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Silicon Photomultiplier Bias Source

Datasheet

Bias
SiPM

Eval Kit
SiPM

KETEK

Table of Contents

This datasheet covers the KETEK SiPM Bias source only.
For other products please refer to www.ketek.net.

Revision history:

Rev. 1.0, October 2016 - Initial release

1 Introduction

The KETEK SiPM Bias Source is a bias supply for evaluation purposes which powers all KETEK Silicon Photomultipliers. It is an ideal addition to the KETEK SiPM Evaluation Kit and can be used with any single KETEK SiPM or arrays of KETEK SiPMs.

Key Features are

- Benchtop bias supply for any KETEK SiPM
- Bias voltage regulation by a screw potentiometer
- Switchable polarity
- Switchable current limit
- LED indicators for operation and current limit

2 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 KETEK 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% - 80% RH (non-condensing). Do not operate while condensation is present.

Use of the the KETEK SiPM 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 KETEK SiPM 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

The KETEK SiPM Bias Source is intended for evaluation purposes only. Therefore it is to be handled only by trained personnel in a laboratory environment.

3 Specifications

The specifications of the SiPM Bias Source together with its supplied power adapter can be found in tab. 1. The power adapter has different plug adapters suitable for worldwide wall outlets and power grids.

Tab. 1 SiPM Bias Source Parameters

Parameter	Specification
SiPM Bias Source	12 V DC ⊖—●—⊕
Output	20 - 40 V, SMA type
Current Limit	2 or 20 mA
Polarity	positive or negative
Ripple	< 2 mV rms
Operating Range	+ 5 to 40 °C
EMC	EN 61326:2013
Specification	EN 55011, class B
Frequency Range	30 MHz to 1 GHz
Size	71 x 57 x 18 mm³
Power Adapter	12 V DC, 0.85 A
Input	90 - 264 V AC, 47 - 63 Hz
Specification	Meets CEC + ErP Level V CE

4 Front and Rear Panel Connections

The front and rear panels with their corresponding controls are shown in fig. 1a and 1b.

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 e.g. 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.v

Fig. 1a SiPM Bias Source Front Panel

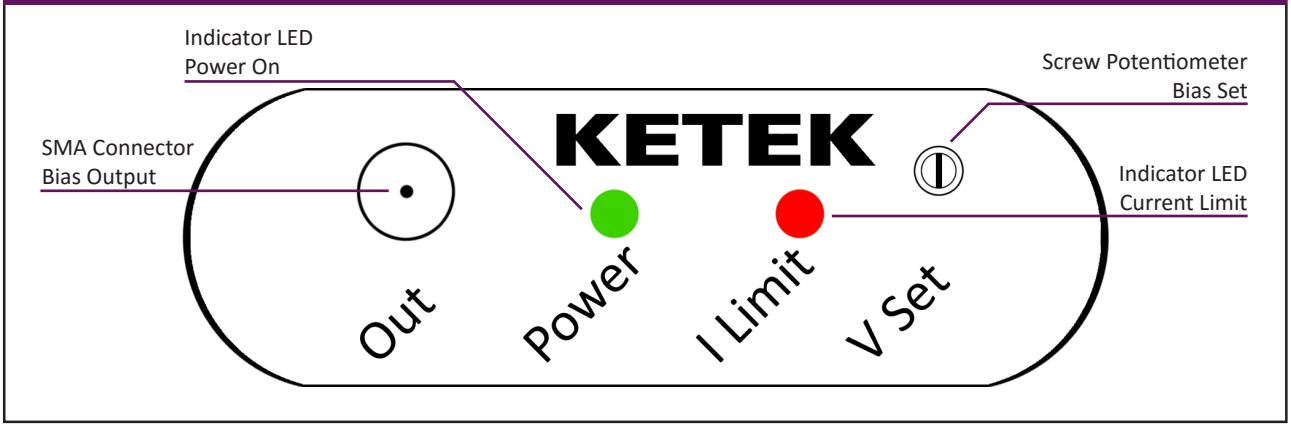
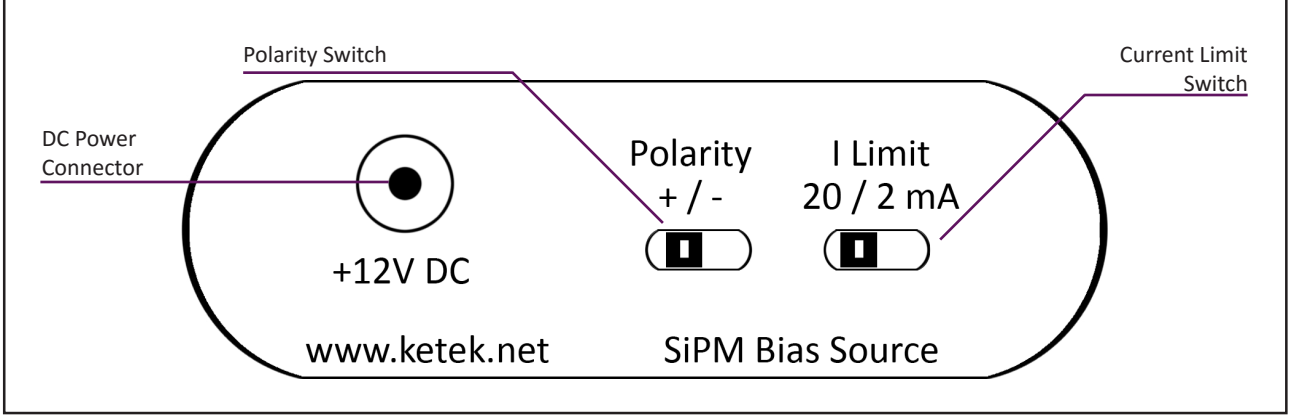


Fig. 1b SiPM Bias Source Back Panel



5 Declaration of Conformity

KETEK

Declaration of Conformity

CE

We,
KETEK GmbH, Hofer Str. 3, 81737 Munich, Germany,
declare under our sole responsibility, that the product

Name:	**SiPM Bias Source**
Brand:	**KETEK – Creative Detector Solutions**
Type, Model, Article No.:	**PEBIAS**

fulfills the requirements of the standard and regulations of the following directives:

I) **Directive 2014/30/EU** of the European Parliament and of the Council from April 20th, 2016 on the approximation of the laws of the member states relating to electromagnetic compatibility.

II) **EN 61326-1:2013 (IEC 61326-1)**
Electrical equipment for measurement, control and laboratory use; EMC – requirements; Part 1: general requirements.

III) **EN 55011:2009 (IEC 11:2009)**
Electrical equipment for measurement, control and laboratory use.

IV) **Directive 2006/95/EC** of the European Parliament and of the Council from December 12th, 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.

Munich, 04.10.2016

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