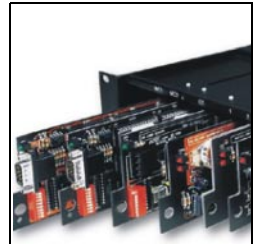




instruction manual

PT10-ADD

Additional Camera Pan/Tilt System



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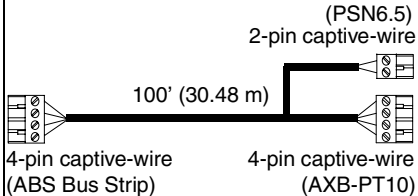
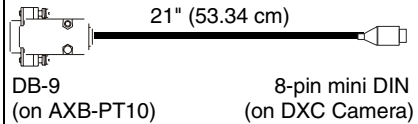
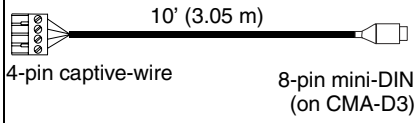
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PT10-ADD Additional Camera Pan/Tilt System Package

The AMX Additional Camera Pan/Tilt System adds a single camera pan/tilt package to the PT10-PLV Single Camera Pan/Tilt System. This system works with both Sony® CMA-D2 and CMA-D3 camera adapters.

PT10-ADD System Components

AXB-PT10 Pan/Tilt Camera Head The AXB-PT10 is a fully integrated camera-positioning controller that provides on-board control of camera pan/tilt, and lens zoom/focus/iris. The AXB-PT10 power rating is 2 A @ 12 VDC. This power supply must be local.	
PSN6.5 Power Supply The PSN6.5 NetLinX Power Supply distributes switched-mode 12 VDC power @ 6.5 A to up to three AMX devices. The PSN6.5 supplies power to the AXB-PT10 pan/tilt camera head.	
CC-AXL AXlink Connection Cable (4-pin captive-wire to 4-pin captive-wire, with 2-pin local power connector) The AXlink cable is used in all configurations, and connects the AXB-PT10 to the Master Controller (either the AXB-EM232 or AXCENT³). The 2-pin connector plugs into the PSN6.5 to provide local power to the AXB-PT10.	
CC-CAM Connection Cable (DB-9 to 8-pin mini DIN) The CC-CAM cable connects the AXB-PT10 to the DXC-390/950 camera. This cable is used with any camera powered by a CMA-D2.	
CC-CAM Connection Cable (4-pin captive-wire to 8-pin mini DIN) The CC-CAM camera/lens cable connects the AXB-EM232 RS-232 control to the CMA-D3 controllers. This cable is used with cameras powered by a CMA-D3 when an AXB-EM232 is used as the Master Controller.	

PT10 to Camera Lens Cable (DB15 to 12-pin Hirose) This cable connects the Lens control assembly on the camera to the LENS control port on the AXB-PT10.	 6" (15.24 cm) DB-15 (on AXB-PT10) 12-pin Hirose
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PT10-ADD Configuration with CMA-D2 (up to 25 m)

FIG. 1 shows a sample camera control application using a CMA-D2. The CMA-D2 provides power to cameras at distances of up to 25 meters.

