

## HF Series High Frequency Coaxial RF Rotary Joint

Senring HF series RF high frequency/microwave coaxial rotary joint is used in the 360° continuous rotation devices to transfer DC~50GHz high frequency signals. Application for satellite Antenna, vehicle, radar, Microwave antenna test bench... etc, it can be support single-channel or multi-channels high frequency for transmission, also support 1~2 channel DC~50GHz RF signals, communication, 1~96 circuits power or signals supply, fluid mixing transmission medium. High frequency signal is used by 50Ω impedance of RF coaxial structure. for others connector can be switching, and lead wire RG178、RG316、RG174 available.



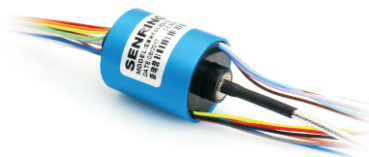
### Main Features

- Support 1~2channel DC~50GHz RF channel;
- Accurately transmit high speed data;
- Can be combine power/signal transmitting(1~196 wires);
- Low insertion loss and voltage standing wave ratio;
- Application for satellite Antenna,Ship-borne,vehicle,radar,Microwave antenna test bench...etc;

### Photos of Some Products



singal channel (DC~3GHz)



RF+Electrical(Without Flange)



RF+Electrical(Flange Installation)



singal channel (DC~18GHz)



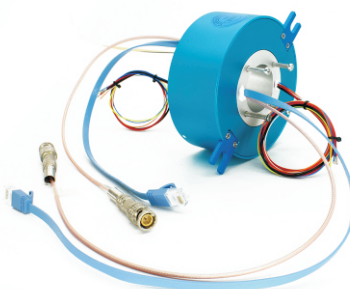
RF+Electrical(customized)



2 channel(DC~18GHz)



2 channel(DC~18GHz)



RF+Gigabit Ethernet+Electrical



2 channel(DC~18GHz)+Electrical

### Part No. Description

#### HF - RF Channel - Frequency - OD - Power Circuits - Signal Circuits

HF: RF rotary joint  For example: 01: 1 channel , 02: 2 channel  For example: 03: DC~3GHz 18: DC~18GHz 50: DC~50GHz			For example: 06S:6 circuits signal@2A 12S:12 circuits signal@2A  For example: 0610:6 circuits@10A 1230:12 circuits@30A  For example: 07: OD 7mm,12: OD 12.7mm
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### Examples

HF0103-17: 1 channel RF coaxial rotary joint,frequency DC~3GHz,OD 7mm;

HF0103-22-12S: 1 channel RF coaxial rotary joint+12 circuits signal@2A,frequency DC~3GHz,OD 22mm;

HF0118-56-0610-12S: 1 channel RF rotary joint+6 circuits@10A+12 circuits signal@2A,frequency DC~18GHz,OD 56mm;

HF0218-64-1205: 1 channel RF coaxial rotary joint+12 circuits signal@5A,frequency DC~18GHz,OD 64mm;

### Model List

Model	RF Channels	Frequency Rate(GHz)	OD(mm)	Power/Signal circuits	Connector typel
HF0103-07	1	DC~3GHz	7mm	0	connector type: coax RG405 (can add SMA, MCX,MMCX connectors)
HF0103-22	1	DC~3GHz	22mm	1~12	
HF0103-32	1	DC~3GHz	32.8mm	13~24	
HF0118-12	1	DC~18GHz	12.7mm	0	SMA-K + SMA-K
HF0118-32	1	DC~18GHz	32.8mm	1~24	
HF0118-56	1	DC~18GHz	56mm	1~48	
HF0118-86	1	DC~18GHz	86mm	1~96	
HF0150-12	1	DC~50GHz	12.7mm	0	2.4(K)-F + 2.4(K)-F
HF0150-56	1	DC~50GHz	56mm	1~48	2.4(K)-F + 2.4(K)-F
HF0218-31	2	channel 1: DC~18GHz	31.7mm	0	SMA-K + SMA-K
		channel 2: DC~4.5GHz			
HF0218-64	2	channel 1: DC~18GHz	64mm	1~24	
		channel 2: DC~4.5GHz			

### Color Code of Lead Wire

ring #	1	2	3	4	5	6	7	8	9	10	11	12
color	BLK	BRN	RED	ORG	YEL	GRN	BLU	PUR	GRY	WHT	PINK	LGT BLU
ring #	13	14	15	16	17	18	19	20	21	22	23	24
color	WHT/BLK	WHT/BRN	WHT/RED	WHT/ORG	WHT/YEL	WHT/GRN	WHT/BLU	WHT/PUR	WHT/GRY	BLK/RED	BLK/BRN	Transparent

Remark: "1" : the first wire from rotor side , HF0103-22-12S wire color sequence: BLK/BRN/RED/ORG/YEL/GRN , 24 color wires asone group , if more than 24wires, repeat as sequence , use number tube to tell group 1#, 2#....

# HF0103-07 series rf rotary joint slip ring



Signal channel, frequency DC~3GHz, OD 7mm

Senring HF0103-07 series rf rotary joint is used transmitting of analog and digital signals, RF Channel, RG405 connector, Can add SMA, MCX, MMCX connectors.

Part No. Description

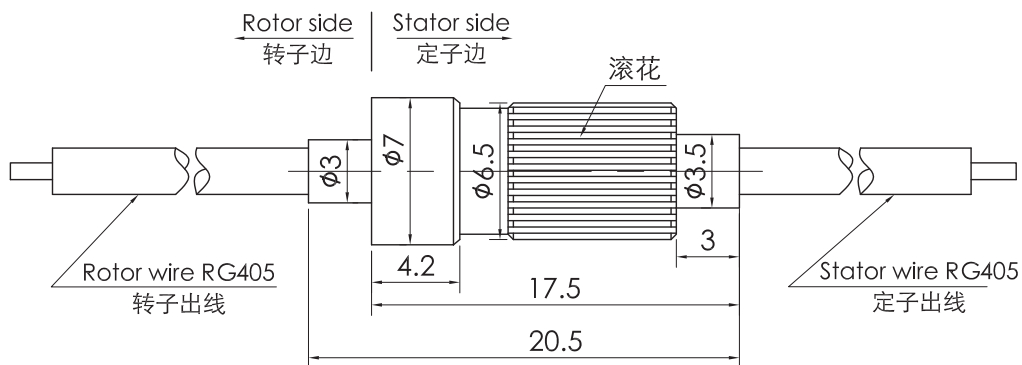
## HF0103-07 - Power / Signal Circuits

Single Channel RF Rotary Joint  
Frequency DC~3GHz, OD 7mm

RF channel, can be customized to combine  
power/signal transmitting (1~96 wires)

### Examples

HF0103-17: single channel RF coaxial rotary joint, frequency DC~3GHz, OD 7mm;



### Technical Specification

Connector type	coax RG405 (can add SMA, MCX, MMCX connectors)	Style	I type
Frequency	DC to 3 GHz	Phase WOW ( Max degree)	1°
VSWR(max)	1.7@DC to 3 GHz	Insertion loss	0.25 dB @ DC to 1.5 GHz 0.30 dB @10 to 3 GHz
VSWR fluctuation(max)	0.05	Insertion loss fluctuation	0.05 dB
Peak power(max)	500W	Average power(max)	200 W @1.5 GHz 500 W @3GHz
Rotating speed(max)	250RPM	working life	> 10 millions for ref(depe-nds on working conditions)
Starting torque(max)	0.5N.cm	Rotating torque(max)	0.5 N.cm
Connector axial load(max)	±0.1N	Connector radial load(max)	±0.1N
Insulating material	PTFE	IP grade	IP 40 acc. EN 60529
Temperature	-55 to +85°C(work temperature) -55 to +85°C(storage temperature)	Humidity	95% (work humidity) 85% (storage humidity)



# HF0103-22 series singal channel coaxial rotary joint

Signal Channel,Frequency DC~3GHz,OD 22mm

Senring HF0103-22 series RF rotary joint is used transmitting of analog and digital signals,RF Channel,can be customized to combine power/signal transmitting(6~12 wires),RG405 connector,Can add SMA,MCX,MMCX,etc connectors.

