device address
- Verify wiring
- Verify device is connected to the same subnet as the QuickServer
- Verify the Modbus device was discovered in Web Configurator (See "Connecting to QuickServer Web Configurator" on page 13.).
- Field COM problems:
 - If Ethernet protocols are used, observe Ethernet LEDs on the QuickServer (See "LED Diagnostics For Communications Between QuickServer And Devices" below).
 - Check DIP switch settings (using correct baud rate and device instance)
 - Verify IP Address setting
 - Verify wiring

NOTICE If the problem persists, a Diagnostic Capture needs to be taken and sent to support. (See "Take Diagnostic Capture With The FieldServer Toolbox" on page A-4.).

LED Diagnostics For Communications Between QuickServer And Devices

Reference Figure A-4 and Table A-1 for understanding QuickServer ProtoNode diagnostic LEDs.



Figure A-4. Ethernet Port Location

Table A-1. Diagnostic LED Description

LED	Description
SPL	The SPL LED will light if the unit is not getting a response from one or more of the configured devices.
RUN	The RUN LED will start flashing 20 seconds after power indicating normal operation.
ERR	The SYS ERR LED will go on solid 15 seconds after power up. It will turn off after 5 seconds. A steady red light will indicate there is a system error on the unit. If this occurs, immediately report the related "system error" shown in the error screen of the GUI interface to support for evaluation.
RX	The RX LED will flash when a message is received on the serial port on the 6-pin connector. If the serial port is not used, this LED is non-operational.
ТХ	The TX LED will flash when a message is sent on the serial port on the 6-pin connector. If the serial port is not used, this LED is non-operational.
PWR	This is the power light and should show steady green at all times when unit is powered.

Take Diagnostic Capture With The FieldServer Toolbox



CE Once the Diagnostic Capture is complete, email it to technical support. The Diagnostic Capture will accelerate diagnosis of the problem.

- Ensure that FieldServer Toolbox is loaded onto the local PC. Otherwise, download the FieldServer Toolbox.zip via the Sierra Monitor Resource Center Software Downloads. Reference Figure A-1.
- Extract the executable file and complete the installation.
- Connect a standard CAT5 Ethernet cable between the PC and QuickServer.
- Double click on the FS Toolbox Utility.
- 1. Take a log

a.Click on the diagnose icon of the desired device.

FieldServer Toolbox				S	N sierra monito	
Setup H	elp	IP ADDRESS	MAC ADDRESS	FAVORITE	CONNECTIVITY	
ProtoNode		192.168.3.110	00:50:4E:10:2C:92	*	•	Connect

Figure A-5. FS Toolbox Utility Screen

b.Ensure "Full Diagnostic" is selected (this is the default).

FieldServer Too	lbox			C	M sierra
Setup Help	Device Diagnostics		Constant of the second s	21	monito
DEVICES 🕀	Device Diagnostics		FAVORITE	CONNECTIVITY	
ProtoNode	Device	Diagnostics	*	•	Connect 📿 -
	ProtoNode	192.168.3.110			
	Diagnostic Test Full Diag Snap Sh Set capture peri Serial C Full Diag	nostic.			
	Enable Message log	ling			
	Show advanced optic	ons			

Figure A-6. Selecting Full Diagnostic For Selected Device

NOTICE If desired, the default capture period can be changed.

c.Click on 'Start Diagnostic'.

FieldServer Too	lbox	SMG
DEVICES +	STAR Device Diagnostics	FAVORITE CONNECTIVITY
ProtoNode	Device Diagnostics	Connect 🕻
	ProtoNode 192.168.3.110	
	Diagnostic Test Full Diagnostic Set capture period 0:05:00	
	Start Diagnostic Open Containing Folder	

Figure A-7. Selecting Start Diagnostic For Selected Device

d.When the capture period is finished, the "Diagnostic Test Complete" window will appear

2. Send Log

a.Once the diagnostic test is complete, a zip file is saved on the PC.

rieidServ	ver Tool	box				C	Sier
DEVICES	Help +	smc Device Diagnostics			FAVORITE	CONNECTIVITY	
ProtoNode		Device	Diagnostics		*	٠	Connect
		ProtoNode	192.168.3.110				
	^{smc} Diagno	stic Test Complete		X			
	smc Diagno	stic Test Complete Diagnostic test completed and th Diagnostic_2015-02-18_12-28.zip Do you want to open the contain	he results have been added to ning folder?				
	smc Diagno	stic Test Complete Diagnostic test completed and th Diagnostic_2015-02-18_12-28.zip Do you want to open the contain	he results have been added to hing folder? Open	Cancel			
	sm: Diagno	stic Test Complete Diagnostic test completed and th Diagnostic 2015-02-18 12-28.zip Do you want to open the contain	he results have been added to hing folder? Open	Cancel			
	sinc Diagno	stic Test Complete Diagnostic test completed and th Diagnostic 2015-02-18 12-28.zip Do you want to open the contain	he results have been added to hing folder? Open t Diagnostic	Cancel			

Figure A-8. Launching Explorer To Located Device's Diagnostic File

b.Choose 'Open' to launch explorer and have it point directly at the correct folder.

c.Send the Diagnostic zip file to technical support (technical support@veeder.com).

Update Firmware

To load a new version of the firmware, follow these instructions:

- 1. Extract and save the new file onto the local PC.
- 2. Open a web browser and type the IP Address of the FieldServer in the address bar.
 - Default IP Address is 192.168.1.24
 - Use the FS Toolbox utility if the IP Address is unknown (See "Lost Or Incorrect IP Address" on page A-1.).
- 3. Click on the "Diagnostics & Debugging" button.
- 4. In the Navigation Tree on the left hand side, do the following:
 - a.Click on "Setup"
 - b.Click on "File Transfer"

c.Click on the "General" tab

- 5. In the General tab, click on "Choose Files" and select the web.img file extracted in Step 1.
- 6. Click on the orange "Submit" button.

Unknown Alarm Category

If the ProtoNode receives an alarm and or device ID that it does not recognize, it will be stored in the DA_UNKCAT data array. Only the last device ID, Alarm ID, and address will be stored.

Securing QuickServer With Passwords

Access to the QuickServer can be restricted by enabling a password on the FS-GUI Passwords page – click Setup and then Passwords in the navigation panel. There are 2 access levels defined by 2 account names: Admin and User.

- The Admin account has unrestricted access to the QuickServer.
- The User account can view any QuickServer information, but cannot make any changes or restart the QuickServer.

The password needs to be a minimum of eight characters and is case sensitive.

