

Video • Data



HubWayEX16S

- Sixteen (16) Camera Channels

Active UTP Transceiver Hub Installation Guide



Rev. 011810



More than just power.™

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Overview:

Altronix HubWayEX16S Active UTP Transceiver Hub employs *automatic gain control (AGC)* to transmit UTP video and RS422/RS485 data over a single CAT-5 or higher structured cable. Unit provides 16 camera channels in a space saving 1U EIA 19" rack mount chassis which may be rack, wall or shelf mounted. Video transmission range is up to 1500m (5000 ft.) max. per channel. Units are compatible with fixed or PTZ cameras. An optional HubSat4D/Di Passive UTP Transceiver Hub with Integral Camera Power can be used as an accessory module to transmit video from up to 4 cameras over a single CAT-5 or higher structured cable back to the HubWayEX16S. In addition, the HubSat4D/Di provides power to these cameras locally to eliminate the possibility of voltage drop associated with long cable runs.

Specifications:

Agency Listings:

- UL Listed for Commercial CCTV Equipment (UL 2044).
- CUL Listed - CSA Standard C22.2 No.1-04, Audio, Video and Similar Equipment.
- CE European Conformity.

Input:

- 115VAC 60Hz, 0.4A or 230VAC 50Hz, 0.2A.

Video:

- Sixteen (16) channels of video over twisted pair up to a distance of 1,500m (5,000 ft.) per channel.
- Sixteen (16) 75 ohm video outputs.

Data:

- RS422/RS485 data inputs.

Visual Indicators:

- AC input power indicator.
- Video signal LED indicators.

Features:

- Automatic picture and gain control.
- Automatic compensation for reverse polarity wiring.
- IEC 320 - 3-wire grounded line cord (detachable).
- Illuminated master power disconnect circuit breaker with manual reset.
- Unit can be rack, wall or shelf mounted.
- 1U rack mount chassis for use in standard EIA 19" rack.

Accessories:

- Video Balun/Combiners:
 - HubWayAv: for use with 24VAC cameras.
 - HubWayAv2: for use with 24VAC cameras.
- When used with optional HubSat4D/Di or HubWayEXP:
 - HubWayDv: for use with 12VDC cameras.
 - HubWayDvi: for use with non-isolated 12VDC cameras.
- Optional HubSat4D/Di allows transmission of up to four (4) video signals over a single CAT-5 or higher structured cable.

WARNING: To reduce the risk of fire or electric shock do not expose the unit to rain or moisture. This installation should be made by qualified service personnel and should conform to all local codes.

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.

