

## E-Link Gateway Installation Instructions

### Applications

The E-Link is used to provide Johnson Controls® and York® mechanical equipment such as chillers and rooftop units with Building Automation System (BAS) networking connectivity. It is designed with three active serial ports. Port 1 and Port 4 are used for BAS networking, Port 2 is reserved for connecting to the equipment, and Port 3 provides access for auxiliary monitoring and control.

To simplify the installation and setup, the E-Link gateway comes preconfigured with a series of chiller and rooftop profiles that you may choose by selecting the correct DIP switch settings.

### Installation

The E-Link gateway comes as a circuit board that may either be installed directly into the equipment's enclosure or can be supplied already mounted within a line voltage capable enclosure. An accessory mounting kit is used to mount the E-Link gateway in an OptiView™ or Latitude panel.

### Parts Included

There are several variations of the E-Link gateway that depend on the type of input voltage and equipment with which it is connected. For chillers using the OptiView or Latitude Micro Panel, the E-Link gateway consists of a single circuit board that is attached to four studs inside the Micro Panel, using the accessory mounting kit. The panel supplies 12 VDC input power, eliminating the need for an external power supply.

For other types of chillers, the E-Link gateway is packaged in its own enclosure. In addition to the E-Link gateway circuit board, a transformer is included inside the enclosure that converts a 120 or 240 volt input to 24 VAC power.

Table 1: E-Link Gateway Part Numbers

| Description  | Part Number  |
|--|--------------|
| E-Link with serial outputs (BACnet® MS/TP, Modbus Remote Terminal Unit [RTU] and N2) | YK-ELNK100-0 |
| E-Link with LON as an output   | YK-ELNK101-0 |
| E-Link with serial outputs in an enclosure   | YK-ELNKE00-0 |
| E-Link with LON output in an enclosure   | YK-ELNKE01-0 |
| E-Link OptiView / Latitude installation kit  | YK-ELNKOLK-0 |

### Wiring

Wire the product in a safe and neat manner, and always comply with the latest edition of any local, state, or country codes that may be applicable. Install the wiring in a way that does not cause a hazard and is protected against electrical and mechanical damage.

### Environment

Install the E-Link gateway in an environment that is protected from the direct influence of the elements and is within the following range:

- Temperature: -40 to 85°C (-40 to 185°F)
- Humidity: 0 to 95% noncondensing

Do not install the E-Link gateway outside the confines of a building unless it is mounted within a suitably rated enclosure. If mounted outside but within a suitable enclosure, make sure the environmental specifications are not exceeded. You may need to add a fan or a heater to maintain the operating temperature within the range listed previously. Normally, this enclosure should be specified as IP65 or a NEMA 4x or higher. Take care when mounting the E-Link gateway so as not to impede access to other equipment within the vicinity.

## Power

The E-Link gateway circuit board is powered from either a 12 VDC or a 24 VAC power source. When used with an OptiView chiller, this voltage is obtained directly from the micro panel through a power harness supplied by the OptiView/Latitude installation kit. If the E-Link gateway circuit board is installed in its own enclosure, a transformer is included in the enclosure. Line voltage may be supplied using an external power source or drawn from the input voltage terminal strip inside the equipment. Be sure the VA capacity of the line supplying the equipment is rated for the additional power required by the E-Link gateway. Use a suitably sized wire to connect the line voltage feed to the E-Link gateway that is one size larger than required for the amperage draw. The line voltage power source should be dedicated, separately fused, and isolated (using a control transformer) from other equipment in the plant room that may generate electromagnetic interference.

## Grounding

For the enclosure style, a ground wire must be connected directly to the chassis at the point of entry. There is a small label (Figure 1) that identifies this grounding point. This should be connected through a continuous ground circuit to the incoming ground at the source transformer.

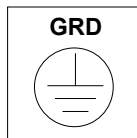


Figure 1: Grounding Label

Besides providing safety protection, the ground connection plays an extremely important part in the operation of the communication circuitry.



**WARNING: Risk of Electric Shock.** Ground the E-Link gateway enclosure according to local, national, and regional regulations. Failure to ground the E-Link gateway may result in electric shock and severe personal injury or death.

## Power Cables

For an enclosure style E-Link gateway, the power cable should be at least 18 AWG copper wire rated for 10 amperes per core at 250 volt AC.

**IMPORTANT: Use copper conductors only.** Make all wiring connections in accordance with local, national, and regional regulations. Do not exceed the E-Link gateway's electrical ratings.

If the power cable uses three conductors, the ground conductor must be, as a minimum, the same size with the same current carrying capacity as the live and neutral conductors.

## Network Cables

In most cases the network cable is specified and provided by a third-party integrator. For the E-Link gateway to chiller interface, a twisted-pair cable, with an overall shield and drain wire, with conductors of at least 24 AWG is recommended as the network cable (for example, Belden® 9272 cables and Belden 9841 cables).

## Protection of Communication Ports

When using RS485 technology, it is possible that electrical disturbances, such as voltage spikes, can damage a circuit board. The E-Link gateway includes tranzorbs on each RS485 port to protect against damaging electrical spikes and stray voltage. The equipment panel should also be equipped with protection against electrical disturbance. Whereas OptiView micro panels are equipped with onboard tranzorbs, other equipment panels may require the addition of an external board. Refer to the equipment documentation for details. Port 1 of the E-Link gateway is also electrically isolated providing a means of mitigating common mode voltage induced problems (the installation is described later).

## High Noise Environments

Electrical equipment that employs high speed switching circuits (variable speed drives, solid state starters and computing equipment) generates Electro-Magnetic Noise (EMI) and Radio Frequency Interference (RFI). When excessive, this noise can affect the way electronics behave and ultimately affect communication. Noisy environments often show up as varying ground potentials; that is, the electrical reference points at different nodes are different. This is referred to as common mode noise. The RS485 circuitry is designed to withstand a certain difference between varying ground sources; however, if this difference becomes too great and exceeds certain voltage limits, the RS485 circuitry can be permanently damaged and require replacement. To combat these possible problems, follow good wiring practices:

- Ensure that the micro panel and the E-Link gateway are powered from a source with true earth ground.
- Do not run communication cables in close proximity to or parallel with power cables.

The pathways for noise, and therefore the likelihood of common mode noise, are greatly reduced if the E-Link gateway is close-coupled to the micro panel. Close-coupling requires that the E-Link gateway and micro panel share the same line voltage power source and are physically close to one another. Typically the E-Link gateway is mounted on the micro panel enclosure. This ensures a short communication cable, which is usually protected entirely within the two enclosures.

### Types of Communication Ports

The E-Link gateway uses three technologies to connect to other devices; RS-485 and FFT are used for multi-drop networking, whereas RS-232 is primarily used for point to point connectivity.

#### RS-485

The RS-485 standard requires the use of three conductors when connecting network nodes; two signal wires and a common. The E-Link gateway either uses a third wire for the return path or the building's infrastructure. The wiring method is dependent on the port being used; an electrically isolated Port 1 typically uses a third wire approach, while ports 2 and 3 would normally use chassis or building ground.

### User Settings

There are a number of settings that a user may make on an E-Link gateway or to the equipment to which it is being connected.

### Network Termination

All End-of-Line (EOL) devices (one that has only one set of RS-485 network wires connected to it.) on an RS-485 network should be terminated. This provides biasing of the network and assists in returning the signal to a normal state in the event of voltage transients. If the E-Link gateway happens to be the end-of-line device, terminate the network by setting the slider switch located above each of the E-Link gateway's RS-485 ports to the ON position.

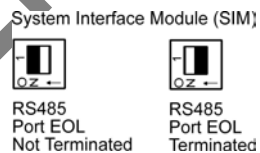


Figure 2: RS-485 Ports

**IMPORTANT:** Ensure that the EOL switches are not set to the ON position for controllers that do not terminate the RS485 network.

### Media Access Control (MAC) Address

The E-Link gateway's network hardware address is set on a single 8-way DIP switch. Switch 8, the T switch is reserved to invoke Terminal mode on Port 3, (refer to the User Guide for more details) leaving the remaining 7 switches for setting the actual address.

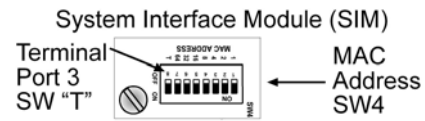


Figure 3: SIM DIP Switch

The network address is binary weighted, allowing you to set up to 127 unique network addresses.

