

DSN 102

Dual SPAD Power Supply

- two-channel power supply for Single Photon Counting Avalanche Diodes (SPAD)
- integrated counter
- acoustic monitoring and warning
- safety shut-down to prevent SPAD degradation
- stand-alone version or OEM module for 19" subrack



Applications

- general photon counting
- spectroscopy
- Fluorescence Lifetime Imaging (FLIM)
- confocal fluorescence microscopy
- Single Molecule Spectroscopy (SMS)
- Fluorescence Correlation Spectroscopy (FCS) and Förster Resonance Energy Transfer (FRET)

Dual SPAD Power Supply

The dual SPAD power supply DSN 102 is an accessory for the SPCM-AQR(H) SPAD detectors of Perkin Elmer, the PDM modules from Micro Photon Devices (MPD), the COUNT modules from Laser Components and the τ -SPAD from PicoQuant. It controls and monitors the operation of the detectors. The DSN 102 can control two SPAD modules at the same time, displaying the count rate of one selected module.

The DSN 102 is also equipped with an automatic protection circuitry that shuts down the supply voltage to the modules safely when critical exposure levels to light are reached. While this is not a critical issue for the PDM modules, it is an absolute must for the SPCM-AQR(H) modules and suggested for the COUNT and τ -SPAD modules. In such a case the DSN 102 gives an acoustic warning.

For further diagnostics and detector adjustment there is also a BNC output for an oscilloscope or other monitoring device. The voltage at this output is proportional to the log count rate. In addition an acoustic count rate monitor output e.g. for use with speakers or earphones is provided. The DSN 102 in its OEM version is an installation module (3 U, 160 mm depth) designated to fit into a 19 inch subrack. The stand-alone version is supplied in a small table-top rack, equipped with the appropriate AC power supply.

⚠ Attention: The DSN 102 helps to protect SPAD modules, but there is no guaranteed absolute safety. Additional protection from excess light levels should be provided through appropriate design of the optical setup.

Specifications

Detector Input		
Pulse width	>20 ns	
Pulse height	>2.3 V	
Electrical Parameters		
High shut-down count rate (factory set)	PDM SPAD: 8×10^6 counts/sec SPCM-AQR(H) SPAD: 4×10^6 counts/sec COUNT SPAD: 4×10^6 counts/sec τ -SPAD: 4×10^6 counts/sec	
Oscilloscope output	max. 2 V	
Acoustic output	>120 Ohms	
Connectors		
SPAD power socket	LEMO EEG 2B (5 pin)	
Appropriate male connector	LEMO FGG 1B 302 C Type	
Input/output SPAD	female SMA	
Oscilloscope output	female BNC	
Acoustic output	3.5 mm earphone socket	
Power Requirements		
	Stand-alone version	OEM version
Voltage	110 to 240 V, 50/60 Hz	13.5 V, stabilized at $\pm 5\%$
Power/current consumption	max. 35 Watts	max. 3 A
Dimensions		
	Stand-alone version (incl. rack)	OEM version (3 U / 21 HP)
Width	237 mm	106 mm
Depth	310 mm	173 mm
Height	133 mm	129 mm



All Information given here is reliable to our best knowledge. However, no responsibility is assumed for possible inaccuracies or omissions. Specifications and external appearances are subject to change without notice. Trademarks or corporate names are used for explanation and identification, to the owner's benefit and without intent to infringe.

© PicoQuant GmbH, October 2010