COMPUTER CONTROLLED PAN-TILT UNIT
Models PTU-D46

• Simple control from host computer via RS-232/485
• Speeds to 300°/second
• Resolution to 0.012857°
• Load capacity over 9 lbs (4.08kg)
• Precise control of position, speed & acceleration
• On-the-fly position and speed changes
• Small form factor
• Low cost
• Applications:
  – Robotics & computer vision
  – Security & surveillance
  – Industrial automation
  – Tracking
  – Webcams
  – Laser ranging
  – Teleconferencing/distance learning
  – Antenna pedestal
  – Photography, video & special effects

Actual size. Camera not included.
**Computer Controlled Pan-Tilt Unit**

**Models PTU-D46-17 & PTU-D46-70**

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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

<table>
<thead>
<tr>
<th>MODEL</th>
<th>PTU-D46-17</th>
<th>PTU-D46-70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated payload</td>
<td>6 lbs (2.72kg)</td>
<td>9 lbs (4.08kg)</td>
</tr>
<tr>
<td>Max. unloaded speed (@30VDC)</td>
<td>300°/second</td>
<td>60°/second</td>
</tr>
<tr>
<td>Resolution</td>
<td>3.086 arc minutes (0.051428°)</td>
<td>0.771 arc minutes (0.012857°)</td>
</tr>
</tbody>
</table>

**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)

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### Power Requirements

**Input Voltage:** 8-30VDC unregulated

**Power Consumption:**
- 13W continuous peak (full-power mode)
- 6W continuous peak (low-power mode)
- 1W continuous peak (holding power off mode)

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### 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:** 8 oz.
- **Dimensions:** 3.25" wide x 4.5" long x 1.25" high

Specifications subject to change without notice.

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### 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-12.

#### 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><delim> ⇒ `<status>`
- **Go to position:** `<axis>`<P><position><delim> ⇒ `<status>`
- **Go to offset position:** `<axis>`<O><relative position><delim> ⇒ `<status>`
- **Set target speed:** `<axis>`<U|L><positions/sec><delim> ⇒ `<status>`
- **Set acceleration:** `<axis>`<positions/sec²><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>`
- **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>]`
- **Slaved mode:** `S<delim>` ⇒ `[<status>]`

**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-INT30V)
- 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 available
- Trackball and analog joystick interfaces available