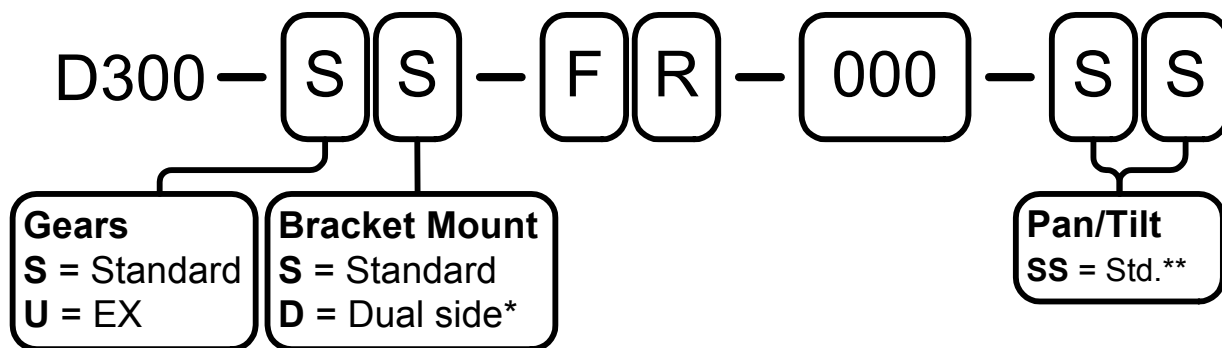


This *Configuration Guide* lists the configuration options and accessories for the PTU-D300-RF pan-tilt units (PTU-D300-RF) manufactured by FLIR Motion Control Systems, Inc. Additional information and instructions for the PTU-D300-RF are available in the following documents:

- PTU-D300-RF *Datasheet*
- PTU-D300-RF *User Manual*
- Pan-Tilt Unit *Command Reference Manual*

Model Numbers



* = Dual side hubs, with top bracket installed

** = SS denotes standard pan/tilt range of motion. Other lettering denotes alternate pan and/or tilt range of motion

Available Options

The following configuration and options are available for the PTU-D300-RF:

- **EX Gears:** The PTU-D300-RF with EX gears provides additional torque with slower axis speeds for heavier loads. Page 2.
- **Bracket Mount:** Payloads can be mounted on the top and/or side. A number of bracket options are available to suit each application. Page 2.
- **Wiring:** Different payload pass-through wiring options are available for passing signals through the PTU to the payload. Page 3.
- **Range of Motion:** If needed, you may request special limits. Page 4.
- **Pan-Tilt Controls:** The PTU-D300-RF can be controlled using an ASCII command set, Ethernet/web connection, external joystick, or binary command set. Page 5.
- **Accessories:** Available accessories include cables, converters, power supplies, and starter kits. Page 6.

EX Gears

The PTU-D300-RF with EX gears increases the maximum payload rating from 35 lbs. to 60 lbs. (top mount) or from 60 lbs. to 90 lbs. (side mount) by providing additional torque at reduced axis speeds.

Part Number: D300-S-_-FR-000-__ (standard gears) or
D300-U-_-FR-000-__ (D300-EX gears)

Bracket Mount

The PTU-D300-RF accepts payloads using top or side mounting. Side mounting offers the higher payload rating because it reduces tilt axis torque. The PTU-D300-RF itself can be mounted in any orientation; however, consideration should be given to gravity and torque effects depending on PTU orientation and payload mounting orientation and balance.

Single Side Mount

The PTU-D300-RF comes with a single side hub.

Part Number: D300-_-S-_-FR-000-__ (PTU)
D300-BKT-LSTD (side bracket)
D300-BKT-HDS (HD side bracket)

Dual Side Mounts

Alternatively, you may order the PTU-D300-RF with one or two optional side-mount bracket(s), with a permanently mounted top bracket.

Part Number: D300-_-D-_-FR-000-__ (PTU) and
D300-BKT-LSTD (bracket)

- **To order a PTU-D300-RF with one side-mount bracket:**

Order the PTU with two side hubs
(D300-_-D-_-FR-000-__) plus one bracket
(D300-BKT-LSTD).