If the password is lost, click cancel on the password authentication popup window (see Figure A-9), and email the password recovery token (see Figure A-10) to technical support to receive a temporary password from the support team. Access the QuickServer to set a new password.

password (if set) is required to change all password: ANT: You may be required to log in again after chan	s. To disable password protection, set an empty A ging a password.	ıdmin
Account Name	Admin •	
Current Admin Password		
New Password		
Confirm New Password		
Cancel	Update Password	
	password (if set) is required to change all passwords ANT: You may be required to log in again after chan Account Name Current Admin Password New Password Confirm New Password Cancel	password (if set) is required to change all passwords. To disable password protection, set an empty A ANT: You may be required to log in again after changing a password. Account Name Account Name Admin Current Admin Password New Password Confirm New Password Update Password Update Password



SMGierra Monitor
Unauthorized
If you are the authorized administrator of this device and need to recover password access, you may contact <u>support@sierramonitor.com</u> and send them the Password Recovery Token shown below.
You will be given a recovery password to enable you to log in as Admin and create a new password.
Password Recovery Token: zMtvwSDf4A==
LOGIN
www.sierramonitor.com

Figure A-10. Password Recovery Page

Appendix B: Vendor Information – Veeder-Root

The ProtoNode provides capability to support any Veeder-Root serial command by defining customized map descriptors for any command or data type. Refer to Appendix A of the 577014-368 QuickServer Industrial Protocol Gateway Installation And Setup manual. Appendix A (Security Code) of the same manual also contains instructions on using a Security Code for the TLS communications port.

Interface To BACnet & Modbus Tables

NOTICE An X in the BACnet Object ID or Modbus Register represents a one- or two-digit number that equals the Node ID. In the Liquid Sensor X Fuel Alarm examples below, with a Node ID of 3, the X will be 3; for a Node ID of 11, the X will be 11.

Point Name	Node ID	BACnet Object ID (X002)	Modbus Register (10X02)
Sensor X Fuel Alarm	3	3 002	10 3 02
Sensor X Fuel Alarm	11	11002	10 11 02

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register
Printer out of Paper	BI	1	10001
Printer Error	BI	2	10002
EEPROM Configuration Error	BI	3	10003
Battery Off	BI	4	10004
Too Many Tanks	BI	5	10005
System Security Warning	BI	6	10006
ROM Revision Warning	BI	7	10007
Remote Display Communications Error	BI	8	10008
Autodial Error	BI	9	10009
Software Module Warning	BI	10	10010
Tank Test Shutdown Warning	BI	11	10011
Protective Cover Alarm	BI	12	10012
BIR Shift Close Pending	BI	13	10013
BIR Daily Close Pending	BI	14	10014
PC(H8) Revision Warning	BI	15	10015
System Self Test Error	BI	16	10016
System Clock Incorrect Warning	BI	17	10017
System Device Poll Timeout	BI	18	10018
Maintenance Tracker NVMem	BI	19	10019
Maintenance Tracker Communication Module	BI	20	10020
Database Error	BI	21	10021
File System Error	BI	22	10022
BIR Status Warning	BI	23	10023
VR Bus Power Outage Warning	BI	24	10024
Software Upgrade Failure Alarm	BI	25	10025
iButton Fault Warning	BI	26	10026
iButton Fault Alarm	BI	27	10027
Version Upgrade Available	BI	28	10028
Expansion Box Unsupported	BI	29	10029

Table B-1. System Veeder-Root Interface To BACnet And Modbus

Table B-2. Unknown_Type Veeder-Root Interface Mappings To BACnet And Modbus

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register
Unknown Device Address	AI	1	30001
Unknown Alarm Category	AI	2	30002
Unknown Alarm Type	ÂI	3	30003

