# MFO Series Fiber Optic Slip Ring(FORJ)

MFO series fiber optic slip ring is an optic+electromechanical device that allows the transmission of power and fiber optic signals from a stationary to a rotating structure. It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid destroying fiber optics. also can be combined with electric slip ring to transmit power and high-speed data too.

### **Product Reference**







1 Channel (FORJ) Fiber Optic Slip Rings

Multichannel (FORJ) Fiber Optic Slip Rings

Multichannel Fiber
Optic+Electric Slip Rings

### **Features**

- Options for single mode & multiple mode
- FC, SC, ST, SMA, or LC (PC and APC) on your request
- Large amounts of data transmittings.
- Anti-electromagnetic interference
- Could support 1,2,4,6,8 channel fiber optic on 360 rotating.
- Combine with 1~96circuits power/signal.
- Much higher rotating speed

### **MFO** Series Models

Model#	Optic Fiber Channel	Circuits Num	OD (mm)
MFO100	1	0	10.1
MFO100B	1	0	12.7
MFO102	1	1~30	24.8
MFO107	1	1~24	33
MFO108	1	1~48	56
MFO109	1	1~96	86
MFO200	2	0	67
MFO200B	2	0	67
MFO200C	2	0	26
MFO208	2	1~96	119
MFO400	4	0	67
MFO400B	4	0	67
MFO408	4	1~96	119
MFO600	6	0	67
MFO608	6	1~96	119
MFO800	8	0	67
MFO808	8	1~96	119
MFO1000C	10	0	38
MFO1200C	12	0	38
MFO1600C	16	0	38
MFO2000C	20	0	38
MFO2400C	24	0	38
MFO2600C	26	0	67

## MFO100 series

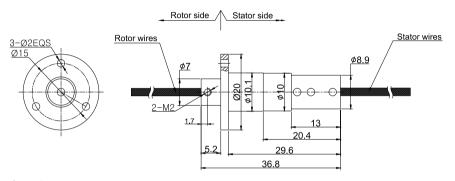
## 1 Channel (FORJ) Fiber Optic Slip Rings

MFO100 fiber optic slip ring support 1 channel fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

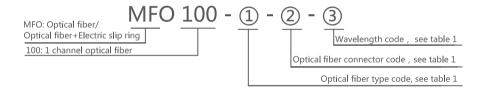


#### Features:

- 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



#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01 : 9/125um , Single-mode	FC: FC Connector	01 : 1310/1550(Single-mode)
02 : 50/125um , Multiple-mode	ST: ST Connector	02 : 850/1310(Multiple-mode)
03:62.5/125m, Multiple-mode	SC: SC Connector	
	LC: LC Connector	
	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

Itmes	Туре	Single-mode	Multiple-mode
Wavewidth(nm)			±50
Max Insert Loss, 23°C(db)		1.2	0.7
Insert Loss Ripple(db)		0.6	0.4
Return Loss(db)		≥55(No connector)	≥40(No connector)
Max Power(w)		0.5	
Weight(g)		50	
Max Rotating Speed(rpm)		12000	
Working Life		>5 billion turn	
Working Temperature(°C)		-45~85	
Storage Temperature(°C)		-50~85	
Protection Grade		IP65	

## MFO100A series

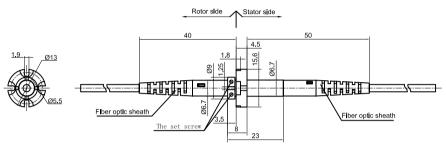
### 1 Channel (FORJ)Fiber Optic Slip Rings

MFO100A fiber optic slip ring support 1 channel fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.



#### Features:

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



#### Part # Explanation

MFO: Optical fiber/
Optical fiber, A type shape

MFO: 100A - 1 - 2 - 3

Wavelength code , see table 1

Optical fiber connector code , see table 1

Optical fiber type code, see table 1

#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC : SC Connector LC : LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,if APC is needed, APC	
	shouldbe added behind APC, such asFC/APC	

#### **Specifications**

Itmes Type	Single-Mode	Single-Mode
Wavewidth(nm)	±	50
Max Insert Loss , 23°C(db)	1.2	0.7
Insert Loss Ripple(db)	0.6	0.4
Return Loss(db)	≥55(No connector)	≥40(No connector)
Max Power(w)	0.5	
Weight(g)	50	
Max Rotating Speed(rpm)	1000	
Working Life	>5 billion turn	
Working Temperature(°C)	-45~85	
Storage Temperature(°C)	-50~85	
Protection Grade	IP68	

#### 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.

- $\ensuremath{\textcircled{1}}$  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.
- $\ensuremath{\mathfrak{B}}$  Support current or signal up to 200 rings.
- $\ensuremath{\textcircled{4}}$  Aviation plug, terminal and heat-shrink tube are optional.
- (§) Hybrid slip ring for Yaskawa/Panasonic/Siemens servo control signal, power line and encoder line.
- (a) 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.

- ® Special environment can be customized, such as quakeproof, high temperature.
- (9) Hybrid Pneumatic/hydraulic and electric slip ring can be mixed.
- Optical fiber connector, optical fiber type and fiber pigtail
   length can be customized.
- ① Optic fiber channels can be customized.
- ② Optic fiber wavelength can be customized.
- (3) Maximum current can up to 5000 amperes.
- 14 Military grade.
- Optional for underwater IP65. IP68.
- 16 Optional for stainless steel housing.

## MFO100B series

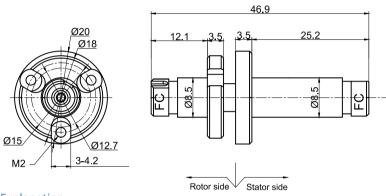
### 1 Channel (FORJ) fiber Optic Slip Rings

MFO100B fiber optic slip ring support 1 channel fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

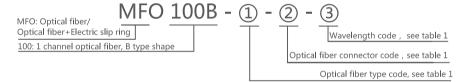


#### Features:

- Low insertion loss, high rotation speed
- Non-contact, zero friction, long working life, single core can achieve one hundred million revolutions
- Small in size, in light weight, high sealing class
- Fiber optics transmitting signal, no leaks, no electromagnetic interference, long-distance



#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01: 9/125um , Single-mode 02: 50/125um , Multiple-mode 03: 62.5/125m , Multiple-mode	FC: FC Connector ST: ST Connector SC: SC Connector LC: LC Connector The connector face is PC by default , If APC is needed, APC shouldbe added behind APC, such as FC/APC.	01 : 1310/1550(Single-mode) 02 : 850/1310(Multiple-mode)

Itmes	Туре	Single-Mode	Multiple-Mode
Wavewidth(nm)			±50
Max Insert Loss , 23°C(db)		1.2	0.7
Insert Loss Ripple(db)		0.6	0.4
Return Loss(db)		≥55(No connector)	≥40(No connector)
Max Power(w)		0.5	
Weight(g)		50	
Max Rotating Speed(rpm)		1000	
Working Life		>5 billion turn	
Working Temperature(°C)		-45~85	
Storage Temperature(°C)		-50~85	
Protection Grade		IP68	

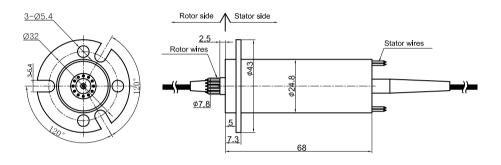
### MFO102 series

### 1 Channel Fiber Optic+electric Slip Rings

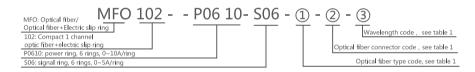
MFO102 can combine 1 channel optic fiber and electric(1~36wires). It adopt complete aluminum alloy structure, can support signal(5A).

Rotary joint of FORJ+Electric is also called photoelectrical slip ring, photoelectricity collector ring, which adopts fiber optic as data transmission media to solve the data transmission between system units. It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position on unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroy fiber optics. Fiber optic rotary joint can be combined with traditional electric slip ring to transmit power and high-speed data.





#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01: 9/125um , Single-mode 02: 50/125um , Multiple-mode 03: 62.5/125m , Multiple-mode	FC: FC Connector ST: ST Connector SC: SC Connector LC: LC Connector The connector face is PC by default, If APC is needed, APC shouldbe added behind APC, such as FC/APC.	01 : 1310/1550(Single-mode) 02 : 850/1310(Multiple-mode)

#### Part#List

MFO102 - Compact 1 channel optic fiber+electric slip ring part list					
Part# Optic Fiber Channel 10A Signal or 2A Length(mm)					
MFO102-S06	1 channel	0	6	68	
MFO102-S12	1 channel	0	12	68	
MFO102-S18 1 channel 0 18 68					

If you have any special requirements, please contact customer service for specific model and customization.

