EAGLE
PAN TILT SYSTEMS
Helping to bring your world into focus

PTE-350
Pan Tilt Head
Installation and Operations Manual
Version 1
July 2008

Contents

ITEMS INCLUDED WITH YOUR PTE-350 PAN TILT HEAD:

1)   EAGLE PTE-350 PAN TILT HEAD

2)   LARGE WHITE CAMERA MOUNTING BRACKET

3)   4X 1/4"-20 X 1.25" FLAT HEAD CAP SCREW FOR DISC/BRACKET MOUNTING

4)   2X 1/4"-20 X 1.00" SOCKET HEAD CAP SCREW FOR MOUNTING CAMERA TO BRACKET, WITH LOCK AND FLAT WASHERS

5)   16 PIN AMP CONNECTOR KIT FOR BASE POWER/DATA INPUT

6)   1X WIHA 1/16" x 50 hex tool for adjusting mechanical limit stops

1. PRECAUTIONARY STATEMENT

⚠ Improper settings and connections may cause damage to the PTE-350 pan tilt head, camera, and the lens being used. Please read all of the following documentation before attempting the installation and configuration of these systems. If any of the instructions are unclear to you, call Eagle tech support, your servicing dealer, or Hitachi <u>before</u> proceeding for clarification. Failure to correctly configure and install these systems may cause damage to the equipment, and will void the warranties. Please make sure before connecting or disconnecting any cables that the power supplies are turned OFF.

2. WARRANTY

Hitachi Kokusai Electric America, Ltd. warrants to the original customer that each unit shall be free from malfunction due to defective workmanship or component failure for a period of ONE YEAR from the original date of delivery to the customer. For service under the warranty period, return authorization must be obtained before returning the product. This warranty does not apply to finish or appearance items, to malfunction due to abuse or operation in violation of published operating specifications, or to failures caused by improper connections, modifications, alterations, or other unauthorized repairs. <u>This warranty does not cover labor or shipping costs for removal and/or reinstallation of equipment under warranty</u>. Under no circumstances shall Hitachi Kokusai Electric America, Ltd. or Display Devices, Inc., their owners or employees be liable to you for any special damages, including any lost profits, lost savings, or other incidental or consequential damages, or for any claim by any other party.

⚠ IMPORTANT SAFETY INSTRUCTIONS

1. Read ALL The Instructions! All the safety and operating instructions should be read efore the product is operated

2. Retain Instructions. These safety and operating instructions should be retained for future reference.

3. Heed Warnings. All warnings on the product and the operating instructions should be adhered to.

4. Follow Instructions. All operating and use instructions should be followed.

5. Cleaning. Unplug this product from the power supply before cleaning. Do not use liquid cleaners or aerosol cleaners. Use only a damp cloth for cleaning.

6. Attachments. Do no use attachments not recommended by the product manufacturer as they may cause hazards.

7. Water and Moisture. Do not immerse this product under water--for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, wet basement, swimming pool, pond, or simi-

lar areas. It is highly water resistant, but not completely waterproof.

8. Accessories. Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and cause serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturers' instructions, and should use only mounting accessories recommended by the manufacturer.

9. Moving. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may coarse the product and cart combination to overturn.

10. Ventilation. The outer case of the unit functions as a heat sink for the electronics contained inside. Do not block off the product from airflow by placing the product on a bed, sofa, rug, or similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturers' instructions have been adhered to .

11. Power Sources. This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your facility, consult your product dealer or local power company.

12. Grounding or Polarization. This product's power supply is supplied with a three wire grounding type plug; a plug having a third (grounding) pin. This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace the obsolete outlet. Do not defeat the purpose of the grounding plug.

13. Power cord protection. Power supply cords should be routed such that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to the cords at plug, receptacle, and to the point at which they enter the power supply and the product.

14. Lightning. For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the product due to lightning and power line surges.

15. Overloading. Do not overload wall outlets, extension cords, or receptacles as this can result in a risk of fire or electric shock.

16. Object and liquid entry. Never push objects of any kind into this product through openings as they may touch voltage points or short out parts that could result in a fire or electrical shock. Never spill liquid of any kind on the product.