Tank X Inventory Volume Al X001 30X01 Tank X Inventory Ulage Al X002 30X02 Tank X Inventory Ulage Al X003 30X03 Tank X Inventory Height Al X006 30X04 Tank X Inventory Temperature Al X006 30X06 Tank X Inventory Temperature Al X006 30X07 Tank X Delivery Product Code Al X008 30X08 Tank X Delivery Porduct Code Al X009 30X09 Tank X Delivery Start Time from 01/01/1970 Al X011 30X11 Tank X Delivery Start Time from 01/01/1970 Al X011 30X11 Tank X Delivery Starting Tor 01/01/1970 Al X014 30X13 Tank X Delivery Starting Tor 01/01/1970 Al X014 30X14 Tank X Delivery Starting Tor 01/01/1970 Al X014 30X14 Tank X Delivery Starting Temp Al X014 30X14 Tank X Delivery Starting Temp Al X016 30X16 Tank X Delivery Ending Meter <th>Point Name</th> <th>BACnet Object Type</th> <th>BACnet Object ID</th> <th>Modbus Register</th>	Point Name	BACnet Object Type	BACnet Object ID	Modbus Register
Tank X Inventory TC Volume AI X002 30x03 Tank X Inventory Ullage AI X003 30x03 Tank X Inventory Ullage AI X006 30x06 Tank X Inventory Water AI X006 30x06 Tank X Inventory Water Volume AI X006 30x06 Tank X Delivery Product Code AI X009 30x09 Tank X Delivery Volume Onlogitation AI X009 30x09 Tank X Delivery Stop Time from 01/01/1970 AI X011 30x11 Tank X Delivery Stop Time from 01/01/1970 AI X011 30x13 Tank X Delivery Starting Volume AI X013 30x13 Tank X Delivery Starting Water AI X014 30x14 Tank X Delivery Starting Water AI X015 30x15 Tank X Delivery Starting Water AI X016 30x16 Tank X Delivery Ending Volume AI X017 30x17 Tank X Delivery Ending Mater AI X017 30x17 Tank X Delivery Ending Mater A	Tank X Inventory Volume	AI	X001	30X01
Tank X Inventory Uliage Al X003 30X03 Tank X Inventory Height Al X004 30X04 Tank X Inventory Temperature Al X006 30X06 Tank X Inventory Temperature Al X007 30X07 Tank X Delivery Product Code Al X009 30X08 Tank X Delivery Product Code Al X009 30X09 Tank X Delivery Start Time from 01/01/1970 Al X010 30X11 Tank X Delivery Start Tim from 01/01/1970 Al X012 30X12 Tank X Delivery Starting To Volume Al X014 30X14 Tank X Delivery Starting To Volume Al X014 30X14 Tank X Delivery Starting To Volume Al X016 30X16 Tank X Delivery Charing Temp Al X017 30X17 Tank X Delivery Charing Temp Al X016 30X16 Tank X Delivery Charing Temp Al X017 30X17 Tank X Delivery Charing Height Al X020 30x20 Tank X Delivery Charing Height	Tank X Inventory TC Volume	AI	X002	30X02
Tank X Al X004 30x04 Tank X Inventory Water Al X005 30x05 Tank X Inventory Water Yolume Al X006 30x06 Tank X Nentory Water Yolume Al X007 30x07 Tank X Delivery Product Code Al X009 30x09 Tank X Delivery Number of Deliveries Al X009 30x09 Tank X Delivery Starting Orol 01/01/1970 Al X011 30x11 Tank X Delivery Starting Orol Al X011 30x13 Tank X Delivery Starting Orol Al X011 30x13 Tank X Delivery Starting Orol Al X014 30x14 Tank X Delivery Starting Orol Al X015 30x16 Tank X Delivery Ending Water Al X017 30x17 Tank X Delivery Ending Mater Al X018 30x19 Tank X Delivery Ending Height Al X020 30x20 <t< td=""><td>Tank X Inventory Ullage</td><td>Al</td><td>X003</td><td>30X03</td></t<>	Tank X Inventory Ullage	Al	X003	30X03
Tank X Inventory Wafer Al X005 30x05 Tank X Inventory Temperature Al X006 30x06 Tank X Inventory Water Volume Al X007 30x07 Tank X Delivery Product Code Al X008 30x08 Tank X Delivery Number of Deliveries Al X009 30x09 Tank X Delivery Start Time from 01/01/1970 Al X010 30x10 Tank X Delivery Start Time from 01/01/1970 Al X011 30x11 Tank X Delivery Starting Toron 01/01/1970 Al X012 30x12 Tank X Delivery Starting Toron 01/01/1970 Al X011 30x11 Tank X Delivery Starting Toron 01/01/1970 Al X014 30x14 Tank X Delivery Starting Toron 01/01/1970 Al X014 30x11 Tank X Delivery Starting Toron 01/01/1970 Al X014 30x11 Tank X Delivery Starting Toron Al X014 30x16 Tank X Delivery Starting Toron Al X016 30x16 Tank X Delivery Ending Group Al X018 30x018	Tank X Inventory Height	Al	X004	30X04
Tank X Inventory Temperature AI X006 30X06 Tank X Inventory Water Volume AI X007 30X07 Tank X Delivery Product Code AI X008 30X08 Tank X Delivery Number of Delivertes AI X009 30X09 Tank X Delivery Starting Time from 01/01/1970 AI X011 30X11 Tank X Delivery Starting Volume AI X012 30X12 Tank X Delivery Starting Volume AI X013 30X13 Tank X Delivery Starting Volume AI X014 30X14 Tank X Delivery Starting Volume AI X016 30X16 Tank X Delivery Ending Volume AI X016 30X16 Tank X Delivery Ending Water AI X018 30X17 Tank X Delivery Ending Water AI X018 30X17 Tank X Delivery Ending Water AI X018 30X17 Tank X Delivery Ending Water AI X018 30X18 Tank X Delivery Ending Water AI X018 30X18 Tank X Delivery Ending Water	Tank X Inventory Water	AI	X005	30X05
Tank X Delivery Product Code Al X007 30X07 Tank X Delivery Product Code Al X008 30X08 30X08 Tank X Delivery Start Time from 01/01/1970 Al X010 30X10 Tank X Delivery Start Time from 01/01/1970 Al X011 30X11 Tank X Delivery Starting Volume Al X013 30X13 Tank X Delivery Starting Volume Al X013 30X13 Tank X Delivery Starting Volume Al X013 30X13 Tank X Delivery Starting Volume Al X015 30X15 Tank X Delivery Starting Temp Al X016 30X16 Tank X Delivery Ending Volume Al X017 30X17 Tank X Delivery Ending Water Al X019 30X19 Tank X Delivery Ending Height Al X021 30X21 Tank X Delivery Ending Height Al X021 30X21 Tank X Tank Setup Warning Bi X001 10X02 Tank X Tank Leak Alarm Bi X003 10X02 Tank X High Wat	Tank X Inventory Temperature	Al	X006	30X06
Tank X Delivery Poduct Code AI X008 30X08 Tank X Delivery Number of Deliveries AI X009 30X09 30X09 Tank X Delivery Start Time from 01/01/1970 AI X011 30X11 30X11 Tank X Delivery Starting Tom 01/01/1970 AI X011 30X11 30X12 Tank X Delivery Starting Tom 01/01/1970 AI X012 30X12 30X12 Tank X Delivery Starting Tom 01/01/1970 AI X013 30X13 30X13 Tank X Delivery Starting Tom 01/01/1970 AI X013 30X12 30X13 Tank X Delivery Starting Temp AI X016 30X16 30X16 Tank X Delivery Ending Water AI X016 30X16 30X17 Tank X Delivery Ending Temp AI X019 30X19 30X17 Tank X Delivery Starting Height AI X020 30X20 30X20 Tank X Delivery Starting Height AI X020 30X20 30X20 Tank X Delivery Starting Height AI X033 10X03 30X3	Tank X Inventory Water Volume	AI	X007	30X07
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Tank X Delivery Ending Volume AI X016 30X16 Tank X Delivery Ending TC Volume AI X017 30X17 Tank X Delivery Ending Temp AI X018 30X18 Tank X Delivery Ending Temp AI X019 30X19 Tank X Delivery Starting Height AI X020 30X20 Tank X Delivery Ending Height AI X021 30X21 Tank X Tank Leak Alarm BI X001 10X01 Tank X Tank Leak Alarm BI X002 10X02 Tank X Tank Leak Alarm BI X003 10X04 Tank X Low Limit Alarm BI X004 10X04 Tank X Tank Leak Alarm BI X006 10X06 Tank X Thigh Limit Alarm BI X006 10X06 Tank X Tank Haarm BI X008 10X08 Tank X High Limit Alarm BI X006 10X06 Tank X Norbit Height Alarm BI X001 10X11 Tank X Maximum Level Alarm BI X010 10X13	Tank X Delivery Starting Temp	Al	X015	30X15
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Tank X Monthly Test WarningBIX01610X16Tank X Annual Test WarningBIX01710X17Tank X Monthly Test AlarmBIX01810X18Tank X Monthly Test AlarmBIX01910X19Tank X Leak Test ActiveBIX02010X20Tank X No CSLD Idle Time WarningBIX02110X21Tank X Siphon Break Active WarningBIX02210X22Tank X Siphon Break Active WarningBIX02310X23Tank X CSLD Rate Increase WarningBIX02410X24Tank X AccuChart Calibration WarningBIX02510X25Tank X HRM Reconciliation WarningBIX02610X26Tank X Cold Temperature WarningBIX02610X26Tank X Missing Delivery Ticket WarningBIX02810X28Tank X Gross Leak AlarmBIX03010X30Tank X Density warningBIX03110X31Tank X Fuel Quality AlarmBIX03310X33Tank X Tank High Temperature WarningBIX03310X33	Tank X Annual Leak Test Alarm	BI	X015	10X15