#### **Specifications**

Itmes Type	Single-Mode	Multiple-Mode	
WaveWidth(nm)	±50		
Max insert Loss, 23°C(dB)	1.2	0.7	
Insert Loss Ripple(dB)	0.6	0.4	
Return Loss(dB)	≥55(No connector)	≥40(No connector)	
Max Power(W)	0.5		
Weight(g)	50		
Max Rotating Speed(rpm)	1000		
Working Life	>5 billion turn		
Working Temperature(°C)	-45~85		
Storage Temperature(°C)	-50~85		
Parameter		Value	
	Power	Signal	
Rated Voltage	0~240VAC/VDC	0~240VAC/VDC	
Insulation Resistance	≥1000MΩ/500VDC	≥1000MΩ/500VDC	
Lead Wires	AWG22#Teflon	AWG22#Teflon	
Lead Length	Standard 300mm(can be extend)		
Dielectric Strength	500VAC@50Hz , 60s		
Electrical Noise	<0.01Ω		
	Mechanical Data		
Parameter	Value		
Working Life	20 million turn		
Rotating Speed	250 RPM		
Working Temperature	-30°C~80°C		
Operating Humidity	0~85% RH		
Contact Material	gold-gold		
Housing Materia	aluminium alloy		
Torque	0.1N.m; +0.03N.m/6ring		
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.
- (§) 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.
- ① Optical fiber connector, optical fiber type and fiber pigtail length can be customized.
- 11) Optic fiber channels can be customized.
- $\ensuremath{\textcircled{\scriptsize{12}}}$  Optic fiber wavelength can be customized.
- 13 Maximum current can up to 5000 amperes.
- (4) Military grade.
- (15) Optional for underwater IP65, IP68.
- (6) Optional for stainless steel housing.

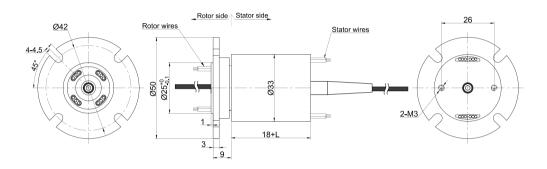
## MFO107 series

### 1 Channel Fiber Optic+electric Slip Rings

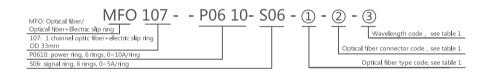
MFO107 can combine 1 channel optic fiber and electric ( $1^2$ 4wires). It adopt complete aluminum alloy structure, can support signal (5A).

Rotary joint of FORJ+Electric is also called photoelectrical slip ring, photoelectricity collector ring, which adopts fiber optic as data transmission media to solve the data transmission between system units. It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position on unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroy fiber optics. Fiber optic rotary joint can be combined with traditional electric slip ring to transmit power and high-speed data.





#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01: 9/125um , Single-mode 02: 50/125um , Multiple-mode 03: 62.5/125m , Multiple-mode	FC: FC Connector ST: ST Connector SC: SC Connector LC: LC Connector The connector face is PC by default, If APC is needed, APC shouldbe added behind APC, such as FC/APC.	01 : 1310/1550(Single-mode) 02 : 850/1310(Multiple-mode)

#### Part#List

MFO107 - 1 channel optic fiber+electric slip ring part list					
Part	Optic Fiber Channel	10A	Signal or 5A	Length(mm)	
MFO107-S06	1 channel	0	6	25.4	
MFO107-S12	1 channel	0	12	39.2	
MFO107-S18	1 channel	0	18	53	
MFO107-S24	1 channel	0	24	66.8	

Products can be customized, please contact customer service for more slip ring models.

#### **Specifications**

Itmes Type	Single-Mode	Multiple-Mode			
WaveWidth(nm)		±50			
Max insert Loss, 23°C(dB)	1.2	0.7			
Insert Loss Ripple(dB)	0.6	0.4			
Return Loss(dB)	≥55(No connector)	≥40(No connector)			
Max Power(W)	0.5				
Weight(g)	50				
Max Rotating Speed(rpm)	1000				
Working Life	>5 billion turn				
Working Temperature(°C)	-45~85				
Storage Temperature(°C)	-50~85				
Parameter		Value			
	Power	Signal			
Rated Voltage	0~440VAC/VDC	0~440VAC/VDC			
Insulation Resistance	≥1000MΩ/500VDC	≥1000MΩ/500VDC			
Lead Wires	AWG22#Teflon	AWG22#Teflon			
Lead Length	Standard 300mm(can be extend)				
Dielectric Strength	500VAC@50Hz , 60s				
Electrical Noise	<0.01Ω				
	Mechanical Data				
Parameter	Value				
Working Life	20 million turn				
Rotating Speed	250 RPM				
Working Temperature	-30°C~80°C				
Operating Humidity	0~85% RH				
Contact Material	gold-gold	gold-gold			
Housing Materia	aluminium alloy				
Torque	0.1N.m; +0.03N.m/6ring				
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.)
- (8) Special environment can be customized, such as quakeproof, high temperature, etc.
- (9) Hybrid Pneumatic/hydraulic and electric slip ring can be mixed.
- ① Optical fiber connector, optical fiber type and fiber pigtail length can be customized.
- ① Optic fiber channels can be customized.
- $\ensuremath{\textcircled{\scriptsize{12}}}$  Optic fiber wavelength can be customized.
- 13 Maximum current can up to 5000 amperes.
- (4) Military grade.
- (15) Optional for underwater IP65, IP68.
- 16 Optional for stainless steel housing.

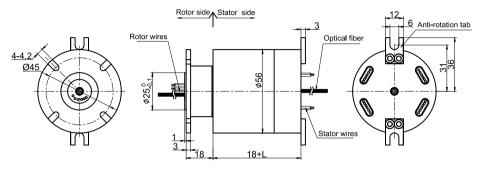
## MFO108 series

### 1 Channel Fiber Optic+electric Slip Rings

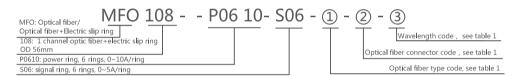
MFO108 can combine 1 channel optic fiber and electric( $1^48$ wires). It adopt complete aluminum alloy structure, can support signal(5A).

Rotary joint of FORJ+Electric is also called photoelectrical slip ring, photoelectricity collector ring, which adopts fiber optic as data transmission media to solve the data transmission between system units. It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position on unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroy fiber optics. Fiber optic rotary joint can be combined with traditional electric slip ring to transmit power and high-speed data.





#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03:62.5/125m , Multiple-mode	The connector face is PC by default , If APC is needed, APC shouldbe added behind APC, such as FC/APC.	

#### Part#List

	MFO108 - 1 chanı	nel optic fiber+electric sli	ip ring part list	
Part	Optic Fiber Channel	10A	Signal or 5A	Length(mm)
MFO108-S06	1 channel	0	6	38
MFO108-P0610	1 channel	6	0	38
MFO108-S12	1 channel	0	12	54.8
MFO108-P1210	1 channel	12	0	54.8
MFO108-P0610-S06	1 channel	6	6	54.8
MFO108-S18	1 channel	0	18	71.6
MFO108-P1810	1 channel	18	0	71.6
MFO108-S24	1 channel	0	24	88.4
MFO108-P1210-S12	1 channel	12	12	88.4
MFO108-P0610-S18	1 channel	6	18	88.4
MFO108-S30	1 channel	0	30	105.2
MFO108-S36	1 channel	0	36	125
MFO108-S42	1 channel	0	42	141.8
MFO108-S48	1 channel	0	48	158.6

#### **Specifications**

Itmes Type	Single-Mode	Multiple-Mode			
Wave Width(nm)		±50			
Max insert Loss , 23°C(dB)	1.2	0.7			
Insert Loss Ripple(dB)	0.6	0.4			
Return Loss(dB)	≥55(No connector)	≥40(No connector)			
Max Power(W)	0.5				
Weight(g)	50				
Max Rotating Speed(rpm)	1000				
Working Life	>5 billion turn				
Working Temperature(°C)	-45~85				
Storage Temperature(°C)	-50~85				
Parameter		Value			
	Power	Signal			
Rated Voltage	0~440VAC/VDC	0~440VAC/VDC			
Insulation Resistance	≥1000MΩ/500VDC	≥1000MΩ/500VDC			
Lead Wires	AWG22#Teflon	AWG22#Teflon			
Lead Length	Standard 300mm(can be extend)				
Dielectric Strength	500VAC@50Hz , 60s				
Electrical Noise	<0.01Ω				
	Mechanical Data				
Parameter	Value				
Working Life	20 million turn				
Rotating Speed	250 RPM				
Working Temperature	-30°C~80°C				
Operating Humidity	0~85% RH	0~85% RH			
Contact Material	gold-gold	gold-gold			
Housing Materia	aluminium alloy	3 3			
Torque	0.1N.m; +0.03N.m/6ring	·			
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.)
- (8) Special environment can be customized, such as quakeproof, high temperature, etc.
- (9) Hybrid Pneumatic/hydraulic and electric slip ring can be mixed.
- ① Optical fiber connector, optical fiber type and fiber pigtail length can be customized.
- ① Optic fiber channels can be customized.
- $\ensuremath{\textcircled{\scriptsize{12}}}$  Optic fiber wavelength can be customized.
- 13 Maximum current can up to 5000 amperes.
- (14) Military grade.
- (15) Optional for underwater IP65, IP68.
- 16 Optional for stainless steel housing.

