Netway SPECTRUM

Fiber Solution

Embedded LINQ TECHNOLOGY

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

NetWaySP82 Series

8-Port Ethernet over Fiber PoE+ Hardened Switches

Models Include:

NetWaySP8WP2

- Dual Fiber Optic SFP 1G Link, 8-port PoE+ switch and power supply.
- NEMA4/4X, IP66 rated Outdoor enclosure.

NetWaySP8WPX2

- Dual Fiber Optic SFP 1G Link, 8-port PoE+ switch and power supply.
- NEMA4/4X, IP66 rated Outdoor enclosure.
- Accommodates up to four (4) 12VDC/4AH batteries.

NetWaySP8X2

- Dual Fiber Optic SFP 1G Link, 8-port PoE+ switch and power supply.
- NEMA1 rated Indoor enclosure.

NetWaySP8PL2

- Dual Fiber Optic SFP 1G Link, 8-port PoE+ switch and power supply.
- Backplane version.

Installation Guide

CE

Altronix®

DOC#: NetWaySP82 Rev. 071321

More than just power.™

Installing Company: _____ Service Rep. Name: _____

Address: _____ Phone #: _____

Overview:

Altronix NetWaySP8WP2 Series Indoor/Outdoor Ethernet over Fiber PoE Hardened Switches provide two (2) 1Gb SFP ports and eight (8) PoE+ (30W) ports or up to two (2) 60W ports, passing data and power to PoE/PoE+ compliant devices. Cameras/edge devices may be located up to 100m from the unit. Features also include an integral battery charger for applications requiring backup and embedded LINQ Technology to monitor, control, and report power and diagnostics from anywhere.

Features:

Agency Listings:
- CE European Conformity.

Input:
- 115VAC, 60Hz, 1.8A or 230VAC, 50/60Hz, 1A.

Power Output:
- Eight (8) ports PoE+ (30W) or up to two (2) 60W ports.
- IEEE 802.3at (30W) and IEEE 802.3af (15W) compliant.
- 240W total power.
- Integral surge protection.

Fiber Port:
- Two (2) Gigabit SFP ports.
- Use with SFP module 1000Base-X (1Gb), compliant to Class 1 laser product (not included).

Ethernet Ports:
- Six (6) 10/100 Mbps and two (2) 10/100/1000 Mbps ports.
- Connectivity: RJ45, auto-crossover.
- Wire type: 4-pair CAT5 or better structured cable.
- Distance: up to 100m.
- Speed: 10/100/1000 Mbps, half/full duplex, auto negotiation.

Battery Backup:
- 24VDC charging circuit charges LiFePO4 (Lithium Iron Phosphate) or sealed lead acid* or gel type* batteries.
- Automatic switch over to stand-by battery when AC fails.

LEDs:
- Individual **PoE On** LEDs for each port.
- Individual **IP Link status, 10/100Base-T/active** LEDs for each port.
- **ALOS** LED indicates fiber connection for SFP port.
- **Heartbeat** LED indicates proper operation of the unit.

Environmental:
- Refer to Technical Specifications Chart on page 5 for Environmental Conditions.

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

Applications:
- Provides PoE / PoE+ / 60W for cameras/devices.

LINQ Technology:
- Remote network management allows for camera/device reset and monitoring.
- 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.

Accessories:

NetWaySP1A
- Ethernet over Fiber Media Converter/Repeater - for applications requiring an additional SFP (Fiber) port

Mechanical:

NetWaySP8WP2
- 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).

NetWaySP8WPX2
- NEMA4/4X, IP66 Rated enclosure for outdoor use.
- Accommodates sealed lead acid or gel type or $LiFePO_4$ (Lithium Iron Phosphate) 12VDC batteries.
- Dimensions (H x W x D approx.): 17.375" x 12" x 6.5" (441.3mm x 304.8mm x 165.1mm).

NetWaySP8X2
- NEMA1 rated indoor enclosure
- Dimensions (H x W x D approx.): 13.5" x 13" x 3.25" (342.9mm x 330.2mm x 83mm).

NetWaySP8PL2
- Dimensions (H x W x D approx.): 10.75" x 8.875" x 2.375" (273.1mm x 225.4mm x 60.3mm).

