

QWL2040 Panel

Integrated Building Manager



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Introduction

Congratulations on choosing the TCS QWL2040 Panel! Purpose-built for facilities managers responsible for multiple sites across multiple geographic locations, the QWL2040 Panel is an integrated building manager that provides the tools to increase energy savings, reduce operational and maintenance costs, provide better indoor air quality, and increase occupant comfort.

The QWL2040 Panel utilizes Ubiquity Cloud™ building management technology, a QD2040 Gateway, an SLQ218 Lighting Controller, and an SEQ100 Pulse Meter for continuous monitoring of electrical, gas, and water usage.

This manual includes all the information you will need to properly install and set up your Panel. It is divided into four sections:

- **Installation:** The Installation section covers the initial mounting, input wiring and connection of the Panel to your network of control devices. Read and thoroughly understand this section before beginning the actual installation of the unit.
- **Gateway Configuration:** Most Panels come with the Gateway preconfigured; if your Panel was preconfigured by TCS, you can skip this section. However, some customers order their Panels without being configured beforehand; for those customers, we include this section which contains essential information necessary to set up the Panel Gateway.
- **Lighting/Pulse Meter Programming:** Lighting and pulse meter programming can be accomplished via Ubiquity Cloud. Read the Lighting/Meter Programming section to learn the basics of properly programming the SLQ218 Lighting Controller and the SEQ100 Pulse Meter to your site specifications.
- **Appendices:** Appendices A, B, and C provide supplemental information regarding connecting a laptop or keyboard and monitor directly to the Panel for local programming and/or configuring the components of the Panel. Appendix D provides information on using TCS Insight software, a service tool that can be used to program the QWL locally. TCS Insight is a very powerful service tool that should be used only by trained technicians.

If you have any questions regarding your Panel or your network, do not hesitate to contact TCS Technical Support at 800.288.9383, ext. 2.

Glossary of Terms

Astronomical Time Clock/Time: Timekeeping settings based on the sunrise and sunset at the geographical location of the unit.

Baud Rate: The speed with which a device communicates over a network connection.

BTU: British Thermal Unit. A measure of the quantity heat required to raise the temperature of one pound of liquid water one degree Fahrenheit.

Cellular Modem: A type of modem that allows a personal computer or a router to receive Internet access via a mobile broadband connection instead of using telephone or cable television lines.

CLI: Command Line Interface. A shell for interactive access to operating system functions or services.

Cloud/Cloud-based: The “cloud” refers to servers that are accessed over the Internet, and the software and databases that run on those servers. By using cloud computing, users and companies don’t have to manage physical servers or run software applications on their own machines.

CT Value: Current Transformer Value. The value of the current wired to the meter, usually expressed in amps.

Current Transducer: A device which converts current into a proportional industrial standard electrical signal.

DHCP: Dynamic Host Configuration Protocol. A network management protocol used on Internet Protocol local area networks. A DHCP server must be present on the network.

DNS: Domain Name System. A hierarchical and decentralized naming system for computers, services, or other resources connected to the Internet or a private network.

Dry Contact: A secondary set of contacts of a relay circuit which does not make or break the primary current being controlled by the relay.

EEMS: Enterprise Energy Management System. A system of computer-aided tools used by operators of electric utility grids to monitor, control, and optimize the performance of the generation or transmission system.

Firewall: A technological barrier designed to prevent unauthorized or unwanted communications between computer networks or hosts.

Gateway: The node in a computer network that passes traffic from a local network to other networks or the Internet (router).

IP: Internet Protocol. A set of rules for sending data across a network

kW: Kilowatt. A unit of electrical power. This unit equals 1000 watts. The kW is typically used to express the output power of electric motors, tools, machines, and heaters.

kWh: Kilowatt-hour. A unit of energy equal to 3600 kilojoules. The kWh is commonly used as a billing unit for energy delivered to consumers by electric utilities.

LAN: Local Area Network. A network that interconnects computers within a limited area such as a residence, school, laboratory, university campus or office building.[

LED: Light Emitting Diode. A semiconductor light source that emits light when current flows through it.

MAC Address: Media Access Control Address. A unique identifier assigned to a Network Interface Card (NIC) for use in communications within a network segment.

Modbus: A standard data communication protocol for use in programmable logic controllers, thermostats, and similar devices connected to the same cable or Ethernet network.

NIC: Network Interface Card. A circuit board or chip, which is installed on a computer so that it can connect to a network.

Polling: The process where a computer or controlling device waits for an external device to check its readiness or state.

Proxy/Proxy Server: A server application or appliance that acts as an intermediary for requests from clients seeking resources from servers that provide those resources.

Installation

RS485: A networking standard which defines the electrical characteristics of drivers and receivers for use in serial communications systems.

TCP: Transmission Control Protocol. A standard that defines how to establish and maintain a network conversation through which application programs can exchange data.

TCP/IP: Transmission Control Protocol/Internet Protocol. A set of standardized rules that allow computers to communicate on a network such as the internet.

UI: User Interface. The space where interactions between humans and computers occur, e.g., keyboard, mouse, monitor.

USB: Universal Serial Bus. A standardized plug and play interface that allows a computer to communicate with peripherals and other devices.

WAN: Wide Area Network. A telecommunications network that extends over a large geographic area for the primary purpose of computer networking.

Material List

- QWL2040 Panel
- External Power Supply

Wall Mounting

The Panel is designed for wall mounting using four #10 pan head screws.

The unit MUST be powered down while mounting to the wall.

When selecting a location to mount the Panel, be sure to allow space for cable connections.

Locate the Panel away from excessive dust, heat sources, moisture or direct sunlight. The ideal environment is a server room. The temperature of the room should not exceed 77°F (25°C); good ventilation is mandatory to provide sufficient air cooling.

Wiring Access Port

The Panel comes with a one-inch wiring access port pre-drilled in the top of the unit. Drilling into the unit to add additional wiring access ports is at your own risk. Use caution when drilling into the unit; be sure to capture all metal shavings.

The unit MUST be powered down while drilling into the unit.

Factory IP Network Address Configuration

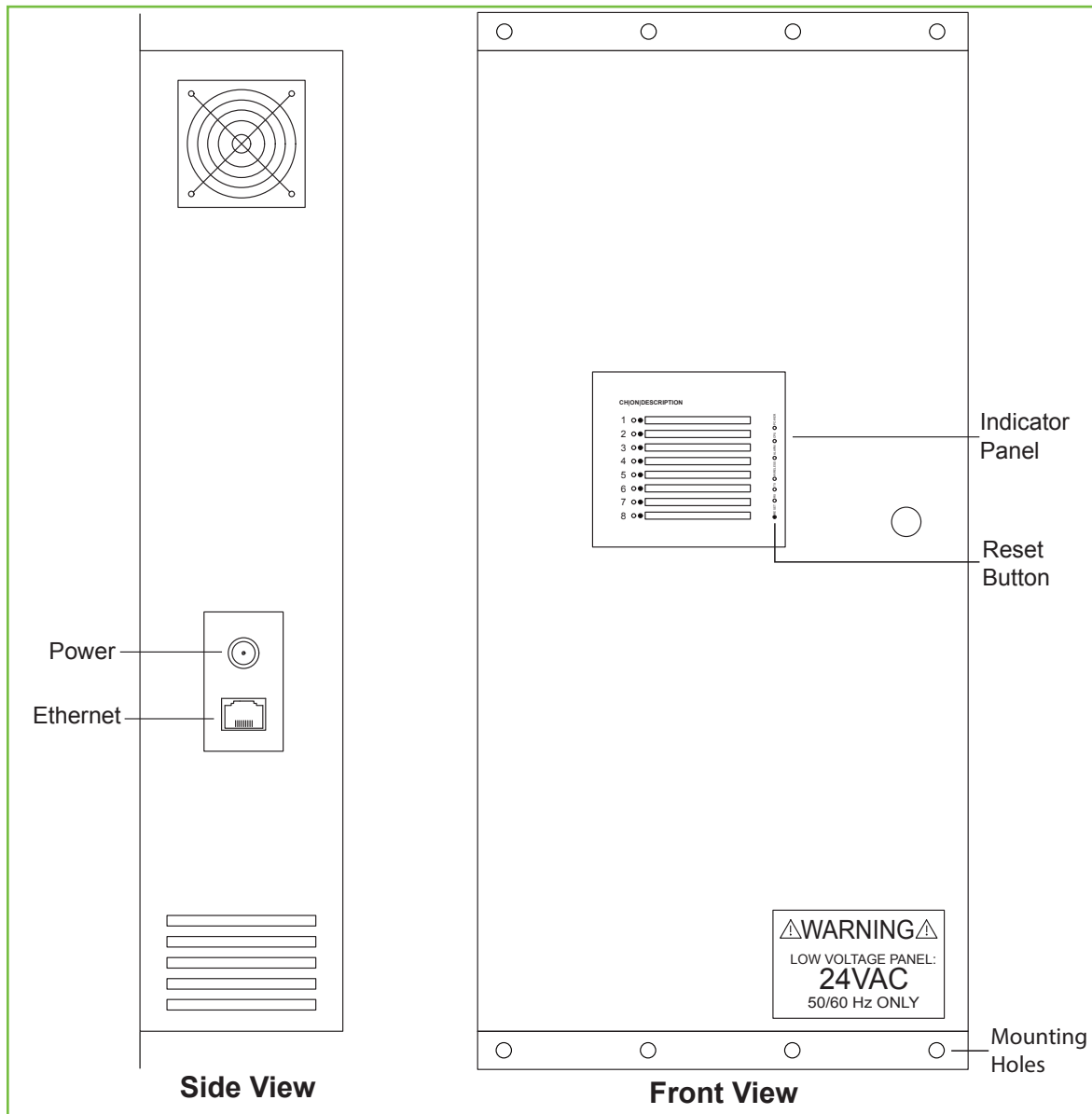
The Panel is typically purchased pre-configured to customer-specific IP networks and no additional software configuration is required. If your Panel was purchased without pre-configuration, it will be shipped with DHCP client enabled.

The IP network configuration page is accessible through a web browser via a computer, e.g., a laptop, that is physically connected to the unit with a standard RJ-45 Ethernet cable. Contact your network administrator to determine the local IP address (refer to the MAC address available on the product label).

Power and Communication Connections

Make the following power and communication connections:

Power: Attach the included power supply to the side of the Panel and insert the plug into a 120VAC outlet. Upon connection, the unit should power up automatically. If it does not, press the Reset button located on the front Indicator Panel once to restart the unit.

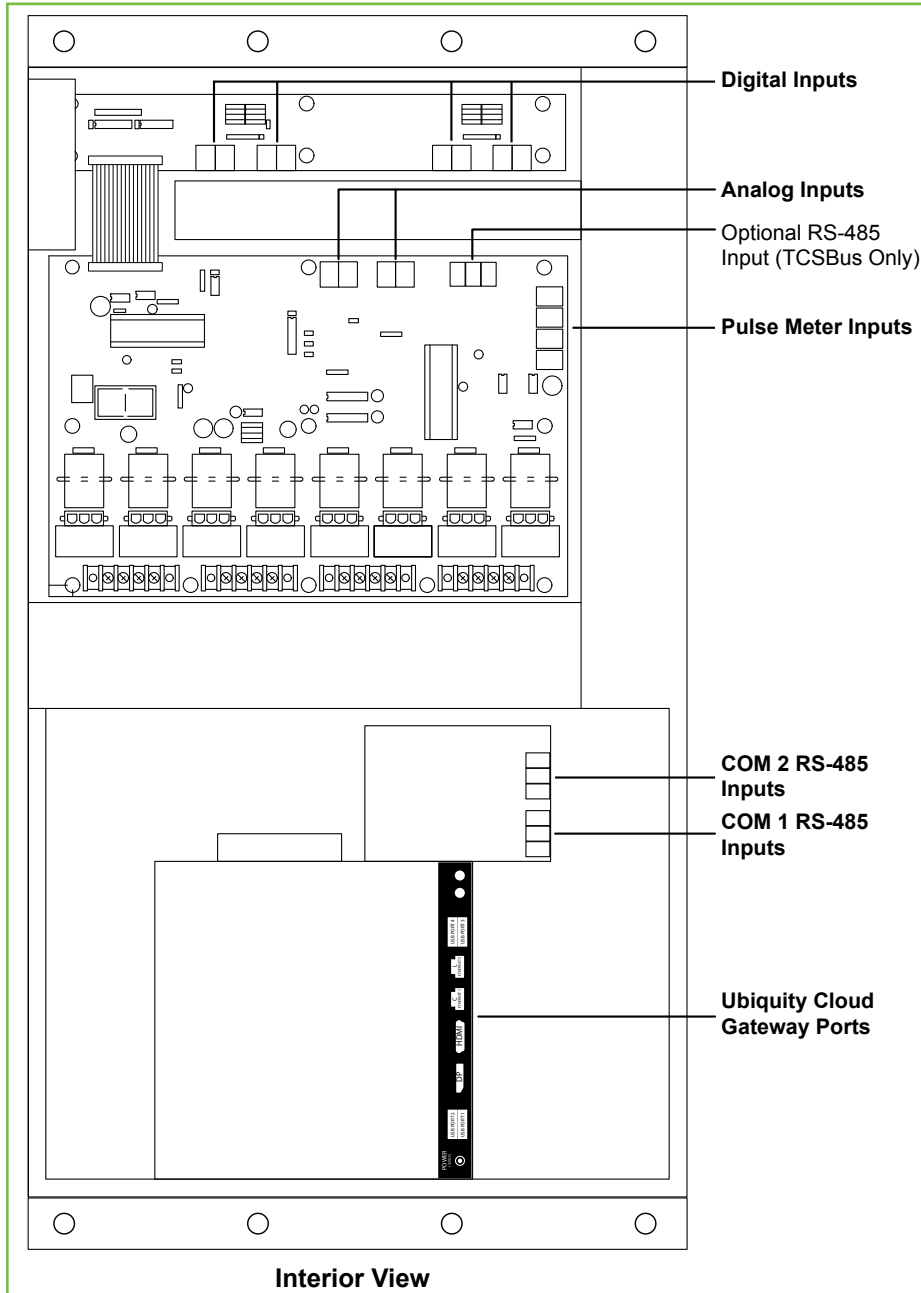


Exterior views

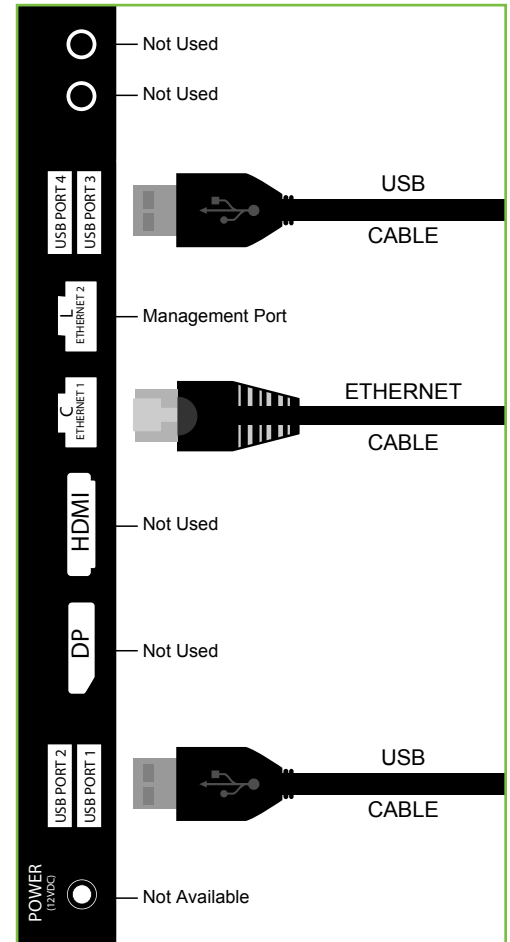
Cloud Connectivity Ethernet Port: Connect an Ethernet cable to the Ethernet port on the side of the Panel. Connect the other end of the cable to your network switch port as determined by your local network administrator or IT department.