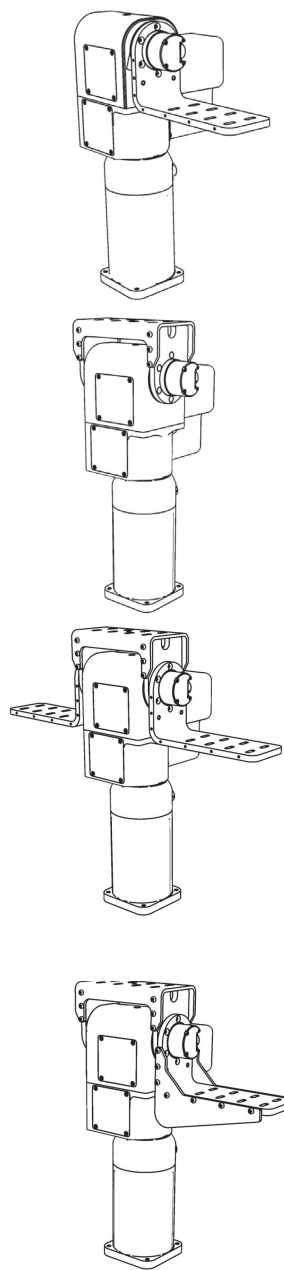
- **To order a PTU-D300-RF with two side-mount brackets:**

Order the PTU with two side hubs
(D300-_-D-_-FR-000-__) plus two brackets
(D300-BKT-LSTD).

Heavy payloads (above 20 lbs.):

Order heavy-duty brackets for payloads that exceed 20 lbs.

Part Number: D300-BKT-HDS (side)



Payload Wiring

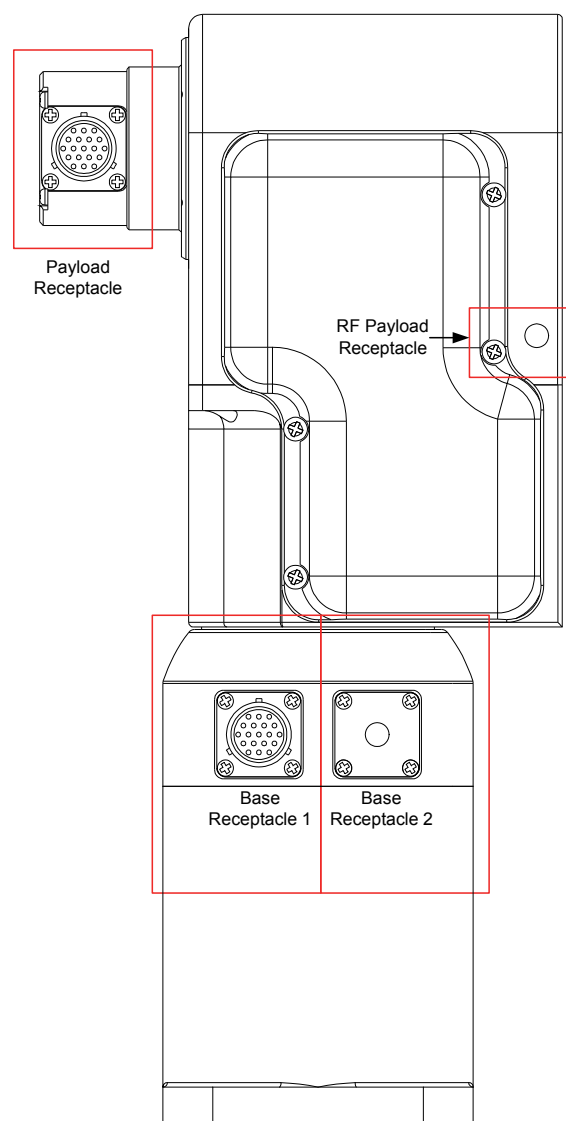
The PTU-D300-RF includes a single DC-18GHz RF channel as well as 10 additional channels for passing power, video, serial commands, and other functions.