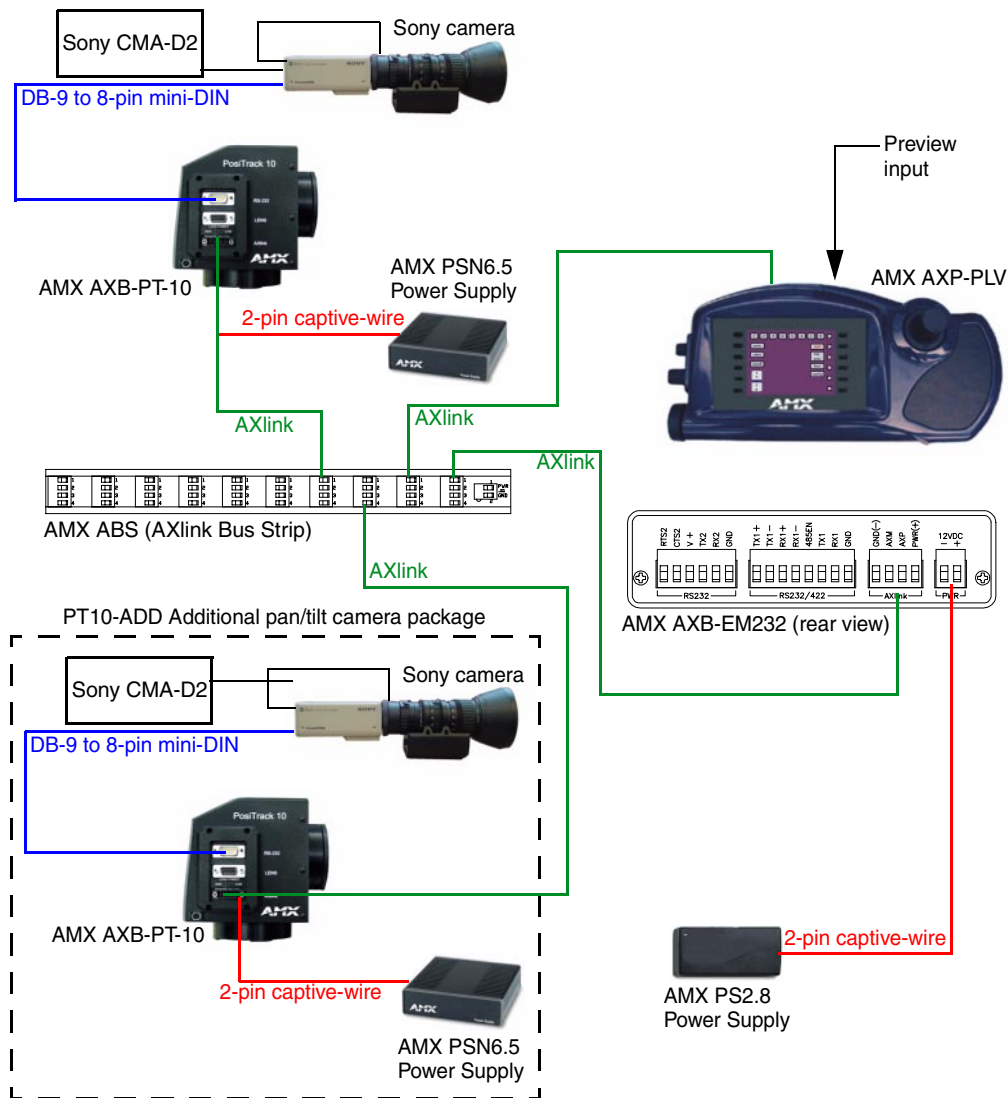


FIG. 1 Sample camera control application using a CMA-D2 connection up to 25 m.

- Power to the AXB-PT10 is supplied from the PSN6.5 Power Supply to the unused power pin on the AXB-PT10's AXlink connector. Refer to FIG. 11 on page 11 and FIG. 12 on page 12 for more information about wiring the AXB-PT10 AXlink connector.
- Each additional camera system's AXB-PT10 must have its AXlink device value increment by a value of 1.

AMX components in this additional-camera control system include:

- AXB-PT10 Pan/Tilt Camera Head
- PSN6.5 Power Supply (for AXB-PT10)
- CC-AXL cable 100' (30.48 m) AXlink connection cable (4-pin captive-wire to 4-pin captive-wire, with 2-pin power connector)
- CC-CAM cable 21" (53.34 cm) connection cable (DB-9 to 8-pin mini-DIN)
- ABS AXlink Bus Strip

Optional accessories:

- WM-CAM Wall or Ceiling Mount Adapter (for AXB-PT10)
- PM-CAM Pedestal Mount Adapter (for AXB-PT10)
- TM-CAM Tripod Mount Adapter (for AXB-PT10)
- AC-RK Accessory Rack Kit (for AXB-EM232, AXB-REL8 and AXB-AV2SM)

Installation and Wiring

This section covers the steps necessary to connect and operate a PT10-ADD Additional Camera Pan/Tilt System. Before continuing, verify that you have received the correct components for your package. Refer to the *PT10-ADD System Components* section on page 1 for more information.

Preparing the AXB-PT10 for Communication

When you add one or more AXB-PT10s to your system, it will be necessary to set the AXlink Device DIP switches on the additional PT10s. The AXB-PT10 that came with your kit was factory set as AXlink device number 90. The first additional AXB-PT10 must have its AXlink device value incremented by a value of 1, up to 95 (for a maximum total of six PT10s).

The AXlink Device DIP switch is located beneath the round cover on the back of the AXB-PT10. FIG. 2 shows the location of the DIP switch and each of the possible AXlink Device DIP switch settings for additional AXB-PT10s.

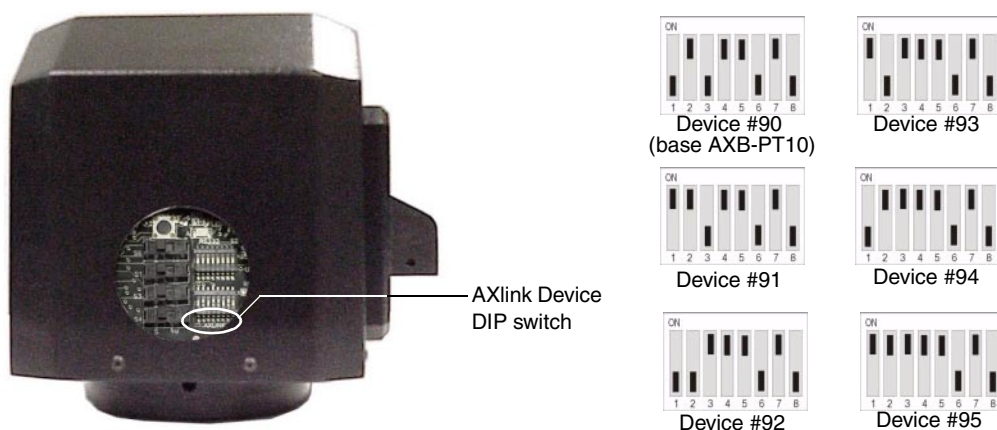


FIG. 2 AXB-PT10 (rear view) and AXLink Device DIP switch settings for devices 90 - 95.

