Product Brief

Fiber Optic Rotary Joints for Single- and Multiple-Fiber Transmission

Overview

OptoHub's fiber optic rotary joints enable continuous optical signal transmission between stationary and rotating interfaces. Based on micro-optics, collimator, and YAG welding technologies, they deliver low insertion loss, stable rotational performance and high reliability. Standard single-mode FORJs are designed for 1,310 nm and 1,550 nm operation, with multimode and hybrid optical/electrical configurations also available.

Features

Single-channel FORJ

- ϕ0.9 mm optical fiber strand type
- ϕ2 mm cord type
- Receptacle type

Multi-channel FORJ

- 6, 8, 10 and 12 channels and higher-count configurations available

MMF FORJ

- GI50 multimode fiber for 1,310 nm operation
- 6, 8, 10 and 12 channels

Single-channel FORJ with AC servomotor

- High-speed rotation using an AC servomotor

FORJ integrated with electrical slip ring

- Supports both SMF and MMF configurations

SPECIFICATION

Single-Channel/Multi-Channel

Parameters	Single-Channel SMF	Multi-Channel SMF
Insertion Loss	≤ 1.5 dB	≤ 5.0 dB
Rotation Loss	≤ 0.5 dB	≤ 2.0 dB
Optical Return Loss *1	≥ 60 dB	≥ 60 dB
Max. Input Power	+23 dBm	+23 dBm
Max Rotation	5,000 rpm	100 rpm
Operating temperature	0 ~ 65℃	0 ~ 65℃

*1 Connector losses are not included

Hybrid-Optical

Parameters	MMF	SMF
Insertion Loss	≤ 2.0 dB	≤ 1.5 dB
Rotation Loss	≤ 1.0 dB	≤ 0.5 dB
Optical Return Loss *1	≥ 15 dB	≥ 60 dB
Max Rotation	200 rpm	200 rpm
Operating temperature	0 ~ 65℃	0 ~ 65℃

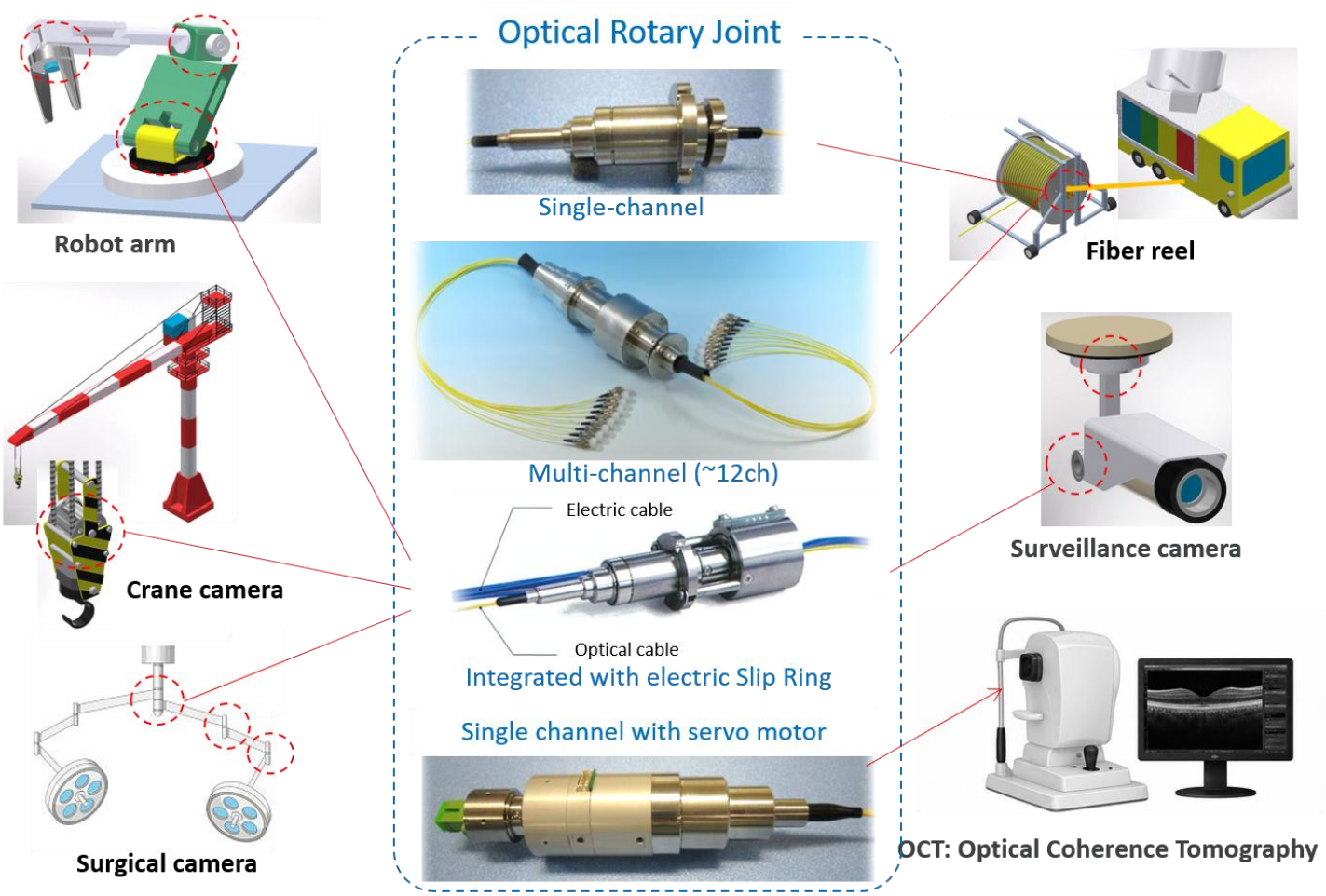
*1 Connector losses are not included

Hybrid-Electrical

Parameters	
Max. Rating of Voltage	200 VAC / 240 VDC
Number of Poles	6
Allowable Current	Max. 2 A/pole
Operating temperature	0~ 65℃

Applications

Typical applications include robotic arms, fiber reels, surveillance cameras, crane cameras, surgical camera systems, and OCT systems, where high-speed, low-noise optical signal transmission is required across continuously rotating interfaces.



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