***CAUTION:** When using lead acid or gel type batteries, enclosure must be properly ventilated.
Battery operational temperature should be derated 10-15ºC lower than manufacture's rated high temperature.

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. All units should be installed by a trained service personnel.

Mounting Instructions:

NetWaySP8WP2/NetWaySP8WPX2 Enclosure Mounting and Installation:

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.
   UL Listed NEMA type 4X rated conduit connector/hubs shall be used for the appropriate size inlets.
3. Clean out the inside of enclosure before remounting circuit board.
4. Mounting NEMA4/4X rated enclosure *(Enclosure Dimensions, pgs. 11-12)*:
   Wall mount: Mount unit in desired location. Mark and drill holes to line up with the top and bottom holes 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 *(Fig. 5, pg. 8)*.
   Pole Mount: *Refer to Figs. 6 - 11, pg. 8*.
5. Mount backplane in enclosure with hardware.
6. To facilitate wire entry utilize weather-tight NEMA rated connectors *(supplied)*, bushings, and cable.

NetWaySP8X2 Enclosure Mounting and Installation:

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. 9)*. Secure enclosure to earth ground.

NetWaySP8PL2 Mounting and Installation:

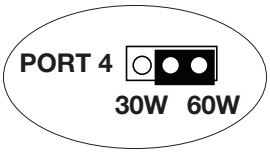
1. Mount backplane in the desired location/enclosure with hardware supplied.

Power Connection:

1. Secure cabinet to earth ground. Connect AC power from overcurrent protective device circuit breaker (20A @ 115VAC, 60Hz, 16A @ 230VAC, 50/60Hz) to the terminals marked [L, N] on power supply board *(Fig. 4, pg. 7)*. Use 14AWG or larger for all power connections (Battery, DC output, AC input).
   Connect ground lug to earth or green branch wire (12AWG min.).
   Keep power-limited wiring separate from non power-limited wiring by utilizing separate knockouts/ inlets. 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. **Port Configurations:**
   Ports 4 and 6 can provide up to 60W of power. To select this option, move corresponding jumper into 60W position *(Fig. 1, pg. 3; Fig. 5b, pg. 7)*. **Total power not to exceed 240W.**

	Jumper Position	
Port	**30W**	**60W**
Port 1	Up to 30W	Up to 30W
Port 2	Up to 30W	Up to 30W
Port 3	Up to 30W	Data only
Port 4	Up to 30W	Up to 60W
Port 5	Up to 30W	Data only
Port 6	Up to 30W	Up to 60W
Port 7	Up to 30W	Up to 30W
Port 8	Up to 30W	Up to 30W

Fig. 1



Input/Data Connections:

1. Connect structured cables from port marked [Port 1] to [Port 8] on NetWaySP8B to PoE-compliant cameras/ edge devices *(Fig. 4, pg. 7)*. **Note:** All interconnected devices must be UL Listed.
2. Insert SFP module into port(s) marked [SFP], then connect cable to the SFP module on NetWaySP8B to the corresponding input of an SFP switch *(Fig. 4, pg. 7)*.

Battery Backup:

1. Connect two (2) 12VDC batteries wired in series or one (1) 24V battery to terminals marked [– BAT +] *(Fig. 4, pg. 7)*, carefully observing polarity. When use of stand-by batteries is desired, they can be $LiFePO_4$ (lithium iron phosphate), lead acid or gel type.
   Note: When batteries are not used, a loss of AC will result in the loss of output voltage.
   Note: When using two 12V $LiFePO_4$ (lithium iron phosphate) batteries, check with manufacturer specifications that batteries can be connected in series.
   For outdoor battery backup, battery enclosure must have sufficient ventilation. Use Altronix Vent2 kit.

Security:

1. Please ensure that the cover is secured with:
   Key lock and screws for **NetWaySP8X2**,
   Latches and optional Altronix Lock1WP for **NetWaySP8WP2/NetWaySP8WPX2.**

Recommended Altronix SFP Modules:

P1MM - For use with Multi-Mode Fiber for distances up to 550m.
P1SM10 - For use with Single-Mode Fiber for distances up to 10km.
P1AB2K - For use with Single-Mode Single Strand Fiber for distances 2km.
P1GCE - For use with CAT5e or better copper ethernet for distances up to 100m.

