

Fiber Optic Rotary Joint

Model 292

Focal Technologies Corporation, a Moog Inc. company, has over 30 years of expertise in supplying standard and custom marine products for harsh environment applications and is a leading manufacturer of high performance and high quality fiber optic rotary joints. Contact Focal for any assistance in selecting the best solution for your requirements.



The Model 292 is an ultra-compact, two pass, multimode fiber optic rotary joint (FORJ). It is passive and bidirectional, and allows the transfer of optical signals on two separate optical fibers across rotational interfaces.

The Model 292 can be combined with our electrical and fluid slip rings, giving a single, compact package for optical signals, electrical power and fluid transfer.

The FORJ can be assembled with pigtail lengths tailored to the customer's application. Housing, mounting flange and drive features can also be customized to meet the customer's requirements. The Model 292 can also be installed with one or both ends having a 90° cable exit, providing even more flexibility when installing the unit into existing slip ring assemblies or installations with little clearance space.

Features

- Provides rotary coupling for two multimode fibers
- Passive and bidirectional
- Can be combined with various electrical slip rings and fluid unions
- Smaller and more compact than the standard FO215 with improved back reflection performance
- Customized mounting flanges available
- Optional 90 degree cable exits at either end of the FORJ
- Optional fluid-filled version for deep submergence to 10,000 psi (69,000 kPa)
- Can be integrated into existing slip ring designs
- Stainless steel housing
- Rugged design
 - MIL-STD-167-1 ship vibration
 - MIL-STD-810 functional shock (40 g)

Benefits

- Can be integrated into existing slip ring designs
- Passive bidirectional optical transmission
- Can be combined with our electrical slips and fluid unions
- Long life

Applications

- Winches and cable reels for remotely operated vehicles
- Remote I / O in industrial machinery
- Video surveillance systems
- Material handling systems
- Sensor platforms
- Robots
- Turrets

Specifications

292 Specifications	
Fiber Size (Microns)	50 / 125 (OM2), 62.5 / 125 (OM1). Consult factory for other sizes
Insertion Loss	Channel 1: Typical < 1.0dB, Maximum < 1.5dB Channel 2: Typical < 4.5 dB, Maximum < 6.0dB
Rotation Variation	Typical < 0.5dB, Maximum < 1.0dB
Back Reflection	Typical 20dB, 18dB Minimum
Wavelengths	Suitable for operation in 850nm and 1300nm multimode bands or 1300nm and 1550nm multimode bands. Consult factory for other wavelengths such as 900-1100nm band (tested at 1060nm)
Rotational Speeds	To 500 rpm. Higher rotational speeds should be discussed with the factory
Temperature	-40 to + 60 °C (dry version) -20 to + 60°C (wet version). Consult factory for extended range
Vibration	Per MIL-STD-167-1A
Shock	40 g / 11 ms sawtooth per MIL-STD-810 Method 516
Terminations	Pigtailed with cable and connectors to meet customer's requirements. Consult factory for other connectors
Pressure	Up to 10,000 psi (69,000 kPa) for fluid-filled version ¹
Pigtail Length	Up to 3 meters standard. Consult factory for longer lengths

Note: Optical values given are based on use with LED sources

¹ Fluid-filled version is slightly larger than shown below