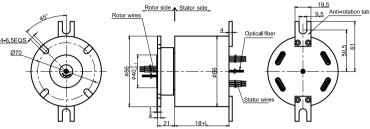
## MFO109 series

### 1 Channel Fiber Optic+electric Slip Rings

MFO109 can combine 1 channel optic fiber and electric ( $1^{-9}$ 6wires). It adopt complete aluminum alloy structure, can support signal (5A).

Rotary joint of FORJ+Electric is also called photoelectrical slip ring, photoelectricity collector ring, which adopts fiber optic as data transmission media to solve the data transmission between system units. It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position on unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroy fiber optics. Fiber optic rotary joint can be combined with traditional electric slip ring to transmit power and high-speed data.





#### Part # Explanation

#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

#### Part#List

MFO109 - 1 channel optic fiber+electric slip ring part list									
Part#	Optic Fiber Channel	10A	Signal or 5A	Length L (mm)	Part#	Optic Fiber Channel	10A	Signal or 5A	Length L (mm)
MFO109-S02	1	0	2	36	MFO109-P1210-S12	1	12	12	119.6
MFO109-P0210	1	2	0	36	MFO109-P1810-S06	1	18	6	119.6
MFO109-S03	1	0	3	39.8	MFO109-P2410	1	24	0	119.6
MFO109-P0310	1	3	0	39.8	MFO109-S30	1	0	30	142.4
MFO109-S06	1	0	6	51.2	MFO109-P0610-S24	1	6	24	142.4
MFO109-P0210-S04	1	2	4	51.2	MFO109-P1210-S18	1	12	18	142.4
MFO109-P0410-S02	1	4	2	51.2	MFO109-P1810-S12	1	18	12	142.4
MFO109-P0610	1	6	0	51.2	MFO109-P2410-S06	1	24	6	142.4
MFO109-S12	1	0	12	74	MFO109-P3010	1	30	0	142.4
MFO109-P0210-S10	1	2	10	74	MFO109-S36	1	0	36	169.2
MFO109-P0310-S09	1	3	9	74	MFO109-P0610-S30	1	6	30	169.2
MFO109-P0610-S06	1	6	6	74	MFO109-P1210-S24	1	12	24	169.2
MFO109-P0810-S04	1	8	4	74	MFO109-P3610	1	36	0	169.2
MFO109-P1010-S02	1	10	2	74	MFO109-S42	1	0	42	192
MFO109-P1210	1	12	0	74	MFO109-P0610-S36	1	6	36	192
MFO109-S18	1	0	18	96.8	MFO109-P1210-S30	1	12	30	192
MFO109-P0210-S16	1	2	16	96.8	MFO109-S48	1	0	48	214.8
MFO109-P0410-S14	1	4	14	96.8	MFO109-P0610-S42	1	6	42	214.8
MFO109-P0610-S12	1	6	12	96.8	MFO109-P0910-S39	1	9	39	214.8
MFO109-P0810-S10	1	8	10	96.8	MFO109-P1210-S36	1	12	36	214.8
MFO109-P1010-S08	1	10	8	96.8	MFO109-P1810-S30	1	18	30	214.8
MFO109-P1210-S06	1	12	6	96.8	MFO109-P2410-S24	1	24	24	214.8
MFO109-P1410-S04	1	14	4	96.8	MFO109-S60	1	0	60	260.4
MFO109-P1610-S02	1	16	2	96.8	MFO109-P0610-S54	1	6	54	260.4
MFO109-S24	1	0	24	119.6	MFO109-P0910-S51	1	9	51	260.4
MFO109-P0410-S20	1	4	20	119.6	MFO109-P1210-S48	1	12	48	260.4
MFO109-P0610-S18	1	6	18	119.6	MFO109-S72	1	0	72	310

#### **Specifications**

Itmes Type	Single-Mode	Multiple-Mode			
WaveWidth(nm)		±50			
Max insert Loss, 23°C(dB)	1.2	0.7			
Insert Loss Ripple(dB)	0.6	0.4			
Return Loss(dB)	≥55(No connector)	≥40(No connector)			
Max Power(W)	0.5				
Weight(g)	50				
Max Rotating Speed(rpm)	1000				
Working Life	>5 billion turn				
Working Temperature(°C)	-45~85				
Storage Temperature(°C)	-50~85				
Parameter		Value			
	Power	Signal			
Rated Voltage	0~440VAC/VDC	0~440VAC/VDC			
Insulation Resistance	≥1000MΩ/500VDC	≥1000MΩ/500VDC			
Lead Wires	AWG22#Teflon	AWG22#Teflon			
Lead Length	Standard 300mm(can be extend)				
Dielectric Strength	500VAC@50Hz , 60s				
Electrical Noise	<0.01Ω				
	Mechanical Data				
Parameter	Value				
Working Life	20 million turn				
Rotating Speed	250 RPM				
Working Temperature	-30°C~80°C				
Operating Humidity	0~85% RH	0~85% RH			
Contact Material	gold-gold	gold-gold			
Housing Materia	aluminium alloy	<u> </u>			
Torque	0.1N.m; +0.03N.m/6ring				
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.)
- (8) Special environment can be customized, such as quakeproof, high temperature, etc.
- (9) Hybrid Pneumatic/hydraulic and electric slip ring can be mixed.
- ① Optical fiber connector, optical fiber type and fiber pigtail length can be customized.
- ① Optic fiber channels can be customized.
- $\ensuremath{\textcircled{\scriptsize{12}}}$  Optic fiber wavelength can be customized.
- 13 Maximum current can up to 5000 amperes.
- (14) Military grade.
- (15) Optional for underwater IP65, IP68.
- 16 Optional for stainless steel housing.

## MFO200 series

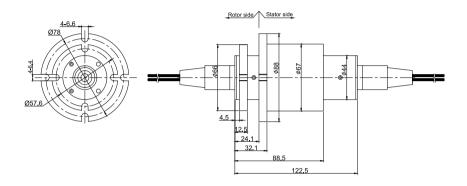
## 2 Channels (FORJ)Fiber Optic Slip Rings

MFO200 fiber optic slip ring support 2 channels fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

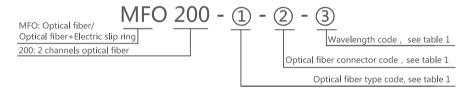


#### Features:

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



#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

Itmes	Туре	Single-Mode	Single-Mode
WaveWidth(nm)		±5	50
Max insert Loss , 23°C(dB)		4	3.5
Insert Loss Ripple(dB)		2	1
Return Loss(dB)		≥50(APC)	≥40(PC)
Max Power(W)		0.5	
Weight(g)		200	
Max Rotating Speed(rpm)		250	
Working Life		>200 million turn	
Working Temperature(°C)		-45~85	
Storage Temperature(°C)		-50~85	
IP68		IP54	

### MFO200A series

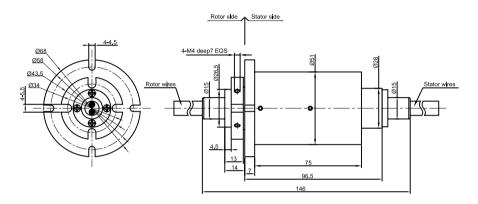
### 2 Channels (FORJ)Fiber Optic Slip Rings

MFO200A fiber optic slip ring support 2 channels fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

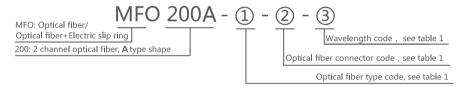


#### Features:

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



#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01: 9/125um , Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02 : 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

Itmes	Туре	Single-Mode	Single-Mode
WaveWidth(nm)		±5	50
Max insert Loss , 23°C(dB)		4	3.5
Insert Loss Ripple(dB)		2	1
Return Loss(dB)		≥50(APC)	≥40(PC)
Max Power(W)		0.5	
Weight(g)		200	
Max Rotating Speed(rpm)		250	
Working Life		>200 million turn	
Working Temperature(°C)		-45~85	
Storage Temperature(°C)		-50~85	
Protection Grade		IP54	

