# MHF Series High Frequency Rotary Joint

MHF series High Frequency Rotary Joint (Slip Ring) is specifically designed to transmit high-speed serial digital signals or analog signal , as well as radar antenna、communication in moving、input signal in moving, etc. It can support maximum transfer rate 40GHz. This series product can support single channel high frequency transmissions, also support high-frequency signal transmission and 24V control signal, communication signal, power supply and fluid media. Video signal adopt 75Ω characteristic impedance. High-frequency signal adopts 50Ω characteristic impedance RF coaxial connector. （other specified connectors are switchable, lead wires are optional, such as RG178、RG179，RG316、RG174,etc）；

## Features

- Support 1,2,3,4 high-frequency channel/channels.
- Combine with 1~96wires Power/Signal.
- Perfect VSWR
- Suitable for large volume data transmission without delay
- High-rate transmission and high-definition video data
- Widely applied for satellite、radar、portable antenna、equipments of communication in moving,etc.

## MHF Series Models

| Model# | Channel | Max Frequency (GHz) | Power/signal (circuits) | OD（mm） |
|---|---|---|---|---|
| MHF100 | 1 | DC-30GHz<br>DC-50GHz | 0 | 6.6/12.5/22/14.5 |
| MHF107 | 1 | DC-3GHz | 0~24 | 33 |
| MHF108 | 1 | DC-30GHz | 1~48 | 56 |
| MHF109 | 1 | DC-30GHz | 1~72 | 86 |
| MHF200 | 2 | 4.5GHz;18GHz | 0 | 31.8 |
| MHF208 | 2 | 4.5GHz;18GHz | 1~72 | 99 |
| MHF300 | 3 | 2.5GHz | 0 | 65 |
| MHF400 | 4 | 2.5GHz | 0 | 65 |
| MHF800 | 8 | 3GHz | 0 | 56 |

MHF Series High Frequency Rotary Joint

# MHF100 Series

## 1 Channel Rf Rotary Joints

MHF100 is single channel high frequency rotary joint, which is specifically designed for high-speed serial digital signals or analog signal transmission. It can support maximum transfer rate 30GHz. MHF series can support single channel or high-frequency signal transmission by itself. Also MHF series can be customized to combine high-frequency signal with 24V control signal, communication signal, power supply and fluid media. Please refer to MHF108 series.

### Typical application:

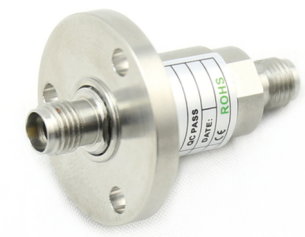
- Military radar antenna、multi shaft 3D simulator
- Antenna rotating platform with radio-frequency signal、support 1080P、1080I, etc HD-SDI high definition rotary table
- Support 1080P、1080I, etc HD-SDI all-in-one machine（high speed dome）

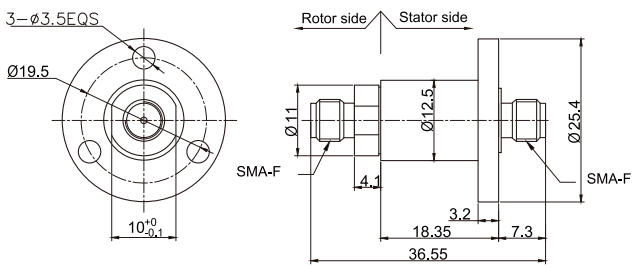
### Part# Explanation

MHF100- SMA - 30G

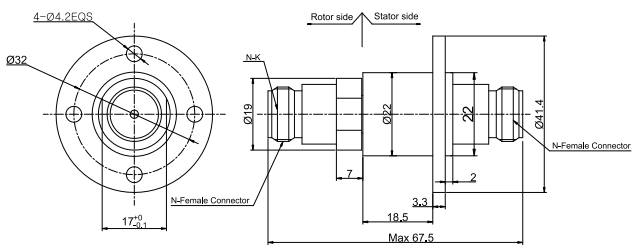
- MHF: High frequency slip ring
- 100: 1 channel high frequency
- SMA: SMA connector; N: N connector;
  W50：Exit RG316 Wires/50Ω
  W75：Exit RG179 Wires/75Ω
- 30G:Max frequency 30GHz

| MHF100-SMA-30G Picture | MHF100-SMA-30G Dimensions |
|---|---|



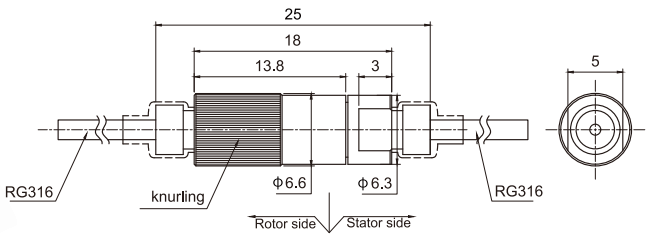



| MHF100-N-12G Picture | MHF100-N-12G Dimensions |
|---|---|

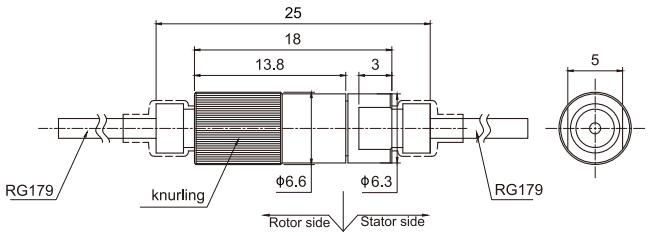


MHF100-W50-3G/MHF100-W75-3G Picture


MHF100-W50-3G/MHF100-W75-3G Dimensions




MHF100-W50-3G




MHF100-W75-3G

## Part# List

| MHF100 - 1 channel RF rotary joint part list | | | | | | | |
|---|---|---|---|---|---|---|---|
| Part# | RF Channel | Frquency | Connector Type | Characteristic Impedance | Insertion Loss | VSWR | VSWR Ripple |
| MHF100-SMA-30G | 1 | DC-30GHz | SMA | 50Ω | 0.45db | ≤1.4 | ≤0.05 |
| MHF100-N-12G | 1 | DC-12GHz | N | 50Ω | 0.3db | ≤1.3 | ≤0.05 |
| MHF100-W50-3G | 1 | DC-3GHz | coaxial-cable RG316 | 50Ω | 0.3db | ≤1.3 | ≤0.05 |
| MHF100-W75-3G | 1 | DC-3GHz | coaxial-cable RG179 | 75Ω | 0.3db | ≤1.3 | ≤0.05 |

## Specifications

| Mechanical data | |
|---|---|
| Parameter | Value |
| Working Life | 50 million revs |
| Rotating Speed | 100RPM |
| Working Temperature | -30℃~80℃ |
| Operating Humidity | 0~85% RH |
| Contact Material | Gold-Gold |
| Housing Material | stainless steel |
| Torque | 0.1N.m；+0.03N.m/6 rings |
| Protection Grade | IP51 |

