HubSat™

Video • Data • Power

HubSat8DV Series

Passive UTP Transceiver Hub with Integral Camera Power

Models Include:

HubSat8DV

- Eight (8) Channel Passive UTP Transceiver Hub with Integral Camera Power

HubSat82DV

- Eight (8) Channel Passive UTP Transceiver includes eight (8) HubWayAv Video Balun/Combiners

HubSat83DV

- Eight (8) Channel Passive UTP Transceiver includes eight (8) HubWayDv Video Balun/Combiners

Installation Guide

CE

Altronix®

Rev. 041212

More than just power.™

Installing Company: _____ Service Rep. Name: _____

Address: _____ Phone #: _____

Table of Contents:

Overview . . . . . *pg. 3*

Specifications . . . . . *pg. 3*

Additional Models . . . . . *pg. 3*

Installation Instructions
HubSat8DV Passive UTP Transceiver Hub with Integral Camera Power . . . . . *pg. 3*
HubSat8DV for Use as a Remote Accessory Module with
HubWay/HubWayLD/HubWayLDH UTP Transceiver Hubs . . . . . *pg. 4*
Alternate 24VAC Fixed Camera Hookup . . . . . *pg. 5*

HubSat Circuit Board . . . . . *pg. 6*

HubWayAv, HubWayAv2, HubWayDv, and HubWayDvi Video Balun/Combiners . . . . . *pg. 7*

CAT-5 Structured Cable Wiring Color Codes . . . . . *pg. 7*

Typical Application Drawings
HubSat8DV Passive UTP Transceiver Hub with Integral Camera Power . . . . . *pg. 9*
HubSat8DV Remote Accessory Module with HubWay UTP Transceiver Hubs . . . . . *pg. 9*

Enclosure Dimensions . . . . . *pg. 12*

Overview:

Altronix HubSat8DV Passive UTP Transceiver Hub with Integral Camera Power transmits UTP video, RS422/RS485 data and power over a single CAT-5 or higher structured cable. Unit provides 8 camera channels in a wall mount enclosure. Video transmission range is up to 750 ft. max. per channel. Units are compatible with AC and/or DC fixed or PTZ cameras when utilizing Altronix HubWayAv, HubWayAv2, HubWayDv or HubWayDvi Video Balun/Combiners. In addition, the unit features individually selectable 24VAC or 28VAC PTC protected outputs with surge suppression. Optionally, the HubSat8DV can be used as an accessory module to transmit video from up to 8 cameras over a single CAT-5 or higher structured cable back to the HubWay, HubWayLD or HubWayLDH Passive and Active UTP Transceiver Hubs. In addition, the HubSat8DV provides power to these cameras locally to eliminate the possibility of voltage drop associated with long cable runs.

Specifications:

Agency Listings:
- CE European Conformity

Input:
- 220VAC 50/60Hz, 1A.

Video:
- Eight (8) channels of quality video over twisted pair up to a distance of 750 ft. per channel.
- Eight (8) 75 Ohm video outputs.

Data:
- RS422/RS485 data input.

Power:
- Individually selectable 24VAC or 28VAC power outputs with OFF position.
- Unit provides up to 1A max. per channel not to exceed a total of 8A maximum current.

Power (cont.)**:**
- PTC protected outputs are rated @ 1A per channel.
- Surge suppression.

Visual Indicators:
- Eight (8) power LED indicators.

Enclosure Dimensions (H x W x D approx.)**:**
13.5” x 13” x 3.25”
(342.9mm x 330.2mm x 82.6mm)

Optional Accessories:
- Video Balun/Combiners:
  - HubWayAv: for use with 24VAC cameras.
  - HubWayAv2: for use with 24VAC cameras.
  - HubWayDv: for use with 12VDC cameras.
  - HubWayDvi: for use with non-isolated 12VDC cameras.

Additional Models:

HubSat82DV
- HubSat8DV with eight (8) HubWayAv Video Balun/Combiners for 24VAC Cameras.

