Fiber Optic Rotary Joints

Fiber optic rotary joints are used to pass optical signals across rotating interfaces, particularly for large amounts of data, are available in single and multi-channel options, can be combined with electrical slip rings to provide an integrated rotational interface for optical signals and electrical power. FORJs usually operate at 1300 nm to1550 nm wavelengths singlemode type and 850 nm to 1300 nm multimode type, support long distance data links under high shock and vibration or harsh environments. FORJs intrinsic advantages ensure they are not easy to be influenced by environment and achieve the reliable transmission, the rugged bodies allow fiber pigtails or ST, FC receptacles on either the rotor or the stator side.

Features

- Bidirectional optical transmission
- Singlemode and multimode optional
- Can be combined with electrical slip rings and rotary unions
- Stainless steel housing
- Rugged design for harsh environments

Advantages

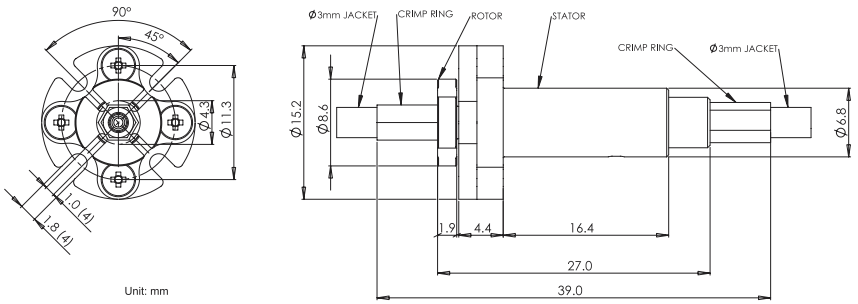
- High bandwidth and EMI immunity
- High shock and vibration capabilities
- Compact design
- Long lifetime

Typical Applications

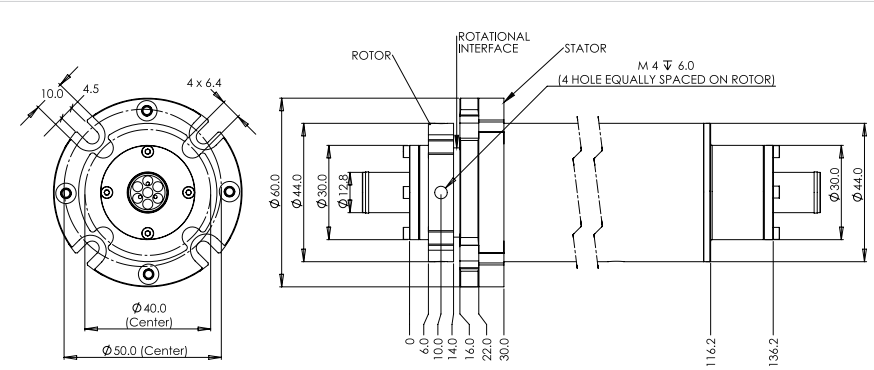
- 4K, 8K ultra HD television
- Unmanned aerial vehicles and sub-systems
- Radar antennas
- Winches and cable reels for remotely operated vehicles
- Heavy equipment turrets
- Unmanned ground vehicles

Specification			
Model	MJX	MXn	JXn
Fiber type	SM or MM	SM or MM	SM or MM
Channels	1	2~7	8~19
Wavelength range	650-1650nm	1270-1610nm for SM; 850-1310nm for MM	1270-1610nm for SM; 850-1310nm for MM
Insertion loss	< 2 dB (typical: <0.5dB)	< 5 dB (typical: <2 -3dB)	< 5 dB (typical: <2 -3dB)
Insertion loss ripple	< +/-0.25 dB (typical: +/-0.15dB)	< +/-0.5 to 1 dB	< +/-0.5 to 1 dB
Return loss (SM)	> 40 dB (typcial: 45 dB,23C)	> 45 dB	> 45 dB
Max speed	2000rpm	300rpm	200rpm
Water submersion	1m	~	~
Pulling strength	10N	10N	10N
Starting torque	<0.01 Nm	<1 Nm	<1 Nm
Estimated lifetime	> 500 million revolutions	100 -200 million revolutions	100 million revolutions
Working temperature	-40 ~ 85 ℃	-20 ~ 65 ℃	-20 ~ 65 ℃
Storage temperature	-50 ~ 85 ℃	-25 ~ 75 ℃	-25 ~ 75 ℃
Package styple	Pigtails on both ends	Pigtails on both ends	Pigtails on both ends
Housing material	Stainless steel	Stainless steel	Stainless steel
Connector types	FC,SC, ST, SMA or LC	FC,SC, ST, SMA or LC	FC,SC, ST, SMA or LC
Dimensions	6.8mm dia x 28mm length	44mm dia x 136mm length	67mm dia x 122mm length
Weight	10g	~1.5kg	~2.5kg
Vibration	MIL-STD -167 -1A	MIL-STD -167 -1A	MIL-STD -167 -1A
Shock	MIL-STD -810G	MIL-STD -810F	MIL-STD -810F
Protection degree	IP68	Up to IP65	Up to IP65

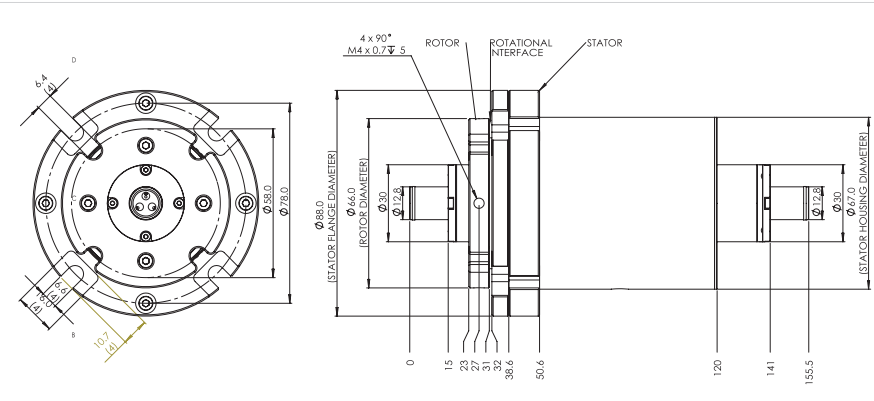
▶ MJX


90°
45°
Ø4.3
Ø11.3
1.0 (4)
1.9 (4)
Unit: mm
Ø3mm JACKET
CRIMP RING
ROTOR
STATOR
CRIMP RING
Ø3mm JACKET
Ø15.2
Ø8.6
Ø6.8
1.9
4.4
16.4
27.0
39.0

▶ MXn


10.0
4.5
4 x 6.4
Ø40.0
(Center)
Ø50.0 (Center)
ROTOR
ROTATIONAL
INTERFACE
STATOR
M 4 ↧ 6.0
(4 HOLE EQUALLY SPACED ON ROTOR)
Ø60.0
Ø44.0
Ø30.0
Ø12.8
Ø30.0
Ø44.0
0
6.0
10.0
14.0
16.0
22.0
30.0
116.2
136.2

▶ JXn


4 x 90°
M4 x 0.7 ↧ 5
ROTOR
ROTATIONAL
INTERFACE
STATOR
Ø88.0
(STATOR FLANGE DIAMETER)
Ø66.0
(ROTOR DIAMETER)
Ø30
Ø12.8
Ø30
Ø12.8
Ø47.0
(STATOR HOUSING DIAMETER)
0
15
23
27
31
32
38.6
50.6
120
141
155.5