Video • Data • Power

HubWay®

Active UTP Transceiver Hub with Integral Isolated Camera Power

Installation Guide

HubWayEX16SP

- UL Listed sixteen (16) Channel Active UTP Transceiver Hub with Integral Isolated Camera Power

c UL us

Rev. 011810

Altronix®

More than just power.™

Overview:

Altronix HubWayEX16SP Active UTP Transceiver Hub w/Integral Isolated Camera Power employs *automatic gain control (AGC)* to transmit UTP video, RS422/RS485 data and power over a single CAT-5 or higher structured cable. Units provide 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 one (1) mile max. per channel. Units are compatible with AC and/or DC fixed or PTZ cameras when utilizing Altronix HubWayAv, HubWayDv Video Balun/Combiners. In addition, the unit features individually selectable 24VAC or 28VAC PTC protected outputs with surge suppression. An optional HubSat4D/4Di Passive UTP Transceiver Hub with Integral Camera Power can be used as a remote accessory module to transmit video from up to 4 cameras over a single CAT-5 or higher structured cable back to the HubWayEX16SP. In addition, the HubSat4D/4Di provides power to these cameras locally to eliminate the possibility of voltage drop associated with long cable runs.

Specifications:

Input:

- 115VAC 60Hz, 2.5 amp or 230VAC 50Hz, 1.5 amp.

Video:

- Sixteen (16) channels of video over twisted pair up to a distance of 5000 ft. per channel.
- Sixteen (16) 75 ohm video outputs.
- Active balun combiners not required.

Data:

- RS422/RS485 data inputs.

Power:

- Unit provides up to 1 amp max. per channel.
- Individually selectable 24VAC or 28VAC isolated power outputs with OFF position.
- Individual electronically isolated PTC outputs.
- PTCs are rated @ 1 amp per channel.
- Surge suppression.

Visual Indicators:

- AC input power indicator.

Visual Indicators (cont'd):

- Video signal and power LED indicators.

Features:

- Automatic picture and gain control.
- Automatic compensation for reverse polarity wiring (video).
- Illuminated master power disconnect circuit breaker with manual reset.
- IEC 320 - 3-wire grounded line cord (detachable).
- 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.
  - HubWayDv - for use with 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 HubWayEX16SP unit (facing front panel) for 115VAC or 230VAC operation *(Fig. 1i, pg. 4)*.
2. Attach mounting brackets to HubWayEX16SP unit for rack or wall mount installation *(Figs. 7-8, pg. 8)*. Affix rubber pads to HubWayEX16SP for shelf installation *(Fig. 9, pg. 8)*.
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. 7)*.
5. Plug the grounded AC line cord into the IEC 320 connector of the HubWayEX16SP. For US & Canada the plug end is a 3 prong type B plug used for standard 115VAC receptacles, as provided with unit *(Fig. 1h, pg. 4)*. For non North American 230VAC applications use the appropriate 3 prong plug that matches the local standard receptacle.
6. Set voltage output selector switch of each camera channel for 24VAC or 28VAC *(Fig. 1d, pg. 4)*.
7. Connect the BNC video outputs for HubWayEX16SP Channels 1-16 to the corresponding video inputs on the head end equipment (DVR) *(Fig. 1f, pg. 4)*.
8. Connect the RS422/RS485 output of the head end equipment (DVR) to the one (1) or both data input terminal blocks of the HubWayEX16SP unit (polarity must be observed) *(Fig. 1e, pg. 4)*.
   Note: The Data input terminals of the HubWayEX16SP must be wired in parallel for proper operation. When using fixed cameras disregard this step.
9. Connect Video Balun/Combiner at camera 1 to the HubWayEX16SP unit utilizing CAT-5 or higher structured cable. Plug the RJ45 connector at one end of the structured cable into the RJ45 jack marked [Channel 1] of the

HubWayEX16SP *(Fig. 1a, pg. 4)*. 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.

- For 24VAC cameras use Altronix model HubWayAv Video Balun/Combiner *(Fig. 3a, pg. 5)*.
- For 12VDC cameras use Altronix model HubWayDv Video Balun/Combiner *(Figs. 3b, pg. 5)*.

