Compact, Stabilized, Extremely Rugged Pan/Tilt Unit

The PTU-D48-ISM E-Series provides high-performance stabilized positioning for payloads up to 10 pounds. Stabilization improves images while on the move and allows communications links to be maintained from air, ground, or sea platforms. The PTU-D48-ISM E-Series is an ideal OEM platform for a wide range of applications including slew-to-cue, video tracking, and antenna tracking.

The PTU-D48-ISM E-Series is based on FLIR’s second generation ISM stabilization platform providing superior performance. The compact, all-in-one design simplifies cabling and improves reliability. 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 and is simple to integrate.

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:**

- 3-axis, integrated gyro
- Rigid worm gear design (no belts/pulleys)
- Solid and vibration-tolerant for maritime and vehicle-mounted applications
- Wide range of pan speeds (< 0.006°/sec to 100°/sec)
- 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

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Specifications

<table>
<thead>
<tr>
<th>Pan/Tilt Performance</th>
<th>Side Mount</th>
<th>Top Mount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Payload</td>
<td>10 lb</td>
<td>0.003°</td>
</tr>
<tr>
<td>Pan Speed Range₁</td>
<td>0.006°/sec – 100°/sec</td>
<td>0.006°/sec – 100°/sec</td>
</tr>
<tr>
<td>Tilt Speed Range</td>
<td>0.003°/sec – 50°/sec</td>
<td>0.003°/sec – 50°/sec</td>
</tr>
<tr>
<td>Resolution – Pan</td>
<td>0.006°</td>
<td>0.006°</td>
</tr>
<tr>
<td>Resolution – Tilt</td>
<td>0.003°</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 +/-168º range, or 360 continuous. |
| Duty Cycle           | Up to 100% duty cycle |
| Acceleration/Deceleration | On-the-fly speed and position changes |

Stabilization

| Type                  | 2 Axis (3-axis, strap-down gyro, 2 stabilized axes) |
| Range                 | Full pan-tilt range of motion |
| Sine-wave Stability Error | <0.25° per axis @ 1 Hz (unloaded) |
| Slew Rate             | Up to pan/tilt maximum |
| External Control      | Accepts pan/tilt move commands while stabilized |

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):
  - 19.8W (Low move power mode), 26.4W (Regular move power mode)
  - 34.5W (High move power mode), 3.3W (Hold power off mode)

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 (9-12c)

- Payload Signal Pass-Through:
  - Power (2c): 30 VDC max. @ 3 A, Video-1 (2c): NTSC/PAL/RS-170
  - Video-2 (2c): NTSC/PAL/RS-170
  - High-Speed Pass-Through (4c): capable of 10baseT
  - Other (3c): 30 VDC max. @ 1 A, Connector: 18-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: 12.4 lbs (with top bracket)
- PTU Dimensions: 11.5” (h) x 6.84” (w) x 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
- Rain (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 color/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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advanced thermography solutions

15540 Rockfield Blvd, Suite C-110
Irvine, CA 92618

Phone: (949) 699-6600
Fax: (949) 699-6601
Email: info@movitherm.com
http://www.movitherm.com

**FLIR Systems, Inc.**

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