## Part No. Description

### HF0103-22 - Power Circuits - Signal Circuits

For example:  
06S:6 circuits signal@2A  
12S:12 circuits signal@2A

For example:  
0610:6 circuits@10A  
1230:12 circuits@30A

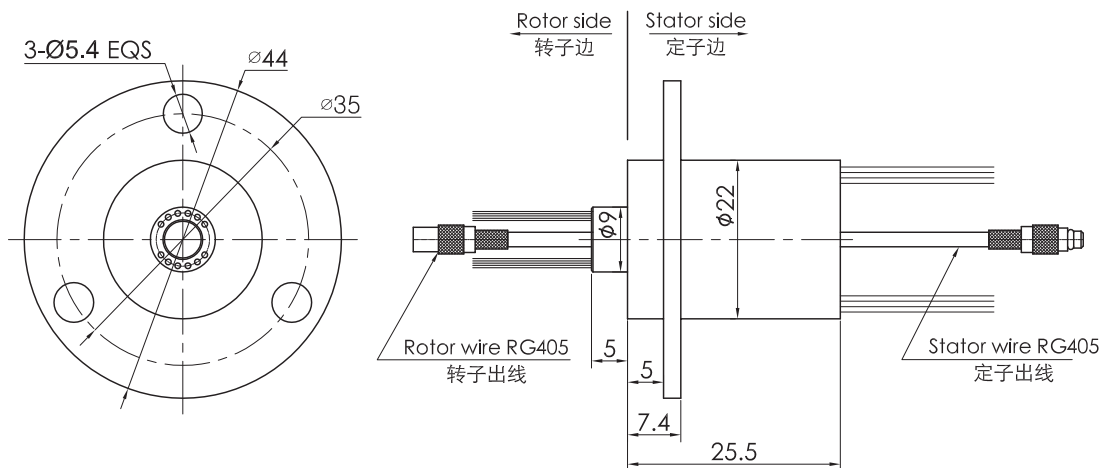
Single Channel RF Rotary Joint  
Frequency DC~3GHz,OD 22mm

## Examples

HF0103-22: singal channel RF coxial rotary joint,frequency DC~3GHz,OD 22mm;

HF0103-22-12S: singal channel coaxial RF +12 circuits signal@2A,frequency DC~3GHz,OD 22mm;

HF0103-22-0610-12S: 1 channel coaxial RF +6 circuits@10A+12 circuits signal@2A,frequency DC~3GHz,OD 22mm;



## Standard Model List

Model	ListRF Channel	Frequency	Circuits no. (10A)	Circuits no. (0~2A)	Length L(mm)
HF0103-22-06	1 channel	DC~3GHz	0	06 channels	25.5mm
HF0103-22-12	1 channel	DC~3GHz	0	12 channels	25.5mm

## Rotary joint Spec.

Connector type	coax RG405 (can add SMA, MCX,MMCX connectors)	Style	I type
Frequency	DC to 3 GHz	Phase WOW ( Max degree)	1°
VSWR(max)	1.7@DC to 3 GHz	Insertion loss	0.25 dB @ DC to 1.5 GHz 0.30 dB @10 to 3 GHz
VSWR fluctuation(max)	0.05	Insertion loss fluctuation	0.05 dB
Peak power(max)	500W	Average power(max)	200 W @1.5 GHz 500 W @3GHz
Rotating speed(max)	250RPM	working life	> 10 millions for ref(depe-nds on working conditions)
Starting torque(max)	0.5N.cm	Rotating torque(max)	0.5 N.cm
Connector axial load(max)	±0.1N	Connector radial load(max)	±0.1N
Insulating material	PTFE	IP grade	IP 40 acc. EN 60529
Temperature	-55 to +85°C(work temperature) -55 to +85°C(storage temperature)	Humidity	95% (work humidity) 85% (storage humidity)

## Electrical slip ring Spec.

Mechanical		Electrical		
Working life	> 10 millions for ref (depends on working conditions)	Spec.	Power	Signal
Rotating speed	250RPM	Voltage range	0~240VAC/VDC	0~240VAC/VDC
Temperature	-30°C~80°C	Insulation resistance	≥300MΩ/300VDC	≥300MΩ/300VDC
Humidity	0~85% RH	Lead wire spec.	AWG#26 Silver-plated teflon	
Contact material	gold-gold	Lead wire length	standard 150mm(can be customized)	
Housing material	plastic	Insulation resistance	300VAC@50Hz,60s	
Torque	0.05N.m+0.01N.m/6 channels	Electrical noise	< 0.01Ω	
IP grade	IP51			

## Color Code of Lead Wire

ring #	1	2	3	4	5	6	7	8	9	10	11	12
color	BLK	BRN	RED	ORG	YEL	GRN	BLU	PUR	GRY	WHT	PINK	LGT BLU
ring #	13	14	15	16	17	18	19	20	21	22	23	24
color	WHT/BLK	WHT/BRN	WHT/RED	WHT/ORG	WHT/YEL	WHT/GRN	WHT/BLU	WHT/PUR	WHT/GRY	BLK/RED	BLK/BRN	Transparent

Remark: "1" : the first wire from rotor side , HF0103-22-12S wire color sequence: BLK/BRN/RED/ORG/YEL/GRN , 24 color wires as one group , if more than 24wires, repeat as sequence , use number tube to tell group 1#, 2#....

# HF0103-32 series high frequency/microwave rotary joint

Signal Channel, Frequency DC~3GHz, OD 32.8mm

Senring HF0103-22 series RF rotary joint is used transmitting of analog and digital signals, RF Channel, can be customized to combine power/signal transmitting (18~24 wires), RG405 connector, Can add SMA, MCX, MMCX, etc connectors.

## Part No. Description

### HF0103-32 - Power Circuits - Signal Circuits

Single Channel RF Rotary Joint  
Frequency DC~3GHz, OD 32.8mm

For example:

06S:6 circuits signal@2A

12S:12 circuits signal@2A

For example:

0610:6 circuits@10A

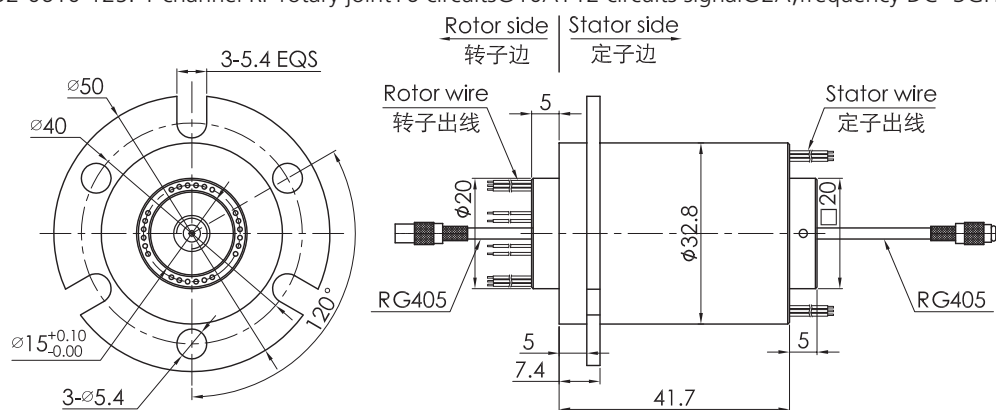
1230:12 circuits@30A

## Examples

F0103-32: 1 channel RF rotary joint, frequency DC~3GHz, OD 32.8mm:

HF0103-32-12S: 1 channel RF rotary joint+12 circuits signal@2A, frequency DC~3GHz, OD 32.8mm:

HF0103-32-0610-12S: 1 channel RF rotary joint+6 circuits@10A+12 circuits signal@2A, frequency DC~3GHz, OD 32.8mm;



