

# PRECISION PAN-TILT UNIT

## High-speed positioning of heavy payloads

## Model PTU-D300

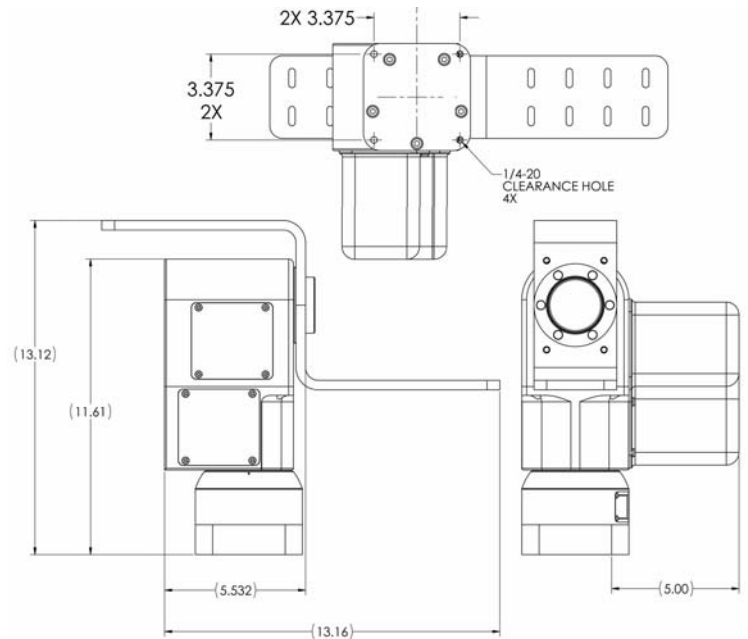
### Rugged, Compact, Feature-rich

The PTU-D300 is a family of modular computer-controlled pan-tilt units designed for fast, accurate positioning of heavy payloads. It provides high torque rated for payloads up to 70 lbs while maintaining speed, precision, and a very small form-factor. It offers multiple mounting options and a single connection point. It is designed for demanding applications that require high duty-cycles and long-life in harsh all-weather environments. Key features include:

- Rigid design provides steady images in windy environments
- Solid and vibration-tolerant for vehicle-mounted applications.
- Large payload capacity (35 lbs. top-mount; 70 lbs. side-mount)
- Wide-range of pan speeds ( $< 0.00643^\circ/\text{sec.}$  to  $50^\circ/\text{sec.}$ )
- Extremely precise positioning ( $0.00643^\circ$ ) allows translating object positions to global coordinates accurately
- $360^\circ$  continuous-pan including pass-through for many payload types (Video, IR, Microwave, Laser).
- Single connector for all video, control, power
- Flexible payload mounting (top or side)
- Precise control of position, speed & acceleration
- Simple control from host computer via RS-232/485
- Fully sealed for outdoor/marine applications (IP67)

### Applications:

- Long-range surveillance
- Antenna positioning systems
- Satellite communications systems
- Laser ranging systems
- Automated video detection & tracking systems
- Industrial automation
- Port security
- Vehicle & shipboard surveillance systems



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## Technical Specifications

### General Features

- Rigid design
- Solid and vibration-tolerant
- 360° continuous-pan with pass-through for any payload
- Single connector for all video, control, power
- Flexible payload mounting (top or side)
- Precise control of position, speed & acceleration
- CE Mark certified; Mil-spec optional
- Single DC power input

### Pan-Tilt Performance

	Side Mount	Top Mount
<b>Max Payload<sup>a</sup></b>	70 lbs. (31.7 kg.)	35 lbs. (15.8 kg.)
<b>Max. speed<sup>b</sup></b>	50°/second	50°/second

- a. Over-the-top payload assumes COG 6" from tilt-axis; over-the-side payload assumes balanced COG.  
b. Max. speed may depend on exact payload configuration and dynamics.

**Tilt Range (approx):** -30° to +90° from upright (120° range)

**Pan Range (approx):** 360° continuous

**Pan Speed Min:** .00643°/sec

**Pan Speed Max:** 50°/sec

**Tilt Speed Min:** .00643°/sec

**Tilt Speed Max:** 50°/sec

**Pan Position Resolution:** +/- 0.00643° (with microstepping)

**Tilt Position Resolution:** +/- 0.00643° (with microstepping)

**Duty Cycle:** Up to 100% duty cycle, or 3-5 million cycles

**Acceleration/Deceleration:** Trapezoidal. On-the-fly speed and position changes.

### Power Requirements

**Input Voltage:** unregulated 9-30VDC (fastest performance & torque @ 30VDC)

**Power Consumption** (measured at 30VDC):

49.2W avg, peak 2.25A (high power mode)

34.2W avg, peak 1.60A (regular power mode)

18.2W avg, peak 0.78A (low power mode(default))

1.6W (holding power off mode)

### Connections & Communications

**Base Connectors:** PRIMARY: AMP (MIL-C-26482). Includes:

PTU-Power (3c) - 9-30VDC + shield

PTU-Control (7c) - RS-232/RS-485

Payload Signals (9c)

SECONDARY: reserved

**Payload Signal Pass Through:**

Power (2c): 50VDC max @ 3A max

Video (4c):

Serial (8c): 2x Serial (CHA/CHB) from PTU-Controller

Other (3c): 50VDC max @ 1A max

Microwave: (DC-18GHz) (OPTIONAL)

Custom: various (OPTIONAL)

**Computer Controls:** RS-232 standard;

Built-in multidrop RS-485 networking

**Control Protocols:** DP (ASCII, Binary)

### Mechanical

**Weight:** 26 lb. (11.34 kg) (Standard bracket: 1.25 lb.)

**Dimensions:**

Pan-tilt only: 11.61" H x 5.53" W x 8.53" D

w/top mount bracket: 13.12" H

w/side mount bracket: 13.16" H

**Payload Mounting:** side-mount, top-mount

**PTU Mounting:** Pedestal mount

**Material:** Machined aluminum

### Packaging & Environmental

**Standards:** Designed to IP67

**Operating Temperature:** -30°C to 50°C

**Non-operating Temperature:** -30°C to 70°C

**Humidity:** 100% relative humidity, non-condensing

**Ice (operating):** sustain operation with 0.25" ice buildup

**Dust/Sand (operating):** sustain exposure to blowing dust/sand

**Wind/Rain/Fog:** IP67

**Salt Spray:** sustain operation in salt spray environments

**Color/Finish:** Black anodized

**EMI:** FCC Part 15, part B Class A

### Options

- Microwave payload pass-through (rotary joint)
- Side mount or top-mount brackets
- Geo-Pointing Module
- Ethernet/IP Interface
- Stabilization Module

Specifications subject to change without notice.