

Net3™



I/O Gateway Setup Guide

Revision A

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Introduction

Congratulations on your purchase of an industry leading ETC Net3™ network device.

This manual will guide you through the setup of the hardware, electrical, and data connections of this Gateway. It does not cover any of the software modes and configuration. This is covered separately by documents that are specifically tied to the software versions that may be running in the Gateways, such as the *Net3 GCE Quick Guide* or related video training files.

Part of the Net3 Family of Products

- **Small size.** Maintains the same compact form factor size as the DMX Four Port Gateways. This gateway allows it to go in more places and provides you with the ability of getting more functionality per rack space. This gateway is only 1U rack space tall and 1/2 rack space wide.
- **LCD Display.** The LCD provides a wealth of information about status, configuration, and the software that is currently active in the Gateway.
- Supports PoE standard IEEE 802.3af (Power over Ethernet). In addition to supporting external DC power supplies, the Net3 Gateways also support PoE to ease installation and reduce the need for having AC power nearby.

Using this Manual

In order to be specific about where features and commands are found, the following naming and text conventions will be used throughout this manual:

- References to other parts of the quick guide are indicated in *italics*. When viewing this setup guide electronically, click on the reference to jump to that section in the document..



Note: *Notes are helpful hints and information that is supplemental to the main text.*



CAUTION: *Caution statement indicates situations where there may be undefined or unwanted consequences of an action, potential for data loss or an equipment problem.*



WARNING: *A Warning statement indicates situations where damage may occur, people may be harmed, or there are serious or dangerous consequences of an action.*



WARNING: *RISK OF ELECTRIC SHOCK! This warning statement indicates situations where there is a risk of electric shock.*

Please email comments about this manual to: TechComm@etconnect.com

Help from ETC Technical Services

If you are having difficulties, your most convenient resources are provided in this user manual. To search more widely, try the ETC website at www.etcconnect.com. If none of these resources is sufficient, contact ETC Technical Services directly at one of the offices identified below.

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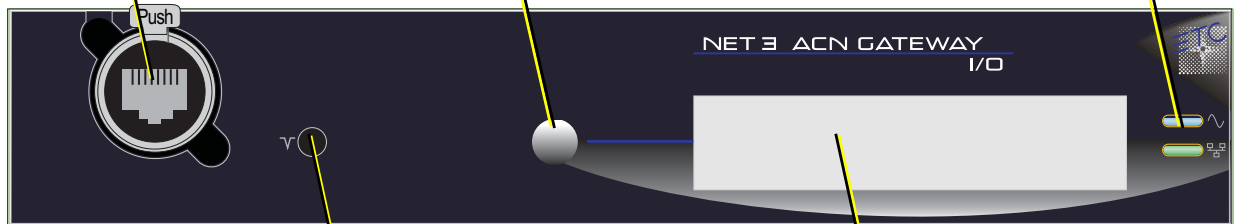
Section 1: Gateway Hardware

Front Panel Layout

- Ethernet connection supports:
- EtherCon™ locking connector
 - PoE (IEEE 802.3af)
 - 10/100Mbps data speeds
 - Auto-sensing
 - Auto-negotiation.

The LCD button activates the backlight (depending on the mode) as well as advances through display pages.

- Blue LED
- On indicates power
- Green LED
- On indicates network connection
 - Flashing indicates network activity



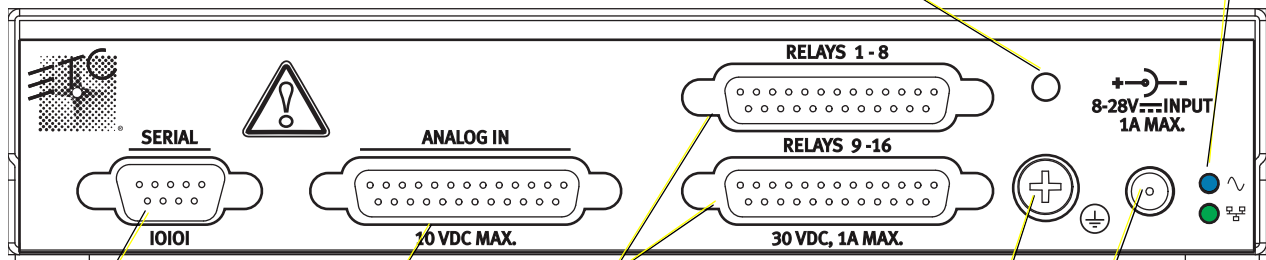
Reset button to hard reboot the Gateway (this button is recessed).

