

# MMC Series Stator Flange Slip Rings

Micro slip ring is a general designation of a series of slip rings with very small overall outer diameter (5.9mm ~ 15.5mm).The product adopts American military surface treatment process, super hard gold coating treatment, ensuring extremely low resistance waveDynamic and ultra long working life.It is mainly used to transmit weak control signals and weak current in small and medium-sized systems. Such as video, control,Sensor, power supply, EthernetLow torque, low loss, maintenance free; low electrical noiseTypical applications: UAV, camera stabilizer, smart home, security monitoring, camera, robot,Test instruments, turntables and automation equipment.



## MMC Series Models

Model#	Bore(mm)	OD(mm)	Circuit ( Ring )	Current/ring ( A )	Max voltage(VDC/VAC)
MMC088	8.8	5.9	1~4	信号(1A)	120
MMC118	11.9	5.9	1~8	信号(1A)	120
MMC119	11.9	6.5	1~8	信号(1A)	120
MMC181	18.2	11.6	1~6	信号(4A)	220
MMC182	18.2	12.5	1~6	信号(2A)	220
MMC195	19.5	12.5	1~12	信号(2A)	220
MMC235	23.5	12.5	1~18	信号(2A)	220
MMC397	39.7	15.5	1~24	信号(2A)	220

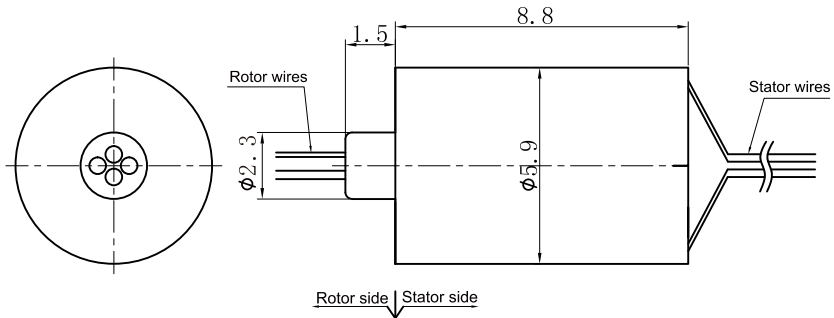
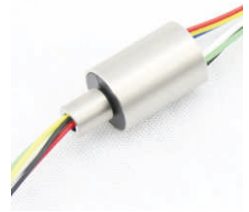
60% of MOFLON's sales are customized solutions, please contact customer service for special requirements.

# MMC088 Miniature Capsule Slip Rings

## OD 5.9mm 4 circuits , 1A each circuit

MMC088 slip rings are small and compact with OD 5.9mm \* L 8.8mm, standard, off-the-shelf. Color-coded lead wires are used on both the stator and rotor for simplified electrical connections. Using a 90° V-groove ring design for each ring.

MMC0889 is the high-end version corresponding to MMC088, It has higher performance and longer working life, higher speed rotating speed, low noise.



### Part# Explanation

## MMC 088(9)

MMC:miniature capsule slip ring  
 088:common quality version  
 0889:high-end quality version

### Specification

Electrical Data		
Parameter	Value	
	Power	Signal
Rated Voltage	0~120VAC/VDC	0~120VAC/VDC
Insulation Resistance	≥100MΩ/150VDC	≥100MΩ/150VDC
Lead Wires	AWG#32 teflon	AWG#32 teflon
Lead Length	Standard 300mm(adjustable)	
Dielectric Strength	500VAC@50Hz , 60s	
Electrical Noise	<0.01Ω	
Mechanical Data		
Parameter	Value	
Working Life	See Product Quality Level Table	
Rotating Speed	See Product Quality Level Table	
Working Temperature	-30°C~80°C	
Operating Humidity	0~85% RH	
Contact Material	See Product Quality Level Table	
Housing Material	See Product Quality Level Table	
Torque	0.005N.m ; +0.02N.m/6rings	
Protection Grade	IP51	

### Part# List

MMC088 Series Parts# List		
Part#	Signal/1A	Total Wires
MMC088-S02	2	2
MMC088-S04	4	4

Note: N channels 1A rings parallel can be used as 1 channel  $N \times 1A$  current. For example: 2 rings 1A parallel could be used as 1 wires 2A, please contact sales for special requirements

### Product Quality Level Table

Part#	Max Speed	Working Life	Housing Material	Electrical Noise①@10RPM
MMC088	250RPM	>10 million	Plastics	10mΩ
MMC0889	1000RPM	>30 million	Plastics	4mΩ

### Lead Wires Color Code

Ring	1	2	3	4
Color	BLK	RED	YEL	GRN

### Options for custom slip ring

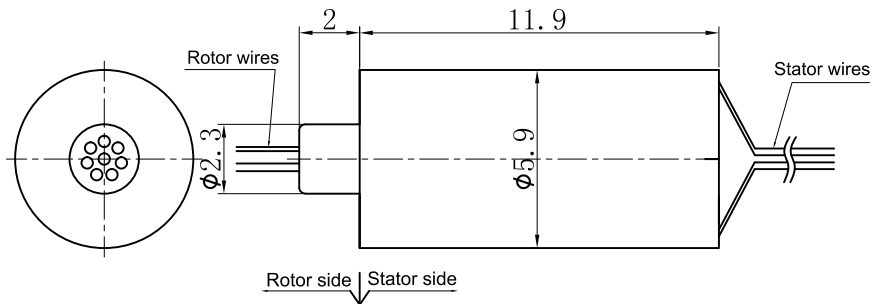
- MMC0889 is the high-end version corresponding to MMC088.
- Optional flange mounting.
- Specified connectors and Heat-shrink tube.
- Longer lead lengths available.
- High temperature is optional.
- Military Grade.