## Standard Model List

Model	ListRF Channel	Frequency	Circuits no. (10A)	Circuits no. (0~2A)	Length L(mm)
HF0103-32-18	1 channel	DC~3GHz	0	18 channels	41.7mm
HF0103-32-24	1 channel	DC~3GHz	0	24 channels	41.7mm

## Rotary joint Spec.

Connector type	coax RG405 (can add SMA, MCX, MMCX connectors)	Style	I type
Frequency	DC to 3 GHz	Phase WOW ( Max degree)	1°
VSWR(max)	1.7@DC to 3 GHz	Insertion loss	0.25 dB @ DC to 1.5 GHz 0.30 dB @10 to 3 GHz
VSWR fluctuation(max)	0.05	Insertion loss fluctuation	0.05 dB
Peak power(max)	500W	Average power(max)	200 W @1.5 GHz 500 W @3GHz
Rotating speed(max)	250RPM	working life	> 10 millions for ref(depe-nds on working conditions)
Starting torque(max)	0.5N.cm	Rotating torque(max)	0.5 N.cm
Connector axial load(max)	±0.1N	Connector radial load(max)	±0.1N
Insulating material	PTFE	IP grade	IP 40 acc. EN 60529
Temperature	-55 to +85°C(work temperature) -55 to +85°C(storage temperature)	Humidity	95% (work humidity) 85% (storage humidity)

## Electrical slip ring Spec.

Mechanical		Electrical		
Working life	> 10 millions for ref (depends on working conditions)	Spec.	Power	Signal
		Voltage range	0~240VAC/VDC	0~240VAC/VDC
Rotating speed	250RPM	Insulation resistance	$\geq 300M\Omega/300VDC$	$\geq 300M\Omega/300VDC$
Temperature	-30°C ~ 80°C	Lead wire spec.	AWG#26 Silver-plated teflon	
Humidity	0~85% RH	Lead wire length	standard 150mm(can be customized)	
Contact material	gold-gold	Insulation resistance	300VAC@50Hz,60s	
Housing material	Aluminum alloy	Electrical noise	< 0.01Ω	
Torque	0.05N.m+0.01N.m/6 channels			
IP grade	IP51			

## Color Code of Lead Wire

ring #	1	2	3	4	5	6	7	8	9	10	11	12
color	BLK	BRN	RED	ORG	YEL	GRN	BLU	PUR	GRY	WHT	PINK	LGT BLU
ring #	13	14	15	16	17	18	19	20	21	22	23	24
color	WHT/BLK	WHT/BRN	WHT/RED	WHT/ORG	WHT/YEL	WHT/GRN	WHT/BLU	WHT/PUR	WHT/GRY	BLK/RED	BLK/BRN	Transparent

Remark: "1" : the first wire from rotor side , HF0103-32-12S wire color sequence: BLK/BRN/RED/ORG/YEL/GRN , 24 color wires as one group , if more than 24wires, repeat as sequence , use number tube to tell group 1#, 2#....





# HF0118-12 series single channel rf rotary joint slip ring

Signal Channel, Frequency DC~18GHz, OD 12.7mm

Senring HF0118-12 series RF rotary joint is used transmitting of analog and digital signals, RF Channel, 2.4(K)-F connector.

## Part No. Description

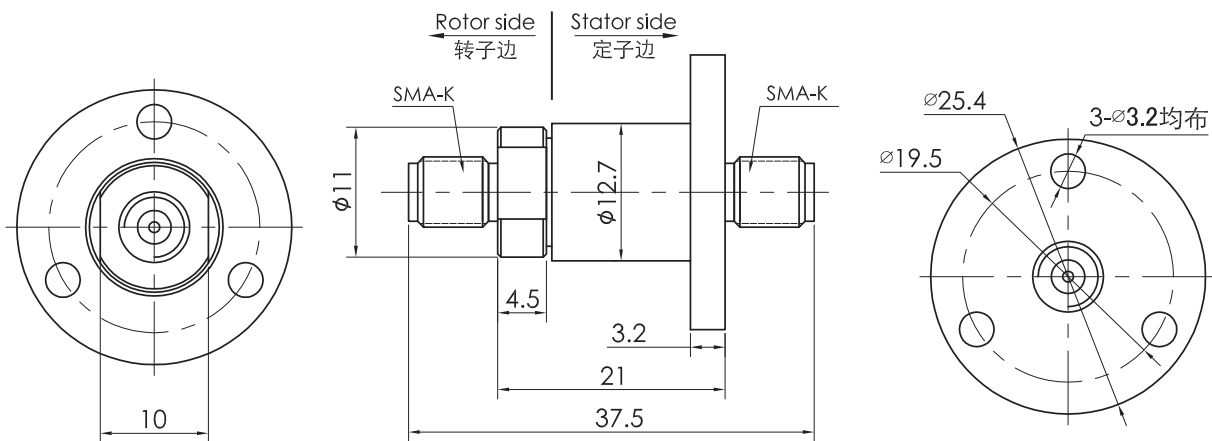
### HF0118-12 - Power / Signal Circuits

Single Channel RF Rotary Joint  
Frequency DC~18GHz, OD 12.7mm

RF channel, can be customized to combine power/signal transmitting (1~96 wires)

## Examples

HF0118-12: single channel RF high frequency rotary joint, frequency DC~18GHz, OD 12.7mm



## Rotary joint Spec.

Connector type	SMA-K (50Ω)	Style	I type
Frequency	DC to 18 GHz	Phase WOW ( Max degree)	1°
VSWR(max)	1.3@DC to 10 GHz 1.4@DC to 18 GHz	Insertion loss	0.25 dB @ DC to 10 GHz 0.30 dB @10 to 18 GHz
VSWR fluctuation(max)	0.05	Insertion loss fluctuation	0.05 dB
Peak power(max)	3000W	Average power(max)	500 W @1 GHz 200 W @6GHz 100 W @12GHz 30 W @18GHz
Rotating speed(max)	250RPM	working life	> 10 millions for ref(depe-nds on working conditions)
Starting torque(max)	0.5N.cm	Rotating torque(max)	0.5 N.cm
Connector axial load(max)	±0.1N	Connector radial load(max)	±0.1N
Insulating material	PTFE	IP grade	IP 40 acc. EN 60529
Temperature	-55 to +85°C(work temperature) -55 to +85°C(storage temperature)	Humidity	95% (work humidity) 85% (storage humidity)



# HF0118-32 series 18GHz singal channel RF rotary joint slip ring

Signal Channel, Frequency DC~18GHz, OD 32.8mm



Senring HF0118-32 series RF rotary joint is used transmitting of analog and digital signals, RF Channel, can be customized to combine power/signal transmitting (12~24 wires) ,2.4(K)-F connector, stator flange installation.

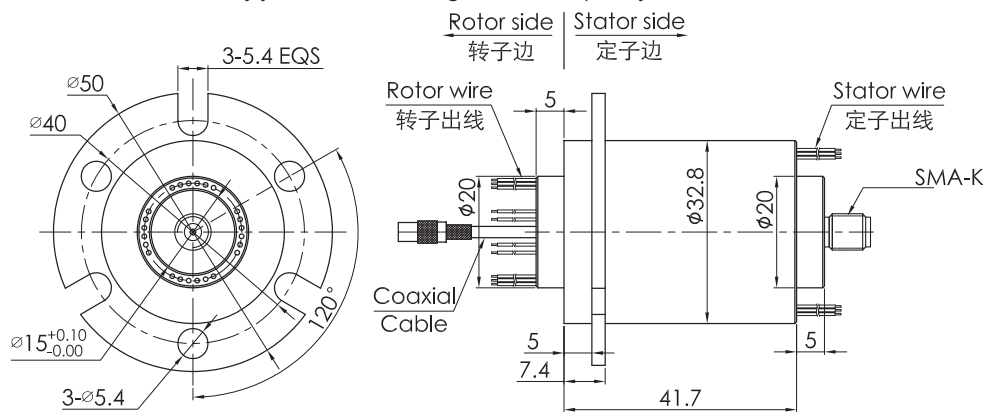
## Part No. Description

Part No.	Description	HF0118-32 - Power Circuits	Signal Circuits
Single Channel RF Rotary Joint	Frequency DC~18GHz, OD 32.8mm		
			For example: 06S:6 circuits signal@2A 12S:12 circuits signal@2A  For example: 0610:6 circuits@10A 1230:12 circuits@30A