17. Flammable and Explosive substances. Avoid using this product where there are gases and also where there are flammable and explosive substances in the immediate vicinity.

18. Heavy shock or vibration. When carrying this product around, do not subject the product to heavy shock or vibration.

19. Servicing. Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified

service personnel unless instructed by Eagle tech support.

20. Damage requiring service. Unplug this product from the wall outlet and refer servic-
ing to qualified service personnel under the following conditions: a--When the power sup-
ply cord or plug is damaged. b--if liquid has been spilled, or objects have fallen into the
product. c--If the product has been exposed to rain or water. d-- if the product does not
operate normally by following the operating instructions. Adjust only those controls which
are covered by the operating instructions as improper adjustment of other controls may
result in damage and will often require extensive work by a qualified technician to restore
the product to its normal operating range. e-- if the product has been dropped or damaged
in any way. f--When the product exhibits a distinct change in performance, this indicates a
need for service.

21. Replacement parts. When replacement parts are required, be sure that the service
technician has used replacement parts specified by the manufacturer or have the same
characteristics as the original part. Unauthorized substitutions may result in fire, electric
shock, or other hazards.

22. Safety Check. Upon completion of any service or repairs to this product, ask the service
technician to perform safety checks to determine that the product is in proper operating
condition.

23. Wall or Ceiling mounting. This product should only be mounted to a wall or ceiling us-
ing brackets made and/or as specified by the manufacturer.

24. Heat. The product must be situated away from heat sources such as radiators, heat
registers, stoves, or other products (including amplifiers or direct sunlight) that produce
heat.

3. HARDWARE ASSEMBLY

Before starting installation, make certain that all power supplies to equipment
are turned OFF. Attach PTE-350 to optional PT-OB-1 mount or to location of your
own choosing. Make sure that wall or bracket is capable of securely handling
weights of 150 pounds (68kg). Ensure that the mount is level in both directions.
Use care in handling the PTE-350 as it is heavy; extreme damage or harm may result to
the head, attached equipment, and to other personnel if the head is dropped.

Attach the supplied camera mounting cradle to the hub of the pan tilt head. The
cradle may be placed on either the left or right side of the head, depending upon your in-
stallation conditions. Use the included 1/4"-20x1.25" flat head hex bolts, passed through the
black spacer disc, to attach it to the hub.

NOTE: if you desire to mount the camera to the side where the limit assembly is
located, the assembly must first be moved to the opposite side of the PTE-350
head.

Place the PT-EE-* housing (not included) onto the housing mounting cradle of the PTE-350. Open the housing latches and raise the cover (it hinges at the front). Using the supplied 1/4"-20 x 1" fasteners and washers, thread them from the underside of the cradle into the bottom of the housing. Tighten the fasteners securely. Connect the umbilical cable conduit harness from the PTE-350 head to the bottom of the PT-EE-* housing. It will be necessary to push the connectors through the conduit fitting one at a time in order to get them to fit, starting with the largest connector first.

Assemble camera/lens combination. Remove any lens hood from the lens. Attach camera/lens system onto sled inside housing using the supplied 1/4"-20 fasteners. The camera / lens system can be mounted on either top of bottom of the sled depending on the centerline height of the lens needed. Place the sled into the housing onto the adjustable screw mounting points. Do not completely tighten the fasteners until after the next step. Depending on your camera, your system may include a spacer block or shims to raise the camera body above the mounting sled in order to accomodate lens motor design.

Depending on your camera and lens type, your system may need a spacer block or shims to raise the camera body above the mounting bracket in order to accomodate lens motor design. Aluminum spacer blocks are available at no cost from Eagle tech support upon request.

Move the camera/lens assembly to the front of the sled until the lens is very close to the glass window at the front of the housing; this is to reduce stray reflections from the window-lens interface. Make sure to allow room for the lens to zoom and focus; not all lenses have internal focusing and zooming, and will change physical dimensions when focused or zoomed. Tighten the sled mounting screws securely now.

Attach connecting cables (camera power, camera control, lens control, video and/or genlock) from the umbilical conduit leading into the housing to the camera and lens. Normally, teleconferencing type lenses have two cables attached to them; a shorter one, that plugs into the camera body; and a longer one that plugs into the mating connector in the umbilical. Make sure these cables are plugged into the correct locations or the lens will not function.

