



QD2020ie
Site Communications Center



Description

The QD2020ie Site Communication Center is designed to monitor and control a network of up to 255 S-Series thermostats and/or controllers in conjunction with Ubiquity client/server software. The QD2020ie maintains a continuous connection with Ubiquity over an ethernet using standard TCP/IP protocol. Together they trend and alarm data, generate reports, and monitor the controller network. The QD2020ie also has a fallback state to continue to trend and alarm in the event of a lost connection with the Ubiquity server.

Features

- Stores up to 5,000 trend events and 400 alarms in memory
- Monitors and trends all points in a controller network
- Alarms exceeding analog limit, loss of network communication and change of state for digital input & output
- Supports sequenced alarms where two conditions must occur in sequence before an alarm is recognized
- Fallback mode which provides notification via email in alarm situations
- Monitors up to 255 thermostats/controllers
- Fallback support for 64 thermostats/controllers
- Outdoor air sharing
- Integrated 10 Base-T ethernet connection and RS485 network converter
- Functions as time clock for central occupancy schedule
- Four 365-day time clocks with two holiday schedules with automatic leap year and daylight savings correction
- Remotely upgradeable firmware
- No battery backup required
- Eight status LEDs

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Material List

- QD2020ie Site Communications Center
- 120 VAC @ 60Hz to 24 VAC power module
- 120 Ω terminating resistor (2)
- 6 foot RS-232 Cable
- Network Setup Utility Disk

Mounting

The QD2020ie is designed for mounting using four #10 sheet metal screws.

Wiring

Wire the QD2020ie as shown. Plug the included power module to the QD2020ie and to a single phase 120 VAC @ 60 Hz power source.

Network Wiring

Thermostats/controllers:

- Superstats must each be programmed through the keypad with the same baud rate as the QD2020ie. Each thermostat must have a separate, unique address.
- All other controllers, where applicable, must be set to "NW" (network mode), must be set to the same baud rate as the QD2020ie and must have a separate, unique address.

Note: Do not use a network address of 248 because all controllers will respond to this address.

Connect the "A" and "B" network wires to the "A" and "B" terminal on the QD2020ie. The "A" wire must be connected only to "A" terminals, and the "B" wire must be connected only to "B" terminals. If using three-wire communication cable, connect "REF" network wires to "REF" terminal on QD2020ie.

REMOTE CONNECTION TO THE QD2020IE

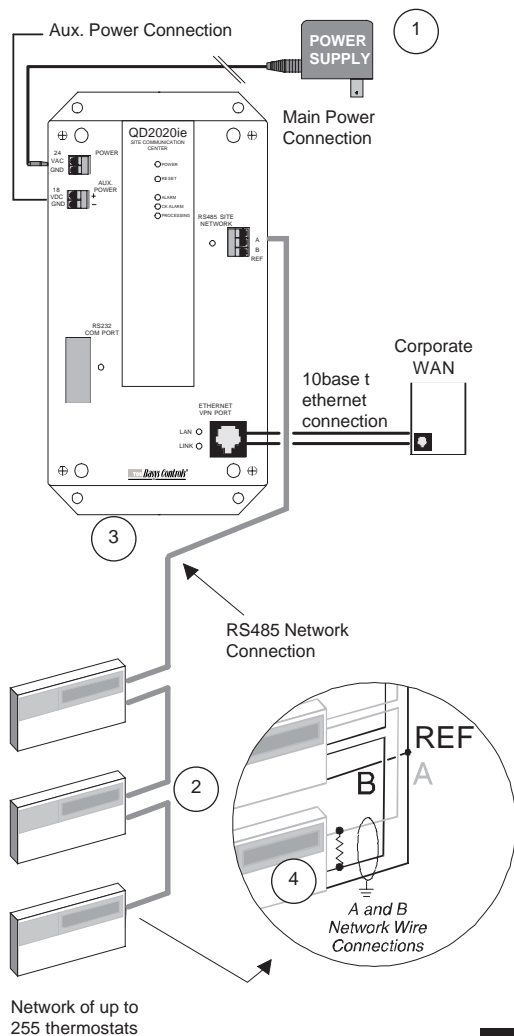
Connect one end of an ethernet cable (purchased separately) into the ethernet jack of the QD2020ie. Plug the other end of the ethernet cable to an ethernet jack.

