Compact, Precise, Extremely Rugged Pan/Tilt Units

The PTU-D48 E Series supports any type of single or multi-part payload through a flexible bracketing system of top and/or side mounting. The real-time command interface supports advanced applications such as video tracking.

The PTU-D48 E Series has been proven in a wide range of mission-critical applications for positioning of cameras, lasers, antennas, or other instruments in both fixed and mobile environments. It is designed for high duty cycles and reliable operation 24/7 in harsh all-weather environments. The low parts count, and highly integrated design provides unsurpassed system reliability.

The latest evolution of FLIR pan-tilts incorporates a powerful 32-bit core electronics platform and real-time operating system to deliver superior motion control fidelity and improve performance.

KEY FEATURES INCLUDE:

• Large payload capacity to 15 Lbs
• Extremely precise positioning (to 0.006° with microstep)
• Wide range of pan speeds 0.006°/sec to 100° for smooth, precise control
• 360-continuous pan (with slip-ring option)
• Precise, real-time control of position, speed and acceleration
• Rigid worm gear design (no belts/pulleys) provides steady positioning in windy environments
• Integrated Ethernet and Web interfaces
• Increased command rates, reduced jitter
• Advanced microstep control

OPTIONS

• Payload brackets (top, side)
• Alternate colors/finishes
• Inertial stabilization
• Geo-pointing built in
### Specifications

#### Pan/Tilt Performance

<table>
<thead>
<tr>
<th>Side Mount</th>
<th>Top Mount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Max. Payload</strong></td>
<td>15 lb</td>
</tr>
<tr>
<td><strong>Pan Speed Range¹</strong></td>
<td>0.006°/sec – 10°/sec</td>
</tr>
<tr>
<td><strong>Tilt Speed Range</strong></td>
<td>0.003°/sec – 50°/sec</td>
</tr>
<tr>
<td><strong>Resolution – Pan</strong></td>
<td>0.006°</td>
</tr>
<tr>
<td><strong>Resolution – Tilt</strong></td>
<td>0.003°</td>
</tr>
</tbody>
</table>

#### Pan/Tilt Features

- **Tilt Range**: Programmable up to +30° to -90° from level (120° range)
- **Pan Range**: Programmable up to +/-180° range, nx360° with slip-ring option
- **Duty Cycle**: Up to 100% duty cycle
- **Acceleration/Deceleration**: On-the-fly speed and position changes

#### Power Requirements

- **Input Voltage**: Unregulated 12-30 VDC (fastest performance & torque @ 30 VDC)
- **Input Protection**: Over-voltage/over-current protection meets MIL-STD-1275D
- **Power Consumption** (Measured at 30 VDC):
  - Low move power mode: 19.8W
  - Regular move power mode: 26.4W
  - High move power mode: 34.5W
  - Hold power off mode: 3.3W

#### Connections & Communications

- **Base Connectors**
  - PRIMARY: Connector: 32-pin (MIL-C-26482) Includes: PTU-Power (3c) - 12-30 VDC + shield
  - PTU-Control (7c) - RS-232 (3c) and RS-485/-422 (4c)
  - Ethernet (4c) pan/tilt configuration/control
  - Payload Pass-Through (12c)
- **Payload Signal Pass-Through**
  - Power (2c): 30 VDC max. @ 3 A
  - Video-1 (2c), Video-2 (2c): NTSC/PAL/RS-170
  - Ethernet: 10baseT
  - Other (3c): 30 VDC max. @ 1 A
  - Connector: 19-pin (MIL-C-26402)
- **Computer Controls**
  - RS-232, RS-485/422, Ethernet
- **Control Protocols**
  - DP (ASCII, Binary), Pelco-D (option), Nexus-compatible

#### Mechanical

- **PTU Weight**: < 12 lbs (not including brackets)
- **PTU Dimensions**: 10.46” (h) × 6.84” (w) × 5.45” (d) (with top bracket)
- **Payload Mounting**: Side and/or top
- **PTU Mounting**: Pedestal
- **Material**: Machined aluminum

#### Packaging & Environmental

- **Standards**: IP67 Certified
- **Operating Temperature²**: -30°C to 70°C (no heaters)
- **Humidity**: 100% relative humidity, non-condensing
- **Ice (Operating)**: Sustained operation with 0.25” ice buildup
- **Dust/Sand (Operating)**: Sustained exposure to blowing dust/sand
- **Wind/Rain/Fog**: IP67
- **Salt Spray**: MIL-810G Salt Spray
- **Color/Finish**: Black anodized and powder-coated; custom colors/finishes available
- **Shock/Vibration Certifications**:
  - MIL-STD-810G Method 514.6 Vibration, Method 516.6 Drop Test, Method 516.6 Shock
- **EMI**: CE Mark and FCC, Part 15, Subpart B, Class A

¹Unloaded. Maximum speed may depend on exact payload configuration and input voltage.

²Reduced speeds may be required for low temperature operation.

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