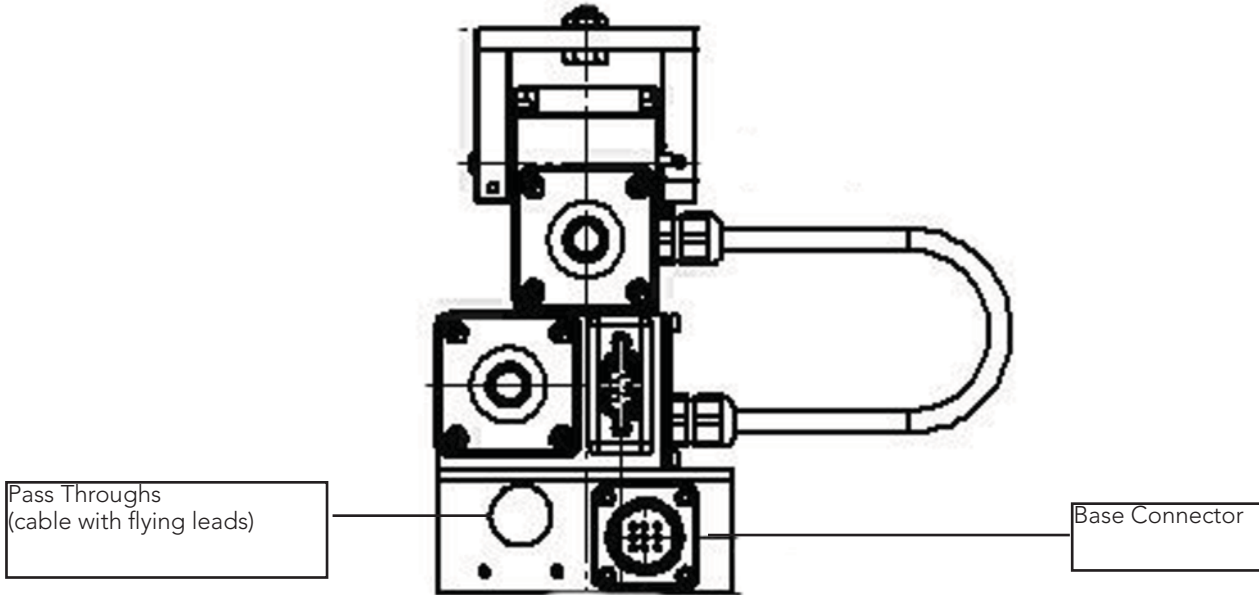




# 1 Payload Wiring

D47-SS-S-**A**-0000-SS

The D47 is available with pass through wiring. This option provides a set of flying leads carrying video, power, and other signals which extend from the base of the pan-tilt unit and are then wired externally to the payload. With this option, external cabling is simplified and streamlined. Please note, there is no slip ring on the D47 for 360° continuous rotation.



### No Pass Through

The PTU-D47 comes standard with no payload pass-through wiring.

#### Ordering:

D47-\_\_\_\_-\_\_-S-0000-\_\_-\_\_ No payload pass-through wiring  
 D47-SS-S-

### Pass through wiring (flying leads)

Allows you to route signals to the equipment mounted on the unit as shown in the table at the right. The PTU-D47 does not include a slip-ring for 360-continuous pan.

#### Ordering:

D47-\_\_\_\_-\_\_-A-0000-\_\_-\_\_ Payload pass-through wiring (flying leads)

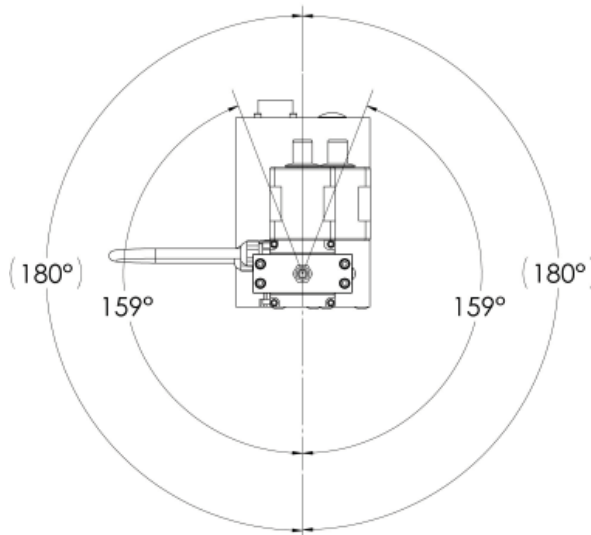
### PTU-D47 Payload Wiring Options

	No pass-through	Flying leads
	# of conductors	
<b>Passed Through</b>		
Power	0	2
Video	0	2
General	0	4
Total	0	8
<b>Base Connector</b>		
RS-232 Host Control	YES	YES
RS-485 Host Control	YES	YES