NETWORK SETUP

Set the network baud rate/bps on the QD2020ie to match the thermostats/controllers on the network. Connect the included 120 Ω resistors across the "A" and "B" network terminals at the two ends of the network. One end of the network may be at the QD2020ie. Finally connect one end of the shield wire of the network wiring to earth ground.

Note: 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.

QD2020ie network wiring diagram.



- 1 Power supply provided (120 VAC @ 60Hz to 24 VAC).
- 2 Twisted, shielded three communications wiring with one end earth grounded.
- 3 First 120 Ω balancing resistor (provided) at one end of the network.
- 4 Second 120 Ω balancing resistor at opposite end of network (furthest from first resistor).

Programming

Almost all of the programming for the QD2020ie is done through the Ubiquity software. Refer to the Ubiquity Manual for instructions on setting up a controller network through Ubiquity. Typically the QD2020ie comes pre-programmed with all of the computer network settings (ie. DHCP enabled, IP Address, DNS, Gateway). However, if it has not been configured or you need to reconfigure the QD2020ie - follow these instructions.

Get the Utility Disk from the QD2020ie packaging. Connect the enclosed RS-232 cable into your computer or laptop and into the RS-232 connection on the QD2020ie:

- Insert the disk into your computer
- Find and click on the program executable - **qd2020.exe**
- Once the program begins running, a dialog box will appear allowing you to choose the Com Port that the RS-232 cable is connected to. If you are unsure, start by trying Com1 and seeing if a connection can be established with the QD2020ie. Select OK to choose the Com Port.
- Once the Com port is selected it will begin communications with the QD2020ie. The Utility reads all of the internet parameters set up in the device. These parameters include: whether the device is DHCP enabled, the IP Address, Gateway, Subnet, DNS server addresses, and the SMTP server address.
- Either -
 - Manually adjust the parameters by entering in new values into the text boxes.
 - Click the *Download Parameters* to retrieve the values from centrally hosted server at TCS
- Click the *Update Parameters* to save the modifications into the QD2020ie

Operation

The QD2020ie is a data collection and storage device that communicates directly with TCS/Basys Controls S-series microprocessor-based thermostats and controllers. The QD2020ie is equipped with an internal ethernet controller to facilitate programming and monitoring of networks from a remote PC using a browser.

The QD2020ie is capable of monitoring up to 255 controllers and internally trending data for up to 64 thermostats and controllers. In normal operations Ubiquity trends all of the points from up to 255 controllers and triggers alarms. In the fallback state, when the QD2020ie is not communicating with the Ubiquity server, the QD2020ie can record and store up

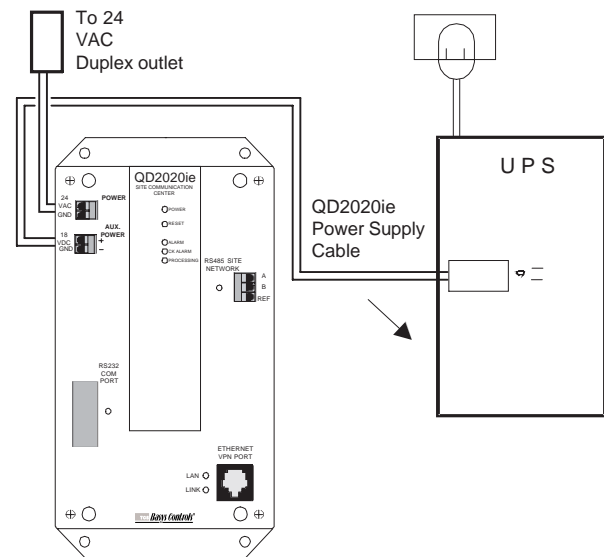
to 5000 total trended events, as well as 400 total alarm conditions. If the SMTP server information is entered into the QD2020ie - it will attempt to distribute those alarms via email. Once communication is reinitiated the trended events and alarms are sent to Ubiquity and accessed via a browser.