# MMC118 Miniature Capsule Slip Rings

OD 5.9mm , 1~8circuits

MMC118 slip rings are small and compact with OD 5.9mm \* L 11.9mm, standard, off-the-shelf. Color-coded lead wires are used on both the stator and rotor for simplified electrical connections. Using a 90° V-groove ring design for each ring.

MMC1189 is the high-end version corresponding to MMC118, It has higher performance and longer working life, higher speed rotating speed, low noise.



### Part# Explanation

## MMC 118(9)

MMC:miniature capsule slip ring

118:common quality version

1189:high-end quality version

### Specification

Electrical Data		
Parameter	Value	
	Power	Signal
Rated Voltage	0~120VAC/VDC	0~120VAC/VDC
Insulation Resistance	≥100MΩ/150VDC	≥100MΩ/150VDC
Lead Wires	AWG#32 teflon	AWG#32 teflon
Lead Length	Standard 300mm(adjustable)	
Dielectric Strength	500VAC@50Hz , 60s	
Electrical Noise	<0.01Ω	
Mechanical Data		
Parameter	Value	
Working Life	See Product Quality Level Table	
Rotating Speed	See Product Quality Level Table	
Working Temperature	-30°C~80°C	
Operating Humidity	0~85% RH	
Contact Material	See Product Quality Level Table	
Housing Material	See Product Quality Level Table	
Torque	0.005N.m ; +0.02N.m/6rings	
Protection Grade	IP51	

### Part# List

MMC118 Series Parts# List		
Part#	Signal/1A	Total Wires
MMC118-S02	2	2
MMC118-S04	4	4
MMC118-S06	6	6
MMC118-S08	8	8

Note: N channels 1A rings parallel can be used as 1 channel  $N \times 1A$  current. For example: 2 rings 1A parallel could be used as 1 wires 2A ,please contact sales for special requirements

### Product Quality Level Table

Part#	Max Speed	Working Life	Housing Material	Electrical Noise①@10RPM
MMC118	250RPM	> 10 million	Plastics	10mΩ
MMC1189	1000RPM	> 30 million	Plastics	4mΩ

### Lead Wires Color Code

Ring	1	2	3	4	5	6	7	8
Color	BLK	RED	YEL	GRN	BLU	WHT	ORG	PUR

### Options for custom slip ring

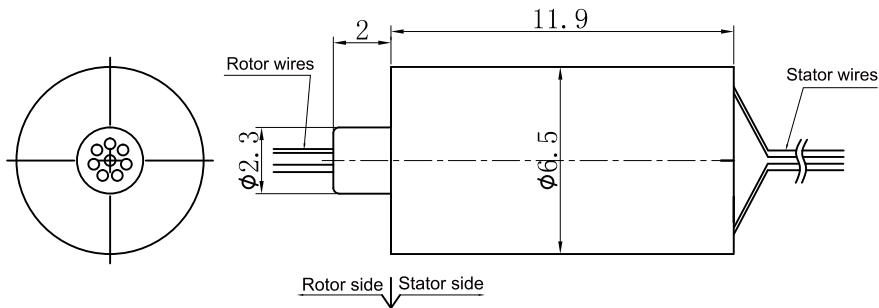
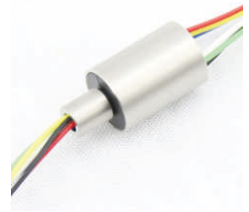
- MMC1189 is the high-end version corresponding to MMC118.
- Optional flange mounting.
- Specified connectors and Heat-shrink tube.
- Longer lead lengths available.
- High temperature is optional.
- Military Grade.

# MMC119 Miniature Capsule Slip Rings

OD 6.5mm, 2~8circuit

MMC119 slip rings are small and compact with OD 6.5mm \* L 11.9mm, standard, off-the-shelf. Color-coded lead wires are used on both the stator and rotor for simplified electrical connections. Using a 90° V-groove ring design for each ring.

MMC1199 is the high-end version corresponding to MMC119, It has higher performance and longer working life, higher speed rotating speed, low noise.



