





Power over the Ethernet

# **NetWay5PQ Series**

LINQ Managed 5-Port Hardened PoE+ Switches

# **Models Include:**

# NetWay5PQWP

- 5-port Managed Hardened PoE Switch with Power Supply/Charger
- NEMA4/4X. IP66 rated Outdoor enclosure.

# NetWay5PQWPX

- 5-port Managed Hardened PoE Switch with Power Supply/Charger
- NEMA4/4X, IP66 rated Outdoor enclosure.
- Accommodates up to four (4) 12VDC/4AH batteries.

# NetWay5PQX

- 5-port Managed Hardened PoE Switch with Power Supply/Charger
- NFMA1 rated Indoor enclosure.

# **NetWay5PQWPN**

- 5-port Managed Hardened PoE Switch
- NEMA4/4X rated outdoor enclosure

# NetWay5PQ

- 5-port Managed Hardened PoE Switch
- Board Only

# **Installation Guide**

CE



Rev. 012924

Installing Company:	_ Service Rep. Name:		
Address:		Phone #:	





#### **Overview:**

Altronix Netway5PQ Series are LINQ managed hardened PoE+ switches. They provide a network data uplink and four (4) PoE ports to power IP devices, such as PoE access controllers and cameras. Other applications may include solar power (with NetWay5PQ and NetWay5PQWPN), as well as integrating network door access systems with video surveillance.

For unmanaged switches see NetWay5P Series.

#### **Features:**

#### Input:

- 120VAC, 60Hz, 4.5A.
- NetWay5PQ/NetWay5PQWPN:

24VDC from a UL Listed power source or a solar panel with nominal 24V (~18-35V) output. Current draw: 6A at maximum 120W output.

#### Output:

- Four (4) PoE/PoE+ ports.
- IEEE 802.3at (30W) and IEEE 802.3af (15W) compliant.
- Single data uplink port.

#### **Ethernet Ports:**

- Five (5) 10/100/1000 Mbps ports.
- Connectivity: RJ45, auto-crossover.
- Wire type: 4-pair CAT5e or higher structured cable.
- Distance: up to 100m.
- Speed: 10/100/1000 Mbps, half/full duplex, auto negotiation.

## LINQ Technology:

- Remote network management allows for camera/ device reset and monitoring.
- PoE port management via Dashboard IP management program.
- Provides local and/or remote access to critical information via LAN/WAN.
- Email and Windows Dashboard Alert notifications report real-time diagnostics.
- Event log tracks history.

#### **LED Indicators:**

- Individual **PoE On** LEDs for each port.
- Individual IP Link status, 100/1000Base-T/active LEDs for each port.

#### VI AN

- Multiple management VLAN assignment.
- 802.1Q Tagged VLAN.
- Up to 10 VLAN groups. ID Range 2-4095.

#### **Environmental:**

- Operating Ambient Temperature:
  - 30°C to 70°C (- 22°F to 158°F).
- Storage Temperature:
  - 40°C to 85°C (- 40°F to 185°F).
- Humidity: 20 to 85%, non-condensing.
- Operating Altitude: 304.8 to 2,000m.

#### **Applications:**

 Allows to power up to four (4) IP devices and networking of multiple remote devices without the need for running multiple cables from the main switch/server.

#### Mechanical:

#### NetWay5PQ:

Dimensions (L x W x D approx.):
 5.9" x 3.6" x 0.75" (150mm x 91.4mm x 19mm).

#### NetWav5PQWPN

- NEMA 4X, IP66 Rated enclosure for outdoor use.
- Dimensions (H x W x D approx.): 9.5" x 7.32" x 4.92" (241.3mm x 185.9mm x 125mm).

#### NetWav5PQWP:

- NEMA4/4X, IP66 Rated enclosure for outdoor use.
- Dimensions (H x W x D approx.): 13.31" x 11.31" x 5.59" (338.1mm x 287.3mm x 142mm).

#### NetWay5PQWPX:

- NEMA4/4X. IP66 Rated enclosure for outdoor use.
- Accommodates four (4) 12VDC/4AH batteries (48V of backup).
- Dimensions (H x W x D approx.): 17.53" x 15.3" x 6.67" (445.3mm x 388.6mm x 169.4mm).

#### NetWay5PQX:

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 Dimensions (H x W x D approx.): 13.5" x 13" x 3.25" (342.9mm x 330.2mm x 83mm).







