Altronix NetWaySP41BT Series 4 Port Hardened 802.3bt User Manual

Contents

Altronix NetWaySP41BT Series 4 Port Hardened 802.3bt

Product Information

Specifications

- **Product** Name: Fiber Solution NetWaySP41BT Series
- **Type:** 4-port Hardened 802.3bt 4PPoE Switches (Layer 2)
- **Models:**
  - **NetWaySP41BTWP**
  - **NetWaySP41BTWPX**
  - NetWaySP41BTWPN
  - **NetWaySP41BTX**
  - **NetWaySP41BTPL**
  - **NetWaySP41BTB**

Product Usage Instructions

Overview

The Altronix NetWaySP41BT Series Hardened 802.3bt 4PPoE Layer 2 Switches come with two (2) 1Gb SFP ports and four (4) 802.3bt compliant Ethernet ports rated at 90W each, limited to 240W or 320W total power, depending on the model.

Features

- 48-56V UL Listed ITE power supply.
- Auto-negotiation.
- LiFePO4 (Lithium Iron Phosphate) or sealed lead acid or gel-type batteries support.

Mechanical

- When using lead acid or gel-type batteries, ensure proper ventilation in the enclosure.

Installation Guide

- Refer to the provided installation guide with DOC#: NetWaySP41BT Rev. 031723 for detailed installation instructions.

FAQ

Q: What are the recommended Altronix Power Sourcing Equipment for the NetWaySP41BT Series?

- **A:** Recommended Altronix Power Sourcing Equipment includes NetWaySP4P, NetWaySP4PX, NetWaySP4P2, WayPoint562 High Current Outdoor Power Supply/Charger, Vertiline563, and PoE240.

Q: Which Altronix SFP Modules are compatible with the NetWaySP41BT Series?

- **A:** Compatible Altronix SFP Modules are P1MM, P1SM10, P1AB2K, and P1GCE, suitable for different fiber types and transmission distances.

Models Include

NetWaySP41BTWP

- port Hardened 802.3bt 4PPoE Switch and Power Supply/Charger
- NEMA4/4X, IP66-rated Outdoor enclosure.

NetWaySP41BTWPX

- 4-port Hardened 802.3bt 4PPoE Switch and Power Supply/Charger
- NEMA4/4X, IP66-rated Outdoor enclosure.
- Accommodates up to four (4) 12VDC/4AH batteries.

NetWaySP41BTWPN

- 4-port Hardened 802.3bt 4PPoE Switch (uses external power supply).
- NEMA4/4X, IP66-rated Outdoor enclosure.

NetWaySP41BTX

- 4-port Hardened 802.3bt 4PPoE Switch and Power Supply/Charger
- NEMA1-rated Indoor enclosure.

NetWaySP41BTPL

- 4-port Hardened 802.3bt 4PPoE Switch and Power Supply/Charger

- Backplane version.

NetWaySP41BTB

- 4-port Hardened 802.3bt 4PPoE Switch
- Board Only.

Overview

- Altronix NetWaySP41BT Series Hardened 802.3bt 4PPoE Layer 2 Switches are equipped with two (2) 1Gb SFP ports and four (4) 802.3bt compliant Ethernet ports rated at 90W each, limited to 240W or 320W total power, depending on a model.

Features

Agency Listings:

- CE European Conformity.

Input

- NetWaySP41BTWP/NetWaySP41BTWPX/ NetWaySP41BTPL/ NetWaySP41BTX: 115VAC, 60Hz, 1.8A or 230VAC, 50/60Hz, 1A.
- NetWaySP41BTB/NetWaySP41BTWPN: 48-56V UL Listed ITE power supply.

Output

- NetWaySP41BTWP/NetWaySP41BTWPX/
- NetWaySP41BTPL/ NetWaySP41BTX:
- Four (4) 10/100/1000 Mbps Ethernet ports rated at 90W each (limited to 240W total power).
- NetWaySP41BTB/NetWaySP41BTWPN:
- Four (4) 10/100/1000 Mbps Ethernet ports rated at 90W each (depending on the power supply employed, limited to 320W total power).
- IEEE 802.3af, 802.3at, 802.3bt compliant.

SFP Ports:

- Two (2) Gigabit SFP ports.

Ethernet Ports:

- Four (4) 10/100/1000 Mbps ports.
- **Connectivity:** RJ45, auto-crossover.
- **Wire type:** 4-pair CAT5e or higher structured cable.
- **Speed:** 10/100/1000 Mbps, half/full duplex, auto negotiation.

Battery Backup:

- NetWaySP41BTWP/NetWaySP41BTWPX/ NetWaySP41BTPL/ NetWaySP41BTX:
- 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.

Indicators (LED)

- Individual PoE On LEDs for each port.
- Individual IP Link status, 10/100/1000 Base-T/active LEDs for each port.
- ALOS LED indicates fiber connection for the SFP port.
- Heartbeat LED indicates proper operation of the unit.

Mechanical

- NetWaySP41BTB
- Dimensions (L x W x D approx.):
    - 5.625” x 4.5” x 0.625”
    - (158.8mm x 142.9mm x 15.9mm).