### Part# Explanation

## MMC 119(9)

MMC:miniature capsule slip ring  
 119:common quality version  
 1199:high-end quality version

### Specification

Electrical Data		
Parameter	Value	
	Power	Signal
Rated Voltage	0~120VAC/VDC	0~120VAC/VDC
Insulation Resistance	≥100MΩ/150VDC	≥100MΩ/150VDC
Lead Wires	AWG#32 teflon	AWG#32 teflon
Lead Length	Standard 300mm(adjustable)	
Dielectric Strength	500VAC@50Hz , 60s	
Electrical Noise	<0.01Ω	
Mechanical Data		
Parameter	Value	
Working Life	See Product Quality Level Table	
Rotating Speed	See Product Quality Level Table	
Working Temperature	-30°C~80°C	
Operating Humidity	0~85% RH	
Contact Material	See Product Quality Level Table	
Housing Material	See Product Quality Level Table	
Torque	0.005N.m ; +0.02N.m/6rings	
Protection Grade	IP51	

### Part# List

MMC119 Series Parts# List		
Part#	Signal/1A	Total Wires
MMC119-S04	4	4
MMC119-S06	6	6
MMC119-S08	8	8

Note: N channels 1A rings parallel can be used as 1 channel  $N \times 1A$  current. For example: 2 rings 1A parallel could be used as 1 wires 2A ,please contact sales for special requirements

### Product Quality Level Table

Part#	Max Speed	Working Life	Housing Material	Electrical Noise①@10RPM
MMC119	250RPM	> 10 million	Plastics	10mΩ
MMC1199	1000RPM	> 30 million	Plastics	4mΩ

### Lead Wires Color Code

Ring	1	2	3	4	5	6	7	8
Color	BLK	RED	YLK	GRN	BLU	WHT	ORG	PUR

### Options for custom slip ring

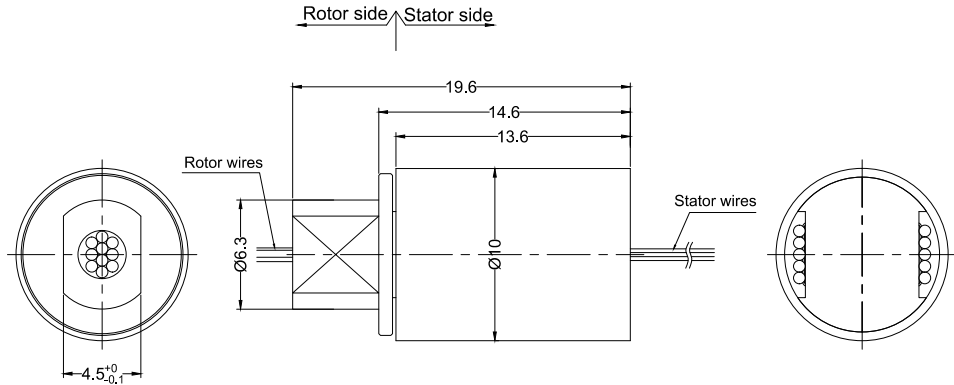
- MMC1199 is the high-end version corresponding to MMC119.
- Optional flange mounting.
- Specified connectors and Heat-shrink tube.
- Longer lead lengths available.
- High temperature is optional.
- Military Grade.

# MMC146 Miniature Capsule Slip Rings

## OD10 mm, 2~10 circuit

MMC146 slip rings are small and compact with OD 10mm \* L 14.6mm, standard, off-the-shelf. Color-coded lead wires are used on both the stator and rotor for simplified electrical connections. Using a 90° V-groove ring design for each ring.

MMC1469 is the high-end version corresponding to MMC146, It has higher performance and longer working life, higher speed rotating speed, low noise.



### Part# Explanation

## MMC 146(9)-FL01

MMC:miniature capsule slip ring  
146:common quality version  
1469:high-end quality version

FL01: flange type

### Specification

Electrical Data		
Parameter	Value	
	Power	Signal
Rated Voltage	0~220VAC/VDC	0~120VAC/VDC
Insulation Resistance	≥100MΩ/220VDC	≥100MΩ/150VDC
Lead Wires	AWG#30 teflon	AWG#30 teflon
Lead Length	Standard 300mm(adjustable)	
Dielectric Strength	500VAC@50Hz , 60s	
Electrical Noise	<0.01Ω	
Mechanical Data		
Parameter	Value	
Working Life	See Product Quality Level Table	
Rotating Speed	See Product Quality Level Table	
Working Temperature	-30°C~80°C	
Operating Humidity	0~85% RH	
Contact Material	See Product Quality Level Table	
Housing Material	See Product Quality Level Table	
Torque	0.005N.m ; +0.02N.m/6rings	
Protection Grade	IP51	



**Part# List**

MMC182 Series Part# List		
Part#	Signal/2A	Total Wires
MMC146	10	10

Note: N channels 2A rings parallel can be used as 1 channel N × 2A current. For example: 2 rings 2A parallel could be used as 1 wires 4A please contact sales for special requirements

**Product Quality Level Table**

Part#	Max Speed	Working Life	Housing Material	Electrical Noise①@10RPM
MMC146	250RPM	>10 million	Plastics	10mΩ
MMC1469	1000RPM	>30 million	Plastics	4mΩ