## 2 Ranges of Motion

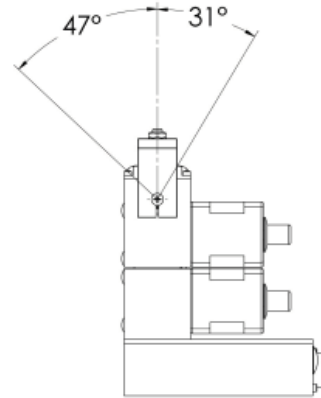
D47- S S - S - A - 0000 - S S

The PTU-D47 calibrates automatically on power-up using an internal precision limit detection system. In order for the unit to calibrate successfully, it must explore the full range of motion in both axes. If this calibration sequence may potentially interfere with surrounding equipment, modified pan and tilt ranges can be specified at time of order. The calibration sequence can be software controlled, and suppressed at power up. However the sequence must be executed before absolute position commands will be accepted. Range of motion limits must be set at the factory and cannot be changed by the user.



PAN AXIS +/-159°  
(+/-180° EXTENDED RANGE)

Pan axis  
+/- 159°  
+/- 180° with limits disabled



TILT AXIS  
-47° TO +31°

Tilt axis  
+31° to -47°  
+31° to -80° with limits disabled

### Pan Range Options

#### Ordering:

D47-\_\_\_-\_\_\_-\_\_\_ - 0000-\_\* <\* see below>

Example: D47- S S - S - S - 0000-AS = +005/-005 Pan

#### Available Pan Range Values

S	+159 / -159 (+/- 180 with limits disabled) (standard)
A	+005 / -005 Pan
B	+010/-010 Pan
C	+025 / -025 Pan
E	+035 / -035 Pan
F	+090 / -090 Pan
Z	Custom Pan (specify, requires engineering approval)

### Tilt Range Options

#### Ordering:

D47-\_\_\_-\_\_\_-\_\_\_-0000-\_\* <\* see below>

Example: D47-SS-S-S-0000-SC = +025/-025 Tilt

#### Available Tilt Range Values

S	+031 / -047 (+31/-80 with limits disabled) (standard)
A	+005 / -005 Tilt
B	+010/-010 Tilt
C	+025 / -025 Tilt
E	+035 / -035 Tilt
G	+000 / -040 Tilt
Z	Custom Tilt (specify, requires engineering approval)

### 3 Pan-Tilt Control

The PTU-D47 supports serial, ethernet, and joystick control interfaces enabling a wide range of system control architectures. Options are described below.

#### ASCII Command Set

The pan-tilt can be controlled over the built-in serial port (RS-232 and RS-485) using simple ASCII commands documented in the Command Reference Manual. This can be done using a terminal program such as Hyperterminal, or from a custom application. Performance using the ASCII command formats is approximately 10 commands/second.

##### Ordering:

<included in all configurations>

#### Binary Command Set (C API)

In addition to the ASCII format, the pan-tilt will accept binary forms of the commands. These binary formats are supported via our C Language Interface library (PTU-CPI) which is provided as ANSI C Source Code which can be compiled into your application on most any computing platform (CPU/OS). The binary command format supports over 60 commands/second and is recommended for high performance applications such as tracking.

##### Ordering:

PTU-CPI "C Language Programmer's Interface..."

#### Ethernet/Web Interface and Geo-Pointing

The pan-tilt can be controlled via commands sent over Ethernet/IP using the Geo-Pointing Module (GPM). A simple HTTP based command string format is documented in the Geo-Pointing Module User's Manual. The GPM also includes a graphical web interface that allows pan-tilt control and configuration from a mouse and entered commands. The GPM supports command rates of up to 2 commands/second.

The GPM also supports control of the pan-tilt by sending latitude, longitude, altitude commands over Ethernet. Operations of geo-pointing is described in the GPM User's Manual.

##### Ordering:

PTU-DGPM "Geo-Pointing Module..."

#### Rugged Joystick

A rugged joystick (PTU-DCJ) is available for direct control of the pan-tilt with no computer involved. The PTU-DCJ provides proportional joystick control and other inputs (see PTU-DCJ Datasheet for details).