NOTE: If using a cellular modem provided by TCS, connect the Ethernet cable to the LAN port on the modem (contact TCS Technical Support at 800.288.9383, ext. 2 for additional information).

Installation



Interior view of boards and wiring connections



Closeup of Ubiquity Cloud gateway ports

Input Wiring

NOTE: The Local Management Ethernet Port (L) on the side of the Ubiquity Cloud Gateway is used only for local onsite management of the QWL2040 Panel device. Optionally, this port can be configured as secondary Internet fail-over port (see [Appendix D: Configuring Local Management Port as a Fail-Over Port on page 40](#)).

COM Ports (RS485 Network): Connect up to two RS485 Networks to the inputs on Com Port panel or on the Serial Board adjacent to the Gateway. (see [RS485 Controller Network Wiring & Setup on page 10](#)).

USB Ports 1 – 4: As an option, you can connect up to 64 RS485 controller networks via the four USB ports on the side of the Ubiquity Cloud Gateway, by using QD1010 USB-to-RS485 converters (not included).

Installation

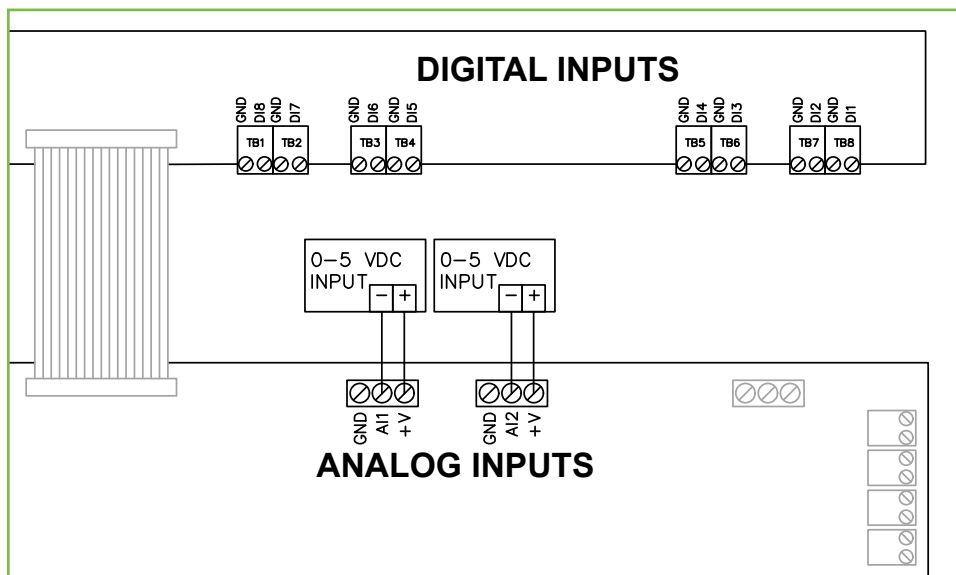
NOTE: Do not install line voltage devices (120VAC or greater) within this panel.

The QWL2040 Panel is comprised of the following components:

- Ubiquity Cloud Gateway
- SLQ218 Lighting Controller
- SLQ100 Electrical Pulse Meter

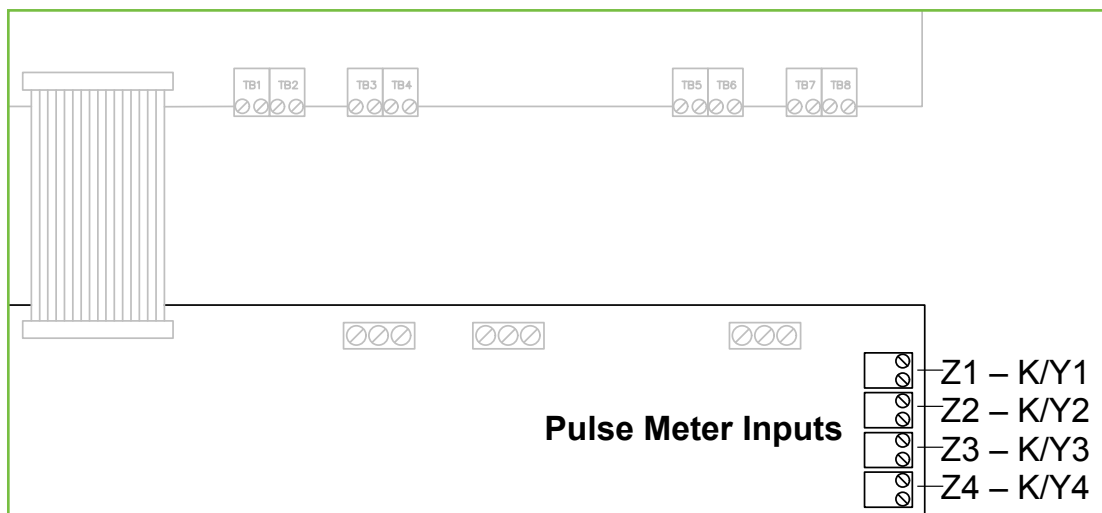
These components accept the following inputs:

- **SLQ218 Lighting Controller:**
 - Eight dry contact/digital inputs
 - Two 0 – 5VDC analog inputs



Closeup of lighting controller inputs

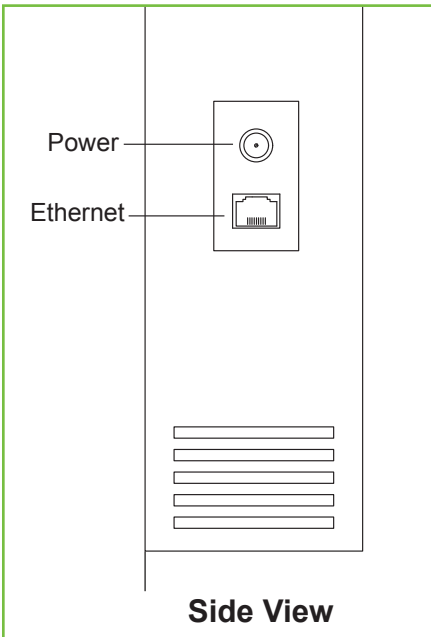
- **SLQ100 Electrical Pulse Meter:**
 - Four pulse meter inputs



Closeup of pulse meter inputs

Installation

- **Ubiquity Cloud Site Building Manager:**
 - Power from a 120VAC @ 60Hz to 12VDC power supply module (included)



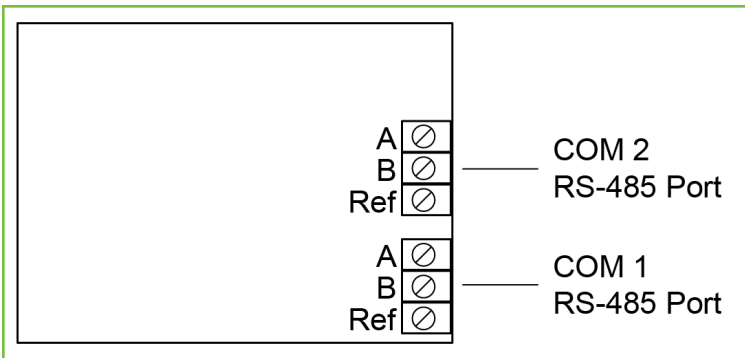
Closeup of side view of QWL2040 Panel

RS485 Controller Network Wiring & Setup

The QWL2040 Panel can handle as many as 64 connected controllers on each port, including COM and serial ports. All controllers connected to the network must be programmed with the same communication baud rate as well as a unique communication address from 0 to 255, excluding 248. The baud rate is programmed onsite locally through the monitor and keyboard, or through remote access through the network. On controllers with displays, this can be done from the controller using its keypad and display, by using TCS Insight software, or by calling TCS Technical Support (800.288.9383, ext. 2). TCS Technical Support can access the QWL2040 Panel online and change the address of a controller.

Network Wiring

The Panel has a serial board with two RS485 ports that will accept Modbus and TCSbus Connections. These are the recommended ports to use for your controller networks.



Recommended RS485 port locations on serial board

NOTE: There is an additional RS485 port on the Lighting Control/Pulse Meter Panel labelled "External RS485"; however, that port will only accept TCSbus.

Installation

Use 22 AWG, twisted shielded two-conductor or three-conductor cable for network wiring. Network wiring should start at one controller and go to the next and then go to the next, until the final controller is reached. Wiring is such that all “A” wires are connected to “A” wires, all “B” wires are connected to “B” wires, and all “REF” wires are connected to “REF” wires.

NOTE: “A” refers to the negative (–) RS485 connection and “B” refers to the positive (+) RS485 connection.

A 120 Ω terminating resistor should be placed at each of the two ends of the network directly across the “A” and “B” wires.

- If the Panel will be at one end of the network, hard-wire a 120 Ω terminating resistor across the “A” and “B” terminals of the QWL2040 Panel (See [Three-Wire Network Wiring on page 11](#)).
- If the Panel will be in the middle of the network, do not wire in the terminating resistor on the QWL2040 Panel terminal block

Connect one end (ideally the furthest end from the QWL2040 Panel) of the shield wire of the network wiring to earth ground.

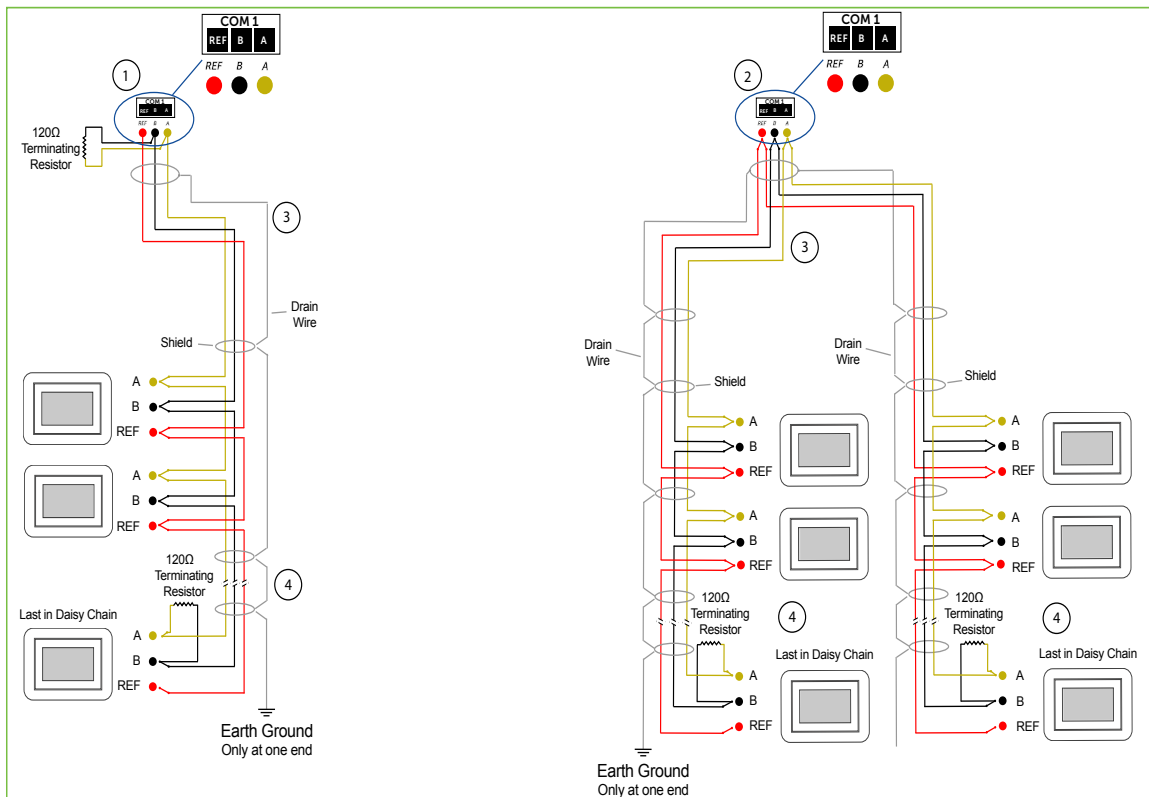
NOTE: If you encounter time-out errors, contact TCS Technical Support (800.288.9383, ext. 2).

Three-Wire Network Wiring

Follow this wiring diagram for all three-wire systems (this is common).

NOTES: In the middle of the network, all network wiring shields should be twisted together and taped off to prevent accidental grounding. More than one ground on the network wiring can result in communication failure.

A maximum of two terminating resistors can be used.