LCD display's exact content changes by mode and software version but generally contains information about status, configuration and the software that is currently active in the Gateway.

Rear Panel Layout

Strain relief clip for dc power cable

- Blue LED
- On indicates power
- Green LED
- On indicates network connection
 - Flashing indicates network activity



RS-232 serial port

- 9600 8N1 No Flow Control (Default)

Contact Closure Inputs

- Analog (0-10Vdc)
- Digital (on/off)
- +10Vdc max.

Relay outputs

- Normally open contacts
- Normally closed contacts
- Max. switching of 1A @ 30Vdc

Grounding post

DC power input

- 8-28Vdc
- Positive tip
- 3.5mm barrel
- 7 watts usage typ.

Section 2: I/O Ports

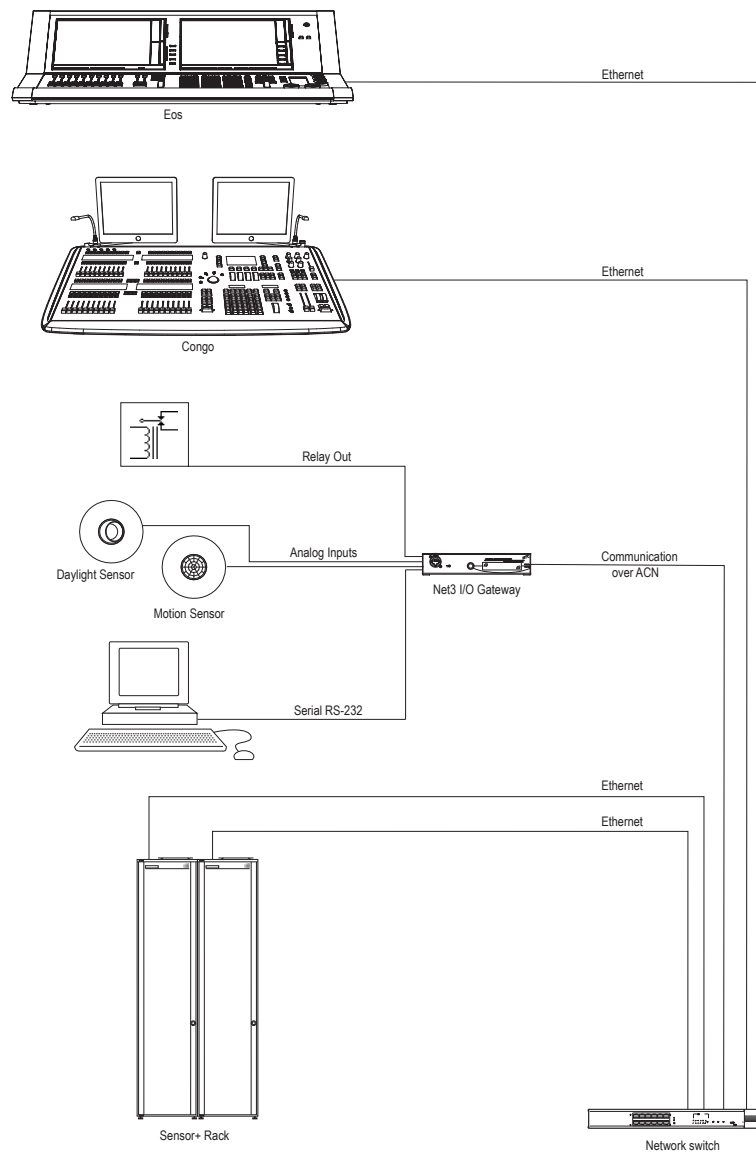
There are three different types of I/O ports available: RS-232 serial port, analog in, and relay outputs.