Fig. 1 - NetWay5PQ Board Configulration

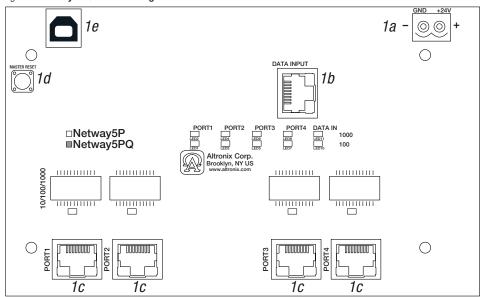
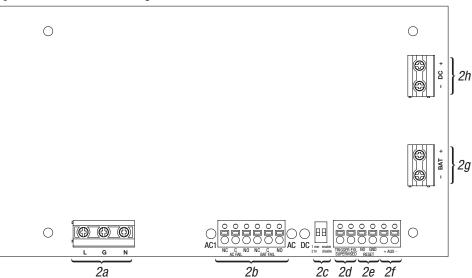


Fig. 2 - eFlow104NB Board Configuration



NetWay5PQ Series Installation Guide - 3 -







#### **Installation Instructions:**

Wiring methods shall be in accordance with the National Electrical Code/NFPA 70/ANSI, and with all local codes and authorities having jurisdiction. Wiring should be UL Listed and/or Recognized wire suitable for the application. All units should be installed by a trained service personnel.

#### Installation:

#### NetWay5PQ:

- 1. Mount NetWay5PQ in the desired location/enclosure (mounting hardware included).
- Connect NetWay5PQ to power source and Ethernet devices:
   NetWay5PQ can be powered by a UL Listed 24VDC power source, e.g. Altronix eFlow power supply/charger or a solar panel with nominal 24V (~18-35V) output.
- 3. Connect a power source to the [GND +24V] terminals carefully observing polarity (Fig. 1a, pg. 3).
- 4. Connect a Data source to the [Data Input] RJ45 jack (Fig. 1b, pg. 3).
- 5. Connect Access Control boards, Altronix LINQ units or other IP devices to the [Port 1 Port 4] RJ45 jacks (Fig. 1c, pg. 4). Refer to the corresponding Installation Guides for details.

#### NetWav5PQWPN/NetWav5PQWP/NetWav5PQWPX:

- 1. Remove backplane from enclosure prior to drilling. Do not discard hardware.
  - **Note:** Make sure that hardware will not interfere with components of the circuit board.
- 2. Mark and drill desired inlets on the enclosure to facilitate wiring. Maximum NEMA type 4X rated fittings to be used are 0.5". Follow manufacturer's specifications for the appropriate size opening.
  - Note: Inlets for conduit fittings should only be made on the bottom of the enclosure.
  - To facilitate wire entry utilize weather-tight NEMA rated connectors (supplied), bushings, and cable.
- 3. Clean out the inside of enclosure before remounting circuit boards/backplane.
- 4. Mounting NEMA4/4X rated enclosure (Enclosure Dimensions, pg. 13-15):
  - **Wall mount:** Mount unit in desired location. Mark and drill holes to line up with the top and bottom hole of the enclosure flange. Secure enclosure with appropriate fasteners (e. g. screws and anchors; bolts and locking nuts, etc.) that are compatible with mounting surface and are of sufficient length/construction to ensure a secure mount (*Fia. 5. pa. 12*).

Pole Mount: Refer to Fig. 6 - 11, pg.12.

5. Mount backplane in enclosure with hardware.

#### NetWav5PQX:

1. Mount unit in the desired location. Mark and predrill holes in the wall to line up with the top two keyholes in the enclosure. Install two (2) upper fasteners and screws in the wall with the screw heads protruding. Place the enclosure's upper keyholes over the two (2) upper screws; level and secure. Mark the position of the lower two (2) holes. Remove the enclosure. Drill the lower holes and install two fasteners. Place the enclosure's upper keyholes over the two (2) upper screws. Install the two (2) lower screws and make sure to tighten all screws (Enclosure Dimensions, pg. 16). Secure enclosure to earth ground.

#### **Power Connection:**

#### NetWay5PQWP, NetWay5PQWPX, NetWay5PQX:

 Connect unswitched AC power (120VAC 60Hz) to terminals marked [L, N] (Fig. 2a, pg. 4). Green "AC" LED on power supply board will turn on. Use 14 AWG or larger for all power connections.
 Secure green wire lead to earth ground.

