

ORDELA MODEL VS-06

LOW NOISE PREAMPLIFIER

DESCRIPTION

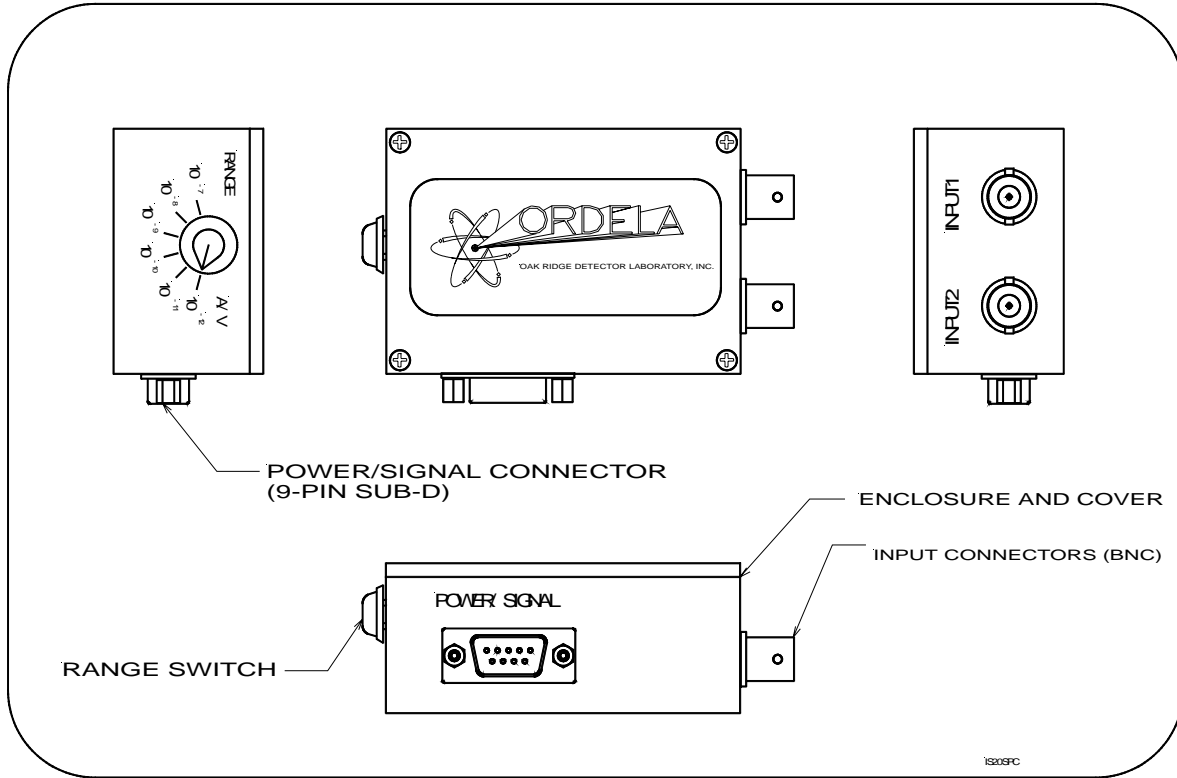
The ORDELA Model VS-06 is a low-noise, voltage-sensitive preamplifier designed with optimum transfer characteristics for pulses from proportional counters or similar signal sources. Its output baseline voltage is stabilized by a pole-zero cancellation network in the feedback loop to mitigate baseline drift and pile-up saturation.¹ Up to 3000 V filtered bias may be applied to the detector. The test pulse input has a sensitivity of 2 Pc/V.

The Model VS-06 is contained in a die-cast electronics box, 7.5 cm long, 6.6 cm wide, and 4.2 cm high. A male MSV input connector permits direct connection (i. e., without cable) of the preamplifier to the proportional counter output for biasing and signal transfer. A SHV connector (H. V. BIAS) connects to the high voltage power supply, and a 9-pin sub-D connector (SIGNAL/POWER) connects to the shaping amplifier to provide preamplifier power and transmits the preamplifier outputs and pulse generator inputs.

1. M. K. Kopp and J. A. Williams, Rev. Sci. Instrum., 48 (1977) 383.

2.0 SPECIFICATIONS

INPUT SIGNALS:	Voltage pulses, 0 to 200 mV amplitude, either polarity, <50 ns rise time, \approx 2 ms fall time.
INPUT NOISE VOLTAGE:	<2 nV (Hz) ^{-1/2} , measured at 100 kHz.
INPUT RESISTANCE:	22 M Ω , higher values upon request.
INPUT CAPACITANCE:	3 pF
MID-FREQUENCY GAIN:	5 V/V
LOW-FREQUENCY GAIN:	1 V/V
GAIN-BANDWIDTH PRODUCT:	200 MHz.
OUTPUT PULSE RISE-TIME:	30 ns, response to input voltage step.
OUTPUT PULSE FALL TIME:	50 μ s, response to 2 ms input pulse fall time.
OUTPUT VOLTAGE SWING:	\pm 5 V maximum.
OUTPUT RESISTANCE:	100 Ω .
POWER REQUIREMENT:	\pm 12 V @15 mA.
INPUT CONNECTION:	MSV connector.
TEST INPUT:	Power/signal 9-pin Sub-D connector, pin 5.
HV BIAS INPUT:	SHV connector.
POWER INPUT:	Power/signal 9-pin Sub-D connector, +12 V AT pin 4, -12 V at PIN 9, ground and shield at pins 1 and 2.
SIGNAL OUTPUT:	Power/signal 9-pin Sub-D connector, pin 3.
DIMENSIONS:	7.5 cm long, 6.6 cm wide, 4.2 cm high.
WEIGHT:	0.25 kg



ORDELA MODEL VS-06 INTERCONNECTION 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.