Mounting the AXB-PT10

Mount the AXB-PT10 to a flat horizontal surface, either upright or inverted.



*Never use the camera cradle to handle or lift the AXB-PT10.
Do not mount a PosiTrack unit in any location where the motion of the camera is obstructed by any object.*

1. Select a surface that can support the combined weight of the AXB-PT10 (8.00 lbs./3.63 kg), camera/lens (10 lbs./4.54 kg), and control cables. Some support surfaces include the WM-CAM, PM-CAM, and TM-CAM mounts available for use with these units.
2. Locate the external white position markers located on the pan and tilt axis. The position markers must align with the pan and tilt axis in order to be considered in the home position. FIG. 3 shows the camera cradle attachment in the center position.
3. Mount the PosiTrack unit to a flat surface by drilling four holes, according to the mounting-plate dimensions shown in FIG. 4. Secure the unit to the surface using four 1/4" x 20 machine

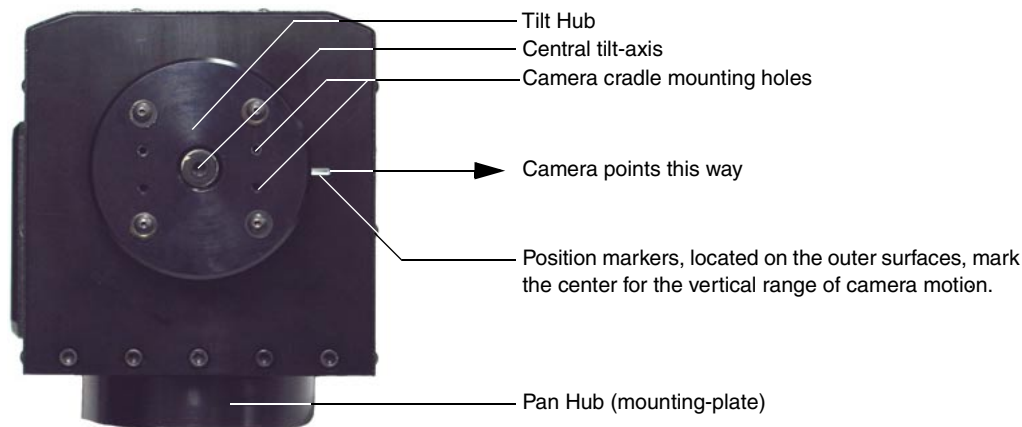


FIG. 3 Center position for the camera cradle attachment (side view)

bolts and lock washers. Ensure that the external white position marker, on the pan drive hub, is inside the desired camera rotation range.

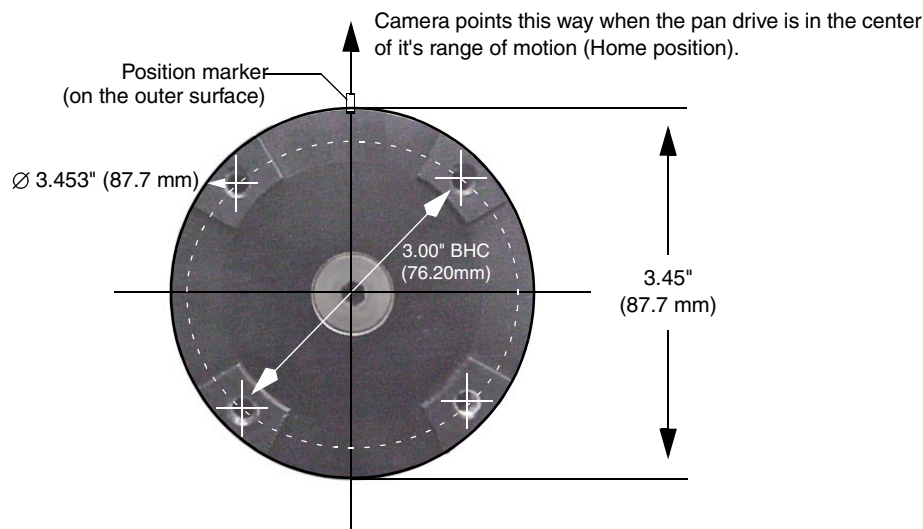


FIG. 4 Mounting-plate dimensions

The PT10 can be mounted to camera mounts such as the TM-CAM, WM-CAM, and PM-CAM (Pedestal mount) as shown in FIG. 5. The Camera/Lens cradle can be mounted on either side of the cradle support bracket.