Make and attach the data/power input cable for the base of the PTE-350 head as detailed on page 15.

Set both the mechanical limit stops and the electronic limits in accordance with section 5-13 below on limit adjustment.

SPECIAL NOTE: For remote camera control operation with the Eagle CCB option, the camera must be set to 9600 baud and to native remote mode (not RS-232) before mounting it to the bracket in order to be controlled by the PTE-350 head. Consult your camera's owners' manual for instructions on setting up the baud rate and communications type of your particular camera model.

⚠ DO NOT ATTEMPT TO PAN OR TILT THE UNIT BY HAND! Gear reductions on the motors make this impossible to do, and damage may result if this is attempted. Always use the Eagle controller or the Windows® compatible software to control the movement of the pan tilt systems.

Follow the detailed instructions in Eagle controller manuals and/or the following software control instructions for complete usage of the pan-tilt head.

4. FUNCTION DEFINITIONS FOR CONTROL OF PTE-350 when used with EAGLE PT-C desktop controller

These are a simple overview of controls; for more complete details, consult the manual included with your particular Eagle controller. Your controller may or may not include all of these listed features.

Select the FUNCTION button then the following numbers to run the desired function;

#1 Lens "position" mode. This function only needs to be used with controllers made before July 2008. Controllers made after this date should use the TYPE 5 lens control mode which doesn't require you to be in position mode to save a preset. Enter FUNCTION, 1 to set lens zoom and focus presets. See section "SAVE PRESET" below for details on the operation of this function. The LCD display will read POSITION MODE.

#2 Lens "speed" mode

This is the normal lens operating mode. After pressing FUNCTION, 2 the LCD will read SPEED MODE momentarily.

#3 Preset speed change mode.

 In conjunction with function 7 below, this function allows changing preset speeds to different values than were originally chosen. For example, travel to preset 3 was originally set to speed 1(high speed). If you now want to change travel speed to this preset to 2 (normal), recall preset 3, then enter FUNCTION, 3; the LCD will read PRESET SPEED. Then press 2 for normal speed. The LCD display will clear itself after 3 to 4 seconds.

#4 Scene recall / Preset location functions.

 Dependent upon the camera being used, i.e., if using the HV-D30, HV-D15, or HV-D5W cameras, SCENE files can be stored on the camera controller and recalled in conjunction with a specific location preset. This could be useful if the scene has multiple shots to be setup, under different lighting conditions. First, the scene files must be set up AND STORED using the PT-CC or PT-TSC2 camera controller. Next, decide which position preset you want to link to which scene file. For our example, let's use position preset 3, and link it to scene file 1. RECALL position preset 3 (as described in section 5.4), then hit FUNCTION, 4, and the LCD display will show CAMERA SCENE. Then press number 1, specifying the recall of scene file 1. This will now link the position preset 3 and the scene file 1 together. In order to make any changes after saving this information, you must either resave the SCENE file, or resave or delete the position preset 1. The LCD will clear itself after 3 to 4 seconds.

