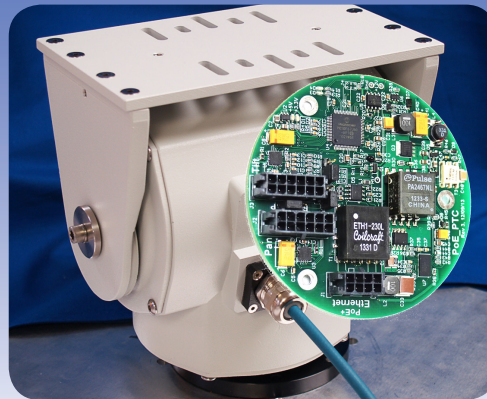


The JPTH-35PoE is the Worlds' First 802.3at Compliant Pan and Tilt Positioner.  
With Optional Heaters Allowing Operating Temperatures To Extended Well Below -40C.

**World's First  
PoE+ Pan/Tilt**

**Closed Loop DC Servo  
Accuracy and Repeatability**

*Operates From Any PoE+ Switch*  
*Built-In Web Interface*  
*-30C to +70C Operation*  
*Aux 12VDC Power Available*  
*Opt Heaters Can Extend Temp Range*  
*Torque Limiting Built-In*  
*Closed Loop DC Servo Systems*  
*Full PID Control*



*Precise Stopping Ability*  
*18 User Defined Preset Positions*  
*High Freq. Pulse Width Modulation*  
*Auto-Patrol Functionality*  
*Rugged IP 68 Construction*  
*Dynamic Current Management*  
*API Available*  
*Decodes Pelco D Across RS485*

### PoE+ Powered Pan / Tilt Positioner

The all new JPTH-35PoE represents a revolutionary development in PoE+ powered pan and tilt positioners. As a result of a unique Dynamic Current Management (DCM) algorithm, the JPTH-35MPoE+ can start and operate comfortably from any 802.3at high power PoE+ switch.

The proven JPTH-35, which has been deployed in the field for over 15 years in all types of weather, just became THE industry leader with the launch of the JPTH-35PoE. The DCM algorithm allows both the pan and tilt motors to start at the same time, while carrying the units full loaded weight of 35lbs, from any high power 802.3at PoE compliant switch.

This is the smallest pan and tilt positioner in the world that can carry a 35 lb load and operate from a high power PoE+ switch; truly World Class !

**Ideal For**  
**Military Field Applications w/ 12VDC**  
**Law Enforcement Deployments**  
**Remote or Ad-Hoc Monitoring**  
**Mobile Camera Systems**

### **Dynamic Current Management Insures Positive Torque Limiting to Help Prevent Motor or Gear Damage**

#### FEATURES

- Operates from any 802.3at PoE+ Switch
- Rugged Design w/ Pre-Hardened, High Tensile Strength Gears
- -30C (or colder w/ optional heaters) to +70C Operation
- Closed Loop DC Servo Operation for Precise Control
- Built-In Web Interface and Virtual Joystick Control
- User Defined Presets with Auto-Patrol Functionality
- Automated Torque Limiting
- Trapezoidal Motion Profile (Prog. Acceleration and Velocity)
- Low Cost w/ Proven Field Reliability

