EAGLE®

PT-200 Series Pan Tilt Head

Installation and Operations Manual
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Contents

1.PRECAUTIONARY STATEMENT

Improper settings and connections may cause damage to the PT-200 pan tilt, the 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 your servicing dealer or Hitachi before 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 Denshi America 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. Under no circumstances shall Hitachi Denshi America, Ltd. or Display Devices, Inc. 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.

3.HARDWARE INSTALLATION

Before starting installation, make certain that all power supplies to equipment are turned OFF.

Attach PT-200 to wall arm or ceiling mount using mounting adapter as needed. Make sure that wall or ceiling mount is capable of securely handling weights of 50 pounds (23kg). Ensure that the mount is level in both directions.

Attach camera mounting cradle to PT-200 head using supplied 10-32 x 3/8" button head hex screw fasteners.

Assemble camera/lens combination. Estimate the rough balance position of the assembly from front to rear.

Place camera/lens system into mounting cradle using supplied fasteners. Do not completely tighten the fasteners until after the next step.

Move the camera/lens assembly to the front or rear of the cradle until its' approximate balance point lines up with the center of the tilt pivot point. Now securely tighten the camera/lens mounting fasteners. Centering the weight of the camera/lens assembly on the mounting platform is IMPORTANT to insure the accuracy and smooth performance of the

pan-tilt system.

Attach connecting cables from controllers and power supply to the camera and the pan-tilt head. Use cable ties and mounts to insure that cables are not restricted, yet will not obstruct operation.

If using separate camera and pan-tilt power supplies, turn on power supply for camera first, then turn on power supply for the pan-tilt head. If using the integrated power supply from the PT head, make sure the camera is plugged in to the head before turning on the main supply.

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

Follow the detailed instructions in PT-C controller manual or the PT-PCS software manual for usage of the pan-tilt head.

4.ADDITIONAL SETUP INSTRUCTIONS IF USING PT-PCS SOFTWARE CONTROL INSTEAD OF HARDWARE CONTROL

If using PT-PCS software to control the pan-tilt head via computer, follow these instructions.

NOTE: Software is for use with Windows 95®, Windows 98®, or Windows NT® compatible computer systems only

Insert PT-PTC software disc into your computers' 3.5″ floppy drive

Click on Start on the Windows menu bar, and choose Run. Type in a: setup

Press ENTER key and follow the instructions that appear on the screen.

Connect communication cable from PT-200 pan-tilt head to PT-RSA RS-485 adapter. Plug PT-RSA adapter into an available COM port of the computer.

5.BUTTON DEFINITIONS FOR PT-C CONTROL PANEL

NOTE: when using the keypad, you must use the number key for the specific function you wish to access; for example, to press FUNCTION 16, hit the FUNCTION button,

then the 16 key. Do not use the separate 1 and 6 keys–this will not work!

CAMERA

Selects the camera / head combination to be moved. Select the CAMERA button followed by the number of the camera you wish to control. For example, to control camera 1, press "CAMERA" , then the 1 key. The display will show "CAMERA 1". Select the CAMERA then ALL button if you wish to move ALL camera heads.

STATUS

 This button will display the status of the current head selection on the status bar at the top of the program window. It is useful when trying to track a communications problem in the initial setup of the system. If the communications are working correctly, the display should return an "OK" when the STATUS button is pushed. Note that this will only report the status of a single station; it will not work if CAMERA / ALL is selected. If an unprogrammed camera is selected, no report will be returned; for example, if the status is asked for on camera #5 in a four camera system, etc.

SAVE PRESET

 Move the left joystick up, down, left, or right for positioning the head, manually aiming the shot the way you desire. Select FUNCTION 1 to begin the lens position mode (Fujinon / Canon lenses only). Use the zoom and focus in/out buttons to select the field of view as desired. YOU MUST ZOOM AND FOCUS TO SET UP YOUR SHOT AFTER ENTERING THE POSITION MODE !!. If you set up your zoom and focus before entering the POSITION mode, the lens will not report where it is in its' zoom and focus range to the software. Click the SAVE PRESET button followed by the number of the preset you wish to call it. Up to 16 presets may be saved for each individual pan tilt head.

RECALL PRESET

 Push this button followed by the number of the preset you wish to recall.

DELETE PRESET

Push this button followed by the number of the preset you wish to delete.