Keep power-limited wiring separate from non power-limited wiring (120VAC 60Hz Input, Battery Wires). Minimum 0.25" spacing must be provided.

CAUTION: Do not touch exposed metal parts. Shut branch circuit power before installing or servicing equipment. There are no user serviceable parts inside. Refer installation and servicing to qualified service personnel.

- 2. When the use of stand-by batteries is desired, they must be lead acid or gel type. If batteries are housed in a weather-proof enclosure (NetWay5PQWP, NetWay5PQWPX), it must be properly ventilated. Use Altronix Vent2 kit. Connect battery to terminals marked [- BAT +] (Fig. 2g, pg. 4). Use two (2) 12VDC batteries connected in series for 24VDC operation (battery leads included) Use batteries Casil CL1270 (12V/7AH), CL12120 (12V/12AH), CL12400 (12V/40AH), CL12650 (12V/65AH) batteries or UL recognized BAZR2 batteries of an appropriate rating. When batteries are not used, a loss of AC will result in the loss of the output voltage.
- 3. Connect appropriate signaling notification devices to AC FAIL & BAT FAIL (Fig. 2b, pg. 4) supervisory relay outputs.

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- 4. To delay AC reporting for 2 hrs. set DIP switch [AC Delay] to OFF position (*Fig. 2c, pg. 4*). To delay AC reporting for 1 min. set DIP switch [AC Delay] to ON position (*Fig. 2c, pg. 4*). **Note:** Must be set to ON position for Burglar Alarm Applications.
- 5. To enable Fire Alarm Disconnect set DIP switch [Shutdown] to ON position (Fig. 2c, pg. 4). To disable Fire Alarm Disconnect set DIP switch [Shutdown] to OFF position (Fig. 2c, pg. 4).
- 6. Trigger terminals are end of a line resistor supervised (10k ohms). Opening or shorting trigger terminals will cause [DC] output to shutdown (Fig. 2d, pg. 4).
- 7. Place a jumper for non-latching FACP. A momentary short on these terminals resets FACP latching [Trigger EOL Shutdown] (Fig. 2e, pg. 4).

#### NetWav5PQ, NetWav5PQWPN:

- 1. Mount NetWay5PQ/NetWay5PQWPN in the desired enclosure/location (mounting hardware is included).
- 2. NetWay5PQ/NetWay5PQWPN can be powered by a UL Listed 12/24VDC power source, e.g. Altronix eFlow power supply/charger or a solar panel with nominal 24V (~18-35V) output.

# **Input/Data Connections:**

- 1. Connect a Data source to the [Data Input] RJ45 jack (Fig. 1b, pg. 4).
- 2. Connect Access Control boards, Altronix LINQ units or other IP devices to the [Port 1 Port 4] RJ45 jacks (Fig. 1c, pg. 4). Refer to the corresponding Installation Guides for details.

### **Terminal and Port Identification:**

## NetWav5PQ PoE+ Switch

Terminal/Port Legend	Function/Description	
GND +24V	Connect a 24VDC UL Listed power source to these terminals carefully observing polarity. (Fig. 1a, pg. 3)	
Data Input	Can be used as a Data Uplink (Fig. 1b, pg. 3).	
Port 1 - Port 4	Data and PoE/PoE+ (IEEE 802.3af (15W) and IEEE 802.3at (30W) compliant) ports (Fig. 1c, pg. 3).	
Master Reset	ter Reset Resets NetWay5P/NetWay5PQ to factory settings. See <b>Factory Reset Option</b> , pg. 9 (Fig. 1d, pg. 3).	
USB Port	Can be used as an option to configure the Netway5PQ for managed operation (Fig. 1e, pg. 3).	