- The payload receptacle contains lines for Video 1, Video 2, payload power, and general pass-through lines.
- The base receptacle contains lines for Video 1, Video 2, payload power, general pass-through lines, PTU control (RS-232, RS-485), and PTU power.
- The base and payload RF connectors contain a line for the single DC-18GHz RF channel.

PL01 Wiring

PL01 allows you to route signals to the payload as shown in the table via 10 dedicated conductors, not including the RF channel. A mating connector for cable construction is included.

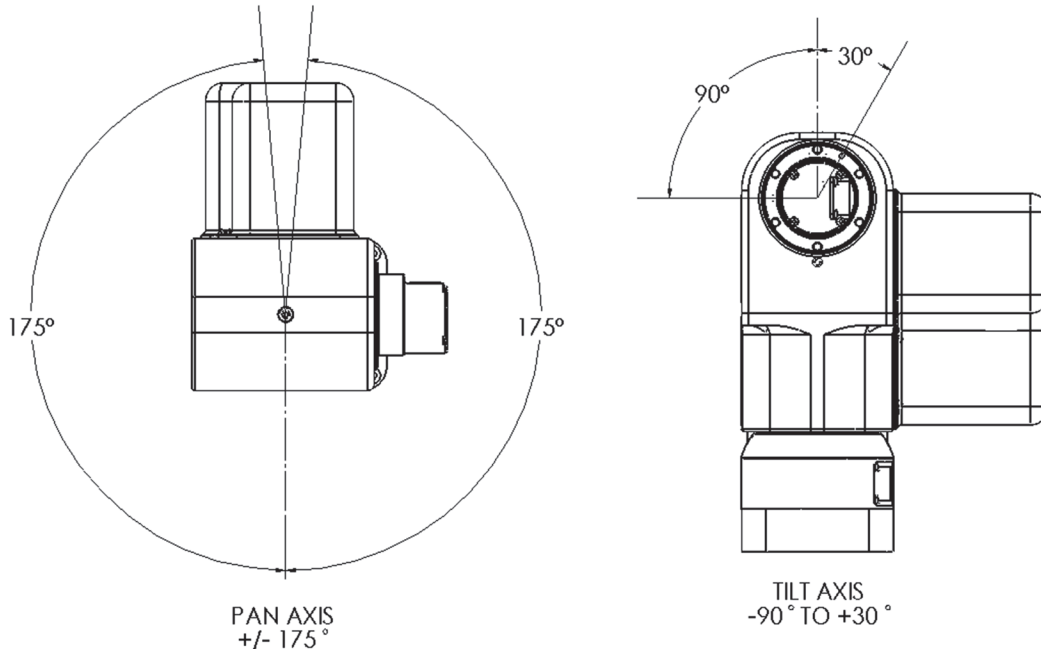
Part Number: D300-__-FR-000-__



Pass Through Conductors	PL01
Power	3
Video	4
General	3
RF (DC-18GHz)	1
Total	11
Signals at Payload	
TTL Outputs	1
PTU Host Control	3
CHA/CHB Serial	8
Base Connector	
RS-232 Host Control	YES
RS-485 Host Control	YES

Range of Motion

The PTU-D300-RF has the following standard factory pan and tilt axis limits. Factory limits define the range of motion allowed for an axis when limits are enabled, and that axis cannot travel beyond those limits. You may also order a PTU-D300-RF with an optional slip ring that allows continuous 360° pan-axis movement (see Page 3).



Note: You may special order a PTU-D300-RF with custom hard stops installed and/or with custom bracket positioning, factory ranges of motion, etc. Please contact FLIR Motion Control Systems, Inc. for assistance.