Tank X Annual Test WarningBIX01710X17Tank X Monthly Test AlarmBIX01810X18Tank X Annual Test AlarmBIX01910X19Tank X Annual Test AlarmBIX01910X19Tank X Leak Test ActiveBIX02010X20Tank X No CSLD Idle Time WarningBIX02110X21Tank X Siphon Break Active WarningBIX02210X22Tank X CSLD Rate Increase WarningBIX02310X23Tank X AccuChart Calibration WarningBIX02410X24Tank X HRM Reconciliation WarningBIX02510X25Tank X HRM Reconciliation AlarmBIX02610X26Tank X Cold Temperature WarningBIX02710X27Tank X Gross Leak AlarmBIX02910X28Tank X Delivery Density WarningBIX03010X30Tank X Fuel Quality AlarmBIX03110X31Tank X Tank High Temperature WarningBIX03310X33Tank X Tank High Temperature WarningBIX03310X33	Tank X Monthly Test Warning	BI	X016	10X16
Tank X Monthly Test AlarmBIX01810X18Tank X Annual Test AlarmBIX01910X19Tank X Leak Test ActiveBIX02010X20Tank X No CSLD Idle Time WarningBIX02110X21Tank X Siphon Break Active WarningBIX02210X22Tank X Siphon Break Active WarningBIX02210X22Tank X CSLD Rate Increase WarningBIX02310X23Tank X AccuChart Calibration WarningBIX02410X24Tank X HRM Reconciliation WarningBIX02610X25Tank X Cold Temperature WarningBIX02610X26Tank X Cold Temperature WarningBIX02810X27Tank X Cold Temperature WarningBIX02810X28Tank X Delivery Ticket WarningBIX02910X29Tank X Delivery Density WarningBIX03010X30Tank X Density warningBIX03110X31Tank X Tank High Temperature WarningBIX03310X33Tank X Tank K Use Tank WarningBIX03310X34	Tank X Annual Test Warning	BI	X017	10X17
Tank X Annual Test AlarmBIX01910X19Tank X Leak Test ActiveBIX02010X20Tank X No CSLD Idle Time WarningBIX02110X21Tank X Siphon Break Active WarningBIX02210X22Tank X Siphon Break Active WarningBIX02210X22Tank X CSLD Rate Increase WarningBIX02310X23Tank X AccuChart Calibration WarningBIX02410X24Tank X HRM Reconciliation WarningBIX02510X25Tank X HRM Reconciliation AlarmBIX02610X26Tank X Cold Temperature WarningBIX02810X27Tank X Gross Leak AlarmBIX02910X29Tank X Delivery Density WarningBIX03010X30Tank X Density warningBIX03110X31Tank X Tank High Temperature WarningBIX03210X32Tank X Tank High Temperature WarningBIX03310X33Tank X Tank High Temperature WarningBIX03310X34	Tank X Monthly Test Alarm	BI	X018	10X18
Tank X Leak Test ActiveBIX02010X20Tank X No CSLD Idle Time WarningBIX02110X21Tank X Siphon Break Active WarningBIX02210X22Tank X CSLD Rate Increase WarningBIX02310X23Tank X CSLD Rate Increase WarningBIX02410X24Tank X AccuChart Calibration WarningBIX02410X25Tank X HRM Reconciliation WarningBIX02510X25Tank X HRM Reconciliation MarningBIX02610X26Tank X Cold Temperature WarningBIX02710X27Tank X Cold Temperature WarningBIX02810X28Tank X Gross Leak AlarmBIX02910X29Tank X Delivery Density WarningBIX03010X30Tank X Fuel Quality AlarmBIX03110X31Tank X Tank High Temperature WarningBIX03210X32Tank X Tank King Temperature WarningBIX03310X33Tank X Tank King Temperature WarningBIX03310X34	Tank X Annual Test Alarm	BI	X019	10X19
Tank X No CSLD Idle Time WarningBIX02110X21Tank X Siphon Break Active WarningBIX02210X22Tank X CSLD Rate Increase WarningBIX02310X23Tank X AccuChart Calibration WarningBIX02410X24Tank X AccuChart Calibration WarningBIX02510X25Tank X HRM Reconciliation WarningBIX02510X25Tank X HRM Reconciliation AlarmBIX02610X26Tank X Cold Temperature WarningBIX02710X27Tank X Cold Temperature WarningBIX02810X28Tank X Gross Leak AlarmBIX02910X29Tank X Delivery Density WarningBIX03010X30Tank X Density warningBIX03110X31Tank X Fuel Quality AlarmBIX03210X32Tank X Tank High Temperature WarningBIX03310X33Tank X Tank Kigh Temperature WarningBIX03310X34	Tank X Leak Test Active	BI	X020	10X20
Tank X Siphon Break Active WarningBIX02210X22Tank X CSLD Rate Increase WarningBIX02310X23Tank X AccuChart Calibration WarningBIX02410X24Tank X HRM Reconciliation WarningBIX02510X25Tank X HRM Reconciliation AlarmBIX02610X26Tank X Cold Temperature WarningBIX02710X27Tank X Cold Temperature WarningBIX02810X28Tank X Missing Delivery Ticket WarningBIX02910X28Tank X Gross Leak AlarmBIX02910X29Tank X Delivery Density WarningBIX03010X30Tank X Fuel Quality AlarmBIX03110X31Tank X Tank High Temperature WarningBIX03310X33Tank X Tank K Tank High Temperature WarningBIX03410X34	Tank X No CSLD Idle Time Warning	BI	X021	10X21
Tank X CSLD Rate Increase WarningBIX02310X23Tank X AccuChart Calibration WarningBIX02410X24Tank X HRM Reconciliation WarningBIX02510X25Tank X HRM Reconciliation AlarmBIX02610X26Tank X Cold Temperature WarningBIX02710X27Tank X Missing Delivery Ticket WarningBIX02910X28Tank X Gross Leak AlarmBIX02910X29Tank X Delivery Density WarningBIX03010X30Tank X Density warningBIX03110X31Tank X Fuel Quality AlarmBIX03210X32Tank X Tank High Temperature WarningBIx03310X33Tank X Tank High Temperature WarningBIx03310X34	Tank X Siphon Break Active Warning	BI	X022	10X22
Tank X AccuChart Calibration WarningBIX02410X24Tank X HRM Reconciliation WarningBIX02510X25Tank X HRM Reconciliation AlarmBIX02610X26Tank X Cold Temperature WarningBIX02710X27Tank X Missing Delivery Ticket WarningBIX02810X28Tank X Gross Leak AlarmBIX02910X29Tank X Delivery Density WarningBIX03010X30Tank X Density warningBIX03110X31Tank X Fuel Quality AlarmBIX03210X32Tank X Tank High Temperature WarningBIx03310X33Tank X Tank High Temperature WarningBIx03310X33	Tank X CSLD Rate Increase Warning	BI	X023	10X23
Tank X HRM Reconciliation WarningBIX02510X25Tank X HRM Reconciliation AlarmBIX02610X26Tank X Cold Temperature WarningBIX02710X27Tank X Missing Delivery Ticket WarningBIX02810X28Tank X Gross Leak AlarmBIX02910X29Tank X Delivery Density WarningBIX03010X30Tank X Density warningBIX03110X31Tank X Fuel Quality AlarmBIX03210X32Tank X Tank High Temperature WarningBIx03310X33Tank X Tank Light Temperature WarningBIx03310X34	Tank X AccuChart Calibration Warning	BI	X024	10X24
Tank X HRM Reconciliation AlarmBIX02610X26Tank X Cold Temperature WarningBIX02710X27Tank X Missing Delivery Ticket WarningBIX02810X28Tank X Gross Leak AlarmBIX02910X29Tank X Delivery Density WarningBIX03010X30Tank X Density warningBIX03110X31Tank X Fuel Quality AlarmBIX03210X32Tank X Tank High Temperature WarningBIx03310X33Tank X Tank Ligh Temperature WarningBIx03310X34	Tank X HRM Reconciliation Warning	BI	X025	10X25
Tank X Cold Temperature WarningBIX02710X27Tank X Missing Delivery Ticket WarningBIX02810X28Tank X Gross Leak AlarmBIX02910X29Tank X Delivery Density WarningBIX03010X30Tank X Density warningBIX03110X31Tank X Fuel Quality AlarmBIX03210X32Tank X Tank High Temperature WarningBIx03310X33Tank X Tank Low Temperature WarningBIx03410X34	Tank X HRM Reconciliation Alarm	BI	X026	10X26
Lank X Missing Delivery Ticket WarningBIX02810X28Tank X Gross Leak AlarmBIX02910X29Tank X Delivery Density WarningBIX03010X30Tank X Density warningBIX03110X31Tank X Fuel Quality AlarmBIX03210X32Tank X Tank High Temperature WarningBIx03310X33Tank X Tank Ligh Temperature WarningBIx03310X33	Tank X Cold Temperature Warning	BI	X027	10X27
Tank X Gross Leak AlarmBIX02910X29Tank X Delivery Density WarningBIX03010X30Tank X Density warningBIX03110X31Tank X Fuel Quality AlarmBIX03210X32Tank X Tank High Temperature WarningBIx03310X33Tank X Tank Low Temperature WarningBIx03410X34	Tank X Missing Delivery Ticket Warning	BI	X028	10X28
I ank X Delivery Density Warning BI X030 10X30 Tank X Density warning BI X031 10X31 Tank X Fuel Quality Alarm BI X032 10X32 Tank X Tank High Temperature Warning BI x033 10X33 Tank X Tank Ligh Temperature Warning BI x033 10X34	Lank X Gross Leak Alarm	BI	X029	10X29
I ank X Density warning BI X031 10X31 Tank X Fuel Quality Alarm BI X032 10X32 Tank X Tank High Temperature Warning BI x033 10X33 Tank X Tank Univ Temperature Warning BI x034 10X34	Tank X Delivery Density Warning	BI	X030	10X30
Lank X Fuel Quality Alarm BI X032 10X32 Tank X Tank High Temperature Warning BI x033 10X33 Tank X Tank Low Temperature Warning BI x034 10X34	Tank X Density warning	BI	X031	10X31
Tank X Tank High Temperature Warning BI X033 10X33 Tank X Tank Low Temperature Warning BI X034 10X34	Tank X Fuel Quality Alarm	BI	X032	10X32
LIARK & LARK LOW LEMPERATURE WARDING I BL I VU34 I 10X34	Tank A Tank High Temperature Warning	BI	XU33	10X33
Tank Y Donsity Offect Warning DI v025 40/25			XU34	10/04