**Lead Wires Color Code**

Ring	1	2	3	4	5	6	7	8	9	10
Color	RED	GRN	YEL	VLT	GRY	BLK	BLU	BN	ORG	WHT

**Options for custom slip ring**

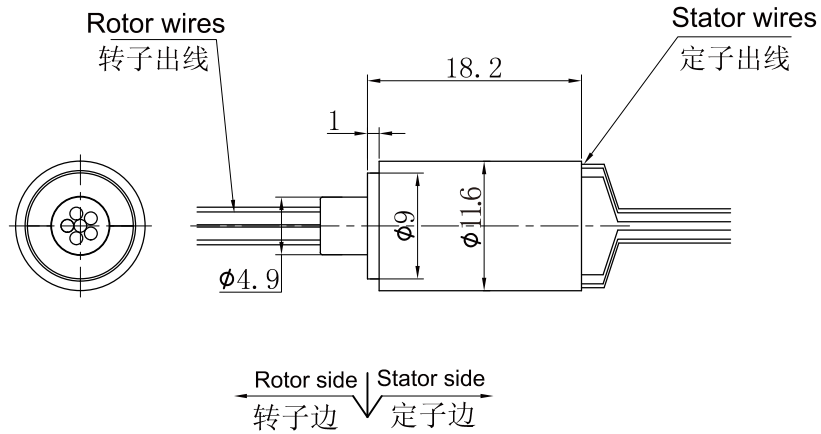
- MMC1469 is the high-end version corresponding to MMC146.
- Optional flange mounting.
- Specified connectors and Heat-shrink tube.
- Longer lead lengths available.
- High temperature is optional.
- Military Grade.

# MMC181 Miniature Capsule Slip Rings

OD 6.5mm, 2~8circuit

MMC181 slip rings are small and compact with OD 11.6mm \* L 18.2mm, standard, off-the-shelf. Color-coded lead wires are used on both the stator and rotor for simplified electrical connections. Using a 90° V-groove ring design for each ring.

MMC181 is the high-end version corresponding to MMC181, It has higher performance and longer working life, higher speed rotating speed, low noise.



### Part# Explanation

## MMC 181(9)-FL01

MMC:miniature capsule slip ring  
181:common quality version  
1819:high-end quality version

FL01: flange type

### Specification

Electrical Data		
Parameter	Value	
	Power	Signal
Rated Voltage	0~220VAC/VDC	0~120VAC/VDC
Insulation Resistance	≥100MΩ/220VDC	≥100MΩ/150VDC
Lead Wires	AWG#28 teflon	AWG#28 teflon
Lead Length	Standard 300mm(adjustable)	
Dielectric Strength	500VAC@50Hz , 60s	
Electrical Noise	<0.01Ω	
Mechanical Data		
Parameter	Value	
Working Life	See Product Quality Level Table	
Rotating Speed	See Product Quality Level Table	
Working Temperature	-30°C~80°C	
Operating Humidity	0~85% RH	
Contact Material	See Product Quality Level Table	
Housing Material	See Product Quality Level Table	
Torque	0.005N.m ; +0.02N.m/6rings	
Protection Grade	IP51	

**Part# List**

MMC182 Series Part# List		
Part#	Signal/2A	Total Wires
MMC182	6	6

Note: N channels 2A rings parallel can be used as 1 channel  $N \times 2A$  current. For example: 2 rings 2A parallel could be used as 1 wires 4A please contact sales for special requirements

**Product Quality Level Table**

Part#	Max Speed	Working Life	Housing Material	Electrical Noise①@10RPM
MMC182	250RPM	>10 million	Plastics	10mΩ
MMC1829	1000RPM	>30 million	Plastics	4mΩ

**Lead Wires Color Code**

Ring	1	2	3	4	5	6
Color	BLK	RED	YEL	GRN	BLU	WHT

**Options for custom slip ring**

- MMC1829 is the high-end version corresponding to MMC182.
- Optional flange mounting.
- Specified connectors and Heat-shrink tube.
- Longer lead lengths available.
- High temperature is optional.
- Military Grade.

# MMC182 Miniature Capsule Slip Rings

## OD 12.5mm

MMC182 slip rings are small and compact with OD 12.5mm \* L 18.2mm, standard, off-the-shelf. Color-coded lead wires are used on both the stator and rotor for simplified electrical connections. Using a 90° V-groove ring design for each ring.

MMC1829 is the high-end version corresponding to MMC182, It has higher performance and longer working life, higher speed rotating speed, low noise.



### Part# Explanation

## MMC 182(9)-FL01

MMC:miniature capsule slip ring  
182:common quality version  
1829:high-end quality version