**J-Systems, Inc.**

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## Web Interface

### Main Control Panel:

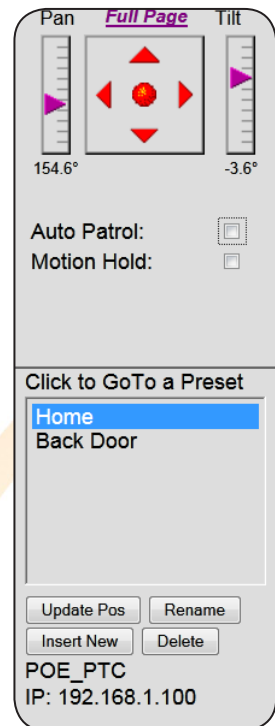
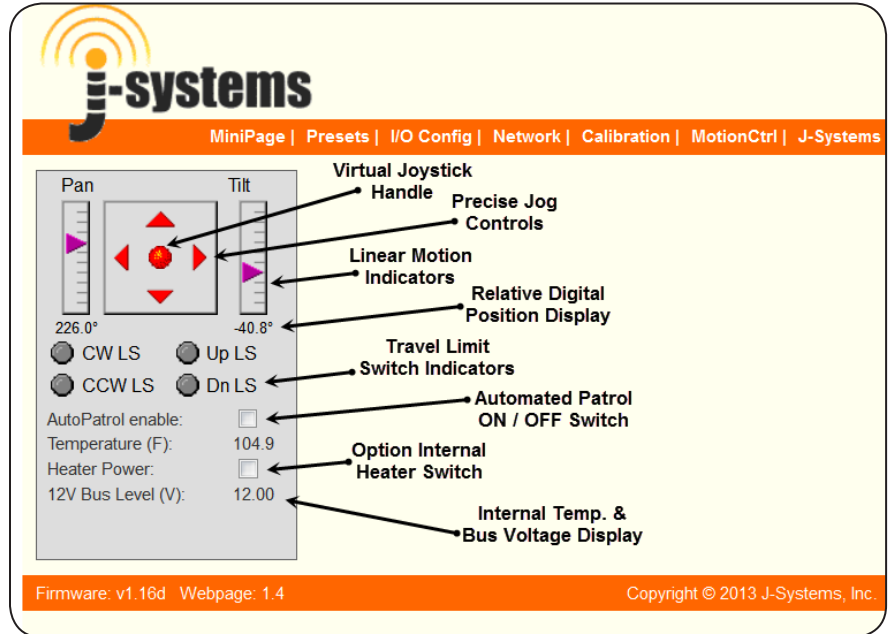
Shown to the right is the main Web interface control panel and Menu Bar allowing access to the MiniPage, Presets, I/O Config, Network, Calibration, MotionCtrl and the J-Systems' Web site.

The Red circle centered between the four red arrows is the virtual joystick. By grabbing this circle with your mouse you can drag it to the right to pan right, or drag it up to tilt up and so on. The closer the circle comes to the red arrows, the faster the movement resulting in proportional speed control.

The red arrows act as Jog controls offering small, precise movements for pan and tilt. These are extremely useful when using large focal length lenses.

The linear scales with magenta pointers provide a visual indication of movement direction as well as relative location. A digital display below each scale shows relative pan-tilt positions in degrees.

The Auto Patrol check box is checked to actuate the AutoPatrol function. The Heater Power check box is used to enable or disable optional motor heaters which can be used to extend the operating temperature range of the pan and tilt to well below -30C. Internal pan and tilt housing temperature which is measured approximately 3/4 inches above the control board is displayed as well as the actual 12VDC bus voltage.



### **MiniPage:**

MiniPage is a compact version of the above virtual joystick interface with a list of 'clickable' Presets. This compact interface is ideal for integration into video management system (VMS) recording applications.

The shape of the MiniPage can be easily altered by adjusting the width of the browser window. The image to the left shows the tallest vertical orientation.

The MiniPage offers full joystick control as well as easy click-and-go to a user defined Preset location. The Auto Patrol function can be turned on or off from here and Preset coordinates can be inserted, updated, renamed, and deleted from this page. For most users, this is the only control page needed for operation.

A special Motion Hold feature allows the closed loop DC servo system to be disabled to prevent servo position hunting in very high or gusty winds when using a large focal length zoom lens.

## Web Interface

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In addition to the Main Control panel and MiniPage, the following Web pages are also available:

- Preset - used to define up to 18 user presets for pan and tilt
- I/O Config - used to configure the RS-485 Pelco D decoding and select Pots or Encoders for position feedback
- Network - used to define all IP network parameters (DHCP, Port#, static IP, gateway etc.)
- Calibration - used once to establish soft travel limits for the pan-tilt head
- MotionCtrl - used to tune the PID response (factory set, normally requires no end-user adjustment)
- J-Systems - a link to the J-Systems Web site

### **Industry Leading Features and Benefits**

**Control Via IP Network or Pelco D Protocol** - the control system provides for several control interfaces. First, this is an IP based controller offering a virtual joystick interface in a Web browser (or custom program with our API) and secondly it can decode the Pelco D protocol so a physical RS-485 wired or wireless joystick can be used. In fact, both interfaces can be used simultaneously making this controller highly versatile.

**DCM (Dynamic Current Management)** - is a proprietary firmware algorithm that intelligently manages pan and tilt motor starting surge currents. This control scheme dynamically limits the pan / tilt motor currents so as not to exceed the power limits of an 802.3at PoE+ supply. A proprietary Trapezoidal Motion Profile offers programmable P/T head acceleration and velocity. DCM does not noticeably limit the speed or load carrying ability of the P/T head.