The RS-232 serial port has a default baud rate of 9600bps with a maximum of 115200bps with standard increments between.

Analog In, which uses an external 10Vdc power supply, takes variable 0-10Vdc inputs and transmits them to a control console or similar device via Net3/ACN Ethernet messages.

The relay outputs can be used to give contact closures to trigger external devices. Both normally closed and normally open contacts are available for each relay.

Example System Riser



Basics & Pin-outs

The Net3 I/O Gateway sends and receives RS-232 control signals, Analog In, and Relay Outs.

RS-232 Serial Port

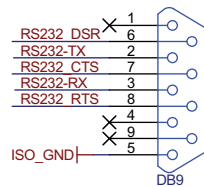
At the most basic level, the serial port on the I/O Gateway acts as a converter between standard RS-232 serial strings of information and a Net3/ACN equivalent that is sent over Ethernet.

This allows a control console (or similar device) to have a remote serial port and to otherwise extend the normal distance limitations of serial communication.

The I/O Gateway does not act on this serial information; it merely acts as a bridge between RS-232 and Ethernet.

The serial property options available are (default settings are in **bold**):

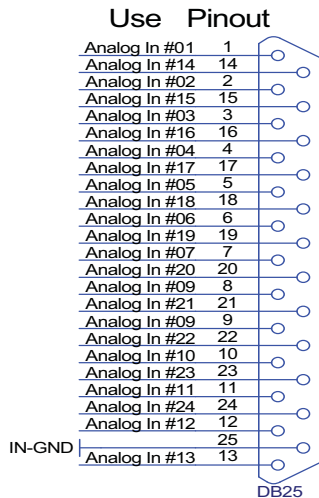
- **9600**, 14400, 19200, 28800, 38400, 57600 and 115200 Baud.
- **7** or **8** Data Bits.
- **None**, Even or Odd for Parity.
- **1** or **2** Stop Bits.
- **None**, Xon/Xoff, Hardware are the Flow Control options.



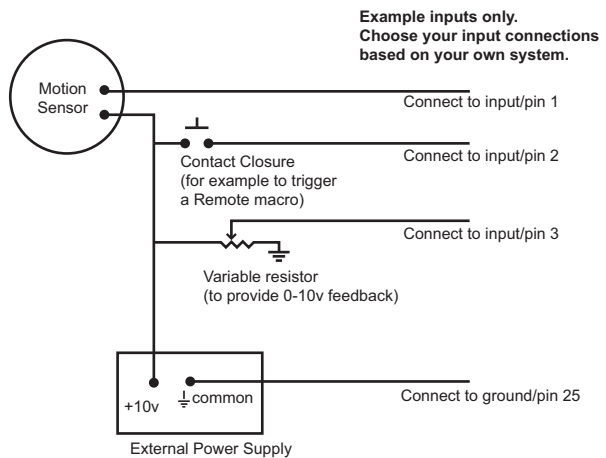
Analog In

The analog input port is used to sense external contact closures and/or analog 0 to 10Vdc input (depending on its software configuration) and send them as Net3/ACN Ethernet messages to a networked control console or similar device.

Unlike some of ETC's previous control consoles that have had a similar port (not pin-compatible), this one does not have a built-in dc power supply to power or sense the closures. This port requires an external 10Vdc power supply.