FL01: flange type

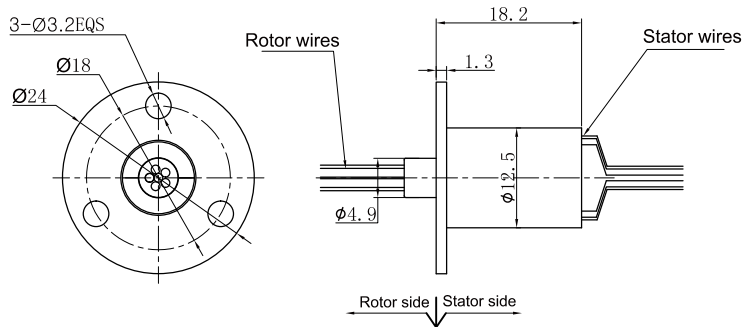
### Part# List

MMC182 Series Part# List		
Part#	Signal/2A	Total Wires
MMC182	6	6

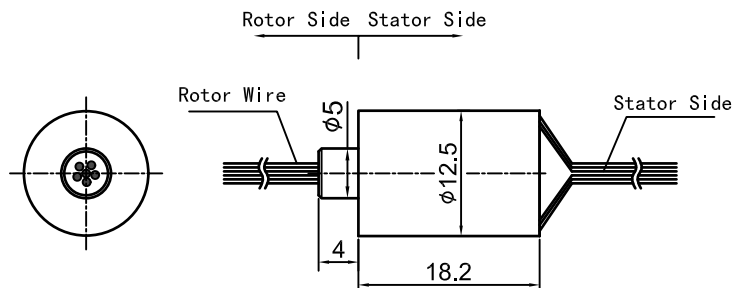
Note: N channels 2A rings parallel can be used as 1 channel N × 2A current. For example: 2 rings 2A parallel could be used as 1 wires 4A ,please contact sales for special requirements

### Dimensions

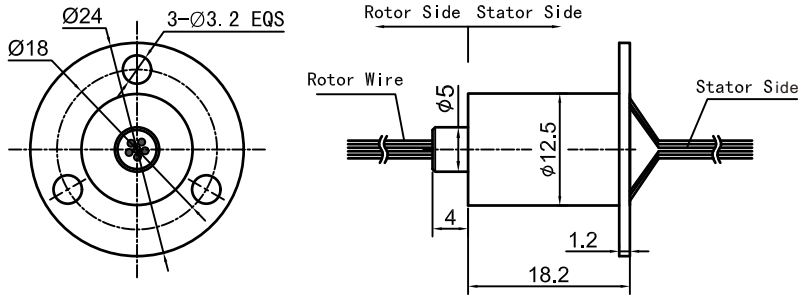
#### MMC182 Standard Model



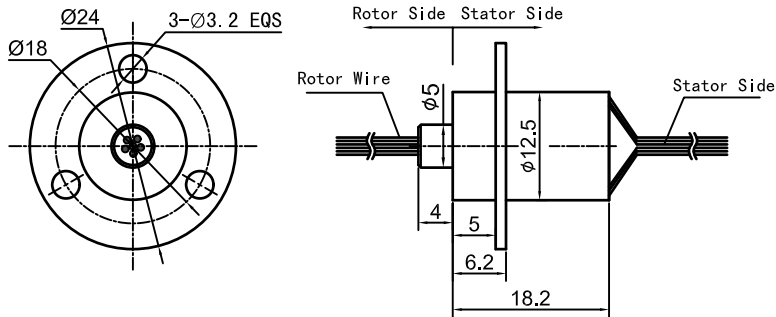
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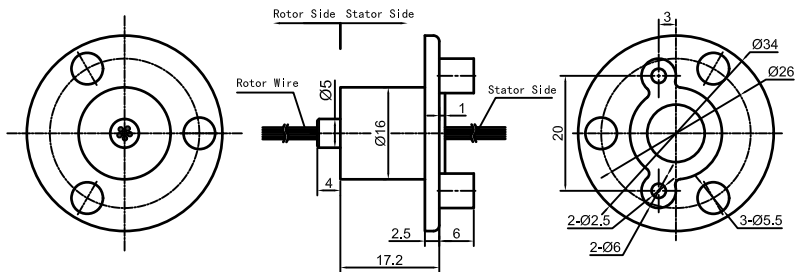
MMC182-FL01