1. Set the input voltage selector switch located on the left side of the HubWayEX16S unit (facing front panel) for 115VAC or 230VAC operation (*Fig. 3g, pg. 6*).
2. Attach mounting brackets to HubWayEX16S unit for rack or wall mount installation (*Figs. 7-9, pg. 12*). Affix rubber pads to HubWayEX16S for shelf installation (*Fig. 9, pg. 12*).
3. Secure the unit in a rack, mount unit to a wall or place unit on a shelf as desired (unit should be spaced at least 3" from any video monitors).
4. Set illuminated master power disconnect circuit breaker to the (OFF) position (*Fig. 6, pg. 11*).
5. Plug the grounded AC line cord into the IEC 320 connector of the HubWayEX16S. For US & Canada the plug end is a 3-prong type B plug used for standard 115VAC receptacles, as provided with unit (*Fig. 3f, pg. 6*). For non North American 230VAC applications use the appropriate 3-prong plug that matches the local standard receptacle.
6. Connect the BNC video outputs of the HubWayEX16S Channels 1-16 to the corresponding video inputs on the head end equipment (DVR) (*Fig. 3d, pg. 6*).
7. Connect the RS422/RS485 output of the head end equipment (DVR) to the one (1) or both data input terminal block(s) of the HubWayEX16S unit (polarity must be observed) (*Fig. 3c, pg. 6*).
Note: The Data input terminals of the HubWayEX16S must be wired in parallel for proper operation. When using fixed cameras disregard this step.
8. Connect Video Balun/Combiner at Camera 1 to the HubWayEX16S unit utilizing CAT-5 or higher structured cable. Plug the RJ45 connector at one end of the structured cable into the RJ45 jack marked [1] of the HubWayEX16S (*Fig. 3a, pg. 6*). Plug the RJ45 connector at the opposite end of the structured cable into the RJ45 jack of the Video Balun/Combiner located at Camera 1.
Repeat steps 6-8 for each additional camera (Channels 2-16 for HubWayEX16S).
Note: An external power source is required to power the cameras (*Fig. 4, pg. 7*). Connect AC or DC cameras to an external wall or rack mount power supply, for DC cameras polarity must be observed (*Fig. 4, pg. 7*). Optionally, an Altronix HubSat4D/Di Passive UTP Transceiver Hub with Integral Camera Power (*Fig. 5, pg. 8*) or HubWayEXP (*Fig. 5a, pg. 9*) 16 Channel UTP Power Injector may be utilized. The combined total cable distance must not exceed 1,500m (5,000 ft.) for video transmission between the HubWayEX16S and each camera routed through the HubSat4D/Di or HubWayEXP (*refer to HubSat4D/Di or HubWayEXP installation instructions*).
9. Set illuminated master power disconnect circuit breaker to the RESET (ON) position (*Fig. 6, pg. 11*) and measure the output voltage at the power output of each Video Balun/Combiner (*Figs. 1b, 1d, pg. 5*) before powering each camera to ensure proper operation and avoid possible damage.
 - For AC cameras - HubWayAv/HubWayAv2 - Terminals marked [AC POWER] (*Figs. 1a, 1b, 1e, pg. 5*).
 - For DC cameras - HubWayDv/HubWayDvi - Terminals marked [- 12VDC +] (*Figs. 1c, 1d, pg. 5*).
10. Connect the BNC connector of HubWayAv, HubWayAv2 or HubWayDv Video Balun/Combiners to the BNC video outputs of cameras (*Figs. 1b-1d, pg. 5*).
11. Connect the terminals marked [+ DATA -] of HubWayAv, HubWayAv2, HubWayDv or HubWayDvi Video Balun/Combiners to data input terminals of cameras for PTZ control (*Figs. 1b-1d, pg. 5*). Polarity must be observed. When using fixed cameras disregard this step.
12. Upon completion of wiring set illuminated master power disconnect circuit breaker to the RESET (ON) position (*Fig. 6, pg. 11*).
13. The video signal indicator LEDs (Red) located on the rear of the HubWayEX16S will illuminate when video signal is present (*Fig. 3e, pg. 6*). If any of these LEDs are not illuminated, there is no video signal for that corresponding channel.

HubWayAv, HubWayAv2, HubWayDv, and HubWayDvi Video Balun/Combiners:

Altronix Model Number	Input Voltage from HubWay Unit	Output Voltage to Camera	Camera Type	Power LED
HubWayAv	*24VAC/28VAC	*24VAC/28VAC	*24VAC/28VAC	Green
HubWayAv2	*24VAC/28VAC	*24VAC/28VAC	*24VAC/28VAC	N/A
HubWayDv	*24VAC/28VAC	12VDC	12VDC cameras	Red
HubWayDvi	*24VAC/28VAC	12VDC electronically isolated	12VDC cameras without isolation	Red

*Based on camera load and structured cable length.

Fig. 1

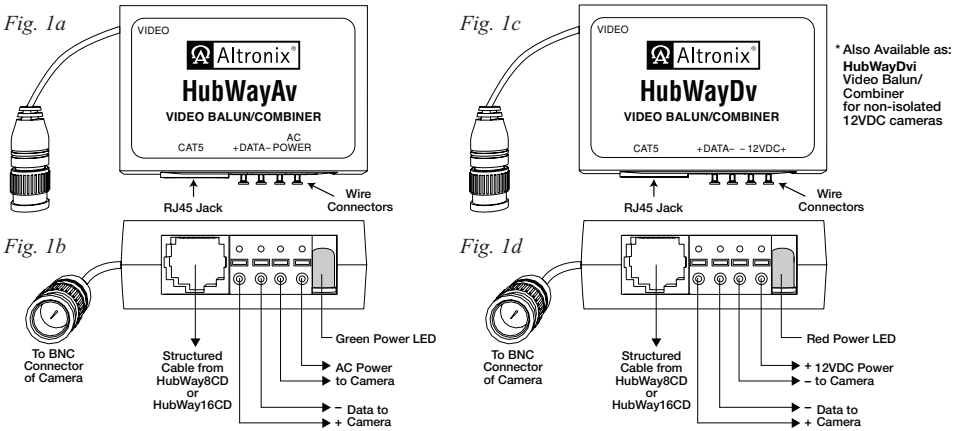
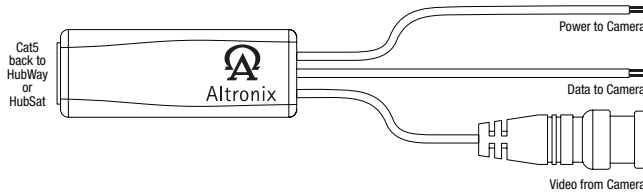


