

Multichannel Analyzer (MCA) Model 4110

The model 4110 multichannel analyzer (MCA) is a high resolution Wilkinson type multichannel analyzer. The 4010 is a single NIM mode that is specifically designed for use in nuclear and x-ray spectroscopy and connects via a USB port to PC. Also, MCA is fully supported by DAS software. The MCA records and stores pulses according to their height. Each storage unit is called a channel. The height of the pulse has some known relationship usually proportional to the energy of the particle that enters into the detector. Each pulse is in turn stored in a particular channel corresponding to a certain energy. The distribution of pulses in the channels is an image of the distribution of the energies of the particles. At the end of a counting period, the spectrum that was recorded may be displayed on the screen of the MCA. There are many experiments for the study of events in terms of more than one parameter. Such requirements occur in

1. Coincidence measurements where the energy spectrum from both detectors need be analyzed.
2. Simultaneous measurement of energy and mass distribution of fission fragments.
3. Study of energy and angular dependence of nuclear reactions involving many particles, etc.

Specifications

1. Input

SIGNAL IN

- Accepts Signal: positive or bipolar pulses (positive portion leading)
- Input range: 25 mV to 10 V
- Input impedance: 1000 Ω
- Rise time: 100 ns to 100 us
- Fall time: 200 ns to 100 us
- Width: 0.5 us minimum
- Input couple: DC – coupled
- Connector: front panel BNC

GATE IN

- Accepts Signal: positive TTL level or signal width 100ns
- Input Impedance: approx. 4.7 kOhm(pull-up)
- Connector: front panel BNC

2. Output

MCA is USB that connected to PC via cable

3. Front panel Controls

LLD: Screwdriver adjustable 20-turn precision potentiometer to set lower level discriminator, continuously adjustable from +20 mV to +10 V.

ULD: Screwdriver adjustable 20-turn precision potentiometer to set upper level discriminator, continuously adjustable from +20 mV to +10 V.

Zero: Screwdriver adjustable 20-turn precision potentiometer to set the analog zero level.

4. Power Requirements

+24 V	80 mA
-24 V	120 mA
+12 V	110 mA
-12 V	20 mA

FACTORY REPAIR

This device, or any other standard IAP product, may be returned to the factory for repair service at a nominal cost. Our standard procedure for repair ensures the same quality control and checkout that are used for a new

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Security and Safety Systems



instrument. Always contact consumer service at IAP, (021) 22779028, before sending in an instrument for repair to obtain shipping instructions and so that required return authorization number can be assigned to the unit. Write this number on the address label and on the package to ensure prompt attention when it reaches the factory.