Repeat steps 6-9 for each additional camera (Channels 2-16 for HubWayEX16SP).

Note: When a particular camera exceeds the maximum distance for power transmission, a local external power source is required. Optionally, an Altronix HubSat4D/Di Passive UTP Transceiver Hub with Integral Camera Power may be utilized *(Fig. 5, pg. 6)*.

The combined total cable distance must not exceed 5000 ft. for video transmission between the HubWayEX16SP and each camera routed through the HubSat4D/4Di Remote Accessory Module *(refer to HubSat4D/Di installation instructions)*.

10. Set illuminated master power disconnect circuit breaker to the RESET (ON) position *(Fig. 6, pg. 7)* and measure the output voltage at the power output of each Video Balun/Combiner *(Figs. 3a, 3b, pg. 5)* before powering each camera to insure proper operation and avoid possible damage.
    - HubWayAv - Terminals marked [AC POWER] *(Fig. 3a, pg. 5)*.
    - HubWayDv - Terminals marked [– 12VDC +] *(Fig. 3b, pg. 5)*.
11. Set illuminated master power disconnect circuit breaker to the (OFF) position to make the final connections *(Fig. 6, pg. 7)*.
12. Connect the power outputs of the HubWayAv or HubWayDv Video Balun/Combiners to the power inputs of the cameras *(Figs. 3a-3b, pg. 5)*. Polarity must be observed.
13. Connect the terminals marked [+ DATA –] of the HubWayAv or HubWayDv Video Balun/Combiners to the data terminals of the cameras for PTZ control *(Figs. 2a-2d, pg. 5)*. Polarity must be observed. When using fixed cameras disregard this step.
14. Connect the BNC connector of the HubWayAv or HubWayDv Video Balun/Combiners to the BNC video outputs of the cameras *(Figs. 3a-3b, pg. 5)*.
15. Upon completion of wiring set illuminated master power disconnect circuit breaker to the RESET (ON) position *(Fig. 6, pg. 7)*.
16. The power LEDs (Red) located on the front of the HubWayEX16SP will illuminate when AC power is present *(Fig. 1c, pg. 4)*.

    Note: If any of these LEDs are not illuminated either a voltage output selector switch is in the OFF position or the PTC is tripped for that channel.

    To reset the PTC:
    1. Set the voltage output selector switch for that corresponding channel to the OFF position. Switch must remain in the OFF position for approximately 2 minutes in order for the PTC to reset.
    2. Eliminate the trouble condition (short circuit or overload).
    3. Set the voltage output selector switch for 24VAC or 28VAC *(Fig. 1d, pg. 4)*.
17. AC LED (Green) of the HubWayAv or DC LED (Red) of the HubWayDv Video Balun/Combiners will illuminate indicating power is present at the cameras *(Fig. 3a, 3b, pg. 5)*.
18. The video signal indicator LEDs (Red) located on the rear of the HubWayEX16SP will illuminate when video signal is present *(Fig. 1g, pg. 4)*. If any of these LEDs are not illuminated, no video signal is present for that corresponding channel.

Fig. 1

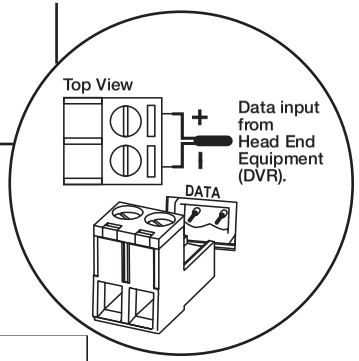
1b - Channels 1-4, Channels 5-8, Channels 9-12 & Channels 13-16: CAT-5 or higher structured cable from optional HubSat4D enables video transmission from up to four (4) cameras.

1e - Data: Removable terminal blocks for RS422/RS485 input from head end equipment (DVR) for PTZ control.