## MFO200B series

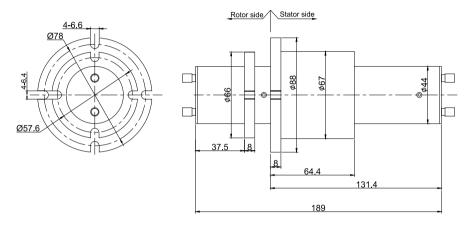
### 2 Channels (FORJ)Fiber Optic Slip Rings

MFO200B fiber optic slip ring support 2 channels fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

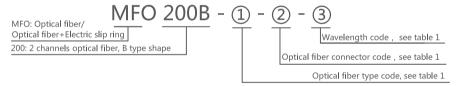


#### Features:

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



#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,  If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

Itmes	Туре	Single-Mode	Single-Mode
WaveWidth(nm)		±5	50
Max insert Loss , 23°C(dB)		4	3.5
Insert Loss Ripple(dB)		2	1
Return Loss(dB)		≥50(APC)	≥40(PC)
Max Power(W)		0.5	
Weight(g)		200	
Max Rotating Speed(rpm)		250	
Working Life		>200 million turn	
Working Temperature(°C)		-45~85	
Storage Temperature(°C)		-50~85	
Protection Grade		IP54	

# MFO200C series

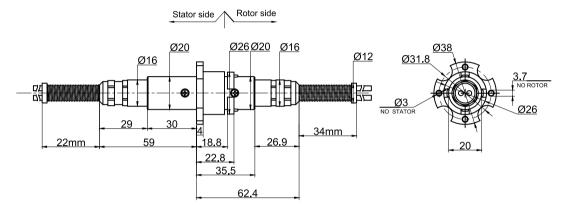
### 2 Channels (FORJ)Fiber Optic Slip Rings

MFO200B fiber optic slip ring support 2 channels fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

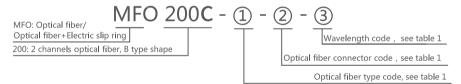


#### Features:

- Low insertion loss, high rotation speed
- Non-contact, zero friction, long working life, single core can achieve one hundred million revolutions
- Small size, light weight, high sealing class
- Fiber optics transmitting signal, no leaks , no electromagnetic interference, long-distance transmission
- Loss below 1.5-2db can be customized



#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

Itmes	Туре	Single-Mode	Single-Mode
WaveWidth(nm)		±5	50
Max insert Loss, 23°C(dB)		4	3.5
Insert Loss Ripple(dB)		2	1
Return Loss(dB)		≥55(APC)	≥40(PC)
Max Power(W)		0.5	
Weight(g)		200	
Max Rotating Speed(rpm)		250	
Working Life		>200 million turn	
Working Temperature(°C)		-45~85	
Storage Temperature(°C)		-50~85	
Protection Grade		IP68	

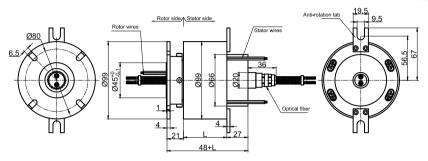
## MFO208 series

### 2 Channels Fiber Optic+electric Slip Rings

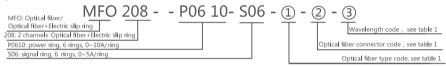
MFO208 can combine 2 channels optic fiber and electric(1~72wires). It adopt complete aluminum alloy structure, can support signal(5A).

Rotary joint of FORJ+Electric is also called photoelectrical slip ring, photoelectricity collector ring, which adopts fiber optic as data transmission media to solve the data transmission between system units. It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position on unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroy fiber optics. Fiber optic rotary joint can be combined with traditional electric slip ring to transmit power and high-speed data.





#### Part # Explanation



#### Part#List

		М	FO208 series	through hole	slip ring part list				
Part	Optic Fiber Channel	10A	Signal or 5A	Length L (mm)	Part	Optic Fiber Channel	10A	Signal or 5A	Length L (mm)
MFO208-S02	2	0	2	39.2	MFO208-P1210-S12	2	12	12	114
MFO208-P0210	2	2	0	39.2	MFO208-P1810-S06	2	18	6	114
MFO208-S03	2	0	3	42.6	MFO208-P2410	2	24	0	114
MFO208-P0310	2	3	0	42.6	MFO208-S30	2	0	30	134.4
MFO208-S06	2	0	6	52.8	MFO208-P0610-S24	2	6	24	134.4
MFO208-P0210-S04	2	2	4	52.8	MFO208-P1210-S18	2	12	18	134.4
MFO208-P0410-S02	2	4	2	52.8	MFO208-P1810-S12	2	18	12	134.4
MFO208-P0610	2	6	0	52.8	MFO208-P2410-S06	2	24	6	134.4
MFO208-S12	2	0	12	73.2	MFO208-P3010	2	30	0	134.4
MFO208-P0210-S10	2	2	10	73.2	MFO208-S36	2	0	36	157.8
MFO208-P0310-S09	2	3	9	73.2	MFO208-P0610-S30	2	6	30	157.8
MFO208-P0610-S06	2	6	6	73.2	MFO208-P1210-S24	2	12	24	157.8
MFO208-P0810-S04	2	8	4	73.2	MFO208-P3610	2	36	0	157.8
MFO208-P1010-S02	2	10	2	73.2	MFO208-S42	2	0	42	178.2
MFO208-P1210	2	12	0	73.2	MFO208-P0610-S36	2	6	36	178.2
MFO208-S18	2	0	18	93.6	MFO208-P1210-S30	2	12	30	178.2
MFO208-P0210-S16	2	2	16	93.6	MFO208-S48	2	0	48	198.6
MFO208-P0410-S14	2	4	14	93.6	MFO208-P0610-S42	2	6	42	198.6
MFO208-P0610-S12	2	6	12	93.6	MFO208-P0910-S39	2	9	39	198.6
MFO208-P0810-S10	2	8	10	93.6	MFO208-P1210-S36	2	12	36	198.6
MFO208-P1010-S08	2	10	8	93.6	MFO208-P1810-S30	2	18	30	198.6
MFO208-P1210-S06	2	12	6	93.6	MFO208-P2410-S24	2	24	24	198.6
MFO208-P1410-S04	2	14	4	93.6	MFO208-S60	2	0	60	242.4
MFO208-P1610-S02	2	16	2	93.6	MFO208-P0610-S54	2	6	54	242.4
MFO208-P1810	2	18	0	93.6	MFO208-P0810-S52	2	8	52	242.4
MFO208-S24	2	0	24	114	MFO208-P1010-S0	2	10	50	242.4

 $Circuit\ numbers\ and\ high\ current\ can\ be\ customized,\ please\ contact\ customer\ service\ for\ more\ models.$ 

Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

#### **Specifications**

Itmes Type	Single-Mode	Multiple-Mode				
WaveWidth(nm)		±50				
Max insert Loss , 23°C(dB)	4	3.5				
Insert Loss Ripple(dB)	2	1				
Return Loss(dB)	≥50(APC)	≥40(PC)				
Max Power(W)	0.5					
Weight(g)	200					
Max Rotating Speed(rpm)	250					
Working Life	>200 million turn					
Working Temperature(°C)	-45~85					
Storage Temperature(°C)	-50~85					
Parameter		Value				
	Power	Signal				
Rated Voltage	0~440VAC/VDC	0~440VAC/VDC				
Insulation Resistance	≥1000MΩ/500VDC	≥1000MΩ/500VDC				
Lead Wires	AWG16#Teflon	AWG22#Teflon				
Lead Length	Standard 300mm(can be extend	d)				
Dielectric Strength	500VAC@50Hz , 60s					
Electrical Noise	<0.01Ω					
	Mechanical Data					
Parameter	Value					
Working Life	20 million turn					
Rotating Speed	250 RPM					
Working Temperature	-30°C~80°C					
Operating Humidity	0~85% RH	0~85% RH				
Contact Material	gold-gold	gold-gold				
Housing Materia	aluminium alloy	aluminium alloy				
Torque	0.1N.m; +0.03N.m/6ring	0.1N.m; +0.03N.m/6ring				
Protection Grade	IP51	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.
- (§) Support mixed high speed data transmission (including Ethernet, USB, RS232, RS485, Profibus, CanBUS, CANOPEN, DeviceNET, CC-LINK, ProfiNET, EtherCAT, etc.)
- $\ensuremath{\bigcirc}$  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.
- $\textcircled{\scriptsize 10}$  Optical fiber connector, optical fiber type and fiber pigtail length can be customized.
- $\ensuremath{\textcircled{\scriptsize{1}}}\xspace$  Optic fiber channels can be customized.
- ② Optic fiber wavelength can be customized.
- (3) Maximum current can up to 5000 amperes.
- (14) Military grade.
- (5) Optional for underwater IP65, IP68.
- (16) Optional for stainless steel housing.