Mounting and Balancing the Camera/Lens

The camera/lens assembly should be mounted so that the tilt axis is capable of going through the optical axis of the camera, assuming the optical centerline is between ½" (12.70 mm) and 5" (127.00 mm) above the mounting plane of the camera lens. The mounting platform (camera mount) allows the camera/lens to be mounted with its center of gravity on the tilt axis. The maximum weight of the camera/lens assembly is 10 lbs. (4.54 kg). The camera cradle is mounted to the Tilt Hub. See FIG. 6 for dimensions.



FIG. 5 PT10 and pedestal mount

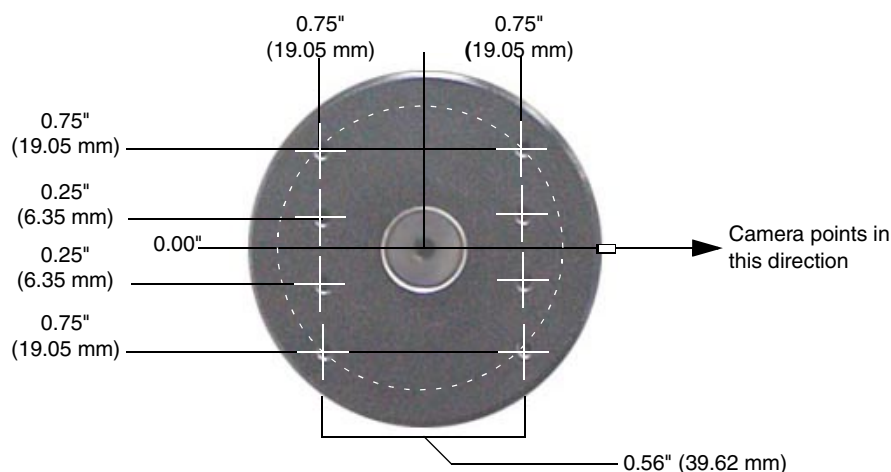


FIG. 6 Tilt Hub dimensions

To mount and balance the camera/lens:



Do not lift the PT10 by the Camera/Lens cradle as this procedure damages internal components.

1. Remove the camera/lens cradle assembly by removing the four ½" screws and washers from the Tilt Hub.
2. Separate the camera mount and cradle support bracket by removing the two ½" screws on the underside of the assembly (FIG. 7) using a 3/32 Allen wrench.
3. Install the camera alignment peg to the mount at the position that best fits the camera/lens.
4. Secure the camera/lens to the cradle (at the camera alignment peg) with the screw and fastener supplied with the camera/lens (see FIG. 7).

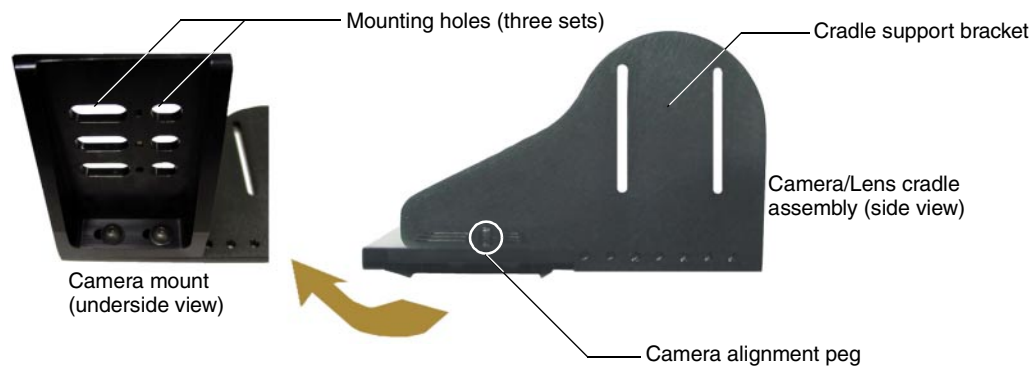


FIG. 7 Camera/Lens cradle assembly (camera mount and lens mount)

5. Determine (and note) the center of gravity for the camera by using your finger to balance the entire camera/lens and mount. The center of gravity is the location on the long axis of the camera/lens assembly around which the camera balances.
6. Place the camera/mount in the appropriate location along the cradle support bracket so the camera's center of gravity aligns with the horizontal tilt-axis, as shown in FIG. 8.

