

**CB200A - CHARGE SENSITIVE PREAMPLIFIER**

The preamplifier CB200A is a low noise charge sensitive preamplifier. CB200A series has four fixed gain values. The preamplifier is optimized for high input capacitance (up to 1000pF). The module has bias input (up to 3KV) and protection circuit to avoid breakdown of the input of the preamplifier circuit. Different number of amplifiers can be housed in different boxes. There are 2 type of boxes (see below).

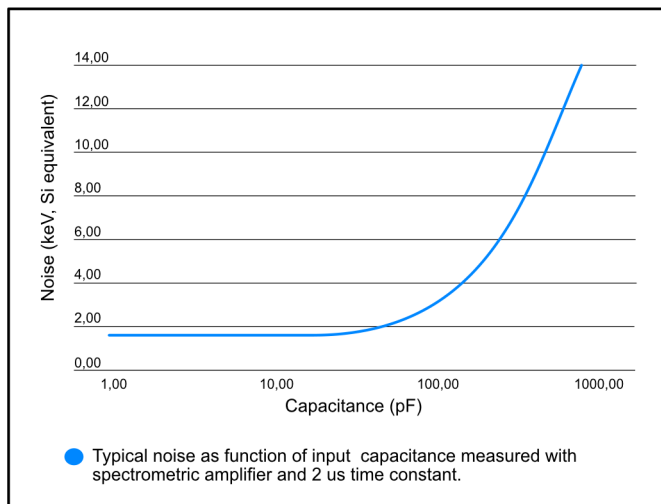
Model	Charge sensitivity (Si Equivalent 3,62)	Max. Noise (KeV/(Si)) (C <sub>in</sub> =0pF)	Energy range
CB200A	45 mV/MeV	< 1,5 KeV	0-200 MeV
CB200A2	20 mV/MeV	< 1,5 KeV	0-400 MeV
CB200A3	12 mV/MeV	< 1,9 KeV	0-600 MeV
CB200A7	5,5 mV/MeV	< 1,9 KeV	0-1200 MeV

**PERFORMANCE**

Decay time	CB200A	100 μs
	CB200A2	200 μs
	CB200A3	165 μs
	CB200A7	70 μs
Dynamic input capacitance	Up to 1000 pF	
Noise/input capacitance ratio	CB200A	9 e <sup>-</sup> /pF
	CB200A2	10 e <sup>-</sup> /pF
	CB200A3	12 e <sup>-</sup> /pF
	CB200A7	14 e <sup>-</sup> /pF
Integral nonlinearity	0,03% (without termination)	
Dynamic output range	± 7,5 V (without termination) ± 3 V (with 100 Ω termination)	
Temperature stability	± 100 ppm/C	
Rise time	< 12 ns	
Open loop gain	30,000	
HV Bias resistor	26 MegΩ	
Output resistors	100 Ω	
Test Capacitance	3 pF (±3%)	

## INPUT/OUTPUT

<b>Input</b>	Accepts positive or negative charge signal. SHV connector standard, BNC connector without bias connection.
<b>Bias</b>	High voltage can be applied through SHV input connector. The serial resistance between input and bias connectors is 26 Meg $\Omega$ .
<b>Test</b>	Pulse input connector is BNC type connector. Test capacitance is 3 pF.
<b>Power</b>	Input power through 3m screened cable from spectrometric amplifier or portable power supply.
<b>Energy</b>	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)	111x80x40 mm
version 8 (eight channels)	160x165x103 mm
weight	0,5 kg
cable length	3 m