HubSat83DV
- HubSat8DV with eight (8) HubWayDv Video Balun/Combiners for 12VDC Cameras.

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:

HubSat8DV Passive UTP Transceiver Hub with Integral Camera Power.

1. Mount unit in desired location. Mark and predrill holes in the wall to line up with the top two keyholes in the enclosure. Install two upper fasteners and screws in the wall with the screw heads protruding. Place the enclosure’s upper keyholes over the two upper screws; level and secure. Mark the position of the lower two holes. Remove the enclosure. Drill the lower holes and install two fasteners. Place the enclosure’s upper keyholes over the two upper screws. Install the two lower screws and make sure to tighten all screws *(Enclosure Dimensions, pg. 12)*. Secure green wire lead to earth ground.
2. Set illuminated master power disconnect circuit breaker to the (OFF) position *(Fig. 3a, pg. 8)*.
3. Connect unswitched AC circuit (220VAC, 60Hz) as follows: Green branch wire (ground) connects to the terminal marked ⏚, Line connects to the terminal marked [L], and Neutral connects to the terminal marked [N] of the Inlet Appliance Connector *(Fig. 3, pg. 8)*. The power LEDs (Green) for Channels 1-8 of the HubSat8DV will illuminate when AC power is present *(Fig. 1e, pg. 6)*
4. Select 24VAC or 28VAC power output for Channels 1-4 with the corresponding voltage adjustment switches *(Fig. 1d, pg. 6)*.
5. Connect the BNC video outputs for HubSat8DV Channels 1-8 to the corresponding video inputs on the head end equipment (DVR) *(Fig. 1a, pg. 6)*.

6. Connect the RS422/RS485 output of the head end equipment (DVR) to the data terminals marked [+ DATA –] of the HubSat8DV unit (polarity must be observed) *(Fig. 1f, pg. 6)*.
   Note: The Data input terminals of the HubSat8DV must be wired in parallel for proper operation. When using fixed cameras disregard this step.
7. Connect Video Balun/Combiner at camera 1 to the HubSat8DV unit utilizing CAT-5 or higher structured cable. Plug the RJ45 connector at one end of a structured cable into the RJ45 jack marked [PVD1] of the HubSat8DV *(Fig. 1i, 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.
   - For 24VAC cameras use Altronix model HubWayAv/HubWayAv2 Video Balun/Combiner *(Fig. 2a, 2b, 2e, pg. 7)*.
   - For 12VDC cameras use Altronix model HubWayDv Video Balun/Combiner *(Fig. 2c, 2d, pg. 7)*.
   - For non-isolated 12VDC cameras use Altronix model HubWayDvi Video Balun/Combiner *(Fig. 2c, 2d, pg. 7)*.