Monitored digital and analog points of data are stored and sent to the Ubiquity server on change of state. The QD2020ie polls the controller network up to every minute for changes, and can poll less frequently. Once the polling cycle is completed the data is sent to the Ubiquity server.

The QD2020ie has four internal schedules which can be used as different schedules for controllers on the network. This is utilized with controllers that do not have internal schedule abilities. Changing and assigning schedules is done through Ubiquity.

Another feature of the QD2020ie is to allow the sharing of outdoor air temperature between controllers. The QD2020ie can periodically read this temperature from a master controller and broadcast that value to any other controller on the network requiring an outdoor air temperature input.

The QD2020ie also has a reset feature that can either be triggered on site by pressing the button on the unit or remotely triggered through Ubiquity.



BACKUP POWER

The QD2020ie can generate an alarm when a power loss occurs, provided that an uninterruptible power supply (QD2020-UPS) is installed. Refer to the QD2020-UPS instructions for proper use and operation. See diagram.

Ubiquity Systems Software

The Ubiquity system addresses the market's desire for a fully integrated system in a single, customizable package. Ubiquity is a centrally hosted application that readily and easily interfaces with a QD2020i or QD2020ie. The system is designed on a modular approach to collect and manage information and data. This strategy provides us the opportunity to effectively package a solution tailored to embrace your most immediate concerns. Plus our advanced controls and monitors, combined with this easily modified modular approach, offers the scalability to effectively meet your future demands.

The Ubiquity systems modular design incorporates:

- Energy and environmental management
- TCS/Basys Controls energy management system
- Automated lighting management
- Refrigeration and freezer monitoring and alarming
- Global scheduling, programming and alarming
- Integrated preventive and reactive maintenance functions

Refer to the Ubiquity section for further information

Checkout & Troubleshooting

CHECKOUT

1. Be sure to check and verify all wiring before powering the QD2020ie.
2. Apply power. The QD2020ie Power LED will turn on.
3. The Processing LED will begin blinking indicating that the device is running.
4. If the QD2020ie has not been pre-programmed, it can be programmed at this time.
5. The QD2020ie is now ready for operation.

TROUBLESHOOTING

Power LED does not light up

Be sure that the power supply module, included with the QD2020ie, is plugged in to an outlet that has power.

No Communications with Controllers on the network

Make sure the baud rate selection for the QD2020ie is set to match the baud rate of all the controllers on the network. All controllers on the network must have a unique address, excluding the address '248'. Also, the Network LED will blink whenever the QD2020ie is accessing the network. Network wiring should also be checked.

LED Description

Eight LEDs on the unit allow the occupant to view the current operating status of the QD2020ie.

Power

This LED will be on when the QD2020ie is properly powered.

Alarm

This LED will be on when any *fallback* alarm is generated on the controller network. The LED will remain on as long as any alarm condition remains.

Processing

This LED flickers rapidly when the QD2020ie is processing information.

CK Alarm

This LED will be on when not successfully communicating with Ubiquity. (The LED will initially be on when the unit is powered, and will remain on until it is communicating with Ubiquity.)

RS-485 Site Network

This LED will blink when the unit is accessing controllers or thermostats on a network.

LAN

The LED notes activity on the ethernet. A blinking light represents communications.

Link

The LED will remain on, signifying an ethernet cable is properly connected to the QD2020ie.

RS-232 COM Port

Notes communication on the RS-232 COM port.