# eFlow104NB Power Supply/Charger

Terminal Legend	Function/Description		
L, N	Connect 120VAC 60Hz to these terminals: L to hot, N to neutral (non power-limited) (Fig. 2a, pg. 3).		
– DC +	24VDC nominal @ 10A continuous output factory connected to NetWay5PQ (Fig. 2h, pg. 3).		
Trigger EOL Supervised	Fire Alarm Interface trigger input from a short or FACP. Trigger inputs can be normally open, normally closed from an FACP output circuit (power-limited input) (Fig. 2d, pg. 3).		
NO, GND RESET	FACP interface latching or non-latching (power-limited) (Fig. 2e, pg. 3).		
+ AUX -	Auxiliary Class 2 power-limited output rated @ 1A (unswitched) (Fig. 2f, pg. 3).		
AC Fail NC, C, NO	Indicates loss of AC power, e.g. connect to audible device or alarm panel. Relay normally energized when AC power is present. Contact rating 1A @ 30VDC (power-limited) (Fig. 2b, pg. 3).		
Bat Fail NC, C, NO	Indicates low battery condition, e.g. connect to alarm panel. Relay normally energized wher DC power is present. Contact rating 1A @ 30VDC.  A removed battery is reported within 5 minutes.  Battery reconnection is reported within 1 minute (power-limited) (Fig. 2b, pg. 3).		
– BAT +	Stand-by battery connections. Maximum charge current 1.54A (non power-limited) (Fig. 2g, pg. 3).		









# **Technical Specifications:**

Parameter	Description				
Input Power Requirements	NetWay5PQWP, NetWay5PQWPX, NetWay5PQX: 120VAC, 60Hz, 4.5A. NetWay5PQ/NetWay5PQWPN: 24VDC from a UL Listed power source or a solar panel with nominal 24V (~18-35V) output.Current draw: 6A at maximum120W output.				
Output	Four (4) PoE/PoE+ ports. Single data uplink port.				
Indicators	NetWay5PQ: Individual PoE On LEDs for each port. Individual IP Link status, 100/1000Base-T/active LEDs for each port. eFlow104NB: AC input and DC output LED indicators.				
Environmental Conditions	Operating Ambient Temperature:- 30°C to 70°C (- 22°F to 158°F).Storage Temperature:- 40°C to 85°C (- 40°F to 185°F).Humidity:20 to 85%, non-condensing.Operating Altitude:- 304.8 to 2,000m.				
	Model	Product Weight	Shipping Weight		
Weights (approx.)	NetWay5PQWP NetWay5PQWPN NetWay5PQWPX NetWay5PQX NetWay5PQ	10.5 lb. (4.76 kg) 3.7 lb. (1.68 kg) 15 lb. (6.8 kg) 6.65 lb. (3.02 kg) 0.25 lb. (0.11 kg)	11.9 lb. (5.4 kg) 5 lb. (2.27 kg) 17.5 lb. (7.9kg) 7.55 lb. (3.42kg) 0.75 lb. (0.34 kg)		

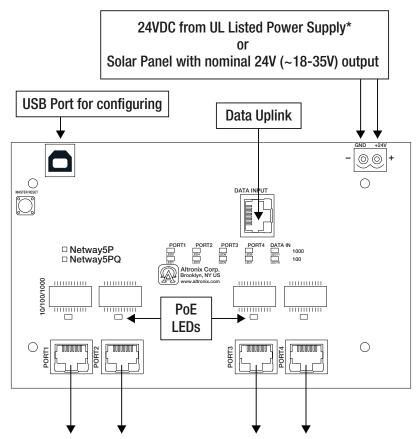






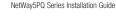
### Fig. 3

# **Typical Application:**



To Networked Access Controllers, Devices & Cameras and/or Altronix LINQ Series Ethernet connections

\*NetWay5PQWP, NetWay5PQWPX and NetWay5PQX are factory connected to Power Supply











# Configuring NetWay5PQ for Network Connection

Please be sure to visit altronix.com for latest firmware and installation instructions

## **Factory Default Settings**

• IP Address: 192.168.168.168

User Name: adminPassword: admin

- 1. Set the static IP address for the laptop to be used for programming to the same network IP address as the NetWay5PQ. The default address of the NetWay5PQ is 192.168.168.168, E.I. 192.168.168.200.
- Connect one end of the network cable to the network jack on the NetWay5PQ and the other to the network connection of the laptop.
- Open a browser on the computer and enter "192.168.168.168" into the address bar.
   A dialog box Authentication Required will appear requesting both user name and password.
   Enter the default values here. Click on the button labeled Log In.
- 4. The status page of the NetWay5PQ will appear. Click on the tab labeled Network Settings. This will open the Network Setting screen. In this screen the MAC Address of the NetWay5PQ module will be found along with the Network Settings and Email Settings.

