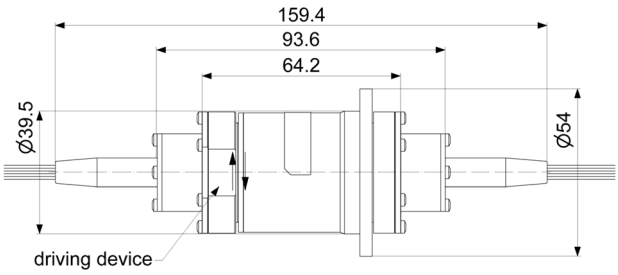
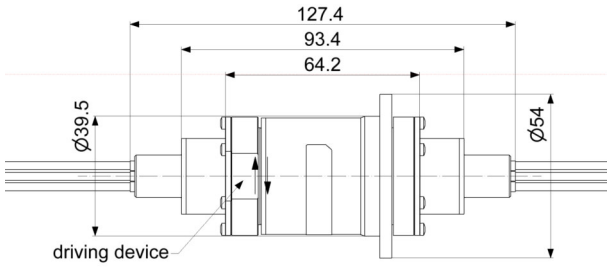
Multi-Channel Fiber Optic Rotary Joints x.40 (FORJ)

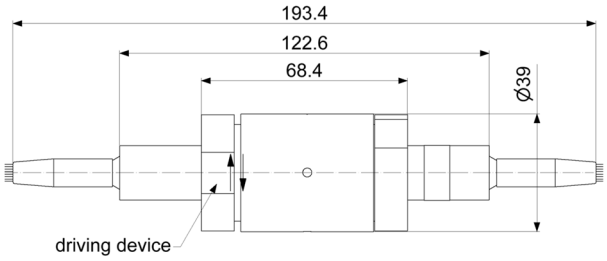
The FORJ type x.40 fills a gap in the intermediate range of Spinner's portfolio of fiber-optic rotary joints. With an outer diameter of 40 mm, it falls between the small x.25 (with a diameter of 25 mm) and the large model, namely the x.60 (60 mm in diameter). The x.40 can be configured with up to eight independent channels. Like in all the other SPINNER FORJs, our proprietary active alignment approach delivers superior optical performance in a compact casing. In-house production of the mechanical parts used also ensures efficient quality management, backed by multiple visual checks during the assembly of each FORJ. This ensures reliability and ideal performance.
The x.40 can be configured with single-mode or multimode channels or a mix of both. Each channel is independently optimized, thus minimizing attenuation and preventing crosstalk between channels. The x.40 also stands out with its high rotational speed of up to 1000 rpm and beyond. To facilitate integration into existing setups, SPINNER provides customized FLEXIFLANGES to suit your needs. This type of FORJs is used in high performance applications with restricted space available, e.g in cable drums, aerospace, optronic systems, and civil and military radar systems.

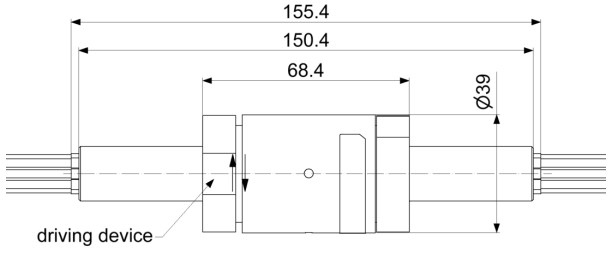
SPINNER FORJ x.40 IP50





SPINNER FORJ x.40 IP65





Multi-Channel Fiber Optic Rotary Joints x.40 (FORJ)

Standard series part number explanation

RO 0X – XZ XXX ZZZ – XX ZZ – XZ – XZ

- Rotary Joint
- Channel Count
- Housing Type
- Fiber Type
- Connector / Polish C1
- Connector / Polish C2
- Length L1
- Length L2
- Fiber Protection P1
- Fiber Protection P2
- Unique Id1
- Unique Id2

Rotary Joint	Fiber Optic	Channel Count		Housing Type	Fiber Type		Connector Polish C1	Connector Polish C2		Length L1	Length L2		Fiber Protection P1 / P2		Unique ID1	Unique ID2
R	O	0X	-	X	Z	-	XXX	ZZZ	-	XX	ZZ	-	XZ	-	X	Z

Ø 40 mm (Type x.40) IP50	C
Ø 40 mm (Type x.40) IP65	J

Single-mode E9 / 125 (standard OS1)	S
Single-mode SMF28 Ultra	U
Multi-mode G50 / 125 (standard OM2)	M
Multi-mode G62.5 / 125	N
Special fiber (e.g. G657, HI1060, etc.)	X

Connector Type C1 & C2

Single Mode Connector / Polish	**Multi Mode** Connector / Polish		
LC / APC (Standard)		LCA	LCA
LC / UPC		LCU	LCU
	LC / PC	LCP	LCP
FC / APC		FCA	FCA
FC / UPC		FCU	FCU
FC / PC	FC / PC (Standard)	FCP	FCP
SC / APC		SCA	SCA
SC / UPC		SCU	SCU
SC / PC	SC / PC	SCP	SCP
ST / UPC		STU	STU
ST / PC	ST / PC	STP	STP
Other connectors: LSA, LuxCis, Molex, special, expanded beam etc. unique ID		OTH	OTH

Length L1 in m [0.2 … 4.5] (standard 4.5 m for 900µm, 1.5 m for 3 mm and 2 mm)
Length L2 in m [0.2 … 4.5] (standard 4.5 m for 900µm, 1.5 m for 3 mm and 2 mm)

Bare fiber only	5 mm bending radius	0
Fiber protective tube 900µm buffer	30 mm bending radius (Standard)	1
Fiber protective tube Kevlar / aramid armor	20 mm bending radius	2
Metallic protective tube	30 mm bending radius	M
Special protection (e.g. military grade)		X

FLEXIFLANGE	Unique identifier

Example: FORJ 4.40 IP50 type with SMF28 Ultra, FC/APC and SC/UPC, 1 m length each side with Kevlar protection
RO04-CU-FCASCU-1010-22-**

Multi-Channel Fiber Optic Rotary Joints x.40 (FORJ)

Fiber optic channel characteristics

Channels	Up to 8 CHs	
Fiber type	Singlemode	Multimode
Fiber model	See fiber list	See fiber list
Wavelength (dependent on fiber model)	450 nm – 1650 nm	450 nm – 1650 nm
Average power capability, max.	500 mW	500 mW
Return Loss, min. / premium	45 - 55 dB	35 - 45 dB
Insertion loss, max. / premium	3.5 – 2.5 dB	4.5 – 2.5 dB
Insertion loss variation over rotation, max. / premium	1.5 - 0.5 dB	1.5 - 0.5 dB

Mechanical characteristics

Rotation speed, max.	Up to 1000 rpm
Life, min.	200 x 10^6 revolutions
Torque (room temperature), max.	0.15 Nm (depending on IP protection level)
Interface loads, max.	no loads allowed
Case material	stainless steel, copper alloy (corrosion resistant)
Case surface finish	no finish
IP protection level	IP50/IP65 per EN 60529 (all interfaces connected with appropriate gaskets)
Weight, approx.	0.7 kg

Environmental conditions

Operation	
Ambient temperature range	-40 °C to +85 °C
Relative humidity, max.	95% - 100%
Storage	
Ambient temperature range	-40 °C to +85 °C
Relative humidity, max.	95% - 100%