   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. 2b, 2d, pg. 7)*.
   The total cable distance must not exceed 750 ft. for video transmission between the HubSat8DV and each camera. Repeat this step for each additional camera [PVD2-8].
8. Set illuminated master power disconnect circuit breaker to the RESET (ON) position *(Fig. 3a, pg. 8)* and measure the output voltage at the power output of each Video Balun/Combiner *(Fig. 2b, 2d, pg. 7)* before powering each camera to ensure proper operation and avoid possible damage.
9. Set illuminated master power disconnect circuit breaker to the (OFF) position *(Fig. 3a, pg. 8)*.
10. Connect the power outputs of the HubWayAv or HubWayDv Video Balun/Combiners to the power inputs of the cameras *(Fig. 2a-2e, pg. 7)*. Polarity must be observed.
    - HubWayAv/HubWayAv2 - Terminals marked [AC POWER] *(Fig. 2a, 2b, 2e, pg. 7)*.
    - HubWayDv/HubWayDvi - Terminals marked [– 12VDC +] *(Fig. 2c, 2d, pg. 7)*.
11. Connect the terminals marked [+ DATA –] of HubWayAv, HubWayAv2, HubWayDv or HubWayDvi Video Balun/Combiners to data input terminals of cameras for PTZ control *(Fig. 2a-2e, pg. 7)*. Polarity must be observed. When using fixed cameras disregard this step.
12. Connect the BNC connector of HubWayAv, HubWayAv2, HubWayDv or HubWayDvi Video Balun/ Combiners to the BNC video outputs of cameras *(Fig. 2a-2e, pg. 7)*.
13. Set illuminated master power disconnect circuit breaker to the RESET [ON] position *(Fig. 3a, pg. 8)*.
14. The power LEDs (Green) or Channels 1-8 of the HubSat8DV will illuminate when AC power is present *(Fig. 1e, pg. 6)*. If any of these LEDs are off, a loss of AC power output may be due to a blown fuse or a tripped PTC caused by a short circuit or overload condition. If all of the LEDs are OFF there may be a complete loss of supply power to the HubSat8DV unit or the illuminated master power disconnect circuit breaker is in the OFF position or the primary in-line fuse is blown.
    To restore the power output for HubSat8DV:
    1 - Switch corresponding output voltage switch to the OFF position *(Fig. 1d, pg. 6)*.
    2 - Eliminate the trouble condition.
    3 - Allow 1 minute for PTC to cool off.
    4 - Switch output voltage switch to the 24VAC or 28VAC position as desired *(Fig. 1d, pg. 6)*.

HubSat8DV for use as a Remote Accessory Module with HubWay/HubWayLD/HubWayLDH UTP Transceiver Hubs.

After completing steps 1-4 of Installation Instructions for HubSat8DV Passive UTP Transceiver Hub with Integral Camera Power proceed with the following.

1. For fixed cameras run two (2) CAT-5 cables between HubSat8DV and HubWay, HubWayLD or HubWayLDH to allow video transmission of up to eight (8) cameras. For PTZs run three (3) CAT-5 cables between HubSat8DV and HubWay, HubWayLD or HubWayLDH *(Fig. 5, pg. 9)*.
   a. Connect one (1) of the CAT-5 cables to the RJ45 jack marked [Video 1-4] on Circuit Board A. Connect the opposite end of this CAT-5 cable into the RJ45 jack marked [CH 1-4] of HubWay, HubWayLD or HubWayLDH unit *(Fig. 5, pg. 9)*.
   b. Connect the second CAT-5 cable to the RJ45 jack marked [Video 1-4] on Circuit Board B. Connect the opposite end of this CAT-5 cable into the RJ45 jack marked [CH 5-8] of HubWay, HubWayLD or HubWayLDH unit *(Fig. 5, pg. 9)*.
   c. For data (PTZ) connect the third CAT-5 cable to the RJ45 jack marked [Data 1-4] on Circuit Board A. Connect the opposite end of this CAT-5 cable into any unused RJ45 jack marked [1-16] of HubWay, HubWayLD or HubWayLDH unit *(Fig. 5, pg. 9)*.

Note: Data inputs of HubWay, HubWayLD or HubWayLDH units must be wired in parallel for proper operation. When using fixed cameras disregard this step.

2. Plug the RJ45 connector at one end of the CAT-5 or higher structured cable into the RJ45 jack marked [PVD1] on Circuit Board A *(Fig. 1i, pg. 6)*. Plug the RJ45 connector at the opposite end of the CAT-5 or higher structured cable into the RJ45 jack of the Video Balun/Combiner to be installed at camera 1.
   - For 24VAC cameras use Altronix model HubWayAv/HubWayAv2 Video Balun/Combiner *(Fig. 2a, 2b, 2e, pg. 7)*.
   - For 12VDC cameras use Altronix model HubWayDv Video Balun/Combiner *(Fig. 2c, 2d, pg. 7)*.
   - For non-isolated 12VDC cameras use Altronix model HubWayDvi Video Balun/Combiner *(Fig. 2c, 2d, pg. 7)*.

