Model PTU-D300EX E-Series

High-Performance Pan/Tilt Unit

Precise, Programmable, Rugged

adept electronic solutions
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Real-time control, built-in Ethernet

The PTU-D300EX E-Series is a high-performance real-time positioning system for payloads up to 90 Lbs. The PTU-D300EX is part of the PTU-D300 family offering higher gear ratios and all-stainless gear train providing increased payload capacities and superior long-term wear performance under harsh duty cycles.

The PTU-D300EX 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-D300EX 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-D300EX E Series is an open platform that provides the flexibility needed while minimizing your development and integration effort.

The PTU-D300EX 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-D300EX E Series will help ensure your project is completed on-time and right the first time.

Key features include:

- Large payload capacity to 90 Lbs
- Extremely precise positioning (to 0.0064° with microstep)
- Wide range of pan speeds 0.0064°/sec to 22° 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 rate and 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 span
- 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-D300EX E-Series

Technical Specifications

Pan/Tilt Performance (Standard)

	Side Mount	Top Mount
Max Payload[1]	90 lb (41 kg)	60 lb (27.2 kg)
Max Speed[2]	22°/second	22°/second

[1] Over-the-top payload assumes COG 6" from tilt axis; over the side payload assumes balanced COG.

[2] Maximum speed may depend on exact payload inertia and input voltage.

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)	27.6W (Low move power mode) 37.5W (Regular move power mode) 60.0W (High move power mode) 3.3W (Hold power off mode)

Pan/Tilt Features

Approx. Tilt Range	Programmable from +30° to -90° from upright (120° range) (up to +/-90° with single side mount)
Approx. Pan Range	Programmable up to 360° continuous
Min. Pan Speed	.0064°/second
Min. Tilt Speed	.0064°/second
Pan Position Resolution	.0064° (with microstepping)
Tilt Position Resolution	.0064° (with microstepping)
Duty Cycle	Up to 100% duty cycle, or 3-5 million cycles
Acceleration/Deceleration	Programmable, on-the-fly speed and position changes

Connections & Communications

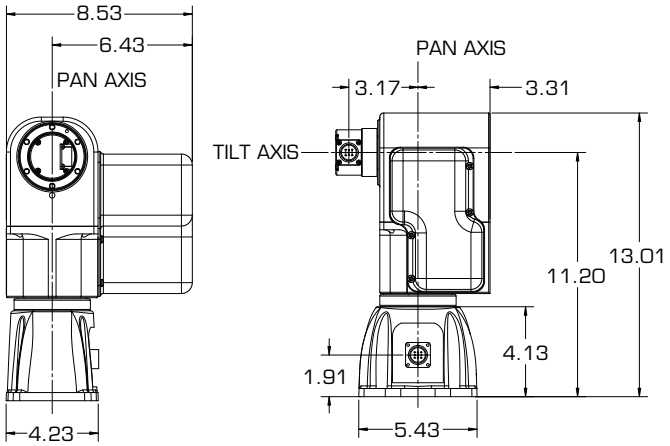
Base Connectors	PRIMARY: 32-pin (MIL-C-26482) Includes: PTU-Power (3c) - 9-30 VDC + shield PTU-Control (11c) - RS-232/-422/-485/ Ethernet (4c) pan/tilt configuration/control Payload Signals (9-12c)
Payload Signal Pass-Through	Power (2c): 30 VDC max @ 3 A max Video (4c) Other (3-6c): 30 VDC max @ 1 A max High-Speed Pass-Through (4c): capable of 10baseT
Computer Controls	RS-232, RS-485/422, Ethernet
Control Protocols	DP (ASCII, Binary), Pelco-D (option), Nexus-compatible

Mechanical

Weight	26 lb (11.8 kg) (Standard bracket: 1.25 lb)
Dimensions	Pan/Tilt Only: 13.01"(h) x 7.07"(w) x 8.53"(d) (without brackets)
Payload Mounting	Side-mount, top-mount, dual-side+top mount
PTU Mounting	Pedestal mount
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	P67
Salt Spray	MIL-801F Salt Spray
Color/Finish	Black anodized and powder-coated; custom colors and finishes available
EMI Certifications	CE Mark and FCC Part 15, Subpart B, Class A
Certifications	RoHS Compliant



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