



Fiber Solution

NetWaySP41BT Series

4-port Hardened 802.3bt 4PPoE Switches (Layer 2)

Models Include:

NetWaySP41BTWP

- 4-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.

Installation Guide



DOC#: NetWaySP41BT Rev. 031723

More than just power.™

Installing Company: _____ Service Rep. Name: _____

Address: _____ Phone #: _____

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 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, 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 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:

NetWaySP41BTB:

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

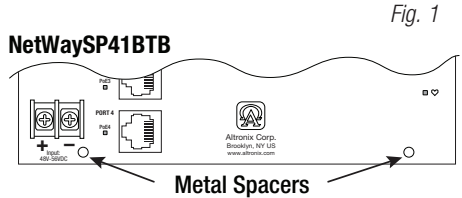


Fig. 1

NetWaySP41BTWPN/NetWaySP41BTWP/NetWaySP41BTWPX:

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. **NetWaySP41BTWPN:** Connect external 48V-56V UL Listed ITE power source to terminal marked [+], and [-], carefully observing correct polarity (Fig. 2, pg. 6).
5. Mounting NEMA4/4X rated enclosure (Enclosure Dimensions, pg. 11-12):
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 (Fig. 4, pg. 8).
Pole Mount: Refer to Fig. 5 - 9, pg. 8.
6. Mount backplane in enclosure with hardware.

NetWaySP41BTX:

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.

NetWaySP41BTPL:

1. Mount backplane in the desired enclosure with hardware supplied (Backplane Dimensions, pg. 10).

Power Connection:

For NetWaySP41BTWP, NetWaySP41BTWPX, NetWaySP41BTX, and NetWaySP41BTPL:

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. 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. 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 NetWay unit to PoE compliant cameras/edge devices (Fig. 2, pg. 6).
2. Insert SFP module into port(s) marked [SFP], then connect 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. When 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, battery enclosure must have sufficient ventilation.

Security:

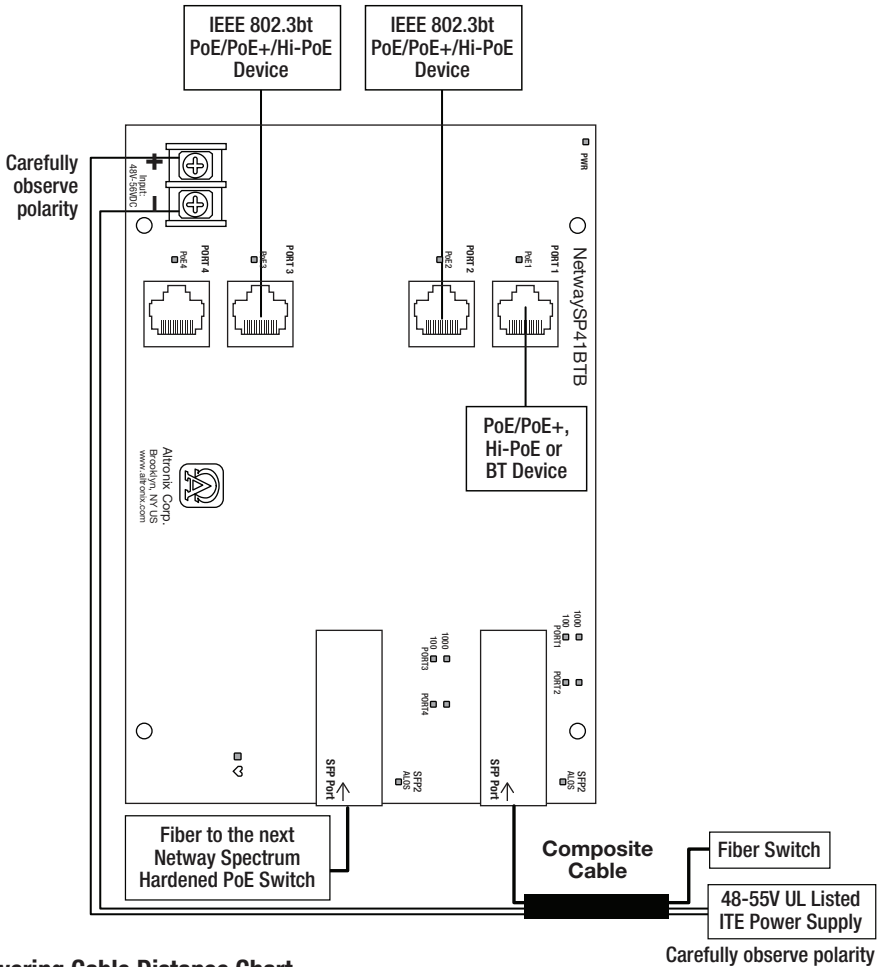
Please ensure that the cover is secured with:

