

**Features**

- » Compatible With Most Optical Modulators
- » Adjustable Input to Output Power Ratio Control
- » Local or Remote Adjustment of Control Ratio and Reset
- » Includes Optical Power Monitors
- » Simple to Integrate Into System
- » Includes Power Supply

**Applications**

- » Optical Modulator Communications Systems
- » RF and Microwave Photonic Transmitters
- » Spectroscopy Systems
- » Optical Test Systems
- » Optical Modulator Component Evaluation
- » Optical Delay Lines

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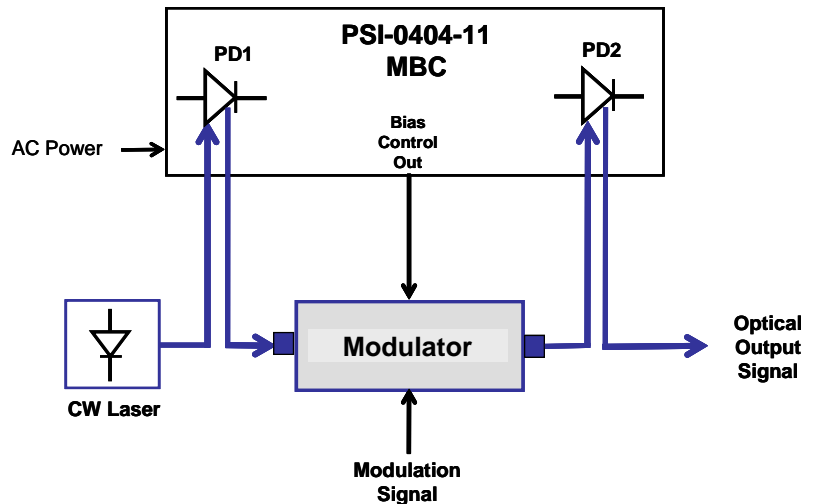
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**Description**

The PSI-0404-11 modulator bias controller offers a simple solution for precise control of electro-optical modulators. This controller accurately prevents bias point drift from any user defined point on the Mach-Zehnder transmission voltage curve by holding a fixed power ratio of the optical input and output of the modulator under control. Through the use of integrated optical tap coupler/power monitor devices, the PSI-0404-11 monitors the ratio of DC optical power level at the modulator's input and output ports. Precise feedback control circuitry maintains a user-set ratio through automatic adjustment of the bias voltage applied to the modulator under control.

Along with standard configurations, PSI can modify the PSI-0404-11 to meet system requirements . **Please contact PSI with you application needs.**



**Figure 1: Typical System Configuration**

**Ordering Information**

| PSI Part Number | Description   |
|-----------------|---|
| PSI-0404-11     | Power Ratio Controller<br><br>Note: Please provide the following information at time of quote: <ul style="list-style-type: none"> <li>• For PD1 selection, please specify maximum optical input power (PM fiber is assumed).</li> <li>• For PD2 selection, please specify maximum optical power out from modulator and the required fiber type (PM or SM available).</li> </ul> |

### Performance Characteristics

| Parameter                                   | Condition  | Min            | Typ | Max | Units |
|---|--|----------------|-----|-----|-------|
| Maximum Optical Input Power to Modulator    | User specified value required by system up to max. |                |     | 23  | dBm   |
| Optical Input Dynamic Range                 | From user defined max. level                       | 20             |     |     | dB    |
| Maximum Optical Output Power from Modulator | User defined value and optical modulator dependent |                |     | 20  | dBm   |
| Optical Output Dynamic Range                | From user defined max. level                       | 20             |     |     | dB    |
| Power Ratio Accuracy                        | Up to 30 dB of combined range                      | 1              |     |     | %     |
|   | Up to 40 dB of combined range                      | 10             |     |     | %     |
| PD1 and PD2 Insertion Loss Range            | Varies by Optical Power Selection                  | < 0.05 to <0.4 |     |     | dB    |

### Environmental Characteristics

| Parameter             | Condition | Min | Typ | Max | Units |
|-----------------------|-----------|-----|-----|-----|-------|
| Operating Temperature |           | -20 |     | 70  | °C    |
| Storage Temperature   |           | -40 |     | 85  | °C    |

### Power Supply

| Parameter           | Condition  | Min | Typ | Max | Units           |
|---------------------|--|-----|-----|-----|-----------------|
| PCB Supply Power    | J1 Connector   |     | 16  |     | V <sub>AC</sub> |
| Power Supply Module | 120 V <sub>AC</sub> Input to 16 V <sub>AC</sub> Output unit supplied with unit |     |     |     |                 |

### Pin-out and Jumper Descriptions

| Designator | Pin | Description                               |
|------------|-----|---|
| J1         | 1   | 16 V <sub>AC</sub> Input                  |
| J2         | 1   | Modulator Bias Output Signal              |
|            | 2   | Ground                                    |
|            | 3   | Remote Controller Reset (Ground to Reset) |
| J3         | 1   | Remote Ratio Set (or PD2 Monitor)         |
|            | 2   | Remote Ratio Set, Variable                |
|            | 3   | Remote Ratio Set (or PD1 Monitor)         |
| JP2        |     | Bias Polarity                             |
| JP3        |     | Ratio Control Select: Local / Remote      |

**Mechanical Dimensions**

