# Model PTU-D48 E-Series

## High-Performance Pan/Tilt Unit

Precise, Programmable, Rugged

### Real-time control, built-in Ethernet

The PTU-D48 E-Series is a high-performance real-time positioning system for payloads up to 15 Lbs.

The PTU-D48 E Series pan/tilt offers very high precision positioning and speed control. The stepper motor/worm gear design supports micro-stepping and is based on a rigid bearing and mechanical design to ensure solid repeatable motion. The unit is highly programmable with user parameters for range of motion, speed, acceleration, power consumption and more. The real-time command interface supports advanced applications such as video tracking. The low parts count, and highly integrated design provides unsurpassed system 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. It has been designed to be simple to integrate. The PTU-D48 E Series is an open platform that provides the flexibility needed while minimizing your development and integration effort.

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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 PTU-D48 E Series will help ensure your project is completed on-time and right the first time.

**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
- Solid and vibration-tolerant for vehicle-mounted applications
- Single connector for power, control, payload signals
- Flexible payload mounting (to or sides)
- Fully sealed for outdoor/marine applications (IP67)
- Wide temperature range with no heater required
- Wide-range DC power input (12VDC to 30VDC) with battery-friendly power controls
- Precise digital encoders
- Multiple control interfaces: RS-232/485/422 and Ethernet
- Multiple protocol command interface: FLIR-MCS, Nexus, Pelco-D

**Available options include:**

- Payload brackets (top, side)
- Alternate colors/finishes
- Inertial stabilization
- Geo-pointing

## About the E-Series Pan/Tilt Units

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

- Increased command rates, reduced jitter
- Advanced microstep control
- Digital encoders for closed-loop control
- User-programmable ranges of motion
- Integrated Ethernet and Web interfaces
- Slip-ring for 360° continuous pan
- On-board stabilization (with ISM option)
- On-board geo-pointing (with GPM option)
- CE mark, FCC, RoHs compliant


Surveillance


Military


Remote Sensing


Robotics


Maritime


Antennas

FLIR® | Motion Control Systems

# Model PTU-D48 E-Series

## Technical Specifications

### Pan/Tilt Performance

| | Side Mount | Top Mount |
|---|---|---|
| **Max. Payload** | 15 lb | 10 lb |
| **Pan Speed Range[1]** | 0.006°/sec - 100°/sec | 0.006°/sec - 100°/sec |
| **Tilt Speed Range** | 0.003°/sec - 50°/sec | 0.003°/sec - 50°/sec |
| **Resolution - Pan** | 0.006° | 0.006° |
| **Resolution - Tilt** | 0.003° | 0.003° |

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

### Pan/Tilt Features

| | |
|---|---|
| Max. Tilt Range | Programmable up to +30° to -90° from level (120° range) |
| Max. Pan Range | Programmable up to +/-188° 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 30VDC with loaded axes. May vary with application.) | 19.8W (Low move power mode)<br>26.4W (Regular move power mode)<br>34.5W (High move power mode)<br>3.3W (Hold power off mode) |

### Connections & Communications

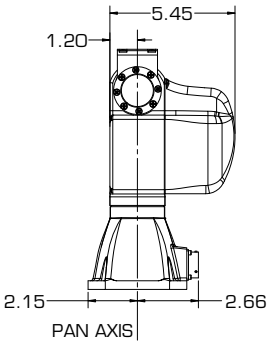
| | |
|---|---|
| Base Connectors | PRIMARY: Connector: 32-pin (MIL-C-26482)<br>Includes:<br>PTU-Power (3c) - 12-30 VDC + shield<br>PTU-Control (7c) - RS-232 (3c) and RS-485/-422 (4c)<br>Ethernet (4c) pan/tilt configuration/control<br>Payload Pass-Through (9-12c) |
| Payload Signal Pass-Through | Power (2c): 30 VDC max. @ 3 A<br>Video-1 (2c): NTSC/PAL/RS-170<br>Video-2 (2c): NTSC/PAL/RS-170<br>High-Speed Pass-Through (4c): capable of 10baseT<br>Other (3c): 30 VDC max. @ 1 A<br>Connector: 19-pin (MIL-C-26402) |
| Computer Controls | RS-232, RS-485/422, Ethernet |
| Control Protocols | DP (ASCII, Binary), Pelco-D (option), Nexus-compatible |

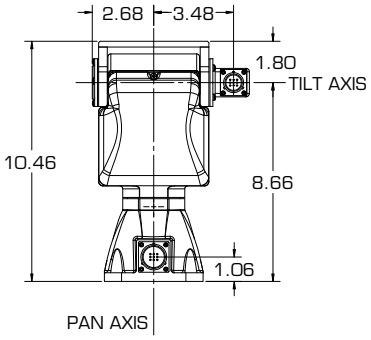
### Mechanical

| | |
|---|---|
| Weight | < 12 lbs (not including brackets) |
| Dimensions | 10.46"(h) x 6.84"(w) x 5.45"(d) (with top bracket) |
| Payload Mounting | Side and/or top |
| PTU Mounting | Pedestal |
| Material | Aluminum |

### Packaging & Environmental

| | |
|---|---|
| Standards | Designed to IP67 |
| Operating Temperature | -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-810F Salt Spray |
| Color/Finish | Black anodized and powder-coated; custom colors/finishes available |
| EMI Certifications | CE Mark and FCC Part 15, Subpart B, Class A |
| Certifications | RoHS Compliant |

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