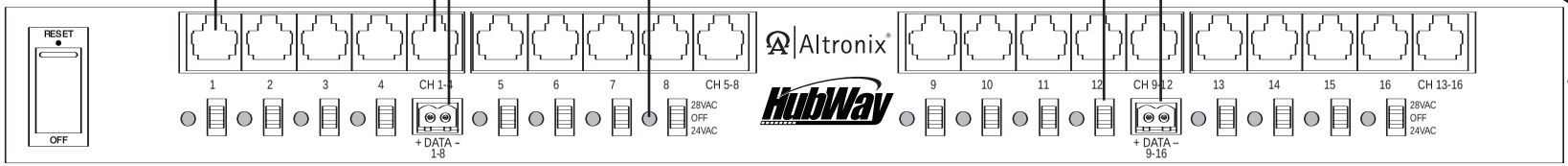
1a - Channels 1-16: CAT-5 or higher structured cable to Video /Balun Combiners at cameras 1-16. When using an optional HubSat4D/Di any of the outputs can be utilized for the data transmission to PTZ's.

1c - LED(s) 1-16: Power indicators.

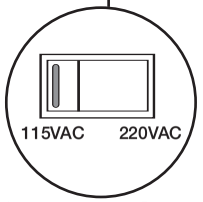
1d - Output voltage switches: Selects 24VAC/28VAC/OFF for each output.



Front



Rear



1i - Input Voltage Switch: Selects 115VAC/230VAC (switch is located on the left side of the unit).

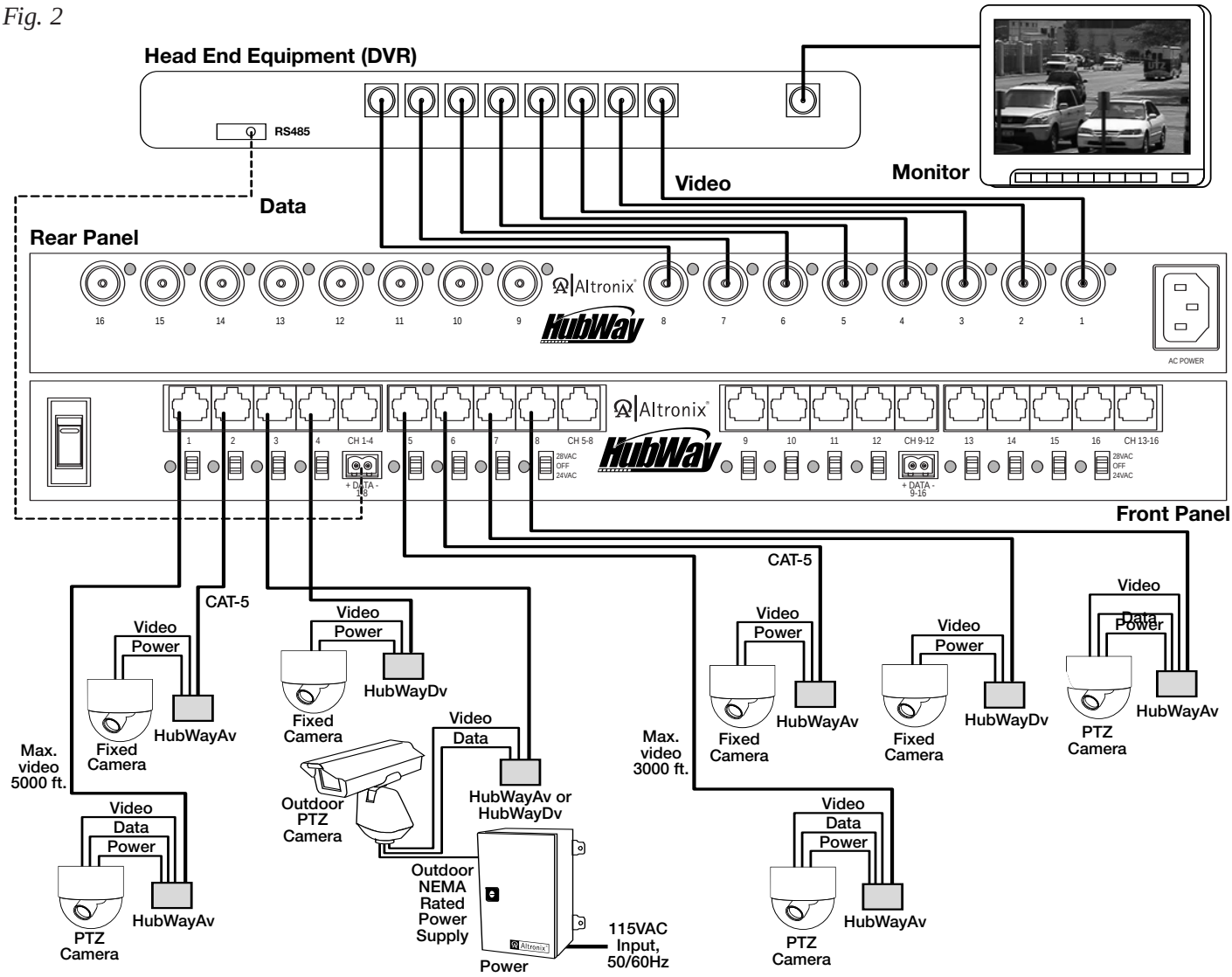
1f - BNC Connector: Video outputs to head end equipment (DVR).

