

# R-10-FB

## ROTATOR UNIT WITH FEEDBACK



**Internal limit switch and feedback potentiometer provide orientation information at control station**

**13.56 N-m (10 lb-ft) of output torque handles moderately heavy loads**

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



***Single axis rotator with position feedback and optional RS-485 control to remotely orient camera systems, acoustic equipment, and other instrumentation.***

The unparalleled reliability of the R-10-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 R-10-FB provides 13.56 N-m (10 lb-ft) of output torque. Heavy-duty ball bearings supporting the output shaft allow it to accommodate heavier payloads up to 25 pounds. The drive train for the rotator 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 the output shaft without damage to the gear or the motor.

This positioner is equipped with an internal limit switch and position feedback potentiometer. The potentiometer senses rotation orientation angles for display at the remote control station.

With the choice of different power configurations, AC or DC, the R-10-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.

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

*ROS has been manufacturing an array of harsh environment cameras, lights, positioners, and specialized systems designed for oceanographic, nuclear, industrial, and military applications for over 30 years.*

# R-10-FB - Rotator Unit with Feedback

## PERFORMANCE

Power:	120 VAC, 0.135 amps; 24 VAC option available 24 VDC, 1.5 amps
Torque:	10 lb-ft (13.56 N-m)
Rotation Speed (88:1 gears):	
60 Hz:	4.9 degrees/second (0.82 RPM)
50 Hz:	4.1 degrees/second (0.68 RPM)
RS-485 model only:	Programmable, 0.5 to 20 degrees/second (0.08 to 3.3 RPM)
Harmonic gear backlash (88:1 gears):	0.6 degrees (36 arc minutes)
Scan Range:	+/- 170 degrees max
Feedback Potentiometer:	Absolute position (1000 ohm wire-wound)
Resolution:	+/- 0.5 degrees (30 arc minutes)
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

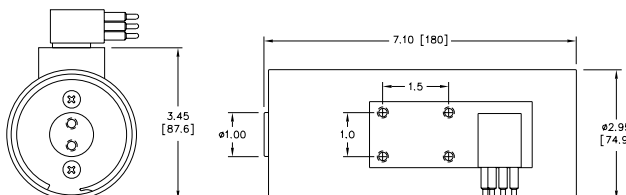
Housing Material:	Anodized 6061-T6 Aluminum
Length:	
Air-filled:	180 mm (7.10 in)
Oil-filled with bellofram:	225 mm (8.84 in)
Height without connector:	87.6 mm (3.45 in)
Main Body Diameter:	74.9 mm (2.95 in)
Output Shaft Diameter:	25.4 mm (1.00 in)
Weight in Air:	
Air-filled:	1.9 kg (4.3 lbs)
Oil-filled:	2.3 kg (5.1 lbs)
Weight in Water:	
Air-filled:	1.4 kg (3.1 lbs)
Oil-filled:	1.4 kg (3.1 lbs)
Standard Connectors:	LPMBH-7-MP, LPBH-7-MP, LPMBH-4-MP (RS-485 model only)
Housing Mounting:	Four 1/4-20 threaded holes in mounting boss
Equipment Mounting:	Two 1/4-20 threaded holes in output shaft
Mounts:	ROS mounting plate or 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) in air
Radiation Tolerance:	1 x 10 <sup>8</sup> rad (max accumulated dose)

## ROS STANDARD PIN-OUT

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



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