# MFO400 series

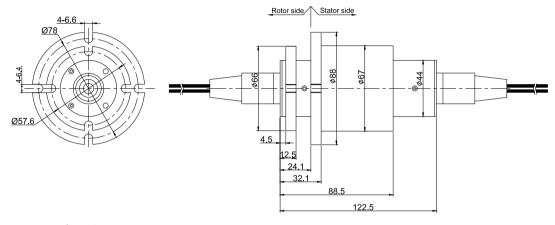
# 4 Channels (forj)fiber Optic Slip Rings

MFO400 fiber optic slip ring support 4 channels fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

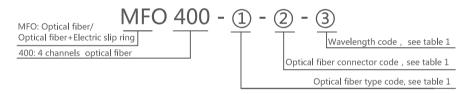


#### Features:

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



#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01: 9/125um , Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03:62.5/125m , Multiple-mode	The connector face is PC by default , If APC is needed, APC shouldbe added behind APC, such as FC/APC.	

Itmes	Туре	Single-Mode	Single-Mode	
WaveWidth(nm)		±:	50	
Max insert Loss , 23°C(dB)		4	3.5	
Insert Loss Ripple(dB)		2	1	
Return Loss(dB)		≥50(APC)	≥40(PC)	
Max Power(W)		0.5		
Weight(g)		200		
Max Rotating Speed(rpm)		250		
Working Life		>200 million turn		
Working Temperature(°C)		-45~85		
Storage Temperature(°C)		-50~85		
Protection Grade		IP54		

# MFO400A series

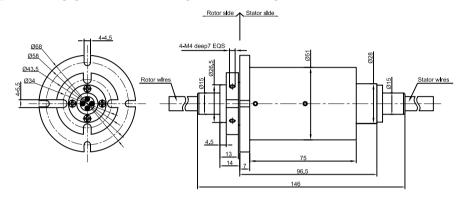
### 4 Channels Fiber Optic Slip Rings

MFO400A fiber optic slip ring support 4 channels fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

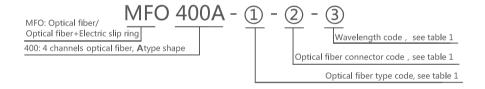


#### Features:

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



#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

Itmes	Туре	Single-Mode	Single-Mode
WaveWidth(nm)		±:	50
Max insert Loss, 23°C(dB)		4	3.5
Insert Loss Ripple(dB)		2	1
Return Loss(dB)		≥50(APC)	≥40(PC)
Max Power(W)		0.5	
Weight(g)		200	
Max Rotating Speed(rpm)		250	
Working Life		>200 million turn	
Working Temperature(°C)		-45~85	
Storage Temperature(°C)		-50~85	
Protection Grade		IP54	

# MFO400B series

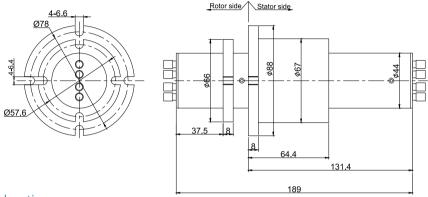
### 4 Channels Fiber Optic Slip Rings

MFO400B fiber optic slip ring support 4 channels fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

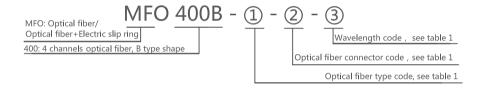


#### Features:

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



#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

Itmes	Туре	Single-Mode	Single-Mode	
WaveWidth(nm)		±:	50	
Max insert Loss , 23°C(dB)		4	3.5	
Insert Loss Ripple(dB)		2	1	
Return Loss(dB)		≥50(APC)	≥40(PC)	
Max Power(W)		0.5		
Weight(g)		200		
Max Rotating Speed(rpm)		250		
Working Life		>200 million turn		
Working Temperature(°C)		-45~85		
Storage Temperature(°C)		-50~85		
Protection Grade		IP54		

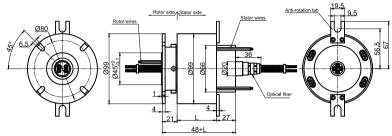
### MFO408 series

### 4 Channels Fiber Optic Slip Rings

MFO408 can combine 4 channels optic fiber and electric ( $1^{-72}$  wires). It adopt complete aluminum alloy structure, can support signal (5A).

Rotary joint of FORJ+Electric is also called photoelectrical slip ring, photoelectricity collector ring, which adopts fiber optic as data transmission media to solve the data transmission between system units. It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position on unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroy fiber optics. Fiber optic rotary joint can be combined with traditional electric slip ring to transmit power and high-speed data.





#### Part # Explanation



#### Part#List

		М	FO408 - 4 cha	annels optic fi	ber+electric slip ring p	art list			
Part	Optic Fiber Channel	10A	Signal or 5A	Length L (mm)	Part	Optic Fiber Channel	10A	Signal or 5A	Length L (mm)
MFO408-S02	2	0	2	39.2	MFO408-P1210-S12	2	12	12	114
MFO408-P0210	2	2	0	39.2	MFO408-P1810-S06	2	18	6	114
MFO408-S03	2	0	3	42.6	MFO408-P2410	2	24	0	114
MFO408-P0310	2	3	0	42.6	MFO408-S30	2	0	30	134.4
MFO408-S06	2	0	6	52.8	MFO408-P0610-S24	2	6	24	134.4
MFO408-P0210-S04	2	2	4	52.8	MFO408-P1210-S18	2	12	18	134.4
MFO408-P0410-S02	2	4	2	52.8	MFO408-P1810-S12	2	18	12	134.4
MFO408-P0610	2	6	0	52.8	MFO408-P2410-S06	2	24	6	134.4
MFO408-S12	2	0	12	73.2	MFO408-P3010	2	30	0	134.4
MFO408-P0210-S10	2	2	10	73.2	MFO408-S36	2	0	36	157.8
MFO408-P0310-S09	2	3	9	73.2	MFO408-P0610-S30	2	6	30	157.8
MFO408-P0610-S06	2	6	6	73.2	MFO408-P1210-S24	2	12	24	157.8
MFO408-P0810-S04	2	8	4	73.2	MFO408-P3610	2	36	0	157.8
MFO408-P1010-S02	2	10	2	73.2	MFO408-S42	2	0	42	178.2
MFO408-P1210	2	12	0	73.2	MFO408-P0610-S36	2	6	36	178.2
MFO408-S18	2	0	18	93.6	MFO408-P1210-S30	2	12	30	178.2
MFO408-P0210-S16	2	2	16	93.6	MFO408-S48	2	0	48	198.6
MFO408-P0410-S14	2	4	14	93.6	MFO408-P0610-S42	2	6	42	198.6
MFO408-P0610-S12	2	6	12	93.6	MFO408-P0910-S39	2	9	39	198.6
MFO408-P0810-S10	2	8	10	93.6	MFO408-P1210-S36	2	12	36	198.6
MFO408-P1010-S08	2	10	8	93.6	MFO408-P1810-S30	2	18	30	198.6
MFO408-P1210-S06	2	12	6	93.6	MFO408-P2410-S24	2	24	24	198.6
MFO408-P1410-S04	2	14	4	93.6	MFO408-S60	2	0	60	242.4
MFO408-P1610-S02	2	16	2	93.6	MFO408-P0610-S54	2	6	54	242.4
MFO408-P1810	2	18	0	93.6	MFO408-P0810-S52	2	8	52	242.4
MFO408-S24	2	0	24	114	MFO408-P1010-S0	2	10	50	242.4

Circuit numbers and high current can be customized, please contact customer service for more models.

#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

#### **Specifications**

Itmes Type	Single-Mode Multiple-Mode			
WaveWidth(nm)		±50		
Max insert Loss , 23°C(dB)	4	3.5		
Insert Loss Ripple(dB)	2	1		
Return Loss(dB)	≥50(APC)	≥40(PC)		
Max Power(W)	0.5	·		
Weight(g)	200			
Max Rotating Speed(rpm)	250			
Working Life	>200 million turn			
Working Temperature(°C)	-45~85			
Storage Temperature(°C)	-50~85			
Parameter		Value		
	Power	Signal		
Rated Voltage	0~440VAC/VDC	0~440VAC/VDC		
Insulation Resistance	≥1000MΩ/500VDC	≥1000MΩ/500VDC		
Lead Wires	AWG16#Teflon	AWG22#Teflon		
Lead Length	Standard 300mm(can be ext	rend)		
Dielectric Strength	500VAC@50Hz , 60s			
Electrical Noise	<0.01Ω			
	Mechanical Data			
Parameter	Value			
Working Life	20 million turn			
Rotating Speed	250 RPM			
Working Temperature	-30°C~80°C			
Operating Humidity	0~85% RH			
Contact Material	gold-gold			
Housing Materia	aluminium alloy			
Torque	0.1N.m; +0.03N.m/6ring			
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.