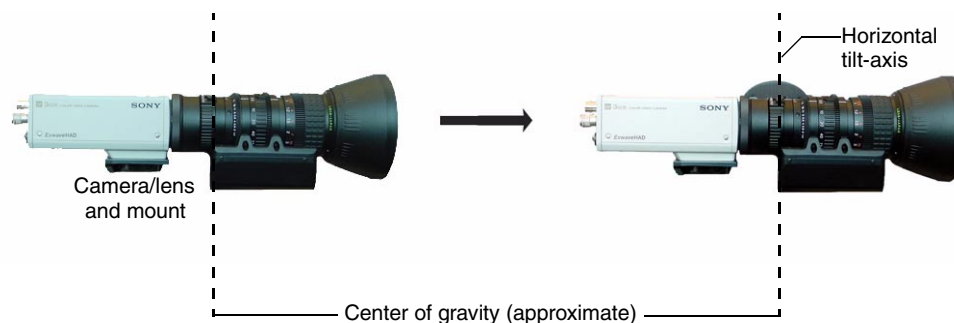


FIG. 8 Mounting a camera



Mount the camera as close to the Tilt Hub as possible to obtain a true center of gravity.

7. Re-attach the camera mount (camera/lens) to the cradle support bracket using the two 1/2" screws.
8. Take the entire camera/cradle assembly and align the lens with the Tilt Hub, so the vertical-axis intersects the center of the camera's iris, as shown in FIG. 9.

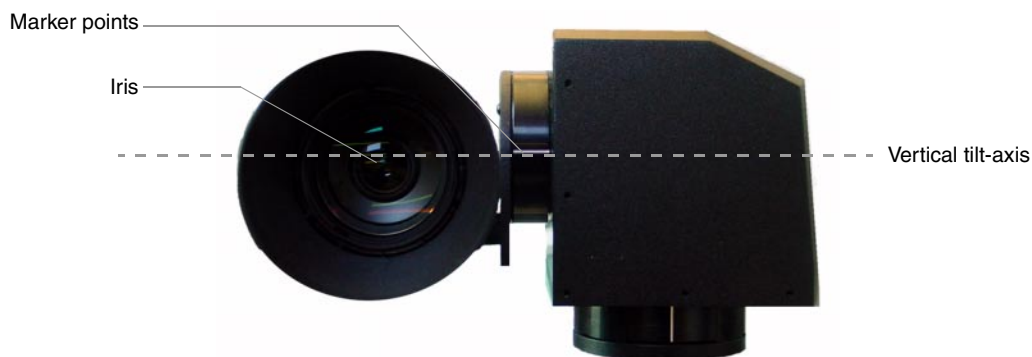


FIG. 9 Iris alignment with vertical tilt-axis

9. Mark the position of the cradle support bracket on the Tilt Hub (for later attachment).
10. Remove the camera/lens and mount piece from the support bracket by unscrewing the two ½" screws on the underside of the camera mount.
11. Secure the support bracket to the Tilt Hub (at the same position marked for the iris alignment) on the PT10 with some or all of the four ½" screws and washers.
12. Secure the camera/mount to the support bracket by using the two ½" screws.



NOTE

The camera/lens cradle can be mounted on either side of the cradle support bracket. This is especially useful when the camera is mounted to the ceiling.

13. Support the weight of the camera cables with a wire tie attached to the wire tie mount on the lower corner of the face of the AXB-PT10 (FIG. 10).



CAUTION

When applying power to the AXB-PT10, adjust the soft-set pan/tilt-limit stops to a safe position to prevent camera or AXB-PT10 damage.

Wiring Information for the AXB-PT10

Each PosiTrack Controller has an RS-232 DB-9 connector, lens control DB-15 high-density connector, and an AXlink 4-pin connector. Always provide enough cable to accommodate the desired range of motion for the PosiTrack unit and its camera/lens. The Lens Power switch on the control panel (FIG. 10), removes any power noise on the incoming video by turning power On/Off to Pin 1 of the DB-15 lens control connector when the camera/lens is powered from a separate supply.

The AXB-PT10 receives all power through the +12 VDC and GND connections on the 4-pin AXlink connector. The portion of the power directed toward the pan and tilt motors is fused. The fuses are self-resetting.

The AXB-PT10 power rating is 2 amps @ 12 VDC. Refer to FIG. 11 for details.

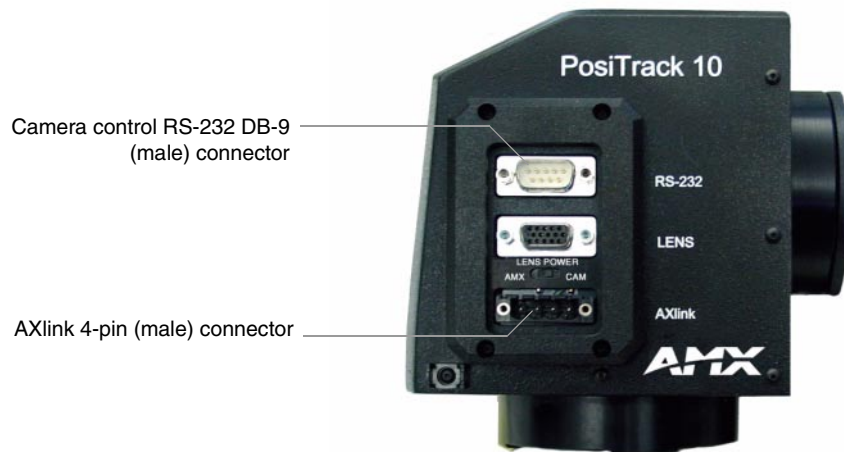


FIG. 10 Side view of the AXB-PT10 showing the location of the AXlink connector.

