COMPUTER CONTROLLED PAN-TILT UNIT
Models PTU-46-17.5 & PTU-46-70

- Simple control from host computer via RS-232/485

- Speeds to 300°/second

- Resolution to 0.012857°

- Load capacity to 6 lbs (2.72kg)

- Precise control of position, speed & acceleration

- On-the-fly position and speed changes

- Small form factor

- Low cost

- Applications:
  - Robotics & computer vision
  - Webcams
  - Security & surveillance
  - Industrial automation
  - Tracking
  - Laser ranging
  - Teleconferencing/distance learning
  - Photography, video & special effects

Actual size. Camera not included.

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COMPUTER CONTROLLED PAN-TILT UNIT
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Technical Specifications

General Features

- Simple to use from any RS-232 terminal or computer
- Fast and accurate camera positioning at low cost
- Precise control of position, speed & acceleration
- Small form factor
- Allows on-the-fly position and speed changes
- Self calibration upon reset
- Power consumption can be controlled from host
- ASCII command mode for simplicity, binary commands available for efficient program control
- DC power input from an unregulated source
- Radiation hardened
- CE Mark certified for Europe

Pan-Tilt Performance

	PTU-46-17.5	PTU-46-70
Rated payload	4 lbs (1.81kg)	6 lbs (2.72kg)
Max. unloaded speed (@36VDC)	300°/second	60°/second
Resolution	3.086 arc minutes (0.051428°)	0.771 arc minutes (0.012857°)

Acceleration/Deceleration: Trapezoidal. On-the-fly speed and position changes.

Tilt Range (approx): minimum 31° up and 47° down (78° range) with option of 80° down (111° range)

Pan Range (approx): ±159° (318° range) with option of ±180° (360° range)

Power Requirements

Input Voltage: 11-37VDC unregulated

Power Consumption:

16W continuous peak (full-power mode)
7.5W continuous peak (low-power mode)
1W continuous peak (holding power off mode)

Mechanical

Pan-Tilt Unit:
– **Weight:** 3 lb.
– **Dimensions:** 3" wide x 5.13" high x 4.25" deep
– **Camera mounting:** Hole for 1/4-20 screw standard. Camera mounting plate removes for easy customizing.
– **Pan-tilt unit mounting:** Bottom or front 1/4-20 mounting

Controller:
– **Weight:** 12 oz.
– **Dimensions:** 3.4" wide x 5.5" long x 2.5" high

Specifications subject to change without notice.

Built-In Connectivity Capabilities

Basic Mode: Host RS-232 port controls single pan-tilt unit

Extended Mode: Control of multiple pan-tilt units from one or more host computers. Multidrop RS-485 network using RJ-11.

Host Control

Host: RS-232 (default is 9600 baud, 1 start bit, 8 data bits, 1 stop bit, no parity, no handshaking). DB-9 female connector.

Host modes: Interactive Mode (ASCII command set) and Encoded Mode (binary format for higher bandwidth computer control)

Commands include:

<axis> is **T** for the tilt axis or **P** for the pan axis.

Axis Control Commands:

General form: <axis><command><value><dem>   [<status>]

Go to position: <axis>**P**<position><delim>   [<status>]

Go to offset position: <axis>**O**<relative position><delim>   [<status>]

Set target speed: <axis>**S**<positions/sec><delim>   [<status>]

Set acceleration: <axis>**A**<positions/sec^2><delim>   [<status>]

Set speed bounds: <axis>[**U** | **L**]<positions/sec><delim>   [<status>]

Move power mode:
<axis>**M**[<hi power> | <reg power> | <lo power>]<delim>   [<status>]

Hold (stationary) power mode:
<axis>**H**[<reg power> | <lo power> | <power off>]<delim>   [<status>]

Axis Queries:

General form: <axis><command><delim>   <query answer>
(Axis Control Commands become queries when the <value> argument is omitted.)

Resolution: <axis>**R**<delim>   <arc seconds per position>

Position bounds: <axis>[**N** | **X**]<delim>   <boundary position>

Unit Commands:

Command menu: ?<delim>   <menu>

Await completion: A<delim>   <status>

Reset unit: R<delim>   [<status>]

Immediate mode: I<delim>   [<status>]
(immediate position command execution)

Slaved mode: S<delim>   [<status>]
(position commands execute upon Await Completion command)

Defaults: D[<save> | <restore> | <factory settings>]<delim>   [<status>]
(Saves and restores unit defaults at power up)

Available Options

- International AC/DC Power Supply (model PT-PS-IHPS)
- Weatherized option provides outdoor use (add "W" to PTU model)
- Nodal (gimbal) pan-tilt adaptor
  – Payload can mount at the intersection of the pan and tilt axes
  – Uses include rotating camera at focal point & mirror positioning
- C Programmer's Interface (model PTU-CPI)
- PTU network cabling kits (PTU-NET-SK and PTU-NET-AU)
- Analog joystick interface