### APP Group A

The E-Link gateway uses a 6-way DIP switch to select the desired equipment's profile. This switch is also binary weighted allowing up to 63 unique selections.

### APP Group B

The E-Link gateway uses a 4-way DIP switch to select the desired output protocol. This switch is also binary weighted allowing up to 15 unique selections.

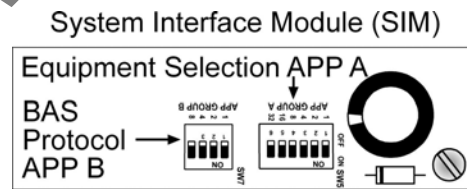


Figure 4: SIM Interface Module

### Push Button

The E-Link gateway uses a push button (Figure 5) as a means of activating any user selections on APP Group A and APP Group B switches.

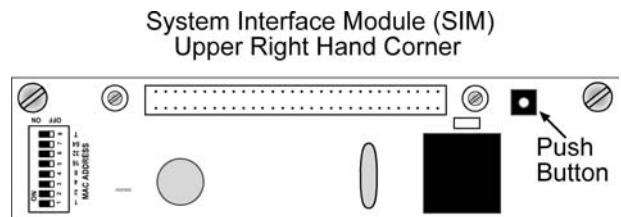


Figure 5: E-Link Gateway Push Button

**Note:** Refer to the User Guide for more details on the functionality of the above switches.

## Equipment Setup

Different pieces of equipment sometimes require a specific hardware configuration (jumper/switch settings) to enable communication with the E-Link gateway. The user should reference the equipment's installation literature for these settings.

### Setting the Rotary Switch on Chiller Panels

Some micro panels use a rotary switch to set their York Talk II address, (York Talk address = Rotary Switch setting + 1). Since the E-Link gateway uses a one to one relationship with the chiller panel, this switch is normally set to 0 (York Talk address 1);

however, in a master/slave configuration, set the master micro panel rotary switch to 0 and the slave micro panel to 1. If the chiller micro panel is not equipped with a rotary switch, the York Talk address is software settable. In most cases, this is user configurable, but some models are fixed and cannot be changed (refer to the equipment documentation for specific details).

Chiller Rotary Switch

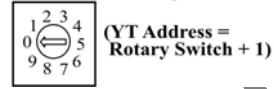


Figure 6: Chiller Rotary Switch

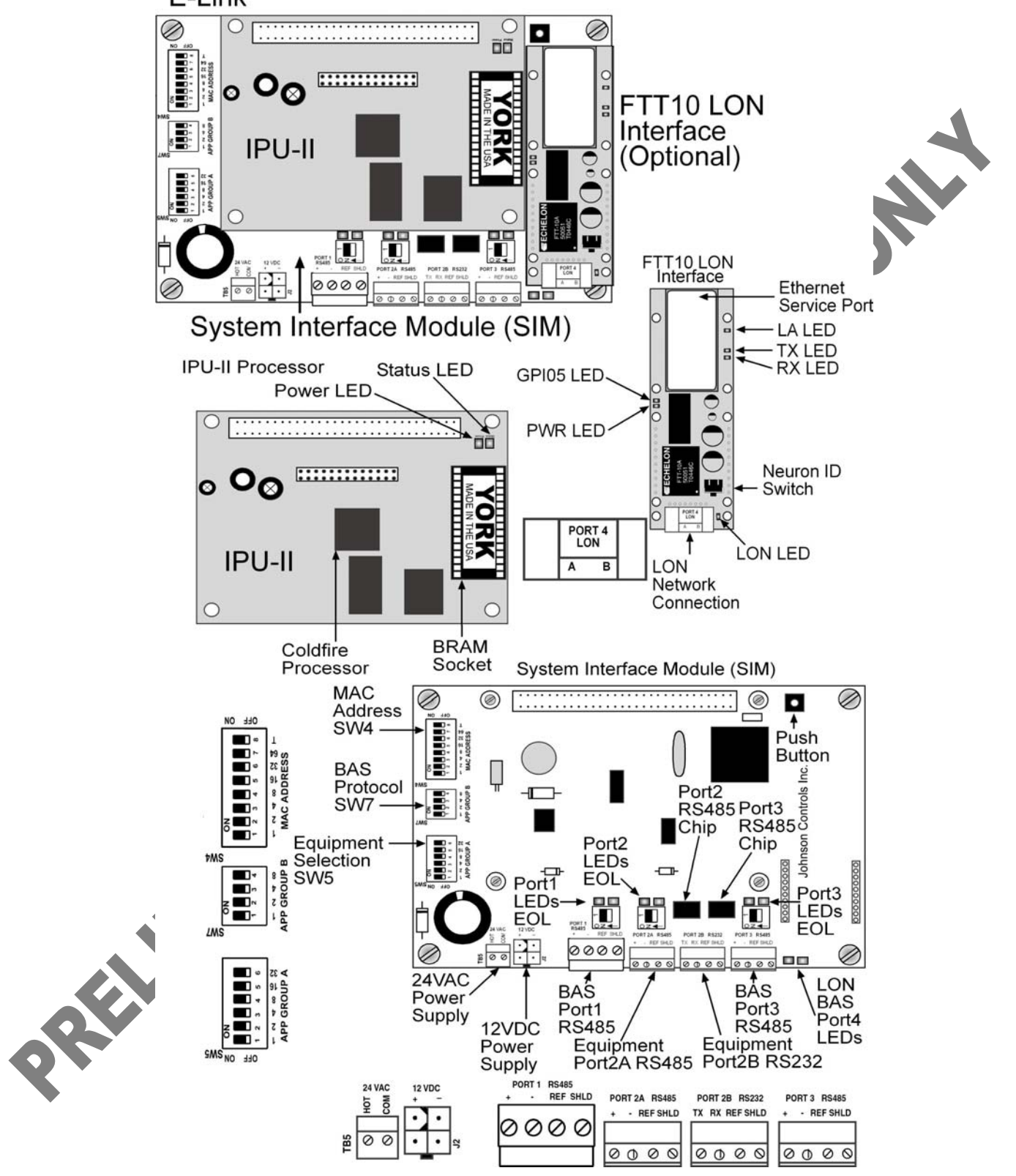


Figure 7: E-Link Gateway Component Identification

Preliminary—This information may change.

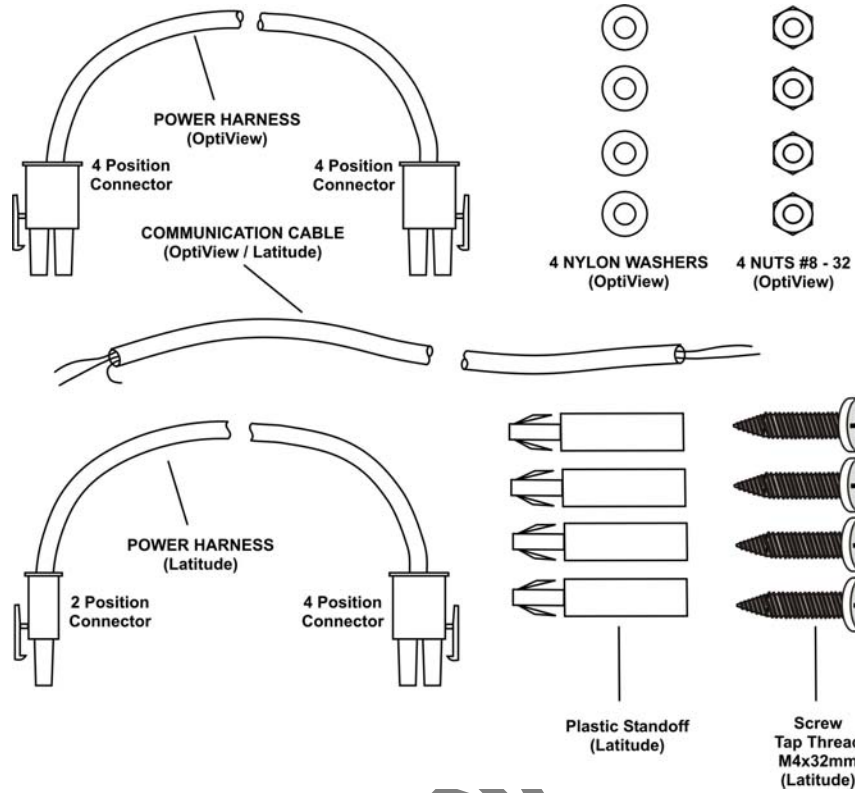
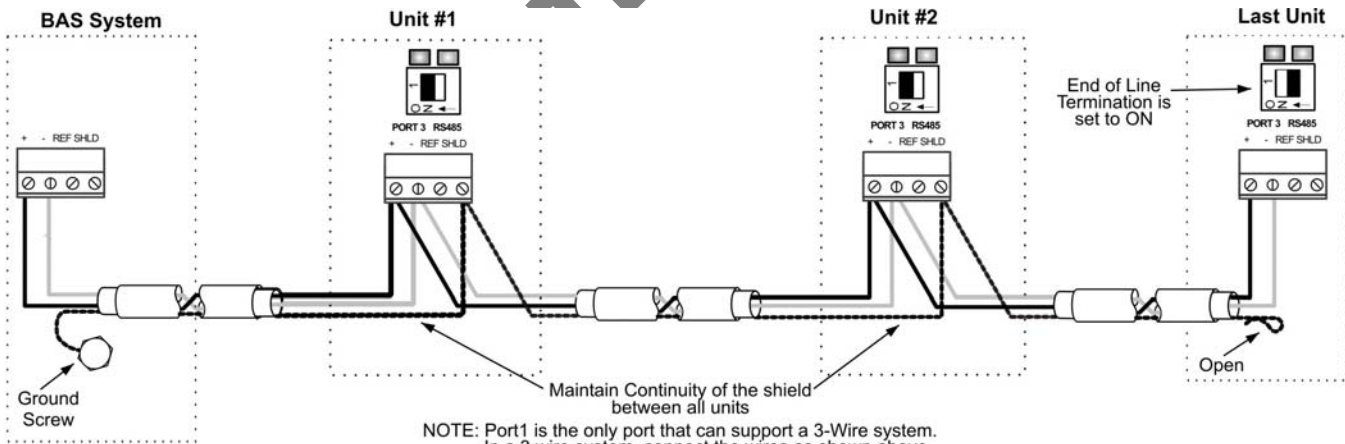