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: - 40°C to 55°C (- 40°F to 131°F) 180W: - 40°C to 65°C (- 40°F to 149°F) 150W: - 40°C to 75°C (- 40°F to 167°F) Relative Humidity: 85%, +/- 5% Storage Temperature: - 30°C to 85°C (- 22°F to 185°F) Operating Altitude: - 304.8 to 2,000m | | |
| Weights (approx.) | Model | Product Weight | Shipping Weight |
| | NetWaySP41BTWP | 10.5 lb. (4.76 kg) | 11.9 lb. (5.4 kg) |
| | NetWaySP41BTWPX | 15 lb. (6.8 kg) | 17.5 lb. (7.9kg) |
| | NetWaySP41BTWPN | 9.5 lb. (4.3 kg) | 10.9 lb. (4.9 kg) |
| | NetWaySP4X | 6.85 lb. (3.11 kg) | 7.75 lb. (3.51 kg) |
| | NetWaySP4PL | 2.6 lb. (1.18 kg) | 4.0 lb. (1.81kg) |
| | NetWaySP41BTB | 0.4 lb. (0.18 kg) | 0.75 lb. (0.34 kg) |

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



Powering Cable Distance Chart

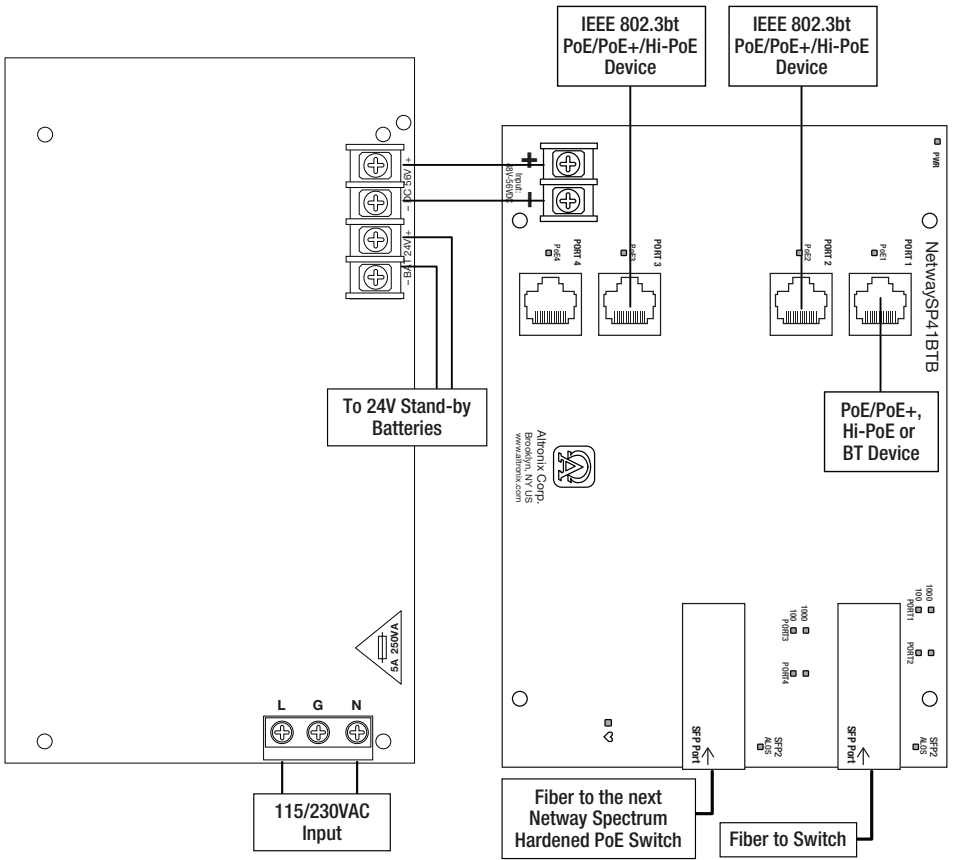
Carefully observe polarity

| 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 starting voltage of 56VDC and accounts 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.