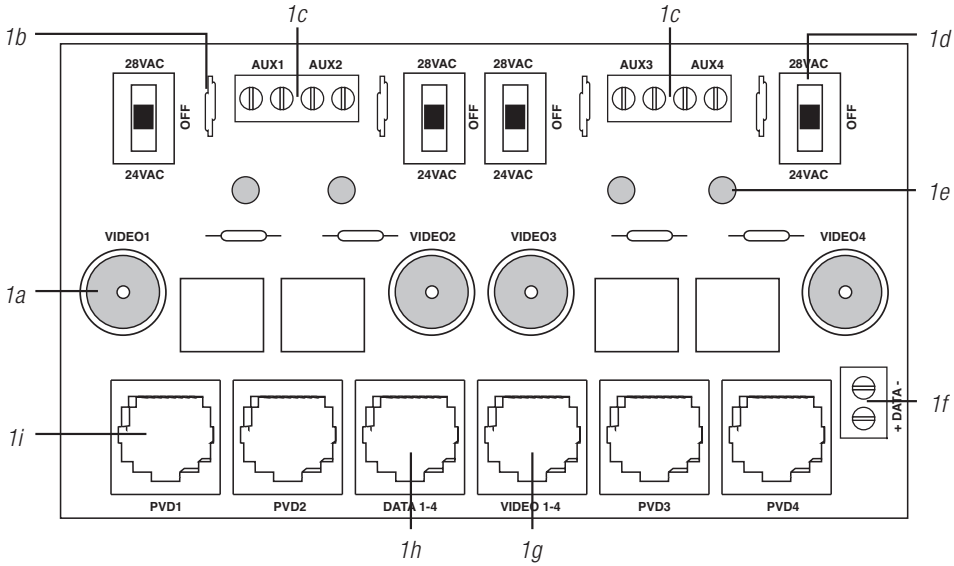
   The total cable distance must not exceed 750 ft. for video transmission between the HubSat8DV and each camera. Repeat this step for all other camera channels [PVD2-4] on Circuit Board A and [PVD1-4] on Circuit Board B.
3. Set illuminated master power disconnect circuit breaker to the RESET (ON) position *(Fig. 3a, pg. 8)*. Power LEDs (Green) of the HubSat8DV will illuminate when AC power is present *(Fig. 1e, pg. 6)* and HubWayAv, HubWayDv or HubWayDvi Video Balun/Combiner LEDs will illuminate indicating power is present *(Fig. 2b, 2d, pg. 7)*.
4. Measure the output voltage at each Video Balun/Combiner *(Fig. 2b, 2d, pg. 7)* before making connections to each camera to ensure proper operation and avoid possible damage.
5. Set illuminated master power disconnect circuit breaker to the (OFF) position *(Fig. 3a, pg. 8)*.
6. Connect power outputs of HubWayAv, HubWayAv2, HubWayDv or HubWayDvi Video Balun/Combiners to power inputs of cameras *(Fig. 2a-2d, pg. 7)*. Polarity must be observed.
   - HubWayAv/HubWayAv2 - Terminals marked [AC POWER] *(Fig. 2a, 2b, 2e, pg. 7)*.
   - HubWayDv/HubWayDvi - Terminals marked [– 12VDC +] *(Fig. 2c, 2d, pg. 7)*.
7. Connect the terminals marked [+ DATA –] of HubWayAv, HubWayAv2, HubWayDv or HubWayDvi Video Balun/Combiners to data input terminals of cameras for PTZ control *(Fig. 2a-2e, pg. 7)*. Polarity must be observed. When using fixed cameras disregard this step.
8. Connect the BNC connector of HubWayAv, HubWayAv2, HubWayDv or HubWayDvi Video Balun/Combiners to the BNC video outputs of cameras *(Fig. 2a-2e, pg. 7)*.
9. Set illuminated master power disconnect circuit breaker to the RESET (ON) position *(Fig. 3a, pg. 8)*.
10. The power LEDs (Green) of the HubSat8DV will illuminate when AC power is present *(Fig. 1e, pg. 6)*.
    Note: If any of the power LEDs are not illuminated, the cause may be due to the following:
    a. AC mains fail.
    b. Illuminated master power disconnect circuit breaker is tripped.
    c. An individual power output voltage switch is set to the OFF position *(Fig. 1d, pg. 6)*.
    d. A PTC is tripped due to a short circuit or overload condition for one or more channels/power outputs. 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 *(Fig. 1d, pg. 6)*.
       2. Eliminate the trouble condition (short circuit or overload).
       3. Set the voltage output selector switch for either 24VAC or 28VAC *(Fig. 1d, pg. 6)*.