1g - LED(s) 1-16: Video signal indicators.

1h - IEC 320 Connector: Grounded line cord included.

Typical Applications:

Fig. 2



HubWayAv and HubWayDv 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 cameras	Green
HubWayDv	*24VAC/28VAC	12VDC	12VDC cameras	Red

*Based on camera load and structured cable length.

Fig. 3

Fig. 3a

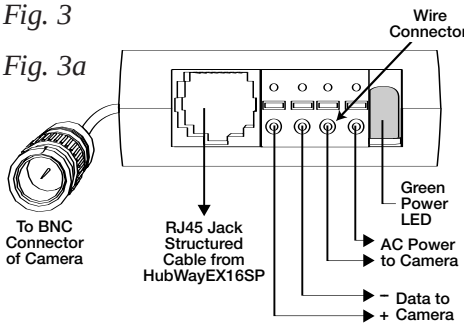
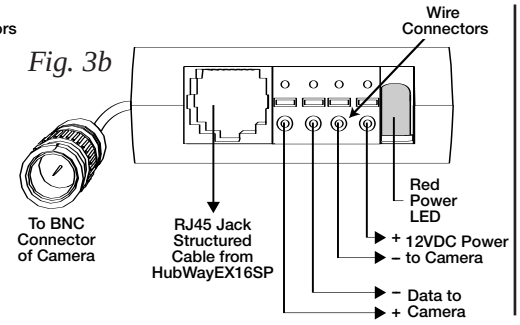


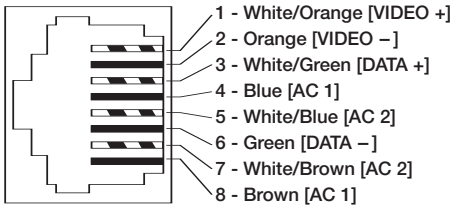
Fig. 3b



HubWayAv passes AC voltage from pins 4, 5, 7, 8 to terminals marked [AC Power] *(Fig. 3, pg. 5)*.