#5 Focus lock/unlock

This is a toggling function that will lock and unlock the FOCUS axis of the joystick. This is convenient if you have a shot setup that the focus will not need to be changed, but you wish to zoom in and out to change the shot. This will prevent any accidental changes in focus while zooming. Press FUNCTION, then 5, then 1 to LOCK or 2 to UNLOCK. The LCD display will read FOCUS LOCKED and FOCUS UNLOCKED.
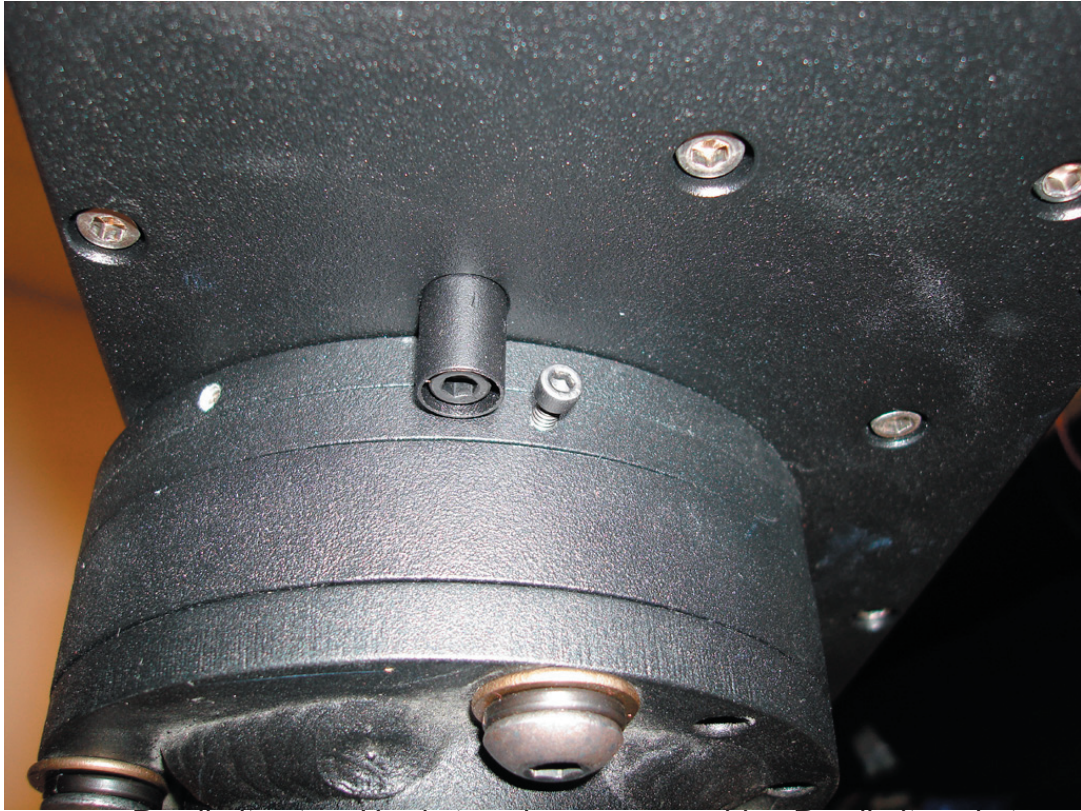
Pan limit setup. Hard stop shown approaching Pan limit socket head screw. Loosen 2 set screws and the socket head screw and move lower stop ring to right to allow more movement to left. Move lower stop ring to left to allow less movement to left.

#6 Zoom lock/unlock

This is a toggling function that will lock and unlock the ZOOM axis of the joystick. This is convenient if you have a shot setup that the zoom setting will not need to be changed, but you wish to focus near or far to make the shot. This can also be used to prevent any unwanted or unauthorized changes. Press FUNCTION, then 6, then 1 to LOCK or 2 to UNLOCK. The LCD display will read ZOOM LOCKED and ZOOM UNLOCKED.

#7 Pan tilt movement speed control mode.

This allows the overall speed of the pan and tilt motion to be changed. Press the FUNCTION, 7; the display will read HEAD SPEED. Then press 1 for HIGH speed, 2 for NORMAL,

and 3 for SLOW. Any pan and tilt presets will also store the speed originally chosen here. For example, you can set a preset position using two different speeds, and recall them at different times depending on the effect desired. NOTE: lens zoom and focus presets are always recalled at full speed, this is not changeable. The LCD will clear itself after 3 to 4 seconds.

It is recommended that for any load over 18 lbs. that only speeds 2 or 3 should be used, not HIGH speed mode 1.

#8 Camera controller feedback.

If using the PT-C standalone pan tilt controller with the PT-CC camera controller, this will let the PT-C know it has a camera controller installed to talk to. Press FUNCTION, 8--The display will toggle between CC ON and CC OFF.

#9 Inverted movement operation mode

(up/down, left/right reversed). This function is used when the pan/tilt is to be ceiling mounted instead of tripod mounted, and it reverses the movement directions of the pan tilt head. This can be set individually on a head by head basis so that if a mix of upright and inverted heads are being used in the same system, they can be configured such that they all move the same direction. Please note that no LCD feedback is shown when executing this function.

#10 Clear all movement limits.