Technical Specifications:

Parameter	Description		
Number of Ports	Eight (8) ports PoE+ (30W) or up to two (2) 60W ports. Two (2) Gigabit SFP Ports.		
Input Power Requirements	115VAC, 60Hz, 1.8A or 230VAC, 50/60Hz, 1A.		
Environmental Conditions	Operating Ambient Temperature: **240W:** – 30ºC to 55ºC (– 22ºF to 131ºF) **180W:** – 30ºC to 65ºC (– 22ºF to 149ºF) **150W:** – 30ºC to 75ºC (– 22ºF to 167ºF) Storage Temperature: – 30ºC to 85ºC (– 22ºF to 185ºF) Relative Humidity: 85%, +/– 5% Operating Altitude: – 304.8 to 2,000m		
Weights (approx.)	**Model**	**Product Weight**	**Shipping Weight**
	NetWaySP8WP2 NetWaySP8WPX2 NetWaySP8X2 NetWaySP8PL2	10.72 lb. (4.86 kg) 15 lb. (6.8 kg) 6.85 lb. (3.11 kg) 2.8 lb. (1.27 kg)	12.1 lb. (5.49 kg) 17.5 lb. (7.9kg) 7.75 lb. (3.51 kg) 4.2 lb. (1.9 kg)

Configuring Unit for Network Connection:

Visit altronix.com for the latest firmware and installation instructions

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.

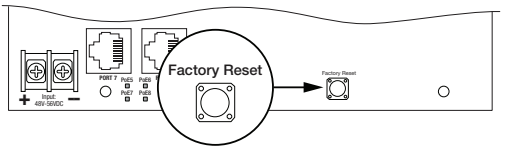
Configuring vLan on the Altronix NetwaySP8 Series Switch:

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.
5. 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 NetwaySP8 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.

Factory Reset Option:

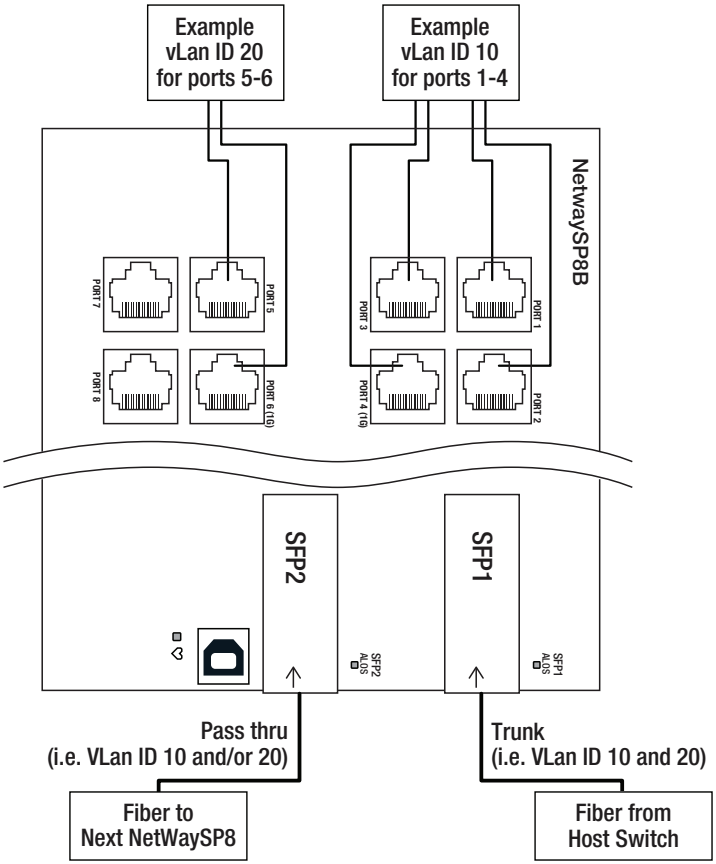
1. Power the unit down. Allow approximately 30 seconds for the unit to power down completely.
2. Depress **Factory Reset** button on NetWaySP8B while reapplying power to the unit *(Fig. 2, pg. 5; Fig. 4b, pg. 7)*.
   Continue holding the button until the LEDs on board go through the start up cycle, then release the button.
3. The unit returns to the original factory settings.