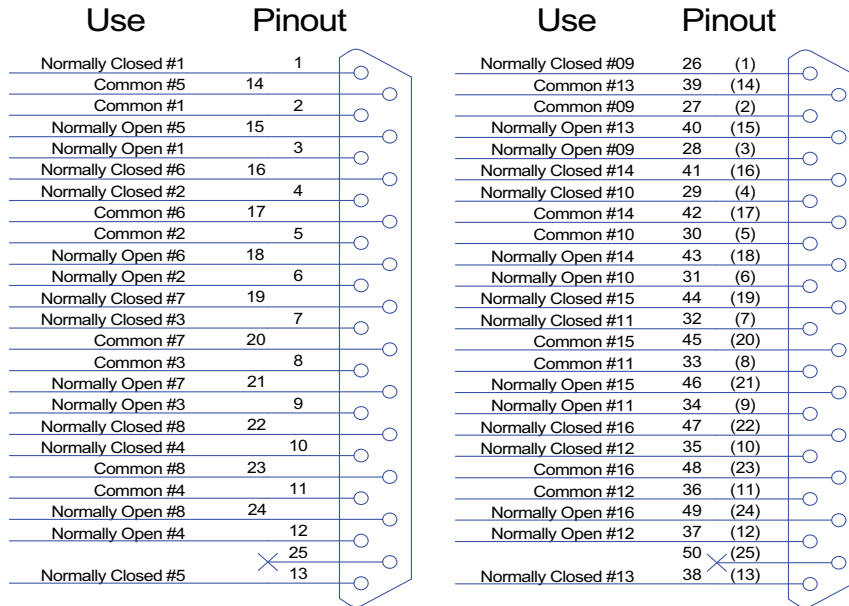
Example circuit for uses of analog inputs



Relay Outputs

When choosing your connections (normally open vs. normally closed) to the relay outputs, be sure to consider the default or powered off state of the relay and how your connected device will react when the I/O Gateway is powered off or reset.

In other words, if your device will activate with a closed circuit, don't choose a normally closed connection and keep it open via a command from a controlling Ethernet based device. This choice could result in your device activating at a unanticipated time during a software update (which causes a momentary reset of the I/O Gateway). You **should** choose the normally open connection so it doesn't activate unless it is specifically directed to do so.