NetWaySP41BTPL:

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

NetWaySP41BTWP, NetWaySP41BTWPN:

- 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).

NetWaySP41BTWPX:

- NEMA4/4X, IP66-rated enclosure for outdoor use.
- Accommodates sealed lead acid or gel type or LiFePO4 (Lithium Iron Phosphate) 12VDC batteries*.
- **Dimensions** (H x W x D approx.):
- 17.53” x 15.3” x 6.67”
- (445.3mm x 388.6mm x 169.4mm).

NetWaySP41BTX:

- 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).
- **CAUTION:** When using lead acid or gel-type batteries, the enclosure must be properly ventilated.

Recommended Altronix Power Sourcing Equipment:

- **NetWaySP4P** Ethernet to Fiber Media Converter with Integral Power Supply/Charger.
- **Four** (4) 56VDC non power-limited outputs up to 120W max. full power per port (240W total power). Four (4) 1Gb SFP ports.
- **NetWaySP4PX** Ethernet to Fiber Media Converter with Integral Power Supply/Charger.
- **Four** (4) 56VDC non power-limited outputs up to 120W max. full power per port (480W total power). Four (4) 1Gb SFP ports.
- **NetWaySP4P2** Ethernet to Fiber Media Converter with Integral Power-Limited Power Supply/Charger.
- **Four** (4) 56VDC power-limited outputs up to 60W max. full power per port (240W total power). Four (4) 1Gb SFP ports.
- **WayPoint562** High Current Outdoor Power Supply/Charger. 56VDC/120W output.
    - Filtered and electronically regulated output. Short circuit and thermal overload protection.
- **Vertiline563** EIA 19” 1U Rack Mountable Dual Independent Power Supply/Charger.
    - 56VDC @ 3A each output.
    - Filtered and electronically regulated output. Short circuit and thermal overload protection.
- **PoE240** Power Supply/Charger Board. 56VD/240W output.
    - Filtered and electronically regulated output. Short circuit and thermal overload protection.

Recommended Altronix SFP Modules:

- Altronix P1MM, P1SM10, P1AB2K, and P1GCE are hot-pluggable SFP fiber transceiver modules and are readily usable with all Altronix Spectrum fiber optic equipment for 1Gb transmission rates.
- **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 Strand Single-Mode Fiber for distances up to 2km.
- **P1GCE** For use with CAT5e or better for distances up to 100m.

Installation Instructions

- Wiring methods shall be per the National Electrical Code/NFPA 70/ANSI, and with all local codes and authorities having jurisdiction.
- All units should be installed by trained service personnel.

Mounting Instructions:

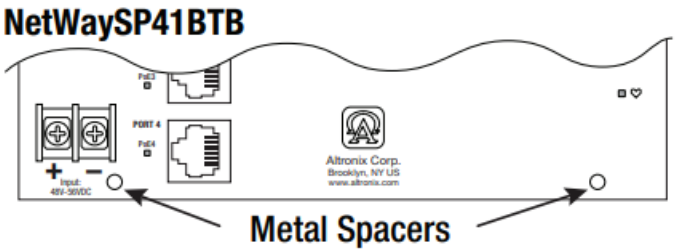
NetWaySP41BTB:

1. 1. Mount board in the desired location/enclosure with hardware supplied.
    - **Note:** For proper earth ground connections on NetWaySP41BTB fasten metal spacers (provided) to

threaded studs at indicated board mounting holes (shown on the right). This is recommended for better environmental immunity.

2. Connect the external 48V-56V UL-listed ITE power source to the terminal marked [+] and [–], carefully observing the correct polarity (Fig. 2, pg. 6).

Fig. 1



NetWaySP41BTWPN/NetWaySP41BTWP/NetWaySP41BTWPX:

1. Remove the backplane from the enclosure before drilling. Do not discard hardware.
   Note: Make sure that hardware will not interfere with the 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 the 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. 3. Clean out the inside of the enclosure before remounting circuit boards/backplanes.
4. **NetWaySP41BTWPN**: Connect external 48V-56V UL Listed ITE power power source to the terminal marked [+] and [–], carefully observing the correct polarity (Fig. 2, pg. 6).
5. **Mounting NEMA4/4X** rated enclosure (Enclosure Dimensions, pg. 11-12):
   - **Wall mount:** Mount the unit in the 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 the mounting surface and are of sufficient length/construction to ensure a secure mount (Fig. 4, pg. 8).
   - **Pole Mount:** Refer to Fig. 5 – 9, pg. 8.

3. Mount the backplane in an enclosure with hardware.
   - **NetWaySP41BTX:**
   - Mount the 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 the enclosure to earth ground.
   - **NetWaySP41BTPL:**
   - Mount the backplane in the desired enclosure with hardware supplied (Backplane Dimensions.

Power Connection

For NetWaySP41BTWP, NetWaySP41BTWPX, NetWaySP41BTX, and NetWaySP41BTPL:

1. Secure cabinet to earth ground. Connect AC power from the overcurrent protective device circuit breaker (20A @ 115VAC, 60Hz, 16A @ 230VAC, 50/60Hz) to the terminals marked [L, N] on the power supply board (Fig. 3,

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. A 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.