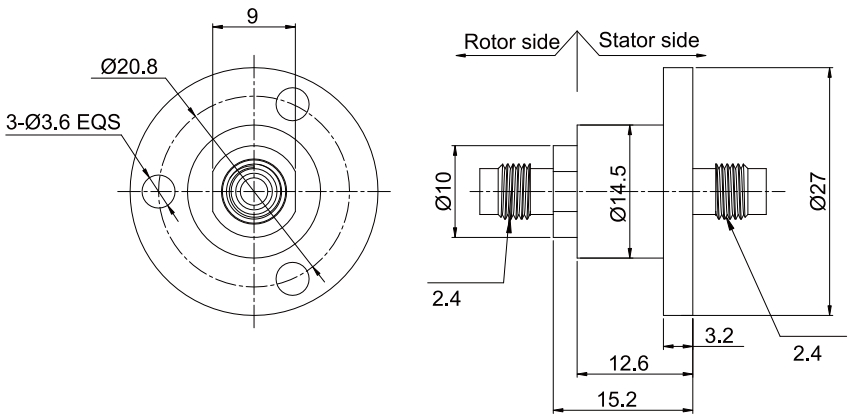
# MHF100-50G Series

## 1 Channel Rf Rotary Joints

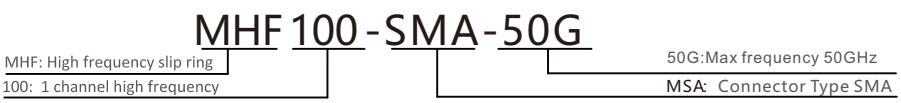
MHF100-50G is single channel high frequency rotary joint, which is specifically designed for high-speed serial digital signals or analog signal transmission. It can support maximum transfer rate 50GHz. MHF series can support single channel or high-frequency signal transmission by itself. Also MHF series can be customized to combine high-frequency signal with 24V control signal, communication signal, power supply and fluid media. Please refer to MHF108 series.

### Typical application:

- Military radar antenna、multi shaft 3D simulator
- Antenna rotating platform with radio-frequency signal、support 1080P、1080I, etc HD-SDI high definition rotary table
- Support 1080P、1080I, etc HD-SDI all-in-one machine（high speed dome）




### Part# Explanation




### Part# List

| MHF100-50G channel RF rotary joint part list | | | |
|---|---|---|---|
| Part# | RF Channel | Frquency | Connector Type |
| MHF100-SMA-50G | 1 | 50GHz | 2.4 |

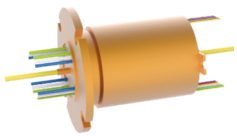
### Specifications

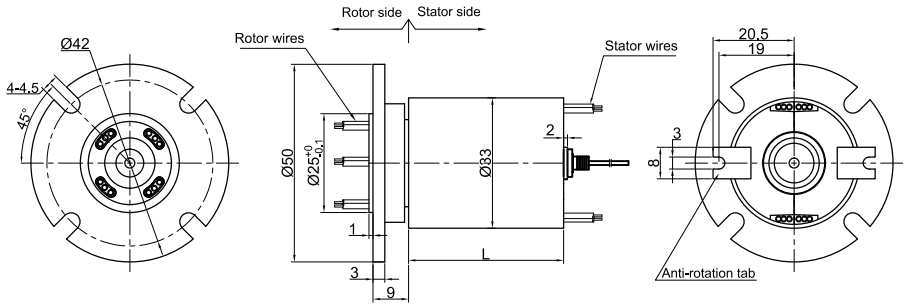
| Mechanical Data | | (RF Rotary joints) Specifications | |
|---|---|---|---|
| Parameter | Value | Parameter | Value |
| Working Life | 5 million revs | Frquency | DC-50GHz |
| Rotating Speed | 60RPM | power | ≥20@18GHz |
| Working Temperature | -40℃-70℃ | voltage standing wave ratio | DC-18GHz≤1.5<br>18GHz-26.5GHz≤1.8<br>26.5GHz-50GHz≤2.6 |
| Operating Humidity | 0-95%RH | | |
| Contact Material | Gold-Gold | VSWR Ripple | 0.15 |
| Housing Material | aluminum alloy | Insertion Loss | DC-18GHz≤0.8<br>18GHz-26.5GHz≤1.2<br>26.5GHz-50GHz≤2.5 |
| Torque | 0.05Nm | Insertion Loss Ripple | 0.15 |
| Protection Grade | IP60 | Minimum isolation | 60dB |
| surface treatment | Conductive oxidation | Connector Type | 2.4 |

# MHF107 Series

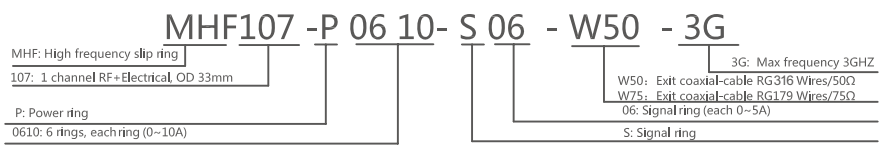
## 1 Channel Rf Rotary Joints+electric Slip Ring

MHF107 is 1 channel RF + electric combining high frequency rotary joint. High frequency + electric slip ring is specifically designed to support high-speed serial digital signals or analog signal transmission. It can support maximum rate 3GHz. This series product can support single channel high frequency transmissions, also high-frequency signal transmission combining with 24V control signal, communication signal, power supply and fluid media. Video signal adopt 50Ω characteristic impedance. High-frequency signal adopts 50Ωcharacteristic impedance RF coaxial connector. (other specified connectors are switchable, also Lead wire size are optional, such as RG178、RG316、RG174, etc.)






## Part# Explanation




## Part# List

| MHF107 channel RF rotary joint part list | | | | | |
|---|---|---|---|---|---|
| Part# | RF Channel | Frquency | 10A | Signal 5A | Length (mm) |
| MHF107-S06 | 1 | DC-3GHz | 0 | 6 | 25.4 |
| MHF107-S12 | 1 | DC-3GHz | 0 | 12 | 39.2 |
| MHF107-S18 | 1 | DC-3GHz | 0 | 18 | 53 |
| MHF107-S24 | 1 | DC-3GHz | 0 | 24 | 66.8 |

Note: 1) N channels 10A rings parallel can be used as 1 channel N*10A current. For example: 2 rings 10A parallel could be used as 1 wires 20A
2) circuit number and current strength can be customized, please contact customer service for more details.

## Specifications

| (RF Rotary joints) Specifications | | Mechanical Data | |
|---|---|---|---|
| Parameter | Value | Parameter | Value |
| Frequency | 0~3GHz | Working Life | 50 million revs |
| Rated Power | 5W | Rotating Speed | 100RPM |
| VSWR | <1.3 | Working Temperature | -30℃~80℃ |
| Insertion Loss | 0.3db | Operating Humidity | 0~85% RH |
| VSWR Ripple | <0.05 | Contact Material | Gold-Gold |
| Insertion Loss Ripple | 0.05db | Housing Material | aluminum alloy |
| Connector Types | Exit coaxial-cable directly | Torque | 0.1N.m；+0.03N.m/6 rings |
| Characteristic Impedance | 50Ω or 75Ω | Protection Grade | IP51 |

| Electrical Data | | |
|---|---|---|
| Parameter | Value | |
| | Power | Signal |
| Rated Voltage | 0~400VAC/VDC | 0~240VAC/VDC |
| Insulation Resistance | ≥500MΩ/300VDC | ≥200MΩ/300VDC |
| Lead Wire | AWG22#teflon | AWG22#teflon |
| Lead Length | Standard length 300mm(adjustable) | |
| Insulating Strength | 200VAC@50Hz,60s | |
| Electrical Noise | <0.01Ω | |