Fig. 2



Typical VLan Setup:

Fig. 3



Typical Applications:

Fig. 4

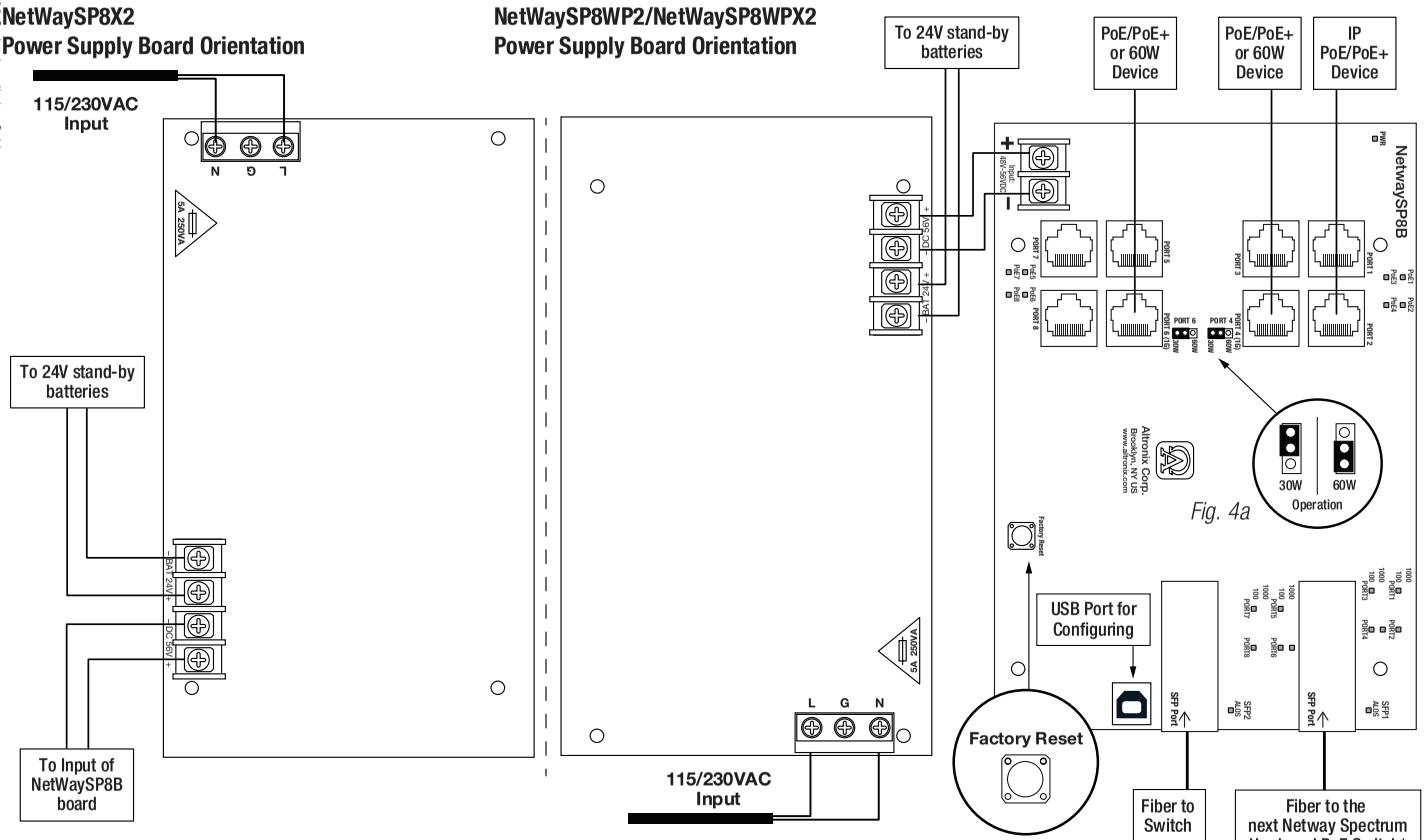


Fig. 4a

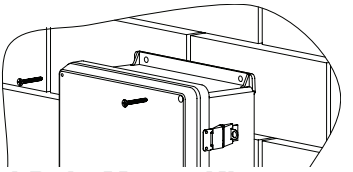
Fig. 4b

***Note:** No limit to quantity of daisy-chained units.
Daisy chaining only limited to total bandwidth of 1Gbps.

Wall Mount Installation:

1- Place unit at desired location and secure with mounting screws *(not included) (Fig. 5, pg. 8).*

Fig. 5



Pole Mounting Using Optional Pole Mount Kit **PMK1** (NetWaySP8WP2) **or PMK2** (NetWaySP8WPX2)**:**

This installation should be made by qualified service personnel. This product contains no serviceable parts. PMK1 and PMK2 outdoor pole mount kits are designed to simplify the installation of Altronix outdoor rated power supplies and accessories housed in models WP2, WP3 and WP4 NEMA rated enclosures. PMK1 and PMK2 can be mounted on 2" to 8" (50.8mm to 203.2mm) diameter round or 5" (127mm) square poles. Brackets are designed for use with the Wormgear Quick Release Straps (two included).

1. Thread one (1) wormgear quick release strap through the slots on the back of a mounting bracket *(Fig. 6, pg. 8).*
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. 6, pg. 8 and Fig. 7, pg. 8).*

Fig. 6

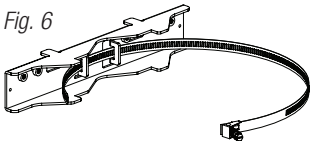


Fig. 7

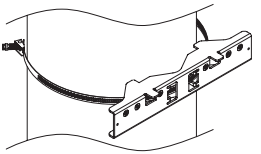
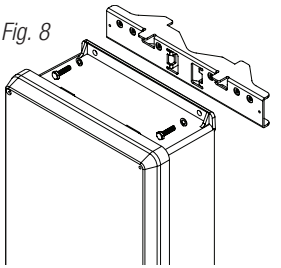


Fig. 8



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. 7, pg. 8).*
4. Thread the second wormgear quick release strap through the slots on the back of the bottom mounting bracket *(Fig. 9, pg. 8).*
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. 8, pg. 8).*
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. 9, pg. 8).*
7. Clip excess straps.