Fig. 1e HubWayAV2



HubWayAv/HubWayAv2 passes AC voltage from pins 4, 5, 7, 8 to terminals marked [AC Power] (Fig. 2, pg. 5). HubWayDv/HubWayDvi converts AC voltage to DC voltage from pins 4, 5, 7, 8 to terminals marked [- 12VDC +] (Fig. 2, pg. 5).

Fig. 2 CAT-5 Structured Cable Wiring Color Codes and PIN Configurations

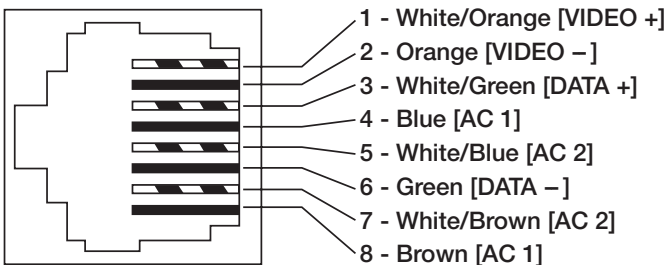


Fig. 3

3a - Channels 1-16:

CAT-5 or higher structured cable to Video/Balun Combiners at cameras 1-8 or 1-16. When using an optional HubSat4D any of the outputs can be utilized for the data transmission to PTZ's.

3b - Channels 1-4, Channels 5-8, Channels 9-12, and Channels 13-16:

CAT-5 or higher structured cable from optional HubSat4D/4Di enables video transmission from up to four (4) cameras.

Front



Rear



3d - BNC Connector:

Video outputs to head end equipment (DVR).

3e - LED(s) 1-16:

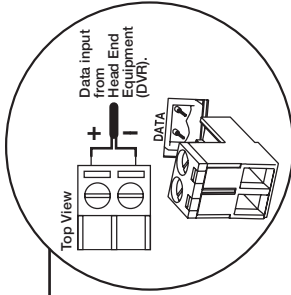
Video signal indicators.

3f - IEC 320 Connector:

Grounded line cord included.

3g - Input Voltage Switch:

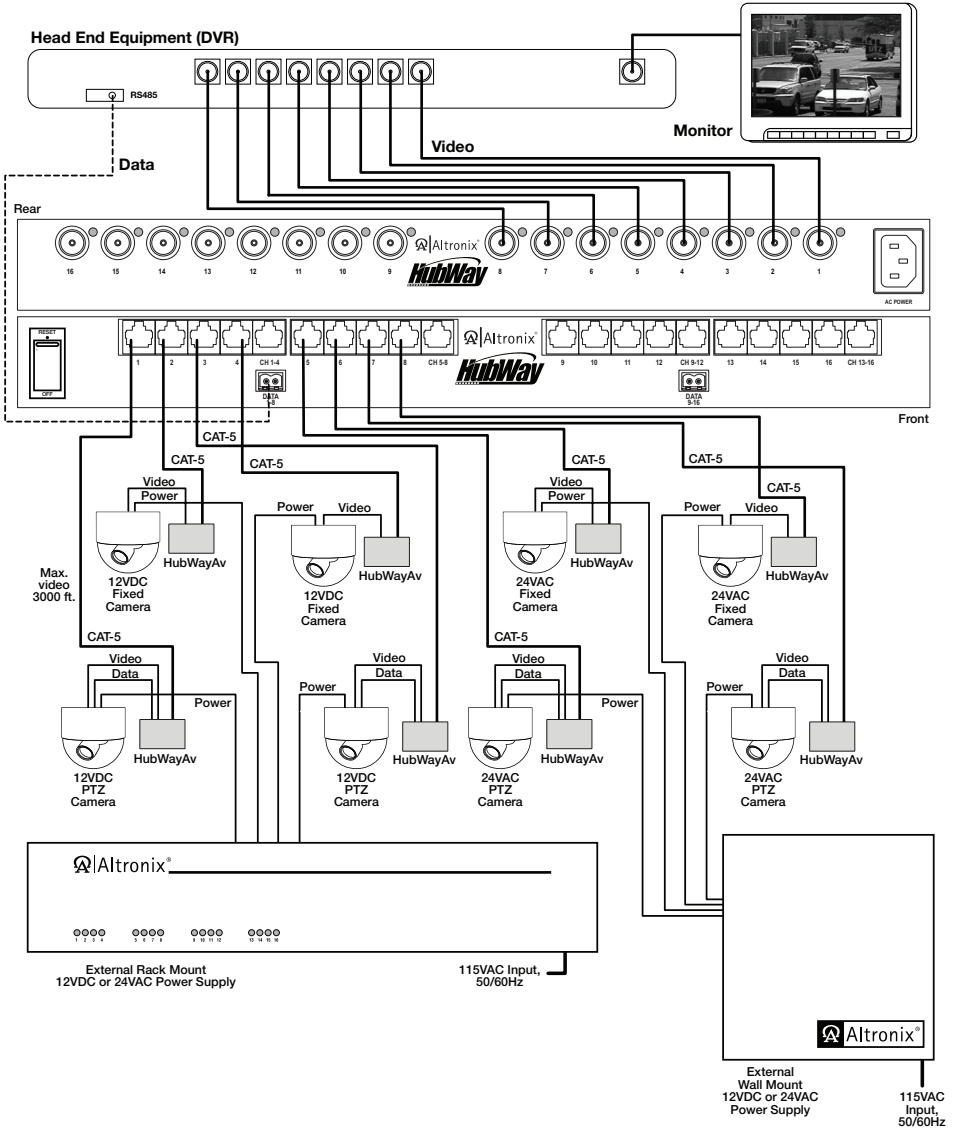
Selects 115VAC/230VAC (switch is located on the left side of the unit).



3c - Data:
Removable terminal blocks for RS422/RS485 input from head end equipment (DVR) for PTZ control.

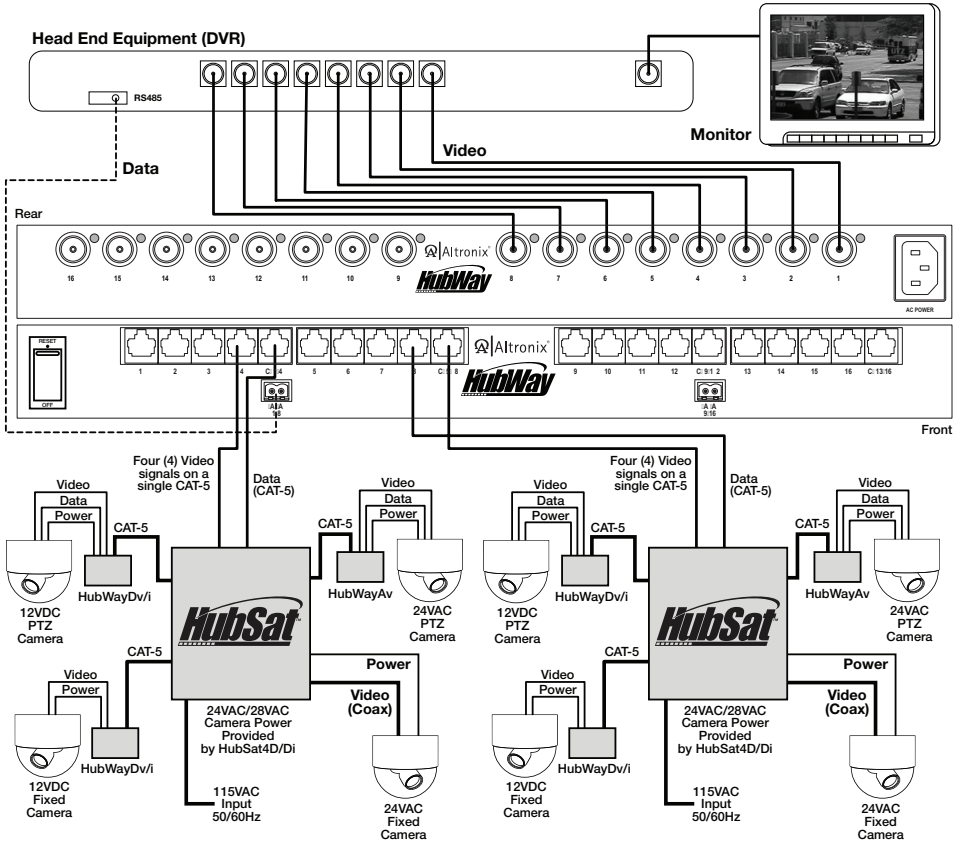
Typical Applications:

Fig. 4



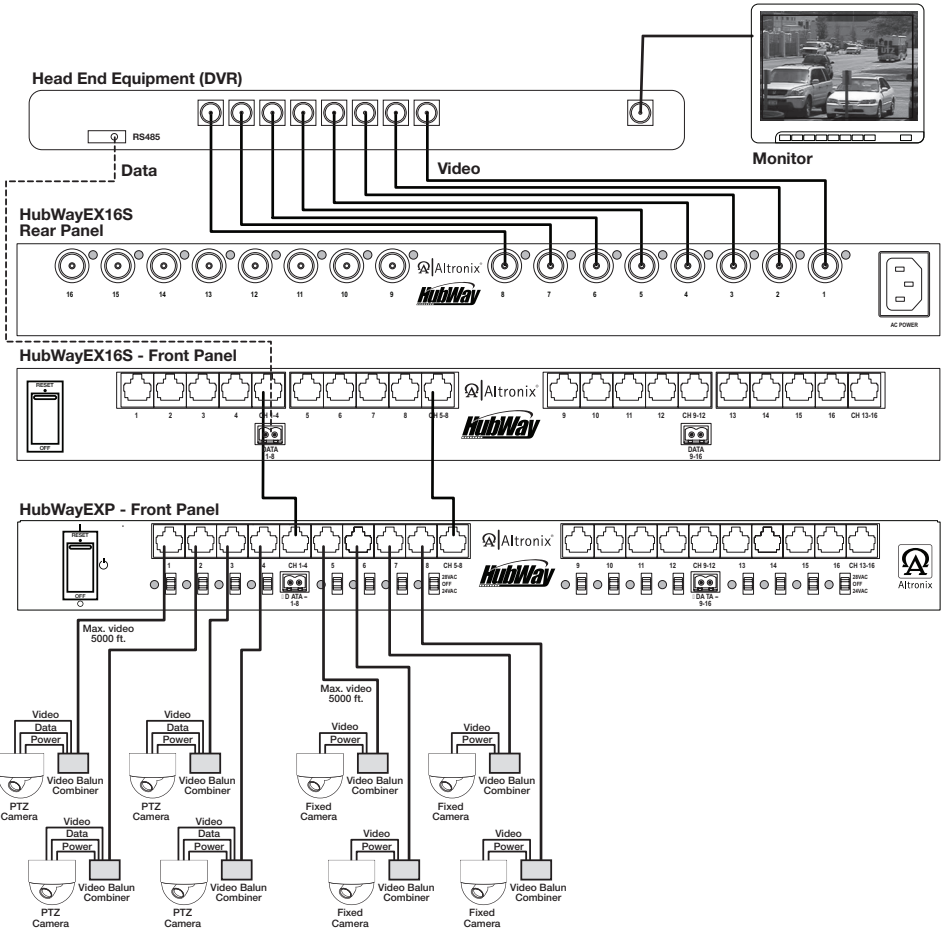
Typical Application Utilizing HubSat4D/Di as a Remote Accessory Module with HubWayEX16S UTP Transceiver Hub:

Fig. 5



Typical Application Utilizing HubWayEXP as a Remote Accessory Module with HubWayEX16S UTP Transceiver Hub:

Fig. 5a



Notes:



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of an insulated **DANGEROUS VOLTAGE** within the product's enclosure that may be of sufficient magnitude to constitute an electric shock.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: To reduce the risk of electric shock do not open enclosure. There are no user serviceable parts inside. Refer servicing to qualified service personnel.