# **Network Settings:**

In the IP Address Method field select the method that the IP Address for the NetWay5PQ will be obtained (STATIC or DHCP), then follow the appropriate steps.

#### Static:

- A. IP Address: Enter the IP address assigned to the NetWay5PQ by the network administrator.
- B. Subnet Mask: Enter the Subnet of the network.
- C. Gateway: Enter the TCP/IP gateway of the network access point (router) being used. Gateway configuration is required to properly receive emails from the device.
- D. HTTP Port: Enter the HTTP port number assigned to the NetWay5PQ module by the network administrator to allow remote access and monitoring. The default inbound port setting is 80. HTTP is not encrypted and unsecure. Even though HTTP can be used for remote access, it is recommended primarily for use with LAN connections.
- E. HTTPS Port: Enter the HTTPS port number assigned to the NetWay5PQ module by the network administrator to allow remote access and monitoring. The default inbound port setting is 443. Being encrypted and more secure, HTTPS is highly recommended for remote access.
- F. Click the button labeled **Submit Network Settings**.

  A dialog box will display "New network settings will take effect after the server is rebooted". Click **OK**.

### DHCP:

- A. After selecting DHCP in the IP Address Method field click the button labeled **Submit Network Settings**. A dialog box will display "New network settings will take effect after the server is rebooted". Click **OK**. Next, click on the button labeled **Reboot Server**. After rebooting the NetWay5PQ will be set in the DHCP mode. The IP address will be assigned by the router when the NetWay5PQ is connected to the network. It is recommended to have the assigned IP Address reserved to ensure continued access (see the network administrator).
- B. Subnet Mask: When operating in DHCP, the router will assign the subnet mask values.
- C. Gateway: Enter the TCP/IP gateway of the network access point (router) being used.
- D. HTTP Port: Enter the HTTP port number assigned to the NetWay5PQ module by the network administrator to allow remote access and monitoring. The default inbound port setting is 80. HTTP is not encrypted and unsecure. Even though HTTP can be used for remote access, it is recommended primarily for use with LAN connections.

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# Secure Network Setup (HTTPS):

In order to setup HTTPS for a Secure Network Connection, a Valid Certificate and Key must be used. Certificates and Key should be in a ".PEM" format. Self Certifications should only be used for testing purposes as no actual authentication is being performed. In a Self-Certified mode, the connection will still state that it is unsecure. How to upload Certificate and Key to setup HTTPS:

- 1. Open Tab Labeled "Security"
- 2. Select Tab Labeled "Email/SSL"
- 3. Scroll to bottom under "SSL Settings"
- 4. Click "Select Certificate"
- 5. Browse and select valid Certificate to upload from server
- 6. Click "Select Kev"
- 7. Browse and select valid Key to upload from server
- 8. Click "Submit Files"

Once the Certificate and Key is uploaded successfully you can proceed with setting up HTTPS in Network Settings.

- A. HTTPS Port: Enter the HTTPS port number assigned to the NetWay5PQ module by the network administrator to allow remote access and monitoring. The default inbound port setting is 443. Being encrypted and more secure. HTTPS is highly recommended for remote access.
- B. Click the button labeled Submit Network Settings.
   A dialog box will display "New network settings will take effect after the server is rebooted". Click OK.

## **Factory Reset Option:**

- 1. Power the unit down. Allow approximately 30 seconds for the unit to power down completely.
- 2. Depress Factory Reset button on NetWay5PQB while reapplying power to the unit (*Fig. 1d, pg. 3*). Continue holding the button until the LEDs on board go through the start up cycle, then release the button.

3. The unit returns to the original factory settings.







### **VLans**

VLans (Virtual Local Area Networks) are a subnetwork that allow for the grouping together of devices for improved network traffic as well as providing higher security by allowing greater control over which devices have access to each other. It is important to plan how you will setup your devices for each vLan.

# Configuring vLan on the Altronix Netway5PQ Series Switch:

1. Ensure Laptop or PC being used to program the vLan settings is on a port that will be assigned to your first vLan configuration. By default the management portion of the software is assigned to vLan-1. CAUTION: Changing VID=1, the industry standard VLAN HOST address to any other VID address should be done with caution and performed only locally, since the change will drop the original HOST connection. Local access then facilitates a physical reconnection to respective port.