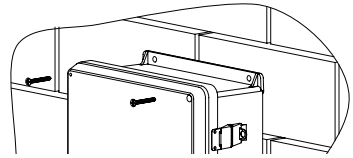
Fig. 3 - NetWaySP41BTX/NetWaySP41BTWP/NetWaySP41BTWPX/NetWaySP4BL – Typical Application with Factory Installed Power Supply



Wall Mount Installation

1. Place unit at desired location and secure 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 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. 8, pg. 8).

Fig. 5

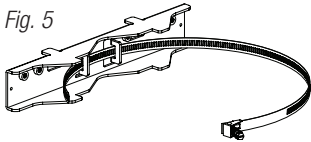


Fig. 6

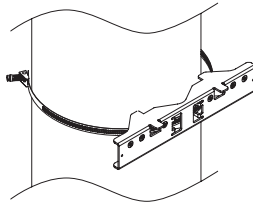
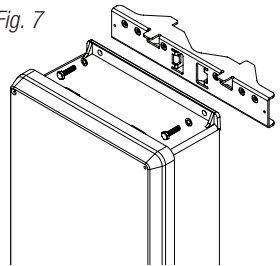


Fig. 7



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 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. 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 screw with flat head screwdriver or 5/16" hex socket driver (Fig. 5, pg. 8).
7. Clip excess straps.

Fig. 8

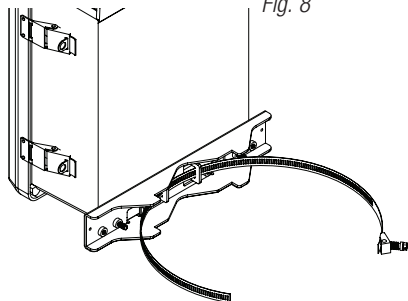


Fig. 9
2" to 8"(50.8mm to 203.2mm)
diameter round pole

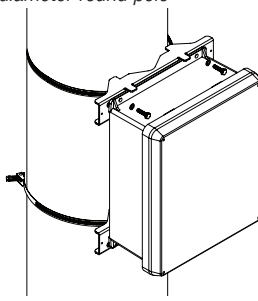
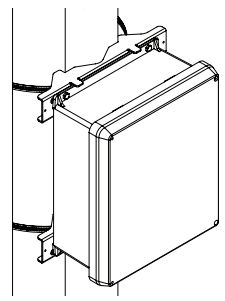