Figure 8: E-Link OptiView/Latitude Installation Kit YK-ELNKOLK-0 Contents



- NOTE: Port1 is the only port that can support a 3-Wire system. In a 3 wire system, connect the wires as shown above. Connect the third wire to the REF terminal of the Port1 terminal blocks.
- NOTE: DO NOT Connect a Port1 3-Wire system communication trunk with any 2-Wire system communication trunk.
- NOTE: DO NOT Connect a Port4 2-Wire LON system communication trunk with any other communication trunk

Figure 9: BAS Trunk Shield Wiring

See Figure 15 and Figure 16 for additional information.

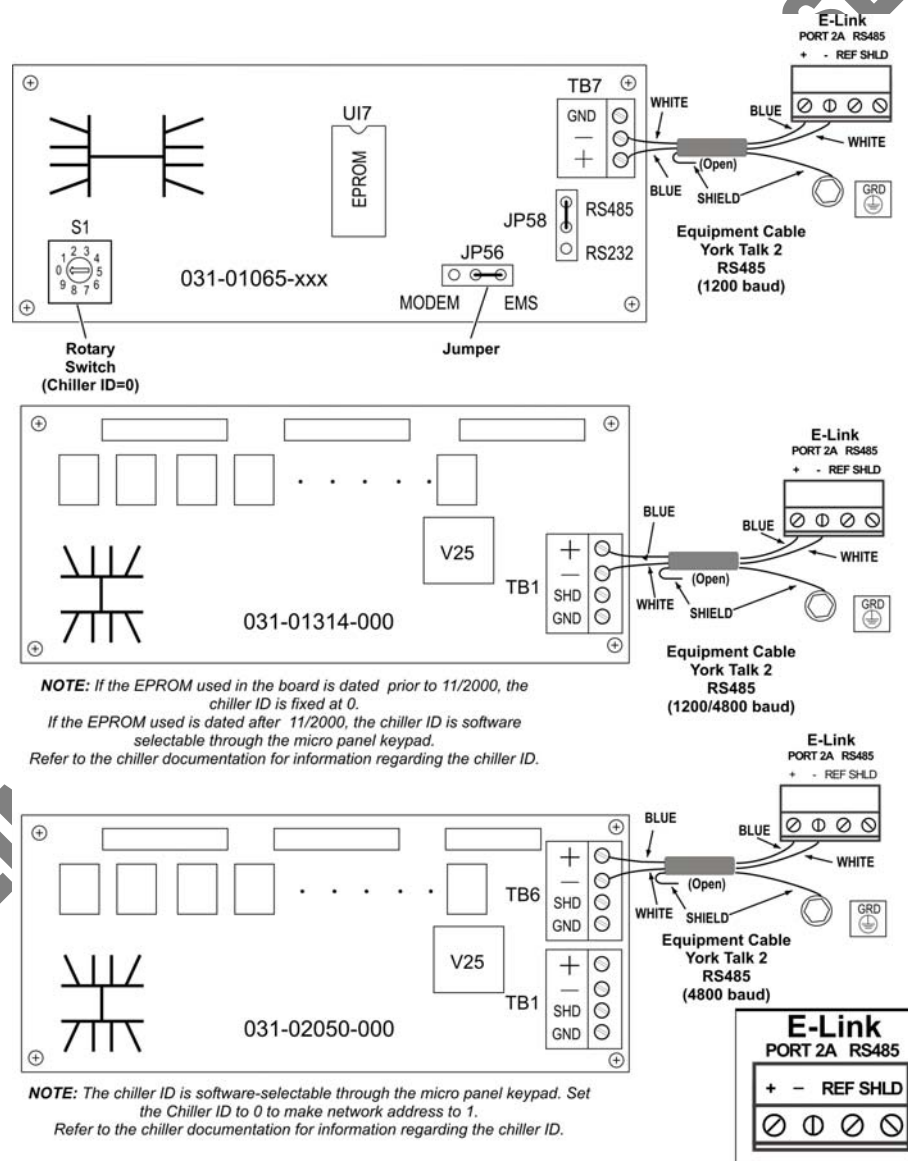
## Network Topology

The E-Link gateway uses three serial communications ports and an optional LON port to connect equipment to a BAS system. Port 1 and

Port 4 are designated as the BAS ports, with Port 1 used to support all RS-485 based communication protocols, whereas Port 4 is primarily used for LON connectivity with the addition of a LON ProtoCessor module.

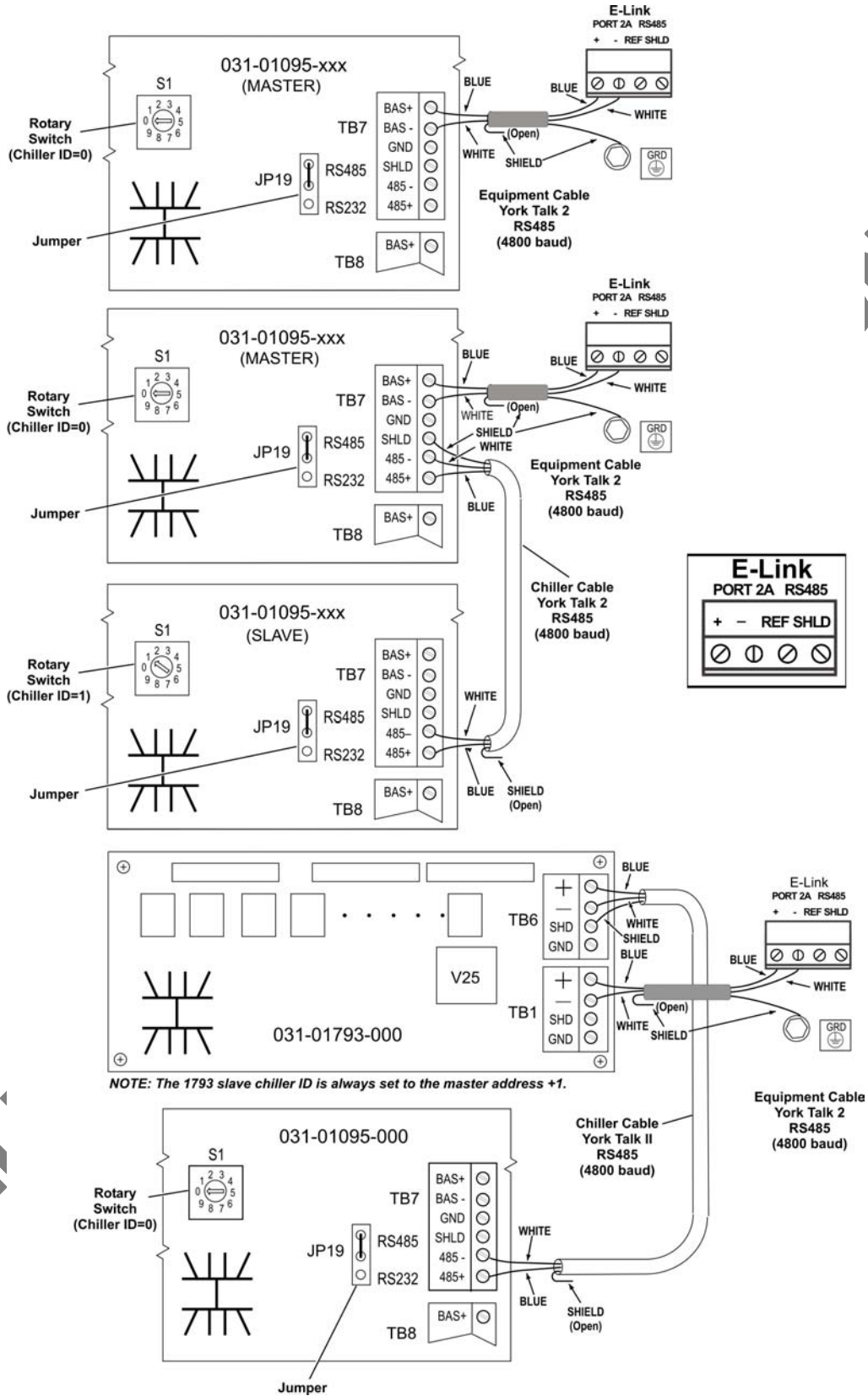
**Table 2: Communication Port Protocol Definition**