Table B-3. Tank Veeder-Root Interface To BACnet And Modbus

Table B-4. Liquid Sensor Veeder-Root Interface Mappings To BACnet And Modbus

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register
Sensor X Setup Data Warning	BI	X001	10X01
Sensor X Fuel Alarm	BI	X002	10X02
Sensor X Out Alarm	BI	X003	10X03
Sensor X Short Alarm	BI	X004	10X04
Sensor X Water Alarm	BI	X005	10X05

Sensor X Water Out Alarm	BI	X006	10X06
Sensor X High Liquid Alarm	BI	X007	10X07
Sensor X Low Liquid Alarm	BI	X008	10X08
Sensor X Liquid Warning	BI	X009	10X09

Table B-5. Input Veeder-Root Interface To BACnet And Modbus

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register
Input X Input Setup Data Warning	BI	X001	10X01
Input X Input Normal	BI	X002	10X02
Input X Input Alarm	BI	X003	10X03
Input X Generator Off	BI	X004	10X04
Input X Generator On	BI	X005	10X05
Input X Input Out Alarm	BI	X006	10X06

Table B-6. Type A Sensor Veeder-Root Interface To BACnet And Modbus

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register
Type-A Sensor X Setup Data Warning	BI	X001	10X01
Type-A Sensor X Fuel Alarm	BI	X002	10X02
Type-A Sensor X Out Alarm	BI	X003	10X03
Type-A Sensor X Short Alarm	BI	X004	10X04
Type-A Sensor X Water Alarm	BI	X005	10X05

Table B-7. Type B Sensor Veeder-Root Interface To BACnet And Modbus

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register
Type-B Sensor X Setup Data Warning	BI	X001	10X01
Type-B Sensor X Fuel Alarm	BI	X002	10X02
Type-B Sensor X Out Alarm	BI	X003	10X03
Type-B Sensor X Short Alarm	BI	X004	10X04
Type-B Sensor X High Liquid Alarm	BI	X005	10X05
Type-B Sensor X Liquid Warning	BI	X006	10X06