Pan Range Options

Part Number: D300-__-FR-000-S (std.)
D300-__-FR-000-* (custom)

Tilt Range Options

Part Number: D300-__-FR-000-S (std)
D300-__-FR-000-* (custom)

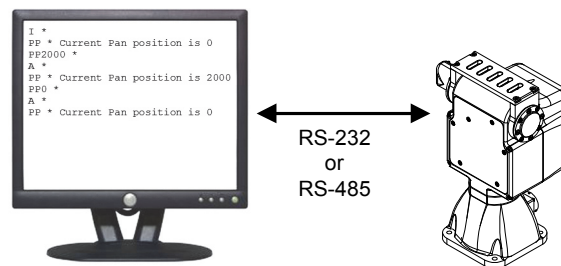
The part number on your PTU-D300-RF may vary as shown here to reflect any special-ordered custom limits, stops, etc.

Pan-Tilt Controls

PTUs support serial, Ethernet/web, binary, and joystick control interfaces that provide a wide range of system control architectures. The following options are available:

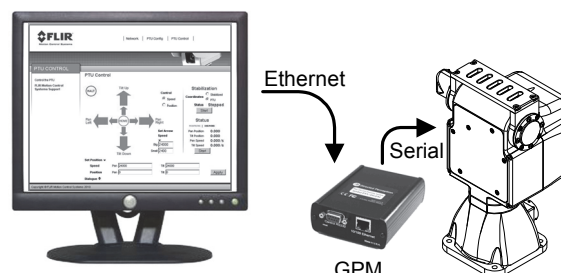
ASCII Command Set

Your PTU can be controlled via the standard built-in serial port (RS-232 or RS-485) using simple ASCII commands. (See the *Command Reference Manual*.) This can be done using a terminal program or a custom application.



Ethernet/Web Interface & GPM

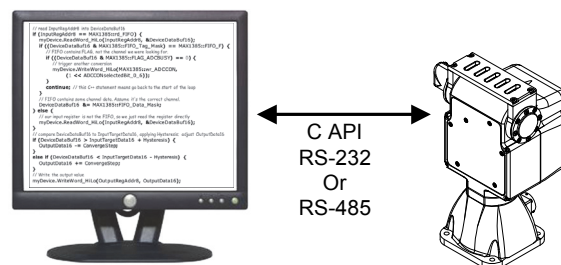
Your PTU can be controlled via Ethernet/IP using the Geo-Pointing Module (GPM), which includes a simple web-based interface for PTU control and configuration from a mouse and entered commands. The GPM also allows PTU control using latitude, longitude, and altitude commands. (See the *Geo Pointing Module Users Manual*.)



Part Number: PTU-DGPM

Binary Command Set (C API)

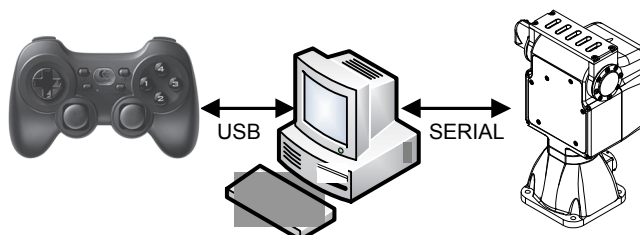
Your PTU can also accept binary commands using the optional C Language Binary Command Set (PTU-CPI), which is provided as ANSI C Source Code that you can compile into your application on most computing platforms (CPU/OS). The binary command format is recommended for high-performance applications such as tracking.



Part Number: PTU-CPI

Gamepad Controller

A USB gamepad controller is available to control a single PTU and up to two VISCA-compatible cameras that are connected to a host computer via a serial connection. The PTU Joystick Control utility is included with your PTU.



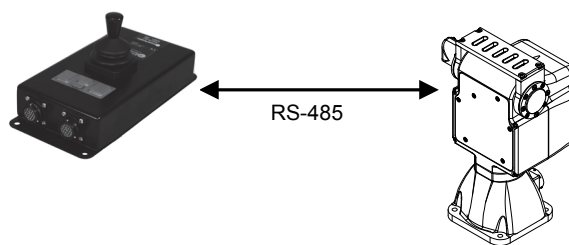
Part Number: PT-PSC



Note: Cameras should be connected to the host PC using a dedicated serial connection for each camera.

Rugged Joystick

A rugged joystick (PT-DCJ) is available for direct control of the PTU with no computer required. The PT-DCJ provides proportional joystick control and other inputs via a 25' connection cable. (Please see the *PT-DCJ Datasheet* for details.)