 This function will eliminate all electronic safety limits that may have been set to prevent excess travel. This clearing is temporary only; when power is reset, the previous limits will return underline you set new limits. Hit FUNCTION, then the 10 key; the LCD display will prompt you to press 1 to clear limits, 2 to cancel. Please note that this function only works with a single addressed head for safety reasons. If CAMERA, ALL is selected, you cannot clear movement limits. This is to prevent the accidental clearing of limits from other heads on the same RS 485 line.

⚠ Never use the PTE-350 head without having electronic limits set to prevent damage to the PT head and/or camera, lens, and accessories if control is lost!

#11 Address of pan tilt head.

This is set by the factory to 1 when shipped. If a change is required, simply enter FUNCTION, the 11 button; the LCD display will read ADDRESS. Then click the number you wish to set the head to. Note that this will set the number for all heads on the RS-485 comm line; you must disconnect the power or communication for all the heads except the one you wish to address, otherwise all the powered heads will be set to the same address.

#12 Set lens type.

After July 2008, all heads are preset at the factory to TYPE 5. This allows lens control in speed mode and the ability to set presets "on the fly" without entering into POSITION mode. This is set by the factory when ordered for your specified lens type; 1 is for Rainbow and other CCTV type lenses, 2 is for Fujinon telecon and Canon telecon lenses set to Fujinon mode. Type 5 is the new standard for use with Fujinon or Canon telecon lenses. Press FUNCTION, 12 and the LCD display will read LENS TYPE. Enter in the desired type number and the display will clear. If you are using a controller manufactured before July 2008, you must either use TYPE 2 mode or you can contact the factory about receiving an upgrade to the program of your controller.

#13 Set left pan limit.

 Limits are preset at the factory to 45 degrees each up and down, and about 90 degrees each left and right. Change the limit settings if you want to change these amounts; this is useful to set up cameras such that they can not get shots of the wall behind the camera, the ceiling above the camera, the floor directly below the camera, etc. Also, limits may need to be set differently for your particular application; e.g., if ceiling mounted, you may need to set a limit for tilting upwards to prevent lens contact with the ceiling, etc. The LCD display will read SET LEFT LIMIT.

Please note that dependent on the setting of FUNCTION 9, the INVERT command, that in some circumstances LEFT LIMIT will actually be RIGHT LIMIT; UP LIMIT will be DOWN LIMIT. If you accidentally set a limit incorrectly, simply clear it by hitting FUNCTION, 10, 1 (CLEAR ALL LIMITS). Limits may not be cleared individually, but only all at once.

#14 Set right pan limit.

See above Function 13

#15 Set up tilt limit.

See above Function 13

#16 Set down tilt limit.

 See above Function 13

5. PAN-TILT OPERATIONS

Be sure to follow all of the installation instructions included with the Eagle pan tilt head be-fore starting to use this system !!

Always power up the Eagle controller being used before powering up the PTE-350 head; Make sure that the PTE-350 head is powered off before the controller if shutting down the power to the entire system!

First, select the address of the head you wish to control. Since multiple heads may be on a single RS-485 line, you must choose the correct one to control. Select CAMERA, then the number of the head to be controlled. Head addresses can be changed as described in your controller manual.

If this is the first time use of the system, the limits of pan tilt movement must be set now to limits of your choosing. If you like the factory limits of 45° up and down, and 90° left and right, you may skip this step.

Begin by clearing all electronic movement limits. See your specific controller manual for details on this operation. This function will eliminate all electronic limits that have been set at the factory to prevent excess travel.

NOTE: This clearing is PERMANENT; when power is removed and then restored, the previous limits will be gone. This will erase any limits previously set by the factory during testing. Never use the PTE-350 head without having limits set to prevent damage to the PT

head and/or camera/lens if control is lost!

Next, reset the home position stops (mechanical stops) as desired. Use the included 1/16"
Wiha hex driver to loosen the 3 set screws on the mechanical stop (pan axis or tilt axis) you
wish to adjust.

