

## CB200B Charge sensitive preamplifier.

The preamplifier **CB200B** is a low noise charge sensitive preamplifier. Fast timing and small size make this preamplifier excellent module for small charged particle detectors or laboratory measurements. 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.



### GENERAL :

| Model         | Charge sensitivity<br>(Si Equivalent) | Max. Noise<br>(keV/(Si) (Cin = 0pF) | Energy range |
|---------------|---------------------------------------|-------------------------------------|--------------|
| <b>CB200B</b> | 60 mV/MeV                             | <1,2 KeV                            | 0-130 MeV    |

Note: Noise characteristics see Fig.1.

### PERFORMANCE

### INPUTS/ OUTPUT

|                                |                                                                    |               |                                                                                                                           |
|--------------------------------|--------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------|
| Decay time                     | 150 us                                                             | <b>INPUT</b>  | Accepts positive or negative charge signal.                                                                               |
| Dynamic input capacitance:     | up to 1000 pF                                                      | <b>BIAS</b>   | voltage can be applied through SHV input connector. The serial resistance between input and bias connectors is 26 MegOhm. |
| Noise/Input capacitance ratio: | <9 e-/pF                                                           | <b>TEST</b>   | pulse input connector is BNC type connector. Test capacitance is 3,3 pF.                                                  |
| Integral nonlinearity:         | 0,1 % (without termination)                                        | <b>POWER</b>  | input power through 3 meter screened cable from spectrometric amplifier, NIM crate power supply or portable power supply. |
| Dynamic output range :         | +/- 7,5 V (without termination).<br>+/-3 V( 100 Ohms termination). | <b>ENERGY</b> | output negative or positive linear pulse. BNC connector.                                                                  |
| Temperature stability:         | +/- 100 ppm/C.                                                     |               |                                                                                                                           |
| Open loop gain:                | 30,000                                                             |               |                                                                                                                           |
| Output resistors:              | 100 Ohm                                                            |               |                                                                                                                           |
| Test Capacitance:              | 3,3 pF (+/-3%).                                                    |               |                                                                                                                           |

**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:

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

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

Box dimensions: 111x80x40 mm

Cable length 3 m.

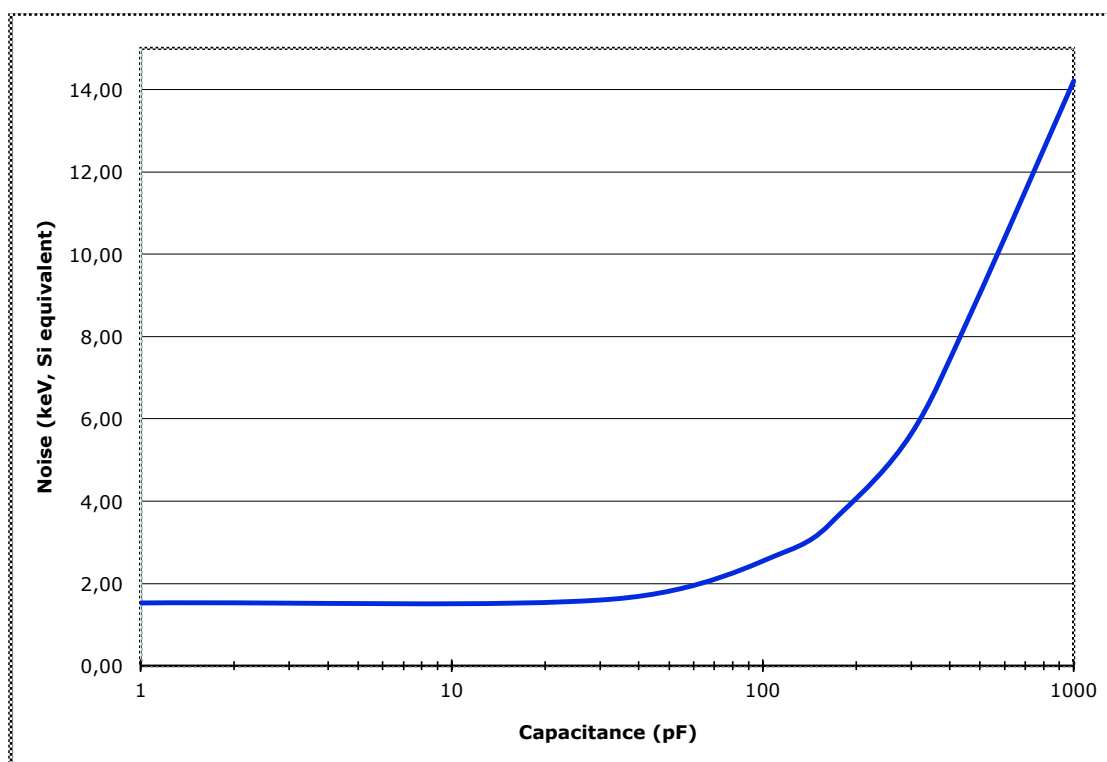


Fig.1. Typical noise as function of input capacitance measured with spectrometric amplifier and 2 us time constant.