1 QWL2040 Panel at end of the network.

2 QWL2040 Panel in the middle of the network.

3 Shielded, twisted three-conductor communications wiring with one end earth grounded. (120 Ω balancing resistors provided.)

4 Shielded, twisted three-conductor communications wiring with one end earth grounded. (120 Ω balancing resistors provided.)

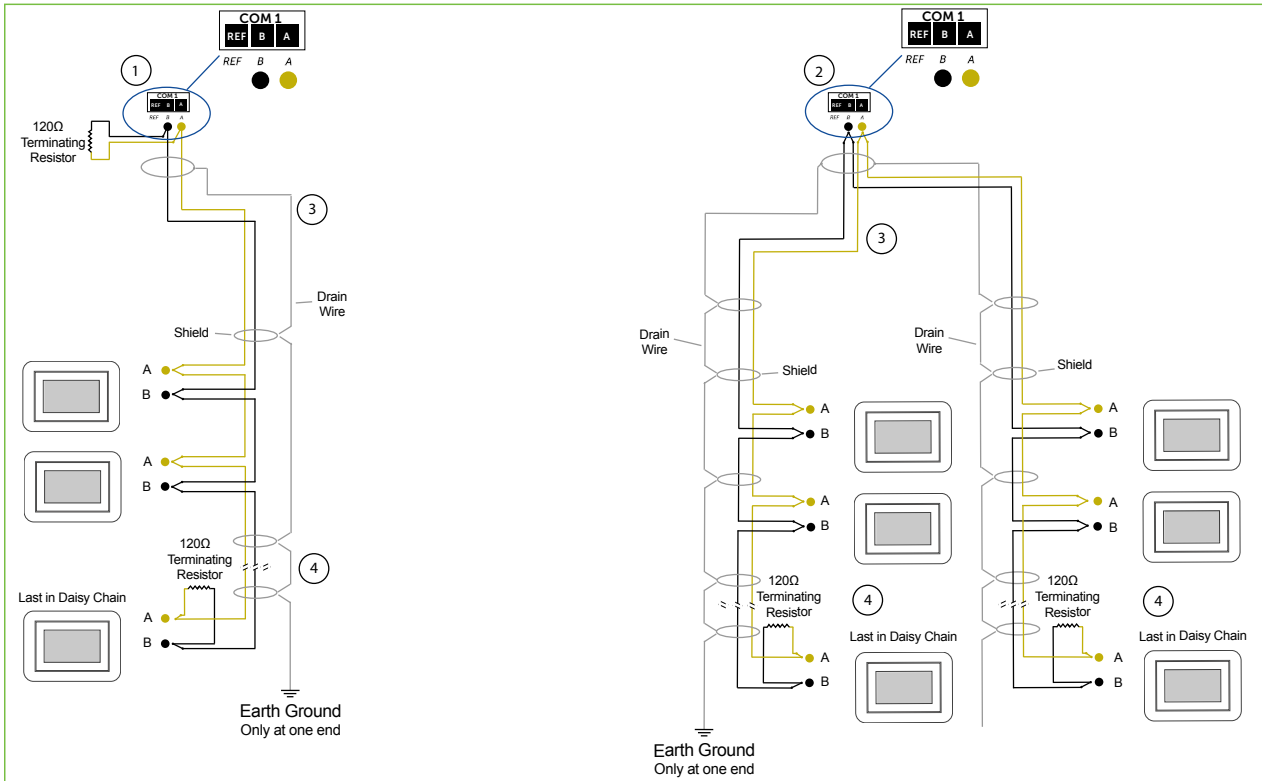
NOTES:

1. If using more than 64 controllers, use the second RS485 port or additional QD1010 adapters.
2. Each controller must use the same baud rate and be assigned a unique address.

Installation

Two-Wire Network Wiring

Follow this wiring diagram for two-wire (Modbus) wiring systems (this is not common).



Two-wire diagram

- ① QWL2040 Panel at end of the network.
- ② QWL2040 Panel in middle of the network.
- ③ Shielded, twisted two-conductor communications wiring with one end earth grounded. (120 Ω balancing resistors provided.)
- ④ Shielded, twisted two-conductor communications wiring with one end earth grounded. (120 Ω balancing resistors provided.)

NOTES:

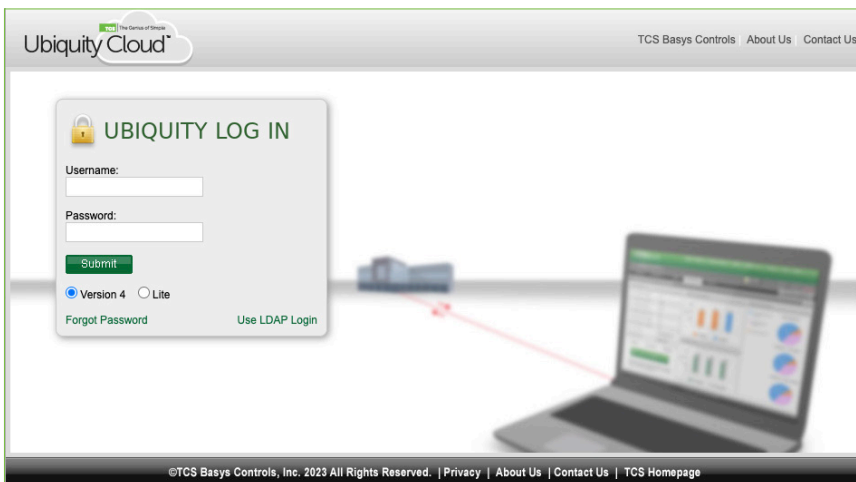
1. If using more than 64 controllers, use the second RS485 port or additional QD1010 adapters.
2. Each controller must use the same baud rate and be assigned a unique address.

Startup

1. Verify all RS485 connections from the controller network to the QWL2040 Panel are complete.

NOTE: Refer to [Power and Communication Connections on page 7](#) for steps 2 through 5 below.

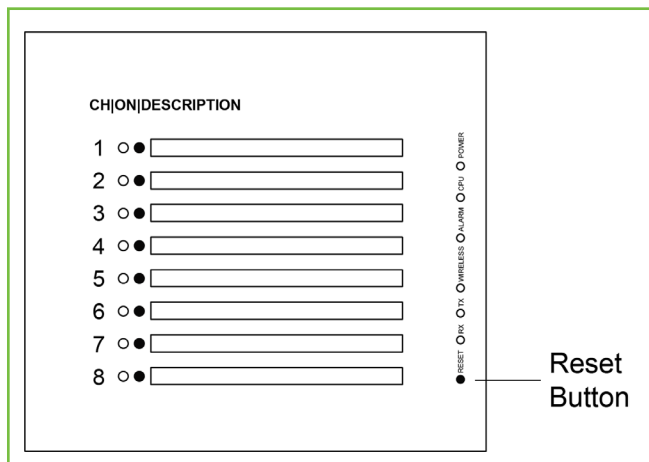
2. Verify that all 24V power wiring to the controller network has been completed; all controllers are powered on and each controller has been programmed with a unique RS485 address.
3. Connect one end of the Ethernet cable to the Ethernet port 1 (C) on the Panel, and the other end to the network port provided by the customer, or to a cell modem (if utilized).
4. Connect the power source to the QWL2040 Panel and apply power. If your Panel was preconfigured by the TCS factory or another user, it will automatically go online and contact Ubiquity Cloud.
5. **You MUST call TCS Technical Support (800.288.9383 ext. 2) to verify connection and activate the unit.**
6. **If your Panel was not ordered preconfigured:** You can configure it at this time. See [Gateway Configuration on page 16](#).
7. Using a computer connected to the Internet, open any web browser and go to the Ubiquity Cloud web site (www.ubiquitysystems.net). Enter the login credentials provided to you at the time of sale. You will immediately be prompted to change your login credentials. Once you have changed your login credentials, you will be able to configure your QWL2040 Panel Building Manager.



Ubiquity login screen

Troubleshooting

The LEDs in the QWL2040 Panel's indicator panel on the front of the unit can be used to aid in troubleshooting and allow the occupant to view the current operating status of the Panel.



Front indicator panel

Power LED Does Not Light Up

Be sure that the power supply module, included with the Panel, is plugged in to an outlet that has power. This is a 12V, 7A, tip positive power supply. If the power supply is plugged in to a live outlet and there is still no power, press the Reset button located on the front panel until the CPU light is out to turn off the unit, and then press the Reset button once and let go to restart the unit.

No Communications with Controllers on the Network

Make sure the baud rate selection for the Panel is set to match the baud rate of all the controllers on each port network (the default communication speed of the serial bus is 9600). All controllers on the network must have a unique address, excluding the reserved address '248'. All controllers on any given port must be of the same type, whether Modbus or TCSbus. Also, each port must be configured for the appropriate type of communication.

Check the network wiring, making sure to follow polarity. Make sure the A wire goes to the A terminal in all devices, as well as the wires that go to B and REF terminals.

No LAN Link to the Internet

Verify the network cable is connected correctly and make sure the LEDs next to the Ethernet jack are properly illuminated. For example, a solid green LED at the RJ-45 LAN connector usually indicates that the QWL2040 Panel is either connected or receiving a signal. If the green light is flashing, this is an indication of data being sent or received.

If there are no lights, the Panel may not be connected properly, or may not be receiving a signal from the network. If, after checking the connections, the LED indicators are still off, the network adapter, port, or cable may be defective.

If there are lights but there is still no communication, this could be because the network communication is not set properly or there is a bad firewall proxy setting. Contact your IT department for support, or contact TCS Technical Support (800.288.9383, ext. 2) for assistance.

No Communication with RS485 Ports (COM 1 and 2), Ubiquity Time-out, or No Data

Verify each port on the Panel has the proper biasing resistors as specified by TCSbus and Modbus standards. Verify each port is also optically isolated, which cleans up the signal and protects the unit from taking stray voltage off the RS485 lines.

A set of LEDs on each of the RS485 ports on the Panel allow the building occupant to view operational status of the serial communication integrated board:

Installation

- GREEN: Blinking indicates transmitting (Tx)
- YELLOW: Blinking indicates receiving (Rx)

Additionally, a single red LED (indicating the serial ports are operational) is located inside the enclosure on the Ubiquity Cloud board.

If none of these lights are functioning, Ubiquity Cloud is not coming online. This could be because the network communication is not set properly or there is a bad firewall proxy setting. There also could be a bad connection, a bad cable, a bad ground, or a bad component. Contact TCS Technical Support (800.288.9383, ext. 2) for assistance.

IMPORTANT: The Gateway Configuration section is for customers who did not order their QWL2040 Panel preconfigured by TCS, or who need to reconfigure their unit. If you ordered your QWL2040 Panel preconfigured by TCS, which is typical, you can skip this section and jump to [Lighting/Pulse Meter Programming on page 24!](#)

Introduction to Gateway Configuration

The QWL2040 Panel utilizes an internal Gateway to communicate with Ubiquity Cloud and the attached device networks. This Gateway can be configured locally by connecting a laptop directly to the device, or by connecting a monitor and keyboard. When using a laptop, you can configure the Gateway through the Panel's internal web page. When using a monitor and keyboard, you can configure the Gateway via the text-based Command Line Interface (CLI).

NOTE: All Ubiquity Cloud services are accessed by logging into the Ubiquity Cloud Server (www.ubiquitysystems.net), not by using the internal Gateway.

The Gateway is preconfigured with a default login and password, which is supplied to customers upon request. It is the customer's responsibility to configure a custom login and password. Contact TCS Technical Support (800.288.9383, ext. 2) for information on managing Gateway login credentials.

Gateway Configuration Via Laptop

Once you have made a connection and have logged in (see [Appendix A: Local Management Port on page 29](#)) you can configure the operation of the unit by selecting the proper parameters for your application.

If you are unable to access the configuration page, contact TCS Technical Support (800.288.9383, ext. 2) for assistance.

Installation Information

The Hardware Identity section contains unit-related information used to uniquely identify the unit when it is being serviced in the field.

NOTE: Model and submodel numbers can reference revision suffixes that do not affect user operation but may be useful when troubleshooting with TCS Technical Support.

The Software Status section contains software/application-related information that identifies the level of patching of the unit. The Site Time is used by the local network and the Panel until the Ubiquity Cloud Server performs a time synchronization with the site.

NOTE: Be sure to set the correct time zone so that the site will correctly adjust the time during future time synchronizations with Ubiquity Cloud.

Once you are finished entering information in this section, click the Update Installation Info button.

Gateway Configuration

Installation Information			
Hardware Identity			
Product UUID:	4ac98e31-4b80-e311-af30-4437e6cc981b		
MAC:	00224DAEF196	Serial Number:	0496003610000000
Hardware Version:	10	Hardware Revision:	695
Model:	QD2040	Submodel:	qwl 4.0
Software Status			
System Checksum:	7744aab1dbbc128e2f1ec8b58718f1552e6fbf5cfe3a019e731267f6af88deaf		
OS:	qdos7		
Application Version:	07.06.01	Application Revision:	070601_rc9
Application Build Date:	2021/03/12 17:56:26 GMT+0000		
Site Time			
Wait up to two minutes for the values to change.			

Installation information

Application Information

This section contains settings which define how the Panel interacts with the controller network, and how it communicates the data to the Ubiquity Cloud Server.

Application Options

Select a Network Polling Cycle Time for the Panel. This is the time interval that the unit will poll the entire network of controllers on all ports. You must select whether to allow caching the host name via DNS. Typically, this is left unchecked. You must select how often the Panel connects to the Ubiquity Cloud Server. Typically, this is set to "Always On."