| Port 1       | Port 2A      | Port 2B       | Port 3       | Port 4 |
|--------------|--------------|---------------|--------------|--------|
| RS-485       | RS-485       | RS-232        | RS-485       | LON    |
| BACnet MS/TP | York Talk II | York Talk III | Modbus RTU   |        |
| Modbus RTU   | BACnet MS/TP |               | N2           |        |
| N2           |              |               | BACnet MS/TP |        |
|              |              |               | Terminal     |        |



**Figure 10: E-Link Gateway to Equipment Connections**

Preliminary—This information may change.



NOTE: The 1793 slave chiller ID is always set to the master address +1.

Figure 11: E-Link Gateway to Equipment Connections (Continued)

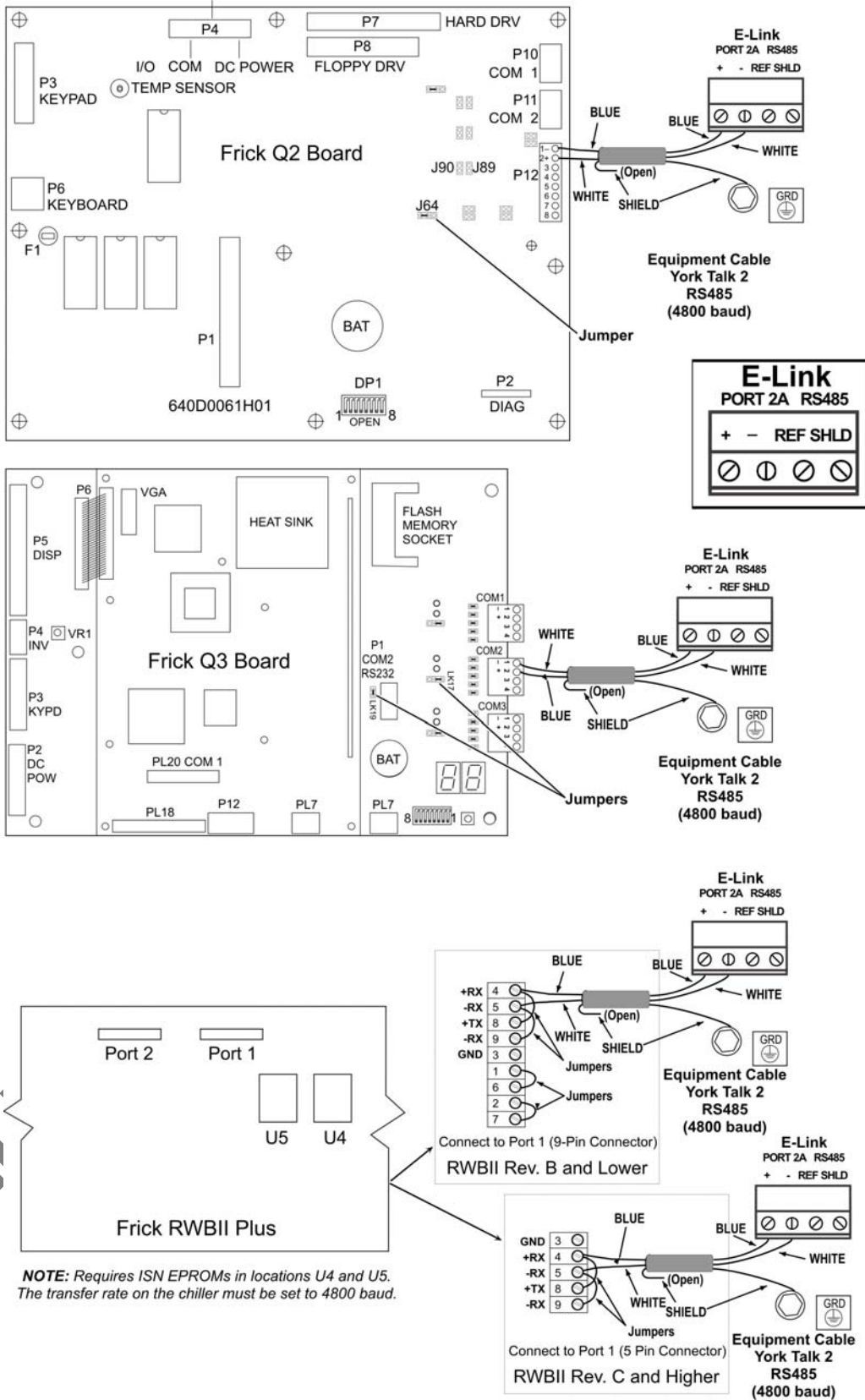


Figure 12: E-Link Gateway to Equipment Connections (Continued)

Preliminary—This information may change.

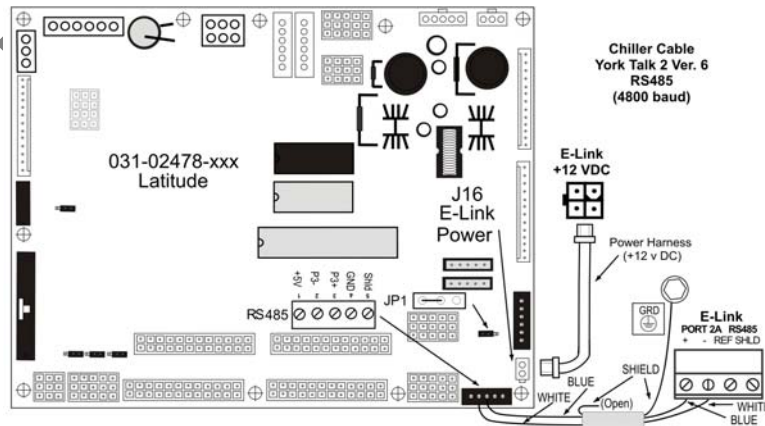
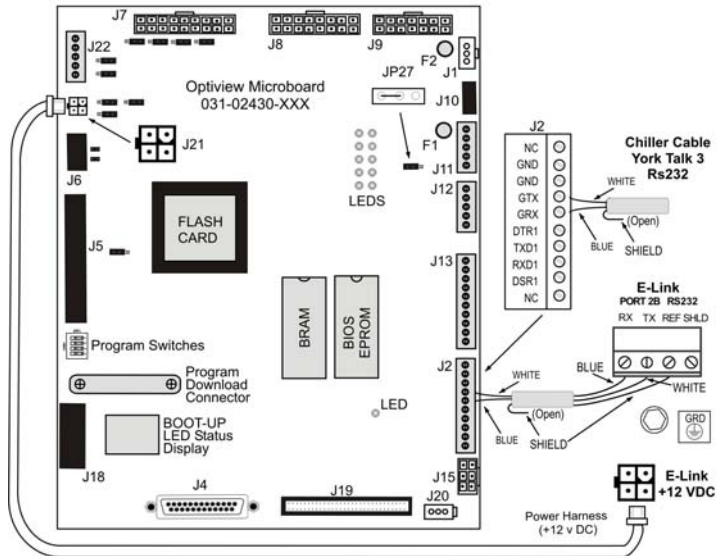
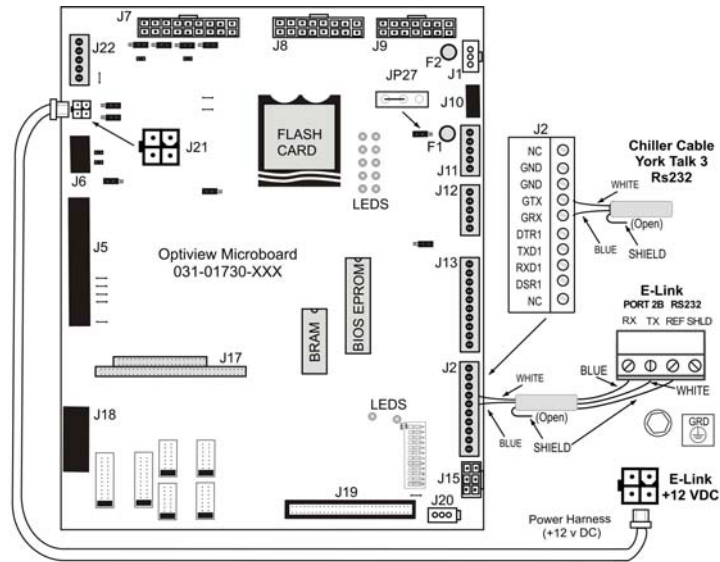


