



DESCRIPTION

The PS1801N is a compact photomultiplier power base, operating at negative high voltage. The CW principle of operation provides the lowest power consumption within our range of power bases. This is particularly relevant to battery operated equipment. It is suitable for use with 10 stage, 38 mm diameter, photomultipliers with an overall voltage range of -300 to -1800 V. It is available in two versions: the PS1801N/5 operates from a +5 Vsupply, the PS1801N/12 requires +12 V.

It is housed in a cylindrical metal enclosure to provide electrical screening. Low voltage connections are by 450 mm long insulated leads, and the anode output is via a 450 mm long RG174U screened coaxial cable. The dynode potentials are provided directly to the socket contacts.

The overall operating voltage for the photomultiplier can be set precisely using any one of the three programming options **shown in the programming options section**.

APPLICATIONS

The PS1801N is suitable for the following applications:

- Pulsed light
- Photon counting



EXAMPLES OF THE SENS-TECH'S RANGE OF POWER BASES

FEATURES

- Extremely low power consumption
- Compact design
- No high voltage cables
- Low ripple
- Exceptional voltage divider stability with varying anode current
- Excellent pulse height linearity
- Sleep mode
- Reverse supply protected

PS1801N DATA SHEET

PHOTOMULTIPLIER POWER BASE (NEGATIVE)



SENS - TECH

SPECIFICATION

OUTPUT VOLTAGE RANGE -300 V to -1800 V	WARM UP TIME TO 0.3 % OF FINAL OUTPUT < 1 s
ANODE CURRENT AT 1800 V MAX 200 μ A	DISCHARGE TIME TO <40 V WITH NO LOAD < 15 s
INPUT CURRENT, FULL LOAD (PS1801N/5) <36 mA	INPUT CURRENT, FULL LOAD (PS1801N/12) <15 mA
INPUT CURRENT, IDLING (PS1801N/5) <26 mA	INPUT CURRENT, IDLING (PS1801N/12) <11 mA
LOAD REGULATION (TYPICAL) 0.017% (0-100%)	LINE REGULATION (TYPICAL) 0.001 % V^{-1}
EXTERNAL VOLTAGE CONTROL 0.3 V to 1.8 V (0-100%)	REFERENCE VOLTS OUT (BLUE WIRE) 2.5V \pm 0.4%
TEMPERATURE COEFFICIENT (TYPICAL) 5 ppm $^{\circ}C^{-1}$	ANODE RIPPLE WITH 10 KΩ / 20 PF, 1 KV 4 mV pp / 0.3 mV p-p (nulled)
WEIGHT 80g	

RATINGS

INPUT VOLTAGE (PS1801N/5) +4.75 V to +8 V	TEMPERATURE (OPERATING) + 5 $^{\circ}C$ to +55 $^{\circ}C$
INPUT VOLTAGE (PS1801N/12) +11 V to +15 V	REFERENECE OUT LOAD 1mA
CONTROL VOLTAGE 0 to +1.8 V	

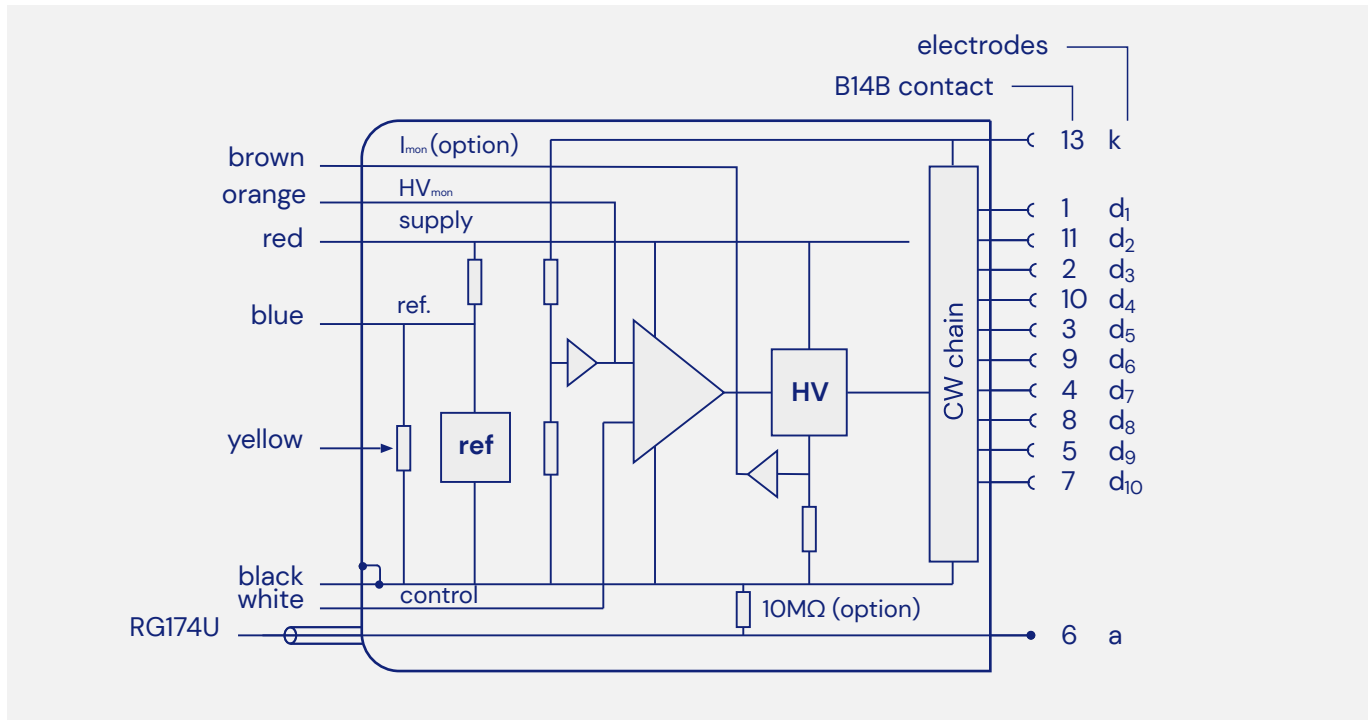
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SCHEMATIC DIAGRAM