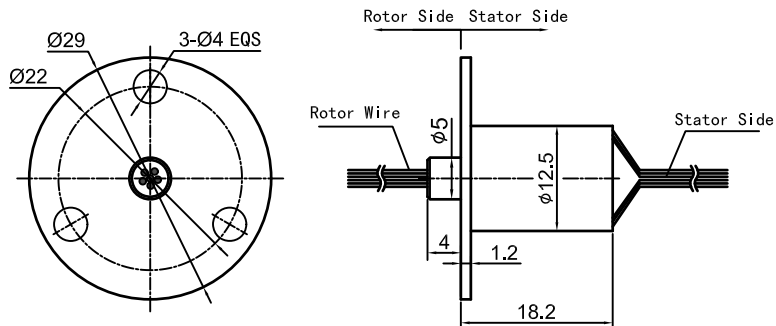
MMC182-FL02



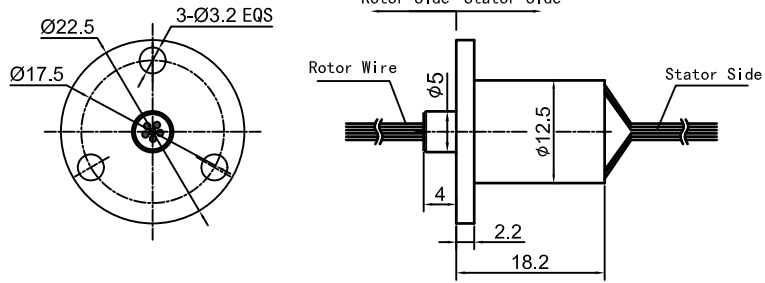
MMC182-FL03



MMC182-FL04



MMC182-FL05



### Specification

Electrical Data		
Parameter	Value	
	Power	Signal
Rated Voltage	0~220VAC/VDC	0~120VAC/VDC
Insulation Resistance	≥100MΩ/220VDC	≥100MΩ/150VDC
Lead Wires	AWG#28 teflon	AWG#28 teflon
Lead Length	Standard 300mm(adjustable)	
Dielectric Strength	500VAC@50Hz , 60s	
Electrical Noise	<0.01Ω	
Mechanical Data		
Parameter	Value	
Working Life	See Product Quality Level Table	
Rotating Speed	See Product Quality Level Table	
Working Temperature	-30°C~80°C	
Operating Humidity	0~85% RH	
Contact Material	See Product Quality Level Table	
Housing Material	See Product Quality Level Table	
Torque	0.005N.m ; +0.02N.m/6rings	
Protection Grade	IP51	

### Product Quality Level Table

Part#	Max Speed	Working Life	Housing Material	Electrical Noise①@10RPM
MMC182	250RPM	>10 million	Plastics	10mΩ
MMC1829	1000RPM	>30 million	Plastics	4mΩ

### Lead Wires Color Code

Ring	1	2	3	4	5	6
Color	BLK	RED	YEL	GRN	BLU	WHT

### Options for custom slip ring

- MMC1829 is the high-end version corresponding to MMC182.
- Optional flange mounting.
- Specified connectors and Heat-shrink tube.
- Longer lead lengths available.
- High temperature is optional.
- Military Grade.

# MMC195 Miniature Capsule Slip Rings

OD 12.5mm

MMC195 slip rings are small and compact with OD 12.5mm \* L 19.5mm, standard, off-the-shelf. Color-coded lead wires are used on both the stator and rotor for simplified electrical connections. Using a 90° V-groove ring design for each ring.

MMC1959 is the high-end version corresponding to MMC195, It has higher performance and longer working life, higher speed rotating speed, low noise.



## Part# Explanation

### MMC 195(9)-FL01

MMC: miniature capsule slip ring  
 195: common quality version  
 1959: high-end quality version

FL01: flange type

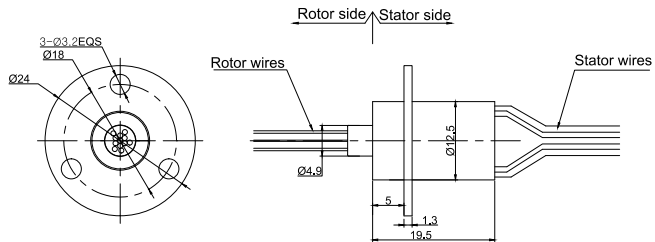
## Part# List

MMC195 Series Parts# List		
Part#	Signal/1A	Total Wires
MMC195	12	12

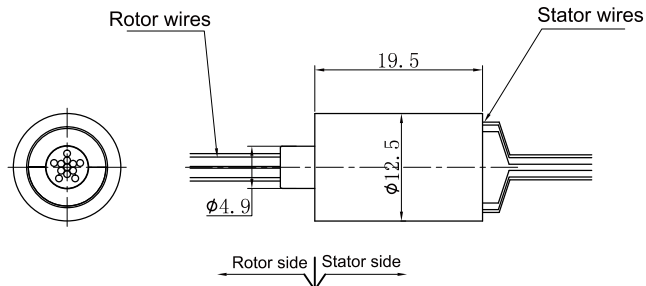
Note: N channels 1A rings parallel can be used as 1 channel N × 1A current. For Example: 2 rings 1A parallel could be used as 1 wire 2A ,please contact sales for special requirements

## Dimensions

### MMC195 Standard Model



### MMC195 Without Flange Model



### Specification

Electrical Data		
Parameter	Value	
	Power	Signal
Rated Voltage	0~220VAC/VDC	0~120VAC/VDC
Insulation Resistance	≥100MΩ/220VDC	≥100MΩ/150VDC
Lead Wires	AWG#28 teflon	AWG#28 teflon
Lead Length	Standard 300mm(adjustable)	
Dielectric Strength	500VAC@50Hz , 60s	
Electrical Noise	<0.01Ω	
Mechanical Data		
Parameter	Value	
Working Life	See Product Quality Level Table	
Rotating Speed	See Product Quality Level Table	
Working Temperature	-30°C ~80°C	
Operating Humidity	0~85% RH	
Contact Material	See Product Quality Level Table	
Housing Material	See Product Quality Level Table	
Torque	0.005N.m ; +0.02N.m/6rings	
Protection Grade	IP51	

### Product Quality Level Table

Part#	Max Speed	Working Life	Housing Material	Electrical Noise@10RPM
MMC195	250RPM	>10 million	Plastics	10mΩ
MMC1959	1000RPM	>30 million	Plastics	4mΩ

### Lead Wires Color Code

Ring	1	2	3	4	5	6	7	8	9	10	11	12
Color	BLK	RED	YEL	GRN	BLU	WHT	BLK	RED	YEL	GRN	BLU	WHT

### Options for custom slip ring

- MMC1959 is the high-end version corresponding to MMC195.
- Optional flange mounting.
- Specified connectors and Heat-shrink tube.
- Longer lead lengths available.
- High temperature is optional.
- Military Grade.