Figure 13: E-Link Gateway to Equipment Connections (Continued)

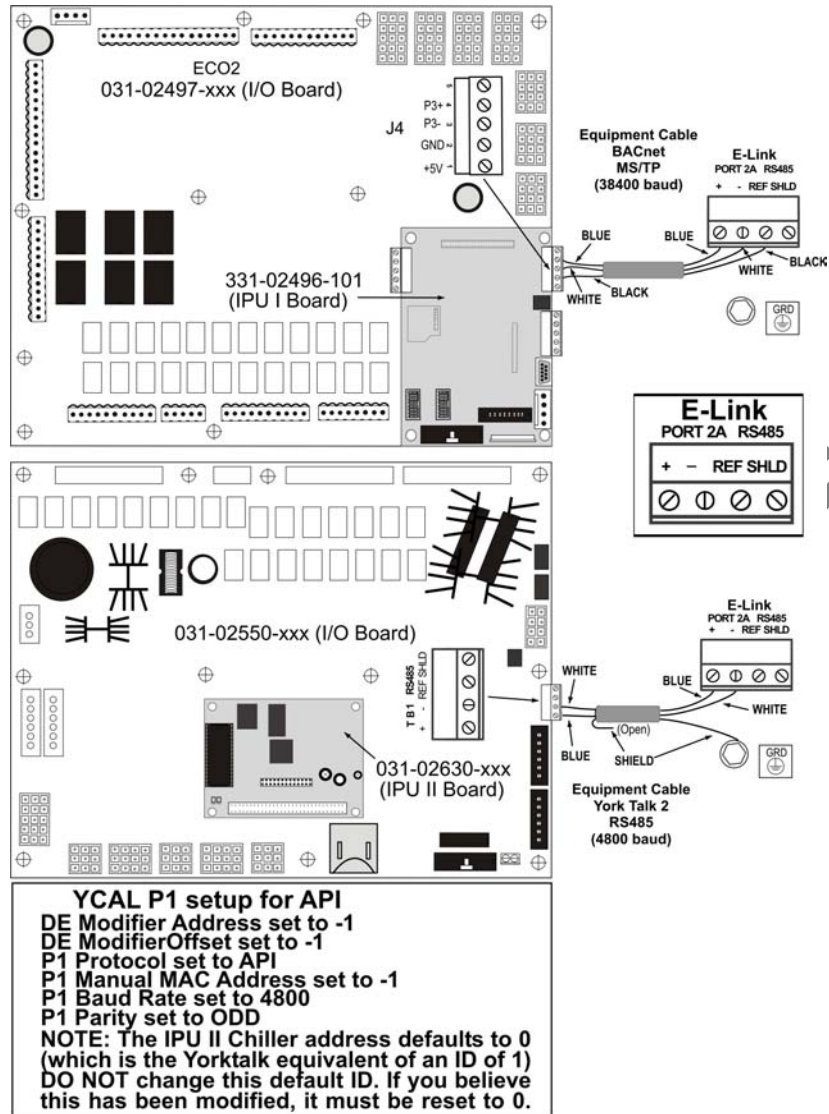
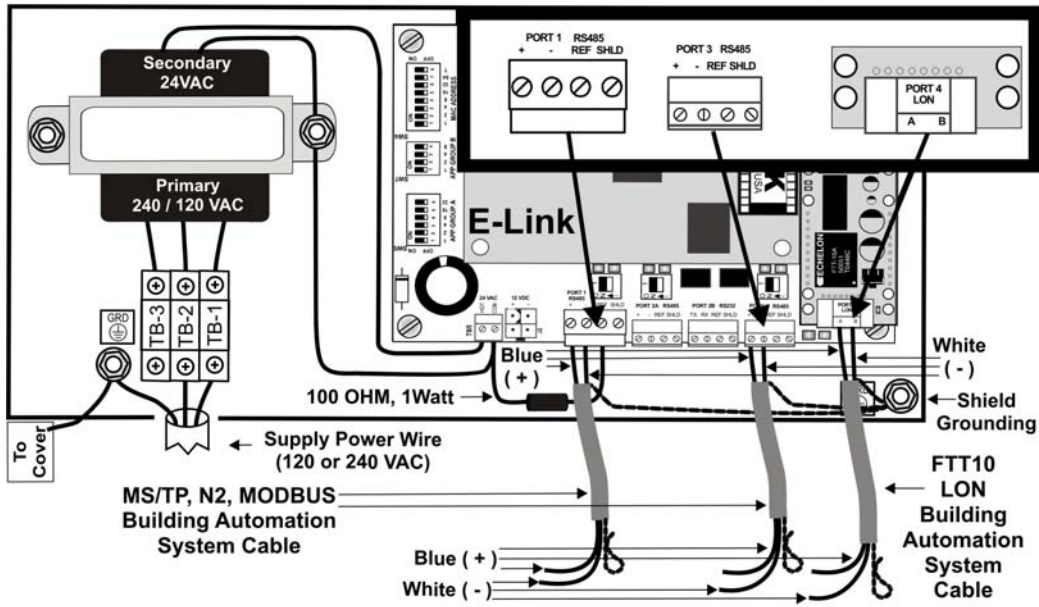
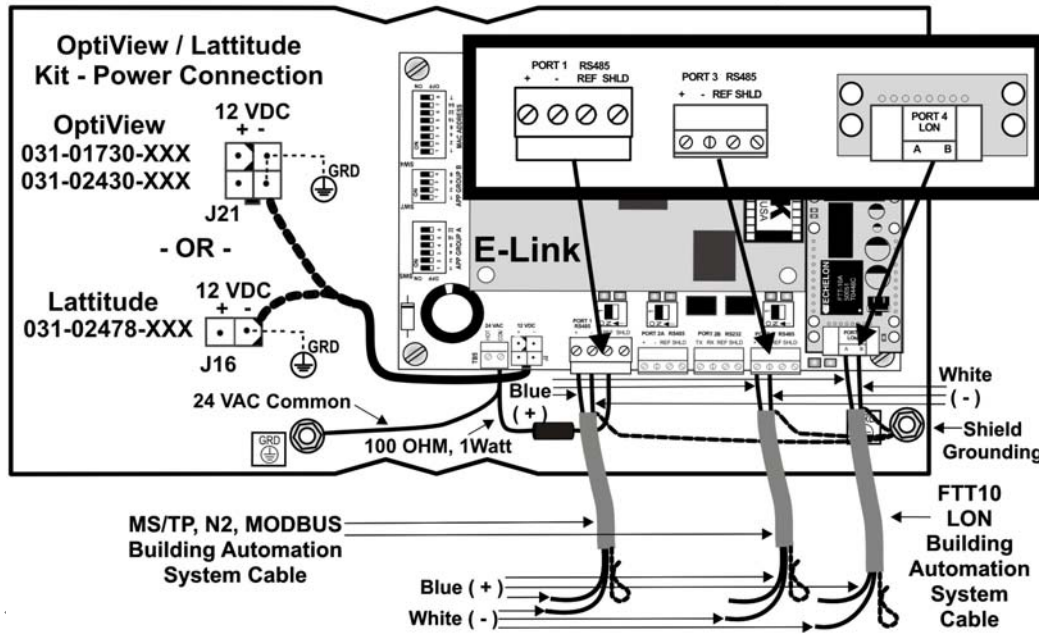


