CB200C1 module, 1 channels charge sensitive preamplifier.

The preamplifier CB200C1 is low noise charge sensitive preamplifier. CB200C1 series has adjustable gain values. The preamplifier is optimized for high input capacitance (up to 1000pF). The module has bias input (up to 3 KV) and protection circuit to avoid breakdown of the input of the preamplifier circuit. In module C200C1 is a small box with only +/- 12 Volt power supply voltage.

<table>
<thead>
<tr>
<th>Model</th>
<th>Charge sensivity (Si Equivalent)</th>
<th>Max. Noise (keV/(Si) (Cin=0pF))</th>
<th>Energy range</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB200C1</td>
<td>20-100 mV/MeV</td>
<td>&lt;1.5 KeV</td>
<td>0-200 MeV</td>
</tr>
</tbody>
</table>

Note: Noise value diagram see on Fig.1.

**PERFORMANCE**

- Decay time: 100 us
- Dynamic input capacitance: up to 1000 pF
- Noise/Input capacitance ratio: 9 e-/pF
- Integral nonlinearity: 0,03 % (without termination)
- Dynamic output range: +/- 7,5 V (without termination), +/-3 V (with 100 Ohms termination).
- Temperature stability: +/- 100 ppm/C.
- Rise time: Less then 20 ns
- Open loop gain: 30,000
- HV Bias resistor: 26 Meg
- Output resistors: 100 Ohm
- Test Capacitance: 3 pF
INPUTS/ OUTPUT

INPUT
Accepts positive or negative charge signal.

BIAS
High voltage can be applied through SHV input connector. The serial resistance between input and bias connectors is 26 MOhm.

TEST
Pulse input connector is LEMO type connector. Test capacitance is 3 pF.

POWER
Input power through 3 meter screened cable from spectrometric amplifier or portable power supply.

ENERGY
LEMO type connector

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

Power supply pin out:

<table>
<thead>
<tr>
<th>Pin number</th>
<th>Power level</th>
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</thead>
<tbody>
<tr>
<td>4</td>
<td>+12 Volt</td>
</tr>
<tr>
<td>9</td>
<td>-12 Volt</td>
</tr>
<tr>
<td>1</td>
<td>Ground</td>
</tr>
<tr>
<td>2</td>
<td>Ground</td>
</tr>
</tbody>
</table>

P. Voltage (V) | Current(mA)
---|---
+12 | 24,0
-12 | 20,0

Box dimensions: 111x80x40 mm

Cable length 3 m.
Fig. 1. Typical noise as function of input capacitance measured with spectrometric amplifier and 2 us time constant.