## Examples

HF0118-32: singal channel RF coaxial rotary joint, frequency DC~18GHz, OD 32.8mm;

HF0118-32-12S: 1 channel RF rotary joint+12 circuits signal@2A, frequency DC~18GHz, OD 32.8mm;



## Standard Model List

Model	ListRF Channel	Frequency	Circuits no. (10A)	Circuits no. (0~2A)	Length L(mm)
HF0118-32-12	1 channel	DC~18GHz	0	42 channels	41.7mm
HF0118-32-24	1 channel	DC~18GHz	0	24 channels	41.7mm

## Rotary joint Spec.

Connector type	2.4(K)-F (50Ω)	Style	I type
Frequency	DC to 18 GHz	Phase WOW ( Max degree)	1°
VSWR(max)	1.3@DC to 10 GHz 1.4@DC to 18 GHz	Insertion loss	0.25 dB @ DC to 10 GHz 0.30 dB @10 to 18 GHz
VSWR fluctuation(max)	0.05	Insertion loss fluctuation	0.05 dB
Peak power(max)	3000W	Average power(max)	500 W @1 GHz 200 W @6GHz 100 W @12GHz 30 W @18GHz
Rotating speed(max)	250RPM	working life	> 10 millions for ref(depe-nds on working conditions)
Starting torque(max)	0.5N.cm	Rotating torque(max)	0.5 N.cm
Connector axial load(max)	±0.1N	Connector radial load(max)	±0.1N
Insulating material	PTFE	IP grade	IP 40 acc. EN 60529
Temperature	-55 to +85°C(work temperature) -55 to +85°C(storage temperature)	Humidity	95% (work humidity) 85% (storage humidity)

## Electrical slip ring Spec.

Mechanical		Electrical		
Working life	> 10 millions for ref (depends on working conditions)	Spec.	Power	Signal
		Voltage range	0~240VAC/VDC	0~240VAC/VDC
Rotating speed	250RPM	Insulation resistance	$\geq 300M\Omega/300VDC$	$\geq 300M\Omega/300VDC$
Temperature	-30°C~80°C	Lead wire spec.	AWG#26 Silver-plated teflon	
Humidity	0~85% RH	Lead wire length	standard 150mm(can be customized)	
Contact material	gold-gold	Insulation resistance	300VAC@50Hz,60s	
Housing material	Aluminum alloy	Electrical noise	< 0.01Ω	
Torque	0.05N.m+0.01N.m/6 channels			
IP grade	IP51			

## Color Code of Lead Wire

ring #	1	2	3	4	5	6	7	8	9	10	11	12
color	BLK	BRN	RED	ORG	YEL	GRN	BLU	PUR	GRY	WHT	PINK	LGT BLU
ring #	13	14	15	16	17	18	19	20	21	22	23	24
color	WHT/BLK	WHT/BRN	WHT/RED	WHT/ORG	WHT/YEL	WHT/GRN	WHT/BLU	WHT/PUR	WHT/GRY	BLK/RED	BLK/BRN	Transparent

Remark: "1" : the first wire from rotor side , HF0118-32-12S wire color sequence: BLK/BRN/RED/ORG/YEL/GRN/BLU PUR/GRY/WHT/PINK/LGT BLU,24 color wires asone group , if more than 24wires, repeat as sequence , use number tube to tell group 1#, 2#....



# HF0118-56 series rf rotary joint slip ring

Signal Channel, Frequency DC~18GHz, OD 56mm

Sending HF0118-56 series RF rotary joint is used transmitting of analog and digital signals, RF Channel, can be customized to combine power/signal transmitting (6~48 wires), 2.4(K)-F connector, stator flange installation.

## Part No. Description

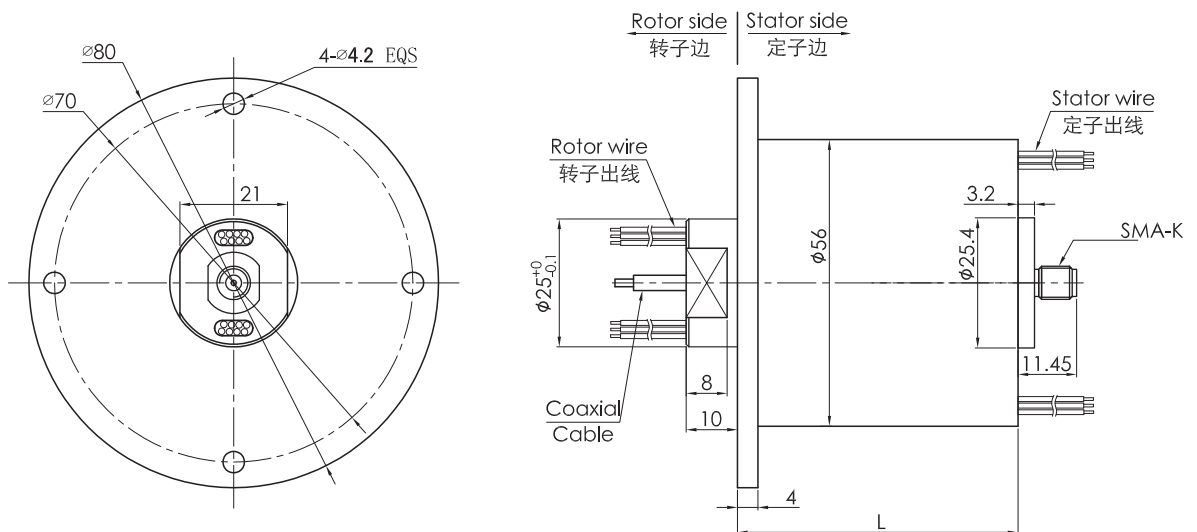
HF0118-56 - Power Circuits - Signal Circuits	
Single Channel RF Rotary Joint Frequency DC~18GHz, OD 56mm	For example: 06S: 6 circuits signal@2A 12S: 12 circuits signal@2A  For example: 0610: 6 circuits@10A 1230: 12 circuits@30A

## Examples

HF0118-56: 1 channel RF rotary joint, frequency DC~18GHz, OD 56mm;

HF0118-56-12S: 1 channel RF rotary joint+12 circuits signal@2A, frequency DC~18GHz, OD 56mm;

HF0118-56-0610-12S: 1 channel RF rotary joint +6 circuits@10A+12 circuits signal@2A, frequency DC~18GHz, OD



## Standard Model List

Model	ListRF Channel	Frequency	Circuits no. (10A)	Circuits no. (0~2A)	Length L(mm)
HF0118-56-0610	1 channel	DC~18GHz	6channels	0	38mm
HF0118-56-06S	1 channel	DC~18GHz	0	6channels	38mm
HF0118-56-0610-06S	1 channel	DC~18GHz	6channels	6channels	55mm
HF0118-56-1210	1 channel	DC~18GHz	12channels	0	55mm
HF0118-56-12S	1 channel	DC~18GHz	0	12channels	55mm
HF0118-56-0610-12S	1 channel	DC~18GHz	6channels	12channels	71.5mm
HF0118-56-1810	1 channel	DC~18GHz	18channels	0channels	71.5mm
HF0118-56-18S	1 channel	DC~18GHz	0	18channels	71.5mm
HF0118-56-0610-18S	1 channel	DC~18GHz	6channels	18channels	88.5mm
HF0118-56-1210-12S	1 channel	DC~18GHz	12channels	12channels	88.5mm
HF0118-56-2410	1 channel	DC~18GHz	24channels	0	88.5mm
HF0118-56-24S	1 channel	DC~18GHz	0	24channels	88.5mm
HF0118-56-36S	1 channel	DC~18GHz	0	36channels	122mm
HF0118-56-48S	1 channel	DC~18GHz	0	48channels	156mm

