Multi-channel Singlemode Fiber Optic Rotary Joint

Model 291

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 FO291 is a multi-pass, singlemode fiber optic rotary joint (FORJ). It is passive and bidirectional, and allows the transfer of optical signals across a rotational interface on 2 to 9 separate singlemode optical fibers.

The FO291 can be combined with our electrical and / or fluid slip rings, giving a single, compact package for optical signals, electrical power and fluid transfer, with ISO 9000 quality.

Other options include fluid-filling for pressure compensation permitting operation at any ocean depth, and the combination of the model 190 to include up to a total of 19 multimode passes.

Features

- 2 to 9 singlemode channels
- Can be combined with our electrical slip rings, fluid rotary unions and the model 190 multimode fiber optic rotary joint
- Alternative drive coupling arrangements are available (consult factory for specification details)
- Tested to 10,000 psi (69,000 kPa) when fluid-filled
- Aluminum and stainless steel construction
- Connectorized interfaces, for easy fiber cable replacement
- Rugged design
  - MIL-STD-167-1 ship vibration
  - MIL-STD-810 functional shock (40g)

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

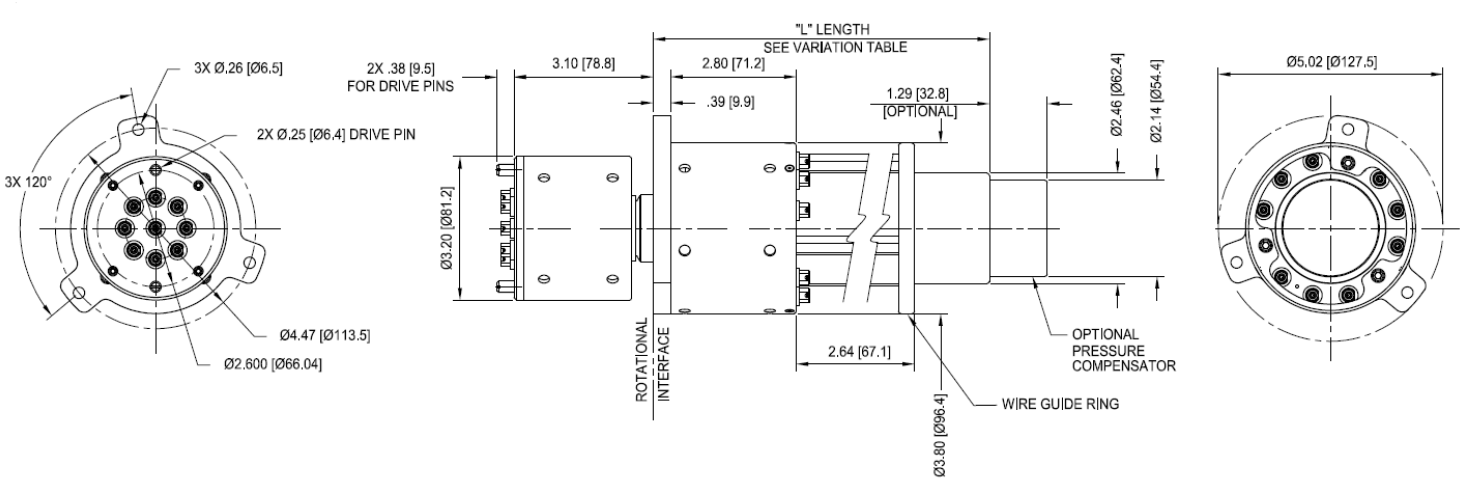
Applications

- Remotely operated vehicles
- Floating production systems
- Undersea telemetry
- Seismic streamers
- Radar antennas
- Cable reels

Specifications

FO291 Specifications									
Insertion Loss (dB) (Typical/Maximum, Includes Rotational Variation)	Channel	2-Pass	3-Pass	4-Pass	5-Pass	6-Pass	7-Pass	8-Pass	9-Pass
	1	2.0/3.0	2.0/3/0	2.0/3.0	2.0/3.0	2.0/3.0	2.0/3.0	2.0/3.0	2.0/3.0
	2	2.0/3.5	2.5/3.5	2.5/3.5	2.5/3.5	2.5/3.5	2.5/3.5	2.5/3.5	2.5/3.5
	3		2.5/4.0	3.0/4.0	3.0/4.0	3.0/4.0	3.0/4.0	3.0/4.0	3.0/4.0
	4			3.0/5.0	3.5/5.0	3.5/5.0	3.5/5.0	3.5/5.0	3.5/5.0
	5				3.5/5.5	4.0/5.5	4.0/5.5	4.0/5.5	4.0/5.5
	6					4.5/6.5	5.0/6.5	5.0/6.5	5.0/6.5
	7						5.5/6.5	5.5/6.5	5.5/6.5
	8							6.0/6.5	6.0/6.5
	9								6.0/6.5
Variation Length “L”, inch [mm]		3.82 [97.0]	4.70 [119.4]	5.59 [142.0]	6.47 [164.3]	7.36 [186.9]	8.24 [209.3]	9.13 [231.9]	10.01 [254.3]
Rotational Variation	Typical < 1.0 dB, maximum < 2.0 dB								
Back Reflection [1]	Typical > 22dB, minimum > 18 dB								
Wavelengths	Suitable for operation over full CWDM band (18 wavelengths from 1271nm to 1611nm in 20nm increments), tested at 1310nm and/or 1550nm. Consult factory for other wavelengths such as 900-1100nm band (tested at 1060nm)								
Rotational Speeds	To 100 rpm dry and 60 rpm fluid filled. Consult factory for higher rotational speeds								
Temperature	-40 to +60 °C standard. Consult factory for extended range								
Exterior Surfaces	Stainless steel and aluminum								
Vibration	Per MIL-STD-167-1A								
Shock	40 g / 11 ms sawtooth per MIL-STD-810 Method 516								
Connectors	FC / PC connector bushings standard (ST connector bushings optional)								
Pressure	Up to 10,000 psi (69,000 kPa) for fluid filled version								

[1] Lower back reflection available, consult factory.



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

Dimensions in inches [mm].

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