Part Number: PT-DCJ (joystick)
PT-DCJ-CABLE (25' DCJ cable)
PTU-CAB-25BO (DCJ BO cable)

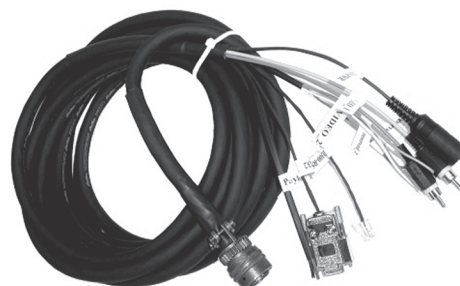
Accessories

The following accessories may be ordered for your PTU. These accessories simplify system prototyping and fielding.

Breakout Cables

The breakout cable connects to the 19-pin base connector (MIL-C-26482) on the PTU and terminates to standard connectors for power, serial communication, and payload signals. The terminating connectors are: Power (DIN), 2x video (composite), RS-232 (DB-9, female), RS-485 (RJ11), and payload pass-through conductors. Length: 25'.

Part Number: PTU-CAB-25BO (25') or
PTU-CAB-50BO (50') or
PTU-CAB-100BO (100')



Power Supply

PTU power supply unit. 30VDC output, 110/220VAC input.

Dimensions: 3.44"W x 2.01"H x 7.61"L.

Part Number: PTU-APS-30V-NA (North America) or
PTU-APS-30V-EC (Europe)



Note: Input voltages under 30V can reduce the maximum speed of the unit by an amount that is proportional to the voltage difference.



Starter Kit

The PTU starter kit includes one power supply (PTU-AC-APS-30V), one 25' breakout cable (PTU-CAB-25BO), and one USB to RS-485 adapter cable (PTU-CONV-USB-RS485).

Part Number: D300KIT-STR-NA (North America) or
D300KIT-STR-EC (Europe)



Note: Input voltages under 30V can reduce the maximum speed of the unit by an amount that is proportional to the voltage difference.

Mating Connector

Mating connector for the 19-pin base and payload connectors (MIL-C-26482) PTU connectors. Use this to make custom PTU and/or payload cables.

Part Number: PTU-CAB1-19PMILC (19-pin)



Note: Each PTU with a wiring option (PL01, PL02, or PL17) includes one (1) 19-pin mating connector (PTU-CAB1-19PMILC).



RS-485 to RS-232 Converter

Bi-directional module that converts signals from RS-232 to RS-485. Includes power supply, coupler, and cable.

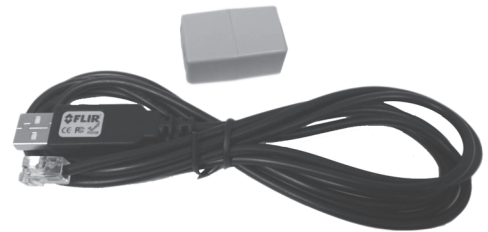
Part Number: PTU-CONV-RS485C



USB to RS-485 Adapter Cable

Cable that converts USB to RS-485 serial connections.

Part Number: PTU-CONV-USB-RS485



Rugged Joystick and Cable

This rugged joystick allows PTU control without a host computer. Cable ordered separately.

Part Number: PT-DCJ (joystick) and
PT-DCJ-CABLE (25' DCJ connection cable) or
PTU-CAB-25BO (19-pin breakout cable for DCJ)



Geo-Pointing Module and Ethernet/Web Interface

The Geo-Pointing Module (DGPM) provides both an Ethernet/web interface for PTU control and geo-pointing capabilities. Please see the following documents for additional information:

- *Geo-Pointing Module Datasheet*
- *Geo-Pointing Module User's Manual*

Part Number: PTU-DGPM



Extension Cables

An extension cable extends the length of the breakout cable. There is a male connector on one end and a female connector on the other. Available in 50' and 100' lengths.

Part Number: PTU-CAB-EXT-50 (50') or
PTU-CAB-EXT-100 (100')