**Note:** Only this vLan network allows access to IP management.

- 2. In Network Section click on VLan Tab.
- 3. Click Add vLan.
- 4. Enter a name for the vLan.
- Enter a vLan ID, i.e. 10, 20, etc. Ensure this vLan ID is associated with a vLan setup on the main switch and that your Laptop or PC being used for programming is on this same ID.
   Note: vLan ID could be any value 2-4094.
- 6. Assign vLan QOS (Quality of Service) priority. 0 = Lowest and 7 = Highest
- 7. Pick a Trunk port (Tagged Ports). Trunk ports are typically the main connection for network traffic for each group. They are usually connected to a network switch, WAPs, etc.
- 8. Pick the Access port(s) (Untagged Ports) associated with the vLan. Access Ports are typically used for Cameras, etc. If programming locally, ensure your laptop or PC is connected to one of these ports.
- 9. Save Configuration.
- 10. Repeat steps 2 9 to add another vLan.

If unit is accidently programmed incorrectly and you cannot get into the Netway5PQ series programming, physically moving ports of your PC connected to the main switch to a correct port (when being programmed remotely), or, as a last resort, completing a factory reset locally and reprogramming the unit.

#### 11. Advanced Port Settings:

Unknown VID Packet Forwarding Configuration:

On ingress unknown VID, Foward to a fixed set of ports. By default no forwarding is set.

Configuration on Ingress Untagged Traffic:

Trunk Port action for ingress UNTAGGED packets. By default do not drop packets.

Keep Tag on Egress:

Select if you want ACCESS Port to keep the vLan tag when sending egress packets.

By default tags are stripped.

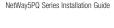
Preferred VLAN Forwarding:

For ACCESS Ports that belong to more than one VLan. Select preferred vLan to forward UNTAGGED ingress packets. By default preferred vLan is the last vLan created.

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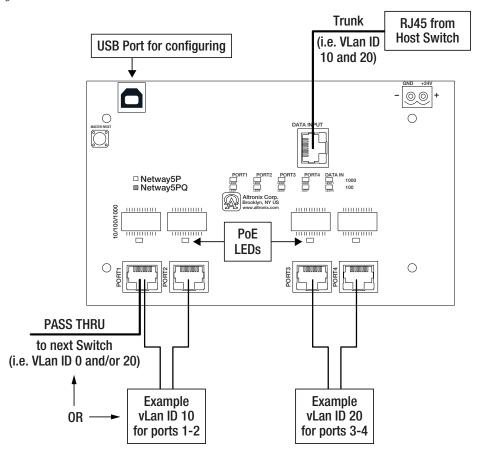






## **Typical VLan Setup:**

Fig. 4



Any Ethernet port can be used for VLan Pass Thru

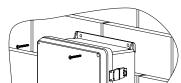




### **Wall Mount Installation**

1. Place unit at desired location and secure with mounting screws (not included) (Fig. 5, pg. 12).

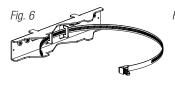


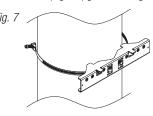


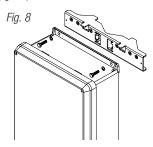
# Pole Mounting Using Optional Pole Mount Kit PMK1 (NetWay5PQWPN and NetWay5PQWP) or PMK2 (NetWay5PQWPX):

This installation should be made by qualified service personnel. This product contains no serviceable parts. Pole mount kits are intended for use with Altronix outdoor rated power supplies or accessories housed in WP1, WP2, WP3 and WP4 enclosures. Brackets are designed for use with the Wormgear Quick Release Straps (two included).

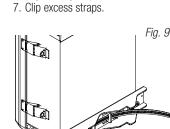
- 1. Thread one (1) wormgear guick release strap through the slots on the back of a mounting bracket (Fig. 6, pg. 12).
- 2. Once the desired height of the top Pole Mount bracket is achieved, tighten the straps down by sliding open end of the strap through the locking mechanism on the strap, then tighten the screw with flat head screwdriver or 5/16" hex socket driver (Fig. 7, pg. 12 and Fig. 9, pg. 12).