Example of output voltage with 1.300 volts applied to control (white) wire

CONTACT	ELECTRODE	VOLTAGE	CONTACT	ELECTRODE	VOLTAGE
1	d ₁	-1000	8	d ₈	-300
2	d ₃	-800	9	d ₆	-500
3	d ₅	-600	10	d ₄	-700
4	d ₇	-400	11	d ₂	-900
5	d ₉	-200	12	nc	
6	a	floating	13	k	-1300
7	d ₁₀	-100	14	nc	

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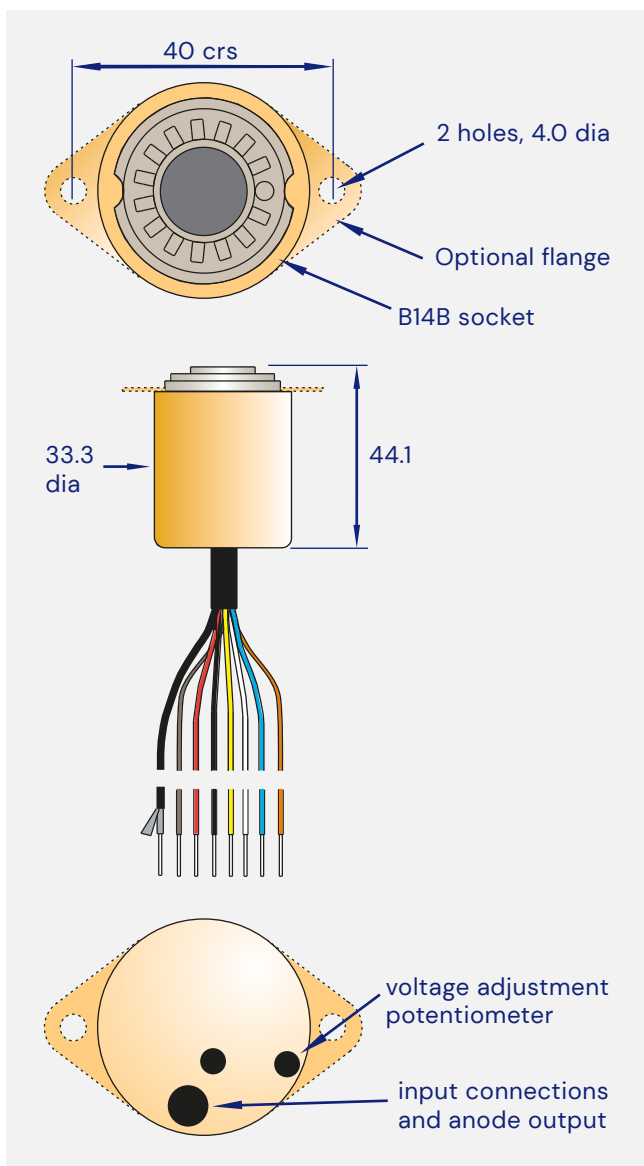
PHOTOMULTIPLIER POWER BASE (NEGATIVE)



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OUTLINE DRAWING MM

All input connections are 7/0.2 PVC covered, 0.45m in length. The anode lead is RG174U, also 0.45m in length.



ORDERING INFORMATION

ITEM	ORDERING CODE
PS1801N, +5 V	PS1801N/5
PS1801N, +5 V, flange	PS1801N/5F
PS1801N, +12V	PS1801N/12
PS1801N, +12V, flange	PS1801N/12F

WARNING

High voltages generated by these products present an electrical shock hazard and appropriate precautions must be taken. They must be installed by qualified personnel and operated within the specified ratings.

The PS1801N is despatched with the internal potentiometer set to zero.

Do not operate outside the ratings limits. This may result in loss of performance or permanent damage to the PS1801N. Do not exceed the ratings of the photomultiplier as this may damage the photomultiplier and the power supply.