## Rotary joint Spec.

Connector type	SMA-K (50Ω)	Style	I type
Frequency	DC to 18 GHz	Phase WOW ( Max degree)	1°
VSWR(max)	1.3@DC to 10 GHz 1.4@DC to 18 GHz	Insertion loss	0.25 dB @ DC to 10 GHz 0.30 dB @10 to 18 GHz
VSWR fluctuation(max)	0.05	Insertion loss fluctuation	0.05 dB
Peak power(max)	3000W	Average power(max)	500 W @1 GHz 200 W @6GHz 100 W @12GHz 30 W @18GHz
Rotating speed(max)	250RPM	working life	> 10 millions for ref(depe-nds on working conditions)
Starting torque(max)	0.5N.cm	Rotating torque(max)	0.5 N.cm
Connector axial load(max)	± 0.1N	Connector radial load(max)	± 0.1N
Insulating material	PTFE	IP grade	IP 40 acc. EN 60529
Temperature	-55 to +85°C(work temperature) -55 to +85°C(storage temperature)	Humidity	95% (work humidity) 85% (storage humidity)

## Electrical slip ring Spec.

Mechanical		Electrical		
Working life	> 10 millions for ref (depends on working conditions)	Spec.	Power	Signal
		Voltage range	0 ~ 440VAC/VDC	0 ~ 240VAC/VDC
Rotating speed	250RPM	Insulation resistance	≥ 500MΩ/500VDC	≥ 300MΩ/300VDC
Temperature	-30°C ~ 80°C	Lead wire spec.	AWG#17	AWG#26
Humidity	0 ~ 85% RH		Silver-plated teflon	Silver-plated teflon
Contact material	gold-gold	Lead wire length	standard 250mm(can be customized)	
Housing material	Aluminum alloy	Insulation resistance	500VAC@50Hz,60s	
Torque	0.05N.m+0.01N.m/6 channels	Electrical noise	< 0.01Ω	
IP grade	IP51			

## Color Code of Lead Wire

ring #	1	2	3	4	5	6	7	8	9	10	11	12
color	BLK	BRN	RED	ORG	YEL	GRN	BLU	PUR	GRY	WHT	PINK	LGT BLU
ring #	13	14	15	16	17	18	19	20	21	22	23	24
color	WHT/BLK	WHT/BRN	WHT/RED	WHT/ORG	WHT/YEL	WHT/GRN	WHT/BLU	WHT/PUR	WHT/GRY	BLK/RED	BLK/BRN	Transparent

Remark: "1" : the first wire from rotor side , HF0118-56-12S wire color sequence: BLK/BRN/RED/ORG/YEL/GRN/BLU PUR/GRY/WHT/PINK/LGT BLU , 24 color wires asone group , if more than 24wires, repeat as sequence , use number tube to tell group 1#, 2#....



## HF0118-86 series rf rotary joint slip ring

Signal Channel, Frequency DC~18GHz, OD 86mm

Senring HF0118-86 series RF rotary joint is used transmitting of analog and digital signals, RF Channel, can be customized to combine power/signal transmitting(6~12 wires), 2.4(K)-F connector, stator flange installation.

### Part No. Description

#### HF0118-86 - Power Circuits - Signal Circuits

Single Channel RF Rotary Joint  
Frequency DC~18GHz, OD 86mm

For example:  
06S:6 circuits signal@2A  
12S:12 circuits signal@2A

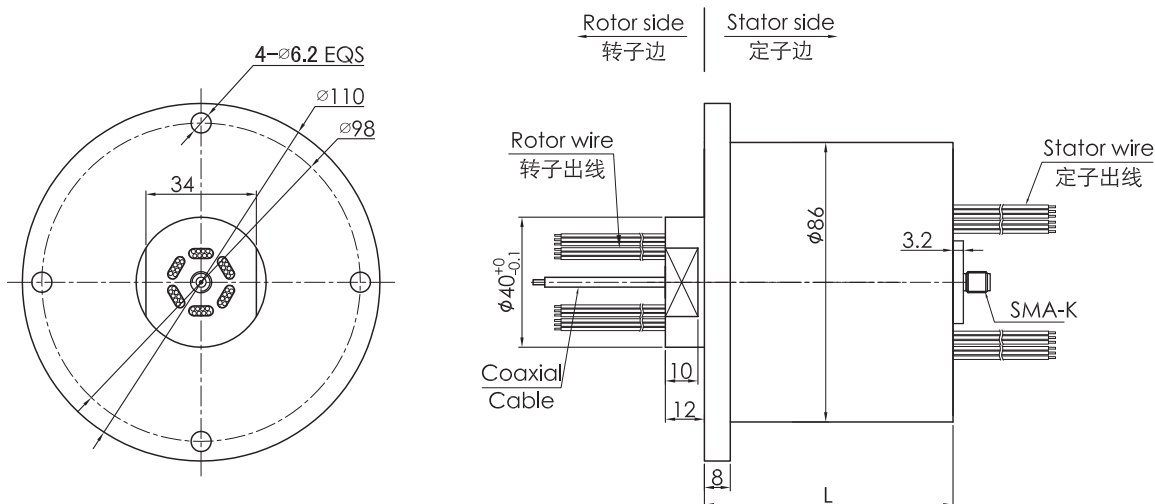
For example:  
0610:6 circuits@10A  
1230:12 circuits@30A

### Examples

HF0118-86: 1 channel RF rotary joint, frequency DC~18GHz, OD 86mm;

HF0118-86-12S: 1 channel RF Rotary Joint+12 circuits signal@2A, frequency DC~18GHz, OD 86mm;

HF0118-86-0610-12S: 1 channel RF+6 circuits@10A+12 circuits signal@2A, frequency DC~18GHz, OD 86mm;



### Standard Model List

Model	ListRF Channel	Frequency	Circuits no. (10A)	Circuits no. (0~2A)	Length L(mm)
HF0118-86-0610	1 channel	DC-18GHz	6channels	0	48mm
HF0118-86-06S	1 channel	DC-18GHz	0	6channels	48mm
HF0118-86-0610-06S	1 channel	DC-18GHz	6channels	6channels	72mm
HF0118-86-1210	1 channel	DC-18GHz	12channels	0	72mm
HF0118-86-12S	1 channel	DC-18GHz	0	12channels	72mm
HF0118-86-0610-12S	1 channel	DC-18GHz	6channels	12channels	96mm
HF0118-86-1810	1 channel	DC-18GHz	18channels	0channels	96mm
HF0118-86-18S	1 channel	DC-18GHz	0	18channels	96mm
HF0118-86-0610-18S	1 channel	DC-18GHz	6channels	18channels	120mm
HF0118-86-1210-12S	1 channel	DC-18GHz	12channels	12channels	120mm
HF0118-86-2410	1 channel	DC-18GHz	24channels	0	120mm
HF0118-86-24S	1 channel	DC-18GHz	0	24channels	120mm
HF0118-86-0610-30S	1 channel	DC-18GHz	6channels	30channels	168mm
HF0118-86-1210-24S	1 channel	DC-18GHz	12channels	24channels	168mm
HF0118-86-3610	1 channel	DC-18GHz	36channels	0	168mm
HF0118-86-36S	1 channel	DC-18GHz	0	36channels	168mm
HF0118-86-0610-42S	1 channel	DC-18GHz	6channels	42channels	216mm

Model	ListRF Channel	Frequency	Circuits no. (10A)	Circuits no. (0~2A)	Length L(mm)
HF0118-86-1210-36S	1 channel	DC-18GHz	12channels	36channels	216mm
HF0118-86-2410-24S	1 channel	DC-18GHz	24channels	24channels	216mm
HF0118-86-4810	1 channel	DC-18GHz	48channels	0	216mm
HF0118-86-48S	1 channel	DC-18GHz	0	48channels	216mm
HF0118-86-2410-36S	1 channel	DC-18GHz	24channels	36channels	264mm
HF0118-86-6010	1 channel	DC-18GHz	60channels	0	264mm
HF0118-86-60S	1 channel	DC-18GHz	0	60channels	264mm
HF0118-86-2410-48S	1 channel	DC-18GHz	24channels	48channels	312mm
HF0118-86-7210	1 channel	DC-18GHz	72channels	0	312mm
HF0118-86-72S	1 channel	DC-18GHz	0	72channels	312mm
HF0118-86-96S	1 channel	DC-18GHz	0	96channels	360mm
HF0118-86-120S	1 channel	DC-18GHz	0	120channels	408mm