Input/Data Connections:

1. Connect structured cables from port marked [Port 1] to [Port 4] on the NetWay unit to PoE-compliant cameras/edge devices (Fig. 2, pg. 6).
2. Insert the SFP module into port(s) marked [SFP], then connect a cable to the SFP module on NetWaySP41BTB to the corresponding input of an SFP switch (Fig. 2, pg. 6).

Battery Backup (if desired)

NetWaySP41BTWP/ NetWaySP41BTWPX/NetWaySP41BTX/NetWaySP41BTPL

1. Connect two (2) 12VDC batteries wired in series or one (1) 24V battery to terminals marked [– BAT +] (Fig. 3, pg. 7), carefully observing polarity.
2. When the use of stand-by batteries is desired, they can be LiFePO4 (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 LiFePO4 (lithium iron phosphate) batteries, check with manufacturer specifications that batteries can be connected in series.
    - For outdoor battery backup, the battery enclosure must have sufficient ventilation.

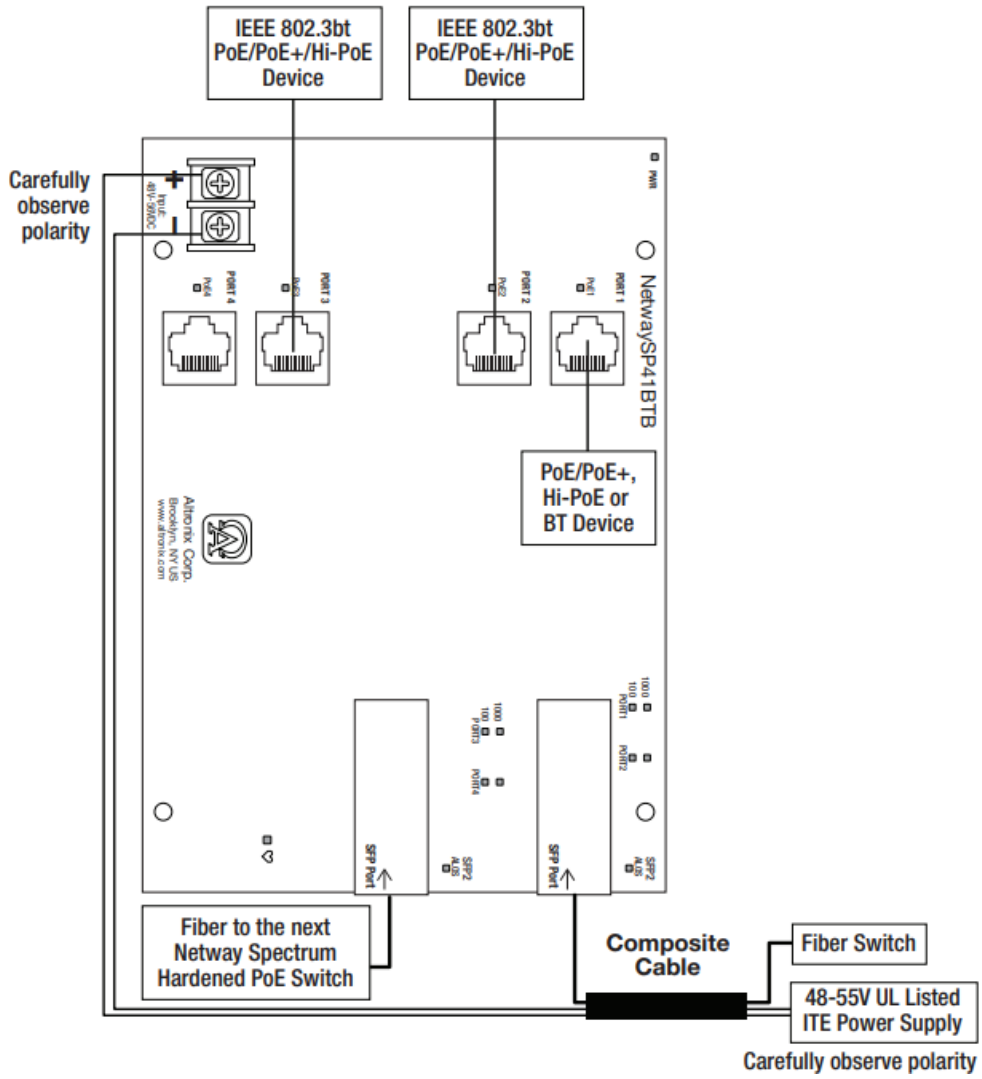
Security:

Please ensure that the cover is secured with a Key lock and screws for NetWaySP41BTX, Security Bolt for NetWaySP41BTWP(X), and NetWaySP41BTWPN.