- **Network Polling Cycle Time:** (Default 1 minute) How often the RS485 network is polled
- **Connection Times:** (Default Always On) The interval when the unit posts data to the Ubiquity Cloud

Application Information			
Application Options			
Controller Network Polling Cycle	1 Minute ▼		
Connection Times	<input checked="" type="radio"/> Always On <input type="radio"/> Never On <input type="radio"/> Specify Times		
RS485 Network -- Port Configuration			
Autodetection of Controllers on All Ports <input checked="" type="checkbox"/> Enabled			
All Ports are Automatically Detected Once Hardware is Installed			
Device C-PORT1-0	Port 1 (addr 0 to 255) ▼		
Protocol Support	TCS ▼	Baud Rate	9600 ▼
Time-Out Period	200 ▼ milliseconds	Autodetection Range	0 ▼ to 255 ▼
Device C-PORT2-0	Port 2 (addr 256 to 511) ▼		
Protocol Support	TCS ▼	Baud Rate	9600 ▼
Time-Out Period	200 ▼ milliseconds	Autodetection Range	0 ▼ to 255 ▼
Device U-PORT4-0	Disabled ▼		
Protocol Support	TCS ▼	Baud Rate	9600 ▼
Time-Out Period	200 ▼ milliseconds	Autodetection Range	0 ▼ to 255 ▼
Update Application Info			

Application information

RS485 Network - Port Configuration

Both RS485 communication (COM) ports are configured using this interface. While the COM ports are automatically detected once the Panel is powered on, each active port will need to be configured to ensure proper functioning of the network. Ports can be enabled or disabled from the drop-down menu as well.

NOTE: Secure Sockets Layer (SSL) requires port 443 to be open.

Protocol: Select the communications protocol being used on each port. TCSbus is selected by default.

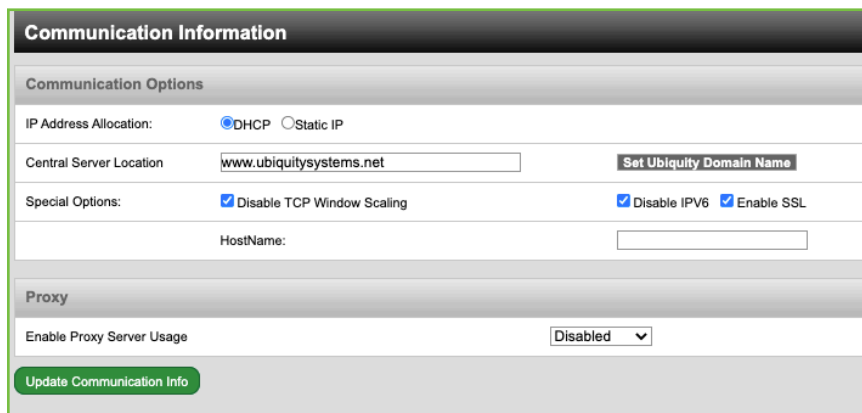
Baud Rate: This is the data transmission speed on the network. The Baud Rate must be the same selection for the port configuration as it is on every device communicating to that port.

Time-out Period: This is the number of milliseconds the port on the Panel will wait for a response from the network devices before determining that a device is not communicating, or has “timed out.” Select the time-out period for each port. TCS recommends TCSbus and Modbus set at 200 ms for wired networks.

Auto-detection Range: (Default 0, 255) This is the lowest address to start polling and the highest address to stop polling during the auto-detected sequence.

Communication Information

This section contains settings which control how the Panel connects through the Internet. All of these settings are determined by your local network administrator or IT department.



Communication options

Communication Options

The Panel supports both static IP and Dynamic Host Configuration Protocol (DHCP) IP address allocations. Enter the Ubiquity Cloud Server location (www.ubiquitysystems.net) by clicking the “Set Ubiquity Domain Name” button. Select whether to enable or disable special options. Enter host name if needed (typically left blank).

Network

Select the desired IP allocation (DHCP addressing or static IP addressing). When using static IP addressing, it is necessary to enter the IP Address, Gateway, Subnet, DNS1 and DNS2 settings; these settings are established by the LAN/ WAN network administrator prior to installation. When utilizing DHCP addressing, the IP address settings are automatically assigned when communication is established.

MTU Adjustments

Adjusting the MTU down may allow gateways to communicate with smaller TCP packet sizes. This may be useful if you are using cell modems not capable of passing a TCP packet with a size of 1500.

Proxy

If a proxy is required, select Static Proxy from the drop-down menu and enter all the related details in the fields that appear. When you are finished entering information in this section, click the Update Communication Info button.

Security Information

This section contains settings which control the security of the device within the Panel and whether it can be accessed through the web interface.

If Secure Mode has been enabled and you need access, call TCS Technical Support (800.288.9383, ext. 2) for assistance.

Here is where you change the default login credentials used to access the Configuration Page. TCS recommends changing these credentials. Once you are finished entering information in this section, click the Update Security Info button.

- **Lockdown Mode:** (Default Unchecked) When the option is checked it will disable all remote interfaces
- **Secure Mode:** (Default Unchecked) When the option is checked it will disable the Web UI
- **Password:** (Default NA) Password Change for admin account

Gateway Configuration

Security Information

Application Security

Lockdown Mode Enable Secure Mode Enable

User: admin Strong Password Example: Qv33n#ltt

Password: Retype Password:

[Update Security Info](#)

[Commissioning Tools](#)

Security information

Commissioning Tools

You can access a separate page containing various commissioning tools by clicking the “Commissioning Tools” button at the bottom of the Security Information page. These tools provide you with access to managing the communication status of the Panel and the controller network connected to it.

Commissioning Tools

Ubiquity Connection Status [Refresh](#)

Status: **ESTABLISHED** Timestamp: 1620157597

Controller View [Refresh](#)

Port	State	Address	Controller Model	Communication Status	
4	Confirmed	5	Dent 3037	COMMLOSS	<input type="checkbox"/>
4	Confirmed	6	Unknown	OK	<input type="checkbox"/>
3	Confirmed	1	Disconnect #2	OK	<input type="checkbox"/>
3	Confirmed	2	Unknown	OK	<input type="checkbox"/>
3	Confirmed	3	Unknown	OK	<input type="checkbox"/>
3	Confirmed	4	Unknown	OK	<input type="checkbox"/>
3	Confirmed	5	Unknown	OK	<input type="checkbox"/>
3	Confirmed	6	Unknown	OK	<input type="checkbox"/>
3	Confirmed	7	Unknown	OK	<input type="checkbox"/>
3	Confirmed	8	Unknown	OK	<input type="checkbox"/>
3	Confirmed	9	Unknown	OK	<input type="checkbox"/>
3	Confirmed	21	Unknown	OK	<input type="checkbox"/>
3	Confirmed	22	Unknown	OK	<input type="checkbox"/>
3	Confirmed	23	Unknown	OK	<input type="checkbox"/>
2	Confirmed	9	Network Room (Transfer Fan)	OK	<input type="checkbox"/>
2	Confirmed	108	2108	OK	<input type="checkbox"/>
2	Confirmed	252	133	OK	<input type="checkbox"/>
1	Confirmed	102	DTS 310	OK	<input type="checkbox"/>
1	Confirmed	218	218Q	OK	<input type="checkbox"/>

[Remove Selected](#)

System Commands

[Reboot Unit](#) [Check For Update](#)

[Gateway Configuration](#)

Commissioning tools

Ubiquity Cloud Connection Status

This section displays the status of the connection between the Panel and the Ubiquity Cloud Server. You have three options for the message that will appear here:

1. **Error - No Route to Host:** The unit does not currently have an Ethernet connection.
2. **Connected:** The unit is able to communicate to the Ubiquity Cloud Server BUT is not being matched up with a specific site. Typically this indicates that the site is not initialized on the Ubiquity Cloud Server side yet. Contact TCS Technical Support (800.288.9383, ext. 2) to assign or initialize the Panel to a site.
3. **Established:** The unit is communicating with the Ubiquity Cloud Server AND is ready to go. All Ubiquity functions (monitoring, programming, alarming, etc.) should be available through the user interface at this point.

Clicking the green Refresh button on the right side of the Ubiquity Connection Status title bar will refresh the connection status.



Refresh button

Controller View

This section allows you to see what controllers have been found by the Panel and view each controller's address, model, and communication status. The state field will show AUTO-DETECTED initially when found by the unit and CONFIRMED once the controller has been recognized by the Ubiquity Cloud Server. This information allows the installer to verify that each controller has been found by the QWL2040 Panel and is communicating with the local network. Clicking the green Refresh button on the right side of the Controller View title bar will refresh each controller's status.

System Commands

This section describes how to set up system flags for the Panel. "Reboot Unit" sets a flag which will shut off and restart the Panel within a five-minute cycle. "Check for Update" contacts the Ubiquity Cloud Server for any updates relevant to its particular model number and software version. Once the update has been downloaded, it is automatically applied, and the unit will reboot if necessary.

NOTE: The "Check for Update" command requires that the Panel have Internet access to retrieve the update patch.

Gateway Configuration via CLI

When you connect to the Panel using a keyboard and monitor (See [Appendix C: Monitor and Keyboard on page 39](#)), you can configure the Gateway parameters for your site by using the built-in CLI.

1. To establish a connection to the CLI, you must enter a login user name and password. If you have not changed the user name and password, you must enter the default credentials.

NOTE: If you do not have the default credentials for this unit, contact TCS Technical Support at 800.288.9383 ext. 2 for assistance.)

2. Once logged in, type in "tcssetup." This will open the CLI (see [Command Line Interface Screens on page 22](#)).
3. Scroll to each field that you want to change by pressing the "Enter" button.
4. Type in new values on any field as needed. Pressing "Enter" will save new value, or keep current value, and advance to the next field.
5. Once the final "Secure Mode" section is finalized, the unit will automatically apply the new configuration and update the unit within five minutes.

NOTE: After you have finished configuring the Gateway, you can revert your laptop back to its original DHCP settings, if desired. See [Appendix B: Revert Back to DHCP Settings on page 35](#).

Gateway Configuration

Command Line Interface Screens

```
-----main: IP Address Allocation selection-----
IP Source (2):

  1. Static IP
  2. Dynamic IP (DHCP)

>1
-----main: get Static IP-----
Static IP (0.0.0.0):

>172.16.10.201
-----main: get Subnet Mask-----
Subnet Mask (0.0.0.0):

>255.255.255.0
-----main: get Gateway IP-----
Gateway IP (0.0.0.0):

>172.16.10.1
-----main: get Primary DNS Server IP-----
DNS Server IP 1 (0.0.0.0):

>172.16.10.1
-----main: get Secondary DNS Server IP-----
DNS Server IP 2 (0.0.0.0):

>8.8.8.8
-----main: Set MTU-----
MTU for eth0 (1500):

  1. 1500 - Ethernet/PPP
  2. 1420 - Typical Cell Modem with CHAP/PAP
  3. 1006 - Serial-Line IP (SLIP)
  4. 576 - ISDN
  5. 500-1500 - Custom

>1500
```

Gateway configuration

```
-----main: get Virtual IP Enable-----
Virtual Config IP Enable (1):

  1. Disable Virtual IP
  2. Enable Virtual IP

>
ERROR: unknown selection, no change
unknown selection, no change
-----main: get Ubiquity URL-----
Ubiquity URL (www.ubiquitysystems.net):

>www.ubiquitysystems.net
-----main: get SSL Communications Status-
QD2040 to Ubiquity SSL Enable (1):

  0. Disable SSL
  1. Enable SSL

>1█
```

Application options

Gateway Configuration

```
-----main: get proxy Usage-----
Proxy Usage (0):

  0. Disable Proxy
  1. Static Proxy
>1
-----main: get Proxy Server IP or Hostname-
Proxy Server ():

>proxy.tcsbasys.com
-----main: get Proxy Server Port Number----
Proxy Port (80):

>3128
-----main: get Proxy Authentication Type----
Proxy Authentication (0):

  0. No Authentication
  1. Normal Authentication
  2. NTLM Authentication
>0
```

Proxy options

```
-----main: get HostName-----
--note: If no hostname, type (disabled):
Host Name (test1):

>
nothing entered, no change
-----main: get IPV6 Status-----
Enabled IPV6 (0):

  0. Disable IPV6
  1. Enable IPV6
>
nothing entered, no change
-----main: get TCP Window Scaling Status-----
Window Scaling (0):

  0. Disable TCPWS
  1. Enable TCPWS
>
nothing entered, no change
-----main: get SecureMode and LockdownMode Status-----
Secure Mode Enabled (0) and Lockdown Mode (0) :

  0. Enable Normal Mode
  1. Disable Secure Mode
  2. Disable Lockdown Mode
  3. Enable Secure Mode
  4. Enable Lockdown Mode
>█
```

Extended application options

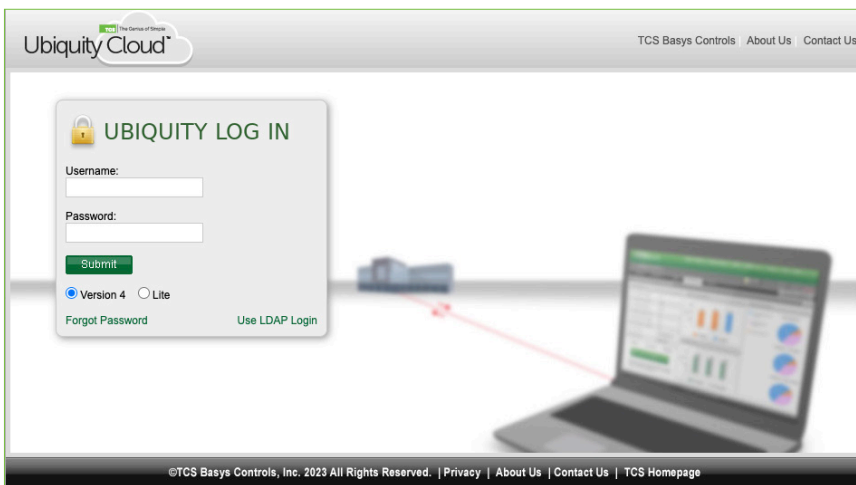
Introduction to Lighting/Pulse Meter Programming

The Lighting Module of the QWL2040 Panel is an SLQ218, which is equivalent to the SL2108. The Pulse Meter Module of the Panel is an SEQ100, which equivalent to the SE1000. The lighting and meter modules can be programmed remotely via Ubiquity Cloud (www.ubiquitysystems.net), which will automatically detect the modules.

Alternatively, you can program the modules locally using TCS Insight software; this section details the steps involved. Before programming the lighting module and/or the pulse meter module via TCS Insight, you must first download the software and install it on a PC. (See [Appendix E: Installing and Using TCS Insight Software on page 44](#)).

NOTE: The lighting and meter modules **cannot** be programmed via a connected laptop or via the CLI.