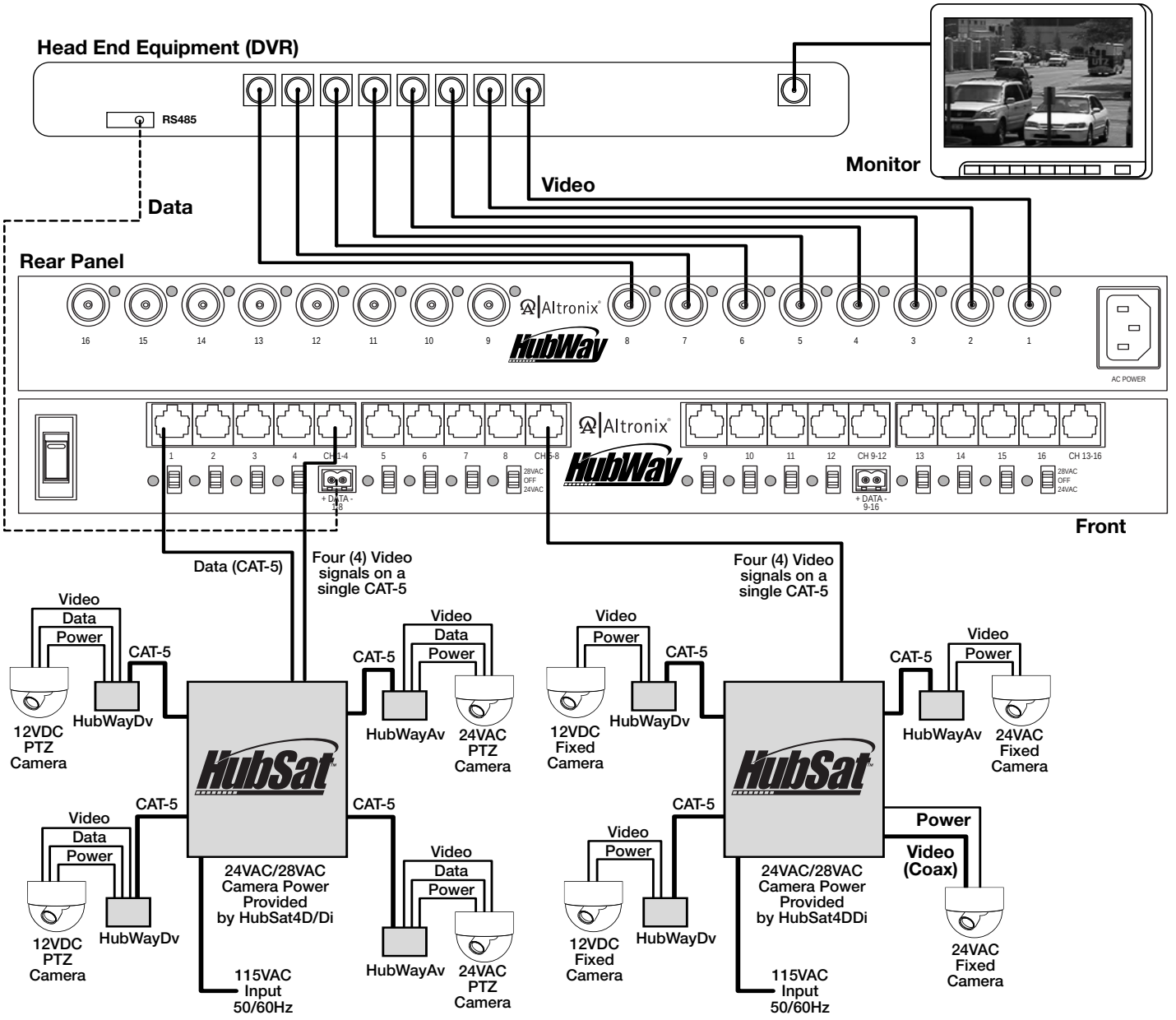
HubWayDv converts AC voltage to DC voltage from pins 4, 5, 7, 8 to terminals marked [–12VDC +] *(Fig. 3, pg. 5)*.

Fig. 4 - CAT-5 Structured Cable Wiring Color Codes and PIN Configurations



Typical Application Utilizing HubSat4D/Di as a Remote Accessory Module with HubWayEX16SP UTP Transceiver Hub:

Fig. 5

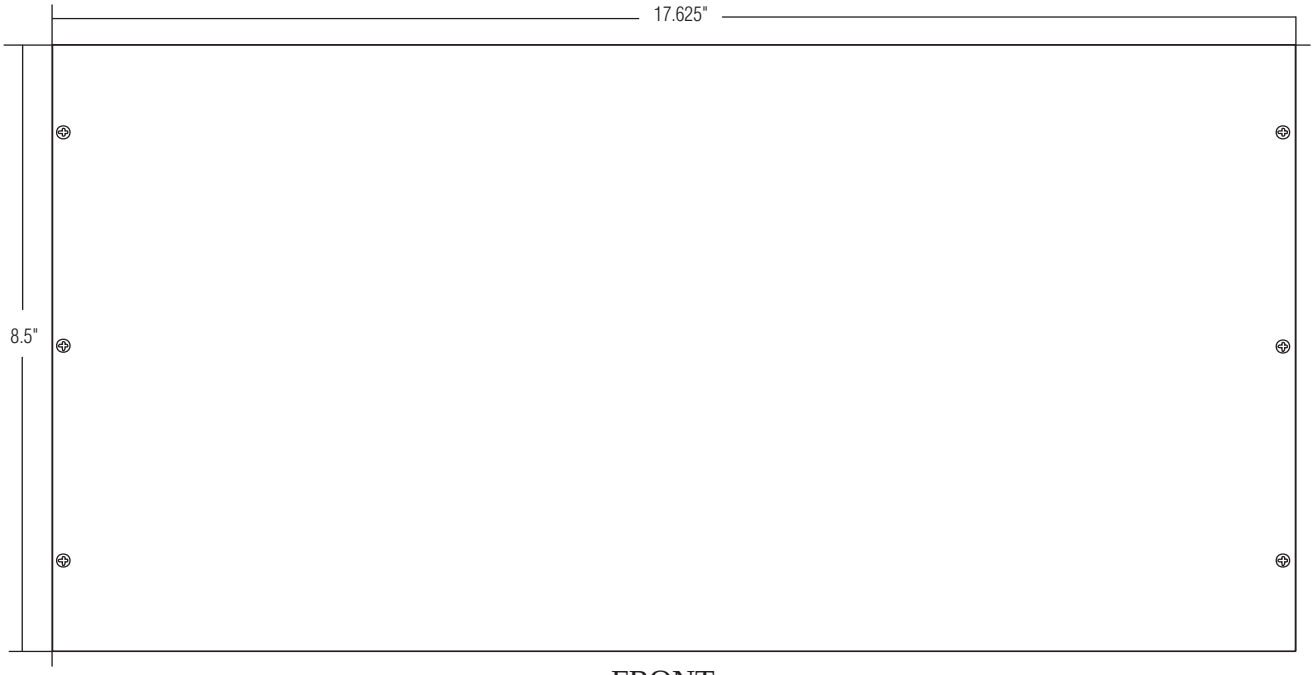


1U EIA 19” Rack Mount Chassis Mechanical Drawing & Dimensions:

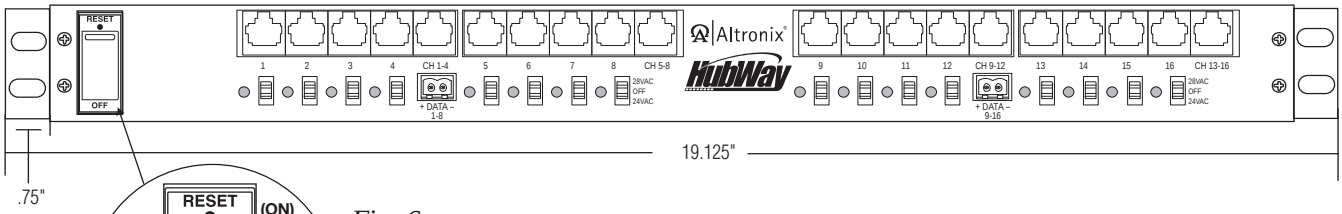
1.625”H x 19.125”W x 8.5”D

REAR

TOP & BOTTOM



FRONT



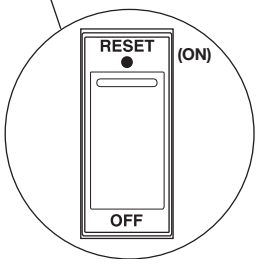


Fig. 6

Illuminated master power disconnect circuit breaker:

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

The lightning flash with arrow head symbol within an equilateral triangle is intended to alert the user to the presence of an insulated “DANGEROUS VOLTAGE” within the products 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: To reduce the risk of electric shock do not open enclosure. There are no user serviceable parts inside. Refer servicing to qualified service personnel.