Technical Specifications

Parameter	Description		
Number of Ports	Four (4) 10/100/1000 Mbps Ethernet ports rated at 90W each. IEEE 802.3af, 802.3at, 802.3bt compliant. Two (2) Gigabit SFP Ports.		
Input Power Requirements	NetWaySP41BTWP/NetWaySP41BTWP/NetWaySP41BTPL/NetWaySP41BTX: 115VAC, 60Hz, 1.8A or 230VAC, 50/60Hz, 1A. NetWaySP41BTB/NetWaySP41BTWPN: 48-56V UL Listed ITE power supply.		
Environmental Conditions	Operating Ambient Temperature: 240W: – 40ºC to 55ºC (– 40ºF to 131ºF) 180W: – 40ºC to 65ºC (– 40ºF to 149ºF) 150W: – 40ºC to 75ºC (– 40ºF to 167ºF) Relative Humidity: 85%, +/– 5% Storage Temperature: – 30ºC to 85ºC (– 22ºF to 185ºF) Operating Altitude: – 304.8 to 2,000m		
Weights (approx.)	Model	Product Weight	Shipping Weight
	NetWaySP41BTWP NetWaySP41BTWPX NetWaySP41BTWPN NetWaySP4X NetWaySP4PL NetWaySP41BTB	10.5 lb. (4.76 kg) 15 lb. (6.8 kg) 9.5 lb. (4.3 kg) 6.85 lb. (3.11 kg) 2.6 lb. (1.18 kg) 0.4 lb. (0.18 kg)	11.9 lb. (5.4 kg) 17.5 lb. (7.9kg) 10.9 lb. (4.9 kg) 7.75 lb. (3.51 kg) 4.0 lb. (1.81kg) 0.75 lb. (0.34 kg)

Fig. 2 – NetWaySP41BTB/NetWaySP41BTWPN – Typical Application with Composite Cable



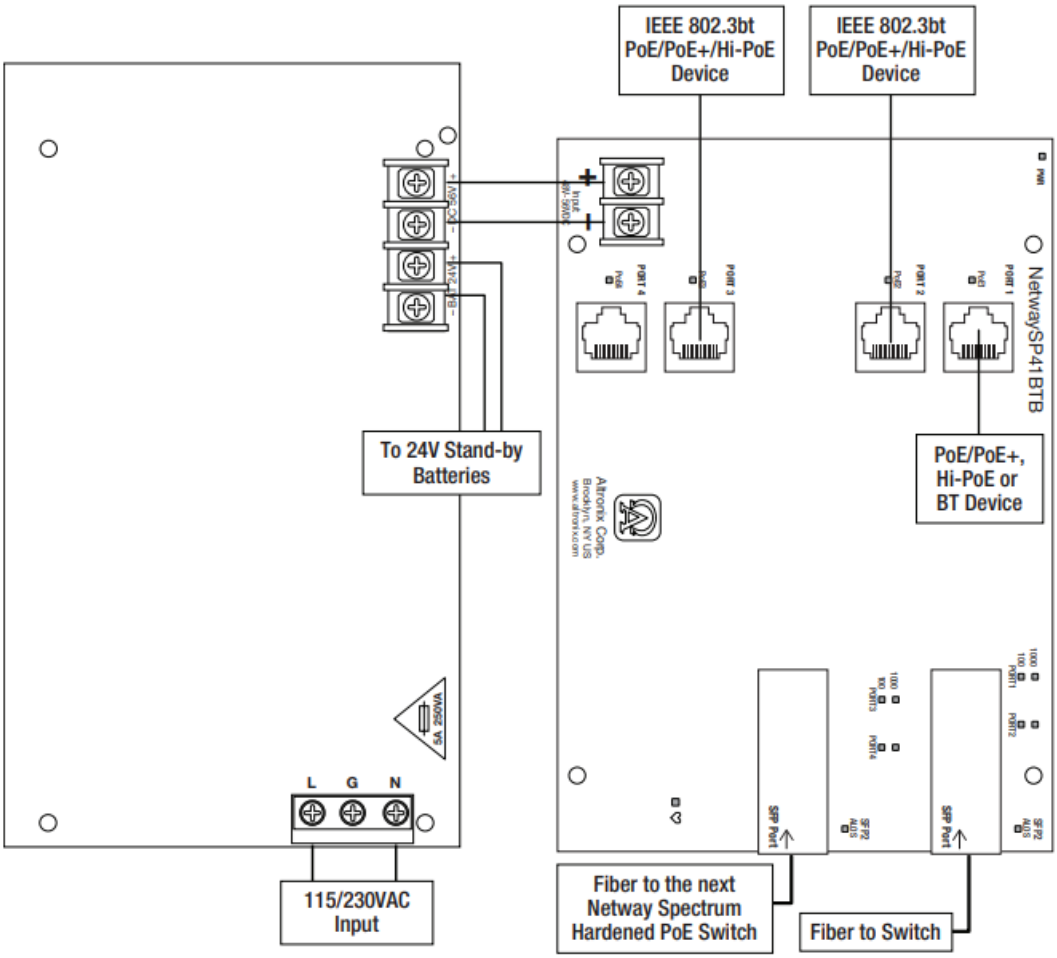
Powering Cable Distance Chart

Power Requirements	Power Cabling AWG	Maximum Distance (ft./m)
15W	12/2	11,162’ / 3,403m
30W	12/2	5,581’ / 1,702m
45W	12/2	3,767’ / 1,148m
60W	12/2	2,739’ / 835m
75W	12/2	2,249’ / 686m
90W	12/2	1,872’ / 571m
105W	12/2	1,607’ / 490m
120W	12/2	1,408’ / 429m
180W	12/2	

Power Requirements	Power Cabling AWG	Maximum Distance (ft./m)
15W	16/2	4,415’ / 1,346m
30W	16/2	2,207’ / 673m
45W	16/2	1,490’ / 454m
60W	16/2	1,083’ / 330m
75W	16/2	889’ / 271m
90W	16/2	740’ / 226m
105W	16/2	635’ / 194m
120W	16/2	557’ / 170m
180W	16/2	

- Estimated distances based on a starting voltage of 56VDC and account for a 10-volt drop.
- All distances are per IEEE 802.3at standard for device power requirements of minimum 44VDC and leave an approximate 2 volts for safety and flexibility.