Fig. 9

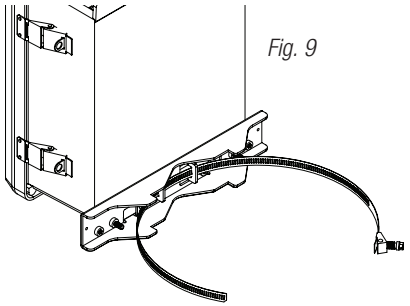


Fig. 10
2" to 8"(50.8mm to 203.2mm) diameter round pole

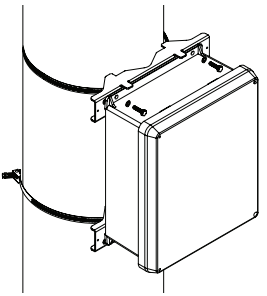
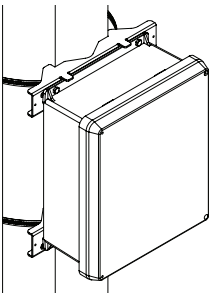
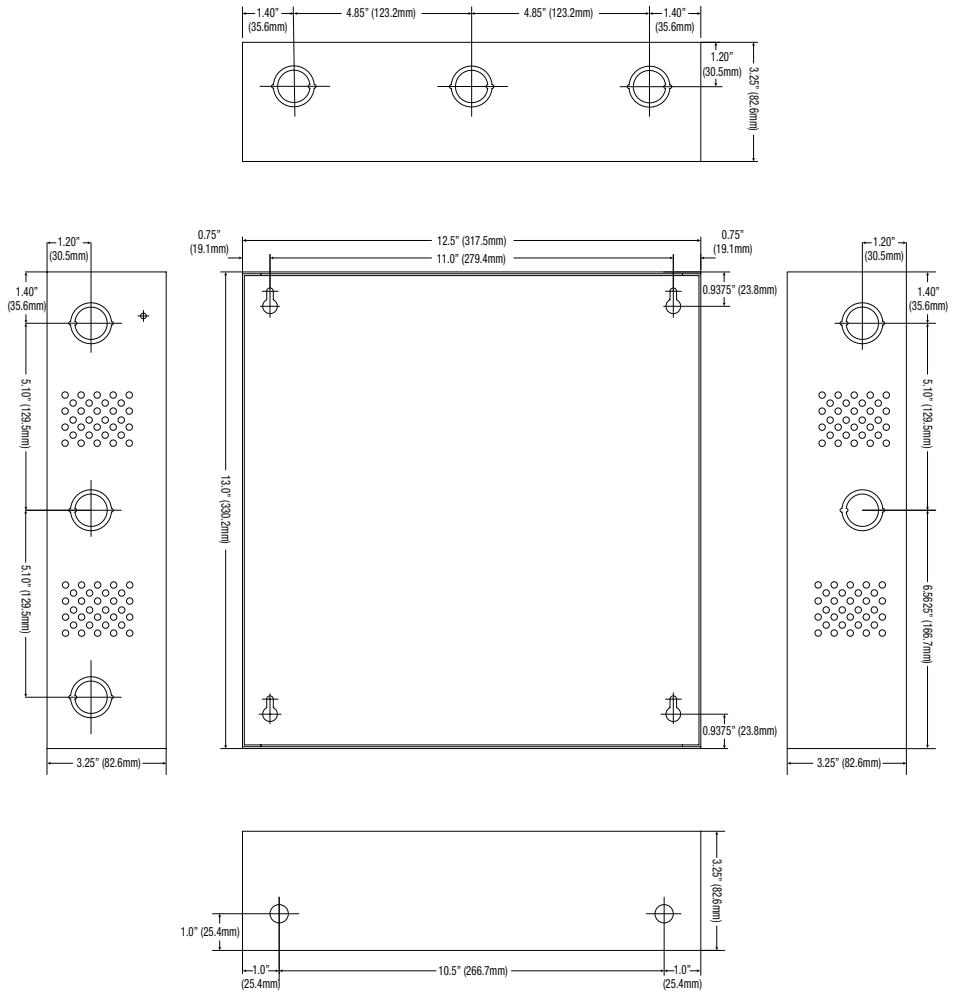