Wiring Guidelines

The PosiTrack Controller requires local +12 VDC power (optional) to operate properly. The maximum wiring distance between the power supply and the PosiTrack Controller is determined by power consumption, supplied voltage, and the wire gauge used for the cable. The following table lists wire sizes and the maximum lengths allowable between the PT10 and the power supply. The maximum wiring lengths are based on a minimum of 13.5 VDC, available at the power supply.

Wiring Specifications PT10	
18 AWG	29.34 feet (8.94 meters)
20 AWG	18.56 feet (5.66 meters)
22 AWG	11.57 feet (3.53 meters)
24 AWG	7.30 feet (2.23 meters)



CAUTION

Do not connect power to the PosiTrack Controller until the wiring is complete. If using an optional +12 VDC power supply, apply power to the AXB-PT10 only after installation is complete.

The PosiTrack Controller is powered from an optional local power supply. The wiring distances listed for the AXB-PT10 in the above table are based on a +12 VDC power supply and are capable of 2 amps (continuous) with a maximum current of 20 amps. The PosiTrack unit provides power outputs for the camera/lens combination.

Using the AXlink connector for data and power

To use the AXlink 4-pin connector for data communication with the AXB-EM232 and power transfer from the PSN6.5 power supply, the incoming PWR and GND cable from the PSN6.5 must be connected to the AXlink cable connector going to the AXB-PT10. FIG. 11 shows how the power cable from the PSN6.5 is used to power the AXB-PT10. This same figure shows how the GND cable is connected onto the existing GND cable on the AXlink cable coming from the AXB-EM232. Always use a local power supply to power the AXB-PT10. This is the configuration of the supplied CC-AXL AXlink Connection Cable.

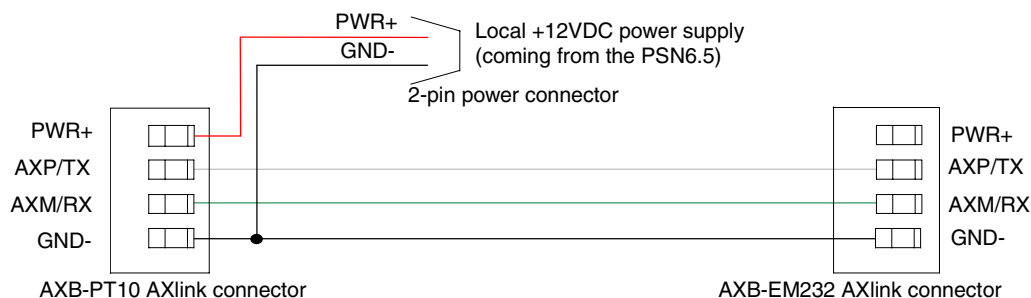
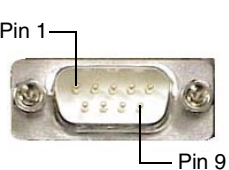


FIG. 11 AXlink connector and local +12 VDC power supply wiring diagram

Using the camera control RS-232 DB-9 connector

The RS-232 DB-9 (male) connector on the AXB-PT10 connects to the camera head's RS-232 connector. The following table lists the pinouts and shows the pin configuration for the DB-9 connector.

Camera Control DB-9 RS-232 Connector Pinouts			
Pin	Signal	Pin	Signal
1	N/A	6	N/A
2	RXD	7	RTS
3	TXD	8	CTS
4	N/A	9	N/A
5	GND		



Using a 2x1 AXlink connector for data

To use the AXlink 4-pin connector for data communication from the AXB-EM232 to both AXB-PT10s. The outgoing wires from these devices must be joined at the terminal AXlink connector on the AXB-EM232. FIG. 12 shows how an AXlink cable can be split-off into two cables; one end going to both AXB-PT10s and the other to the AXB-EM232.



CAUTION

Do not connect the wire from the PWR terminal on the AXB-EM232 to the PWR terminal on any of the AXB-PT10s. Do not provide power to the AXB-EM232 at this point. Instructions for powering up the system are in the Putting It All Together section.

