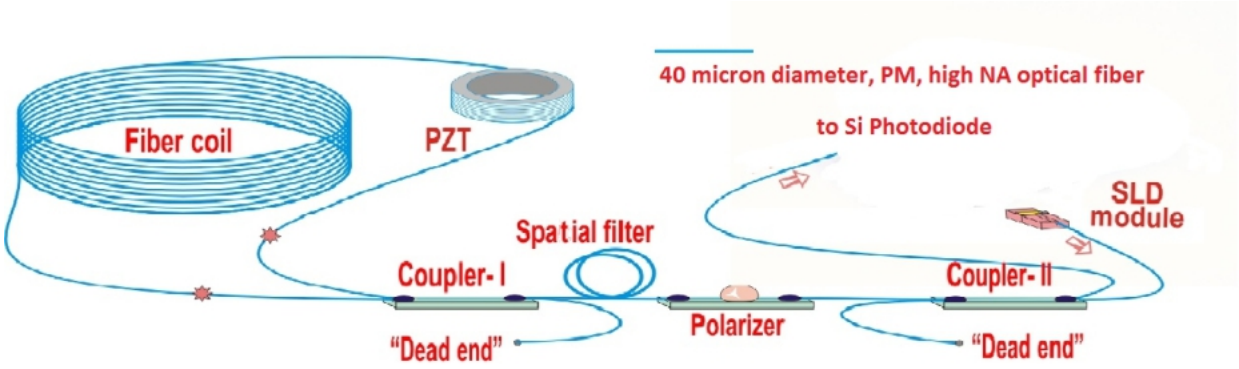
Fizoptika

FIBER OPTIC SENSING ASSEMBLY AND ITS MAJOR COMPONENTS

Info Notes[1]



Minimum configuration spliceless fiber optic assembly of open loop gyroscope

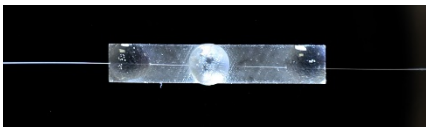
Sensing coil – 100m (depends on the model) of specialty PM-fiber wound on a bobbin to form a quadrupole pattern. Constant low tension is applied to the fiber during winding to achieve uniform and symmetrical mechanical structure of the coil. This specialty very thin fiber (40μ diameter) was specially developed for production of fiber optic gyroscope.

Phase modulator – 0.5m fiber length wound on the side of a piezoelectric ring (PZT). The PZT is glued on a holder with a soft silicone. The holder works as an isolator to weaken mechanical coupling of PZT to the sensor main frame.

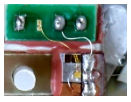
Fiber optic coupler – two fibers fused together and shaped as biconical tapers. The amount of optical cross-coupling depends on fusion length. To achieve predetermined coupling (3 dB), the corresponding signal is being measured continuously during coupler fabrication. The coupler is mounted on a quartz substrate to ensure mechanical and thermal stability.

[1] The information presented in this document is believed to be correct. Fizoptika accepts no liability for any errors it may contain and reserves the right to alter specifications without prior notice.

Fiber-crystal polarizer – a fiber biconical taper cladded by birefringent crystal. The taper is fiber fragment where its diameter is made 5µ by fusion-tapering technique. The crystal is sodium nitrate grown on a mica substrate. The polarizer is mounted on a quartz substrate and covered with silicone gel to ensure mechanical and thermal stability.



Light emitting SLD module – an extremely bright and low-coherence light diode effectively coupled to the input fiber of the fiber optic assembly.



"Dead end" – a specially processed fiber end to eliminate back reflection.