Figure 14: E-Link Gateway to Equipment Connections (Continued)

**E-Link External to Equipment Installation - 2 Wire BAS System**



**E-Link Internal to Equipment Installation - 2 Wire BAS System**

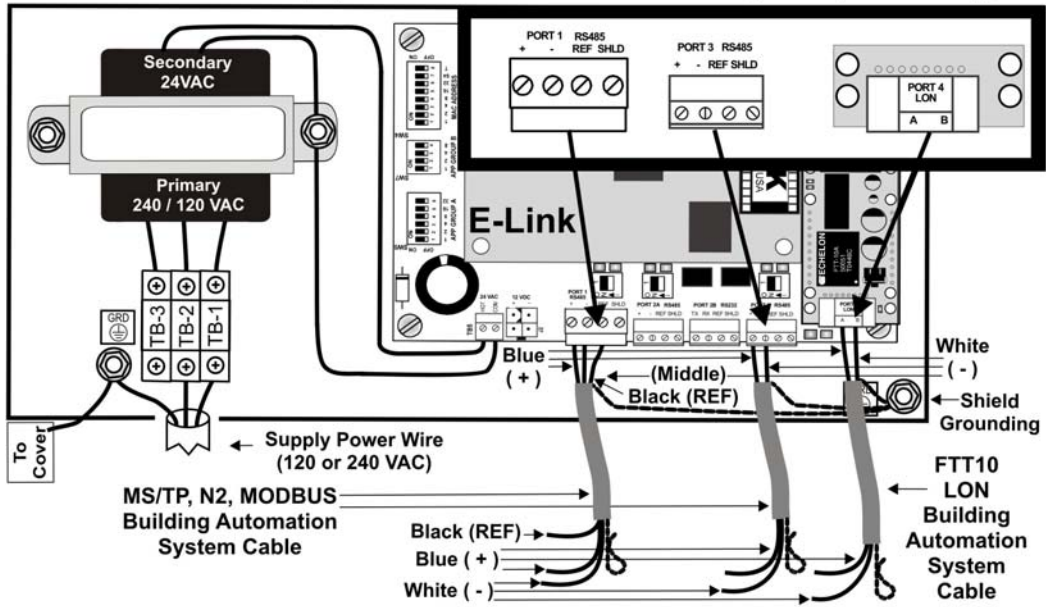


**- NOTE -**

In either 2 wire installation, Port 1 utilizes the ground path for communication return path

**Figure 15: E-Link Gateway Communication Port Connections to a BAS System**

**E-Link External to Equipment Installation - 3 Wire BAS System (Port 1 Only)**



**E-Link Internal to Equipment Installation - 3 Wire BAS System (Port 1 Only)**

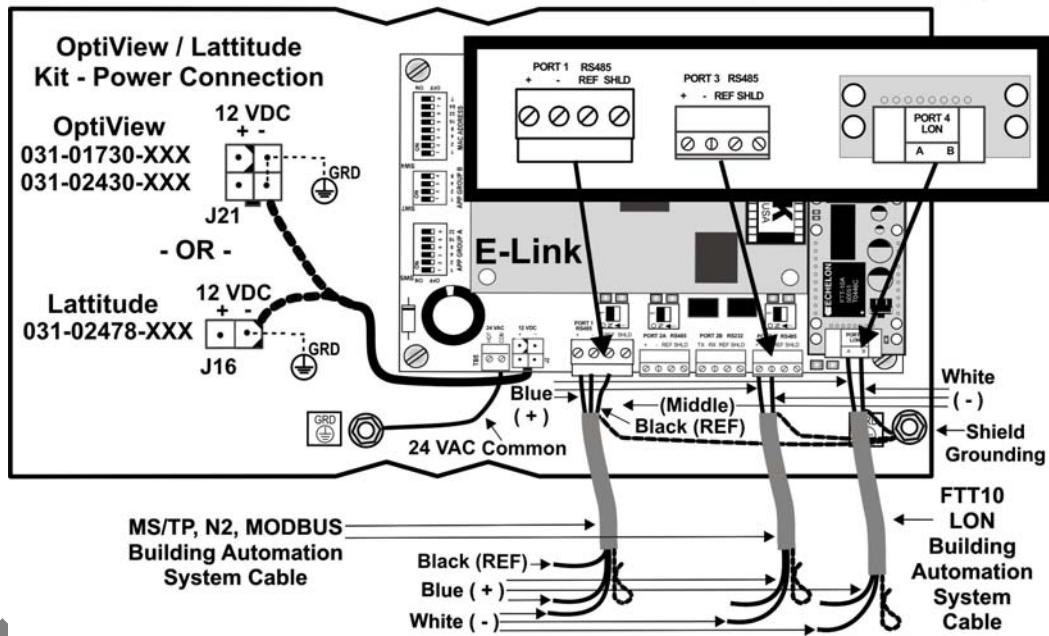


Figure 16: E-Link Gateway Communication Port Connections to a BAS System (Continued)

PREL

## Mounting Instructions



### **CAUTION: Risk of Electric Shock.**

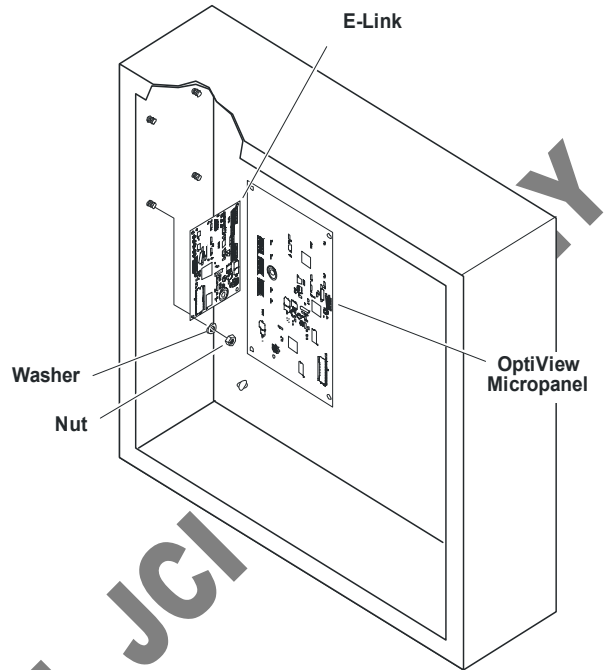
Disconnect power supply before making electrical connections to avoid electric shock.

### OptiView Panel Installation

1. Attach the E-Link gateway board to the studs in the upper left corner of the OptiView enclosure using the four screws and washers provided in the OptiView / Latitude installation kit.
2. Connect the communications cable (included with the kit) from Port 2B on the E-Link gateway to J2 on the OptiView micro panel. Ensure that wires are connected according to Table 3.
3. Check for stray wire strands, which could cause short circuits and ensure all components are secure.
4. Connect the BAS network to Port 1, if the protocols are transported by RS485 or Port 4 if the BAS network is LON.

**Note:** For RS485 2-wire operation, connect a 100 ohm 1W resistor between the REF and the E-Link gateway's TB5 COM.

5. Ensure jumper J27 is set for RS232 (see Figure 13).
6. Connect the power harness (included with the kit) from J2 on the E-Link gateway to J21 on the OptiView micro panel (see Figure 13).



**Figure 17: OptiView Micropanel Connected to E-Link Gateway**

The E-Link gateway is now ready to be configured using Quick Start; see the *Quick Commission* section.

**Table 3: OptiView Wiring – E-Link Port 2B**

| E-Link Port 2B | OptiView Port | Wire Color     |
|----------------|---------------|----------------|
| RX             | GTX           | White          |
| TX             | GRX           | Blue           |
| REF            | N/A           | Shield / Drain |

**Table 4: OptiView – E-Link Port 1**

| E-Link Port 1 | BAS | Wire Color |
|---------------|-----|------------|
| +             | +   | White      |
| -             | -   | Blue       |
| REF           | REF | Black      |

### Other Chiller Panel Installation

For non-OptiView applications, the E-Link gateway includes an optional enclosure. It does not include communication cables due to the variety of types and lengths which may be required.