1. Disconnect the AXP, AXM and GND wires from the AXB-EM232 AXlink connector (4-pin captive-wire to 4-pin captive-wire) cable.
2. Disconnect the AXP, AXM and GND wires from the AXB-PT10 AXlink connector cables (4-pin captive-wire to 4-pin captive-wire) at their terminal end (end connected to the AXB-EM232).
3. Pair the AXP, AXM and GND wires from the AXB-PT10 connectors.
4. Place each twisted pair into its respective clamp position on the AXB-EM232 AXlink connector. Refer to FIG. 12 for more information.
5. Tighten the clamps and secure the twisted wires to the AXB-EM232 AXlink connector.
6. Plug the AXB-EM232 AXlink connector to the AXlink port at the rear of the AXB-EM232.

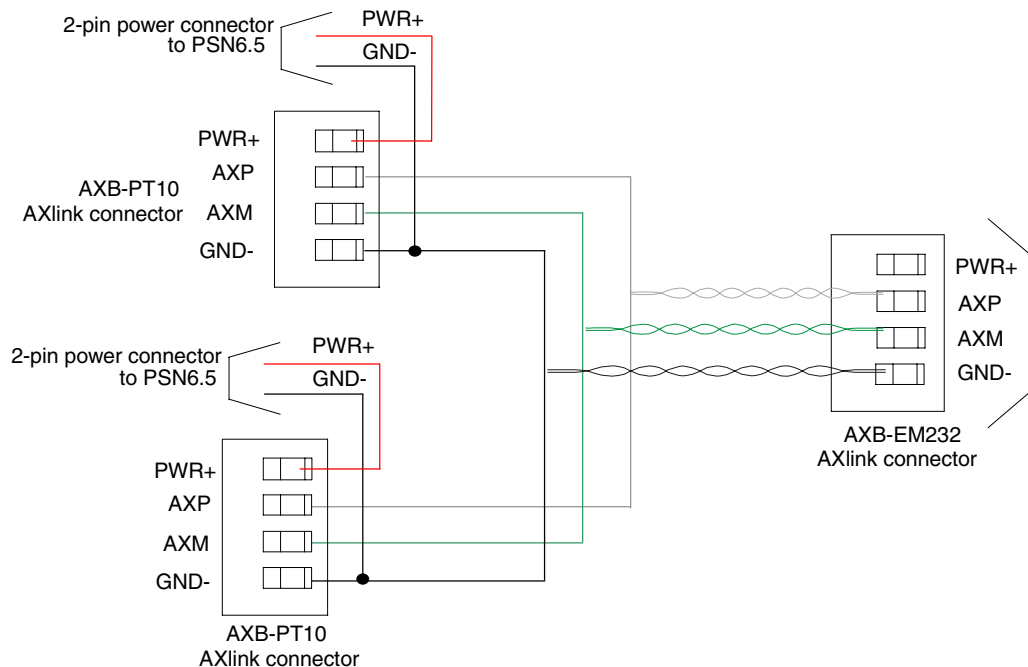


FIG. 12 AXlink connector split cable wiring diagram

Putting It All Together

1. Connect the green 2-pin PS2.8 power connector to the rear of the AXB-EM232.
2. Connect the AXB-PT10 AXlink connectors (from the AXB-EM232) to the AXlink port on the side of the AXB-PT10.
3. Connect the CC-AXL 2-pin power connector to rear of the PSN6.5 power supply.



CAUTION

When applying power to the AXB-PT10, adjust the soft-set pan/tilt-limit stops to a safe position to prevent camera or AXB-PT10 damage.

4. Connect the lens control cable to the LENS connector (6-pin) on the rear of the camera.
5. Connect the DB-9 port on the AXB-PT10 to the 8-pin mini-DIN REMOTE connector on the rear of the camera (for systems where the camera is located within 25 m of the CMA-D2).
For systems where the camera is located over 25 m, use the 4-pin captive-wire to mini 8-pin DIN cable to connect the CMA-D3 to the AXB-EM232 (RS-232 port 1 on the rear panel of the AXB-EM232). The CMA-D3 can be located up to 100 m from the camera.
6. Use a BNC cable to connect the VIDEO OUT port on the rear of the camera to the BNC connector on the rear of the AXP-PLV.
7. Connect the CMA-D2 to the DC IN/VBS port on the rear of the camera.
8. Verify there are no obstructions in the horizontal or vertical paths of the attached camera on the AXB-PT10.
9. Connect the mini-XLR connector (from the AXB-EM232 AXlink connector) to the rear of the AXP-PLV.

For best performance, mount the AXB-EM232 as close to the CMA-D2 as possible.

10. Connect the AXB-EM232 AXlink connector to the rear of the AXB-EM232.
11. Plug in the PSN6.5, PS2.8, and CMA-D2 power supplies to their respective outlets.
12. Press and hold the SETUP button (located on the rear of the AXB-PT10 beneath a protective cover) for three seconds to exercise each control axis (pan/tilt), and to verify correct installation.