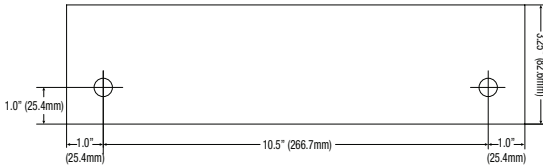
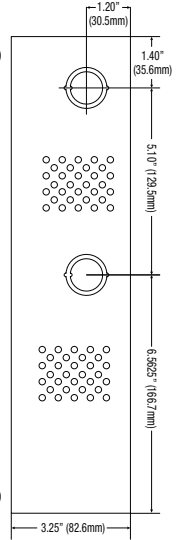
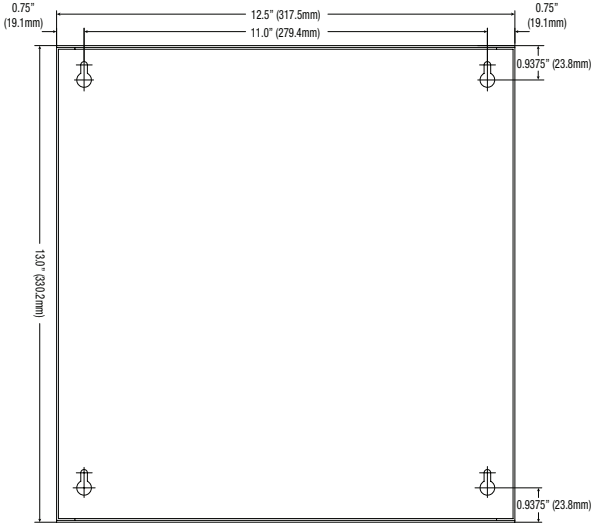
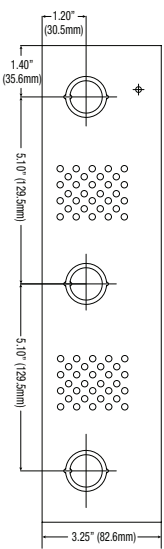
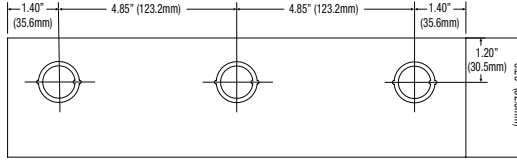
Fig. 9a
5" (127mm) square pole



NetWaySP41BTX

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

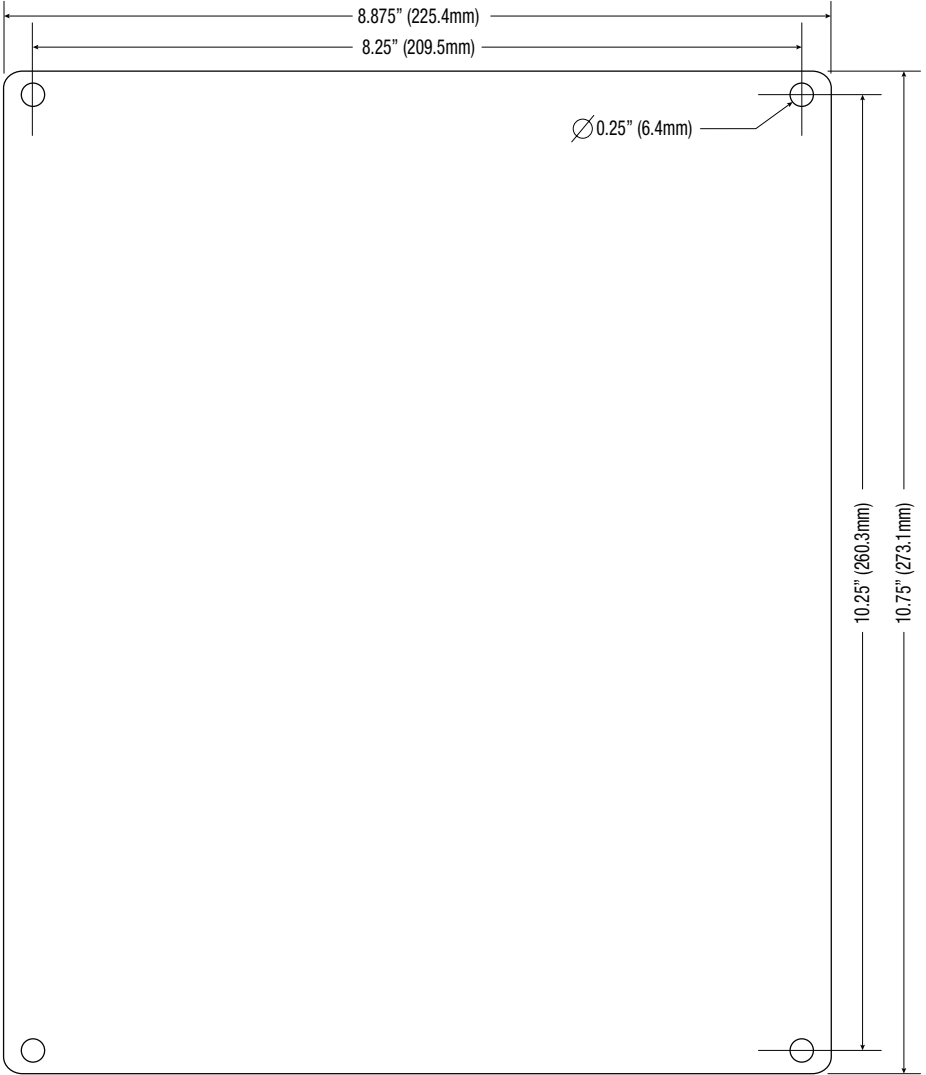
13.5" x 13" x 3.25" (342.9mm x 330.2mm x 82.6mm)