Use the functions of your controller for left, right, up, and down electronic limit setting. Re-
member, that the pan tilt head has a range of pan of 355° (left or right 180°), and a tilt range
of 180° (up or down 90°); it cannot turn more than a full circle. There are end travel stops
programmed into the head to prevent traveling more than these amounts. <u>Make sure when
cabling the system that enough cable slack is included to prevent damage to the pan-tilt
connectors and camera and lens connectors. The motors in the head are very strong, and
will easily rip a connector out of its' socket.</u> Once the travel limits are set, normal usage of
the pan tilt system may begin.

6. POWER REQUIREMENTS AND WIRING CONFIGURATIONS

The PTE-350 pan tilt head requires 24 volts DC power. Maximum draw is approxi-
mately 3 amps; average current draw in operation is 1.5 amps. In operation with the rec-
ommended PT-PS-3E power supply, the head will provide power for camera / lens combi-
nations drawing up to 3 amps @ 12VDC; if the camera / lens draws more than this, an
external camera power supply is required. The input cable for the power to the pan tilt head
is to be attached at the black AMP™ connector at the rear of the pan tilt head base. To help
reduce power drop, it is common practice to run 4 conductors for power thus doubling the
effective current carrying capability. Here is a chart with recommended AWG for different
distances (at 77°F)

| Distance in feet	AWG
up to 200	18
201-500	16
501-1000	12

WIRING THE BASE INPUT CONNECTION

To build up and attach the 16 pin main power and data connector to the bottom of the PTE-
350 head, follow the table below. If using a prebuilt cable purchased from Hitachi, plug in
the cable now.

NOTE: It is very important to build and install this cable correctly; if the data and
power conductors are flipped or misoriented, severe damage may be caused to the pan tilt

head, rendering it inoperable. It is easy for our technicians to tell when miswiring has taken place due to the specific damage it causes. This type of miswiring is **NOT** covered by the warranty.

Here is a table showing the correct wiring order and purpose.
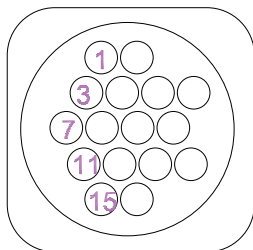
PIN 1	24 VDC POSITIVE
PIN 2	24 VDC POSITIVE
PIN 3	RS-485 LINE 1
PIN 4	RS-485 LINE 2
PIN 5	RS-485 GROUND
PIN 6	OPEN
PIN 7	VIDEO CENTER
PIN 8	VIDEO SHIELD
PIN 9	GENLOCK CENTER
PIN 10	GENLOCK SHIELD
PIN 11	OPEN
PIN 12	OPEN
PIN 13	WASHER COMMON
PIN 14	WASHER TRIGGER
PIN 15	24 VDC GROUND
PIN 16	24 VDC GROUND

7. RS-485 COMMUNICATIONS SETUP

Communications for the PTE-350 heads are transmitted via the RS-485 standard, a common multidrop network configuration. Three wires are required for RS-485 communications, two for signal and one for ground. The input for the RS-485 to the pan tilt head is contained within the AMP™ 16 pin connector at the base of the pan tilt head. Using the appropriate gauge shielded twisted pair cable, maximum communication length without a repeater is 4,000 feet.