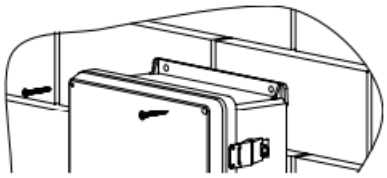
Fig. 3 – NetWaySP41BTX/NetWaySP41BTWP/NetWaySP41BTWPX/NetWaySP4BL – Typical Application with Factory-Installed Power Supply



Wall Mount Installation

1. Place the unit at a desired location and secure it with mounting screws (not included) (Fig. 4, pg. 8).

Fig. 4



Pole Mounting Using Optional Pole Mount Kit

PMK1 (NetWaySP41BTWP) or PMK2 (NetWaySP41BTWPX):

- 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 WP1, 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. 5, pg. 8).
2. Once the desired height of the top Pole Mount bracket is achieved, tighten the straps down by sliding the open the end of the strap through the locking mechanism on the strap, then tighten the screw with a flat head

screwdriver or 5/16” hex socket driver (Fig. 6, pg. 8 and Fig. 8, pg. 8).

Fig. 5

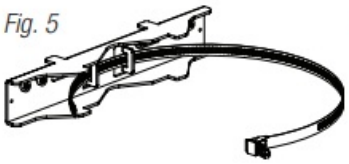


Fig. 6

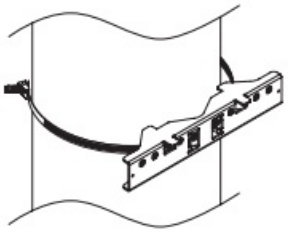
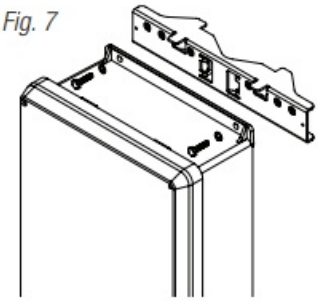


Fig. 7



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. 5, pg. 8).
5. Mount the enclosure onto the top bracket 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).
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 the screw with a flathead screwdriver or 5/16” hex socket driver (Fig. 5, pg. 8).
7. Clip excess straps.