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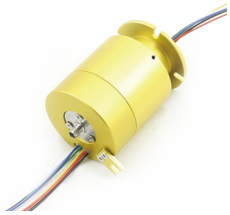
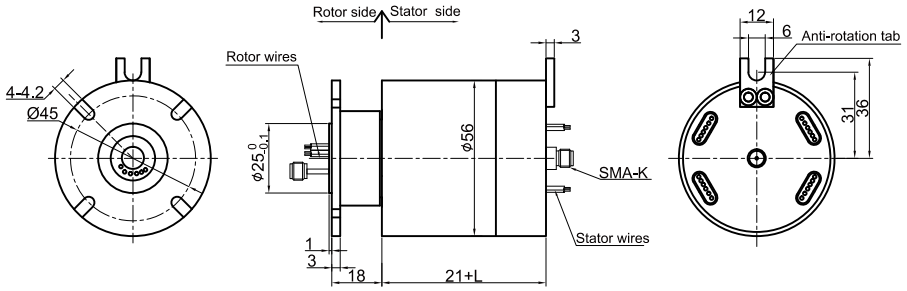
# MHF108 Series

## 1 Channel Rf Rotary Joints+electric Slip Ring

MHF108 is 1 channel RF + electric combining high frequency rotary joint. High frequency + electric slip ring is specifically designed to support high-speed serial digital signals or analog signal transmission. It can support maximum rate 30GHz. This series product can support single channel high frequency transmissions, also high-frequency signal transmission combining with 24V control signal, communication signal, power supply and fluid media. Video signal adopt 50Ω characteristic impedance. High-frequency signal adopts 50Ωcharacteristic impedance RF coaxial connector. (other specified connectors are switchable, also Lead wire size are optional, such as RG178、RG316、RG174, etc.)






## Part# Explanation

MHF108 -P 06 10- S 06 - SMA - 30G

- MHF108: MHF: High frequency slip ring; 108: 1 channel RF+Electrical, OD 56mm
- P: Power ring; 0610: 6 rings, each ring (0~10A)
- S: Signal ring; 06: Signal ring (each 0~5A)
- SMA: SMA connector; W : Exit coaxial-cable
- 30G: Max frequency 30GHZ

## Part# List

| MHF108 channel RF rotary joint part list | | | | | |
|---|---|---|---|---|---|
| Part# | RF Channel | Frquency | 10A | Signal 5A | Length (mm) |
| MHF108-S06 | 1 | DC-30GHz | 0 | 6 | 38 |
| MHF108-P0610 | 1 | DC-30GHz | 6 | 0 | 38 |
| MHF108-S12 | 1 | DC-30GHz | 0 | 12 | 54.8 |
| MHF108-P1210 | 1 | DC-30GHz | 12 | 0 | 54.8 |
| MHF108-P0610-S06 | 1 | DC-30GHz | 6 | 6 | 54.8 |
| MHF108-P0410-S08 | 1 | DC-30GHz | 2 | 8 | 54.8 |
| MHF108-P0210-S10 | 1 | DC-30GHz | 2 | 10 | 54.8 |
| MHF108-S18 | 1 | DC-30GHz | 0 | 18 | 71.6 |
| MHF108-P1810 | 1 | DC-30GHz | 18 | 0 | 71.6 |
| MHF108-P0610-S12 | 1 | DC-30GHz | 6 | 12 | 71.6 |
| MHF108-P1210-S06 | 1 | DC-30GHz | 12 | 6 | 71.6 |
| MHF108-P0610-S18 | 1 | DC-30GHz | 6 | 18 | 88.4 |
| MHF108-P1210-S12 | 1 | DC-30GHz | 12 | 12 | 88.4 |
| MHF108-P1810-S06 | 1 | DC-30GHz | 18 | 6 | 88.4 |
| MHF108-S24 | 1 | DC-30GHz | 0 | 24 | 88.4 |
| MHF108-P2410 | 1 | DC-30GHz | 24 | 0 | 88.4 |
| MHF108-S30 | 1 | DC-30GHz | 0 | 30 | 105.2 |
| MHF108-S36 | 1 | DC-30GHz | 0 | 36 | 125 |
| MHF108-S48(2A) | 1 | DC-30GHz | 0 | 48 | 158.6 |

Note: 1) N channels 10A rings parallel can be used as 1 channel N*10A current. For example: 2 rings 10A parallel could be used as 1 wires 20A
2) circuit number and current strength can be customized, please contact customer service for more details.

## Specifications

| (RF Rotary joints) Specifications | | |
|---|---|---|
| Parameter | Value | |
| Frequency | 0~30GHz | |
| Rated Power | 20W | |
| VSWR | <1.4 | |
| Insertion Loss | 0.45db | |
| VSWR Ripple | <0.05 | |
| Insertion Loss Ripple | 0.05db | |
| Connector Types | SMA-F | |
| Characteristic Impedance | 50Ω | |
| Electrical Data | | |
| Parameter | Value | |
| | Power | Signal |
| Rated Voltage | 0~440VAC/VDC | 0~240VAC/VDC |
| Insulation Resistance | ≥1000MΩ/500VDC | ≥1000MΩ/500VDC |
| Lead Wire | AWG16# Teflon | AWG22# Teflon |
| Lead Length | standard length 300mm ( adjustable ) | |
| Insulating Strength | 500VAC@50Hz , 60s | |
| Electrical Noise | <0.01Ω | |
| Mechanical Data | | |
| Parameter | Value | |
| Working Life | 50 million revs | |
| Rotating Speed | 150RPM | |
| Working Temperature | -30℃~80℃ | |
| Operating Humidity | 0~85% RH | |
| Contact Material | Gold-Gold | |
| Housing Material | aluminum alloy | |
| Torque | 0.1N.m； +0.03N.m/6 rings | |
| Protection Grade | IP51 | |

## Options for custom slip ring

Note: Below special demands can be customized. According, the delivery date will be extended 3 to 15 days; also the cost will be increased 30% to 50%. Most of our basic parts are standard and modular, which can save the cost and lead time.

① Cable exit way and cable length can be customized for both rotor and stator.

② Because of the structure limitation, length/height/OD can be customized on your request.

③ Support current or signal up to 200 rings.

④ Aviation plug, terminal and heat-shrink tube are optional.

⑤ Hybrid slip ring for Yaskawa/Panasonic/Siemens servo control signal, power line and encoder line.

⑥ Support mixed high speed data transmission (including Ethernet, USB, RS232, RS485, Profibus, CanBUS, CANOPEN, DeviceNET, CC-LINK, ProfiNET, EtherCAT, etc.)

⑦ Can combine temperature control signal with thermocouple signal.

⑧ Special environment can be customized, such as quakeproof, high temperature, etc.

⑨ Hybrid Pneumatic/hydraulic and electric slip ring can be mixed.

⑩ Frequency value and connector type can be customized.

⑪ High-frequency power can be customized.

⑫ Channel number can be customized on your request.

⑬ Maximum current can up to 5000 amperes.

⑭ Military grade.

⑮ Optional for underwater IP65, Ip68.