Table B-8. Vapor Sensor Veeder-Root Interface To BACnet And Modbus

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register
Vapor Sensor X Setup Data Warning	BI	X001	10X01
Vapor Sensor X Fuel Alarm	BI	X002	10X02
Vapor Sensor X Out Alarm	BI	X003	10X03
Vapor Sensor X Short Alarm	BI	X004	10X04
Vapor Sensor X Water Alarm	BI	X005	10X05
Vapor Sensor X Water Out Alarm	BI	X006	10X06
Vapor Sensor X High Liquid Alarm	BI	X007	10X07
Vapor Sensor X Low Liquid Alarm	BI	X008	10X08
Vapor Sensor X Liquid Warning	BI	X009	10X09

Table B-9. Groundwater Sensor Veeder-Root Interface To BACnet And Modbus

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register
Groundwater Sensor X Setup Data Warning	BI	X001	10X01
Groundwater Sensor X Fuel Alarm	BI	X002	10X02
Groundwater Sensor X Out Alarm	BI	X003	10X03
Groundwater Sensor X Short Alarm	BI	X004	10X04
Groundwater Sensor X Water Alarm	BI	X005	10X05
Groundwater Sensor X Water Out Alarm	BI	X006	10X06
Groundwater Sensor X High Liquid Alarm	BI	X007	10X07
Groundwater Sensor X Low Liquid Alarm	BI	X008	10X08
Groundwater Sensor X Liquid Warning	BI	X009	10X09

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register
MAG Sensor X Setup Data Warning	BI	X001	10X01
MAG Sensor X Communication Alarm	BI	X002	10X02
MAG Sensor X Fault Alarm	BI	X003	10X03
MAG Sensor X Fuel Warning	BI	X004	10X04
MAG Sensor X Fuel Alarm	BI	X005	10X05
MAG Sensor X Water Warning	BI	X006	10X06
MAG Sensor X Water Alarm	BI	X007	10X07
MAG Sensor X High Liquid Warning	BI	X008	10X08
MAG Sensor X High Liquid Alarm	BI	X009	10X09
MAG Sensor X Low Liquid Warning	BI	X010	10X10
MAG Sensor X Low Liquid Alarm	BI	X011	10X11
MAG Sensor X Temperature Warning	BI	X012	10X12
MAG Sensor X Relay Active	BI	X013	10X13
MAG Sensor X Install Alarm	BI	X014	10X14

Table B-10. MAG Sensor Veeder-Root Interface To BACnet And Modbus

Table B-11. Smart Sensor Veeder-Root Interface To BACnet And Modbus

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register
Smart Sensor X Setup Data Warning	BI	X001	10X01
Smart Sensor X Communication Alarm	BI	X002	10X02
Smart Sensor X Fault Alarm	BI	X003	10X03
Smart Sensor X Fuel Warning	BI	X004	10X04
Smart Sensor X Fuel Alarm	BI	X005	10X05
Smart Sensor X Water Warning	BI	X006	10X06
Smart Sensor X Water Alarm	BI	X007	10X07
Smart Sensor X High Liquid Warning	BI	X008	10X08
Smart Sensor X High Liquid Alarm	BI	X009	10X09
Smart Sensor X Low Liquid Warning	BI	X010	10X10
Smart Sensor X Low Liquid Alarm	BI	X011	10X11
Smart Sensor X Temperature Warning	BI	X012	10X12
Smart Sensor X Relay Active		X013	10X13
Smart Sensor X Install Alarm		X014	10X14
Smart Sensor X Fault Warning		X015	10X15
Smart Sensor X Vacuum Warning		X016	10X16
Smart Sensor X No Vacuum Warning		X017	10X17

Table B-12. PLLD Veeder-Root Interface To BACnet And Modbus

Point Name	BACnet Object Type	BACnet Object ID	Modbus Register
PLLD X Setup Data Warning	BI	X001	10X01
PLLD X Gross Test Fail Alarm	BI	X002	10X02
PLLD X Annual Test Fail Alarm	BI	X003	10X03
PLLD X Periodic Test Needed Warning	BI	X004	10X04
PLLD X Periodic Test Needed Alarm	BI	X005	10X05
PLLD X Sensor Open Alarm	BI	X006	10X06
PLLD X High Pressure Alarm	BI	X007	10X07
PLLD X Shutdown Alarm	BI	X008	10X08
PLLD X High Pressure Warning	BI	X009	10X09
PLLD X Continuous Handle On Warning	BI	X010	10X10
PLLD X Periodic Test Fail Alarm	BI	X011	10X11
PLLD X Annual Test Needed Warning	BI	X012	10X12
PLLD X Annual Test Needed Alarm	BI	X013	10X13
PLLD X Low Pressure Alarm	BI	X014	10X14
PLLD X Sensor Short Alarm	BI	X015	10X15
PLLD X Continuous Handle On Alarm	BI	X016	10X16
PLLD X Fuel Out Alarm	BI	X017	10X17
PLLD X Line Equipment Alarm	BI	X018	10X18
PLLD X Gross Test Needed Alarm	BI	X019	10X19

Appendix C: "A" Bank DIP Switch Settings

Address	A0	A1	A2	A3	A4	A5	A6
26	Off	On	Off	On	On	Off	Off
27	On	On	Off	On	On	Off	Off
28	Off	Off	On	On	On	Off	Off
29	On	Off	On	On	On	Off	Off
30	Off	On	On	On	On	Off	Off
31	On	On	On	On	On	Off	Off
32	Off	Off	Off	Off	Off	On	Off
33	On	Off	Off	Off	Off	On	Off
34	Off	On	Off	Off	Off	On	Off
35	On	On	Off	Off	Off	On	Off
36	Off	Off	On	Off	Off	On	Off
37	On	Off	On	Off	Off	On	Off
38	Off	On	On	Off	Off	On	Off
39	On	On	On	Off	Off	On	Off
40	Off	Off	Off	On	Off	On	Off
41	On	Off	Off	On	Off	On	Off
42	Off	On	Off	On	Off	On	Off
43	On	On	Off	On	Off	On	Off
44	Off	Off	On	On	Off	On	Off
45	On	Off	On	On	Off	On	Off
46	Off	On	On	On	Off	On	Off
47	On	On	On	On	Off	On	Off
48	Off	Off	Off	Off	On	On	Off
49	On	Off	Off	Off	On	On	Off
50	Off	On	Off	Off	On	On	Off