Fig. 10a
5" (127mm) square pole



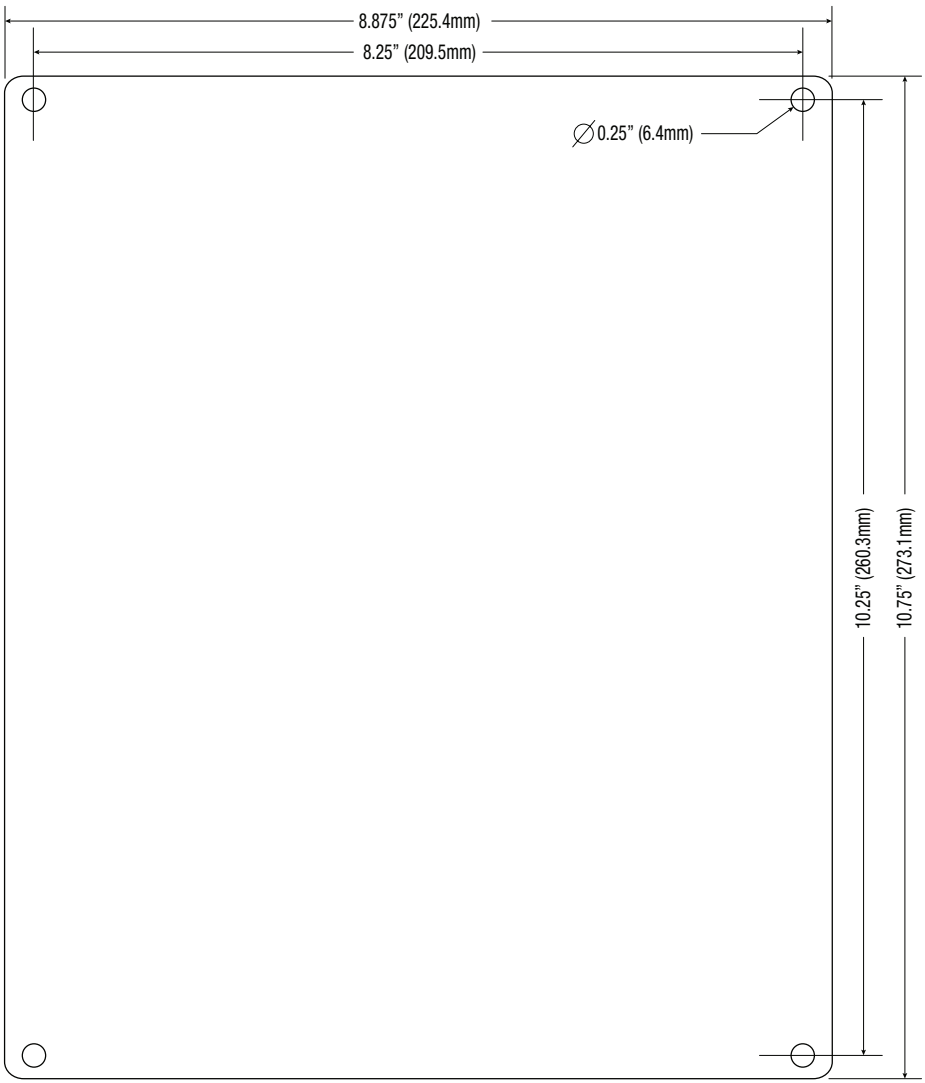
NetWaySP8X2
Mechanical Drawing and Dimensions (H x W x D approx.):

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



NetWaySP8PL2
Mechanical Drawing and Dimensions (H x W x D approx.):

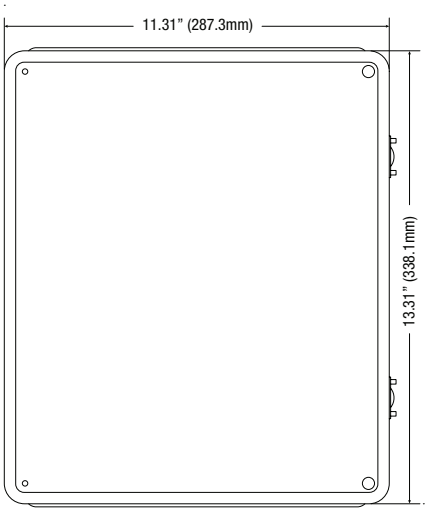
10.75” x 8.875” x 2.375” (273.1mm x 225.4mm x 60.3mm)



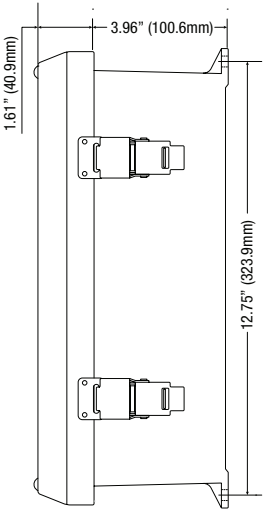
NetWaySP8WP2
Mechanical Drawing and Dimensions (H x W x D approx.):

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

FRONT VIEW



RIGHT SIDE VIEW



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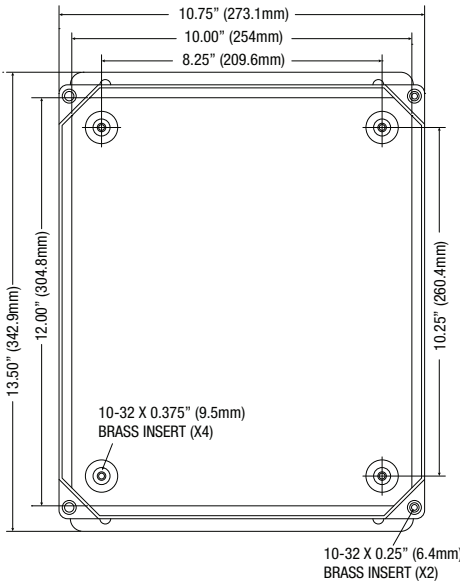