After your Panel is installed and connected to the Internet, use any web browser and go to the Ubiquity Cloud web site (www.ubiquitysystems.net). Enter the login credentials provided to you at the time of sale. You will immediately be prompted to change your login credentials.



Ubiquity Cloud login screen

Lighting Module Programming

Channel Event Scheduling

The lighting module is equipped with eight independent event channels, each with their own schedule. The schedules are configured using “military time.” For example: If the occupied or “ON” time for a particular day is from 8:00 AM to 5:00 PM, enter 8:00 to 17:00. From the Schedule window, you can program multiple channels using various settings.

Channel Holiday Setup

Holidays will appear as part of the selected schedule. You can create date-specific holidays, roaming holidays, or you can select from a list of standard bank holidays. If the selected schedule does not include the desired holiday(s), you can edit the schedule on the Scheduling page.

Enable Blink Output

The Blink Output option forces the respective lighting output to turn off and on four times, five minutes prior to an unoccupied or off period. This will give people in the channel an indication that the “occupied” period is about to end. Click the checkbox to enable this function for each channel.

Enable Astronomical Time

The Astronomical Time option allows the controller to turn off a channel based on the location’s sunrise and sunset times. See [Astronomical Time on page 26](#) for more details and additional configuration options. Click the checkbox to enable this function for each channel.

When Channel Is “ON”

You can select how you want the time clock output (Digital Output Mode) to behave in the event of a power failure at the controller, which will control whether the lighting will stay on. You can choose the channel to be Normally Open or Normally Closed during such periods.

AI1 Ambient Light Sensor Input

If using an ambient light sensor (0 to 5V or 1 to 5V), set the low- and high-scaling limits to AI2. These limits are what the light sensor reads at low limit and what the light sensor reads at full scale.

A Lighting Channel Threshold and Hysteresis for each of the available channels can be set for this input signal. The Channel Power Threshold is a setpoint for which AI1 is compared to determined then to turn off the selected cycle(s). The Channel Power Hysteresis is a buffer value which prevents the channel from cycling off/on prematurely. For example, if the input is scaled 0 to 1000 lumens and you want to turn off one channel if the input gets up to 500 lumens and allow it to come back on if the input falls to 400 lumens, enter in 0 for the scaling low limit, 1000 for the scaling high limit, 500 for the threshold and 10% for the hysteresis for that channel.

Select a threshold and hysteresis for the channels which will be allowed to be shut off based on this input hitting the threshold. A common application for this feature is to control parking and exterior signage lighting. The channel will be on whenever the area is occupied, except when there is too much ambient light. (Similar to the astronomical time function). If AI1 is not used, the threshold for all channels MUST equal the scaling high limit.

AI2 Energy / Power / Monitoring Input

If you are using an energy meter, power meter or current transducer (0 to 5V), set the low and high scaling limits to AI2. These limits are what the energy or power meter reads at 0V and what the energy or power meter reads at 5V. For a 4 to 20mA input to be wired to AI2, you must install a 250 Ω resistor between AI2 and GND.

To use this input with a threshold and hysteresis (Channel Power section) to shut off lighting channels, select the relevant lighting channels (Enable AI2 Threshold checkboxes) and enter a threshold and a hysteresis to be used. If AI1 is not used, the channel power threshold MUST equal the scaling high limit.

Select whether to allow the time clock output (Digital Output Mode) to be Normally Open or Normally Closed during “On” periods.

The Channel Power Threshold is a setpoint to which AI2 is compared, in order to determine when to turn off the selected channel(s). The Channel Power Hysteresis is a buffer value which prevents the channel from cycling off/on prematurely. For example, if the AI2 input is scaled 0 to 10000 KW and you want to turn off some channels if the input gets to 7500 KW and allow them to come back on if the input falls to 6500 KW, enter in 0 for the scaling low limit, 10000 for the scaling high limit, 7500 for the threshold and 10% for the hysteresis. Set this threshold to be larger than the accuracy/error specification of the device being turned off, so it does not cycle on and off.

AI2 Ambient Light Input

If AI2 is not used for power limiting, a second light sensor can be used to monitor another area. Set the low and high limits to AI2. These limits are the light sensor reading at 0V and the sensor reading at 5V, respectively. Check the Enable box for each of the channels to be controlled by AI2 (in the Enable AI2 as Light Level Source column). Then proceed to enter threshold and hysteresis values for each channel (located just below the AI1 AMBIENT LIGHT INPUT section). Each selected channel (Enable AI2 as Light Level Source) will then have its threshold/hysteresis compared to AI2 instead of AI1.

Digital Input Channel Monitoring and Control

DI1 and Override 1 are used for Channel 1, DI2 and Override 2 are used for Channel 2, etc.

There are four Digital Input Modes which can be used with a digital input: Regular, External Override, Momentary Override, and Monitor.

Regular mode: The digital input is used in conjunction with the programmed schedule in determining when the relay output should be on or off.

External Override Mode: The digital input acts the same as the override button on the front of the Panel. The switch used for this type of digital input must be a momentary N.O. switch.

Momentary Override: The digital input acts like a toggle switch. This must also be a momentary N.O. switch. If the time clock is on, pressing the switch turns it off, if the time clock is off, pressing the switch turns it on.

Monitor mode: the digital input acts as a monitor for the DI and has no other function.

Astronomical Time

The Astronomical time function may be set up on any of the channels. It controls the enabled light channel for the daylight period from sunrise to sunset.

To configure astronomical time:

1. Enter the Latitude and Longitude parameters for the location being controlled.
2. Enter the time offset from GMT (Greenwich Mean Time). For example, the USA Central Standard time zone is offset -360 minutes from GMT. Madison, Wisconsin, USA is at 43° 5 minutes North (+) Latitude and 98° 30 minutes west (+) Longitude. The GMT offset range is + 720 minutes.
3. Select the channel(s) that should have the astronomical time function.

To enable all lighting channels that are programmed to use Astronomical Time to adjust the time of day during Daylight Saving Time, select "Automatic" from the Daylight Saving Control drop-down menu.

Selecting "Manual/Off" from the drop-down will disable all lighting channels that are programmed to use Astronomical Time from adjusting to Daylight Savings Time.

Clicking on the "Add 1 hour" option will add an hour to the start time of any lighting channel programmed to use Astronomical Time."

NOTE: For non-North American Daylight Saving Time, set the manual DLS (Day Light Saving) Time.

Channel Occupant Override

A good example of the use of this feature is to allow for a cleaning crew to come in, guaranteeing the lights would not remain on after the crew has left. This is the number of minutes from 0 to 255 (4 hr, 15 min) which the controller will bring a system that is OFF to ON when its override button is pressed. This time can be different for each channel.

Occupied Override

Select whether to allow an occupied override and if so, whether it will be a schedule or channel override.

Holiday Vanishing

Choose whether to enable the Holiday Vanishing Feature. If checked, the controller will make the number of days for a holiday zero after the holiday is over. This will keep the holiday from occurring in subsequent years if it is not reprogrammed.

Digital Input Delay/Filter

Enable the Digital Input Delay by checking the 15 Second Filter for DI Regular Mode box. Do this if you want the Digital Input to be present for 15 seconds before it takes effect. This can prevent cycling.

NOTE: If selected, this delay will apply to all eight channels.

Maximum Power Down Period

If the controller loses power, it will remember which channels have been overridden and how much time is remaining in each override period. This is the amount of continuous power loss time in minutes where the controller will remember the override status. If the controller loses power for longer than this period, the override buttons will have to be pressed again as necessary.

Input Voltage 24VAC Calibration Factor

The input voltage is monitored; the calibration factor is used to scale the controller's 24VAC power input to the appropriate line voltage.

Line Voltage	Power Input	Calibration Factor
120VAC	24VAC	5.0
120VAC	27VAC	4.4
277VAC	24VAC	11.5

Daylight Saving Time

If you wish to use daylight saving time, enable the “Daylight Saving Time” option within the software and enter the starting month + week and the ending month + week.

Scheduling Via TCS Insight

When scheduling via TCS Insight, click on the Channel Schedules tab to display additional tabs for each channel (1 – 8). Each channel tab has subtab for all available functions.

Pulse Meter Module Programming

The Utility Pulse Meter Module is an SEQ100. It is equipped with four different meter inputs; each input is set up for a dry contact and cannot be changed. Each input can be configured to accept signals representing electrical, BTU, water, or gas usage. The required parameters will be provided by either the utility company involved or by the Current Transducer (CT) used to generate the pulse signal.

Meter Types

The SEQ100 supports various meter types; selecting a meter type changes the default values as they are used to calculate meter consumption and demand for that particular meter.

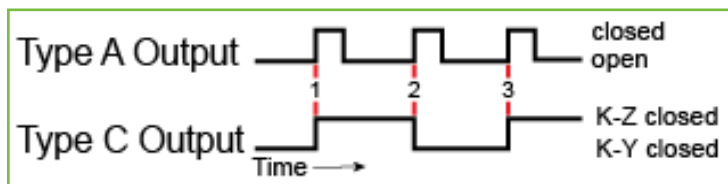
For each of the four SEQ100 meter inputs, there are five selectable options:

1. **ELEC 1 PH:** Electric single-phase meter.
2. **ELEC 3 PH:** Electric three-phase meter.
3. **GAS:** Gas meter.
4. **WATER:** Water meter.
5. **BTU:** BTU meter.

Utility pulse meters can be one of two different types, depending on whether they count the leading and trailing edges of the pulse, or only the leading edge of the pulse as a single count. A pulse output can be either a mechanical relay or solid-state device. The pulse output corresponds to a unit/time of a monitored quantity. The amount of time between states of a pulse output corresponds to the meter demand; the number of pulses is proportional to the meter’s consumption.

Below is a diagram depicting two types of utility meter pulse outputs. Meter Type A counts only the leading edge as a single pulse, while the trailing edge is ignored. Meter Type C is known as a true KYZ meter and counts both the leading and trailing edges as a pulse, doubling the number of pulses as seen by Meter Type A. The SEQ100 measures Type A output only, however KYZ functionality can be mimicked by entering a “Meter Multiplier” value of 2.

In the following diagram, both Type A and C are shown. Three pulses are shown, labeled 1, 2, and 3. As shown in the diagram, the Type A output closes and opens for each pulse, whereas the Type C output changes state.



Meter pulse outputs

If you have a Type C device (three terminals KYZ), you will need to double the multiplier. This is because the SEQ100 only counts the contact closures for the K and Z terminals.

Programming the Meter Constants

CT Value: The value of the CT wired to the meter. This value is usually provided on the CT or on the utility output meter. This value is only used for an electric meter and is set to 1.

PPR Value: The value of the PPR is the number of pulses per 1 kWh, 1 BTU, 1 gallon/minute. For example, one pulse per .1 kWh equals 10 pulses per 1 kWh, so the PPR value is set to 10.

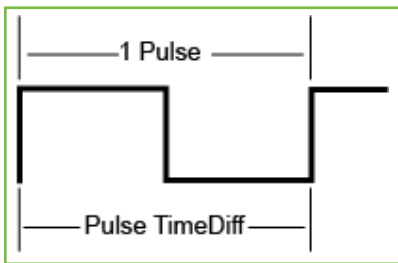
Constant: The value of the constant for the meter is usually provided by the utility company and many times is located on the electric or gas bill. Set to 1.

CU FT/P: The value for Cubic Feet per pulse. Set to 1.

Multiplier

For single-phase or three-phase electric meters, set the multiplier to 1000. For gas, water, and BTU meters, set the multiplier to 200.

The following diagram shows how a single pulse and the pulse time difference are represented on a pulse waveform into the Utility Pulse Meter:



Pulse time difference

Appendix A: Local Management Port

The QWL2040 Panel can be configured locally at the device using a laptop computer. If using this method of configuration, you will need:

1. Laptop with a hardwired Network Interface Card (NIC).
2. Ethernet cable.

Connection Setup

Ethernet Cable

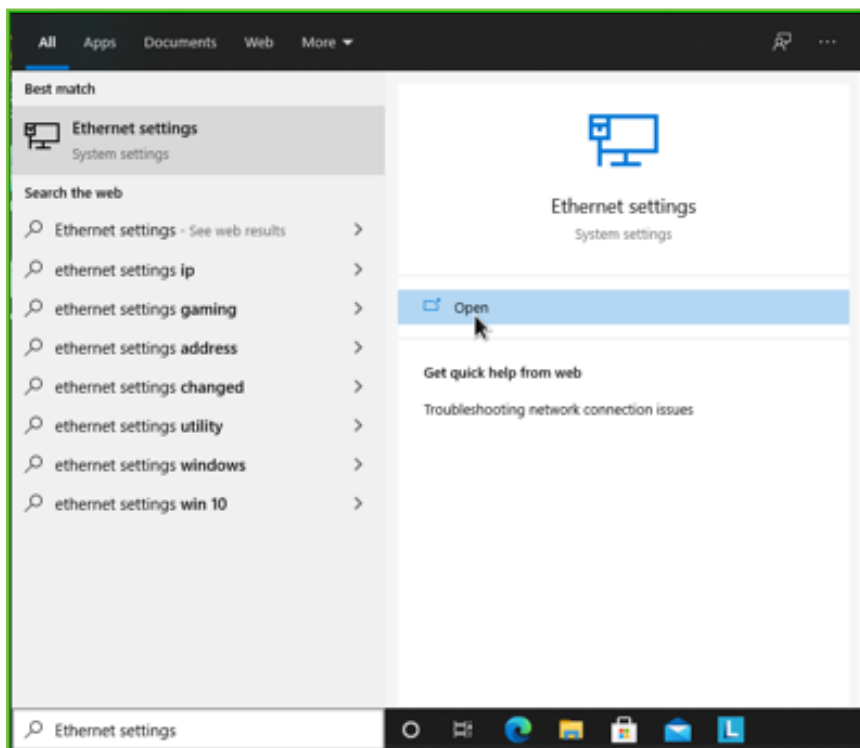
Connect one end of the Ethernet cable to the Local Management Ethernet Port on the Panel (see [Power and Communication Connections on page 7](#)) and the other end to the laptop's Ethernet port.

Laptop

The steps below require changing the network settings of the laptop; this is done at your own risk.