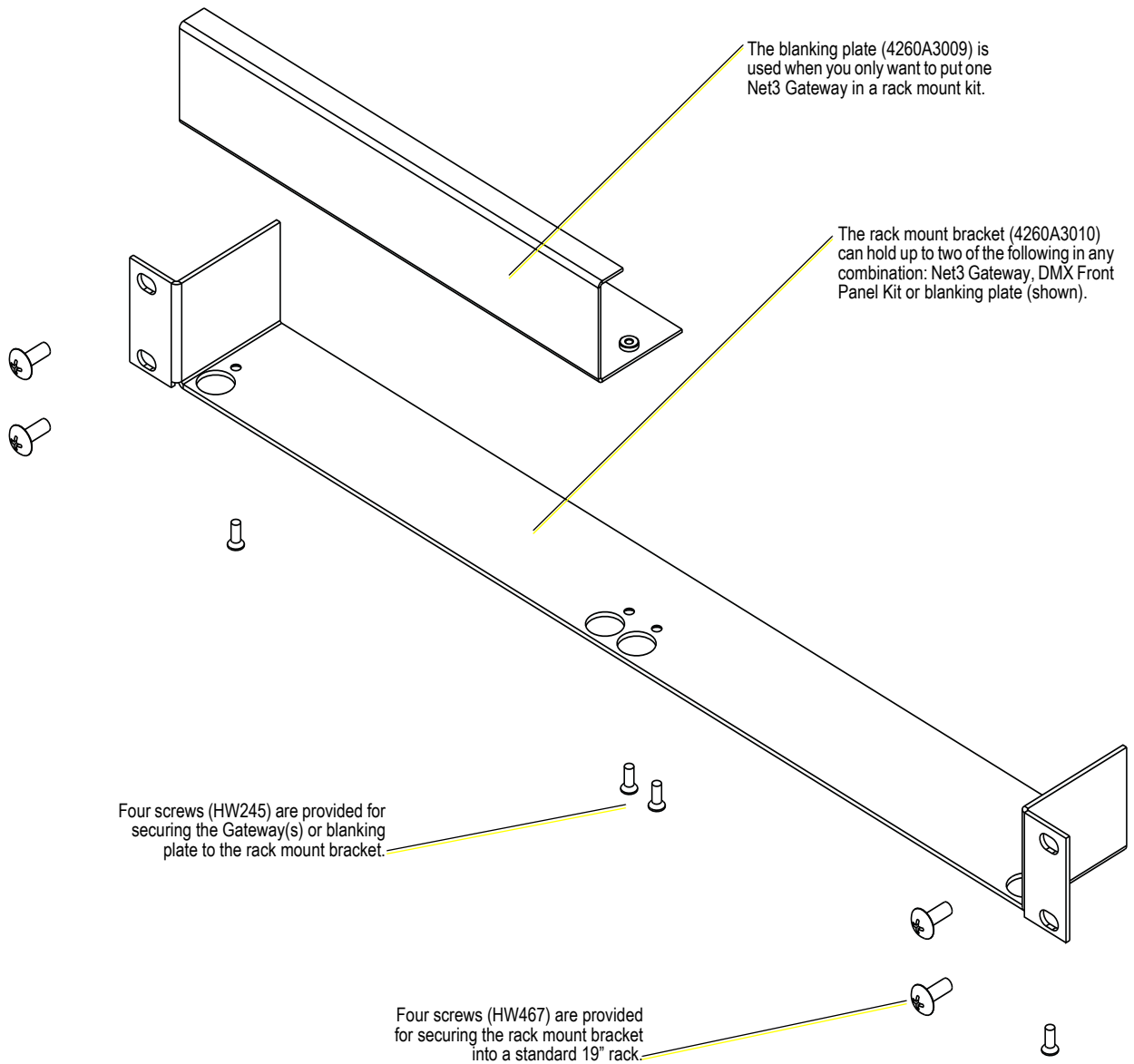
DB25 - DUAL



CAUTION: *The relays are intended to switch a maximum of 1.0A @ 30Vdc.*

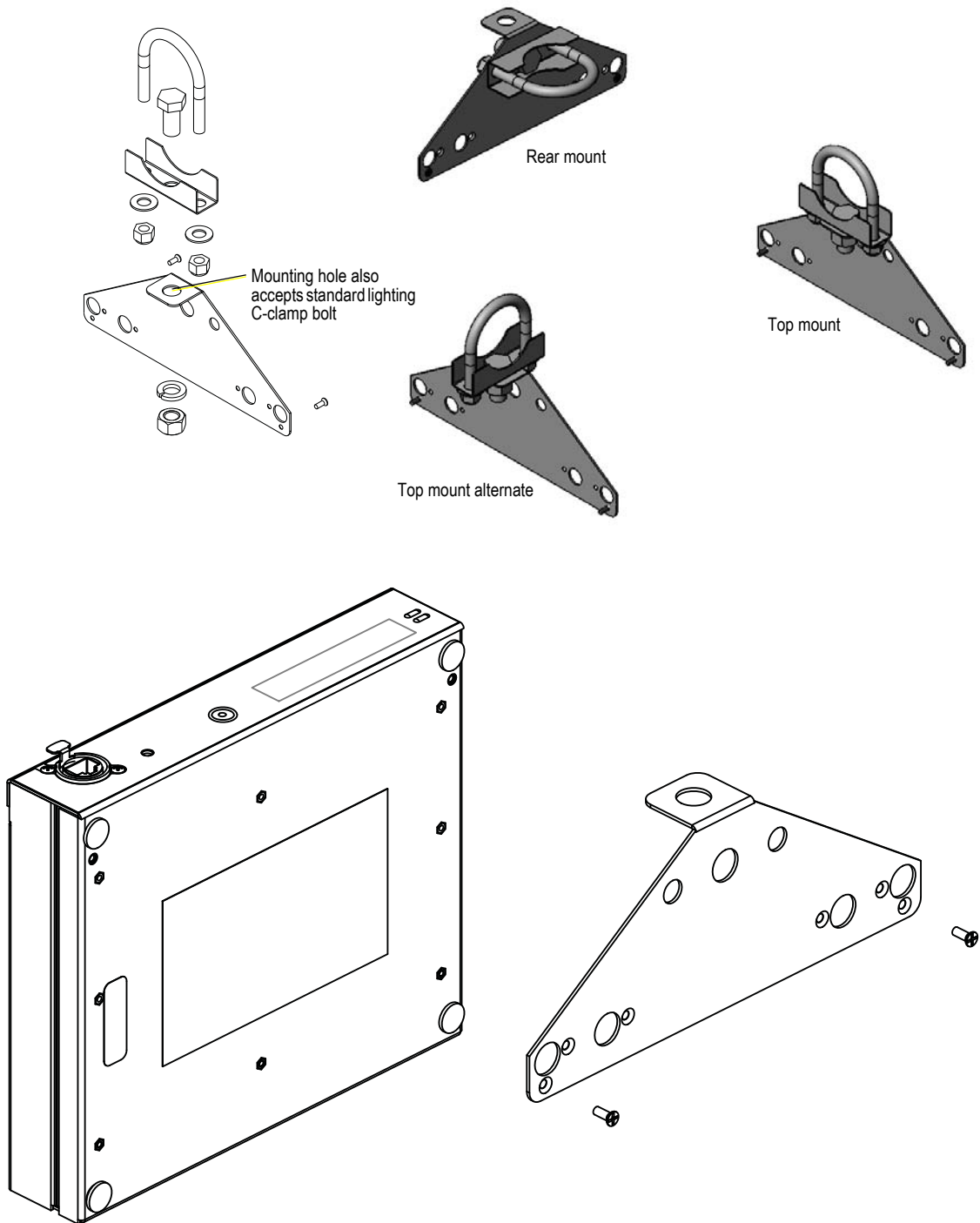
Section 3: Rack Mount Kit-4260K1001 (optional)

The Net3 Gateway Rack Mount Kit is capable of holding up to two Net3 Gateways for