**High Tensile Strength Gear** - the JPTH-35PoE employs high tensile strength steel gears for maximum strength and torque handling ability. The main torque handling gears are cut from a solid pieces of pre-hardened stainless and 4140 steel.

**Extended Temperature Range Available** - this pan/tilt head now has the ability to extend its operating temperature range with the addition of optional internal motor heaters. Yes, even with motor heaters, PoE+ power can still be used. With the optional heaters, it is now possible to operate below -40C.

**Automated Torque Limiting (ATL)** - Another feature of the DCM algorithm is its ability to limit torque before damage can be done to the gear train or a stalled motor. Stalled DC motors can draw significant current and ultimately self-destruct from massive internal heat rise; they burn out. The ATL system limits stall current and torque by as much as 80% to prevent this type of disastrous damage.

**Over Travel Protection** - the JPTH-35PoE offers two levels of protection to ensure no dangerous over limit travel occurs. On the outside of the pan/tilt head there are Pan (left and right) and Tilt (up and down) user adjustable limit switch actuators. Additionally, during the Calibration process at the factory, soft limits are established just short of these limits. The soft travel limits and are designed to prevent the limit switch actuators from ever being tripped. Soft limits and limit switch actuators are fully user adjustable.

**Built To Survive** - with built in surge and lightening protection. Each unit is supplied with a 7ft high flexibility, UV protected CAT5 cable with shielded RJ45 jack on one end, in-line RJ45 shielded coupler, powder coated Aluminum body and components, and stainless steel hardware. It is IP-68 rated and designed for -30C to +70C operation in all types of weather.

**Ideal For Solar Power** - the JPTH-13MPoE draws approximately 2W of standby power with only a minor increase in power consumption when the pan and tilt motors are powered. Considering no heating or cooling are needed to operate this P/T head it offers a very green power footprint. Ideal for use with the J-Systems 12 or 24VDC powered PoE+ high power switch. (JSwitchPoE+)

**High Precision Repeatability** - precision potentiometers are used for positional feedback, you can expect a high degree of Preset position repeatability as a result of the precise closed loop DC servo systems that control both axes.

**Smallest 35lb Load P/T Head** - the JPTH-35PoE is without a doubt the world's smallest, harsh duty, PoE+ powered pan and tilt control system that has been designed for -30C to +70C operating temperatures and beyond.

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# SPECIFICATIONS

## Control Parameters

Variable Speed Control	Pulse Width Modulation (PWM) w/ Virtual Joystick
PWM Frequency	Approx. 40KHz
Start - Stop Profile	Soft Start and Rapid Soft Stop (Trapezoidal Profile)
DC Servo Control	Closed Loop PID Algorithm (tunable & adjustable)
Channels	2 (pan and tilt)
Calibration Method	Ability to Run In Open-Loop Servo Mode
PID Loop Tuning	Built-In PID Tuning Software (Graph to Excel)
Jog Control	Approx. 0.35 deg per jog with potentiometers (pan-tilt)
Controller Form Factor	Round PCB
Positional Accuracy	+/- 0.35 deg w/JPTH-35 PT Head
Position Indicators	Relative Linear Pointers and Digital Displays

## Functions

Pan-Tilt Positional Control	Brushed 12VDC Motor and Gear Train
DCM Current Management	Proprietary Dynamic Current Management Algorithm
Presets (P/T)	18 User Defined Presets for Pan and Tilt
AutoPatrol	Used Defined Dwell Times and Preset Selection
Auxiliary Heaters	<b>Optional</b> - aux. motor heaters to extend temp. range
Load Capacity	P/T Head Can Carry 35 lbs OVT
Motion Limits	User Adjustable Hard Limits & Soft Limits
Patrol Function	Any Or All of 18 Presets w/ Adjustable Dwell Time
12VDC DVM	Displays 12VDC Bus Voltage +/- .05V or 1%
Temperature Readout	Deg F at PCB Level +/- 3 degs F

## Operating Parameters

Operating Voltage	802.3at Compliant PoE+
Operating Temperature	-30C to +70C
Power Consumption	5 watts average (excluding external loads)
Overload Current	Automatic Torque Limiting Built-In
Connectors	7ft Shielded CAT5 Cable Terminated in RJ45 Coupler
ESD Protection	All I/O Pins Protected
RS-485	Decodes Pelco D Protocol

API (Application Program Interface) Available