Fig. 8

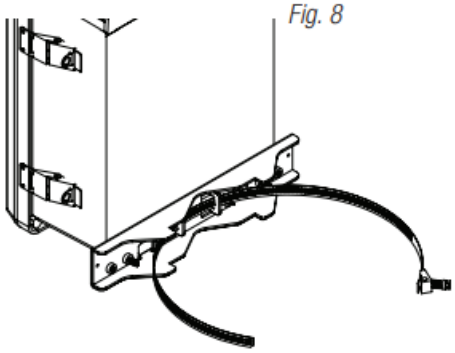


Fig. 9
2” to 8”(50.8mm to 203.2mm) diameter round pole

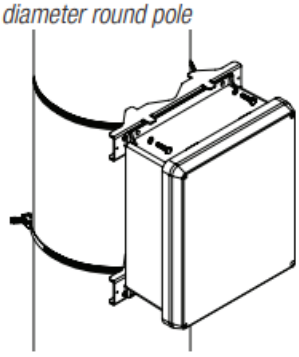
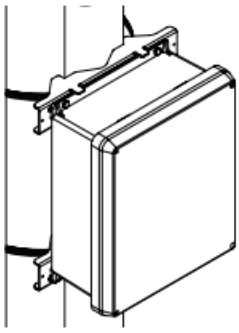
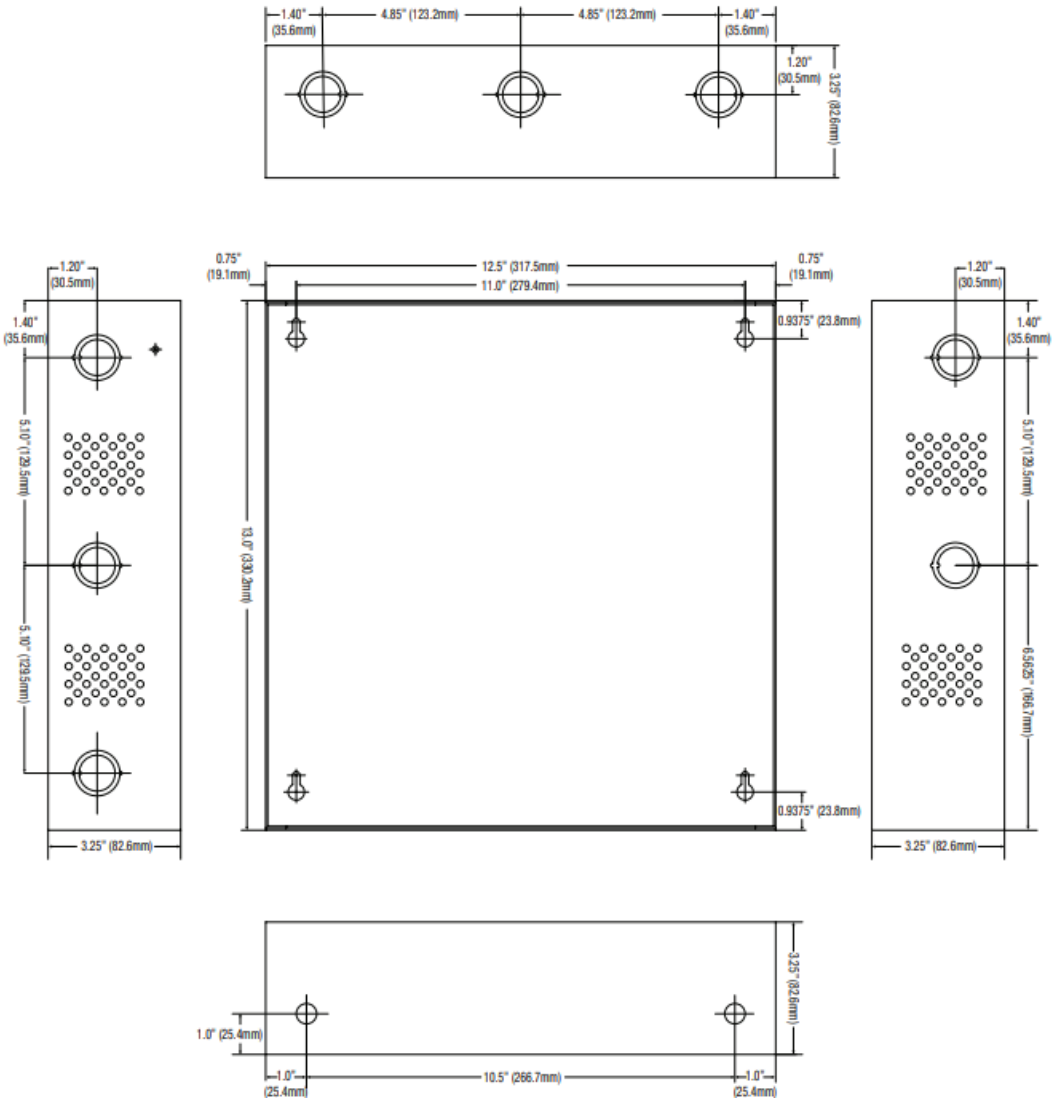