mounting in a standard 19" rack enclosure. If you only need to mount a single unit, there is a blanking plate included in the kit. This blanking plate can be installed on either side of the rack mount bracket.



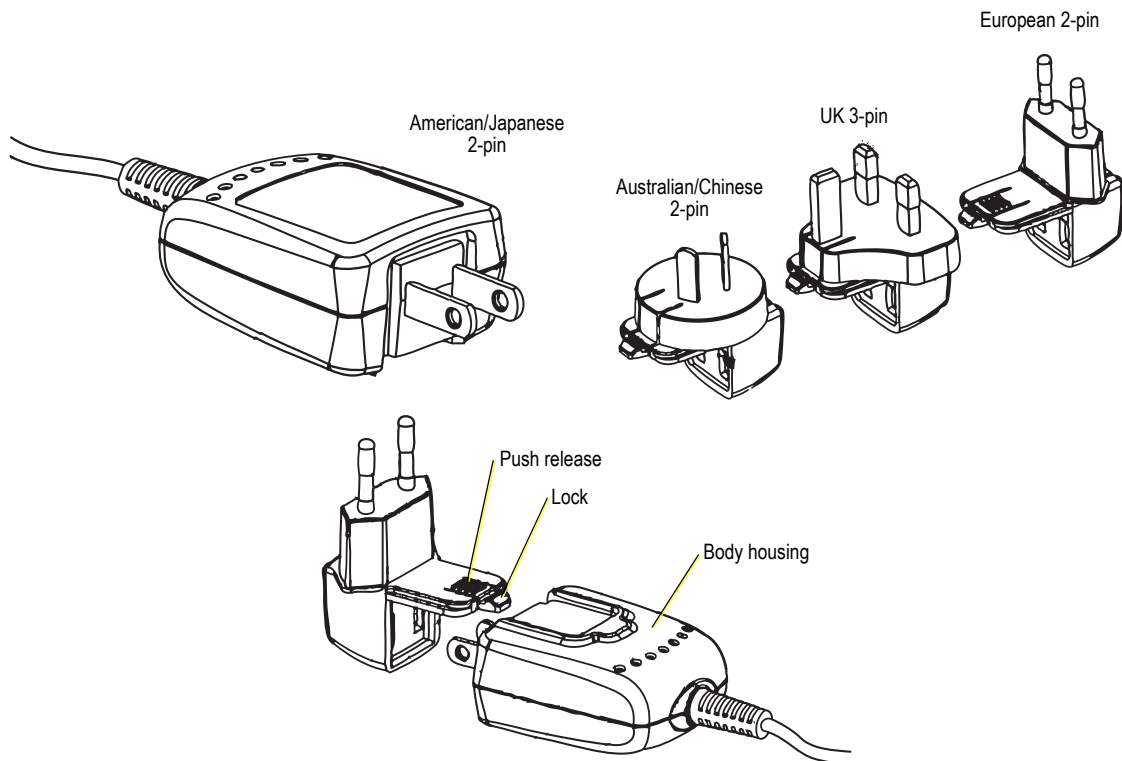
Section 4: Hanging Hardware Kit (optional)

