Fiber Optic Rotary Joint Slip Ring — Single

1265–1650 nm (SM), 750–1310 nm (MM)

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Fiber Optic Rotary Joints (FORJs), also known as fiber optic slip rings, provide a continuous optical connection between stationary and rotating optical fibers while allowing unrestricted 360° rotation. They are designed for applications requiring the transmission of optical data, communication signals, or laser power between static and rotating platforms during continuous or intermittent rotation. Our FORJs are engineered for low insertion loss, low insertion loss variation, low back reflection, high rotational reliability, and high-speed optical transmission. Available in single-channel and multi-channel configurations, they support both single-mode and multimode fibers for demanding applications.

Features

- Low insertion loss, high rotation speed
- Non-contact, zero friction, long working life, 1 channel can achieve one hundred million revolutions
- Small size, light weight, high sealing class
- Fiber optic transmitting signal, no electromagnetic interference, long-distance transmission

Applications

- Robot
- Material transfer system
- Rotating turret on vehicle
- Remote control system
- Radar signal
- Marine equipment and ship system
- Medical system
- Video monitoring system

Specifications

Parameter		Min	Typical	Max	Unit
Wavewidth	SM		1310/1550		nm
	MM		850/1310		
Insertion Loss (@23°C)				≤ 1.5	dB
Insertion Loss Ripple			≤ 0.7dB / (±0.35dB)		dB
Return Loss	SM		≥ 50 (APC), ≥ 40 (PC)		dB
	MM		≥ 30(PC)		dB
Power				23	dBm
Rotating Speed				2000	rpm
Working Life			> 100 million revs		
Rotating Torque			≤ 0.01		N.m
Working Temperature		-20 (-40)		+60 (+85)	°C
Storage Temperature		-45		+85	°C
Weight			15		g
Protection Grade			IP60 (IP65, IP67 optional)		

RoHS COMPLIANT

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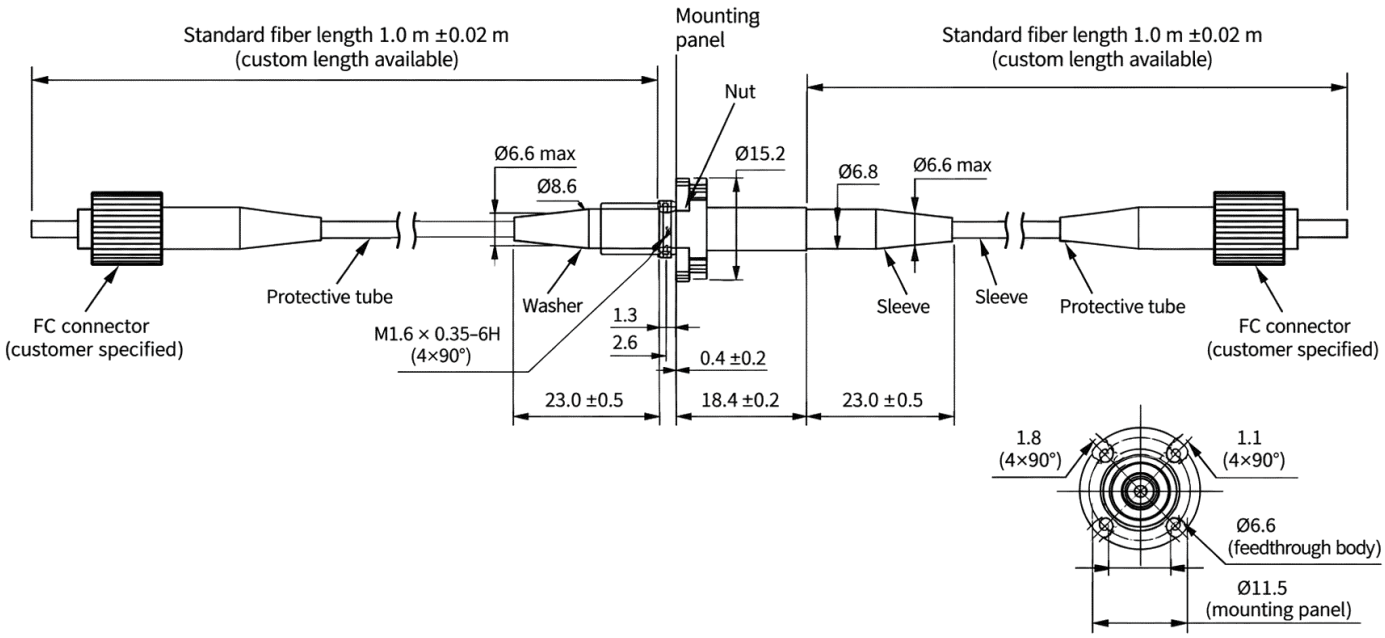
Mechanical Dimensions (mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