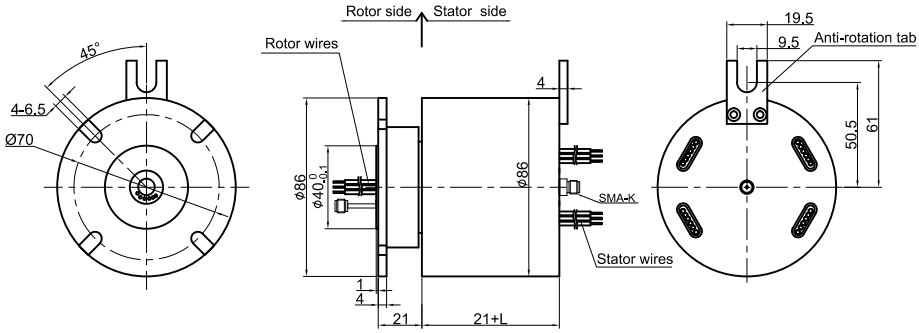
⑯ Optional for stainless steel housing

Technical support: technical@moflon.com

# MHF109 Series

## 1 Channel Rf Rotary Joints+electric Slip Ring

MHF109is 1 channel RF + electric combining high frequency rotary joint. High frequency + electric slip ring is specifically designed to support high-speed serial digital signals or analog signal transmission. It can support maximum rate 30GHz. This series product can support single channel high frequency transmissions, also high-frequency signal transmission combining with 24V control signal, communication signal, power supply and fluid media. Video signal adopt 50Ω characteristic impedance. High-frequency signal adopts 50Ωcharacteristic impedance RF coaxial connector. (other specified connectors are switchable, also Lead wire size are optional, such as RG178、RG316、RG174, etc.)




## Part# Explanation

MHF109 -P 06 10- S 06 - SMA - 30G

- MHF109: MHF: High frequency slip ring; 109: 1 channel RF+Electrical, OD 86mm
- P: Power ring; 0610: 6 rings, each ring (0~10A)
- S: Signal ring
- 06: Signal ring (each 0~5A)
- SMA: SMA connector; N: N connector；W：Exit coaxial-cable
- 30G: Max frequency 30GHZ

## Part# List

MHF109 channel RF rotary joint part list

| Part# | RF Channel | Frquency | 10A | Signal 5A | Length (mm) | Part# | RF Channel | Frquency | 10A | Signal 5A | Length (mm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MHF109-S02 | 1 | DC-30GHz | 0 | 2 | 31.6 | MHF109-P1210-S12 | 1 | DC-30GHz | 12 | 12 | 106.4 |
| MHF109-P0210 | 1 | DC-30GHz | 2 | 0 | 31.6 | MHF109-P1810-S06 | 1 | DC-30GHz | 18 | 6 | 106.4 |
| MHF109-S03 | 1 | DC-30GHz | 0 | 3 | 35 | MHF109-P2410 | 1 | DC-30GHz | 24 | 0 | 106.4 |
| MHF109-P0310 | 1 | DC-30GHz | 3 | 0 | 35 | MHF109-S30 | 1 | DC-30GHz | 0 | 30 | 126.8 |
| MHF109-S06 | 1 | DC-30GHz | 0 | 6 | 45.2 | MHF109-P0610-S24 | 1 | DC-30GHz | 6 | 24 | 126.8 |
| MHF109-P0210-S04 | 1 | DC-30GHz | 2 | 4 | 45.2 | MHF109-P1210-S18 | 1 | DC-30GHz | 12 | 18 | 126.8 |
| MHF109-P0410-S02 | 1 | DC-30GHz | 4 | 2 | 45.2 | MHF109-P1810-S12 | 1 | DC-30GHz | 18 | 12 | 126.8 |
| MHF109-P0610 | 1 | DC-30GHz | 6 | 0 | 45.2 | MHF109-P2410-S06 | 1 | DC-30GHz | 24 | 6 | 126.8 |
| MHF109-S12 | 1 | DC-30GHz | 0 | 12 | 65.6 | MHF109-P3010 | 1 | DC-30GHz | 30 | 0 | 126.8 |
| MHF109-P0210-S10 | 1 | DC-30GHz | 2 | 10 | 65.6 | MHF109-S36 | 1 | DC-30GHz | 0 | 36 | 150.2 |
| MHF109-P0310-S09 | 1 | DC-30GHz | 3 | 9 | 65.6 | MHF109-P0610-S30 | 1 | DC-30GHz | 6 | 30 | 150.2 |
| MHF109-P0610-S06 | 1 | DC-30GHz | 6 | 6 | 65.6 | MHF109-P1210-S24 | 1 | DC-30GHz | 12 | 24 | 150.2 |
| MHF109-P0810-S04 | 1 | DC-30GHz | 8 | 4 | 65.6 | MHF109-P3610 | 1 | DC-30GHz | 36 | 0 | 150.2 |
| MHF109-P1010-S02 | 1 | DC-30GHz | 10 | 2 | 65.6 | MHF109-S42 | 1 | DC-30GHz | 0 | 42 | 170.6 |
| MHF109-P1210 | 1 | DC-30GHz | 12 | 0 | 65.6 | MHF109-P0610-S36 | 1 | DC-30GHz | 6 | 36 | 170.6 |
| MHF109-S18 | 1 | DC-30GHz | 0 | 18 | 86 | MHF109-P1210-S30 | 1 | DC-30GHz | 12 | 30 | 170.6 |
| MHF109-P0210-S16 | 1 | DC-30GHz | 2 | 16 | 86 | MHF109-S48 | 1 | DC-30GHz | 0 | 48 | 193.2 |
| MHF109-P0410-S14 | 1 | DC-30GHz | 4 | 14 | 86 | MHF109-P0610-S42 | 1 | DC-30GHz | 6 | 42 | 193.2 |
| MHF109-P0610-S12 | 1 | DC-30GHz | 6 | 12 | 86 | MHF109-P0910-S39 | 1 | DC-30GHz | 9 | 39 | 193.2 |
| MHF109-P0810-S10 | 1 | DC-30GHz | 8 | 10 | 86 | MHF109-P1210-S36 | 1 | DC-30GHz | 12 | 36 | 193.2 |
| MHF109-P1010-S08 | 1 | DC-30GHz | 10 | 8 | 86 | MHF109-P1810-S30 | 1 | DC-30GHz | 18 | 30 | 193.2 |
| MHF109-P1210-S06 | 1 | DC-30GHz | 12 | 6 | 86 | MHF109-P2410-S24 | 1 | DC-30GHz | 24 | 24 | 193.2 |
| MHF109-P1410-S04 | 1 | DC-30GHz | 14 | 4 | 86 | MHF109-S60 | 1 | DC-30GHz | 0 | 60 | 234 |
| MHF109-P1610-S02 | 1 | DC-30GHz | 16 | 2 | 86 | MHF109-P0610-S54 | 1 | DC-30GHz | 6 | 54 | 234 |
| MHF109-S24 | 1 | DC-30GHz | 0 | 24 | 106.4 | MHF109-P0910-S51 | 1 | DC-30GHz | 9 | 51 | 234 |
| MHF109-P0410-S20 | 1 | DC-30GHz | 4 | 20 | 106.4 | MHF109-P1210-S48 | 1 | DC-30GHz | 12 | 48 | 234 |
| MHF109-P0610-S18 | 1 | DC-30GHz | 6 | 18 | 106.4 | MHF109-S72 | 1 | DC-30GHz | 0 | 72 | 277.8 |

Note: 1) N channels 10A rings parallel can be used as 1 channel N*10A current. For example: 2 rings 10A parallel could be used as 1 wires 20A
2) circuit number and current strength can be customized, please contact customer service for more details.