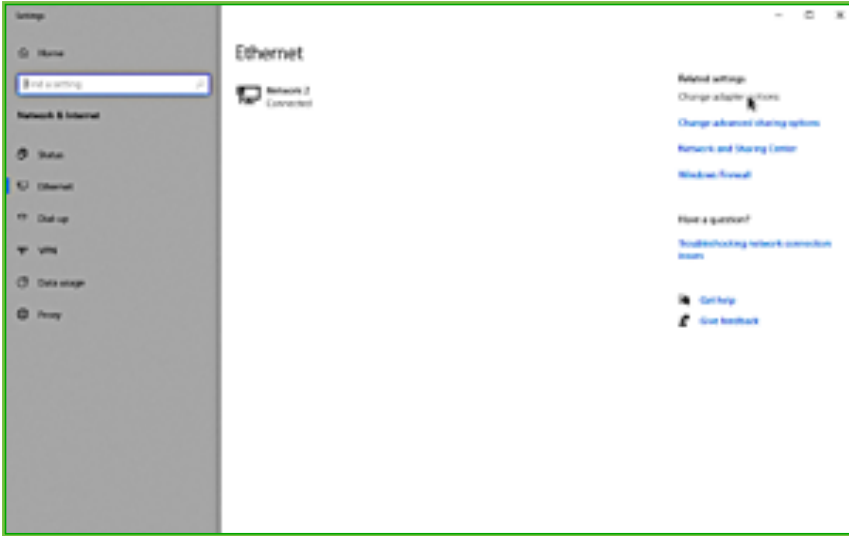
Windows 10 or Later:

1. Search for Ethernet Settings and click the "Open" link.



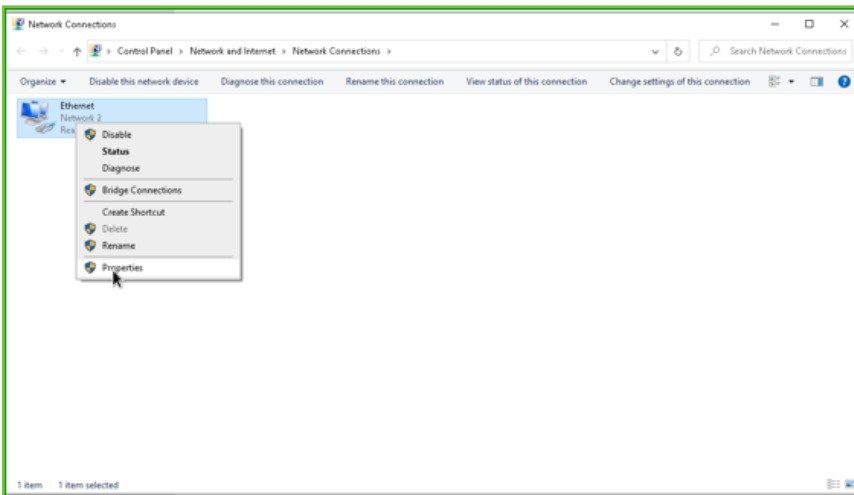
Ethernet settings

2. On the Ethernet Settings panel and click the "Change adapter options" link.



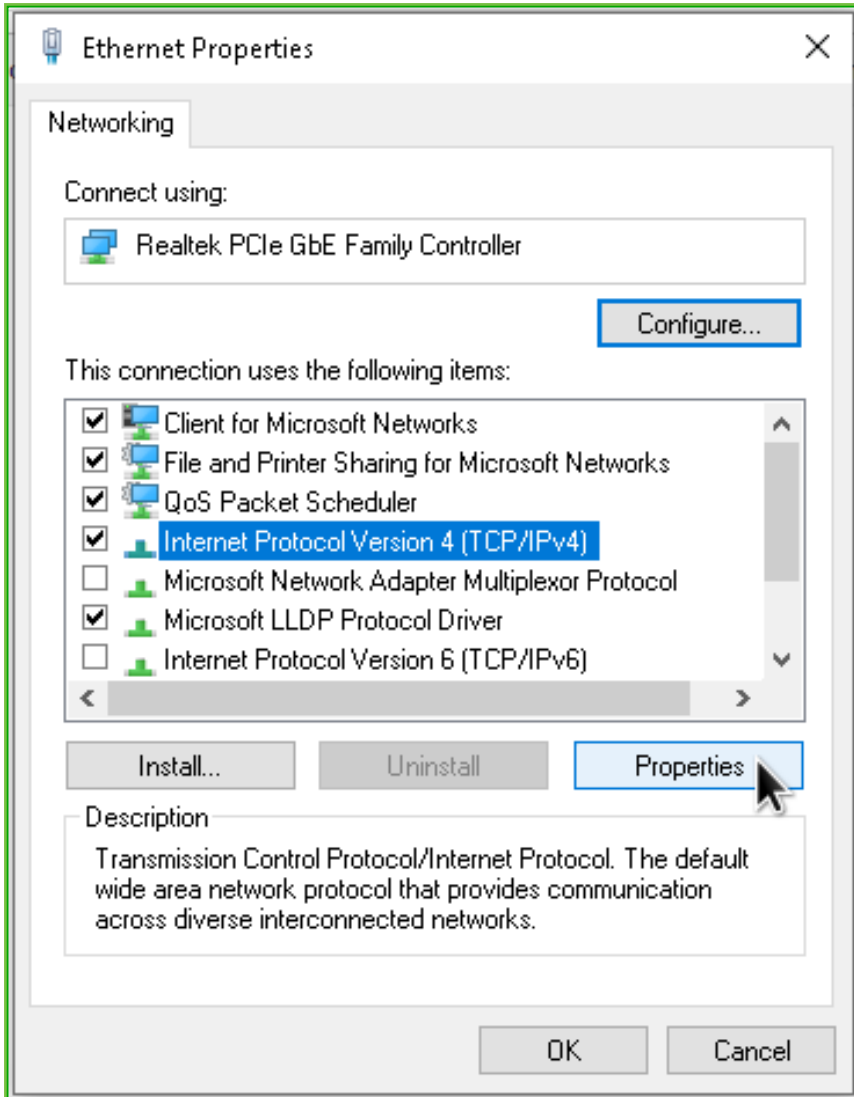
Change adapter options

3. On the Network Connections panel locate the Ethernet interface that is connected to the cable. Right click on the item and select “Properties.”



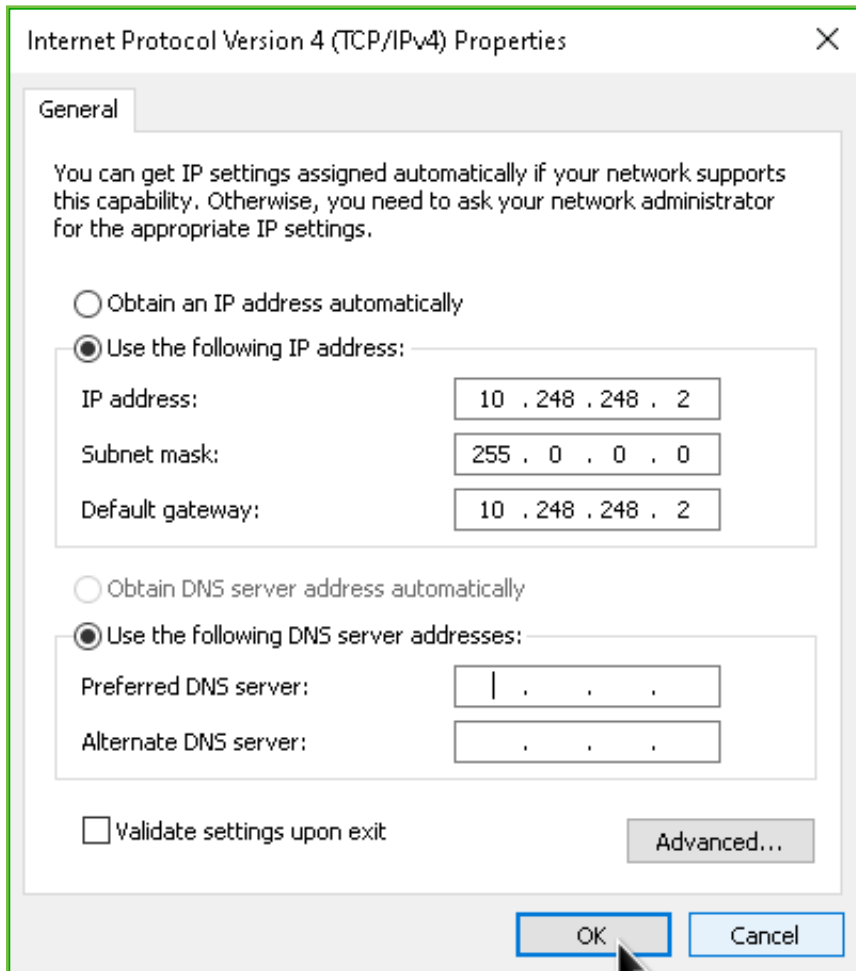
Properties

4. On the Ethernet Properties panel locate the “Internet Protocol Version 4 (TCP/IPv4)”. Select that option, then click on the “Properties” button.



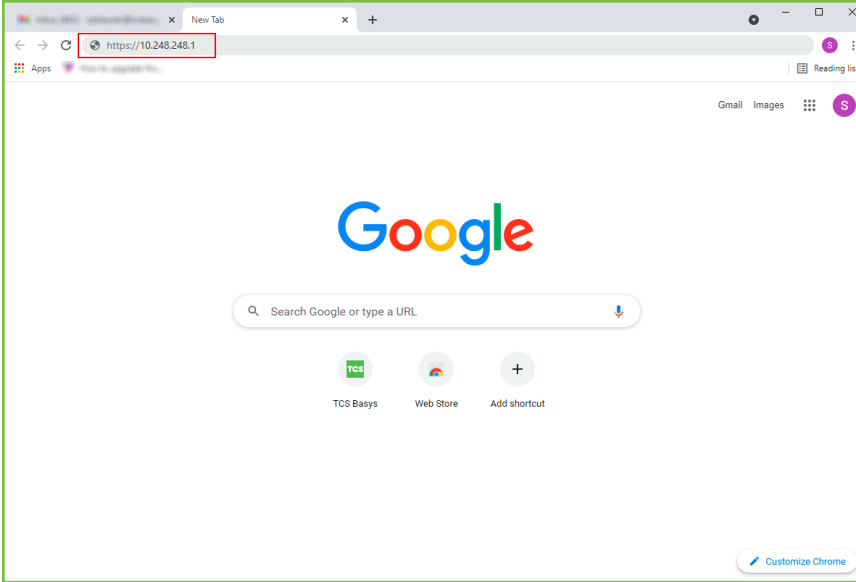
TCP/IPv4

- On the Internet Protocol Version 4 (TCP/IPv4) Properties change the IP schema to:
 - IP Address:** 10.248.248.2
 - Subnet Mask:** 255.0.0.0
 - Default Gateway:** 10.248.248.2
 - DNS:** Blank
- Click on the "OK" button and close the window.



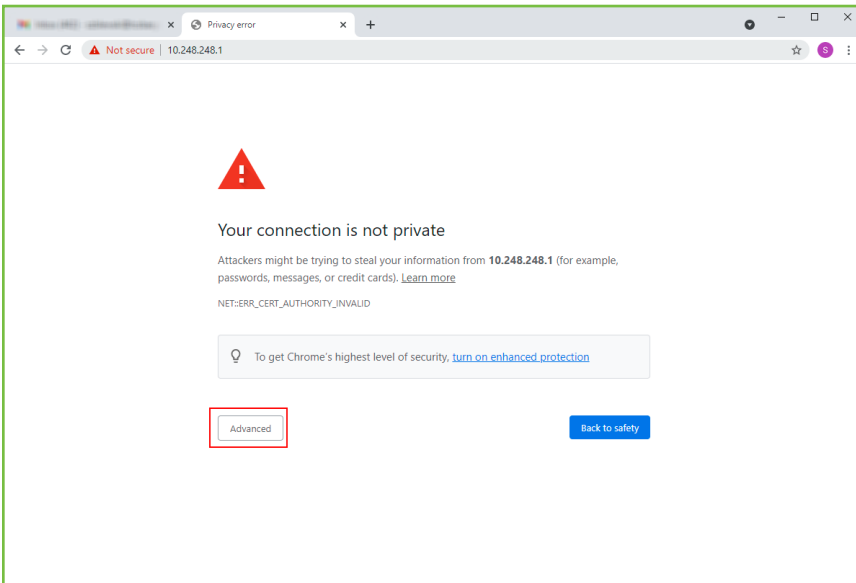
Port to static settings

7. Launch any web browser and type in the following address: <https://10.248.248.1>.



Device address

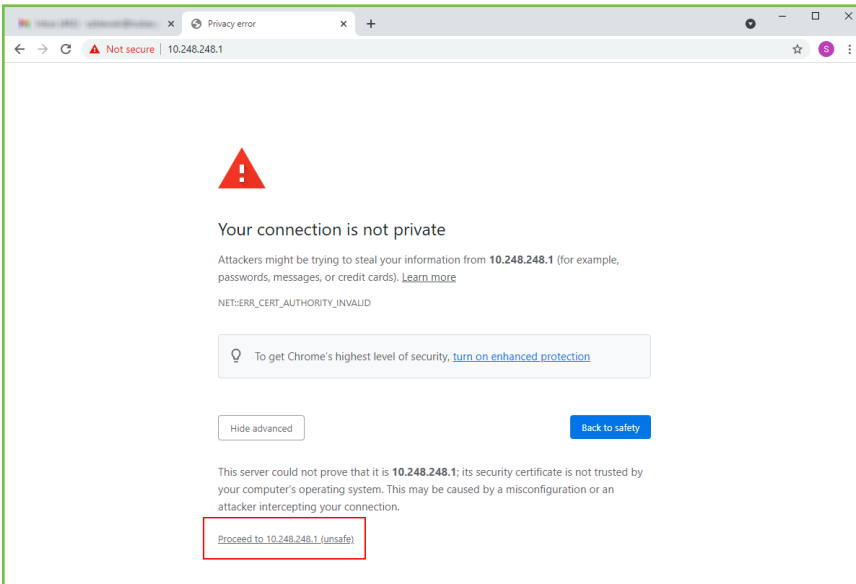
8. Depending on your browser's configuration, you may get the following screen:



Privacy error warning screen

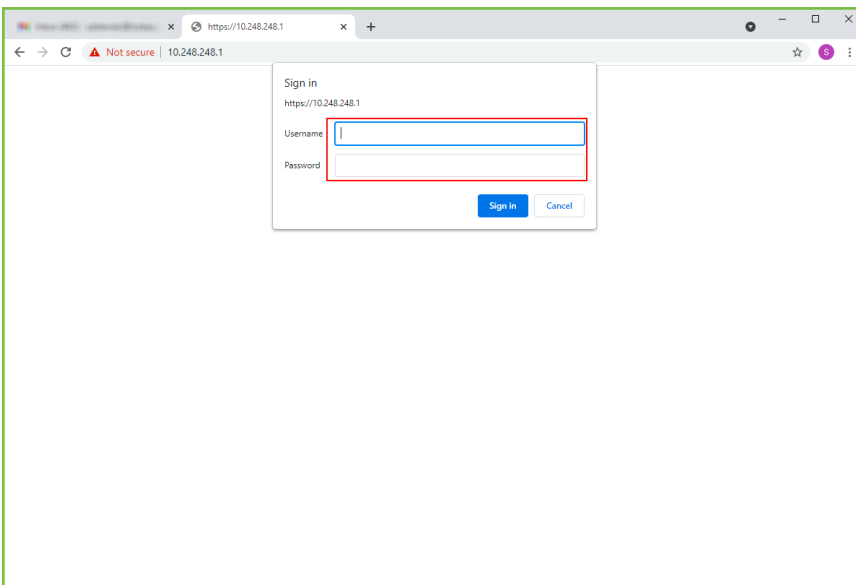
9. Click on the "Advanced" button in the Privacy Error Warning screen.