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Ordering Information (Part Number)

	FF	1	☐	☐☐	☐	☐	☐
Prefix	**Configuration**	**# Channel**	**Wavelength**	**Fiber Type**	**Fiber Cover**	**Fiber Length**	**Connector**
FORJ-	Fiber = FF	1 = 1	1310/1550nm = S 850/1310nm = M Special = 0	SM28 = 01 50/125 = 05 62.5/125 = 06 105/125 = 0A Special = 00	3mm tube = 3 0.9mm tube = 2 Special = 0	0.5m = 2 1.0m = 3 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 LC/UPC = U Special = 0

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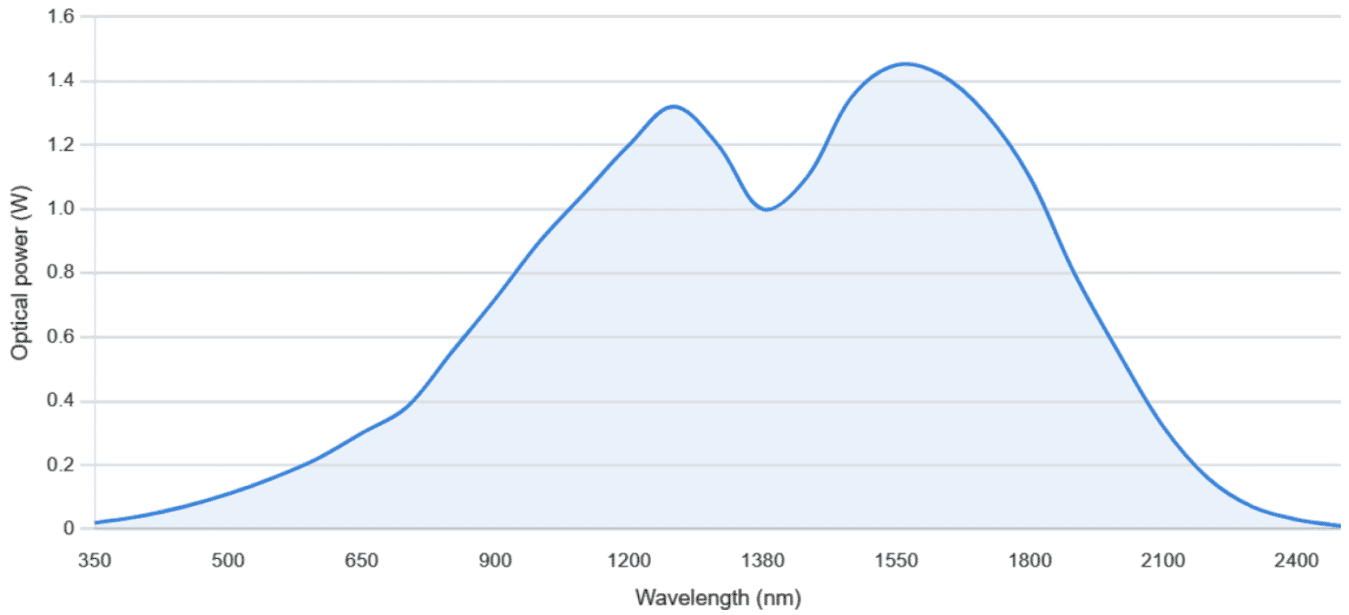
Regular Single Mode / Polarization Maintaining Fiber Optical Power Handing vs Wavelength



Single mode fiber optical power is limited by nonlinear effects in addition to absorption that increase loss and generate heat. The curve shows the approximate safe CW power envelope for standard single-mode fiber. Actual limits depend on fiber design, core size, length, and laser characteristics. Specialty fibers can significantly increase the power limit.

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