Fig. 9a
5” (127mm) square pole



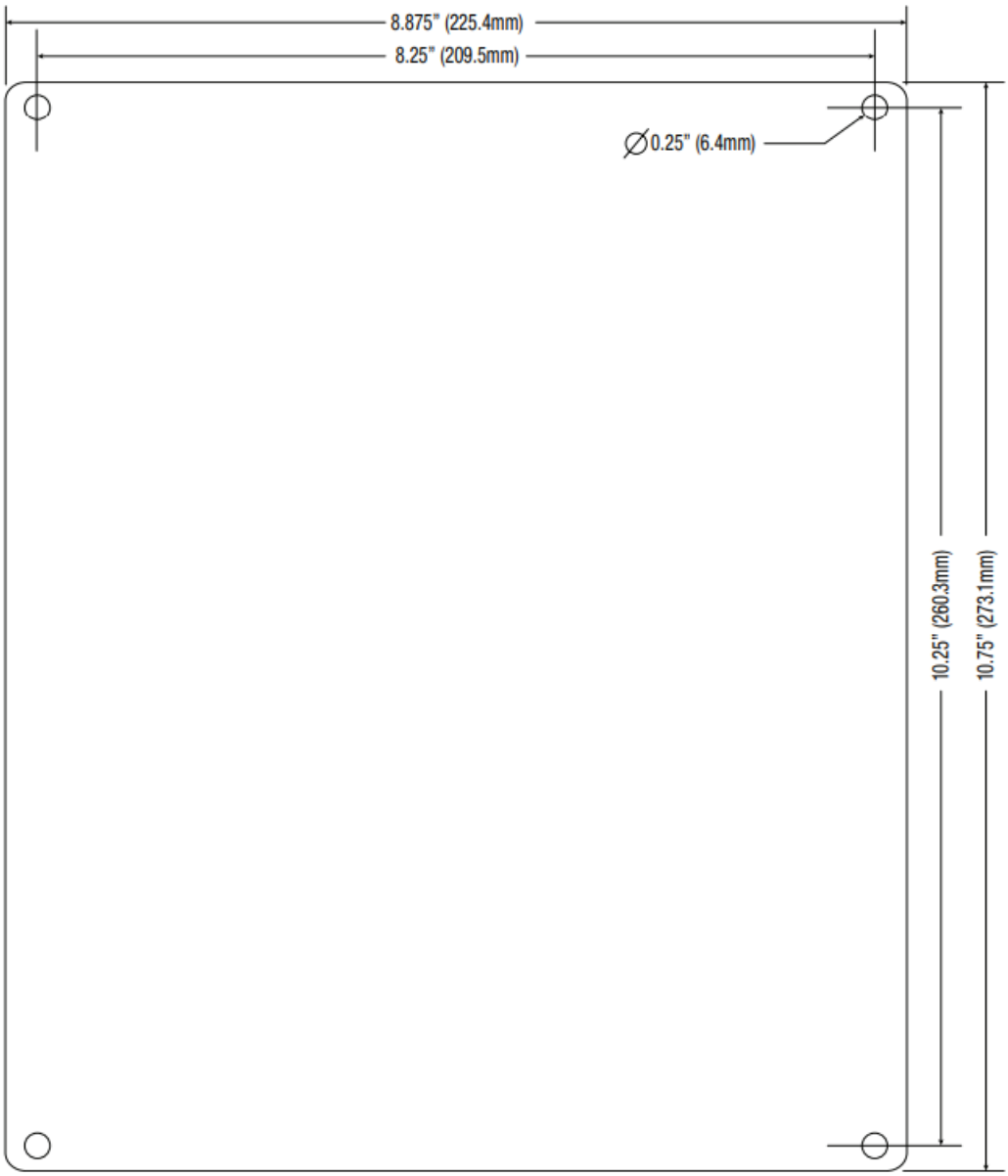
NetWaySP41BTX

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)