This Hanging Hardware Kit can be used to hang a Net3 Gateway in a variety of ways. You can vary both the way the U-bolt (or C-clamp) attaches to the bracket and the way the bracket mounts to the Net3 Gateway. Given the relatively small size of the Net3 Gateways, they can now be hung almost anywhere.



Section 5: International Power Supply Kit (optional)

This optional power supply (PS313-F) is CE marked and UL listed and can be used to supply the Net3 Gateways with dc power via the dc input connector on the rear of the unit if Power over Ethernet (PoE 802.3af) is not available.



Appendix A: Specifications

Net3 I/O Gateway Control Features

- Supports Net3/ACN protocols
- Distributes Analog In, Relay Out and RS-232 data to any ACN compliant network device capable of using that information
- LCD screen for labeling, status and configuration indicators
- LED power and network indicators
- Supports Power over Ethernet (PoE) and an external DC power supply
- Versatile compact size
- Configurable via GCE software or directly through ACN

Net3 I/O Gateway Specification

General

- Supports Net3/ACN protocols
- ETL/cETL approved (Tested to UL Standards by ETL)

Network

- Complies with IEEE 802.3i for 10BASE-T, 802.3u for 100BASE-TX and 802.3af for Power over Ethernet specifications
- Data transport utilizes TCP/IP suite of protocols
- Distributes Analog In, Relay Out and RS-232 data to any ACN compliant network device capable of using that information

Mechanical

- 1U rack height; 1/2 rack width allows for greater density
- Fabricated of 18-gauge galvanized steel, finished in fine-texture, scratch-resistant, black powder coat
- 8.5" x 8" x 1.75" / 216mm x 203mm x 45mm (W x D x H with modules installed)
- Hanging Bracket allows mounting in 3 orientations (U-bolt option)
- Single UTP Ethercon Ethernet jack on front of unit (this connector provides locking connections with other Ethercon connectors and will also accept industry standard RJ45 connectors)
- Backlit graphic LCD display for identification (soft-labeling) and status reporting:
 - Gateway identification (User-defined name, software version)
 - Network configuration (including IP address information)
- Menu Button for backlight/paging control
- Power (blue) and Network present/activity (green) LED indicators on front and rear
- Reset button for hard reset, forced reboot

Electrical

- Analog input port: +10Vdc external power supply
- Relay output port switches up to: 1.0A @ 30Vdc
- Gateway power consumption: 7 watts normal operation / 12 watt maximum
- Gateway power supply options include:
 - 8 to 28Vdc external power
 - 48V IEEE 802.3af power over Ethernet (PoE)
- Optional Universal Power Supply available (ETC Part# PS313-F)
90-240VAC to 12Vdc @ 1.3A



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