Do not move the joystick or the focus wheel while the AXP-PLV is displaying its initialization page. Self-calibration is in progress.

13. Allow the AXP-PLV touch panel software approximately 20 seconds for initialization and self-calibration before beginning use.
 - Select the video input for camera one by pressing the Camera Station 1 pushbutton located on the right side of the AXP-PLV touch panel.
 - Select the video input for camera two by pressing the Camera Station 2 pushbutton located on the right side of the AXP-PLV touch panel.

Suggested Wire Types For Custom Cables

AXlink is a control network that uses four wires to carry data and power to all remote devices in the system. Two wires carry a balanced-line data signal; the other two provide ground and +12 VDC power. Large distributed systems that use long AXlink runs with a maximum of 3,000 feet (914.4 m) should use low-capacitance (12-14 pF/ft) shielded twisted pair cable.

- The length of an AXlink wire run is equal to the total length of wire used; a star run made of one 300' section and six 50' sections equals one 600' AXlink line.
- AXlink data lines (AXM and AXP) are designed for balance-line operation; wire the data lines in the same twisted pair.
- Use a shielded cable for best results, both to reduce electronic interference radiated by adjacent wiring and to eliminate noise from AXlink cabling to adjacent audio cabling.

If you find that the included 100' (30.48 m) AXlink cables are not long enough for your application, use the wire types suggested below to make custom cables.

AXlink - (local-area, low-power requirement)

22/24 AWG 4-conductor cables can be used for short wiring runs.

- Level 3, 4, or 5 unshielded, twisted pair
- Belden 8102, 2 twisted pair, 1 shield 12 pF/ft, PVC and plenum cable available.

AXlink - (local-area, high-power requirement)

Large systems that power many bus controllers or touch panels should use a heavier gauge wire to handle DC power.

- Liberty Wire and Cable AMX-2S22218 AXlink Cable, 1 shielded, twisted pair 22 AWG, 12.5 pF/ft, two 18 AWG, PVC and plenum cable available.

AXlink - (wide-area, local-power supply)

In this type of system, power is rarely distributed over the AXlink bus; local power supplies are used for each controller or linked system.

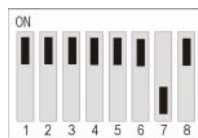
- West Penn D2401 1 twisted pair, 1 shield 14 pF/ft, plenum cable available.

Troubleshooting

If you are experiencing communication problems with the AXB-EM232, check the communications settings for the device. The RS-232 communication parameters for this device are set via the eight-position RS-232 DIP switch. On the AXB-EM232, the RS-232 DIP switch is located on the front panel. Verify that this DIP switch is set to the default positions indicated in below.

Setting the RS-232 DIP switch (S2)

The following describes the RS-232 DIP switch default positions:



- 9,600 baud
- No parity
- 8 bits
- 1 stop bit

The following table lists the RS-232 DIP switch settings:

RS-232 DIP Switch (S2) Settings								
Position	1	2	3	4	5	6	7	8
Function	Stop Bits	Data Bits	Parity			Baud Rate		
	Off 2 bits	Off 7 bits	Off	Off	Off	Off	Off	Off
	On 1 bit	On 8 bits	On	Off	Off	On	Off	Off
			Off	On	Off	Off	On	Off
			On	On	Off	On	On	Off
			Off	Off	On	Off	Off	On
			On	Off	On	On	Off	On
			Off	On	On	Off	On	On
			On	On	On	On	On	On

Sony Technical Support

On the Web

You can contact the Technical Assistance Network (TAN) on the Internet:

- <http://bpgprod.sel.sony.com/infosupport.bpg>

Telephone Support

For dedicated phone support (available from 8:30 a.m. to 8:00 p.m. Eastern time, Monday through Friday):

- (201) 833-5333

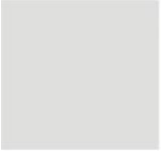
Written Requests for Assistance

Sony's Business Information Center (BIC) serves as a "virtual reception desk" for the Broadcast and Professional Group. Staffed with full-time agents, the center is the focal point of contact for any Broadcast and Professional Group inquiry. The BIC is designed to provide general information, including product specifications, literature and list prices to inquiring callers.

- Tel: 1-800-686-SONY
- Email: <http://bpgprod.sel.sony.com/cic.htm>

attn: Warranty Registration

**AMX Corporation
3000 Research Drive
Richardson TX 75082**



.....



IT'S YOUR WORLD. TAKE CONTROL.

PRODUCT REGISTRATION FORM

Personal Information

☐ Mr. ☐ Mrs. ☐ Ms. ☐ Miss

First Name:

Last Name:

Address:

Address:

City:

State: Zip: —

Purchase Information

Home Phone: ——

Office Phone: —— ext:

E-mail:

Date of Purchase:
day month year

System Type: — example: PT10-PLV

Where did you buy this System?

Serial Number

Please tape before mailing. DO NOT STAPLE.



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