- $\ensuremath{\textcircled{1}}$  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.
- ${\color{red} {\bf \$}} \ {\bf Special \ environment \ can \ be \ customized, \ such \ as \ quakeproof, \ high \ temperature, \ etc. \\$
- (9) Hybrid Pneumatic/hydraulic and electric slip ring can be mixed.
- ① Optical fiber connector, optical fiber type and fiber pigtail length can be customized.
- ① Optic fiber channels can be customized.
- 12) Optic fiber wavelength can be customized.
- ③ Maximum current can up to 5000 amperes.
- (14) Military grade.
- (15) Optional for underwater IP65, IP68.
- (16) Optional for stainless steel housing.

# MFO600 series

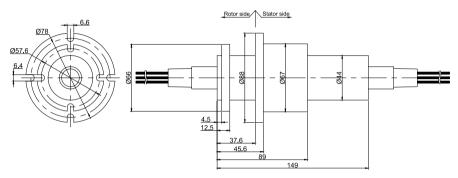
### 6 Channels Fiber Optic Slip Rings

MFO600 fiber optic slip ring support 6 channels fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

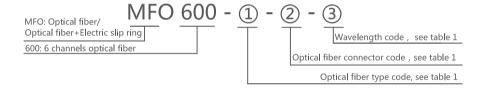


#### Features:

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



#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02 : 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

Itmes	Туре	Single-Mode	Single-Mode	
WaveWidth(nm)		±5	50	
Max insert Loss, 23°C(dB)		4	3.5	
Insert Loss Ripple(dB)		2	1	
Return Loss(dB)		≥50(No connector)	≥40(No connector)	
Max Power(W)		0.5		
Weight(g)		200(No fiber optic cable)		
Max Rotating Speed(rpm)		250		
Working Life		>200 million turn		
Working Temperature(°C)		-45~85		
Storage Temperature(°C)		-50~85		
Protection Grade		IP54		

# MFO600A series

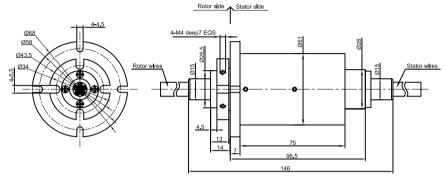
### 6 Channels Fiber Optic Slip Rings

MFO600A fiber optic slip ring support 6 channels fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

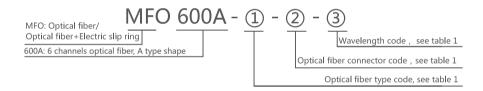


#### Features:

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



#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,  If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

Itmes	Туре	Single-Mode	Single-Mode		
WaveWidth(nm)		±	50		
Max insert Loss , 23°C(dB)		4	3.5		
Insert Loss Ripple(dB)		2	1		
Return Loss(dB)		≥50(No connector)	≥40(No connector)		
Max Power(W)		0.5			
Weight(g)		200(No fiber optic cable)			
Max Rotating Speed(rpm)		250			
Working Life		>200 million turn			
Working Temperature(°C)		-45~85			
Storage Temperature(°C)		-50~85			
Protection Grade		IP54			

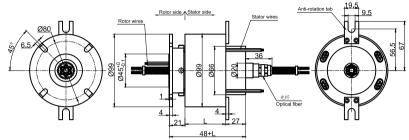
# MFO608 series

### 6 Channels Fiber Optic+electric Slip Rings

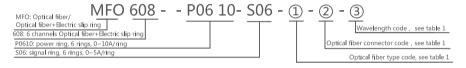
MFO608 can combine 6 channels optic fiber and electric(1~72wires). It adopt complete aluminum alloy structure, can support signal(5A).

Rotary joint of FORJ+Electric is also called photoelectrical slip ring, photoelectricity collector ring, which adopts fiber optic as data transmission media to solve the data transmission between system units. It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position on unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroy fiber optics. Fiber optic rotary joint can be combined with traditional electric slip ring to transmit power and high-speed data.





#### Part # Explanation



#### Part#List

Part	Optic Fiber Channel	10A	Signal or 5A	Length L (mm)	Part	Optic Fiber Channel	10A	Signal or 5A	Length I
MFO608-S02	2	0	2	39.2	MFO608-P1210-S12	2	12	12	114
MFO608-P0210	2	2	0	39.2	MFO608-P1810-S06	2	18	6	114
MFO608-S03	2	0	3	42.6	MFO608-P2410	2	24	0	114
MFO608-P0310	2	3	0	42.6	MFO608-S30	2	0	30	134.4
MFO608-S06	2	0	6	52.8	MFO608-P0610-S24	2	6	24	134.4
MFO608-P0210-S04	2	2	4	52.8	MFO608-P1210-S18	2	12	18	134.4
MFO608-P0410-S02	2	4	2	52.8	MFO608-P1810-S12	2	18	12	134.4
MFO608-P0610	2	6	0	52.8	MFO608-P2410-S06	2	24	6	134.4
MFO608-S12	2	0	12	73.2	MFO608-P3010	2	30	0	134.4
MFO608-P0210-S10	2	2	10	73.2	MFO608-S36	2	0	36	157.8
MFO608-P0310-S09	2	3	9	73.2	MFO608-P0610-S30	2	6	30	157.8
MFO608-P0610-S06	2	6	6	73.2	MFO608-P1210-S24	2	12	24	157.8
MFO608-P0810-S04	2	8	4	73.2	MFO608-P3610	2	36	0	157.8
MFO608-P1010-S02	2	10	2	73.2	MFO608-S42	2	0	42	178.2
MFO608-P1210	2	12	0	73.2	MFO608-P0610-S36	2	6	36	178.2
MFO608-S18	2	0	18	93.6	MFO608-P1210-S30	2	12	30	178.2
MFO608-P0210-S16	2	2	16	93.6	MFO608-S48	2	0	48	198.6
MFO608-P0410-S14	2	4	14	93.6	MFO608-P0610-S42	2	6	42	198.6
MFO608-P0610-S12	2	6	12	93.6	MFO608-P0910-S39	2	9	39	198.6
MFO608-P0810-S10	2	8	10	93.6	MFO608-P1210-S36	2	12	36	198.6
MFO608-P1010-S08	2	10	8	93.6	MFO608-P1810-S30	2	18	30	198.6
MFO608-P1210-S06	2	12	6	93.6	MFO608-P2410-S24	2	24	24	198.6
MFO608-P1410-S04	2	14	4	93.6	MFO608-S60	2	0	60	242.4
MFO608-P1610-S02	2	16	2	93.6	MFO608-P0610-S54	2	6	54	242.4
MFO608-P1810	2	18	0	93.6	MFO608-P0810-S52	2	8	52	242.4
MFO608-S24	2	0	24	114	MFO608-P1010-S0	2	10	50	242.4

Circuit numbers and high current can be customized, please contact customer service for more models.

#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

#### **Specifications**

Itmes Type	Single-Mode Multiple-Mode					
WaveWidth(nm)		±50				
Max insert Loss , 23°C(dB)	4	3.5				
Insert Loss Ripple(dB)	2	1				
Return Loss(dB)	≥50(APC)	≥40(PC)				
Max Power(W)	0.5					
Weight(g)	200					
Max Rotating Speed(rpm)	250					
Working Life	>200 million turn					
Working Temperature(°C)	-45~85					
Storage Temperature(°C)	-50~85					
Parameter		Value				
	Power	Signal				
Rated Voltage	0~440VAC/VDC	0~440VAC/VDC				
Insulation Resistance	≥1000MΩ/500VDC	≥1000MΩ/500VDC				
Lead Wires	AWG16#Teflon	AWG22#Teflon				
Lead Length	Standard 300mm(can be extend)					
Dielectric Strength	500VAC@50Hz , 60s					
Electrical Noise	<0.01Ω					
	Mechanical Data					
Parameter	Value					
Working Life	20 million turn					
Rotating Speed	250 RPM					
Working Temperature	-30°C~80°C	-30℃~80℃				
Operating Humidity	0~85% RH					
Contact Material	gold-gold	gold-gold				
Housing Materia	aluminium alloy					
Torque	0.1N.m; +0.03N.m/6ring					
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.
- (§ Support mixed high speed data transmission (including Ethernet, USB, RS232, RS485, Profibus, CanBUS, CANOPEN, DeviceNET, CC-LINK, ProfiNET, EtherCAT, etc.)
- (8) Special environment can be customized, such as quakeproof, high temperature, etc.
- (9) Hybrid Pneumatic/hydraulic and electric slip ring can be mixed.
- ① Optical fiber connector, optical fiber type and fiber pigtail length can be customized.
- ① Optic fiber channels can be customized.
- ② Optic fiber wavelength can be customized.
- (3) Maximum current can up to 5000 amperes.
- (14) Military grade.
- (5) Optional for underwater IP65, IP68.
- 16 Optional for stainless steel housing.