### Rotary joint Spec.

Connector type	2.4(K)-F (50Ω)	Style	I type
Frequency	DC to 18 GHz	Phase WOW ( Max degree)	1°
VSWR(max)	1.3@DC to 10 GHz 1.4@DC to 18 GHz	Insertion loss	0.25 dB @ DC to 10 GHz 0.30 dB @10 to 18 GHz
VSWR fluctuation(max)	0.05	Insertion loss fluctuation	0.05 dB
Peak power(max)	3000W	Average power(max)	500 W @1 GHz 200 W @6GHz 100 W @12GHz 30 W @18GHz
Rotating speed(max)	250RPM	working life	> 10 millions for ref(depe-nds on working conditions)
Starting torque(max)	0.5N.cm	Rotating torque(max)	0.5 N.cm
Connector axial load(max)	±0.1N	Connector radial load(max)	±0.1N
Insulating material	PTFE	IP grade	IP 40 acc. EN 60529
Temperature	-55 to +85°C(work temperature) -55 to +85°C(storage temperature)	Humidity	95% (work humidity) 85% (storage humidity)

### Electrical slip ring Spec.

Mechanical		Electrical		
Working life	> 10 millions for ref (depends on working conditions)	Spec.	Power	Signal
		Voltage range	0~440VAC/VDC	0~240VAC/VDC
Rotating speed	250RPM	Insulation resistance	≥500MΩ/500VDC	≥300MΩ/300VDC
Temperature	-30°C ~ 80°C	Lead wire spec.	AWG#17	AWG#22
Humidity	0~85% RH		Silver-plated teflon	Silver-plated teflon
Contact material	gold-gold	Lead wire length	standard 250mm(can be customized)	
Housing material	Aluminum alloy	Insulation resistance	300VAC@50Hz,60s	
Torque	0.05N.m+0.01N.m/6 channels	Electrical noise	< 0.01Ω	
IP grade	IP51			

### Color Code of Lead Wire

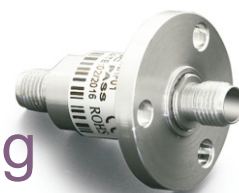
ring #	1	2	3	4	5	6	7	8	9	10	11	12
color	BLK	BRN	RED	ORG	YEL	GRN	BLU	PUR	GRY	WHT	PINK	LGT BLU
ring #	13	14	15	16	17	18	19	20	21	22	23	24
color	WHT/BLK	WHT/BRN	WHT/RED	WHT/ORG	WHT/YEL	WHT/GRN	WHT/BLU	WHT/PUR	WHT/GRY	BLK/RED	BLK/BRN	Transparent

Remark: "1" : the first wire from rotor side , HF0118-86-12S wire color sequence: BLK/BRN/RED/ORG/YEL/GRN/BLU PUR/GRY/WHT/PINK/LGT BLU,24 color wires asone group , if more than 24wires, repeat as sequence , use number tube to tell group 1#, 2#....

# HF0150-12 series rf rotary joint slip ring

Signal Channel, Frequency DC~50GHz, OD 12.7mm

Senring HF0150-12 series RF rotary joint is used transmitting of analog and digital signals, RF Channel, 2.4(K)-F connector, stator flange installation.



## Part No. Description

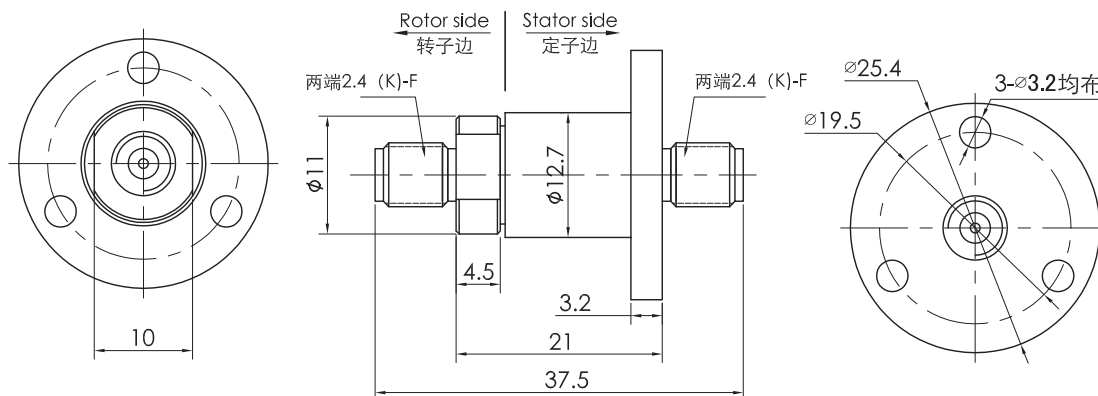
### HF0150-12 - Power / Signal Circuits

Single Channel RF Rotary Joint  
Frequency DC~50GHz, OD 12.7mm

RF channel, can be customized to combine power/signal transmitting (1~96 wires)

## Examples

HF0150-12: single channel RF rotary joint, frequency DC~50GHz, OD 12.7mm;



## Rotary joint Spec.

Connector type	2.4(K)-F (50Ω)	Style	I type
Frequency	DC to 50 GHz	Phase WOW ( Max degree)	1°
VSWR(max)	1.3@DC to 10 GHz 1.4@ 10to 18 GHz 1.7@26.5 to 50 GHz	Insertion loss	0.25 dB @ DC to 10 GHz 0.30 dB @10 to 18 GHz
VSWR fluctuation(max)	0.05@ DC to 26.5 GHz 0.2 @ 26.5 to 50 GHz	Insertion loss fluctuation	0.30 dB @ DC to 10 GHz 0.50 dB @10 to 26.5GHz 0.90 dB @26.5 to 50GHz
Peak power(max)	3000W	Average power(max)	50 W @1 GHz 15 W @10GHz 5 W @26.5GHz 3W @50GHz
Rotating speed(max)	150RPM	working life	> 10 millions for ref(depe-nds on working conditions)
Starting torque(max)	0.5N.cm	Rotating torque(max)	0.5 N.cm
Connector axial load(max)	±0.1N	Connector radial load(max)	±0.1N
Insulating material	PTFE	IP grade	IP 40 acc. EN 60529
Temperature	-55 to +85°C(work temperature) -55 to +85°C(storage temperature)	Humidity	95% (work humidity) 85% (storage humidity)



# HF0150-56 series rf rotary joint slip ring

Signal Channel, Frequency DC~50GHz, OD 56mm



HF0150-56

Senring HF0150-56 series RF rotary joint is used transmitting of analog and digital signals, RF Channel, can be customized to combine power/signal transmitting (6~48 wires), 2.4(K)-F connector, stator flange installation.