##### Ordering:

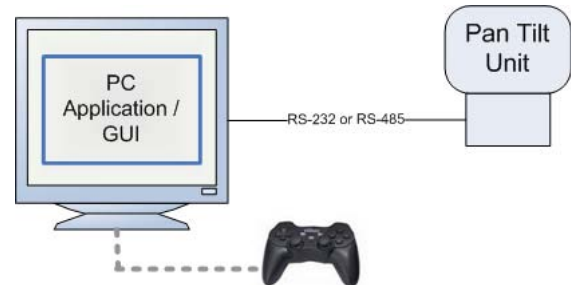
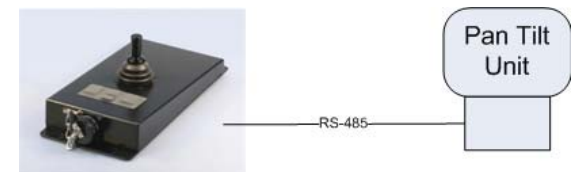
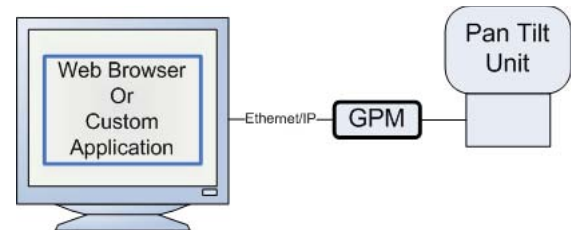
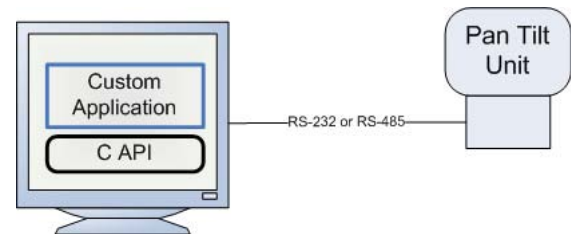
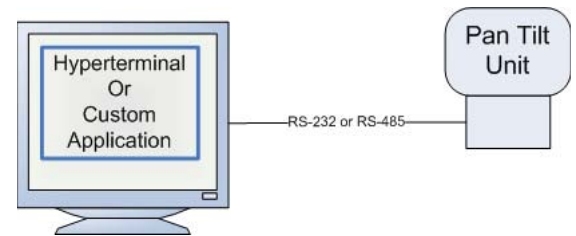
PTU-DCJ "Rugged Joystick/Controller..."

#### PC Control Interface (and gamepad option)

A PC-based software application (PT-AS-01) is available that accepts input from an attached gamepad controller (PT-PSC) and controls the pan-tilt via the PC's serial port.

##### Ordering:

PT-AS-01 "PC Software Application..."  
 PT-PSC "Gamepad Controller, Cordless 2.4 GHz..."



## 4 Accessories

The D47 is available with several optional accessories to simplify prototyping and fielding of systems. These accessories are described below.

### Breakout Cable

Connects to mil-style (MIL-C-26482) base connector of pan-tilt unit and terminates to standard connectors for power, serial communication, payload signals. Terminating connectors are: Power (DIN), 2x video (composite), RS-232 (DB-9, female), RS-485 (RJ11),. Length: 25 feet. Material: \_\_\_\_\_

#### Ordering:

PTU-AC-CAB-25BO "Cable harness..."

### Power Supply

AC/DC, 110/220VAC input, 30VDC output power source for the pan-tilt unit.

Dimensions: 3.44"W x2.01"Hx7.61"L.

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

#### Ordering:

PTU-AC-APS-30V "AC/DC International power supply..."

### Starter Kit

Includes one power supply (GENAC-APS-30V) and one breakout cable (GENAC-CAB-25BO).

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

#### Ordering:

D48AC-Kit-Starter "Includes (1) GENAC-APS-30V, (1) GENAC-CAB-25BO..."

### Extension Cables

Extends length of breakout cable. Male connector on one end, female connector on the other. Available in 50' and 100' lengths.

#### Ordering:

PTU-AC-CAB-Ext-50 "50' extension cable..."

PTU-AC-CAB-Ext-100 "100' extension cable..."

### Mating Connector

Mating connector for Base and Payload pan-tilt connectors (MIL-C-26482). Can be used to make custom cables for pan-tilt and/or payload.

#### Ordering:

PTU-AC-cable01-19PmilC "Mating connector..."

### RS-485 to RS-232 converter

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

#### Ordering:

PTU-AC-Conv-RS485C "RS232/485 converter..."

### Rugged Joystick and Cable

A rugged joystick that allows control of the pan-tilt with no host computer. Cable ordered separately.

#### Ordering:

PT-DCJ "Rugged Joystick/Controller..."

PT-DCJ-Cable "25' Cable to connect PT-DCJ to PTU..."

### Geo-Pointing Module and Ethernet/Web Interface

The Geo-Pointing Module provides ethernet/web interface to control the pan-tilt, as well as geo-pointing capabilities. See the Geo-Pointing Module datasheet and User's Manual for details.

#### Ordering:

PT-DGPM "Geo-Pointing Module..."