## MFO800

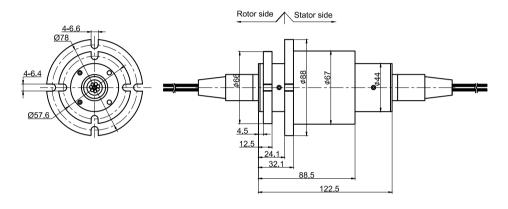
### 8 Channels fiber optic+electric slip rings

MFO800 fiber optic slip ring support 8 channels fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

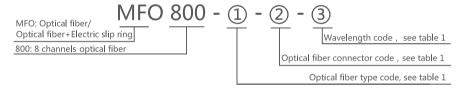


#### Features:

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



#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01: 9/125um , Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

Itmes	Туре	Single-Mode	Single-Mode	
WaveWidth(nm)			±50	
Max insert Loss, 23°C(dB)		4	3.5	
Insert Loss Ripple(dB)		2	1	
Return Loss(dB)		≥50(No connector)	≥40(No connector)	
Max Power(W)		0.5		
Weight(g)		200(No fiber optic cable)		
Max Rotating Speed(rpm)		250		
Working Life		>200 million turn		
Working Temperature(°C)		-45~85		
Storage Temperature(°C)		-50~85		
Protection Grade		IP54		

## MFO800A

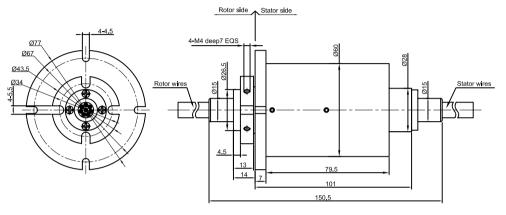
### 8 Channels fiber optic+electric slip rings

MFO800A fiber optic slip ring support 8 channels fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

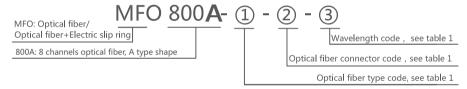


#### Features:

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



#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01: 9/125um, Single-mode 02: 50/125um, Multiple-mode 03: 62.5/125m, Multiple-mode	FC: FC Connector ST: ST Connector SC: SC Connector LC: LC Connector The connector face is PC by default,	01 : 1310/1550(Single-mode) 02 : 850/1310(Multiple-mode)
	If APC is needed, APC shouldbe added behind APC, such as FC/APC.	

Itmes	Туре	Single-Mode	Single-Mode	
WaveWidth(nm)		±50		
Max insert Loss, 23°C(dB)		4	3.5	
Insert Loss Ripple(dB)		2	1	
Return Loss(dB)		≥50(No connector)	≥40(No connector)	
Max Power(W)		0.5		
Weight(g)		200(No fiber optic cable)		
Max Rotating Speed(rpm)		250		
Working Life		>200 million turn		
Working Temperature(°C)		-45~85		
Storage Temperature(°C)		-50~85		
Protection Grade		IP54		

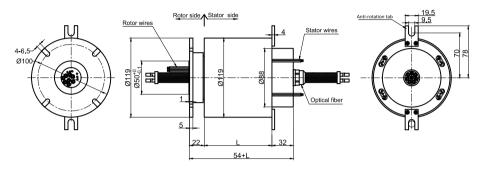
### MFO808 series

### 8 Channels fiber optic+electric slip rings

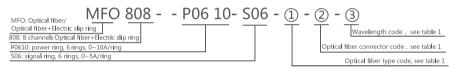
MFO808 can combine 8 channels optic fiber and electric(1~72wires). It adopt complete aluminum alloy structure, can support signal (5A).

aluminum alloy structure, can support signal (5A). Rotary joint of FORJ+Electric is also called photoelectrical slip ring, photoelectricity collector ring, which adopts fiber optic as data transmission media to solve the data transmission between system units. It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs transmit large volume data/signal from permanent position to rotation position on unlimited, continuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroy fiber optics. Fiber optic rotary joint can be combined with traditional electric slip ring to transmit power and high-speed data.





#### Part # Explanation



#### Part#List

		М	FO808 - 8 ch	annels optic fi	ber+electric slip ring լ	oart list			
Part	Optic Fiber Channel	10A	Signal or 5A	Length L (mm)	Part	Optic Fiber Channel	10A	Signal or 5A	Length L (mm)
MFO808-S02	8	0	2	43.6	MFO808-P0610-S24	8	6	24	150
MFO808-P0210	8	2	0	43.6	MFO808-P1210-S18	8	12	18	150
MFO808-S03	8	0	3	47.4	MFO808-P1810-S12	8	18	12	150
MFO808-P0310	8	3	0	47.4	MFO808-P2410-S06	8	24	6	150
MFO808-S06	8	0	6	58.8	MFO808-P3010	8	30	0	150
MFO808-P0210-S04	8	2	4	58.8	MFO808-S36	8	0	36	176.8
MFO808-P0410-S02	8	4	2	58.8	MFO808-P0610-S30	8	6	30	176.8
MFO808-P0610	8	6	0	58.8	MFO808-P1210-S24	8	12	24	176.8
MFO808-S12	8	0	12	81.6	MFO808-P3610	8	36	0	176.8
MFO808-P0210-S10	8	2	10	81.6	MFO808-S42	8	0	42	199.6
MFO808-P0310-S09	8	3	9	81.6	MFO808-P0610-S36	8	6	36	199.6
MFO808-P0610-S06	8	6	6	81.6	MFO808-P1210-S30	8	12	30	199.6
MFO808-P0810-S04	8	8	4	81.6	MFO808-S48	8	0	48	222.4
MFO808-P1010-S02	8	10	2	81.6	MFO808-P0610-S42	8	6	42	222.4
MFO808-P1210	8	12	0	81.6	MFO808-P0910-S39	8	9	39	222.4
MFO808-S18	8	0	18	104.4	MFO808-P1210-S36	8	12	36	222.4
MFO808-P0210-S16	8	2	16	104.4	MFO808-P1810-S30	8	18	30	222.4
MFO808-P0410-S14	8	4	14	104.4	MFO808-P2410-S24	8	24	24	222.4
MFO808-P0610-S12	8	6	12	104.4	MFO808-S60	8	0	60	273
MFO808-P0810-S10	8	8	10	104.4	MFO808-P0610-S54	8	6	54	273
MFO808-P1010-S08	8	10	8	104.4	MFO808-P0910-S51	8	9	51	273
MFO808-P1210-S06	8	12	6	104.4	MFO808-P1210-S48	8	12	48	273
MFO808-P1410-S04	8	14	4	104.4	MFO808-S72	8	0	72	273
MFO808-P1610-S02	8	16	2	104.4	MFO808-P0610-S66	8	6	66	319
MFO808-P1810	8	18	0	104.4	MFO808-P1210-S60	8	12	60	319
MFO808-S24	8	0	24	127.2	MFO808-P2410-S48	8	24	48	319
MFO808-P0410-S20	8	4	20	127.2	MFO808-P3610-S36	8	36	36	319
MFO808-P0610-S18	8	6	18	127.2	MFO808-S84	8	0	84	373
MFO808-P1210-S12	8	12	12	127.2	MFO808-P1210-S72	8	12	72	373
MFO808-P1810-S06	8	18	6	127.2	MFO808-P2410-S60	8	24	60	373
MFO808-P2410	8	24	0	127.2	MFO808-P3610-S48	8	36	48	373
MFO808-S30	8	0	30	150	MFO808-S96	8	0	96	419

Circuit numbers and high current can be customized, please contact customer service for more models.

#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

#### **Specifications**

Itmes Type	Single-Mode	Multiple-Mode			
WaveWidth(nm)		±50			
Max insert Loss , 23°C(dB)	4	3.5			
Insert Loss Ripple(dB)	2	1			
Return Loss(dB)	≥50(APC)	≥40(PC)			
Max Power(W)	0.5				
Weight(g)	200				
Max Rotating Speed(rpm)	250				
Working Life	>200 million turn				
Working Temperature(°C)	-45~85				
Storage Temperature(°C)	-50~85				
Parameter		Value			
	Power	Signal			
Rated Voltage	0~440VAC/VDC	0~440VAC/VDC			
Insulation Resistance	≥1000MΩ/500VDC	≥1000MΩ/500VDC			
Lead Wires	AWG16#Teflon	AWG22#Teflon			
Lead Length	Standard 300mm(can be extend)				
Dielectric Strength	500VAC@50Hz , 60s				
Electrical Noise	<0.01Ω				
	Mechanical Data				
Parameter	Value				
Working Life	20 million turn				
Rotating Speed	250 RPM				
Working Temperature	-30°C~80°C	-30℃~80℃			
Operating Humidity	0~85% RH				
Contact Material	gold-gold				
Housing Materia	aluminium alloy				
Torque	0.1N.m; +0.03N.m/6ring	0.1N.m; +0.03N.m/6ring			
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.
- (§) 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.
- ① Optical fiber connector, optical fiber type and fiber pigtail length can be customized.
- ① Optic fiber channels can be customized.
- ② Optic fiber wavelength can be customized.
- (13) Maximum current can up to 5000 amperes.
- (4) Military grade.
- (15) Optional for underwater IP65, IP68.
- (6) Optional for stainless steel housing.