10. Click on the “Proceed” link to take you to the next screen.



Proceed screen

11. Enter the Login user name and password.



Login screen

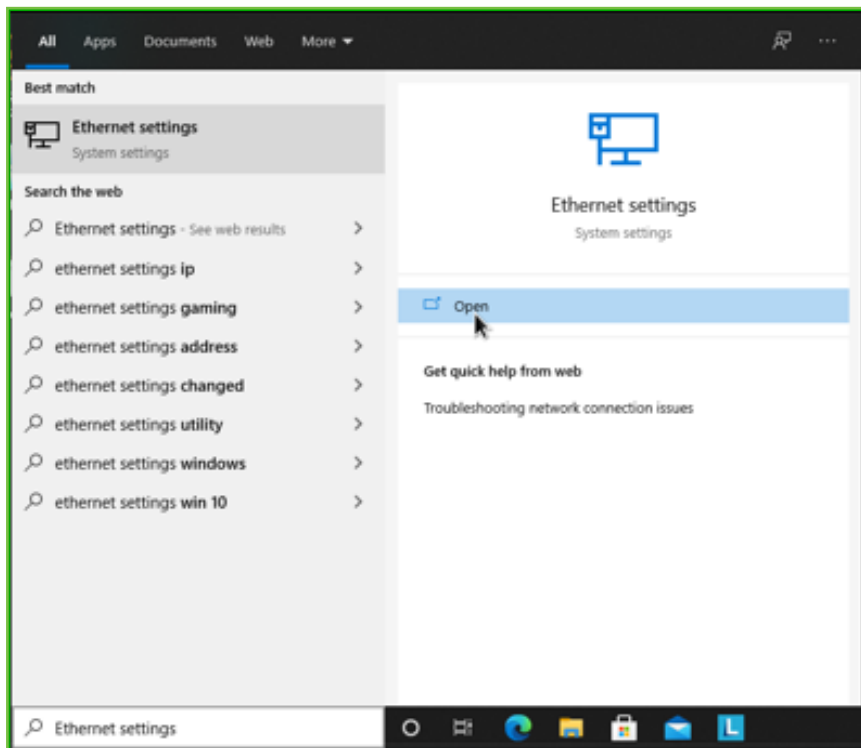
12. Configure the Gateway as needed. (See [Gateway Configuration Via Laptop on page 16](#)).

Appendix B: Revert Back to DHCP Settings

If you have changed your laptop's network configuration (See [Appendix A: Local Management Port on page 29](#)) and wish to revert back to its previous configuration, follow the steps below:

Windows 10 or Later:

1. Search for Ethernet Settings and click the "Open" link.



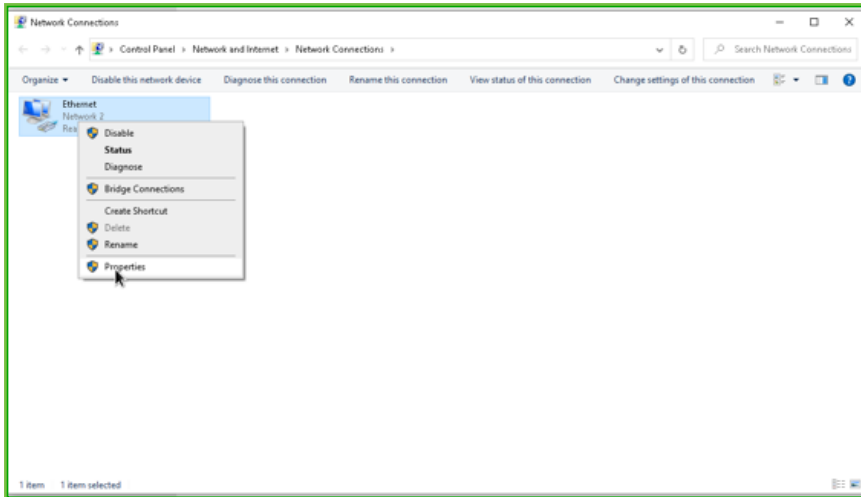
Ethernet settings

2. On the Ethernet Settings panel and click the "Change adapter options" link.



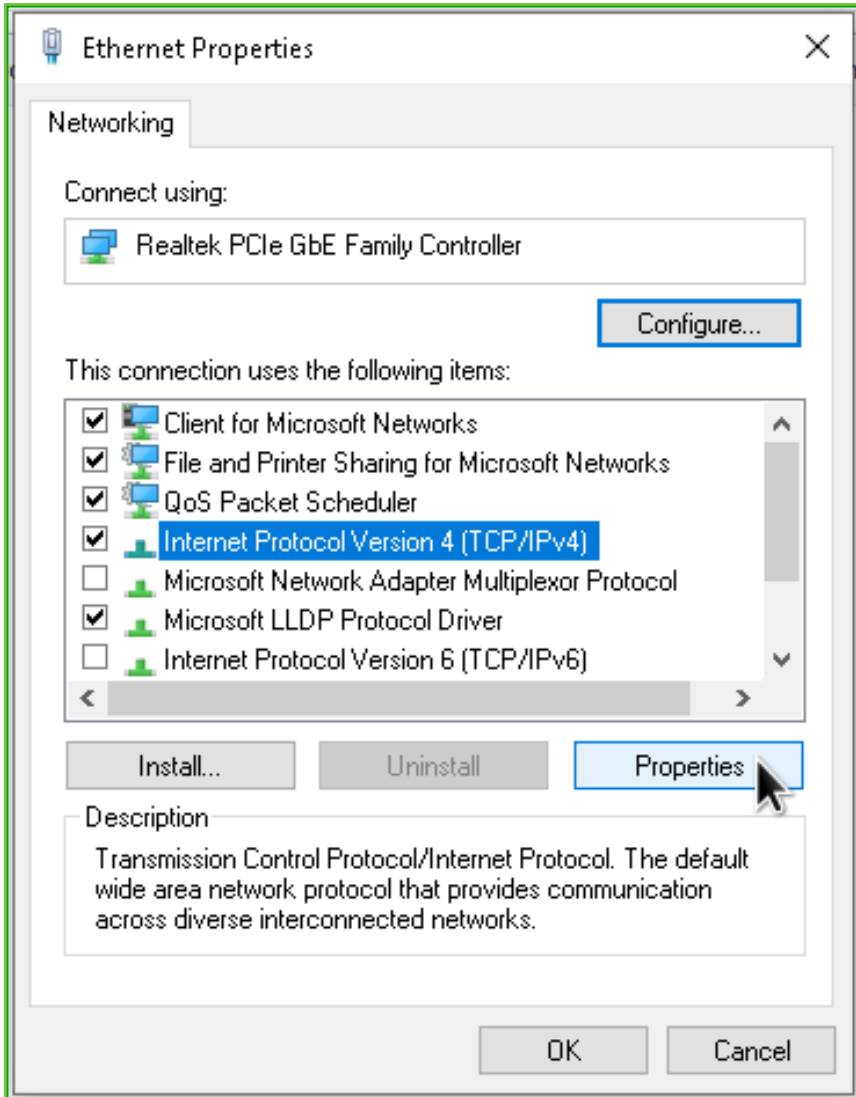
Change adapter options

3. On the Network Connections panel locate the Ethernet interface that is connected to the cable. Right click on the item and select "Properties."



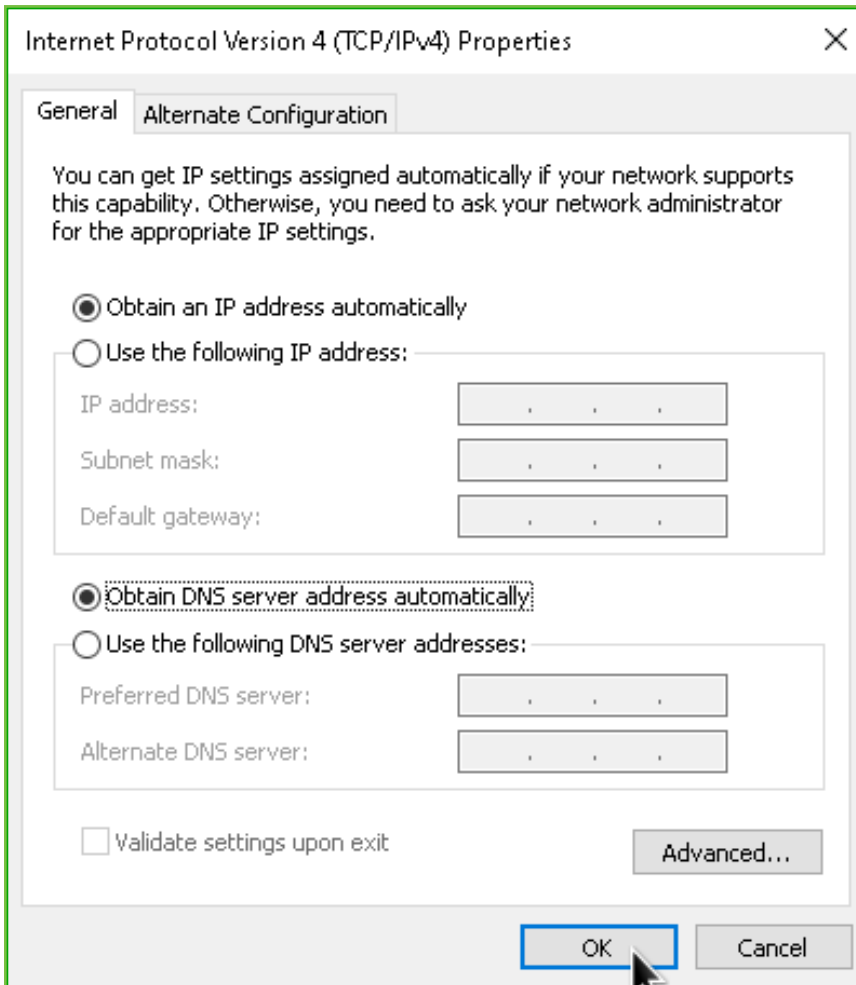
Properties

4. On the Ethernet Properties panel locate the "Internet Protocol Version 4 (TCP/IPv4)". Select that option, then click on the "Properties" button.



TCP/IPv4

5. On the Internet Protocol Version 4 (TCP/IPv4) Properties “General” tab:
6. Click on the “Obtain an IP address automatically” radio button.
7. Click on the “Obtain DNS server automatically” radio button.
8. Click on the “OK” button.



Revert back to DHCP settings

Appendix C: Monitor and Keyboard

The QWL2040 Panel can be configured locally at the device using a keyboard and monitor. If using this method of configuration, you will need:

- Monitor with HDMI or DP(Display Port) connection (depending on your monitor, you may need a VGA-to-HDMI/DP adapter)
- HDMI-to-HDMI cable or DP-to-DP cable
- USB Keyboard

Connection Setup

1. Connect the cable to the monitor and to the Panel Gateway, matching up the corresponding ends (HDMI, DP). (See [Power and Communication Connections on page 7.](#)) Power on the monitor and switch to the proper input, based on the cable used.
2. Plug the USB cable into a free USB port on the Panel. Test keyboard connectivity by pressing Caps Lock to see if the LED on the keyboard illuminates.
3. Reboot the unit by pressing and holding the Power button until the unit turns off. Release the Power button and press it again to power the unit back on. This will cause the unit to recognize the monitor and keyboard.
4. Configure the Gateway as needed. (See [Gateway Configuration via CLI on page 21.](#))

Appendix D: Configuring Local Management Port as a Fail-Over Port

The QWL2040 Panel Gateway has two Ethernet ports: Cloud Ethernet 1 and Local Ethernet 2. By default, Cloud Ethernet 1 is used to connect the Panel to the Ethernet, and Local Ethernet 2 is configured as a local management port; however, Local Ethernet 2 can be configured as a fail-over Ethernet port in the event of an Internet interruption on Cloud Ethernet 1.

IMPORTANT: Configuring Local Ethernet 2 as a failover Ethernet port means you will be unable to locally access the device's internal Gateway for service!

If you wish to revert Local Ethernet 2 back to a service port, you must contact TCS Technical Support (800.288.9383, ext. 2)!

There are two methods you can use to reconfigure Local Ethernet 2:

1. Via the internal Gateway by connecting a laptop directly to the QWL2040 Panel (See [Appendix A: Local Management Port on page 17](#)).
2. Via the Command Line Interface (CLI) by connecting a keyboard and monitor to the device (See [Appendix C: Monitor and Keyboard on page 26](#)).

