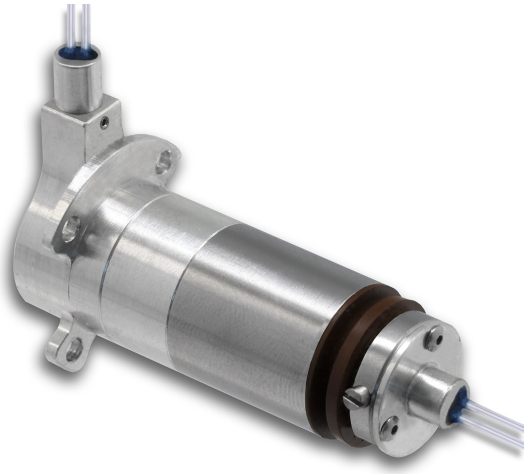
Two Channel Right Angle Fiber Optic Rotary Joint

Model 292RA

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 292RA is an ultra-compact, two-channel, multimode passive fiber optic rotary joint (FORJ) with a flange -mounted fiber axis 90 degrees from the axis of rotation and a shaft-mounted fiber axis coincident with the axis of rotation. The FORJ permits transfer of 850nm wavelength optical signals from VCSEL sources on two separate optical fibers across rotational interfaces, where one optical fiber may carry bi-directional signals and the second optical fiber must carry signals launched into the flange-mounted fiber.

The Model 292RA 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 pigtails 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 292RA is ideal for installations with little clearance space requiring a bi-directional duplex fiber connection across a rotating interface.

Features & Benefits

- Provides rotary coupling for two multimode fibers
- Can be combined with various electrical slip rings and fluid unions
- Smaller in size and mass compared to the standard Model 292 FORJ
- Right angle fiber entries on flange mounting side of FORJ
- Customized mounting flanges available
- Can be integrated into existing slip ring designs
- Stainless steel and aluminum housing for reduced mass
- Long life
- Rugged design
    - DEF STAN 00-35 tracked vehicle vibration
    - DEF STAN 00-35 shock (500g)

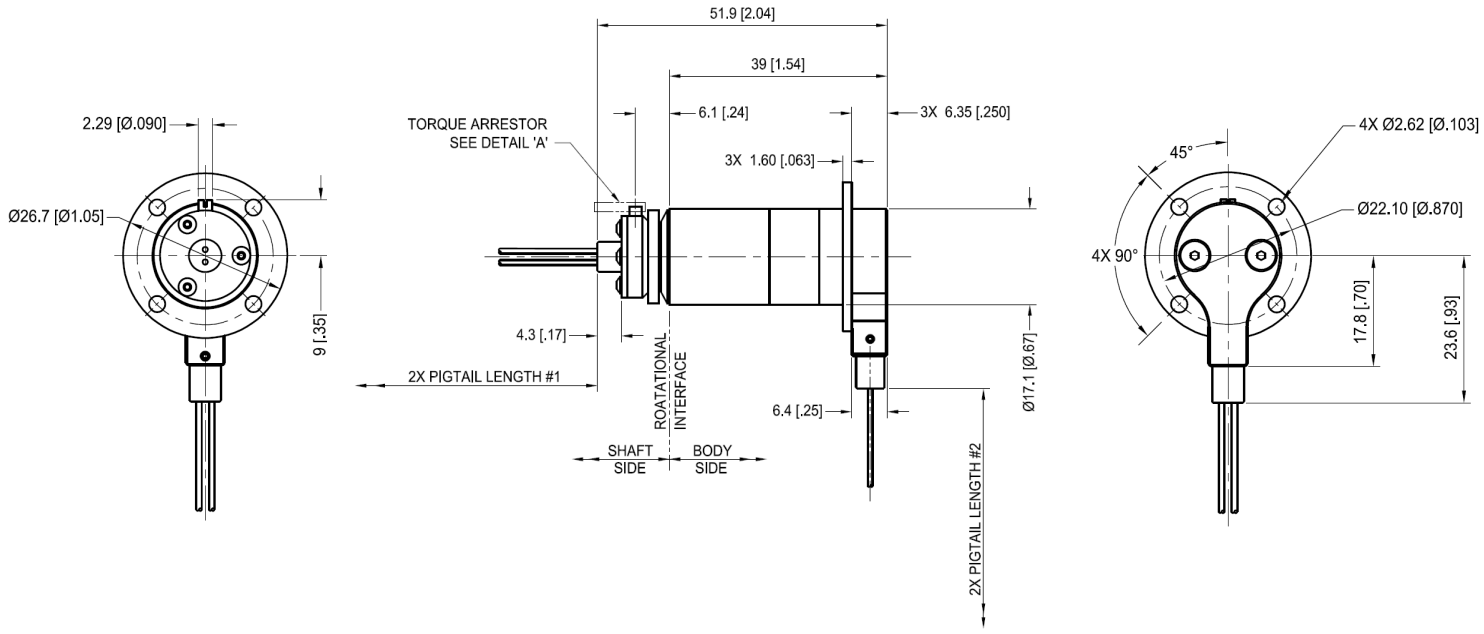
Applications

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

Specifications

292RA Specifications	
Fiber Size (Microns)	50 / 125 (OPM2), 62.5 / 12.5 (OM1). Consult factory for other sizes
Insertion Loss	Channel 1: Typical <=1.5dB, Maximum <=5.5dB Bi-directional Channel 2: Typical <=4.5dB, Maximum <=5.5dB Right angle flange side launch only
Rotation Variation	Channel 1: Typical <=0.5dB, Maximum <=1.5dB Channel 2: Typical <=1.0dB, Maximum <=1.5dB
Back Reflection	Typical >=20dB, Minimum >=18dB
Wavelengths	850nm. Consult factory for extended range
Rotational Speeds	To 500pm. Higher rotational speeds should be discussed with the factory
Temperature	-46 °C per DEF STAN 00-35 Part 3 Issue 4 Method CL5 +71 °C per DEF STAN 00-35 Part 3 Issue 4 Method CL2
Vibration	Per DEF STAN 00-35 Part 3 Issue 4 Method M1 Figure A22
Shock	Per DEF STAN 00-35 Part 3 Issue 4 Method M3 500g/1ms/half-sine
Terminations	Pigtailed with cable and connectors to meet customer's requirements
Pigtail Length	Up to 3 meters standard. Consult factory for longer lengths

Note: Optical values given are based on use with 850nm VCSEL sources



All specifications and information are subject to change without notice. Please contact Focal for the latest updates.

Dimensions in inches [mm].