Alternate 24VAC Fixed Camera Hookup *(Fig. 5a, pg. 9)***.**

After completing steps 1-5 of Installation Instructions Remote Accessory Module for use with HubWay, HubWayLD or HubWayLDH UTP Transceiver Hubs proceed with the following.

1. Set illuminated master power disconnect circuit breaker to the (OFF) position *(Fig. 3a, pg. 8)*.
2. Connect one end of the coaxial cable to the BNC connector marked [Video1] on Circuit Board A *(Fig. 1a, pg. 6)*. Connect the opposite end of the coaxial cable to the BNC video output of camera 1 *(Fig. 5a, pg. 9)*.
3. Set illuminated master power disconnect circuit breaker to the RESET (ON) position *(Fig. 3a, pg. 8)*. Measure the output voltage at terminal pair marked [AUX1] on Circuit Board A to ensure proper operation and avoid possible damage *(Fig. 1b, pg. 6)*.
4. Connect the power output terminal pair marked [AUX1] on Circuit Board A to the power inputs of camera 1*(Fig. 1c, pg. 6)*. Repeat steps 1-3 for each additional camera [AUX2-4].

Fig. 1 - **HubSat Circuit Board**



1a - **BNC Connector:** Video in from remote camera video out to DVR.
1b - **Output PTCs:** Protects each output.
1c - **Power Terminals:** 24VAC/28VAC power outputs.
1d - **Output Voltage Switches:** Selects 24VAC/28VAC/OFF for each output.
1e - **LED(s) 1-4:** Power output indicators.
1f - **Data:** RS422/RS485 input from head end equipment (DVR) for PTZ control.
1g - **Channels 1-4:** Single CAT-5 or higher structured cable out to HubWay, HubWayLD or HubWayLDH enables transmission of up to four (4) video signals.
Pin out configuration *(Fig. 4, pg. 7).*
1h - **Data:** CAT-5 or higher structured cable to data port on HubWay, HubWayLD or HubWayLDH or head end equipment (DVR).
1i - **Channels 1-4:** CAT-5 or higher structured cable to cameras. Pin out configuration *(Fig. 3, pg. 7).*

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. 2

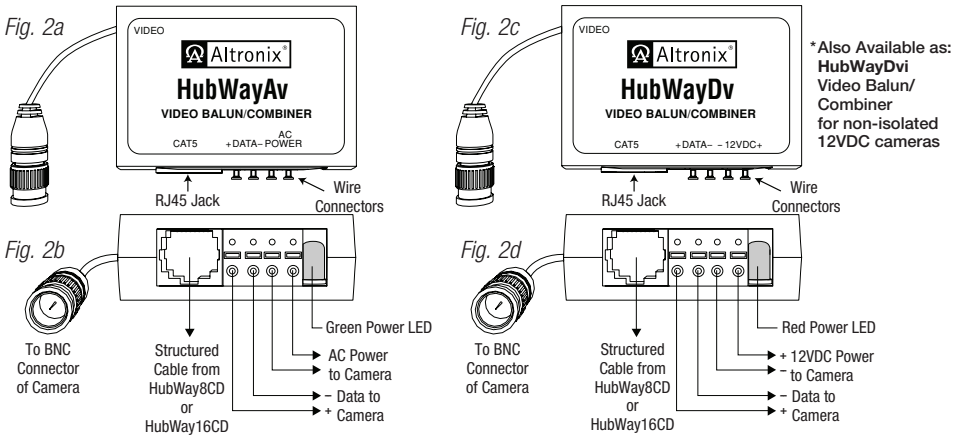
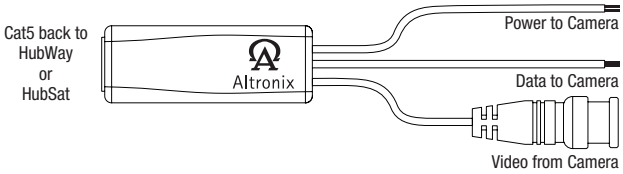