**IMPORTANT:** Never install the E-Link gateway outside the confines of a building unless within another enclosure rated IP 65/NEMA 4x or higher.

The E-Link gateway can be mounted as a stand-alone enclosure on either the outside surface of the chiller micro panel (close coupled) or on a smooth surface within close proximity of the chiller panel enclosure.

For mounting on a micro panel, the line voltage power is typically drawn from inside the micro panel.

**IMPORTANT:** Make sure that the cover is securely fastened to the enclosure when operating and that the internal ground wire is attached. This helps to minimize RFI interference from being generated and “picked-up”.

### Mounting on a Micro Panel



**CAUTION: Risk of Electric Shock.**

Disconnect power supply before making electrical connections to avoid electric shock.

**IMPORTANT:** When attaching the E-Link gateway to a Micro Panel, ensure the E-Link gateway does not impede access to other components.

To mount the E-Link Gateway on a Micro Panel:

1. Disconnect power to the chiller micro panel, and follow standard lock out procedures to prevent electrocution and inadvertent activation.
2. Make sure the E-Link gateway enclosure will fit properly and that no obstructions, such as internal boards, switches or external conduit, prevent mounting or servicing of the panel.
3. Locate and remove the two plastic caps in the bottom of the E-Link gateway enclosure.
4. Mark an appropriate place on the enclosure for a matching set of knock out holes. Mark and drill or punch two holes in the micro panel.
5. Using two bulkhead pipe couplers, attach the E-Link gateway enclosure to the micro panel.
6. Complete the wiring by applying power as described in the *Applying Power* section.

**IMPORTANT:** Be careful not to damage the E-Link gateway or micro panel’s circuit boards during the installation. Protect all circuit boards from metal chips, which may cause short circuits if left on the boards at startup.

**Note:** Use of bulkhead pipe couplers provides sufficient clearance to allow removal of the E-Link gateway cover.

### Wall Mounting

To mount the E-Link gateway on a wall:

**IMPORTANT:** When wall mounting, make sure there is no interference with other components in the near vicinity. Use appropriate conduit to connect the power and communications wiring.

1. Check for proper clearances for the necessary electrical and communications cable runs.
2. Ensure that power and communications wiring is in compliance with all local ordinances and customer requirements.
3. Select a suitable location and mark the anchor points. Ensure that the enclosure will be level.
4. Drill the appropriate holes in accordance with the type of wall anchor being used.
5. Install the enclosure on the wall. Be careful not to damage the circuit cards during installation.
6. Check that the mounting is secure and the wiring connections are correct and tight. Check that there are no loose wire strands or other metal objects that could cause a short circuit on the circuit board.
7. Complete the wiring as described in the *Connecting Power* section.

Preliminary—This information may change.

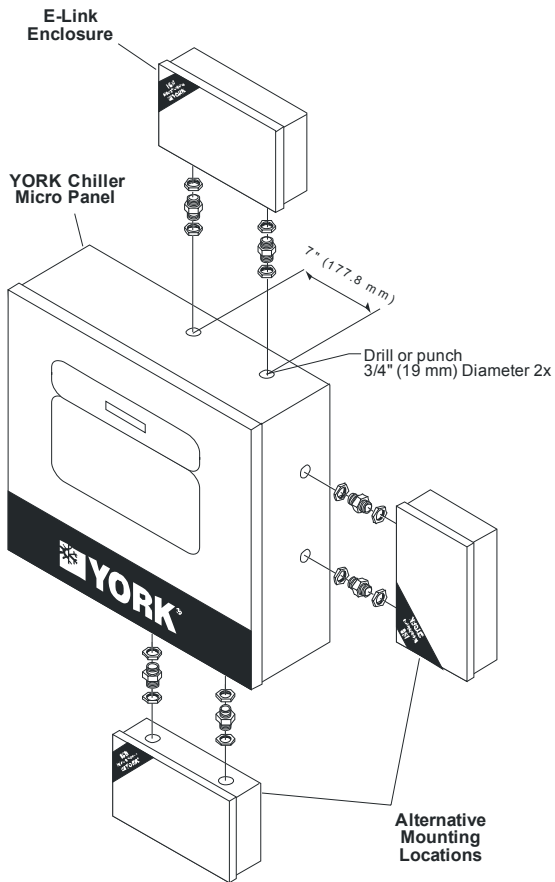


Figure 18: Mounting on the Equipment

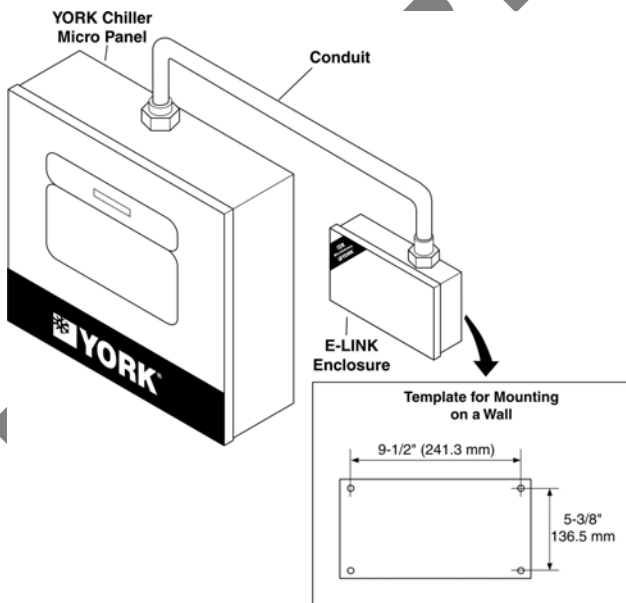


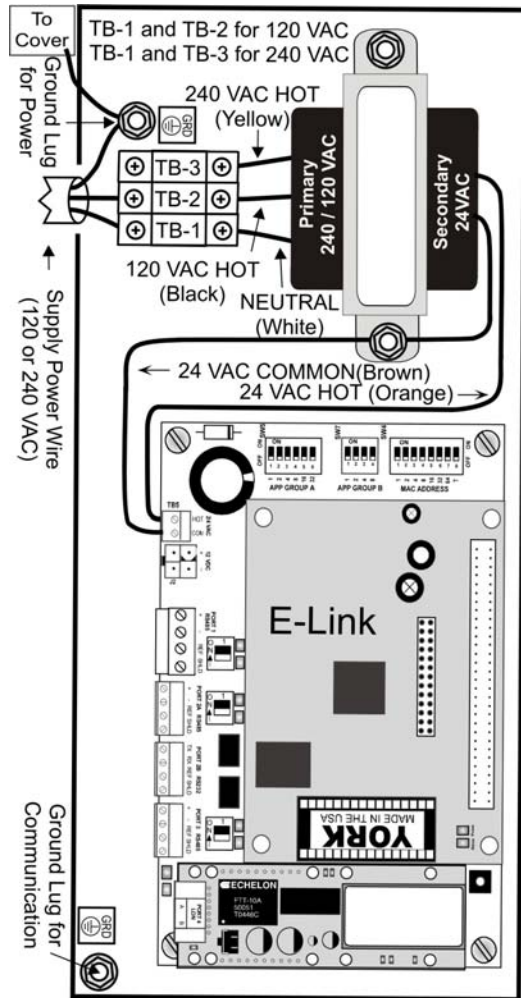
Figure 19: Wall Mounting

## Applying Power

When using an enclosure type of E-Link gateway, power can be drawn from either a separate power supply or from the main terminal strip in the chiller panel. Locate the power source within 2.9 m (3 ft) of the E-Link gateway and protect it with a suitable fuse or circuit breaker. Ensure the power is from a dedicated source and not controlled by a programmed switch.

If the enclosure is mounted on a wall, the wiring from the power source to the E-Link gateway must always be run in a suitable conduit. To obtain the best EMI and EMC performance, ensure that the conduit is bonded to the metal of both enclosures. Scraping the paint around the knockouts usually helps provide a better electrical connection between the joining parts.

1. Disconnect power to the chiller micro panel and follow standard lock out procedures to prevent electrocution and inadvertent activation.
2. Connect a 16-18 AWG wire from a reliable ground reference to the E-Link gateway's incoming power ground lug. Do not remove the existing wire that connects the ground lug to the power circuit.
3. Connect the (Live) 120 VAC or 240 VAC wire to the TB1-2 (for 120 VAC) or TB-3 (for 240 VAC), the (Neutral) always connects to TB-1 and the (Ground) wire to ground lug in the enclosure.