CHAIN

 Presets may be linked together with this function. It will automatically recall presets at intervals of your choosing. First, recall the preset number you wish to start from; even if you are at this preset currently, you must recall it in order to use the CHAIN function. Press CHAIN and the number of the next preset; Press TIME and enter the wait time at this preset in seconds from 1 to 16. Repeat this process for as many presets as desired to be linked. Recall the first preset and the CHAIN will start.

WIPER

This button controls the window wiper of the optional PT-EE-L environmental housing. This

button is only functional with the PTE-200 environmental head.

6.FUNCTION MODES

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

#1 Lens "position" mode.

Enter this mode to set lens zoom and focus presets. See section "SAVE PRESET" above for details on the operation of this function.

#2 Lens "speed" mode

(NORMAL OPERATING MODE)

#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(normal speed). If you now want to change travel speed to this preset to 2 (slow), recall preset 3, then enter FUNCTION, 3, and 2 for slow speed.

#4 Scene recall / Preset location functions.

Dependent upon the camera being used, i.e., if using the HV-D3, HV-D15, or Z-2010A 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 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 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.

#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.

#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.

#7 Pan tilt movement speed control mode.

This allows the overall speed of the pan and tilt motion to be changed. Press the FUNCTION key , 7, then 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 always operate at full speed, this is not changeable. It is also recommended that the PT-200 be used at HIGH and NORMAL speed ranges only; the weight and misbalancing of large cameras preclude the operation of the PT-200 head at SLOW speed ranges.

#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. If using the provided computer software control only, this function is not provided and not necessary.

#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 room, they can be configured such that they all move the same direction.

#10 Clear all movement limits.

This function will eliminate all position limits that may have been set to prevent excess travel. This clearing is temporary only; when power is reset, the previous limits will return unless you set new limits. Hit FUNCTION, then the 10 key; the display will ask if you really want to clear the limits. Press 1 to clear limits, 2 to cancel.

#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, 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 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.

This is set by the factory when ordered; 1 is for Rainbow / CCTV type lenses, 2 is for Fujinon telecon and Canon telecon lenses set to Fujinon mode.

#13 Set left pan limit.

Use the limit functions if you do not wish the head to pan or tilt the full 360°; 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.

#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

7.POWER REQUIREMENTS AND PIN CONFIGURATIONS

The PT-200 series of pan tilt heads require 24 volts DC power. Maximum draw is approximately 5 amps; average current draw in operation is 1.0 A for the motors, with the balance required for the camera. In operation with the PT-PS-3 power supply, the head will provide power for camera / lens combinations drawing up to 5 amp. If the camera / lens combination draws more than this, an external camera power supply is required. To help reduce power drop, it is common practice to run 4 conductors for power, with two for power and two for ground. Here is a chart with recommended AWG for different distances (at 77°F)

DISTANCE (FT)	AWG
20	29
50	26
100	22
200	18
500	16
1000	12

Here are listing of pin configurations for the connectors on the pan tilt head BASE:

HD 26 pin connector on base of PT head	MAIN PAN TILT CONTROL INTERFACE
PIN 1	RS-485 GROUND
PIN 2	RS-485 LINE 1
PIN 3	RS-485 LINE 2
PIN 21	GROUND TO 24VDC MAIN POWER SUPPLY PIN 3 OR 4
PIN 22	GROUND TO 24VDC MAIN POWER SUPPLY PIN 3 OR 4
PIN 24	+24VDC FROM MAIN POWER SUPPLY PIN 1 OR 2
PIN 25	+24VDC FROM MAIN POWER SUPPLY PIN 1 OR 2

The two BNC connectors on the head and exiting the base are provided to loop the video and genlock signals from your camera through the base without worrying about coaxial cables tangling. They are merely looping circuits; the left BNC connector on the head loops to the heat shrink marked connector exiting the base.

8. RS-485 COMMUNICATIONS SETUP

Communications for the PT-100/200 series is 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. Using 24 AWG shielded twisted pair cable, maximum communication length without a repeater is 4,000 feet.

To connect multiple units to the same communication line, connect the three wires in parallel from unit to unit. On each of the pan tilt heads and on the PT-C 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 for termination is located on the front of the unit next to a COMM status LED; with the switch towards the LED, the head is terminated; with the switch away from the LED, the head is unterminated. Heads are shipped with the termination turned ON. The LED provides visual feedback to the status of the head; if the head is called up on a controller, the LED is on solid; if the head is merely on the RS-485 line and listening for a command, it will flicker. If using a controller other than the Hitachi PT-C pan tilt controller, such as an AMX or Crestron control system, termination should be provided at the controller end.

9. BASIC CONFIGURATION DIAGRAM

See attached diagrams.