NetWaySP41BTPL

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

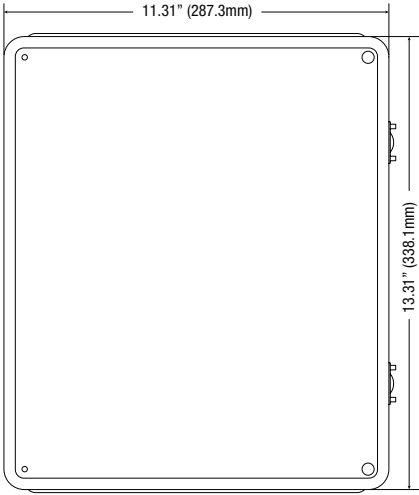
10.75" x 8.875" x 2.375" (273.1mm x 225.4mm x 60.3mm)



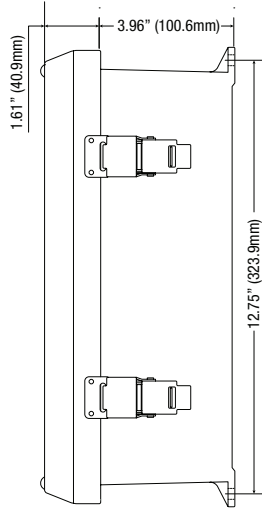
NetWaySP41BTWP and NetWaySP41BTWPN Mechanical Drawing and Dimensions (H x W x D approx.):

