

Optical Assemblies

Optical Fibre Sensing Coil

Polarization-maintaining Fibre Coil

Fiber optic gyroscope (FOG) is an all-solid-state gyroscope which uses Sagnac effect to measure the rotating angular velocity. It has the characteristics of simple structure and wide dynamic range, and has become one of the main instruments in the field of inertial measurement and guidance technology. The core sensing element of FOG is polarization maintaining fiber coil, which mainly includes polarization maintaining fiber and curing adhesive. YOFC's polarization-maintaining fiber coil selects polarization-maintaining fiber with excellent performance and special curing adhesive, adopts multi-pole (monopole, quadrupole, octupole, and hexapole) symmetric winding method to form an all-solid fiber coil., which has the characteristics of high symmetry, high extinction ratio, low loss, etc.

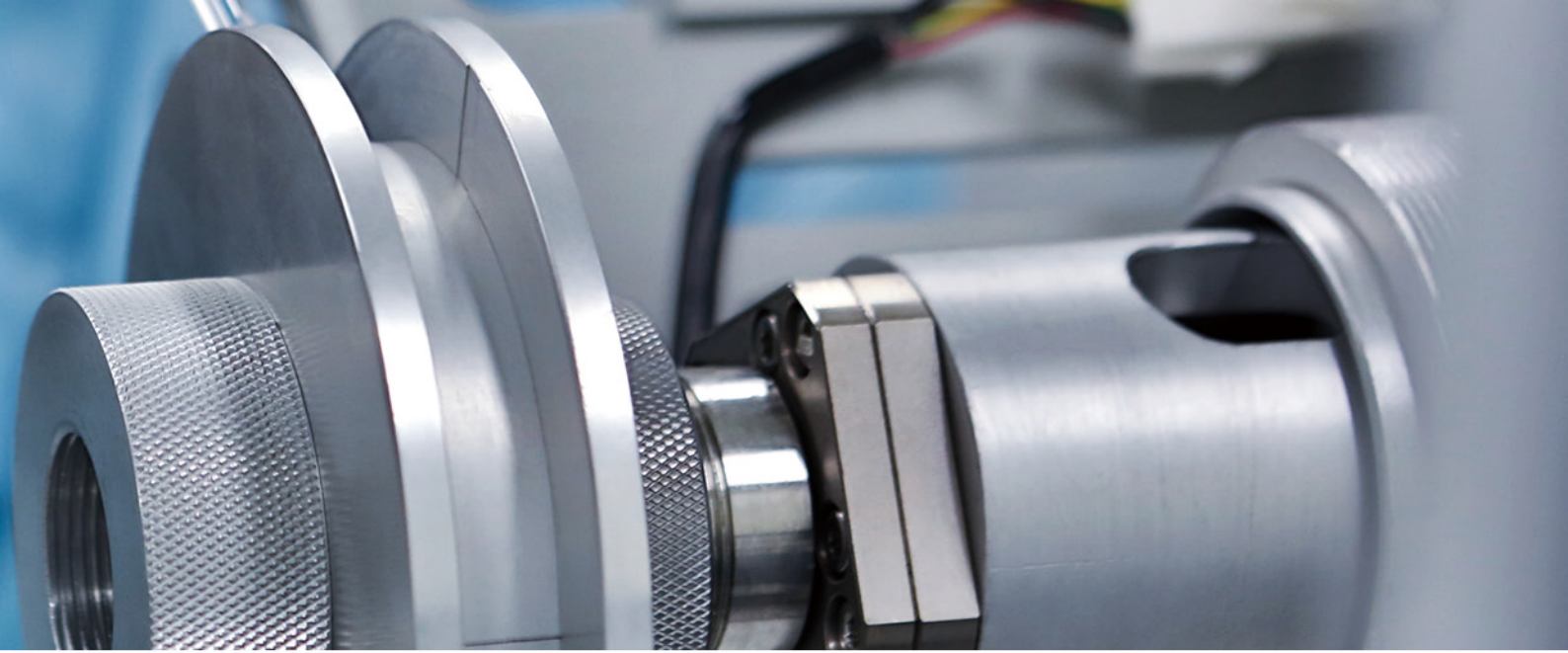
Characteristics

- High symmetry, high extinction ratio, minimum Shupe effect

Applications

- Closed-loop fiber optic gyroscope





Customized Information

- The size, length, performance and whether to remove bone can be customized according to customer requirements
- The solution of full frameless coil can be provided
- The whole system solution of FOG can be provided

