



ORDELA MODEL QS-18

CHARGE-SENSITIVE AMPLIFIER/DISCRIMINATOR

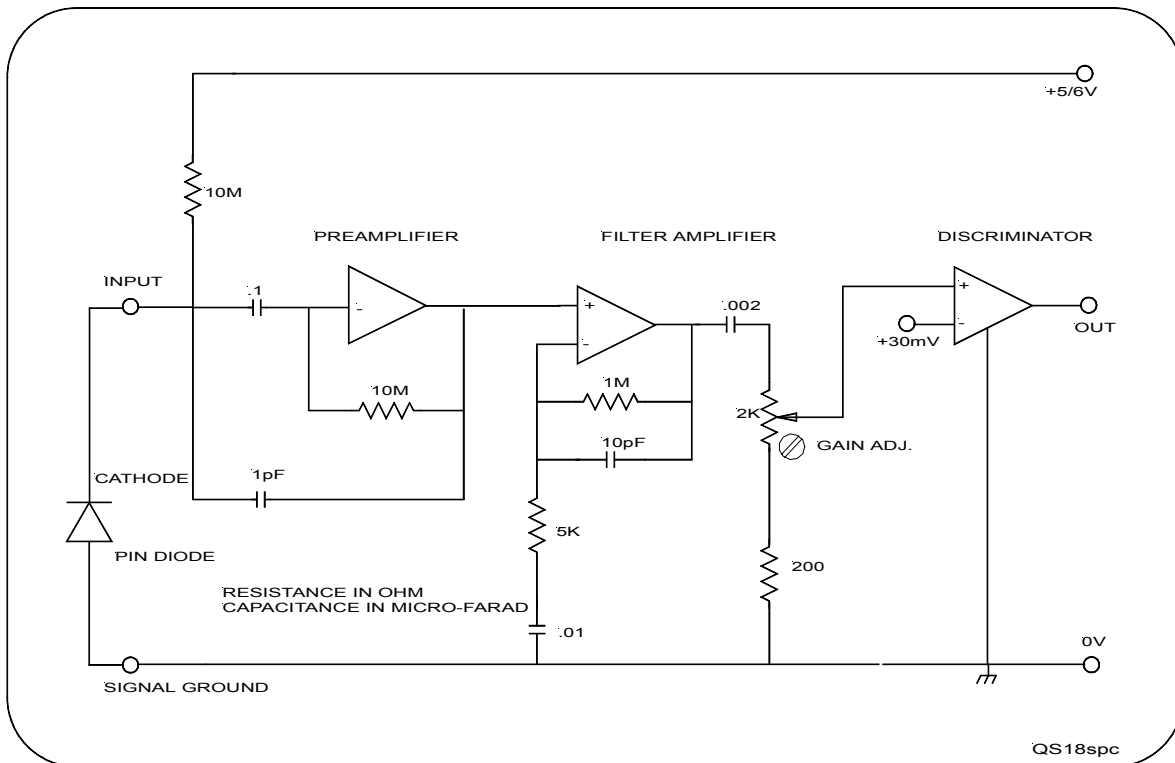
DESCRIPTION

The ORDELA Model QS-18 is a low-noise, charge-sensitive pulse amplification system. It contains a preamplifier, filter circuit and discriminator (Fig. 1). The Model QS-18 is designed for signal conditioning and counting of pulses from PIN diodes or similar radiation detectors. A filtered detector bias of five to six volt is provided. The amplifier gain is adjustable from 1.5 to 12.5 V/pC. The noise referred to the input is typically <1 fC without detector capacitance. The power required is ~ 100 mW at +5 V or +6 V bias.

The Model QS-18 is entirely contained on a 2.8-cm-wide, 6.3-cm-long printed circuit board, having provisions for mounting PIN diodes of 5 x 5 or 10 x 10 mm² active area. The output is a +5 V NIM pulse from the discriminator circuit. All power and signal connections (i.e., + 6 V, power ground, discriminator output, and logic ground/ shield) are available on a 4-pin circuit board connector. A 1.5-m-long interconnection cable is available upon request to interconnect the Model QS-18 to the power supply and the pulse counter.

SPECIFICATIONS

INPUT SIGNALS:	Current pulses, <2 pC integrated charge, negative polarity
INPUT NOISE:	<1 fC (fwhm) equivalent noise charge without detector capacitance, <2 fC equivalent noise charge with 100 pF detector capacitance
LOGIC OUTPUT:	+5 V NIM pulses, 10 micro seconds wide, maximum drive capability 1 k-ohm
AMPLIFIER RESPONSE:	Bipolar pulse, 15 micro seconds dwell time (not available as output) in response to input current pulses
AMPLIFIER GAIN:	Adjustable from 1.5 to 12.5 V/pC
CONTROL:	Gain adjustment, single turn trim potentiometer, PC board mounted
CONNECTOR:	Four pin circuit board connector having the following connections: Pin 1 (red wire) +5/6 V bias, pin 2 (black wire) power ground, pin 3 (white wire) logic output, pin 4 (green and bare wires) logic ground and cable shield.



ORDELA Model QS-18 circuit diagram

WARRANTY

ORDELA, Inc. Warrants its products to be free from defects in materials and workmanship for 12 months after shipment. No other warranty is included. Specifically, no warranty of merchantability or fitness for a particular purpose is implied. ORDELA's liability under this warranty is limited to repairing or replacing the product at ORDELA's option. This warranty is void if the product is operated improperly, disassembled, or modified other than in the ORDELA laboratory.