Inside each of our pan tilt heads and in our PT controller is a 120 ohm terminating resistor. The two units at the ends of the communication line should have the terminating resistor in place; all other units on the line must have the resistor disconnected. The resistor is connected in series to a switch for easy configuration; this switch can be found inside the rear access cover of the PTE-350 pan-tilt head. It is located on the bottom of the main logic
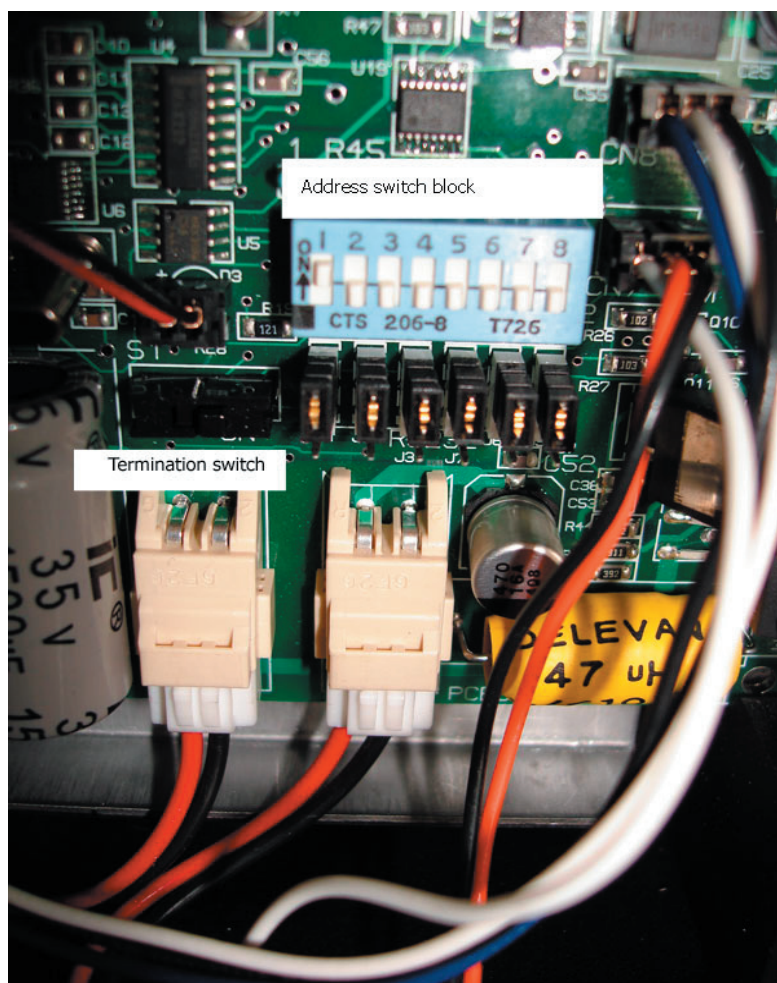
Photo showing close up of control board with address switch block, RS-485 termination switch, and comm mode jumpers

board. (see photo next page) With the switch to the right, the resistor is terminated; move the switch to the left to unterminate the head. Heads are shipped with the switch unterminated. If using a controller other than the Eagle PT series pan tilt controller, such as an AMX or Crestron control system, termination should be provided at the controller end.

SETTING THE ADDRESS OF THE PTE-350 PAN TILT HEAD

All Eagle™ PTE-350 pan tilt heads require a separate address for controlling them by serial communication. Each pan tilt on the RS-485 line has a specific logical address. This address may be set by software control from one of the Eagle™ controllers or software packages, or set mechanically via the dip switches located under the removable rear access panel of the head. To access the address setting switches, remove the four hex head

screws securing the rear cover (one each on right and left sides, one each top and bottom. With the cover removed, you will see the main logic board for the PTE-350. A blue bank of eight white switches can be found near the lower center of the board. The convention for the switches is this: down is OFF(or zero), up is ON. With all switches down/off, the head's address is set by remote control from an Eagle™ controller.

NOTE: These are binary address switches. With only switch number 1 in the up position, the head's address is 1. With only switch number 2 up, the address is 2. With only switch number 3 up, the address is 4. With only switch number 4 up, the address is 8. With only switch number 5 up, the address is 16. With only switch number 6 up, the address is 32. With only switch number 7 up, the address is 64. The switches may be configured in any manner to arrive at a desired address up to 127 (all switches up=1+2+4+8+16+32+64=127) For example, to set address number 3, switches 1 and 2 should be up. For address 6, switches 2 and 3 should be up (2+4=6).

Note that if the address is changed with the unit powered up, the unit power must be cycled off and back on for the address to be set in memory.

Addresses can also be easily set and changed remotely using an Eagle™ PT controller. However, in the event that multiple heads are used on a single RS-485 line, the hardware method of address setting is preferred, as this provides a method of setting the address in the head so that they cannot be changed by accident from the PT controller. To set the address by remote control from a PT controller or software, follow this procedure. The address is set by the factory to 1 when shipped. If a change is required, follow the procedure for your particular model of Eagle™ controller:

PT-C55 controller: Enter FUNCT, PRESET 4, then select PRESET 1 through 8 to set addresses from 1 through 8. Note that the PT-C55 controller is limited to control of 8 PT heads.

PT-C controller: simply enter FUNCTION, the 11 button; the LCD display will read ADDRESS. Then push the number you wish to set the head to.