## Specifications

| (RF Rotary joints) Specifications | | |
|---|---|---|
| Parameter | Value | |
| Frequency | 0~30GHz | |
| VSWR | <1.4 | |
| Insertion Loss | 0.45db | |
| VSWR Ripple | <0.05 | |
| Insertion Loss Ripple | 0.05db | |
| Connector Types | SMA-F | |
| Characteristic Impedance | 50Ω | |
| Electrical Data | | |
| Parameter | Value | |
| | Power | Signal |
| Rated Voltage | 0~440VAC/VDC | 0~440VAC/VDC |
| Insulation Resistance | ≥1000MΩ/500VDC | ≥1000MΩ/500VDC |
| Lead Wire | AWG16# Teflon | AWG22# Teflon |
| Lead Length | standard length 300 mm ( adjustable ) | |
| Insulating Strength | 500VAC@50Hz , 60s | |
| Electrical Noise | <0.01Ω | |
| Mechanical Data | | |
| Parameter | Value | |
| Working Life | 50 million revs | |
| Rotating Speed | 150RPM | |
| Working Temperature | -30℃~80℃ | |
| Operating Humidity | 0~85% RH | |
| Contact Material | Gold-Gold | |
| Housing Material | aluminum alloy | |
| Torque | 0.1N.m； +0.03N.m/6 rings | |
| Protection Grade | IP51 | |

## Options for custom slip ring

Note: Below special demands can be customized. According, the delivery date will be extended 3 to 15 days; also the cost will be increased 30% to 50%. Most of our basic parts are standard and modular, which can save the cost and lead time.

① Cable exit way and cable length can be customized for both rotor and stator.

② Because of the structure limitation, length/height/OD can be customized on your request.

③ Support current or signal up to 200 rings.

④ Aviation plug, terminal and heat-shrink tube are optional.

⑤ Hybrid slip ring for Yaskawa/Panasonic/Siemens servo control signal, power line and encoder line.

⑥ Support mixed high speed data transmission (including Ethernet, USB, RS232, RS485, Profibus, CanBUS, CANOPEN, DeviceNET, CC-LINK, ProfiNET, EtherCAT, etc.)

⑦ Can combine temperature control signal with thermocouple signal.

⑧ Special environment can be customized, such as quakeproof, high temperature, etc.

⑨ Hybrid Pneumatic/hydraulic and electric slip ring can be mixed.

⑩ Frequency value and connector type can be customized.

⑪ High-frequency power can be customized.

⑫ Channel number can be customized on your request.

⑬ Maximum current can up to 5000 amperes.

⑭ Military grade.

⑮ Optional for underwater IP65, Ip68.

⑯ Optional for stainless steel housing

Technical support: technical@moflon.com

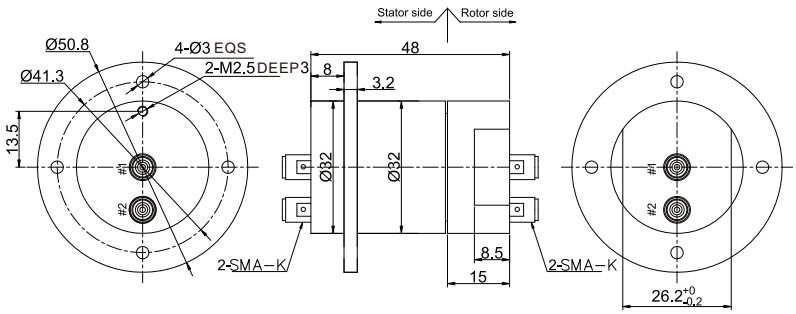
# MHF200 Series

## 2 Channels Rf Rotary Joints

MHF200 is 2 channels high frequency rotary joint; the maximum frequency of every channel is 4.5GHz or 18G. High frequency slip ring is specifically designed to support high-speed serial digital signals or analog signal transmission.

options: it can combine with electric power、24V control signal、communication signal、power supply、media of fluid、water、air、gas etc.

MHF200-SMA-18G




## Part# Explanation

MHF200- SMA - 4.5G

- MHF200: MHF: High frequency slip ring; 200: 2 channels RF
- SMA: SMA connector; N: N connector; W : Exit coaxial-cable
- 4.5G: Max frequency 4.5GHZ

## Part# List

| MHF200 - 2 Channels RF Rotary Joint Part List | | | |
|---|---|---|---|
| Part# | RF Channel | Frquency | Connector type |
| MHF200-SMA-4.5G | 2 | 4.5GHz/Channel | SMA-F |

## Specifications

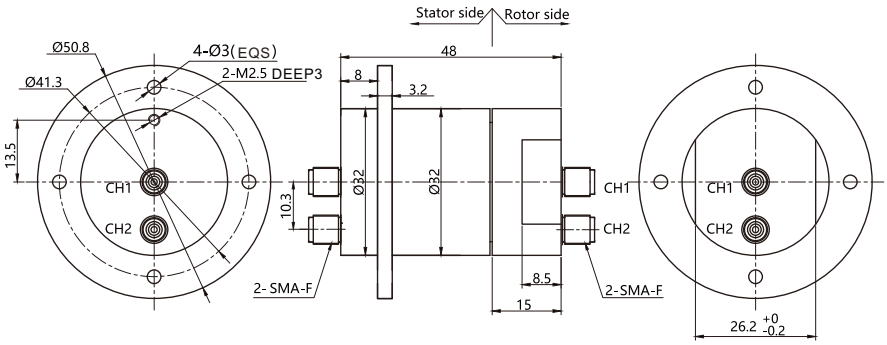
| Mechanical data | | (RF Rotary joints) Specifications | | |
|---|---|---|---|---|
| Parameter | Value | Parameter | Channel 1 value | Channel 2 value |
| Working Life | 5 million revs | Frquency | DC-4.5GHz | DC-4.5GHz |
| Rotating Speed | Max 50RPM | Peak power maximum | 1kW | 1kW |
| Working Temperature | -40℃~70℃ | Maximum average power | 50W@1GHz | 50W@1GHz |
| Operating Humidity | 0~85% RH | voltage standing wave ratio | 1.3 | 1.6 |
| Contact Material | Gold-Gold | VSWR Ripple | 0.05 | 0.2 |
| Housing Material | stainless steel | Insertion Loss | 0.3 | 0.5 |
| Torque | 0.1N.m; +0.03N.m/6 rings | Insertion Loss Ripple | 0.05dB | 0. 15dB |
| Protection Grade | IP51 | Minimum isolation | 50dB | 50dB |
| surface treatment | Conductive oxidation | Connector type | SMA-F | |

# MHF200 Series

## 2 Channels Rf Rotary Joints

MHF200 is 2 channels high frequency rotary joint; the maximum frequency of every channel is 4.5GHz or 18G. High frequency slip ring is specifically designed to support high-speed serial digital signals or analog signal transmission.

options: it can combine with electric power、 24V control signal、 communication signal、




## Part# Explanation

MHF 200- SMA - 18G

- MHF: High frequency slip ring
- 200: 2 channels RF
- SMA: SMA connector; N: N connector; W : Exit coaxial-cable
- 18G:Mmx frequeny 18GHz

