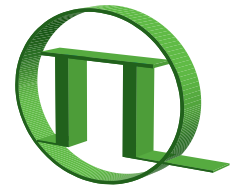


# DSN 101



PICOQUANT  
Unternehmen für optoelektronische  
Forschung und Entwicklung

<http://www.picoquant.com>

## 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
- Fluorescence Correlation Spectroscopy (FCS) and Förster Resonance Energy Transfer (FRET)

# Dual SPAD Power Supply

The dual SPAD power supply DSN 101 is an accessory for the SPCM-AQR(H) SPAD detectors of Perkin Elmer and the PDM modules from Micro Photon Devices (MPD). It controls and monitors the operation of the detectors. The DSN 101 can control two SPAD modules at the same time, displaying the count rate of one selected module. The DSN 101 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 as indicated in the SPAD manual. In such a case the DSN 101 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 101 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.

## Application Examples

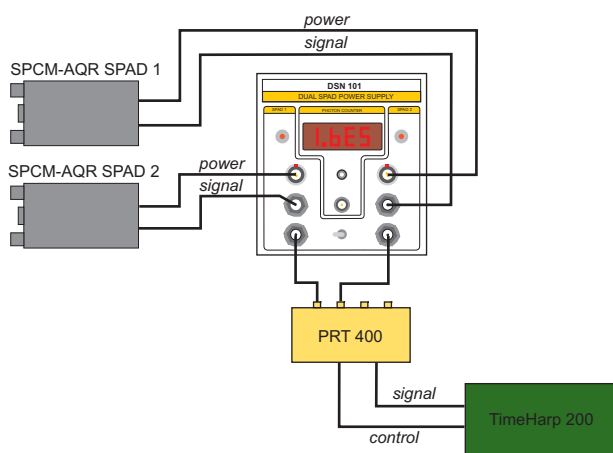


Figure 1 - Photon counting using SPCM-AQR SPADs

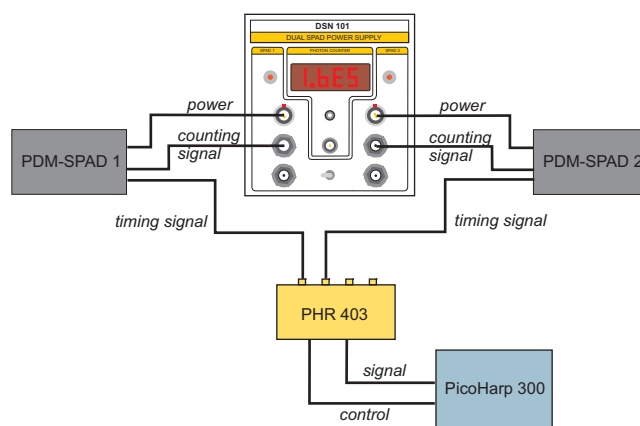


Figure 2 - Photon counting using PDM SPADs

## Specifications

<b>Detector Input</b>		
Pulse width .....	>20 ns	
Pulse height .....	>2.3 V	
<b>Electrical Parameters</b>		
High shut-down count rate (factory set) .....	PDM SPAD: $8 \times 10^6$ counts/sec SPCM-AQR(H) SPAD: $4 \times 10^6$ counts/sec	
Oscilloscope output .....	max. 2 V	
Acoustic output .....	>120 Ohms	
<b>Connectors</b>		
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	
<b>Power Requirements</b>		
	<b>Stand-alone version</b>	<b>OEM version</b>
Voltage .....	110 to 240 V, 50/60 Hz	+5 V, stabilized at $\pm 5\%$
Power / Current consumption .....	max. 35 Watts	max. 3 A
<b>Dimensions</b>		
	<b>Stand-alone version (incl. rack)</b>	<b>OEM version (3 U / 21 HP)</b>
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, July 2008



PicoQuant GmbH  
Rudower Chaussee 29 (IGZ)  
D-12489 Berlin  
Germany

Phone +49-(0)30-6392-6929  
Telefax +49-(0)30-6392-6561  
Email info@picoquant.com  
WWW <http://www.picoquant.com>