Product Classification

- $\phi 50$ PM coil without skeleton
- $\phi 70$ PM coil without skeleton
- $\phi 98$ PM coil without skeleton
- $\phi 120$ PM coil without skeleton

Specifications

$\phi 50$ PM coil without skeleton

Product Type	CQ1-I29/12-PMa2-b* ^①	CQ1-I29/12-PMa3-b* ^①
Coil Internal Diameter (mm)	29 - 35	29 - 35
Coil External Diameter (mm)	≤ 45	≤ 45
Coil Height (mm)	8 - 12	8 - 12
Coil Layers	40 - 60	32 - 52
Coil Length (m)	290 - 600	190 - 430
Crosstalk at 25°C (dB)	≤ -25	≤ -25
Full Temperature Crosstalk (dB)	≤ -20	≤ -20
Insertion Loss (dB)	≤ 0.2	≤ 0.2
10s Full Temperature Drift (°/h)	≤ 0.5	≤ 0.6
10s Peak Value of Full Temperature (°/h)	≤ 2	≤ 2.2
Temperature Range (°C)	-45 to +85	-45 to +85

*^① Product type:CQ1-I29/12-PMa2-b,CQ1-I29/12-PMa3-b, 'a' represents the operating wavelength and 'b' represents the fibre coil length

φ70 PM coil without skeleton

Product Type	CQ1-I52/12-PMa2-b* ^①	CQ1-I52/12-PMa3-b* ^①
Coil Internal Diameter (mm)	52 - 53	52 - 53
Coil External Diameter (mm)	≤ 64	≤ 64
Coil Height (mm)	11 - 12	11 - 12
Coil Layers	28 - 60	32 - 56
Coil Length (m)	440 - 980	390 - 470
Crosstalk at 25°C (dB)	≤ -25	≤ -25
Full Temperature Crosstalk (dB)	≤ -20	≤ -20
Insertion Loss (dB)	≤ 0.4	≤ 0.4
10s Full Temperature Drift (°/h)	≤ 0.2	≤ 0.3
10s Peak Value of Full Temperature (°/h)	≤ 1	≤ 1.2
Temperature Range (°C)	-45 to +85	-45 to +85

*^① Product type:CQ1-I52/12-PMa2-b,CQ1-I52/12-PMa3-b, 'a' represents the operating wavelength and 'b' represents the fibre coil length

φ98 PM coil without skeleton

Product Type	CO1-I75/12-PMa2-b* ^①	CO1-I75/12-PMa3-b* ^①
Coil Internal Diameter (mm)	75 - 76	75 - 76
Coil External Diameter (mm)	≤ 93	≤ 93
Coil Height (mm)	12 - 13	12 - 13
Coil Layers	48 - 68	52 - 56
Coil Length (m)	1200 - 1600	990 - 1150
Crosstalk at 25°C (dB)	≤ -20	≤ -20
Full Temperature Crosstalk (dB)	≤ -18	≤ -18
Insertion Loss (dB)	≤ -0.8	≤ -0.8
100s Full Temperature Drift (°/h)	≤ 0.01	≤ 0.03
100s Peak Value of Full Temperature (°/h)	≤ 0.15	≤ 0.25
Temperature Range (°C)	-45 to +85	-45 to +85

*^① Product type:CO1-I75/12-PMa2-b,CO1-I75/12-PMa3-b, 'a' represents the operating wavelength and 'b' represents the fibre coil length

φ120 PM coil without skeleton

Product Type	CH1-I93/14-PM22-a* ^①
Coil Internal Diameter (mm)	93 - 94
Coil External Diameter (mm)	≤ 112
Coil Height (mm)	13 - 14
Coil Layers	64
Coil Length (m)	2120 - 2200
Crosstalk at 25°C (dB)	≤ -18
Full Temperature Crosstalk (dB)	≤ -15
Insertion Loss (dB)	≤ -1.5
100s Full Temperature Drift (°/h)	≤ 0.005
100s Peak Value of Full Temperature (°/h)	≤ 0.10
Temperature Range (°C)	-45 to +85

*^① Product type:CH1-I93/14-PM22-a, 'a' represents the operating wavelength