## Part# List

| MHF200 - 2 Channels RF Rotary Joint Part List | | | |
|---|---|---|---|
| Part# | RF Channel | Frquency | Connector type |
| MHF200-SMA-18G | 2 | 18GHz/Channel | SMA-F |

## Specifications

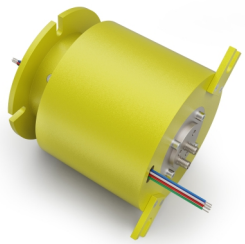
| Mechanical data | | (RF Rotary joints) Specifications | | |
|---|---|---|---|---|
| Parameter | Value | Parameter | Channel 1 value | Channel 2 value |
| Working Life | 5 million revs | Frquency | DC-18GHz | DC-18GHz |
| Rotating Speed | Max 50RPM | Peak power maximum | 1kW | 1kW |
| Working Temperature | -40℃-70℃ | Maximum average power | 50W@1GHz | 50W@1GHz |
| Operating Humidity | 0-95%RH | voltage standing wave ratio | 1.35@DC-8GHz<br>1.75@DC-8GHz | 2@DC-4GHz<br>3@4-8GHz<br>3.5@8-12GHz<br>4.5@12-18GHz |
| Contact Material | Gold-Gold | VSWR Ripple | 0.05 | 0.1@DC-4GHz<br>0.35@4-8GHz<br>0.8@8-12GHz<br>2.0@12-18GHz |
| Housing Material | stainless steel | Insertion Loss | 0.4dB@DC-8GHz<br>1.0dB@8-18GHz | 0.75dB@DC-4GHz<br>1.5dB@4-8GHz<br>2.5dB@8-12GHz<br>3.0dB@12-18GHz |
| Torque | 0.11Nm | Insertion Loss Ripple | 0.05dB | 1.5dB@12-18GHz |
| Protection Grade | IP51 | Minimum isolation | 50dB | 0.1dB@DC-4GHz<br>0.3dB@4-8GHz<br>0.75dB@8-12GHz<br>50dB |
| surface treatment | Conductive oxidation | Conductive oxidation | SMA-F | |



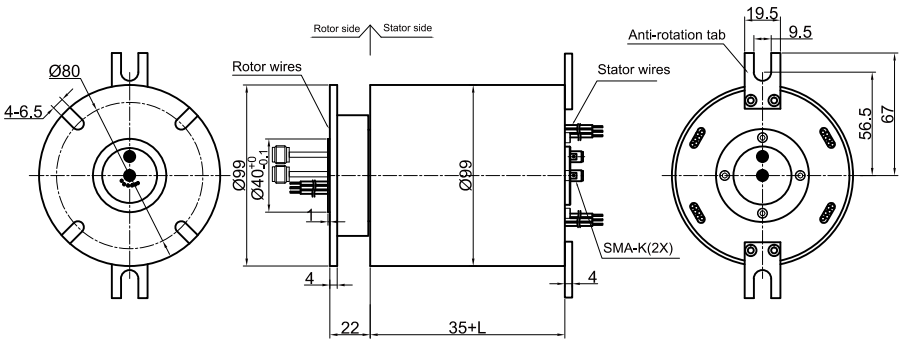
Web: http://www.moflon.com Email: sales@moflon.com

# MHF208 Series

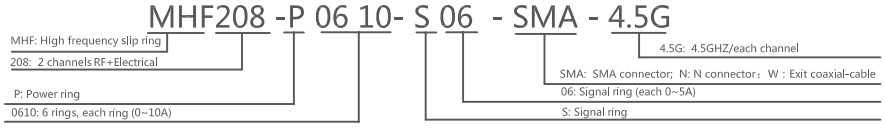
## 2 Channels Rf Rotary Joints+Electric Slip Ring



MHF208 is 2 channels RF + electric combining high frequency rotary joint. High frequency + electric slip ring is specifically designed to support high-speed serial digital signals or analog signal transmission. It can support maximum rate 40GHz.This series product can support 2 channels high frequency transmission, also high-frequency signal transmission combining with 24V control signal, communication signal, power supply and fluid media. High-frequency signal adopts 50Ωcharacteristic impedance RF coaxial connector.(other specified connectors are switchable, also Lead wire size are optional, such as RG178、 RG316、 RG174, etc.)




## Part# Explanation




## Part# List

MHF208 - 2 Channels RF Rotary Joint Part List

| Part# | RF Channel | Frquency | 10A | Signal or 5A | Length (mm) | Part# | RF Channel | Frquency | 10A | Signal or 5A | Length (mm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MHF208-S02 | 2 | 4.5GHz/Channel | 0 | 2 | 31.6 | MHF208-P1210-S12 | 2 | 4.5GHz/Channel | 12 | 12 | 106.4 |
| MHF208-P0210 | 2 | 4.5GHz/Channel | 2 | 0 | 31.6 | MHF208-P1810-S06 | 2 | 4.5GHz/Channel | 18 | 6 | 106.4 |
| MHF208-S03 | 2 | 4.5GHz/Channel | 0 | 3 | 35 | MHF208-P2410 | 2 | 4.5GHz/Channel | 24 | 0 | 106.4 |
| MHF208-P0310 | 2 | 4.5GHz/Channel | 3 | 0 | 35 | MHF208-S30 | 2 | 4.5GHz/Channel | 0 | 30 | 126.8 |
| MHF208-S06 | 2 | 4.5GHz/Channel | 0 | 6 | 45.2 | MHF208-P0610-S24 | 2 | 4.5GHz/Channel | 6 | 24 | 126.8 |
| MHF208-P0210-S04 | 2 | 4.5GHz/Channel | 2 | 4 | 45.2 | MHF208-P1210-S18 | 2 | 4.5GHz/Channel | 12 | 18 | 126.8 |
| MHF208-P0410-S02 | 2 | 4.5GHz/Channel | 4 | 2 | 45.2 | MHF208-P1810-S12 | 2 | 4.5GHz/Channel | 18 | 12 | 126.8 |
| MHF208-P0610 | 2 | 4.5GHz/Channel | 6 | 0 | 45.2 | MHF208-P2410-S06 | 2 | 4.5GHz/Channel | 24 | 6 | 126.8 |
| MHF208-S12 | 2 | 4.5GHz/Channel | 0 | 12 | 65.6 | MHF208-P3010 | 2 | 4.5GHz/Channel | 30 | 0 | 126.8 |
| MHF208-P0210-S10 | 2 | 4.5GHz/Channel | 2 | 10 | 65.6 | MHF208-S36 | 2 | 4.5GHz/Channel | 0 | 36 | 150.2 |
| MHF208-P0310-S09 | 2 | 4.5GHz/Channel | 3 | 9 | 65.6 | MHF208-P0610-S30 | 2 | 4.5GHz/Channel | 6 | 30 | 150.2 |
| MHF208-P0610-S06 | 2 | 4.5GHz/Channel | 6 | 6 | 65.6 | MHF208-P1210-S24 | 2 | 4.5GHz/Channel | 12 | 24 | 150.2 |
| MHF208-P0810-S04 | 2 | 4.5GHz/Channel | 8 | 4 | 65.6 | MHF208-P3610 | 2 | 4.5GHz/Channel | 36 | 0 | 150.2 |
| MHF208-P1010-S02 | 2 | 4.5GHz/Channel | 10 | 2 | 65.6 | MHF208-S42 | 2 | 4.5GHz/Channel | 0 | 42 | 170.6 |
| MHF208-P1210 | 2 | 4.5GHz/Channel | 12 | 0 | 65.6 | MHF208-P0610-S36 | 2 | 4.5GHz/Channel | 6 | 36 | 170.6 |
| MHF208-S18 | 2 | 4.5GHz/Channel | 0 | 18 | 86 | MHF208-P1210-S30 | 2 | 4.5GHz/Channel | 12 | 30 | 170.6 |
| MHF208-P0210-S16 | 2 | 4.5GHz/Channel | 2 | 16 | 86 | MHF208-S48 | 2 | 4.5GHz/Channel | 0 | 48 | 193.2 |
| MHF208-P0410-S14 | 2 | 4.5GHz/Channel | 4 | 14 | 86 | MHF208-P0610-S42 | 2 | 4.5GHz/Channel | 6 | 42 | 193.2 |
| MHF208-P0610-S12 | 2 | 4.5GHz/Channel | 6 | 12 | 86 | MHF208-P0910-S39 | 2 | 4.5GHz/Channel | 9 | 39 | 193.2 |
| MHF208-P0810-S10 | 2 | 4.5GHz/Channel | 8 | 10 | 86 | MHF208-P1210-S36 | 2 | 4.5GHz/Channel | 12 | 36 | 193.2 |
| MHF208-P1010-S08 | 2 | 4.5GHz/Channel | 10 | 8 | 86 | MHF208-P1810-S30 | 2 | 4.5GHz/Channel | 18 | 30 | 193.2 |
| MHF208-P1210-S06 | 2 | 4.5GHz/Channel | 12 | 6 | 86 | MHF208-P2410-S24 | 2 | 4.5GHz/Channel | 24 | 24 | 193.2 |
| MHF208-P1410-S04 | 2 | 4.5GHz/Channel | 14 | 4 | 86 | MHF208-S60 | 2 | 4.5GHz/Channel | 0 | 60 | 234 |
| MHF208-P1610-S02 | 2 | 4.5GHz/Channel | 16 | 2 | 86 | MHF208-P0610-S54 | 2 | 4.5GHz/Channel | 6 | 54 | 234 |
| MHF208-S24 | 2 | 4.5GHz/Channel | 0 | 24 | 106.4 | MHF208-P0910-S51 | 2 | 4.5GHz/Channel | 9 | 51 | 234 |
| MHF208-P0410-S20 | 2 | 4.5GHz/Channel | 4 | 20 | 106.4 | MHF208-P1210-S48 | 2 | 4.5GHz/Channel | 12 | 48 | 234 |
| MHF208-P0610-S18 | 2 | 4.5GHz/Channel | 6 | 18 | 106.4 | MHF208-S72 | 2 | 4.5GHz/Channel | 0 | 72 | 278 |