**Figure 20: Power Connection Shown as 120 VAC**

### Commissioning a Standard Application

Once the E-Link gateway has been mechanically and electrically installed (that is, it has been located in its enclosure, wired and terminated appropriately), it may then be Quick Commissioned.

1. Apply power and check the power Light-Emitting Diode (LED). Make sure the T switch is set OFF and then set the required MAC address. This should be done in concert with the system integrator to ensure that a unique address is used. (If any nonstandard setup is required, refer to the User Guide for more details.)

**Table 5: Allowable MAC Addresses**

| Protocol     | Allowable MAC Addresses |
|--------------|-------------------------|
| BACnet MS/TP | 1 – 127                 |
| N2           | 1 – 127                 |
| Modbus RTU   | 1 – 127                 |

2. Based on the equipment that needs to be integrated (see Table 7) and the required BAS output protocol (see Table 8) select the appropriate settings on GROUP A and GROUP B switches. For equipment points lists, see Table 7 and 8.
3. Press the momentary pushbutton shown in Figure 5. The Status LED flashes quickly. After the E-Link gateway reinitializes, the commissioning is complete.
4. Check the E-Link gateway's LEDs. First, check the STATUS LED; if the E-Link gateway has no errors it should be flashing continuously (1/2 second ON, 1/2 second OFF). If it is not, check Table 6 for possible reasons.

**Table 6: LED Status Indication**

| Flash Rate | Status LED Indication                                     |
|------------|---|
| LED Off    | No database configuration is loaded.                      |
| 1 Flash    | Terminal mode has been invoked (Switch T is on).          |
| 2 Flashes  | An equipment to E-Link communications error has occurred. |
| 3 Flashes  | A Quick Start has a configuration error.                  |
| LED On     | No errors with custom/field modified application.         |
| Continuous | No errors with factory standard application.              |

For all chillers that use the York Talk protocols check that the Port 2 communication LEDs, Red (TX) and Green (RX) are flashing; this indicates that the chiller panel is being polled and is responding. (See Figure 7 for the location of Port 2 communications LEDs.)

Preliminary—This information may change.

**Table 7: Equipment Quick Start Selections**

| Switch Settings | APP GROUP A SWITCH |   |   |   |   | Equipment Profiles Quick Starts |                             |
|-----------------|--------------------|---|---|---|---|---------------------------------|-----------------------------|
|                 | 16                 | 8 | 4 | 2 | 1 | Functionality                   |                             |
| 1               | 0                  | 0 | 0 | 0 | 1 | YK with SSS Imperial            | (York Talk-III)             |
| 2               | 0                  | 0 | 0 | 1 | 0 | YK with VSD Imperial            | (York Talk-III)             |
| 3               | 0                  | 0 | 0 | 1 | 1 | YT with SSS Imperial            | (York Talk-III)             |
| 4               | 0                  | 0 | 1 | 0 | 0 | YT with VSD Imperial            | (York Talk-III)             |
| 5               | 0                  | 0 | 1 | 0 | 1 | YS / YR with SSS Imperial       | (York Talk-III)             |
| 6               | 0                  | 0 | 1 | 1 | 0 | YK with SSS Metric              | (York Talk-III)             |
| 7               | 0                  | 0 | 1 | 1 | 1 | YK with VSD Metric              | (York Talk-III)             |
| 8               | 0                  | 1 | 0 | 0 | 0 | YT with SSS Metric              | (York Talk-III)             |
| 9               | 0                  | 1 | 0 | 0 | 1 | YT with VSD Metric              | (York Talk-III)             |
| 10              | 0                  | 1 | 0 | 1 | 0 | YS / YR with SSS Metric         | (York Talk-III)             |
| 11              | 0                  | 1 | 0 | 1 | 1 | York Talk II, 1200, 1 Section   | (York Talk-II)              |
| 12              | 0                  | 1 | 1 | 0 | 0 | York Talk II, 4800, 1 Section   | (York Talk-II)              |
| 13              | 0                  | 1 | 1 | 0 | 1 | York Talk II, 4800, 2 Sections  | (York Talk-II)              |
| 14              | 0                  | 1 | 1 | 1 | 0 | YD Imperial                     | (York Talk-III)             |
| 15              | 0                  | 1 | 1 | 1 | 1 | YD Metric                       | (York Talk-III)             |
| 16              | 1                  | 0 | 0 | 0 | 0 | ECO2                            | (BACnet MS/TP via an IPU-I) |
| 17 to 62        |                    |   |   |   |   | Reserved for future use         |                             |
| 63              | 1                  | 1 | 1 | 1 | 1 | Reserved for Field adjustments  |                             |

**Table 8: BAS Output Protocol Quick Start Selections**

| Switch Settings | APP GROUP B SWITCH with "T" Switch |   |   |   | Output Protocol Quick Starts |                        |                    |
|-----------------|------------------------------------|---|---|---|------------------------------|------------------------|--------------------|
|                 | 8                                  | 4 | 2 | 1 | Port 1                       | Port 3                 | Port 4             |
| 1 (1,4)         | 0                                  | 0 | 0 | 1 | MS/TP, AUTO, N, 8, 1         | Modbus, 19200, N, 8, 1 | Terminal           |
| 2 (1,4)         | 0                                  | 0 | 1 | 0 | MS/TP, AUTO, N, 8, 1         | Modbus, 19200, N, 8, 2 | Terminal           |
| 3 (1,4)         | 0                                  | 0 | 1 | 1 | MS/TP, AUTO, N, 8, 1         | N2, 9600, N, 8, 1      | Terminal           |
| 4 (1,4)         | 0                                  | 1 | 0 | 0 | N2, 9600, N, 8, 1            | MS/TP, 38400, N, 8, 1  | Terminal           |
| 5 (1,4)         | 0                                  | 1 | 0 | 1 | Modbus, 19200, N, 8, 1       | MS/TP, 38400, N, 8, 1  | Terminal           |
| 6 (1,4)         | 0                                  | 1 | 1 | 0 | Modbus, 19200, N, 8, 2       | MS/TP, 38400, N, 8, 1  | Terminal           |
| 7 (1,4)         | 0                                  | 1 | 1 | 1 | Modbus, 9600, E, 8, 1        | MS/TP, 38400, N, 8, 1  | Terminal           |
| 8 (1,4)         | 1                                  | 0 | 0 | 0 | Modbus, 9600, N, 8, 1        | MS/TP, 38400, N, 8, 1  | Terminal           |
| 9 (2,4,6)       | 1                                  | 0 | 0 | 1 | N2, 9600, N, 8, 1            | Modbus, 19200, N, 8, 2 | LON ~ Conversion   |
| 10 (3,4,6)      | 1                                  | 0 | 1 | 0 | N2, 9600, N, 8, 1            | Modbus, 19200, N, 8, 2 | LON ~ Pass through |
| 11 (2,4)        | 1                                  | 0 | 1 | 1 | Modbus, 19200, N, 8, 2       | N2, 9600, N, 8, 1      | LON ~ Conversion   |
| 12 (3,4)        | 1                                  | 1 | 0 | 0 | Modbus, 19200, N, 8, 2       | N2, 9600, N, 8, 1      | LON ~ Pass through |
| 13 (1,4)        | 1                                  | 1 | 0 | 1 | Modbus, 9600, E, 8, 1        | Modbus, 19200, N, 8, 2 | Terminal           |
| 14 (1,4)        | 1                                  | 1 | 1 | 0 | MS/TP, 38400, N, 8, 1        | N2, 9600, N, 8, 1      | Terminal           |
| 15 (5)          | 1                                  | 1 | 1 | 1 | Reserved                     | Reserved               | Terminal           |

Notes:

1. The Terminal setting on Port 4 is restricted for Factory use only.
2. Quick Start 9 and 11 should be used if the equipment is sending data to the E-Link gateway in Imperial units and the E-Link gateway is required to convert these values into metric. When supporting a LONMARK® profile, supply the data to the FFT10 LON Interface in metric.
3. Quick Start 10 and 12 should be used if the equipment is already sending data to the E-Link gateway in metric units, and no conversion is required by the E-Link gateway, so it operates in a “pass through” mode.
4. Setting Switch T = ON, on the MAC address forces TERMINAL mode on Port 3, @ 57600 baud, N,8, 1, this is only needed to debug the E-Link gateway’s operation.
5. Quick Start 15 is reserved for field adjustments.
6. Quick Starts 9 and 10 are selected when connecting the E-Link gateway to an ECO2 unit.

PRELIM - FOR INTERNAL JCI USE ONLY

JOHNSON  
CONTROLS

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