## Part No. Description

### HF0150-56 - Power Circuits - Signal Circuits

Single Channel RF Rotary Joint  
Frequency DC~50GHz, OD 56mm

For example:

06S: 6 circuits signal@2A

12S: 12 circuits signal@2A

For example:

0610: 6 circuits@10A

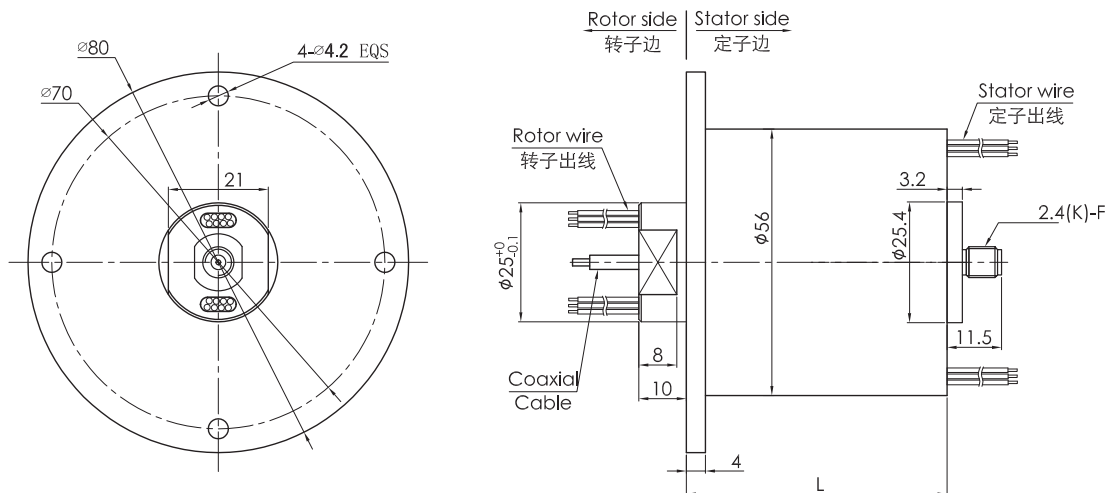
1230: 12 circuits@30A

## Examples

HF0150-56: 1 channel RF rotary joint, frequency DC~50GHz, OD 56mm;

HF0150-56-12S: 1 channel RF rotary joint +12 circuits signal@2A, frequency DC~50GHz, OD 56mm;

HF0150-56-0610-12S: 1 channel RF rotary joint+6 circuits@10A+12 circuits signal@2A, frequency DC~50GHz, OD 56mm;



## Standard Model List

Model	ListRF Channel	Frequency	Circuits no. (10A)	Circuits no. (0~2A)	Length L(mm)
HF0150-56-0610	1 channel	DC~50GHz	6channels	0	38mm
HF0150-56-06S	1 channel	DC~50GHz	0	6channels	38mm
HF0150-56-0610-06S	1 channel	DC~50GHz	6channels	6channels	55mm
HF0150-56-1210	1 channel	DC~50GHz	12channels	0	55mm
HF0150-56-12S	1 channel	DC~50GHz	0	12channels	55mm
HF0150-56-0610-12S	1 channel	DC~50GHz	6channels	12channels	71.5mm
HF0150-56-1810	1 channel	DC~50GHz	18channels	0channels	71.5mm
HF0150-56-18S	1 channel	DC~50GHz	0	18channels	71.5mm
HF0150-56-0610-18S	1 channel	DC~50GHz	6channels	18channels	88.5mm
HF0150-56-1210-12S	1 channel	DC~50GHz	12channels	12channels	88.5mm
HF0150-56-2410	1 channel	DC~50GHz	24channels	0	88.5mm
HF0150-56-24S	1 channel	DC~50GHz	0	24channels	88.5mm
HF0150-56-36S	1 channel	DC~50GHz	0	36channels	122mm
HF0150-56-48S	1 channel	DC~50GHz	0	48channels	156mm

HF Series High Frequency Coaxial RF Rotary Joint

## Rotary joint Spec.

Connector type	2.4(K)-F (50Ω)	Style	I type
Frequency	DC to 50 GHz	Phase WOW ( Max degree)	1°
VSWR(max)	1.3@DC to 10 GHz 1.4@ 10to 18 GHz 1.7@26.5 to 50 GHz	Insertion loss	1 dB @ DC to 26.5 GHz 2 dB @26.5 to 50 GHz
VSWR fluctuation(max)	0.05@ DC to 26.5 GHz 0.2 @ 26.5 to 50 GHz	Insertion loss fluctuation	0.30 dB @ DC to 10 GHz 0.50 dB @10 to 26.5GHz 0.90 dB @26.5 to 50GHz
Peak power(max)	500W	Average power(max)	50 W @1 GHz 15 W @10GHz 5 W @26.5GHz 3W @50GHz
Rotating speed(max)	150RPM	working life	> 10 millions for ref(depe-nds on working conditions)
Starting torque(max)	0.5N.cm	Rotating torque(max)	0.5 N.cm
Connector axial load(max)	±0.1N	Connector radial load(max)	±0.1N
Insulating material	PTFE	IP grade	IP 40 acc. EN 60529
Temperature	-55 to +85°C(work temperature) -55 to +85°C(storage temperature)	Humidity	95% (work humidity) 85% (storage humidity)

## Electrical slip ring Spec.

Mechanical		Electrical		
Working life	> 10 millions for ref (depends on working conditions)	Spec.	Power	Signal
		Voltage range	0 ~ 440VAC/VDC	0 ~ 240VAC/VDC
Rotating speed	250RPM	Insulation resistance	≥ 500MΩ/500VDC	≥ 300MΩ/300VDC
Temperature	-30°C ~ 80°C	Lead wire spec.	AWG#17	AWG#22
Humidity	0 ~ 85% RH		Silver-plated teflon	Silver-plated teflon
Contact material	gold-gold	Lead wire length	standard 250mm(can be customized)	
Housing material	Aluminum alloy	Insulation resistance	300VAC@50Hz, 60s	
Torque	0.05N.m+0.01N.m/6 channels	Electrical noise	< 0.01Ω	
IP grade	IP51			

## Color Code of Lead Wire

ring #	1	2	3	4	5	6	7	8	9	10	11	12
color	BLK	BRN	RED	ORG	YEL	GRN	BLU	PUR	GRY	WHT	PINK	LGT BLU
ring #	13	14	15	16	17	18	19	20	21	22	23	24
color	WHT/BLK	WHT/BRN	WHT/RED	WHT/ORG	WHT/YEL	WHT/GRN	WHT/BLU	WHT/PUR	WHT/GRY	BLK/RED	BLK/BRN	Transparent

Remark: "1" : the first wire from rotor side , HF0150-56-12S wire color sequence: BLK/BRN/RED/ORG/YEL/GRN/BLU PUR/GRY/WHT/PINK/LGT BLU , 24 color wires asone group , if more than 24wires, repeat as sequence , use number tube to tell group 1#, 2#....

# HF0218-31 series dual channel 18GHz RF rotary connector

Signal Channel, Frequency 1: DC~18GHz, channel 2: DC~4.5GHz, OD 31.7mm

Senring HF0218-31 series RF rotary joint is used transmitting of analog and digital signals, RF Channel, 2.4(K)-F connector, stator flange installation.

## Part No. Description

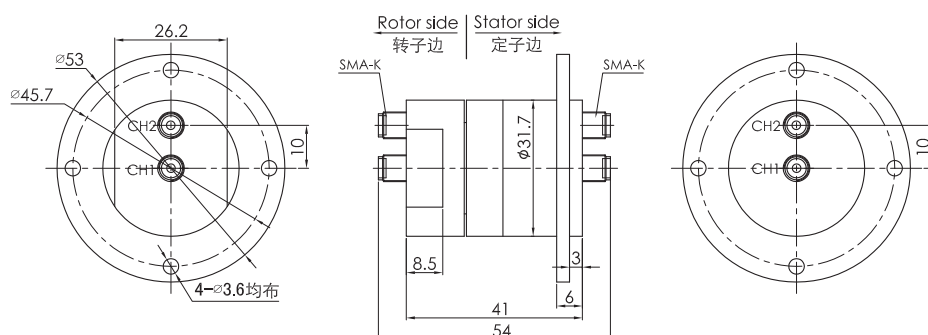
### HF0218-31 - Power / Signal Circuits

Dual Channel RF Rotary Joint  
Channel 1: DC~18GHz  
Channel 2: DC~4.5GHz  
OD 31.7mm

RF channel, can be customized to combine power/signal transmitting (1~96 wires)

## Examples

HF0218-31: dual channel rf rotary joint, channel 1: DC~18GHz, channel 2: DC~4.5GHz, OD 31.7mm;