Fig. 2e - **HubWayAV2**



HubWayAv/HubWayAv2 passes AC voltage from pins 4, 5, 7, 8 to terminals marked [AC Power] *(Fig. 3, pg. 7)*.

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

Fig. 3 - CAT-5 Structured Cable Wiring Color Codes and PIN Configurations PVD1-4 on HubSat8DV and Video Balun/Combiner

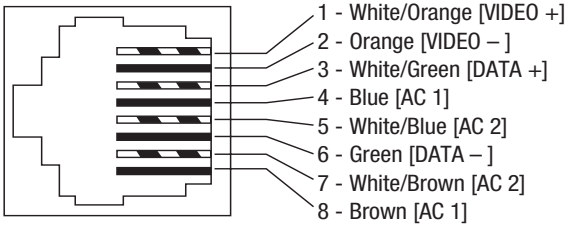
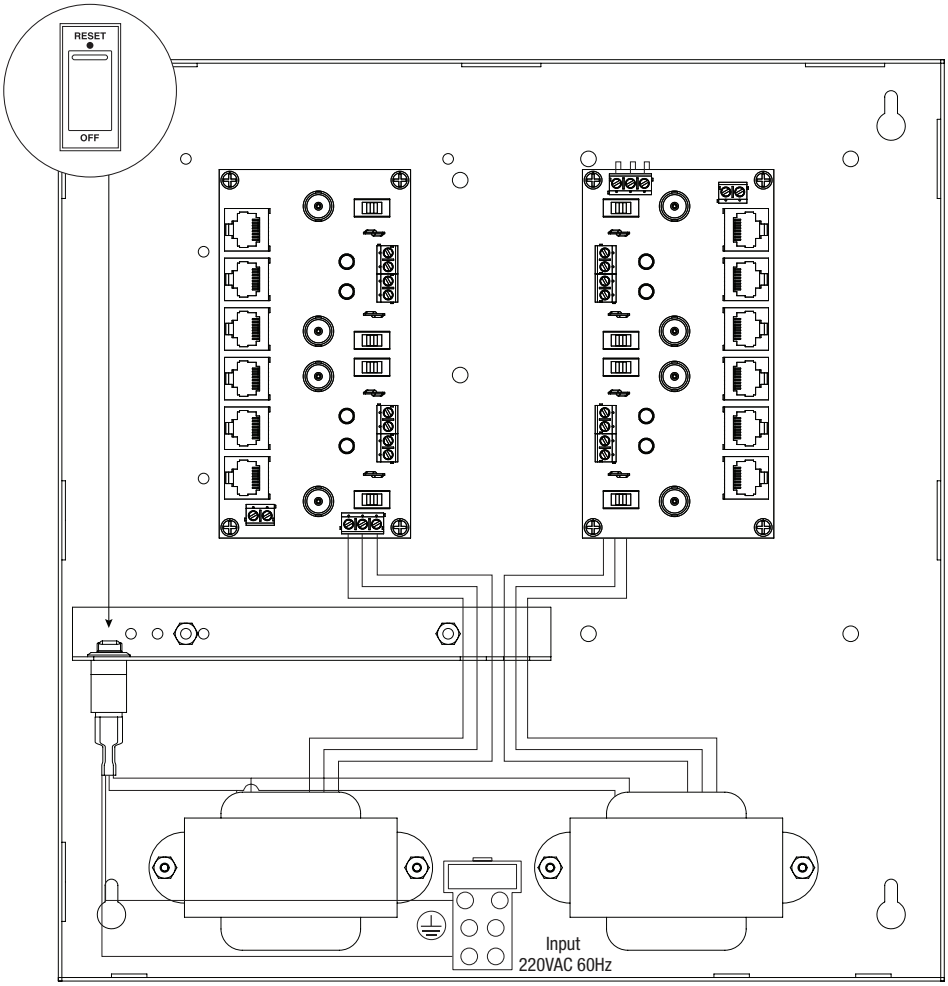


