

CB215A Charge sensitive preamplifier.

The preamplifier **CB215A** is a low noise charge sensitive preamplifier. CB215A series has four fixed gain values. The preamplifier is optimized for high input capacitance (up to 1000pF). The module has bias input (up to **5 KV**) and protection circuit to avoid breakdown of the input of the preamplifier circuit.



Model	Charge sensitivity	Max. Noise	Energy range
	(Si Equivalent)	(keV/(Si) (Cin=0pF)	
CB215A	40 mV/MeV	<1.5 keV	0-266 MeV
CB215A2	20 mV/MeV	<1.5 keV	0-532 MeV
CB215A3	12 mV/MeV	<1,9 keV	0-800 MeV
CB215A7	5.5 mV/MeV	<1,9 keV	0-1600 MeV

Note: Noise value diagram see on Fig.1.

PERFORMANCE

Decay time	CB215A	100 us
	CB215A2	200 us
	CB215A3	165 us
	CB215A7	350 us
Dynamic input capacitance:	up to 1000 pF	
Noise/Input capacitance ratio:	CB215A	9 e-/pF
	CB215A2	10 e-/pF
	CB215A3	12 e-/pF
	CB215A7	14 e-/pF
Integral nonlinearity:	0,1 % (without termination)	
Dynamic output range	:	+/- 10 V (without termination). +/-5 V (with 93 Ohms termination).
Temperature stability:	+/- 100 ppm/C.	
Output rise time	Less then 12 ns	
Open loop gain:	40,000	
HV Bias	up to 5 kV/ default value 3 kV through 26 MOhm	
Test Capacitance:	3,3 pF (+/-3%).	

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 BNC type connector. Test capacitance is 3,3 pF.

**TIMING
OUTPUT**

Unipolar inverted signal, 50 Ohm termination, LEMO connector

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

Power supply pin out:

P. Voltage (V)	Current (mA)
+24	19,6
-24	10,0
+12	20,0
-12	20,6

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

Box dimensions: 111x80x40 mm

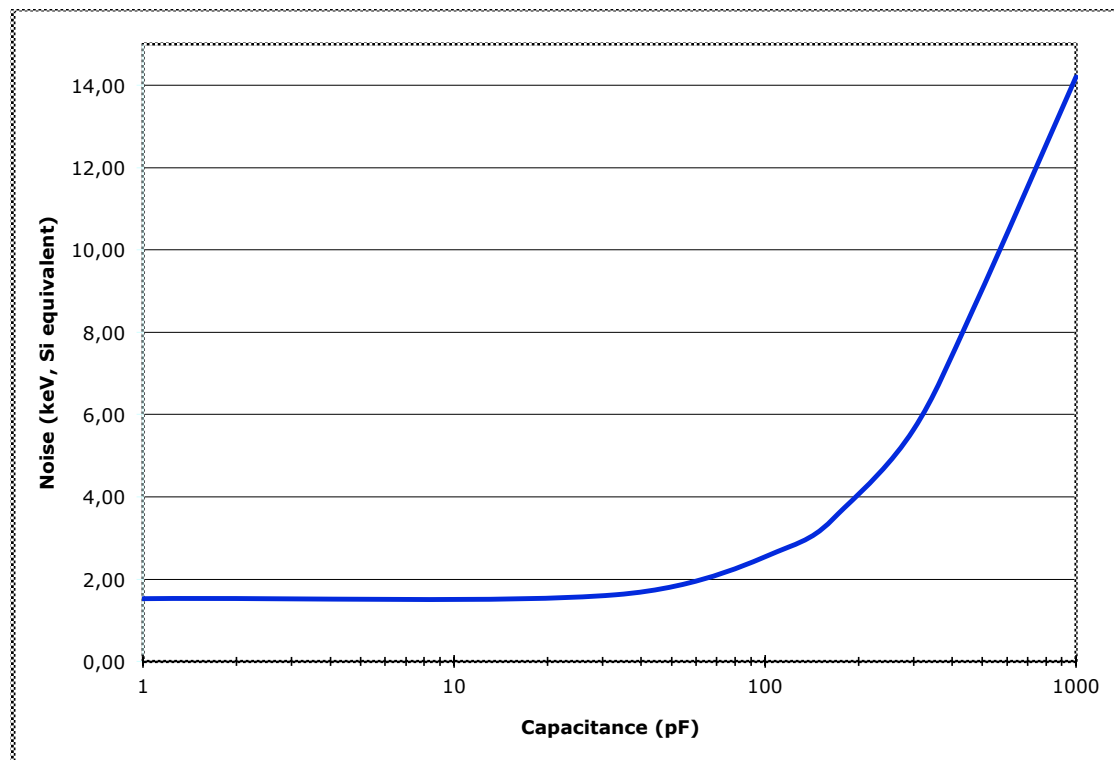


Fig.1. Typical noise as function of input capacitance measured with spectrometric amplifier and 2 us time constant.

NOTE

Information for order:

1. CB215AxV - Vacuum version
2. CB215AxDxxx Decay time Modified
(for example: D100 – Decay time 100us)
3. CB215AxTxxx Temperature stability Modified
(for example: T050 – Temperature stability 50ppm/C)
4. CB215AxSxx Charge sensitivity Modified -
(for example: S30 – Charge sensitivity 30 mV/MeV)
4. CB215AxKx Bias Voltage Modified -
(for example: K5 – Bias Voltage +/-5000V)