Note: 1) N channels 10A rings parallel can be used as 1 channel N*10A current. For example: 2 rings 10A parallel could be used as 1 wire 20A
2) circuit number and current strength can be customized, please contact customer service for more details.

## Specifications

| (RF Rotary joints) Specifications | | |
|---|---|---|
| Parameter | 1st Channel | 2nd Channel |
| Frequency | 0~4.5GHz | 0~4.5GHz |
| VSWR | <1.3 | <1.6 |
| Insertion Loss | 0.3db | 0.5db |
| VSWR Ripple | <0.05 | <0.2 |
| Insertion Loss Ripple | 0.05db | 0.15db |
| Connector Types | SMA-F | SMA-F |
| Characteristic Impedance | 50Ω | 50Ω |
| Electrical Data | | |
| Parameter | Value | |
| | Power | Signal |
| Rated Voltage | 0~440VAC/VDC | 0~240VAC/VDC |
| Insulation Resistance | ≥1000MΩ/500VDC | ≥1000MΩ/500VDC |
| Lead Wire | AWG16# Teflon | AWG22# Teflon |
| Lead Length | standard length 300mm ( adjustable ) | |
| Insulating Strength | 500VAC@50Hz , 60s | |
| Electrical Noise | <0.01Ω | |
| Mechanical Data | | |
| Parameter | Value | |
| Working Life | 50 million revs | |
| Rotating Speed | 30RPM | |
| Working Temperature | -30℃~80℃ | |
| Operating Humidity | 0~85% RH | |
| Contact Material | Gold-Gold | |
| Housing Material | aluminum alloy | |
| Torque | 0.1N.m； +0.03N.m/6 rings | |
| Protection Grade | IP51 | |

## Options for custom slip ring

Note: Below special demands can be customized. According, the delivery date will be extended 3 to 15 days; also the cost will be increased 30% to 50%. Most of our basic parts are standard and modular, which can save the cost and lead time.

① Cable exit way and cable length can be customized for both rotor and stator.

② Because of the structure limitation, length/height/OD can be customized on your request.

③ Support current or signal up to 200 rings.

④ Aviation plug, terminal and heat-shrink tube are optional.

⑤ Hybrid slip ring for Yaskawa/Panasonic/Siemens servo control signal, power line and encoder line.

⑥ Support mixed high speed data transmission (including Ethernet, USB, RS232, RS485, Profibus, CanBUS, CANOPEN, DeviceNET, CC-LINK, ProfiNET, EtherCAT, etc.)

⑦ Can combine temperature control signal with thermocouple signal.

⑧ Special environment can be customized, such as quakeproof, high temperature, etc.

⑨ Hybrid Pneumatic/hydraulic and electric slip ring can be mixed.

⑩ Frequency value and connector type can be customized.

⑪ High-frequency power can be customized.

⑫ Channel number can be customized on your request.

⑬ Maximum current can up to 5000 amperes.

⑭ Military grade.

⑮ Optional for underwater IP65, Ip68.

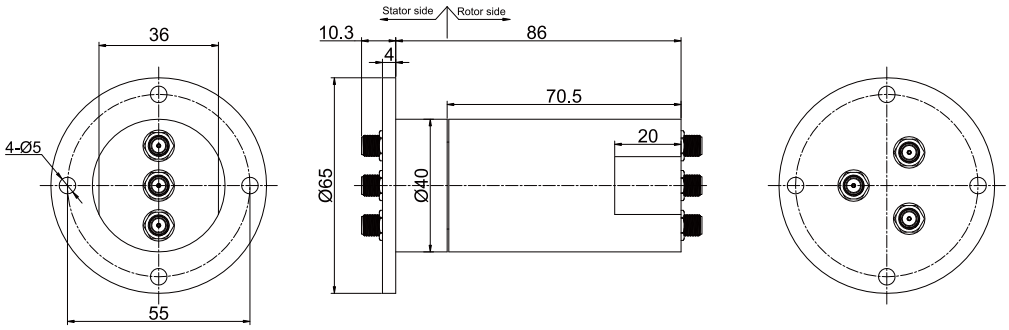
⑯ Optional for stainless steel housing

Technical support: technical@moflon.com

# MHF300 Series

## 3 Channels RF Rotary Joints

MHF300 is 3 channels high frequency rotary joint, which is specifically designed for high-speed serial digital signals or analog signal transmission. It can support maximum transfer rate 2.5GHz. MHF series can support single channel or high-frequency signal transmission by itself. Also MHF series can be customized to combine high-frequency signal with 24V control signal, communication signal, power supply and fluid media.




