

NEW

A1427 Kit

Low noise fast current preamplifier and discriminator

Cabri version

A1427 Preamplifier characteristics:

- Fast non inverting preamplifier, negative output (EOUT)
- Input impedance: 50 Ω AC coupled
- Output high impedance (EOUT)
- Bipolar output high impedance (FOUT)
- Test input (TEST IN) impedance: 50 Ω , negative polarity
- FOUT/DET IN gain (FOUT negative lobe):
 - FC version: 700÷2500
 - PR version: 500÷1500
- FOUT/TEST IN gain: 1/100 of DET IN gain
- Output noise (peak to peak) < 40 mV
- Up to 3 kV detector bias voltage (HV IN)
- Rbias: 200 k Ω

A1428 Discriminator characteristics:

- Input polarity negative
- Input impedance 50 Ω
- Threshold -1 mV to -100 mV
- Output: standard TTL signal
- Maximum frequency 15 MHz for Fission Chamber
- Maximum frequency 6 MHz for Proton Recoil

Overview

A1427 Kit contains a fast preamplifier (A1427) and a discriminator (A1428) assembled together. It is developed by CEA Saclay for the Cabri reactor in Cadarache and it is suitable for fission chambers, boron deposition proportional counters, 3He counters and proton recoil counters.

The A1427 Kit is designed to work with high counting rate and it is specifically studied to be insensible to the external electromagnetic fields. CAEN provides two versions of the kit with different mechanics and connectors: one for desk use and one designed for the Cabri reactor.

A1427 is a fast and low noise current preamplifier with AC coupled input. It hosts two outputs: EOUT (unipolar) that can be integrated to calculate the energy associated to the input signal and FOUT (bipolar) that can be used to calculate the rate of the input signal, discriminating the negative pole using the A1428 discriminator that is specifically designed to fit with A1427. The discriminator thresholds is settable from -1 to -100 mV via a 10 turn rotary handle with lock.

The Kit is available in two different versions one for fission chambers (FC) the other for proton recoil detectors (PR).

We provide A1427 and A1428 separately and in the A1427 Kit configuration, that includes the A1427 and the A1428 assembled together, both for fission chambers and for proton recoil detectors.

Compare

| Version | DET IN connector | HV IN connector | Power Supply | A142x dimensions WxHxL |
|-------------------|------------------|-----------------|--|--|
| A1427 Kit (Cabri) | NHV | Test point | +12V,+5V,-5 V through a wire-to-board terminal block | 61x31x113 mm ³ (without connectors) |
| A1427 Kit | SHV | SHV | +12 V powered by an external AC-DC stabilized power supply provided with the kit | 91x34x115 mm ³ (without connectors) |

Ordering Option

| Code | Description |
|--------------|--|
| WA1427CABFCA | A1427 Cabri Low Noise Fast Current Preamplifier for Fission Chamber |
| WA1427CABPRA | A1427 Cabri Low Noise Fast Current Preamplifier for Proton Recoil |
| WA1427FCAAAA | A1427 Low Noise Fast Current Preamplifier for Fission Chamber |
| WA1427PRAAAA | A1427 Low Noise Fast Current Preamplifier for Proton Recoil |
| WK1427CABFCA | A1427KIT with A1427 Cabri Preamp. + A1428 Cabri Discrimin. for Fission Chamber |
| WK1427CABPRA | A1427KIT with A1427 Cabri Preamp. + A1428 Cabri Discrimin. for Proton Recoil |
| WK1427FCAAAA | A1427KIT with A1427 Preamp. + A1428 Discrimin. for Fission Chamber |
| WK1427PRAAAA | A1427KIT with A1427 Preamp. + A1428 Discrimin. for Proton Recoil |