## MFO1000C series

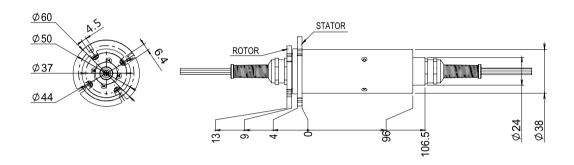
### 10 Channels (FORJ)Fiber Optic Slip Rings

MFO1000C fiber optic slip ring support 10 channels fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

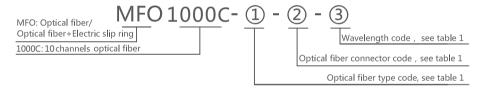


#### Features:

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



#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

Itmes	Туре	Single-Mode	Single-Mode	
WaveWidth(nm)		±50		
Max insert Loss, 23°C(dB)		4	3.5	
Insert Loss Ripple(dB)		2	1	
Return Loss(dB)		≥50(APC)	≥40(PC)	
Max Power(W)		0.5		
Weight(g)		200		
Max Rotating Speed(rpm)		250		
Working Life		>200 million turn		
Working Temperature(°C)		-45~85		
Storage Temperature(°C)		-50~85		
Protection Grade		IP54		

## MFO1200C series

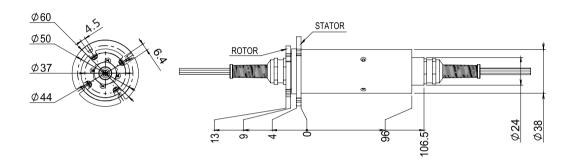
### 12 Channels (FORJ)Fiber Optic Slip Rings

MFO1200C fiber optic slip ring support 12 channels fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

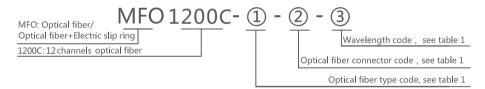


#### Features:

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



#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

Itmes	Туре	Single-Mode		Single-Mode
WaveWidth(nm)			±50	
Max insert Loss , 23°C(dB)	4			3.5
Insert Loss Ripple(dB)	2			1
Return Loss(dB)	≥	50(APC)		≥40(PC)
Max Power(W)	0	.5		
Weight(g)	2	00		
Max Rotating Speed(rpm)	2	50		
Working Life	>	200 million turn		
Working Temperature(°C)	-	45~85		
Storage Temperature(°C)	-	50~85		
Protection Grade	II	P54		

### MFO1600C series

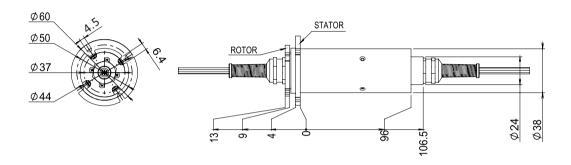
### 16 Channels (FORJ)Fiber Optic Slip Rings

MFO1600C fiber optic slip ring support 16 channels fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

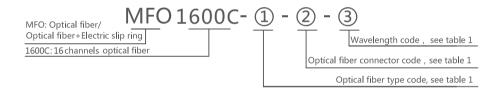


#### Features:

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



#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

Itmes	Туре	Single-Mode	Single-Mode
WaveWidth(nm)		±	50
Max insert Loss , 23°C(dB)		4	3.5
Insert Loss Ripple(dB)		2	1
Return Loss(dB)		≥50(APC)	≥40(PC)
Max Power(W)		0.5	
Weight(g)		200	
Max Rotating Speed(rpm)		250	
Working Life		>200 million turn	
Working Temperature(°C)		-45~85	
Storage Temperature(°C)		-50~85	
Protection Grade		IP54	

# MFO2000C series

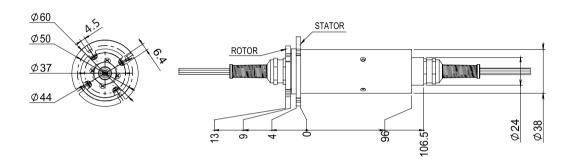
### 20 Channels (FORJ)Fiber Optic Slip Rings

MFO2000C fiber optic slip ring support 20 channels fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

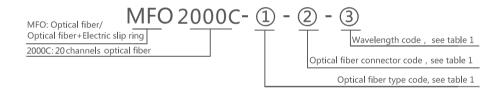


#### Features:

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



#### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

Itmes	Туре	Single-Mode	Single-Mode
WaveWidth(nm)		±50	
Max insert Loss , 23°C(dB)		4	3.5
Insert Loss Ripple(dB)		2	1
Return Loss(dB)		≥50(APC)	≥40(PC)
Max Power(W)		0.5	
Weight(g)		200	
Max Rotating Speed(rpm)		250	
Working Life		>200 million turn	
Working Temperature(°C)		-45~85	
Storage Temperature(°C)		-50~85	
Protection Grade		IP54	

## MFO2400C series

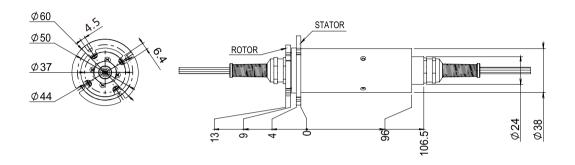
### 24 Channels (FORJ)Fiber Optic Slip Rings

MFO2400C fiber optic slip ring support 24 channels fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.

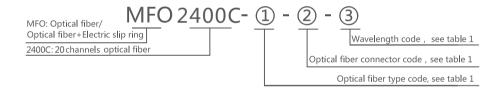


#### Features:

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



### Part # Explanation



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03: 62.5/125m , Multiple-mode	The connector face is PC by default ,	
	If APC is needed, APC shouldbe added behind	
	APC, such as FC/APC.	

Itmes	Туре	Single-Mode	Single-Mode
WaveWidth(nm)		±50	
Max insert Loss , 23°C(dB)		4	3.5
Insert Loss Ripple(dB)		2	1
Return Loss(dB)		≥50(APC)	≥40(PC)
Max Power(W)		0.5	
Weight(g)		200	
Max Rotating Speed(rpm)		250	
Working Life		>200 million turn	
Working Temperature(°C)		-45~85	
Storage Temperature(°C)		-50~85	
Protection Grade		IP54	

# MFO2600C series

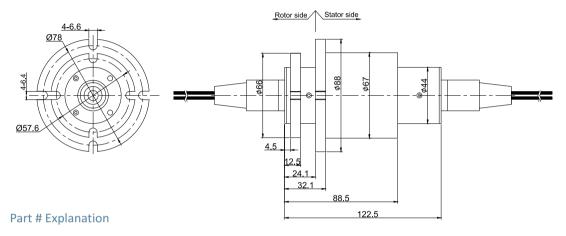
### 26 Channels (FORJ)Fiber Optic Slip Rings

MFO2600C fiber optic slip ring support 26 channels fiber optic(SM/MM). It can perfectly transmit data on 360° rotating. It is also especially suitable for occasion where it needs to transmit large volume data/signal from permanent position to rotation position under unlimited, continuous or discontinuous rotating, which can improve mechanical property, simplify system operation and avoid the rotating of turning joints destroying fiber optics.



#### Features:

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



#### Table 1

Fiber Type Code	Fiber Connector Code	Wavelength Code
01:9/125um, Single-mode	FC: FC Connector ST: ST Connector	01: 1310/1550(Single-mode)
02:50/125um, Multiple-mode	SC: SC Connector LC: LC Connector	02: 850/1310(Multiple-mode)
03:62.5/125m , Multiple-mode	The connector face is PC by default , If APC is needed, APC shouldbe added behind APC, such as FC/APC.	

Itmes	Туре	Single-Mode	Single-Mode
WaveWidth(nm)		±50	
Max insert Loss, 23°C(dB)		4	3.5
Insert Loss Ripple(dB)		2	1
Return Loss(dB)		≥50(APC)	≥40(PC)
Max Power(W)		0.5	
Weight(g)		200	
Max Rotating Speed(rpm)		250	
Working Life		>200 million turn	
Working Temperature(°C)		-45~85	
Storage Temperature(°C)		-50~85	
IP68		IP54	