3-Paddle Polarization Controller

Product description

The polarization control is made by utilizing the principle of induced birefringence in optical fibers under external forces.

Three of the slurries are equivalent to λ/ 4 λ/ 2 λ/ Four types of wave plates, light waves pass through λ/ 4 wave plates are converted into linearly polarized light, and then transformed by λ/ Adjust the polarization direction with a 2-wave plate, and finally pass through the λ/ A 4-wave plate transforms the polarization state of linearly polarized light into any polarization state.

The delay effect caused by birefringence effect is mainly determined by the cladding radius, fiber wrapping radius, and optical wavelength of the fiber. It has been verified that this controller can generate changes in the omnidirectional polarization state, and the adjusted polarization state can cover the entire Poincar sphere.

Product Features

- Equivalent to λ/ 2 λ/ 4 optical waveplates
- Adjustable to any polarization state point on the Poincar sphere
- Low insertion loss, wide wavelength operating range
- Exquisite workmanship and low price
- Easy to disassemble, can replace and wrap optical fibers by oneself

Product Application

- Application of Single Mode to Polarization Maintaining Fiber
- Measurement of Polarization Related Loss (PDL)
- Application of polarization sensitive devices
- Fiber laser
- Fiber optic interferometer

Product structure diagram

3-Paddle Polarization Controller,   product dimensions: length 155.2X width 22X height 52.6mm,   (2-4-2 loops with 3 paddles, workable for SMF-28 fiber）
(Testing unit: Fiber ring diameter 40mm, fiber cladding diameter 125um)
For example, a polarization controller fiber with a fixed diameter of 40mm is wound around a single-mode fiber with a cladding diameter of 125um:
When λ= When the number of loops around 1550nm is 1, the loop is equivalent to λ/ 2 glass slides
When λ= When the number of loops around 1550nm is 3, the loop is equivalent to 3 λ/ 2 glass slides