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

Fig. 7a

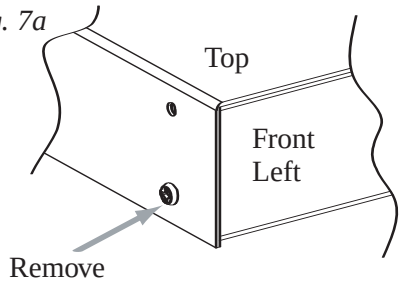


Fig. 7b

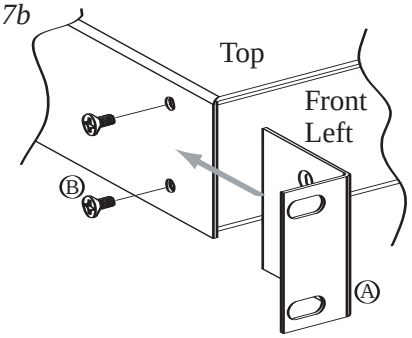
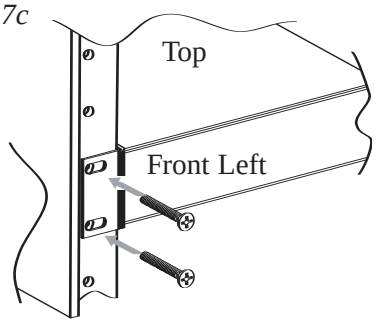


Fig. 7c



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 mounting screws *(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

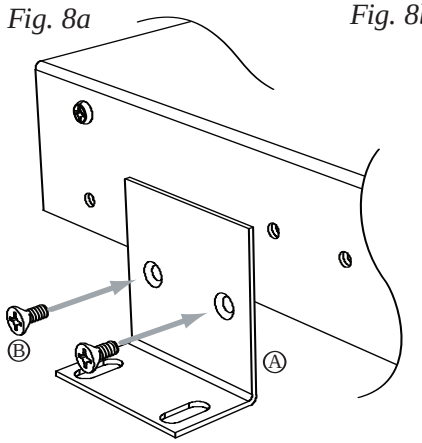
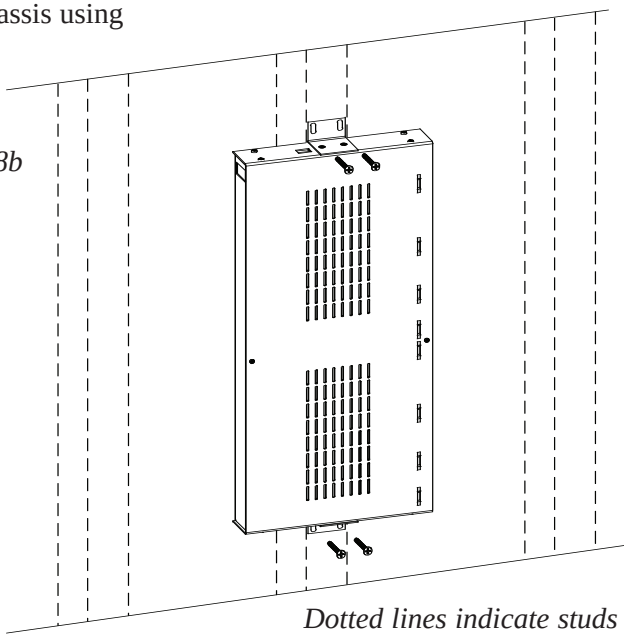


Fig. 8b

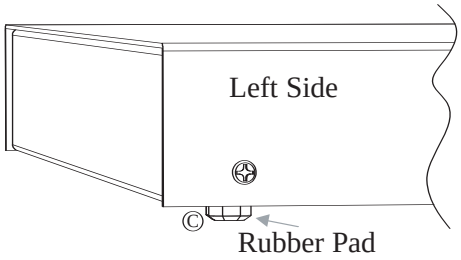


Dotted lines indicate studs behind sheetrock.

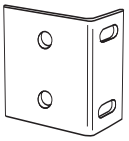
Shelf Installation

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):*



Ⓐ Two (2) mounting brackets

Ⓑ Six (6) flat head screws for mounting brackets.

Ⓒ Four (4) rubber pads.

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