## Rotary joint Spec.

Rotary joint Spec.			
	channel 1	channel 1	
Connector type	2.4(K)-F	2.4(K)-F	
Style	I type	I type	
Frequency	DC to 18 GHz	DC to 4 GHz	
Peak power(max)	3000W	3000W	
Average power(max)	50 W @ 18 GHz	50 W @ 4 GHz	
VSWR(max)	1.2 @ 0 - 4 GHz	1.4 @ 0 - 2 GHz	
	1.5 @ 4 - 18 GHz	2.5 @ 2 - 4 GHz	
VSWR fluctuation(max)	0.04	0.36	
Insertion loss	0.08 dB @ 4 GHz	0.48 dB @ 2 GHz	
	0.48 dB @ 18 GHz	0.98 dB @ 4 GHz	
Insertion loss fluctuation	0.05 dB	0.25 dB	
Phase WOW ( Max degree)	1 °	2 °	
Isolation	60 dB		
Mechanical Spec.			
Rotating speed(max)	60RPM	Working life	> 10 millions for ref (depends on working conditions)
Starting torque(max)	5N.cm	Rotating torque(max)	5N.cm
Temperature	-40 to +70°C(work temperature)	Humidity	85% (work humidity)
	-50 to +70°C(storage temperature)		95% (storage humidity)
IP grade	IP 60 per EN 60529	Insulating material	PTFE

# HF0218-64 series dual channel 18GHz high frequency rotary joint slip rings

2 channels, channel 1:DC~18GHz, channel 2:DC~4.5GHz,1~24 circuits signal(2A),OD 64mm

Senring HF0218-64 series RF rotary joint is used transmitting of analog and digital signals,RF Channel,can be customized to combine power/signal transmitting(6~24 wires),2.4(K)-F connector,stator flange installation.

## Part No. Description

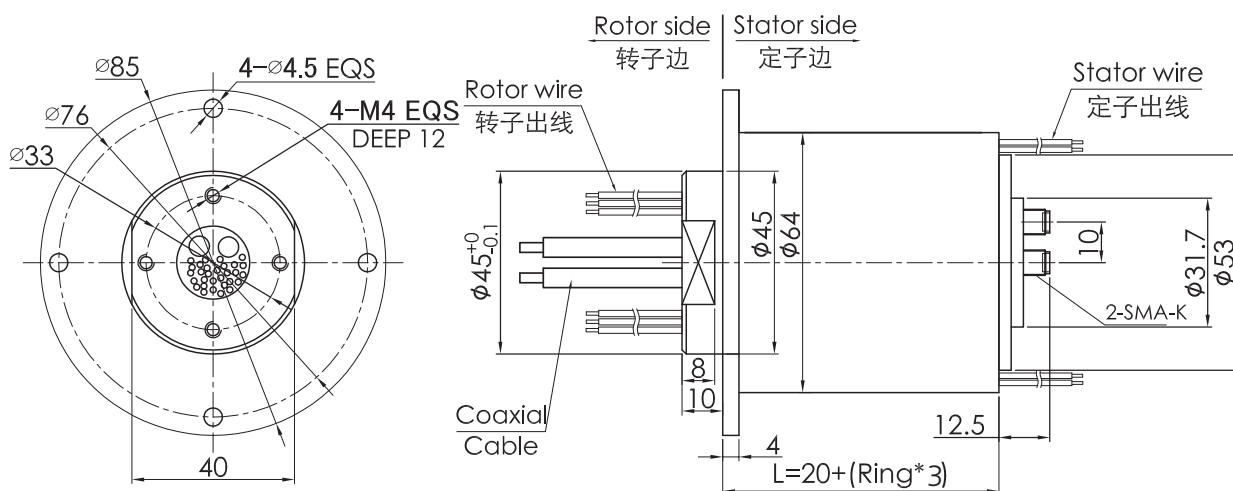
HF0218-64 - Power Circuits - Signal Circuits	
Dual Channel RF Rotary Joint Channel 1:DC~18GHz Channel 2:DC~4.5GHz OD 64mm	For example: 06S:6 circuits signal@2A 12S:12 circuits signal@2A  For example: 0610:6 circuits@10A 1230:12 circuits@30A

## Examples

HF0218-64: 2 channel RF rotary joint,channel 1: DC~18GHz,channel 2: DC~4.5GHz,OD 64mm;

HF0218-64-12S: 2 channel RF rotary joint+12 circuits signal@2A,channel 1: DC~18GHz,channel 2: DC~4.5GHz,OD 64mm;

HF0218-64-0610-12S: 2 channel RF rotary joint+6 circuits@10A+12 circuits signal@2A,channel 1: DC~18GHz,channel 2: DC~4.5GHz,OD 64mm;



## Standard Model List

Model	ListRF Channel	Frequency	Circuits no. (10A)	Circuits no. (0~2A)	Length L(mm)
HF0218-64-0610	2 channels	DC~18GHz	6channels	0	38mm
HF0218-64-06S	2 channels	DC~18GHz	0	6channels	38mm
HF0218-64-12S	2 channels	DC~18GHz	0	12channels	56mm
HF0218-64-18S	2 channels	DC~18GHz	0	18channels	74mm
HF0218-64-24S	2 channels	DC~18GHz	0	24channels	92mm

## Rotary joint Spec.

Rotary joint Spec.			
	channel 1	channel 2	
Connector type	2.4(K)-F	2.4(K)-F	
Style	I type	I type	
Frequency	DC to 18 GHz	DC to 4 GHz	
Peak power(max)	3000W	3000W	
Average power(max)	50 W @ 18 GHz	50 W @ 4 GHz	
VSWR(max)	1.2 @ 0 - 4 GHz	1.4 @ 0 - 2 GHz	
	1.5 @ 4 - 18 GHz	2.5 @ 2 - 4 GHz	
VSWR fluctuation(max)	0.04	0.36	
Insertion loss	0.08 dB @ 4 GHz	0.48 dB @ 2 GHz	
	0.48 dB @ 18 GHz	0.98 dB @ 4 GHz	
Insertion loss fluctuation	0.05 dB	0.25 dB	
Phase WOW ( Max degree)	1 °	2 °	
Isolation	60 dB		
Mechanical Spec.			
Rotating speed(max)	60RPM	Working life	> 10 millions for ref (depends on working conditions)
Starting torque(max)	5N.cm	Rotating torque(max)	5N.cm
Temperature	-40 to +70°C(work temperature)	Humidity	85% (work humidity)
	-50 to +70°C(storage temperature)		95% (storage humidity)
IP grade	IP 60 per EN 60529	Insulating material	PTFE

## Electrical slip ring Spec.

Mechanical		Electrical		
		Spec.	Power	Signal
Working life	> 10 millions for ref (depends on working conditions)	Voltage range	0~440VAC/VDC	0~240VAC/VDC
Rotating speed	250RPM	Insulation resistance	≥500MΩ/500VDC	≥300MΩ/300VDC
Temperature	-30~80°C	Lead wire spec.	AWG#17 Silver-plated teflon	AWG#22 Silver-plated teflon
Humidity	0~85% RH			
Contact material	gold-gold	Lead wire length	standard 250mm(can be customized)	
Housing material	Aluminum alloy	Insulation resistance	300VAC@50Hz,60s	
Torque	0.05N.m+0.01N.m/6 channels	Electrical noise	< 0.01Ω	
IP grade	IP51			

## Color Code of Lead Wire

ring #	1	2	3	4	5	6	7	8	9	10	11	12
color	BLK	BRN	RED	ORG	YEL	GRN	BLU	PUR	GRY	WHT	PINK	LGT BLU
ring #	13	14	15	16	17	18	19	20	21	22	23	24
color	WHT/BLK	WHT/BRN	WHT/RED	WHT/ORG	WHT/YEL	WHT/GRN	WHT/BLU	WHT/PUR	WHT/GRY	BLK/RED	BLK/BRN	Transparent

Remark: "1" : the first wire from rotor side , HF0218-64-12S wire color sequence: BLK/BRN/RED/ORG/YEL/GRN/BLU/PUR/GRY/WHT/PINK/LGT BLU , 24 color wires as one group , if more than 24wires, repeat as sequence , use number tube to tell group 1#, 2#....