Motorized Polarization Controller
PC1300

PC1300 is designed to manipulate the polarization states by either manual adjustment or remote control. Fiber optic quarter-wave plates are driven by motors.

Either by applying analog voltage or by RS232 control, you can remotely control the angular positions of the wave plates. The MPC offers convenient "save and recall" functions with built-in memory. It also provides "auto scan" mode at variable scanning speeds with low insertion loss (less than 0.5 dB) and high polarization extinction ratio. Its compact size enables the MPC to be installed on an electric circuit board.

Features
All-fiber configuration
Low Back Reflection
High Extinction Ratio
Automatic Full Range Scan
Low Insertion Loss
Compact Size
Remote Control with analog voltage input
RS232 Remote Control
Applications

1. **Polarization control for optical devices to match polarization state.**
   
   ![Figure 1](image1)

2. **Remoting control of polarization state by computer.**
   
   ![Figure 2](image2)

3. **Polarization control for fiber optic interferometers.**
   
   ![Figure 3](image3)

4. **Analog feedback for automatic system stabilization.**
   
   ![Figure 4](image4)

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LD: Laser Diode   Ext. Mod: External Modulator   D: Detector   EDF: Erbium-Doped Fiber   SOI: System Of Interest
# Specification

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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<tbody>
<tr>
<td>Operating Wavelength Range</td>
<td>1520 ~ 1620 nm</td>
</tr>
<tr>
<td>Insertion Loss</td>
<td>&lt; 0.5 dB (&lt; 0.3 dB typical) ¹)</td>
</tr>
<tr>
<td>Insertion Loss Variation</td>
<td>&lt; ±0.02 dB ³)</td>
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<tr>
<td>Polarization Extinction Ratio</td>
<td>&gt; 20 dB (&gt; 25 dB typical)</td>
</tr>
<tr>
<td>Back Reflection</td>
<td>&lt; -60 dB (without connector)</td>
</tr>
<tr>
<td>Rotational Resolution</td>
<td>0.225° / step</td>
</tr>
<tr>
<td>Rotational Accuracy</td>
<td>±0.225° / step or 0.225° / position</td>
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<tr>
<td>Rotational Speed</td>
<td>&lt; 7000 steps per sec. (1575° / sec)</td>
</tr>
<tr>
<td>Power Supply</td>
<td>12 V</td>
</tr>
<tr>
<td>Remote Interface</td>
<td>Analogue Voltage Control / RS232</td>
</tr>
<tr>
<td>Dimensions (W × H × D)</td>
<td>184 × 23.5 × 106 mm</td>
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</table>

¹) With FC/PC Connectors.

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## Ordering code

**PC1300-(1)**

1. connector type ➔ FC/SPC (F/P), FC/APC (F/A), No connector (X)

*Example: PC1300-F-P*  ➔ Motorized Polarization Controller with FC/SPC connectors