# MMC235 Miniature Capsule Slip Rings

OD 12.5mm

MMC235 slip rings are small and compact with OD 12.5mm \* L 23.5mm, standard, off-the-shelf. Color-coded lead wires are used on both the stator and rotor for simplified electrical connections. Using a 90° V-groove ring design for each ring.

MMC2359 is the high-end version corresponding to MMC235, It has higher performance and longer working life, higher speed rotating speed, low noise.



## Part# Explanation

### MMC 235(9)-FL01

MMC:miniature capsule slip ring  
235:common quality version  
2359:high-end quality version

FL01:flange type

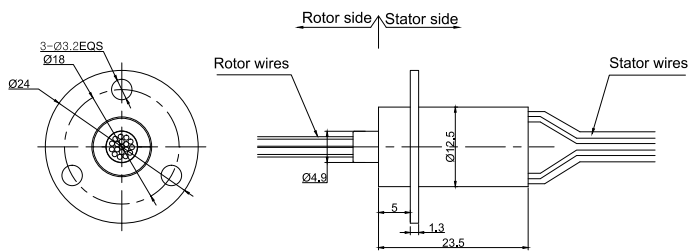
## Part# List

MMC235 Series Parts# List		
Part#	Signal/1A	Total Wires
MMC235	18	18

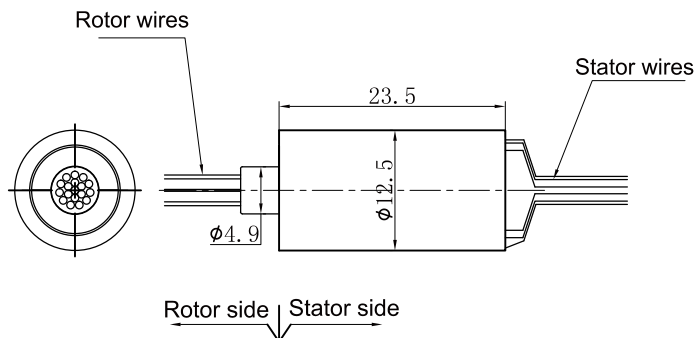
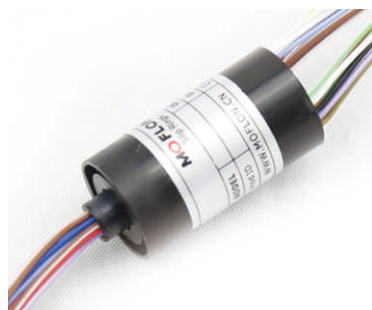
Note: N channels 1A rings parallel can be used as 1 channel  $N \times 1A$  current. For Example: 2 rings 1A parallel could be used as 1 wires 2A ,please contact sales for special requirements

## Dimensions

### MMC235 Standard Model



### MMC235 Without Flange Model



### Specification

Electrical Data		
Parameter	Value	
	Power	Signal
Rated Voltage	0~220VAC/VDC	0~120VAC/VDC
Insulation Resistance	≥100MΩ/220VDC	≥100MΩ/150VDC
Lead Wires	AWG#28 teflon	AWG#28 teflon
Lead Length	Standard 300mm(adjustable)	
Dielectric Strength	500VAC@50Hz , 60s	
Electrical Noise	<0.01Ω	
Mechanical Data		
Parameter	Value	
Working Life	See Product Quality Level Table	
Rotating Speed	See Product Quality Level Table	
Working Temperature	-30°C~80°C	
Operating Humidity	0~85% RH	
Contact Material	See Product Quality Level Table	
Housing Material	See Product Quality Level Table	
Torque	0.005N.m ; +0.02N.m/6rings	
Protection Grade	IP51	

### Product Quality Level Table

Part#	Max Speed	Working Life	Housing Material	Electrical Noise@10RPM
MMC235	250RPM	>10 million	Plastics	10mΩ
MMC2359	1000RPM	>30 million	Plastics	4mΩ

### Lead Wires Color Code

Ring	1	2	3	4	5	6	7	8	9	10	11	12
Color	BLK	RED	YEL	GRN	BLU	WHT	BLK	RED	YEL	GRN	BLU	WHT
Ring	13	14	15	16	17	18						
Color	WHT RED	WHT BLK	WHT BLU	WHT PURPLE	WHT BRN	WHT GRN						

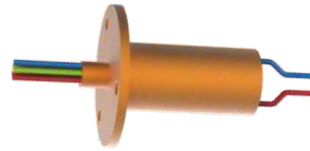
### Options for custom slip ring

- MMC2359 is the high-end version corresponding to MMC235.
- Optional flange mounting.
- Specified connectors and Heat-shrink tube.
- Longer lead lengths available.
- High temperature is optional.
- Military Grade.