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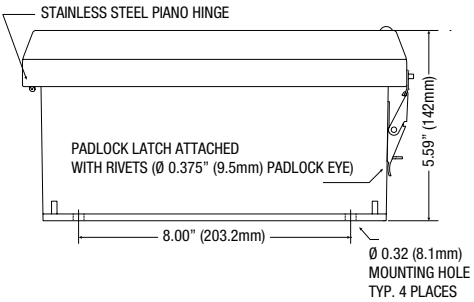
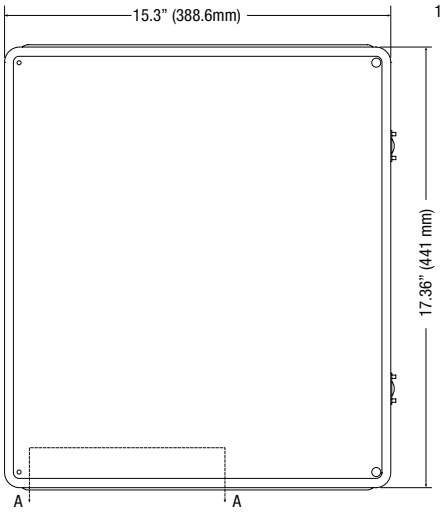


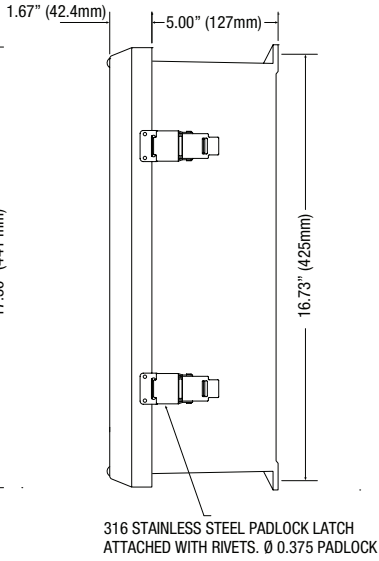
NetWaySP8WPX2
Mechanical Drawing and Dimensions (H x W x D approx.):

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

FRONT VIEW



RIGHT SIDE VIEW



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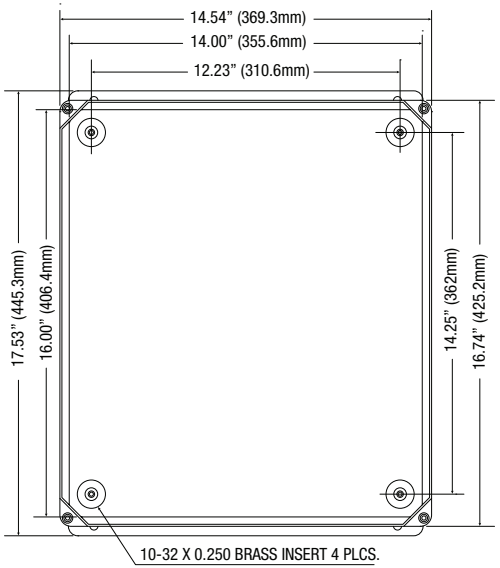
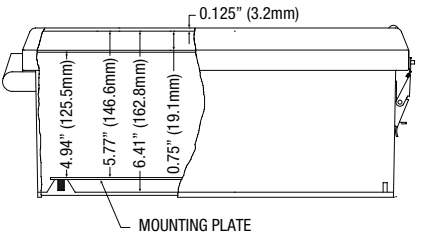
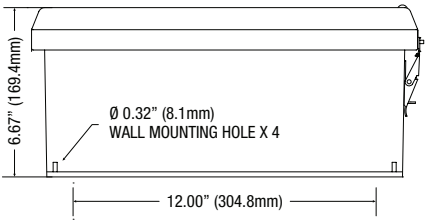


SECTION A-A



END VIEW