Fig. 3

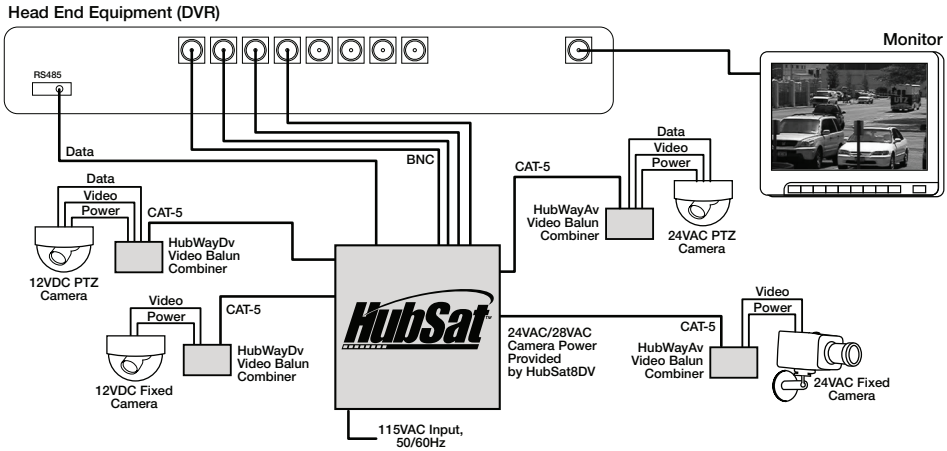
Fig. 3a - Illuminated master power disconnect circuit breaker:
- OFF position: circuit breaker tripped – Switch not illuminated.
- RESET (ON) position – Switch illuminated.



Typical Application Drawing

HubSat8DV Passive UTP Transceiver Hub with Integral Camera Power:

Fig. 4



Typical Application Drawing

HubSat8DV Remote Accessory Module with HubWay UTP Transceiver Hubs:

Fig. 5

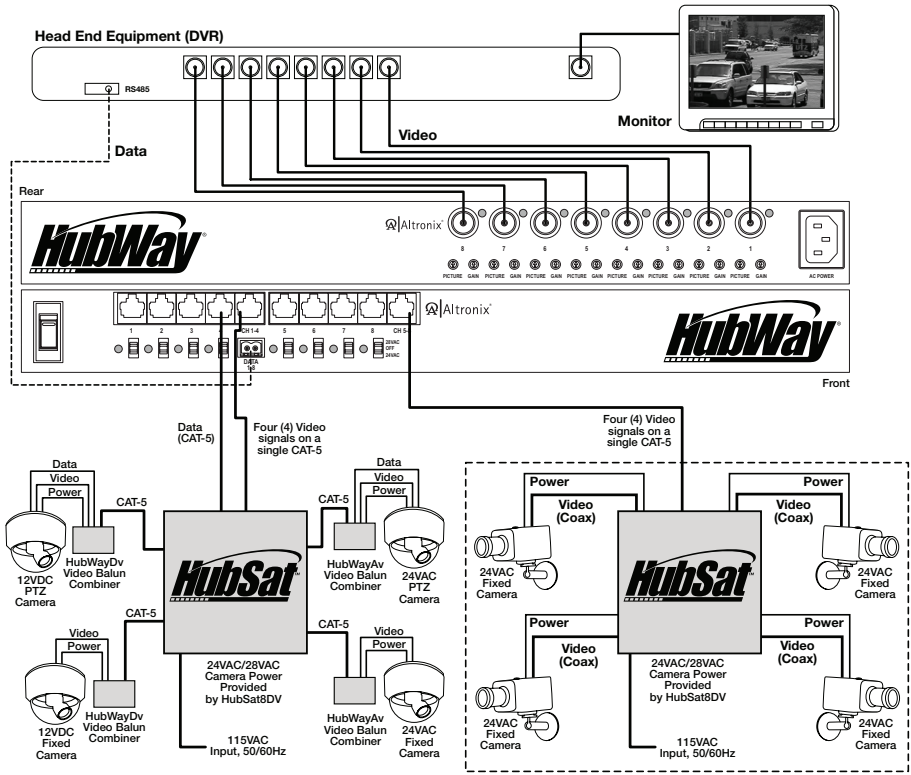


Fig. 5a - Alternate 24VAC fixed camera hookup.

Notes:

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.

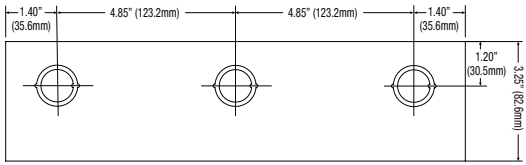
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

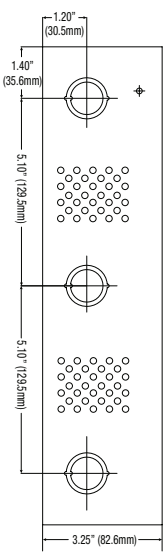
CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

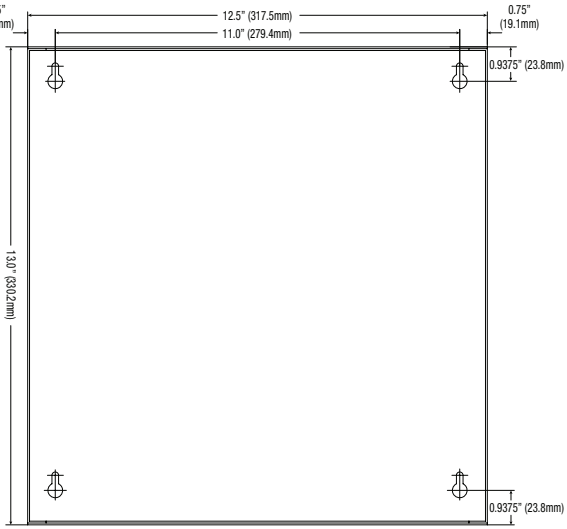
CAUTION: To reduce the risk of electric shock do not open enclosure.
There are no user serviceable parts inside.
Refer servicing to qualified service personnel.

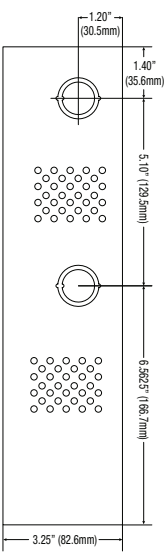
Enclosure Dimensions (H x W x D approximate):

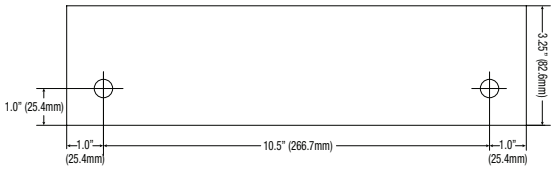
13.5" x 13" x 3.25" (342.9mm x 330.2mm x 82.6mm)











Altronix is not responsible for any typographical errors.

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

IIHubSat8DV K19U

MEMBER