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

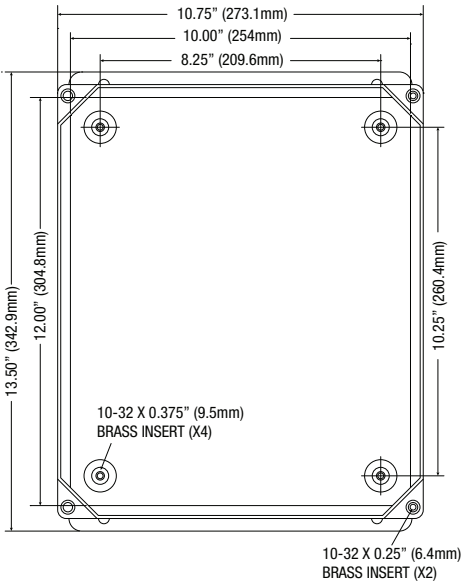
FRONT VIEW



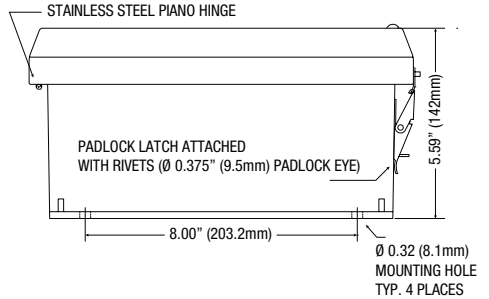
RIGHT SIDE VIEW



FRONT VIEW COVER REMOVED



END VIEW

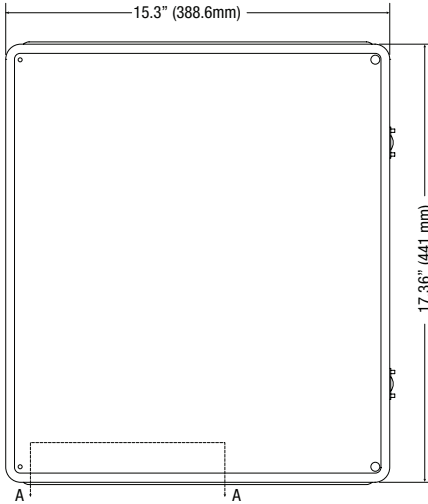


NetWaySP41BTWPX

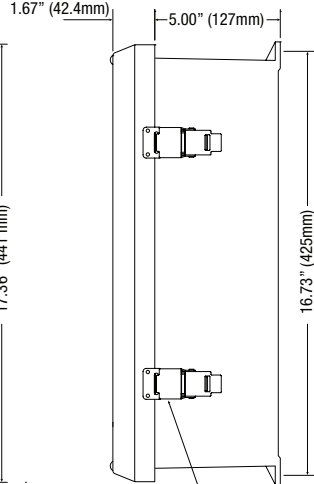
Mechanical Drawing and Dimensions (H x W x D approx.):

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

FRONT VIEW

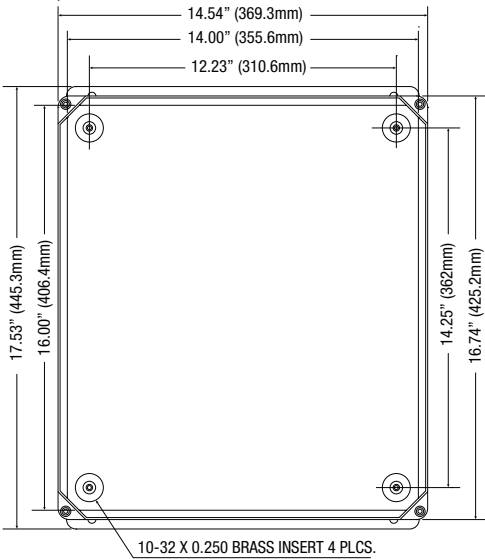


RIGHT SIDE VIEW



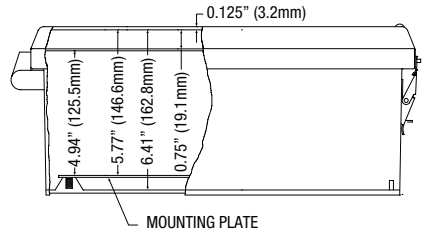
316 STAINLESS STEEL PADLOCK LATCH
ATTACHED WITH RIVETS. Ø 0.375 PADLOCK EYE

FRONT VIEW COVER REMOVED



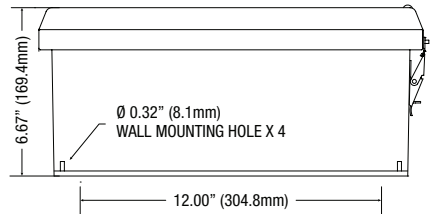
10-32 X 0.250 BRASS INSERT 4 PLCS.

SECTION A-A



MOUNTING PLATE

END VIEW



Ø 0.32" (8.1mm)
WALL MOUNTING HOLE X 4

Altronix is not responsible for any typographical errors.

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website: www.altronix.com | e-mail: info@altronix.com | Lifetime Warranty
INetWaySP41BT Series C17W