PT-TSC2 touchscreen controller: From the main page, touch the FUNCTION button. Then touch the SET PT ADDRESS button. On the numeric keypad that pops up, touch the number you wish the head to become, followed by the ENTER button.

Note that the remote addressing procedure will only work if you know the number the head is currently set to; if you don't know the number, first select CAMERA, ALL. This will allow you to talk to any head that is correctly wired up and powered. Also note that remote addressing will set the number for all heads on the RS-485 comm line; you must disconnect

the power or communication for all the heads except the one you wish to address, otherwise all the powered and connected heads will be set to the same address.

RS-232 SERIAL OPERATION

The PT-250 pan tilt head is capable of direct RS-232 operation right out of the box. No adapters are needed. Under the rear cover access panel you will find six black repositionable jumpers. The PT-250 is shipped in standard RS-485 mode; with all of the jumpers UP.

Switch the three left most jumpers (J1, J2, J3) to the lower position, and the head is now configured for RS-232 mode. The same control codes used for RS-485 apply for moving the head using Eagle™ software or when writing your own software. These control codes are available off of the Eagle website, http://www.eaglepantilt.com. Please be aware that the maximum reliable distance for RS-232 control is only about 50 to 75 feet, and that only one PT-250 head may be hooked up per serial port as is standard with RS-232 communications. The three right jumpers (J7, J6, J5) are to switch the camera control method to RS-232 from the normal TTL mode. Do not move these jumpers unless advised to by Eagle tech support.

ENERGIZING THE SYSTEM

Power up the Eagle™ pan tilt controller before powering up the PTE-350 pan tilt head. When this is done, you may now power up the power supply for the PTE-350 head(s). The head will automatically travel to it's "home" position against the up and left stops. During this travel period, remote control is not possible. This head must home itself whenever power is applied. If the head does not go to the home position, it will not function; please call for service.

The PTE-350 head will now recall PRESET 1 immediately after finding the home position. This allows you to choose an opening shot that you want the head to recall when powering up. Simply memorize a preset 1 position and the head will recall that position upon power up. We have set PRESET 1 at the factory to be straight ahead and level, with a medium wide shot.

LED COMM STATUS

(LED is located inside the head, but valuable for troubleshooting) The LED provides important visual feedback to the status of the head; if the head has been activated and is being talked to by a controller, the LED is on solid, with some slight flickering. If the head is attached to the RS-485 line and hearing a command being sent to another head, it will flicker.

If the LED comes on solid immediately, with no flickering at all, it probably means the RS-485 wiring is incorrect. Usually the ground and one of the data lines have been swapped. Check the wiring and try again.

8. SPECIFICATIONS

GENERAL

All 6061 aluminum; polyester-based, UV resistant textured grey powder coated to prevent corrosion. All fasteners are type 18-8 stainless steel or black oxide treated.

TEMPERATURE RANGE: 0°F TO +120°F (-18°C TO +49°C)

WEIGHT: 23 lbs. (without housing and camera)

MECHANICAL

DRIVE SYSTEM: variable speed DC stepper/servo motors direct coupled to worm gear final drive; worm drive adjustable for backlash minimization

PAN RANGE: 355° HORIZONTAL (-180° to +180°) -NOT CONTINUOUS ROTATION

SPEED: variable from 0° up to approx. 30° per second, with load correctly balanced

TILT RANGE: +90° TO –90° VERTICAL-NOT CONTINUOUS ROTATION

SPEED: variable from 0° up to approx. 30° per second, with load correctly balanced

MAX. LOAD: approximately 50 pounds (22.7 kilos), including camera, lens, and housing

ELECTRICAL

INPUT VOLTAGE: 24vdc from recommended Eagle™ PT-PS-2, 3, or 4 power supplies

CURRENT REQUIREMENTS: starting, 600ma pan or tilt;

running, up to 2500ma, pan and tilt with camera and lens

CABLE REQUIREMENTS:

3 conductor, 22 gauge for RS-485 control system

2 or 4 conductor, 18 gauge for pan tilt head power

Note that these are minimum gauge size requirements; check the tables in the manual for the gauge size needed for your distance/application.