



BROADCOM AFBR-S4KPEBIAS SiPM Bias Source for WB-Type and WL-Type Installation Guide

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BROADCOM AFBR-S4KPEBIAS SiPM Bias Source for WB-Type and WL-Type



Description

The Broadcom® single silicon photomultipliers (SiPM) bias source powers all AFBR-S4K silicon photomultipliers. It is an ideal addition to the SiPM evaluation kit and can be used with any single SiPM or SiPM array.

The active area of these SiPMs is $3.0 \times 3.0 \text{ mm}^2$ with single-photon avalanche diode (SPAD) pitches of $15 \text{ }\mu\text{m}$, $35 \text{ }\mu\text{m}$ or $47 \text{ }\mu\text{m}$. The WL-type series stands for high efficiency and improved low noise performance. Its excellent timing enables easy replacement of PMTs, APDs, and PIN diodes.

Safety

This document contains some information and warnings which have to be followed by the user to ensure safe operation and to retain the instrument in a safe condition.

The SiPM Bias Source is intended for evaluation purposes only. It has been designed for indoor use in laboratory environment for a temperature range 5°C to 40°C , 20% to 80% RH (non-condensing). Do not operate while condensation is present.

Use of the AFBR-S4KPEBIAS Bias Source in a manner not specified by these instructions may impair the safety protection provided. Do not operate it outside its rated supply voltages or environmental range.

When the Bias Source is connected to its supply, the Bias Output is live. Opening the covers or removal of parts exposes live parts. It must be disconnected from all voltage sources before it is opened for any adjustment, replacement, maintenance or repair which may be only carried out by a trained person who is aware of the hazard involved.

CAUTION! This product is intended for evaluation purposes only. Therefore, it is to be handled only by trained personnel in a laboratory environment.

Features

- Benchtop Bias Supply for any AFBR-S4K SiPM
- Switchable Polarity, 20V to 40V output
- Switchable Current Limit 2 mA/20 mA

- Low Output Voltage Ripple < 2 mV RMS
- Bias Voltage Regulation by Potentiometer
- International Power Supply included

NOTE: All values in this data sheet are typical values if not marked with min., max., <, or >.

Preamplifier Specifications

| Parameter | Specification |
|-----------------------------|--|
| Power Input | 12V DC |
| Output Voltage | 20V to 40V, SMA type |
| Output Current Limit | 2 mA or 20 mA, switchable |
| Output Polarity | Positive or negative, switchable |
| Output Ripple | Y 2 mV RMS |
| Operating Range | +5°C to 40°C |
| EMC Norm | EN 61326:2013 |
| EMC Specification | EN 55011, class B |
| EMC Frequency Range | 30 MHz to 1 GHz |
| Dimensions | 71 x 57 x 18 mm ³ (L x W x H) |
| Power Adapter Input | 90V to 264V AC, 47 to 63 Hz |
| Power Adapter Output | 12V DC, 0.85 A |
| Power Adapter Specification | Meets CEC + ErP Level V |

Front and Rear Panel Connections

The front and rear panels with their corresponding controls are shown in Figure 1 and Figure 2. As soon as the Bias Source is powered the green Power On LED lights up and the Bias Output is switched on. The bias voltage is set with a screwdriver at the potentiometer and can be measured with a multimeter to adjust the required value. The Current Limit LED is only lit in case the set current limit is reached. All controls can be switched while the power is on.

Figure 1: PEBIAS Front Panel

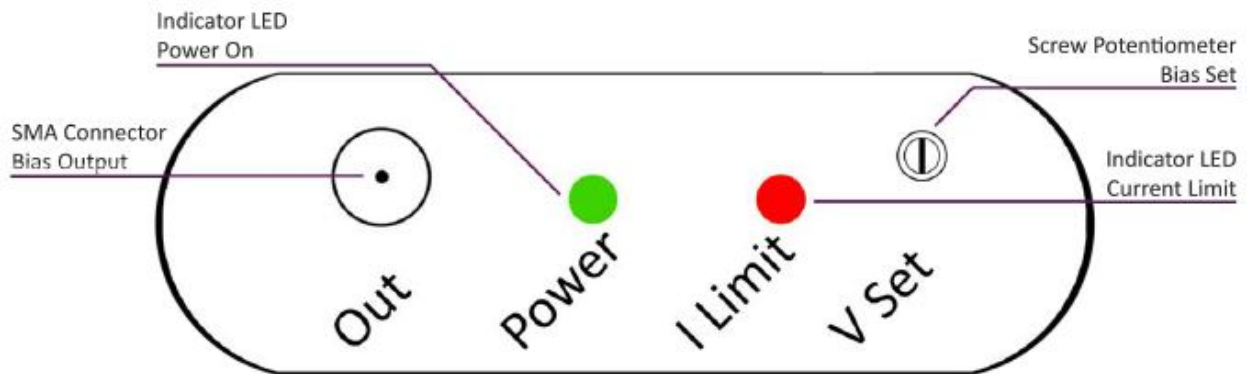
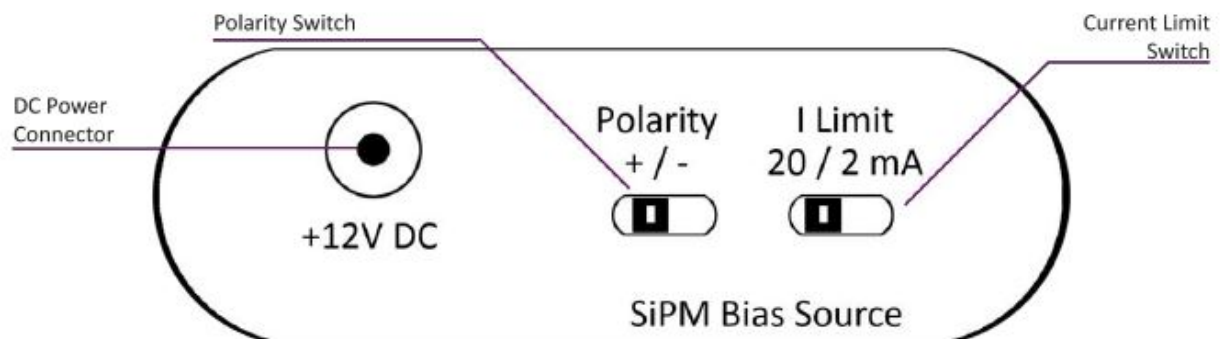


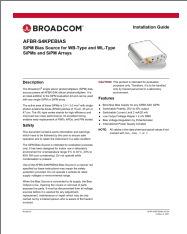
Figure 2: PEBIAS Rear Panel



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Documents / Resources

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|  | <p>BROADCOM AFBR-S4KPEBIAS SiPM Bias Source for WB-Type and WL-Type [pdf] Installation Guide</p> <p>AFBR-S4KPEBIAS, SiPM Bias Source for WB-Type and WL-Type, AFBR-S4KPEBIAS SiPM Bias Source for WB-Type and WL-Type</p> |
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