

DCB209 - CHARGE SENSITIVE PREAMPLIFIER

The DCB209 module has 8 channels low noise charge sensitive preamplifiers. 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 3KV) and protection circuit to avoid breakdown of the input of the preamplifier circuit

Model	Charge sensitivity (Si Equivalent)	Max. Noise (Cin=0pF)	Max. Noise (Cin=200pF)
DCB209	Adjustable 45 and 200 mV/MeV	<3,54 KeV (FWHM)	<7800 KeV(FWHM)

PERFORMANCE

Decay time	100 μ s - 25 μ s
Dynamic input capacitance	Up to 1000 pF
Noise/Input capacitance ratio	< 9 e ⁻ /pF (different for different gain sensitivity)
Integral nonlinearity	0,1% (without termination)
Dynamic output range	\pm 7,5 V (without termination) \pm 3 V (with 100 Ω termination)
Temperature stability	\pm 100 ppm/C (0 to 50 C)
Rise time	7 ns (Cin = 0pF)
Open loop gain	100,000
HV Bias resistor	N/S
Output resistors	100 Ω
Test Capacitance	Common test pulse for all 8 channels 3,0 pF

INPUT/OUTPUT

Input	Input SHV connector and accepts positive or negative charge signals.
Bias	Voltage can be applied through SHV. The serial resistance between input and bias connectors is 25 Meg Ω .
Test	Pulse input connector is BNC type connector. Test capacitance is 3 pF.
Power	Input power through screened cable from spectrometric amplifier, NIM crate power supply or portable power supply
Energy	Output negative or positive linear pulse. BNC connector.

INPUT	OUTPUT	N
Ch1	OUT1	1
Ch2	OUT1	2
Ch3	OUT1	3
Ch4	OUT1	4
Ch5	OUT2	1
Ch6	OUT2	2
Ch7	OUT2	3
Ch8	OUT2	4

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)
+12	180
-12	140

Pin out DSUB 9 connector

Pin number	
4	+12 V
9	-12 V
1	Ground
2	Ground

BOX DIMENSIONS

box dimensions	160x165x51,5 mm
weight	1 kg
cable length	3 m

Note: Special shielded cable with LEMO S0 and Dsub9 (3 meter length).