## Part# Explanation

MHF300- SMA - 2.5G

MHF: High frequency slip ring

300: 3 channels RF

SMA: SMA connector

2.5G: Max frequency 2.5GHZ

## Part# List

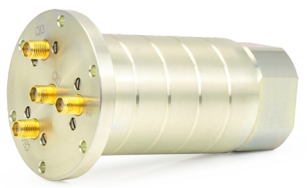
| MHF300- 3 Channels RF Ratary Joint Part List | | | |
|---|---|---|---|
| Part# | RF Channel | Frquency | Connector type |
| MHF300-SMA-4.5G | 3 | 2.5GHz/Channel | SMA-F |

## Specifications

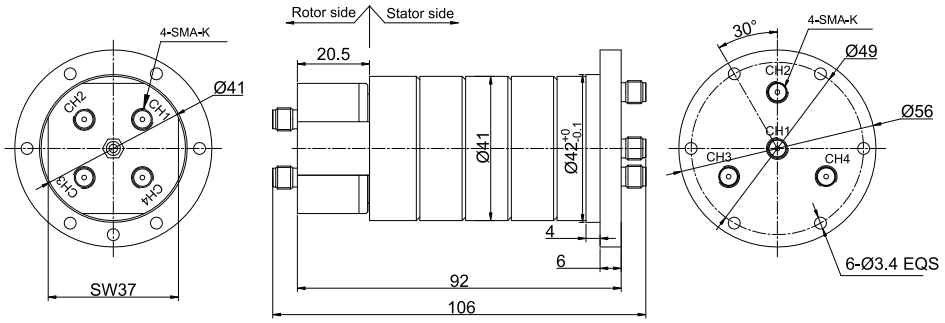
| Mechanical data | | (RF Rotary joints) Specifications | | | |
|---|---|---|---|---|---|
| Parameter | Value | Parameter | 1st Channel | 2nd Channel | 3rd Channel |
| Working Life | 30RPM | Insertion Loss | <1 | <1.2 | <1.2 |
| Rotating Speed | -40℃~70℃ | Insertion Loss Ripple | <0.3 | <0.15 | <0.3 |
| Working Temperature | 0~85% RH | VSWR | <1.5 | <1.6 | <1.6 |
| Operating Humidity | Gold-Gold | VSWR Ripple | <0.1 | <0.2 | <0.2 |
| Contact Material | stainless steel | Average Power | 100W | 10W | 10W |
| Housing Material | 0.1N.m; +0.03N.m/6 rings | | | | |
| Torque | Ip40 | | | | |
| Protection Grade | | | | | |

# MHF400 Series

## 4 Channels RF Rotary Joints



MHF400 is 4 channels high frequency rotary joint, which is specifically designed for high-speed serial digital signals or analog signal transmission. It can support maximum transfer rate 2.5GHz. MHF series can support single channel or high-frequency signal transmission by itself. Also MHF series can be customized to combine high-frequency signal with 24V control signal, communication signal, power supply and fluid media.




## Part# Explanation

MHF400- SMA - 4G

- MHF: High frequency slip ring
- 400: 4 channels RF
- SMA: SMA connector;
- 4G: Max frequency 4 GHZ

## Part# List

| MHF400 - 4 channels RF rotary joint part list | | | |
|---|---|---|---|
| Part# | RF Channel | Frquency | Connector type |
| MHF400-SMA-4G | 4 | 4GHz/Channel | SMA-F |

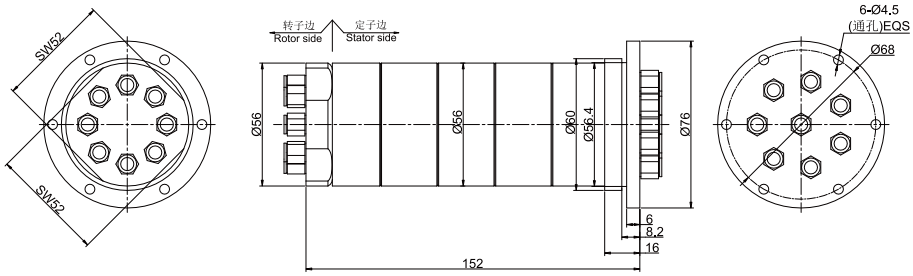
## Specifications

| (RF Rotary joints) Specifications | | | | |
|---|---|---|---|---|
| Parameter | 1st Channel | 2nd Channel | 3rd Channel | 4th Channel |
| Insertion Loss | <1 | <0.5 | <1 | <1 |
| Insertion Loss Ripple | <0.1 | <0.15 | <0.15 | <0.15 |
| VSWR | <1.3 | <1.5 | <1.5 | <1.5 |
| VSWR Ripple | <0.1 | <0.1 | <0.1 | <0.1 |
| Average Power | 50W | 10W | 10W | 10W |
| Mechanical Data | | | | |
| Parameter | Value | | | |
| Working Life | 50 million revs | | | |
| Rotating Speed | 30RPM | | | |
| Working Temperature | -40℃~70℃ | | | |
| Operating Humidity | 0~85% RH | | | |
| Contact Material | Gold-Gold | | | |
| Housing Material | stainless steel | | | |
| Torque | 0.1N.m; +0.03N.m/6 rings | | | |
| Protection Grade | IP51 | | | |

# MHF800 Series

## 8 Channels RF Rotary Joints

MHF800 is 8 channels high frequency rotary joint, which is specifically designed for high-speed serial digital signals or analog signal transmission. It can support maximum transfer rate 3GHz. MHF series can support single channel or high-frequency signal transmission by itself. Also MHF series can be customized to combine high-frequency signal with 24V control signal, communication signal, power supply and fluid media.




## Part# Explanation

MHF800-SMA-3G

- MHF:High fequency slip ring
- 800:8Channelsrf
- SMA:SMA connector
- 3G：Mam frequency 3GHz

## Part# List

| MHF800-8channel RF rotary joint part list | | | |
|---|---|---|---|
| Part# | RF Channel | Frquency | Connector type |
| MHF800-SMA-3G | 8 | 3GHz/Channel | SMA-F |

## Specifications

| Mechanical Data | | (RF Rotary joints) Specifications | | | |
|---|---|---|---|---|---|
| Parameter | Value | Parameter | Main circuit 1 value | Side 2, 3, 4, 5, 6 values | Side 7, 8 values |
| Working Life | 5 million revs | Frquency | DC-3GHz | DC-3GHz | DC-3GHz |
| Rotating Speed | 30RPM | Maximum average power | 10W@1GHz | 10W@1GHz | 10W@1GHz |
| Working Temperature | -40℃-65℃ | voltage standing wave ratio | 1.3 (rotating and stationary) | 1.5 (rotating and stationary) | 1.5 (rotating and stationary) |
| Contact Material | 金-金 | VSWR Ripple | 0.1 (rotating and stationary) | 0.1 (rotating and stationary) | 0.1 (rotating and stationary) |
| | | Insertion Loss | 0.8dB | 1.1dB | 1.2dB |
| | | Insertion Loss Ripple | 0.1dB | 1.15dB | 1.5dB |
| Protection Grade | IP66 | Minimum isolation | 65dB(rotating and stationary) | 65dB(rotating and stationary) | 65dB(rotating and stationary) |
| | | Connector type | SMA-F | SMA-F | SMA-F |