Table C-1. A Bank DIP Switch Settings For Addresses 26-50

Address	A0	A1	A2	A3	A4	A5	A6
51	On	On	Off	Off	On	On	Off
52	Off	Off	On	Off	On	On	Off
53	On	Off	On	Off	On	On	Off
54	Off	On	On	Off	On	On	Off
55	On	On	On	Off	On	On	Off
56	Off	Off	Off	On	On	On	Off
57	On	Off	Off	On	On	On	Off
58	Off	On	Off	On	On	On	Off
59	On	On	Off	On	On	On	Off
60	Off	Off	On	On	On	On	Off
61	On	Off	On	On	On	On	Off
62	Off	On	On	On	On	On	Off
63	On	On	On	On	On	On	Off
64	Off	Off	Off	Off	Off	Off	On
65	On	Off	Off	Off	Off	Off	On
66	Off	On	Off	Off	Off	Off	On
67	On	On	Off	Off	Off	Off	On
68	Off	Off	On	Off	Off	Off	On
69	On	Off	On	Off	Off	Off	On
70	Off	On	On	Off	Off	Off	On
71	On	On	On	Off	Off	Off	On
72	Off	Off	Off	On	Off	Off	On
73	On	Off	Off	On	Off	Off	On
74	Off	On	Off	On	Off	Off	On
75	On	On	Off	On	Off	Off	On

Table C-2. A Bank DIP Switch Settings For Addresses 51 - 75

Address	A0	A1	A2	A3	A4	A5	A6
76	Off	Off	On	On	Off	Off	On
77	On	Off	On	On	Off	Off	On
78	Off	On	On	On	Off	Off	On
79	On	On	On	On	Off	Off	On
80	Off	Off	Off	Off	On	Off	On
81	On	Off	Off	Off	On	Off	On
82	Off	On	Off	Off	On	Off	On
83	On	On	Off	Off	On	Off	On
84	Off	Off	On	Off	On	Off	On
85	On	Off	On	Off	On	Off	On
86	Off	On	On	Off	On	Off	On
87	On	On	On	Off	On	Off	On
88	Off	Off	Off	On	On	Off	On
89	On	Off	Off	On	On	Off	On
90	Off	On	Off	On	On	Off	On
91	On	On	Off	On	On	Off	On
92	Off	Off	On	On	On	Off	On
93	On	Off	On	On	On	Off	On
94	Off	On	On	On	On	Off	On
95	On	On	On	On	On	Off	On
96	Off	Off	Off	Off	Off	On	On
97	On	Off	Off	Off	Off	On	On
98	Off	On	Off	Off	Off	On	On
99	On	On	Off	Off	Off	On	On
100	Off	Off	On	Off	Off	On	On

Table C-3. A Bank DIP Switch Settings For Addresses 76 - 100

Address	A0	A1	A2	A3	A4	A5	A6
101	On	Off	On	Off	Off	On	On
102	Off	On	On	Off	Off	On	On
103	On	On	On	Off	Off	On	On
104	Off	Off	Off	On	Off	On	On
105	On	Off	Off	On	Off	On	On
106	Off	On	Off	On	Off	On	On
107	On	On	Off	On	Off	On	On
108	Off	Off	On	On	Off	On	On
109	On	Off	On	On	Off	On	On
110	Off	On	On	On	Off	On	On
111	On	On	On	On	Off	On	On
112	Off	Off	Off	Off	On	On	On
113	On	Off	Off	Off	On	On	On
114	Off	On	Off	Off	On	On	On
115	On	On	Off	Off	On	On	On
116	Off	Off	On	Off	On	On	On
117	On	Off	On	Off	On	On	On
118	Off	On	On	Off	On	On	On
119	On	On	On	Off	On	On	On
120	Off	Off	Off	On	On	On	On
121	On	Off	Off	On	On	On	On
122	Off	On	Off	On	On	On	On
123	On	On	Off	On	On	On	On
124	Off	Off	On	On	On	On	On
125	On	Off	On	On	On	On	On

Table C-4. A Bank DIP Switch Settings For Addresses 101-125

Address	A0	A1	A2	A3	A4	A5	A6
126	Off	On	On	On	On	On	On
127	On						
128	Off						
129	On	Off	Off	Off	Off	Off	Off
130	Off	On	Off	Off	Off	Off	Off
131	On	On	Off	Off	Off	Off	Off
132	Off	Off	On	Off	Off	Off	Off
133	On	Off	On	Off	Off	Off	Off
134	Off	On	On	Off	Off	Off	Off
135	On	On	On	Off	Off	Off	Off
136	Off	Off	Off	On	Off	Off	Off
137	On	Off	Off	On	Off	Off	Off
138	Off	On	Off	On	Off	Off	Off
139	On	On	Off	On	Off	Off	Off
140	Off	Off	On	On	Off	Off	Off
141	On	Off	On	On	Off	Off	Off
142	Off	On	On	On	Off	Off	Off
143	On	On	On	On	Off	Off	Off
144	Off	Off	Off	Off	On	Off	Off
145	On	Off	Off	Off	On	Off	Off
146	Off	On	Off	Off	On	Off	Off
147	On	On	Off	Off	On	Off	Off
148	Off	Off	On	Off	On	Off	Off
149	On	Off	On	Off	On	Off	Off
150	Off	On	On	Off	On	Off	Off

Table C-5. A Bank DIP Switch Settings For Addresses 126 - 150

Address	A0	A1	A2	A3	A4	A5	A6
151	On	On	On	Off	On	Off	Off
152	Off	Off	Off	On	On	Off	Off
153	On	Off	Off	On	On	Off	Off
154	Off	On	Off	On	On	Off	Off
155	On	On	Off	On	On	Off	Off
156	Off	Off	On	On	On	Off	Off
157	On	Off	On	On	On	Off	Off
158	Off	On	On	On	On	Off	Off
159	On	On	On	On	On	Off	Off
160	Off	Off	Off	Off	Off	On	Off
161	On	Off	Off	Off	Off	On	Off
162	Off	On	Off	Off	Off	On	Off
163	On	On	Off	Off	Off	On	Off
164	Off	Off	On	Off	Off	On	Off
165	On	Off	On	Off	Off	On	Off
166	Off	On	On	Off	Off	On	Off
167	On	On	On	Off	Off	On	Off
168	Off	Off	Off	On	Off	On	Off
169	On	Off	Off	On	Off	On	Off
170	Off	On	Off	On	Off	On	Off
171	On	On	Off	On	Off	On	Off
172	Off	Off	On	On	Off	On	Off
173	On	Off	On	On	Off	On	Off
174	Off	On	On	On	Off	On	Off
175	On	On	On	On	Off	On	Off