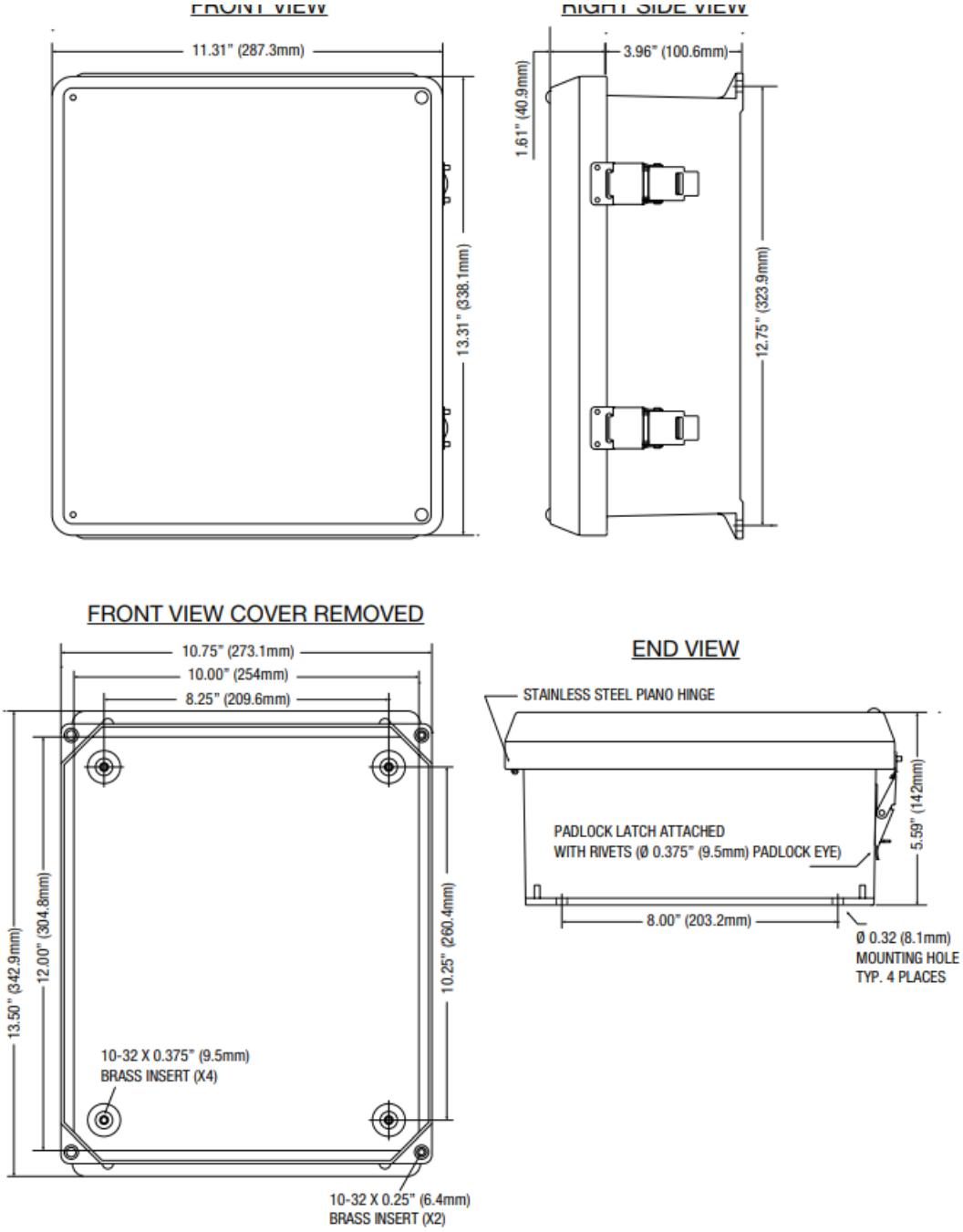


NetWaySP41BTPL

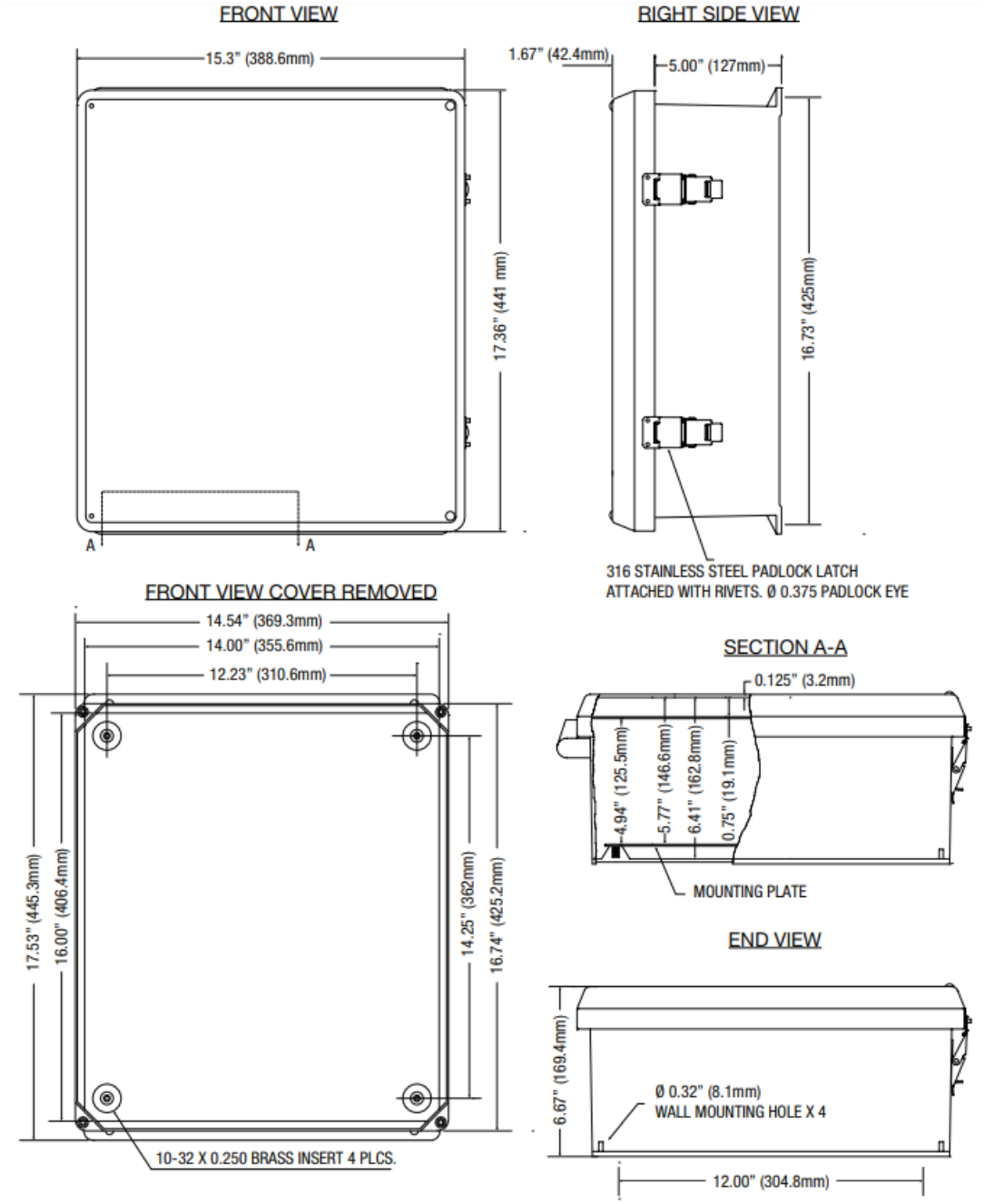
Mechanical Drawing and Dimensions (H x W x D approx.): 10.75” x 8.875” x 2.375” (273.1mm x 225.4mm x 60.3mm)



NetWaySP41BTWP and NetWaySP41BTWPN 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)



NetWaySP41BTWPX 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)



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- 140 58th Street, Brooklyn, New York 11220 USA phone: 718-567-8181 fax: 718-567-9056 website: **www.altronix.com** e-mail: **info@altronix.com** Lifetime Warranty IINetWaySP41BT Series

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Documents / Resources

Altronix NetWaySP41BT Series 4 Port Hardened 802.3bt [pdf] User Manual
NetWaySP41BT Series 4 Port Hardened 802.3bt, NetWaySP41BT Series, 4 Port Hardened 802 .3bt, Port Hardened 802.3bt, Hardened 802.3bt

References

- Altronix Home
- User Manual