



Models of RF Rotary Joint Integrated Slip Rings



● Features

- ⦿ Full-Frequency Compatibility: Supports DC–67GHz RF and high-power transmission, with integrated Ethernet, CAN bus, and more — all in one rotating axis.
- ⦿ Ultra-Low Signal Loss: Multi-shielded cavity and RF-optimized design ensure VSWR <1.5 and insertion loss <0.4dB @18GHz.
- ⦿ Enhanced Anti-Interference: Independent RF and electrical channels with EMI shielding for stable, interference-free transmission.
- ⦿ Rugged for Military Environments: Precious metal contacts, tested for -55°C to +125°C temperature cycles and over 10 million rotations.
- ⦿ Compact & Lightweight: Unique coaxial nested design ideal for drones, robotics, and other space-constrained applications.
- ⦿ Fast Customization: Supports 12+ connector types (SMA, N, BNC, etc.) with tailored one-on-one integration solutions.

● RF Rotary Joint Integrated Slip Rings

JINPAT's RF-Electrical Integrated Slip Rings seamlessly combine high-frequency rotary transmission with power and signal channels in a compact, high-performance design. Supporting frequencies up to 67GHz and a wide range of digital signals—including Ethernet and CAN bus—these hybrid slip rings offer a reliable all-in-one solution for applications requiring RF, data, and power transmission through a single rotating interface.

Engineered for signal stability, the design features low insertion loss (<0.4dB@18GHz), excellent VSWR (<1.5@18GHz), and multi-layer electromagnetic shielding, ensuring minimal interference and high signal integrity even in demanding environments. With precious metal contacts and a rugged build, these units have passed rigorous temperature and durability tests, making them ideal for aerospace, defense, radar systems, and high-end industrial equipment.

JINPAT offers over 12 connector types—including SMA, N-type, and BNC—and provides custom configurations to meet specific application needs. Whether for UAVs, robotic systems, or testing platforms, JINPAT delivers fast, flexible integration tailored to your technical requirements.

● Selection table

Models of RF Rotary Joint Integrated Slip Rings						
Typical Model	RF Channels		Power Channels		Supported Signal Types	Outer Diameter (mm)
	No. of RF Channels	Frequency Range	No. of Current Paths	Voltage		
LPC-1C1202	1	DC-6GHz	12	0-220V	USB 2.0; Fast Ethernet; Gigabit Ethernet; HD-SDI; Common Signals	φ24.8
LPC-1C3602	1	DC-6GHz	36	0-220V	USB 2.0; Fast Ethernet; Gigabit Ethernet; HD-SDI; Common Signals	φ24.8
LPT000-0308-0204-12S-HF01	1	DC-3GHz	5	0-380V	USB 2.0; Fast Ethernet; Gigabit Ethernet; Common Signals	φ86
LPT000-0301-01E3-HF01		DC-6GHz	3	0-380V	USB 2.0; Fast Ethernet; Gigabit Ethernet; Common Signals	φ56
LPT000-0205-04S-01E3-HF02	2	CH1:DC-4.5GHz CH2:DC-4.5GHz	2	0-380V	Fast Ethernet; Gigabit Ethernet; Common Signals	φ99
LPT000-0305-01E2-01E3-HF02			3	0-380V	USB 2.0; Gigabit Ethernet; Common Signals	φ85
LPT000-0430-9S-HF03	3	DC-4GHz (per channel)	4	0-380V	Fast Ethernet; Gigabit Ethernet; Common Signals	φ160
LPT000-47S-3E2-HF03			0	0-380V	Fast Ethernet; Gigabit Ethernet; Common Signals	φ248
LPT000-0803-10S-02E2-HF04	4	DC-4GHz (per channel)	8	0-380V	Fast Ethernet; Gigabit Ethernet; Common Signals	φ138
LPT000-0612-0510-41S-HF04			6	0-380V	Fast Ethernet; Gigabit Ethernet; Common Signals	φ150

● Selection table

Models of RF Rotary Joint Integrated Slip Rings						
Typical Model	Model		Wavelength		Supported Signal Types	Outer Diameter (mm)
	No. of RF Channels	Frequency Range	No. of Current Paths	Voltage		
LPT000-3602-HF05	5	DC-5.25GHz (per channel)	36	0-380V	Fast Ethernet; Gigabit Ethernet; Common Signals	/
LPT000-1010-06E2-HF06	6	DC-4GHz (per channel)	10	0-380V	Fast Ethernet; Gigabit Ethernet; Common Signals	/

● Customization Options

1. Customizable mechanical dimensions
2. Configurable power and signal channels
3. Full-frequency compatibility up to DC-67GHz RF
4. Integration with pneumatic and hydraulic rotary unions
5. Customizable IP protection level
6. Optional housing materials (aluminum alloy, stainless steel, etc.)
7. Mixed high-speed data transmission supported, including:
 - USB 2.0
 - Analog HD video (CVBS/CVI/AHD/TVI/XVI; PAL/NTSC/SECAM)
 - Ethernet slip rings (Fast/Gigabit/Industrial Ethernet)
 - Fieldbus slip rings (RS422, RS485, ProPbus, Modbus, DeviceNet, CC-Link, CAN/CANbus, InterBus)
 - Serial communication (I2C, BiSS, SSI, SPI, UART, RS232, TTL, MIL-STD-1553B, IEEE 1394b)
 - RTD signals
 - Thermocouple signals
 - Sensor signals
 - Encoder signals

● Customization options

Note: The following special requirements can be customized, JINPAT most of the basic accessories are standardized, modular, non-standard customization can also greatly reduce the cost and delivery time.

- 1、 Customized rotor and stator outlet and outlet length
- 2、 Due to structural limitations, can be customized in accordance with the specified length or height or external diameter
- 3、 Yasukawa, Panasonic, Siemens and other servo system signals, power lines, and encoder lines mixed slip ring
- 4、 Mixed high-speed data transmission (including Ethernet, USB, RS232, RS485, Profibus, CanBUS, CANOPEN, DeviceNET, CANBUS, CANPUS). CANOPEN, DeviceNET, CC-LINK, ProPNET, EtherCAT and other types of industrial lines).
- 5、 Anti-shock, high temperature and other special environment customization
- 6、 Can be mixed with pneumatic, hydraulic rotary joints integrated pneumatic-electrical-hydraulic slip ring
- 7、 Military grade
- 8、 Waterproof, underwater mode optional, IP65,IP68 optional