

CB200A_J - CHARGE SENSITIVE PREAMPLIFIER

The preamplifier CB200A_J is a low noise charge sensitive preamplifier. CB200A series has fixed gain values and can be changed by jumpers inside the box. The preamplifier is optimized for high input capacitance (up to 1000pF). The module has bias input (up to 3 or 5KV, specified in order) and protection circuit to avoid breakdown of the input of the preamplifier circuit.

Different number of amplifier can be housed in different boxes. There are 2 type of boxes (see below).

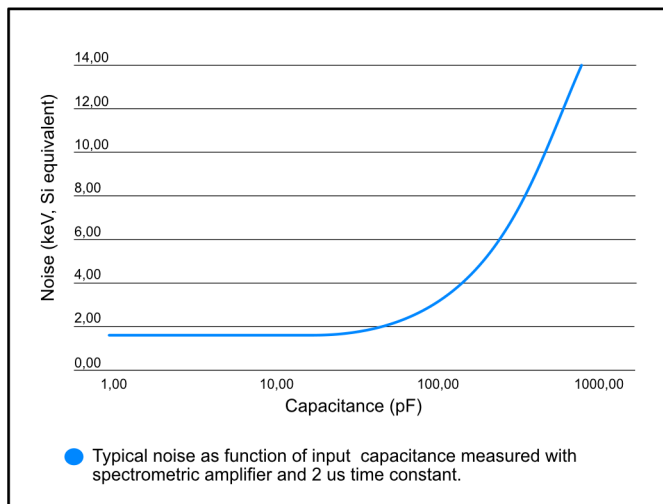
Model	Charge sensitivity (Si Equivalent 3,62)	Max. Noise (KeV/(Si)) (C _{in} =0pF)	Energy range
CB200A_J_1_2	60 or 45 mV/MeV	< 1,5 KeV	125-166 MeV
CB200A_J_3_4	30 or 15 mV/MeV	< 1,5 KeV	250-500 MeV
CB200A_J_5_6	10 or 5 mV/MeV	< 1,9 KeV	750-1500 MeV

PERFORMANCE

Decay time	CB200A_J_1_2	75/100 μ s
	CB200A_J_3_4	75/150 μ s
	CB200A_J_5_6	75/150 μ s
Dynamic input capacitance	Up to 1000 pF	
Noise/Input capacitance ratio	CB200A_J_1_2	9 e ⁻ /pF
	CB200A_J_3_4	10 e ⁻ /pF
	CB200A_J_5_6	12 e ⁻ /pF
Integral nonlinearity	0,03% (without termination)	
Dynamic output range	\pm 7,5 V (without termination)	
	\pm 3 V (with 100 Ω termination)	
Temperature stability	\pm 100 ppm/C	
Rise time	< 12 ns	
Open loop gain	30,000	
HV Bias resistor	26 Meg Ω	
Output resistors	100 Ω	
Test Capacitance	3 pF (\pm 3%)	

INPUT/OUTPUT

Input	Accepts positive or negative charge signal. SHV connector standard or BNC connector if module has not bias connection.
Bias	High voltage can be applied through SHV input connector. The serial resistance between input and bias connectors is 26 Meg Ω . Optional if any bias used.
Test	Pulse input connector is BNC type connector. Test capacitance is 3 pF.
Power	Input power through 3m screened cable from spectrometric amplifier or portable power supply
Energy	Output negative or positive linear pulse. BNC connector.



POWER SUPPLY REQUIREMENTS

The best solution is alimentation from a NIM standard power supply or special low noise linear power supplies.

P. Voltage (V)	Current/ch (mA)
+24	19,6
-24	10,0
+12	10,0
-12	11,6

Power supply pin out:

Pin number	
7	+24 V
6	-24 V
4	+12 V
9	-12 V
1	Ground
2	Ground

BOX DIMENSIONS

version 1 (one channel)	111x80x40 mm
version 2 (two channels)	111x80x40 mm
version 4 (four channels)	160x165x51 mm
version 8 (eight channels)	160x165x51 mm
weight	0,5 kg
cable length	3 m