1U EIA 19" Rack Mount Chassis Mechanical Drawing and Dimensions:

1.625" x 19.125" x 8.5" (41.275mm x 486mm x 216mm)

REAR



TOP and BOTTOM

8.5"
(215.9mm)

FRONT

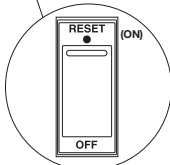
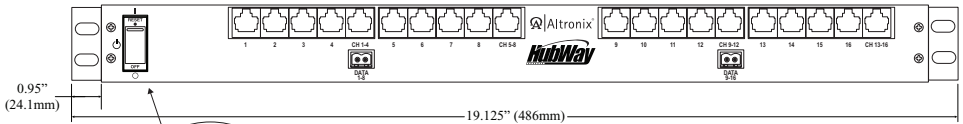


Fig. 6

Illuminated master power disconnect circuit breaker:

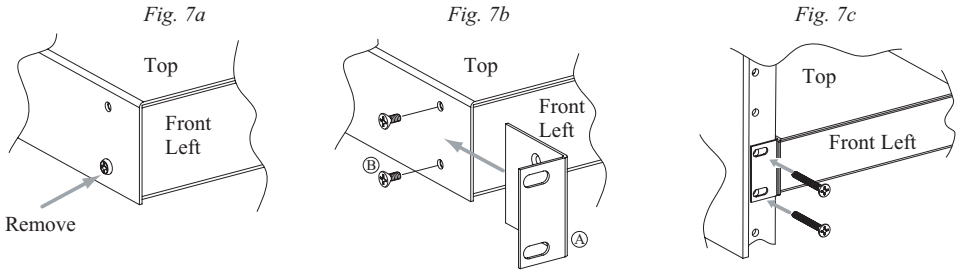
- OFF position: Circuit breaker tripped – Switch not illuminated.
- RESET (ON) position: Switch illuminated.

Mounting Options:

Rack Mount Installation

1. Remove and discard factory installed screws from both sides of rack chassis (Fig. 7a).
2. Install mounting brackets (A) on the left and right side of rack chassis using the four (4) flat head screws (B) (included) (Fig. 7b).
3. Place unit into desired EIA 19" rack position and secure with mounting screws (not included) (Fig. 7c).

Fig. 7



Wall Mount Installation

1. Install mounting brackets (A) on the left and right side of rack chassis using four (4) flat head screws (B) (included) (Fig. 8a).
 2. Place unit at desired location and secure with #6 size screws or larger (not included) (Fig. 8b).
- Caution:** It is necessary to make sure mounting screws are securely fastened to a beam when installing the unit vertically.

Fig. 8

Fig. 8a

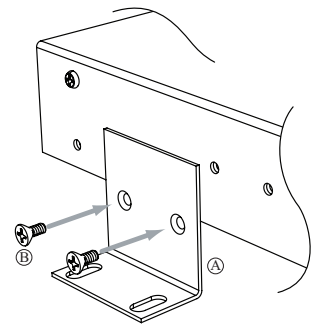
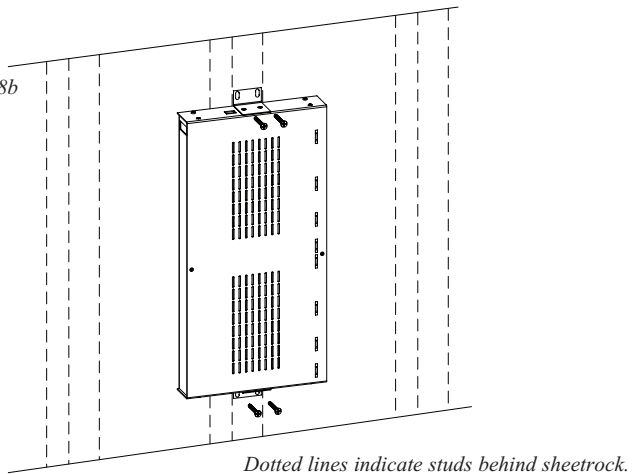


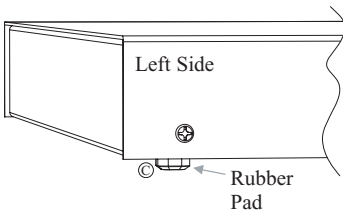
Fig. 8b






Shelf Installation

- 1- Position and affix rubber pads (C) (included) at each corner on the bottom of the unit (Fig. 9).
- 2- Place unit in desired location.

Fig. 9



Mounting Hardware (Included):

-  (A) Two (2) mounting brackets
-  (B) Six (6) flat head screws for mounting brackets.
-  (C) Four (4) rubber pads.

Altronix is not responsible for any typographical errors.

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