

# PT-25-FB

## HEAVY DUTY PAN & TILT UNIT WITH FEEDBACK



**Internal limit switches and feedback potentiometers provide orientation information at control station**

**40 N-m (30 lb-ft) of output torque on each axis handles heavy loads**

**Optional RS-485 control for advanced control options and features**



Dual axis heavy duty pan & tilt with position feedback and optional RS-485 control to remotely orient camera systems, acoustic equipment, and other instrumentation.

The unparalleled reliability of the PT-25-FB is due in part to its rugged construction. Housings and machined components are made of corrosion resistant, hard-anodized aluminum. All external hardware is made of stainless steel for deep water or hazardous environment applications.

The PT-25-FB provides 40 N-m (30 lb-ft) of output torque on each axis. Heavy-duty ball bearings supporting the output shaft allow it to accommodate heavier payloads up to 100 pounds. The drive train for each axis of the pan & tilt uses either a reversible synchronous motor or a brushless stepper motor coupled to low backlash harmonic gearing. The rugged design of the gear train allows stalling of either output shaft without damage to the gears or the motor.

This positioner is equipped with internal limit switches and position feedback potentiometers on both axes. The potentiometers sense pan and tilt orientation angles for display at the remote control station.

With the choice of different power configurations, AC or DC, the PT-25-FB can be used in a wide array of varying environments and applications. Additionally, the 24 VDC model with optional RS-485 communication protocol is highly configurable and precision controllable.

The PT-25-FB heavy duty pan & tilt complements all ROS underwater lights and camera systems and was designed to be an integral part of turnkey, remotely operated, video inspection systems.

All ROS positioning units are available in either dual or single axis configurations.

# PT-25-FB - Heavy Duty Pan and Tilt Unit with Feedback

## PERFORMANCE

Power:	120 VAC, 0.5 amps per axis; 24 VAC option available 24 VDC, 1.5 amps per axis	
Torque:	30 lb-ft (40 N-m) per axis	
Rotation Speed (80:1 gears):	5.4 degrees/second (0.90 RPM) 4.9 degrees/second (0.82 RPM) Programmable, 0.5 to 20 degrees/second (0.08 to 3.3 RPM)	
60 Hz:	5.4 degrees/second (0.90 RPM)	
50 Hz:	4.9 degrees/second (0.82 RPM)	
RS-485 model only:	Programmable, 0.5 to 20 degrees/second (0.08 to 3.3 RPM)	
Harmonic gear backlash (80:1 gears):	0.5 degrees (30 arc minutes)	
Scan Range (both axes):	+/- 170 degrees max	
Scan Range with optional yoke bracket:	+/- 170 degrees pan axis, +/- 90 degrees tilt axis	
Feedback Potentiometer:	Absolute position (1000 ohm wire-wound)	
Resolution:	+/- 0.5 degrees (30 arc minutes); high-resolution potentiometer available	
Static braking option (24 VDC model only):	Requires an additional connector pin	
Control protocol option (24 VDC model only):	RS-485, 2-wire half duplex, 8 bit data, 1 stop bit, no parity, no hardware flow control	
Networkability (RS-485 model only):	Up to 32 ROS RS-485 nodes sharing the same cable for power and communication	

## MECHANICAL

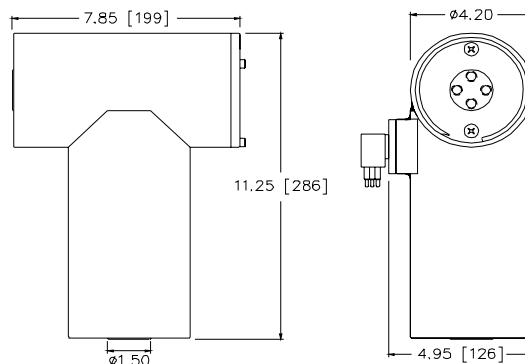
Housing Material:	Anodized 6061-T6 Aluminum	Electropolished 316 Stainless Steel
Height:	286 mm (11.25 in)	286 mm (11.25 in)
Width:		
Air-filled:	199 mm (7.85 in)	199 mm (7.85 in)
Oil-filled with bellofram:	243 mm (9.55 in)	243 mm (9.55 in)
Length without connector:	126 mm (4.95 in)	126 mm (4.95 in)
Main Body Diameter:	107 mm (4.20 in)	107 mm (4.20 in)
Output Shaft Diameter:	38.1 mm (1.50 in)	38.1 mm (1.50 in)
Weight in Air:		
Air-filled:	8.7 kg (19.2 lbs)	10.5 kg (23.2 lbs)
Oil-filled:	9.8 kg (21.5 lbs)	11.6 kg (25.5 lbs)
Weight in Water:		
Air-filled:	4.6 kg (10.2 lbs)	9.3 kg (20.6 lbs)
Oil-filled:	5.7 kg (12.5 lbs)	10.8 kg (23.9 lbs)
Standard Connectors:	LPBH-9-MP, MHDG-10-BCR	
Housing Mounting:	Four 3/8-16 threaded holes in output pan shaft	
Equipment Mounting:	Four 3/8-16 threaded holes in output tilt shaft	
Mounts:	ROS mounting plate and yoke bracket optional	
External Mechanical Limits:	ROS stop collar optional	
Compensator (oil-filled units only):	Bellofram	

## ENVIRONMENTAL

Operating Depth:	
Air-filled:	30 m (100 ft)
Oil-filled:	3,000 m (10,000 ft) standard 6,000 m (20,000 ft) available
Operating Temperature:	0°C to +50°C (32°F to 122°F)
Storage Temperature:	-20°C to +60°C (-4°F to 140°F)
Radiation Tolerance:	1 x 10 <sup>8</sup> rad (max accumulated dose)

## ROS STANDARD PIN-OUT

- 1 - COMMON
- 2 - TILT CCW
- 3 - TILT CW
- 4 - PAN CW
- 5 - PAN CCW
- 6 - +15 VDC FEEDBACK EXCITATION
- 7 - -15 VDC FEEDBACK EXCITATION
- 8 - TILT FEEDBACK
- 9 - PAN FEEDBACK
- 10 - BRAKING (OPTION)



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