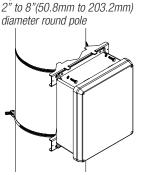




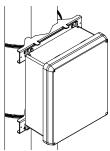


- 3. Attach the bottom bracket to the enclosure by inserting bolts through the flange of the enclosure and into the bracket, tightening bolts with a 7/16" hex socket (Fig. 9, pg. 12).
- 4. Thread the second wormgear quick release strap through the slots on the back of the bottom mounting bracket (Fig. 9 pg. 12).
- 5. Mount enclosure onto the top bracket by inserting bolts through flange of the enclosure and into the bracket, tightening bolts with a 7/16" hex socket (Fig. 10, pg. 12).
- 6. Tighten the straps of the bottom bracket down by sliding the open end of the strap through the locking mechanism on the strap, then tighten screw with flat head screwdriver or 5/16" hex socket driver (Fig. 10, pg. 12).

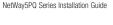








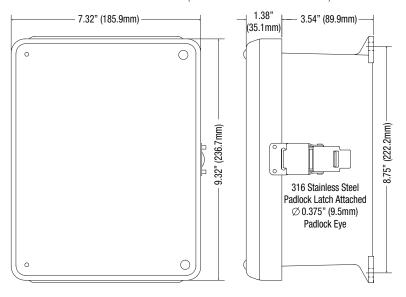


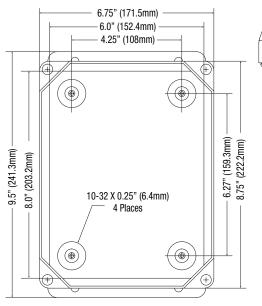


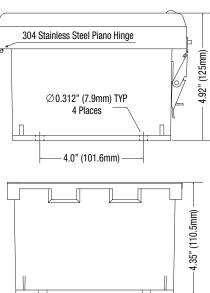


# **NetWay5PQWPN Mechanical Drawing and Dimensions** (H x W x D approx.):

9.5" x 7.32" x 4.92" (241.3mm x 185.9mm x 125mm)







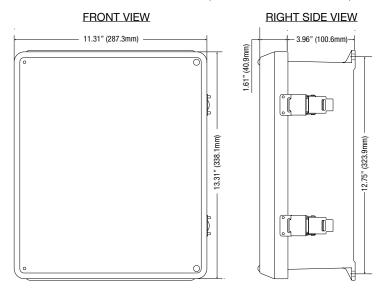




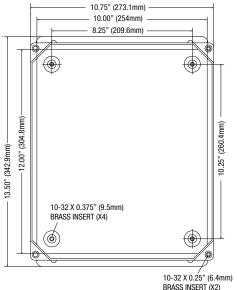


# NetWay5PQWP Mechanical Drawing and Dimensions (H x W x D approx.):

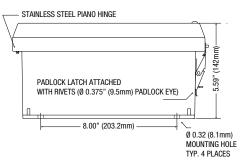
13.31" x 11.31" x 5.59" (338.1mm x 287.3mm x 142mm)



### FRONT VIEW COVER REMOVED



#### **END VIEW**

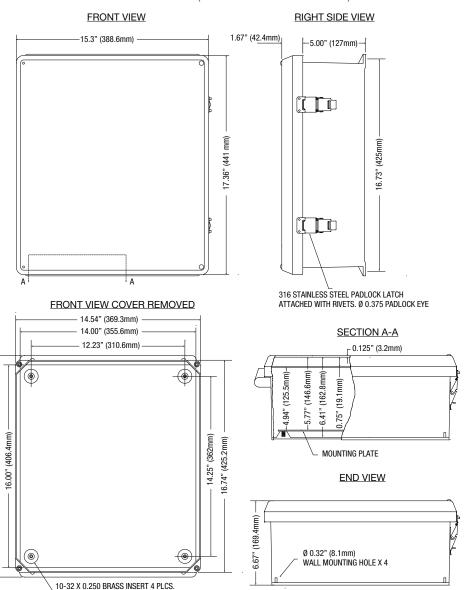


BRASS INSERT (X2)



# **NetWay5PQWPX Mechanical Drawing and Dimensions** (H x W x D approx.):

17.53" x 15.3" x 6.67" (445.3mm x 388.6mm x 169.4mm)





- 12.00" (304.8mm)



17.53" (445.3mm)





# **NetWay5PQX Mechanical Drawing and Dimensions** (H x W x D approx.):

13.5" x 13" x 3.25" (342.9mm x 330.2mm x 82.6mm)