Table C-6. A Bank DIP Switch Settings For Addresses 151 - 175

Address	A0	A1	A2	A3	A4	A5	A6
176	Off	Off	Off	Off	On	On	Off
177	On	Off	Off	Off	On	On	Off
178	Off	On	Off	Off	On	On	Off
179	On	On	Off	Off	On	On	Off
180	Off	Off	On	Off	On	On	Off
181	On	Off	On	Off	On	On	Off
182	Off	On	On	Off	On	On	Off
183	On	On	On	Off	On	On	Off
184	Off	Off	Off	On	On	On	Off
185	On	Off	Off	On	On	On	Off
186	Off	On	Off	On	On	On	Off
187	On	On	Off	On	On	On	Off
188	Off	Off	On	On	On	On	Off
189	On	Off	On	On	On	On	Off
190	Off	On	On	On	On	On	Off
191	On	On	On	On	On	On	Off
192	Off	Off	Off	Off	Off	Off	On
193	On	Off	Off	Off	Off	Off	On
194	Off	On	Off	Off	Off	Off	On
195	On	On	Off	Off	Off	Off	On
196	Off	Off	On	Off	Off	Off	On
197	On	Off	On	Off	Off	Off	On
198	Off	On	On	Off	Off	Off	On
199	On	On	On	Off	Off	Off	On
200	Off	Off	Off	On	Off	Off	On

Table C-7. A Bank DIP Switch Settings For Addresses 176 - 200

Address	A0	A1	A2	A3	A4	A5	A6
201	On	Off	Off	On	Off	Off	On
202	Off	On	Off	On	Off	Off	On
203	On	On	Off	On	Off	Off	On
204	Off	Off	On	On	Off	Off	On
205	On	Off	On	On	Off	Off	On
206	Off	On	On	On	Off	Off	On
207	On	On	On	On	Off	Off	On
208	Off	Off	Off	Off	On	Off	On
209	On	Off	Off	Off	On	Off	On
210	Off	On	Off	Off	On	Off	On
211	On	On	Off	Off	On	Off	On
212	Off	Off	On	Off	On	Off	On
213	On	Off	On	Off	On	Off	On
214	Off	On	On	Off	On	Off	On
215	On	On	On	Off	On	Off	On
216	Off	Off	Off	On	On	Off	On
217	On	Off	Off	On	On	Off	On
218	Off	On	Off	On	On	Off	On
219	On	On	Off	On	On	Off	On
220	Off	Off	On	On	On	Off	On
221	On	Off	On	On	On	Off	On
222	Off	On	On	On	On	Off	On
223	On	On	On	On	On	Off	On
224	Off	Off	Off	Off	Off	On	On
225	On	Off	Off	Off	Off	On	On

Table C-8. A Bank DIP Switch Settings For Addresses 201 - 225

Address	A0	A1	A2	A3	A4	A5	A6
226	Off	On	Off	Off	Off	On	On
227	On	On	Off	Off	Off	On	On
228	Off	Off	On	Off	Off	On	On
229	On	Off	On	Off	Off	On	On
230	Off	On	On	Off	Off	On	On
231	On	On	On	Off	Off	On	On
232	Off	Off	Off	On	Off	On	On
233	On	Off	Off	On	Off	On	On
234	Off	On	Off	On	Off	On	On
235	On	On	Off	On	Off	On	On
236	Off	Off	On	On	Off	On	On
237	On	Off	On	On	Off	On	On
238	Off	On	On	On	Off	On	On
239	On	On	On	On	Off	On	On
240	Off	Off	Off	Off	On	On	On
241	On	Off	Off	Off	On	On	On
242	Off	On	Off	Off	On	On	On
243	On	On	Off	Off	On	On	On
244	Off	Off	On	Off	On	On	On
245	On	Off	On	Off	On	On	On
246	Off	On	On	Off	On	On	On
247	On	On	On	Off	On	On	On
248	Off	Off	Off	On	On	On	On
249	On	Off	Off	On	On	On	On
250	Off	On	Off	On	On	On	On
251	On	On	Off	On	On	On	On
252	Off	Off	On	On	On	On	On
253	On	Off	On	On	On	On	On
254	Off	On	On	On	On	On	On
255	On	On	On	On	On	On	On

Table C-9. A Bank DIP Switch Settings For Addresses 226-255

Appendix D: Reference

Specifications



NOTICE Specifications subject to change without notice.

Item	Description
Electrical Connections	One 6-pin Phoenix connector with RS-232 port (+/-/gnd) and Power port (+/-/Frame-gnd) One 3-pin Phoenix connector with RS-485 port (+/-/gnd) One Ethernet 10/100 BaseT port
Approvals	CE Certified; TUV approved to UL 916, EN 60950-1, EN 50491-3 and CSA C22-2 standards; FCC Class A Part 15; DNP 3.0 Conformance Tested; RoHS Compliant; CSA 205 Approved
	BTL Marked
Power Requirements	Multi-mode power adapter 9-30V DC or 12 - 24V AC
Physical Dimensions	11.5 cm L x 8.3 cm W x 4.1 cm H (4.5 x 3.2 x 1.6 in)
Weight	0.2 kg (0.4 lbs)
Operating Temperature	-40°C o 75°C (-40°F to 167°F)
Surge Suppression	EN61000-4-2 ESD EN61000-4-3 EMC EN61000-4-4 EFT
Humidity	5 - 90% RH (non-condensing)

Table D-1. QuickServer ProtoNode Specifications

Compliance With UL Regulations

For UL compliance, the following instructions must be met when operating QuickServer.

- The units shall be powered by listed LPS or Class 2 power supply suited to the expected operating temperature range.
- The interconnecting power connector and power cable shall:
 - Comply with local electrical code

- Be suited to the expected operating temperature range
- Meet the current and voltage rating for QuickServer
- Furthermore, the interconnecting power cable shall:
 - Be of length not exceeding 3.05m (118.3")
 - Be constructed of materials rated VW-1, FT-1 or better
- If the unit is to be installed in an operating environment with a temperature above 65 °C, it should be installed in a Restricted Access Area requiring a key or a special tool to gain access.
- This device must not be connected to a LAN segment with outdoor wiring.

Certifications - BTL Mark - BACnet® Testing Laboratory



The BTL Mark on QuickServer is a symbol that indicates that a product has passed a series of rigorous tests conducted by an independent laboratory which verifies that the product correctly implements the BACnet features claimed in the listing. The mark is a symbol of a high-quality BACnet product.

Go to www.BACnetInternational.net for more information about the BACnet Testing Laboratory. Click <u>here</u> for the BACnet PIC Statement.

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