# MMC397 Miniature Capsule Slip Rings

OD 15.5mm

MMC397 slip rings are small and compact with OD 15.5mm \* L 34.1mm, standard, off-the-shelf. Color-coded lead wires are used on both the stator and rotor for simplified electrical connections. Using a 90° V-groove ring design for each ring. MMC3979 is the high-end version corresponding to MMC397, it has higher performance and longer working life, higher speed rotating speed, low noise.



## Part# Explanation

### MMC 397(9)-FL01

MMC:miniature capsule slip ring			
397:comon quality version			FL01:flange type
3979:high-end quality version			

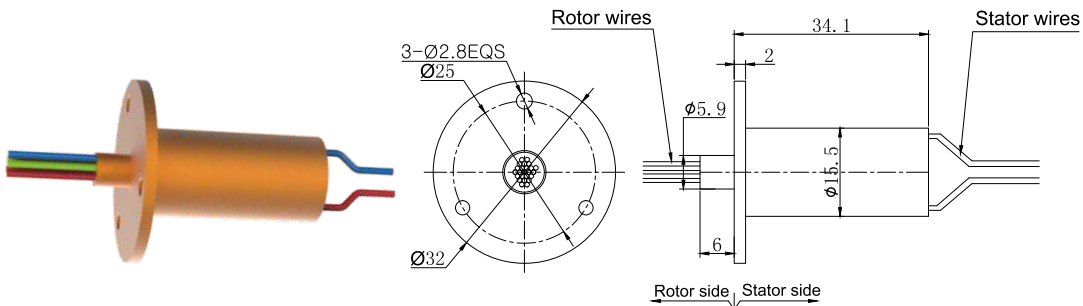
## Part# List

MMC397 Series Parts# List		
Part#	Signal/1A	Total Wires
MMC397	24	24

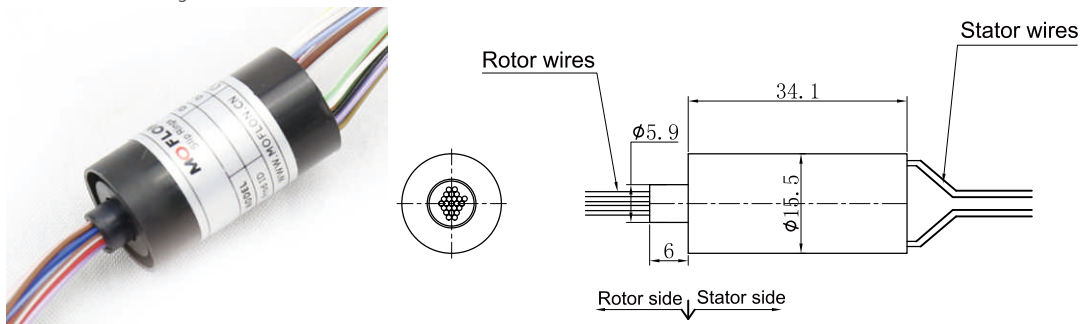
Note: N channels 1A rings parallel can be used as 1 channel N × 1A current. For Example: 2 rings 1A parallel could be used as 1 wires 2A ,please contact sales for special requirements

## Dimensions

MMC397 Standard Model



MMC397 Without Flange Model



### Specification

Electrical Data		
Parameter	Value	
	Power	Signal
Rated Voltage	0~220VAC/VDC	0~120VAC/VDC
Insulation Resistance	≥100MΩ/220VDC	≥100MΩ/150VDC
Lead Wires	AWG#30 teflon	AWG#30 teflon
Lead Length	Standard 300mm(adjustable)	
Dielectric Strength	500VAC@50Hz , 60s	
Electrical Noise	<0.01Ω	
Mechanical Data		
Parameter	Value	
Working Life	See Product Quality Level Table	
Rotating Speed	See Product Quality Level Table	
Working Temperature	-30°C ~80°C	
Operating Humidity	0~85% RH	
Contact Material	See Product Quality Level Table	
Housing Material	See Product Quality Level Table	
Torque	0.005N.m ; +0.02N.m/6rings	
Protection Grade	IP51	

### Product Quality Level Table

Part#	Max Speed	Working Life	Housing Material	Electrical Noise@10RPM
MMC397	250RPM	>10 million	Plastics	10mΩ
MMC3979	1000RPM	>30 million	Plastics	4mΩ

### Lead Wires Color Code

Ring	1	2	3	4	5	6	7	8	9	10	11	12
Color	BLK	RED	YEL	GRN	BLU	WHT	BLK	RED	YEL	GRN	BLU	WHT
Ring	13	14	15	16	17	18	19	20	21	22	23	24
Color	WHT RED	WHT BLK	WHT BLU	WHT PURPLE	WHT BRN	WHT GRN	WHT ORN	WHT YEL	WHT GRA	BLK RED	BLK BLU	YEL GRN

### Options for custom slip ring

- MMC3979 is the high-end version corresponding to MMC397.
- Optional flange mounting.
- Specified connectors and Heat-shrink tube.
- Longer lead lengths available.
- High temperature is optional.
- Military Grade.