Hardware/Internet Requirements

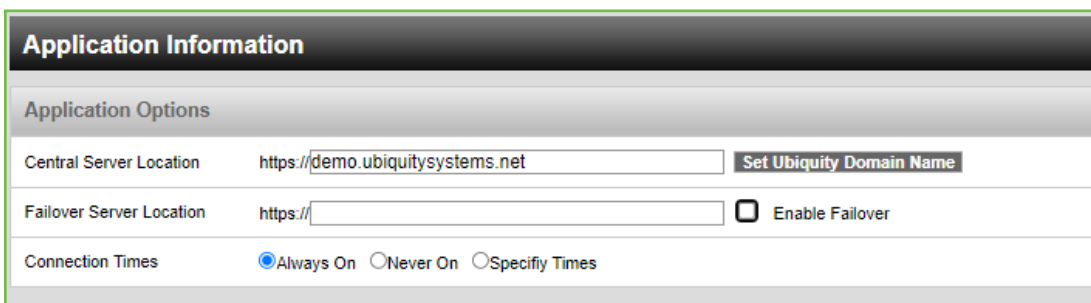
You must provide a secondary Internet connection that is separate from the primary connection (Central Server Location). This failover server connection can be connected to a wired internet connection or it can utilize a cellular modem.

Fail-Over Port Configuration Via Internal Gateway

1. Connect a laptop running Windows 10 or later directly to the Panel using a standard RJ-45 Ethernet cable running from the laptop's Ethernet port to Local Ethernet 2 on the back of the device (see [QD2040d Power and Communication Connections on page 4](#)).
2. Configure the laptop's Ethernet settings and establish communication with the Panel as outlined in [Appendix A: Local Management Port on page 17](#).
3. On your laptop, scroll through the internal Gateway to the Application Options section under Application Information.

Application Options

In the Application Options section, enter the address of the secondary Internet connection in the Failover Server Location field.



The screenshot shows a web interface titled "Application Information". Under the "Application Options" section, there are three rows of configuration fields:

Application Options	
Central Server Location	<input type="text" value="https://demo.ubiquitysystems.net"/> Set Ubiquity Domain Name
Failover Server Location	<input type="text" value="https://"/> <input type="checkbox"/> Enable Failover
Connection Times	<input checked="" type="radio"/> Always On <input type="radio"/> Never On <input type="radio"/> Specify Times

Application information

Click on the "Enable Failover" checkbox. This will open the Failover Options section.

Application Information

Application Options

Central Server Location	<input type="text" value="https://demo.ubiquitysystems.net"/>	Set Ubiquity Domain Name
Failover Server Location	<input type="text" value="https://"/>	<input checked="" type="checkbox"/> Enable Failover
Connection Times	<input checked="" type="radio"/> Always On <input type="radio"/> Never On <input type="radio"/> Specify Times	

Failover Options

Trigger Attempts	3 ▾
Minimum Time in Failover	30 ▾ Minutes
Failback Attempts	3 ▾
Backoff Time Maximum	Between 60 and 120 ▾ Seconds

RS485 Network -- Port Configuration

Controller Network Polling Cycle	1 Minute ▾
Autodetection of Controllers on All Ports	<input checked="" type="checkbox"/> Enabled
<small>All Ports are Automatically Detected Once Hardware is Installed</small>	
Device C-PORT1-0	Port 1 (addr 0 to 255) ▾
Protocol Support	TCS ▾
Baud Rate	9600 ▾
Time-Out Period	200 ▾ milliseconds
Autodetection Range	0 ▾ to 255 ▾
Device C-PORT2-0	Port 2 (addr 256 to 511) ▾
Protocol Support	TCS ▾
Baud Rate	9600 ▾
Time-Out Period	200 ▾ milliseconds
Autodetection Range	0 ▾ to 255 ▾

[Update Application Info](#)

Failover options section

Failover Options Section

The Failover Options section contains several default settings that should be adequate in most situations. TCS strongly recommends contacting your IT department before making any changes to the default settings. Click on the green Update Application Info button beneath the RS485 Network Port Configuration section to save the failover server location and other settings.

Global Network Options Section

Click on the E-PORT2 Mode Designation drop-down menu and select Failover. In the Hostname field, enter the failover network's host name. Click on the green Update Communication Info button to save the settings.

Network Information

Global Network Options

E-PORT1 Mode Designation:	WAN ▼
E-PORT2 Mode Designation:	Failover ▼
HostName:	<input type="text"/>
Special Options:	<input checked="" type="checkbox"/> Disable TCP Window Scaling <input checked="" type="checkbox"/> Disable IPV6

WAN Proxy

Use Proxy

E-PORT1 Settings

IP Address Allocation:	<input checked="" type="checkbox"/> Use DHCP
MTU:	1500 - Ethernet/PPP ▼

E-PORT2 Settings

IP Address Allocation:	<input type="checkbox"/> Use DHCP
MTU:	1500 - Ethernet/PPP ▼

E-Port2 IPV4 Network

IP Address:	<input type="text" value="10.248.248.1"/>	DNS1:	<input type="text" value="10.0.0.0.1"/>
Gateway:	<input type="text" value="10.0.0.0.1"/>	DNS2:	<input type="text" value="0.0.0.0"/>
Subnet:	<input type="text" value="255.0.0.0"/>		

Update Communication Info

Global network options

Fail-Over Port Configuration Via CLI

NOTE: Configuring the Gateway in this manner requires a working knowledge of text-based user interfaces. Do not attempt this method of configuration if you are unfamiliar with text-based user interfaces.

1. Connect a keyboard and monitor directly to the QWL2040 Panel and reboot the device (See [Appendix C: Monitor and Keyboard on page 26](#)).
2. Establish a connection to the CLI (see [Gateway Configuration via CLI on page 15](#)).
3. Skip past the setup questions until you see the Failover settings.
4. Enable Failover by entering a "1".
5. In the Host Name field, enter the host name provided by your IT department.
6. Skip to the Local Ethernet 2 fields. Enter the failover network information provided by your IT department.
7. Exit the CLI to save settings. Disconnect the monitor and keyboard. Do not reboot the QWL2040 Panel.

Changes made via the CLI will take about five minutes to execute.

Appendices

```
-----main: get Ubiquity URL-----  
Ubiquity URL (www.ubiquitysystems.net):  
  
>nothing entered, no change  
-----main: get Failover Enabled -----  
Use Failover (0) (Y/n):  
  
Y  
>-----main: get Failover URL-----  
Failover URL (www.ubiquitysystems.net):
```

Failover URL Settings

```
-----main: get E-PORT2 Mode Designation -----  
E-PORT2 Mode (1) :  
  
0. Open  
1. Service Port  
2. Failover  
2  
>-----main: E-PORT1-----  
E-PORT1: Use Dynamic IP (DHCP) 1 (Y/n)  
  
Y  
>-----main: DHCP selected, setting ip defaults-----  
-----main: Set MTU-----  
E-PORT1: MTU (1500):  
  
1. 1500 - Ethernet/PPP  
2. 1420 - Typical Cell Modem with CHAP/PAP  
3. 1006 - Serial-Line IP (SLIP)  
4. 576 - ISDN  
5. 500-1500 - Custom  
  
>nothing entered, no change  
-----main: E-PORT2-----  
E-PORT2: Use Dynamic IP (DHCP) 0 (Y/n)  
  
Y  
>-----main: DHCP selected, setting ip defaults-----  
-----main: Set MTU-----  
E-PORT2: MTU (1500):  
  
1. 1500 - Ethernet/PPP  
2. 1420 - Typical Cell Modem with CHAP/PAP  
3. 1006 - Serial-Line IP (SLIP)  
4. 576 - ISDN  
5. 500-1500 - Custom  
  
>nothing entered, no change
```

E-port 2 mode settings

Appendix E: Installing and Using TCS Insight Software

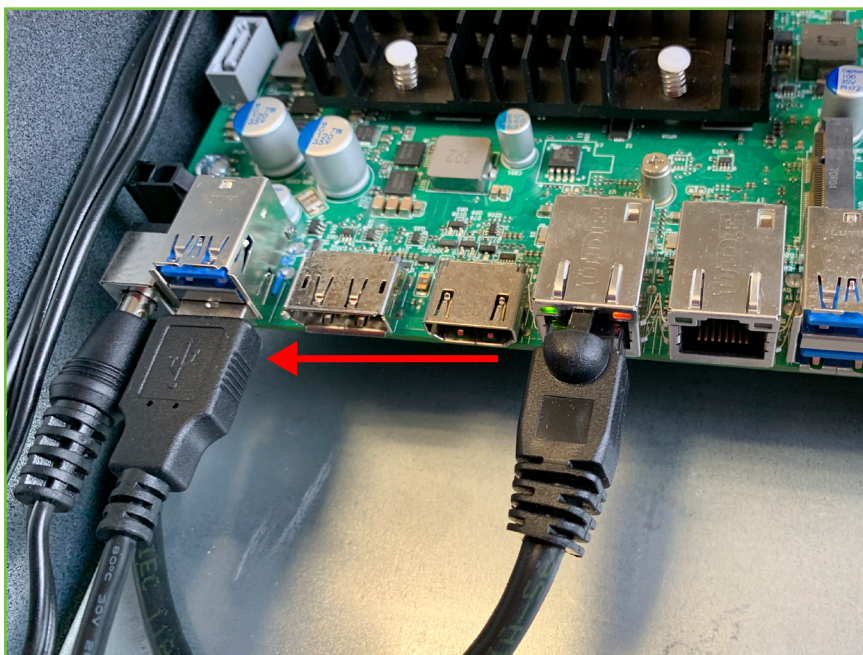
TCS Insight is a free software tool for the initial installation, programming, and verification of the lighting and pulse meter modules built into the QWL2040 Panel. It is meant to be used in those instances when you may not have access to Ubiquity Cloud. You can download the software at https://www.ubiquitysystems.net/su/insight/TCS_Insight_Setup.zip.

In order to use TCS Insight software, you will need:

- Laptop PC running Windows 10 or later, with an available USB port
- USB A to B Cable
- RS485 Cable
- QD1010-USB Converter (wired networks) OR QW1010a Converter (wireless networks)

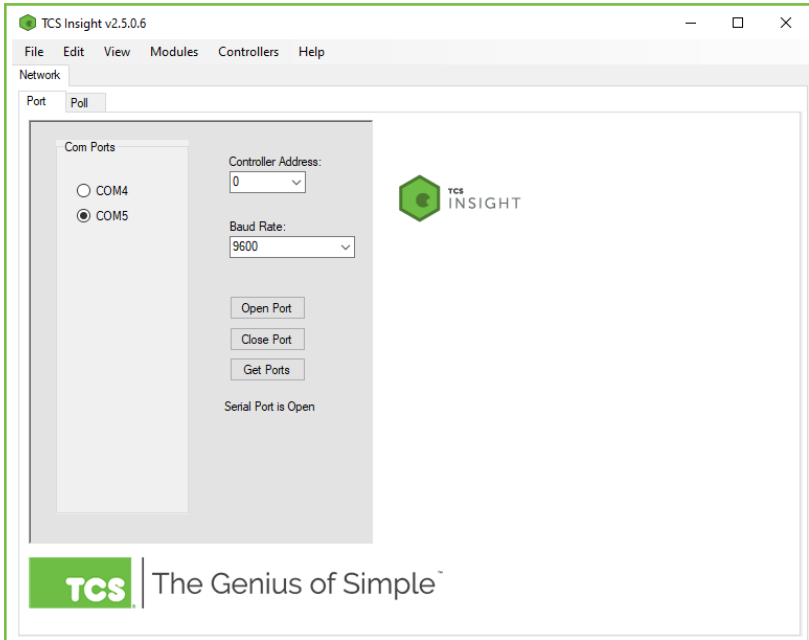
Setup

1. Inside the QWL panel, disconnect the internal USB cable leading to the Panel Gateway. This will isolate the SLQ218 and pulse meter for polling.



USB cable to disconnect

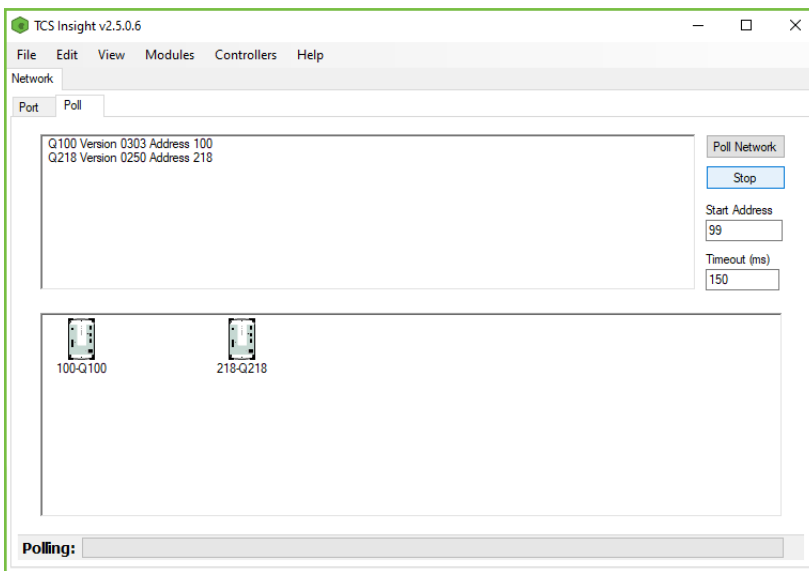
2. Connect an RS485 cable from the open port on the SLQ218/SEQ100 board to the QD1010-USB or QW1010a converter ([See Input Wiring on page 8](#) for port location).
3. Use a USB cable to connect the converter to the open USB port on the laptop. This will power the converter.
4. Launch Insight. The software should detect the converter and establish a new COM port (e.g., COM5).



TCS Insight network tab

NOTE: If the laptop does not detect the converter, you will need to install an FTDI driver. Click on the Help tab in the Insight software and select Install FTDI Driver. Follow the installation instructions.

5. Select the new COM port and click on the Open Port button.
6. Click on the second Poll tab. This will cause the software to recognize the SLQ218 and SEQ100.



Second poll tab

7. Click on the SLQ218 icon to access the programming tabs. (See [Lighting/Pulse Meter Programming on page 24](#)).
8. After programming the SLQ218, click on the SEQ100 icon to access the programming tabs.