

**CdTe MINIATURE WATERPROOF
GAMMA RAY DETECTION PROBE
MODEL SO8W**



INSTRUCTION'S MANUAL



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MAIN CHARACTERISTICS OF THE CdTe GAMMA RAY PROBE

The miniaturised detection probe has been developed for fuel verification in nuclear power stations and reprocessing plants.

It incorporates the detector and the charge sensitive preamplifier. The standard probe housing has a diameter of 8mm and a length of 91 ± 1 mm. It is made of inox alloy.

The probe is waterproof and can constantly operate under humid atmosphere conditions.

HEMISPHERICAL DETECTOR

With a hemispherical detector mounted inside it offers a nearly uniform 360° solid angle detection sensitivity. Hence it will operate without collimator and is best suited for inspection tasks where the direction of irradiation can not be foreseen. The hemispherical detector geometry ensures a good energy resolution and peak to valley ratio in a gamma energy range from 30keV up to 1 000keV.

The field of applications includes research on dosimeters, pipeline inspections or surveillance of tanks with isotopes solutions in reprocessing plants.

PLANAR DETECTOR

A planar detector in connection with the Compact Pulse Processor model EURORAD CPP results in a very small and rugged spectrometric probe with excellent energy resolution. Since the spectral responds of such a planar detector depends from the direction of irradiation, the use of a collimator strongly recommended.

TECHNICAL SPECIFICATIONS

TYPE : SO8

DETECTOR

Type : CdTe detector hemispheric or planar

Volume : from 1mm^3 to 65mm^3

Detector bias voltage : polarity POSITIVE

PREAMPLIFIER

Type : SMD technology charge sensitive preamplifier

Size : 46x6mm

Noise : 1.6keV (CdTe, 0pF)

Sensitivity : 25mV/MeV (CdTe)

Risetime : 50ns (0pF)

Feedback network : 500M Ω / 0.5pF

Output resistance : 50 Ω

Supply voltage : $\pm 12V$, $\pm 20\%$

Output polarity: POSITIVE

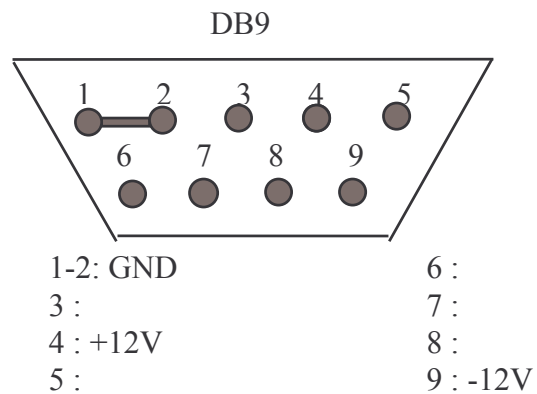
CONNECTOR

SUPPLY VOLTAGES

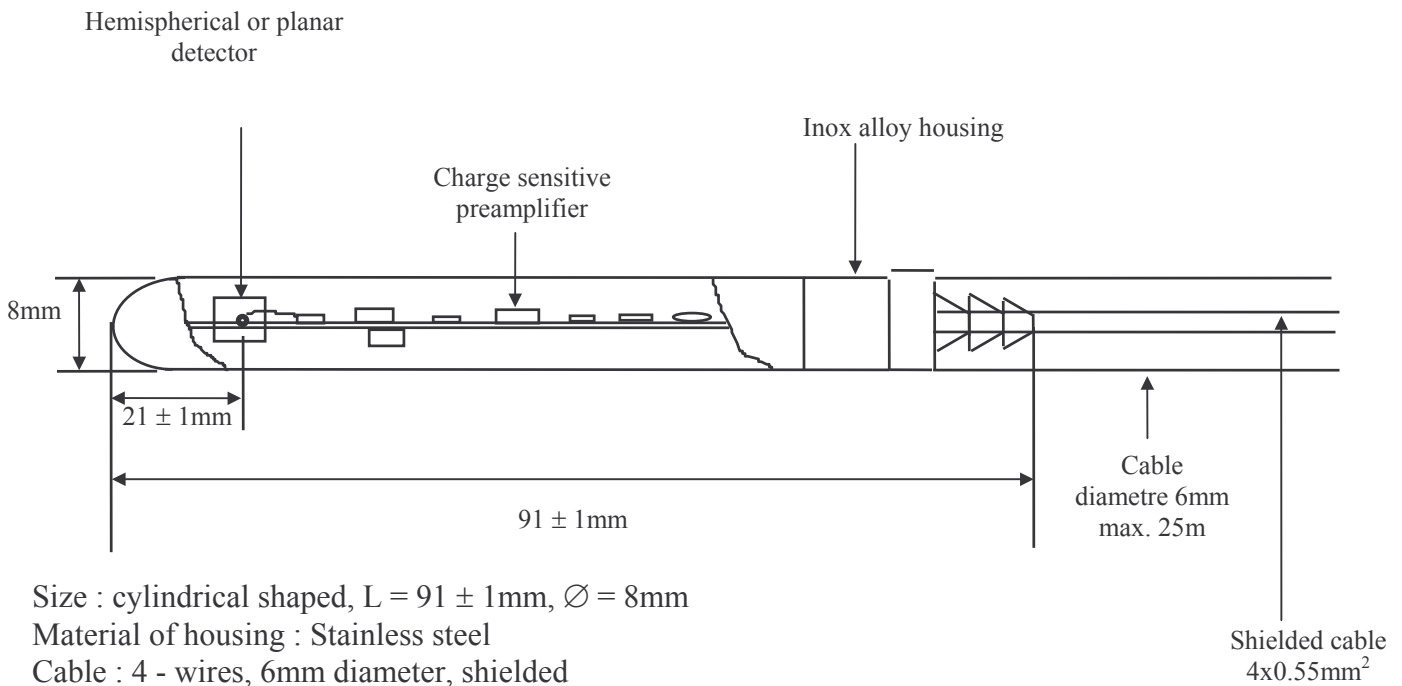
Amphenol 9 contacts (DB9), male

Detector BIAS voltage : high voltage BNC connector, female

Output : BNC connector male



MECHANICAL CHARACTERISTICS



SIGNAL PROCESSING

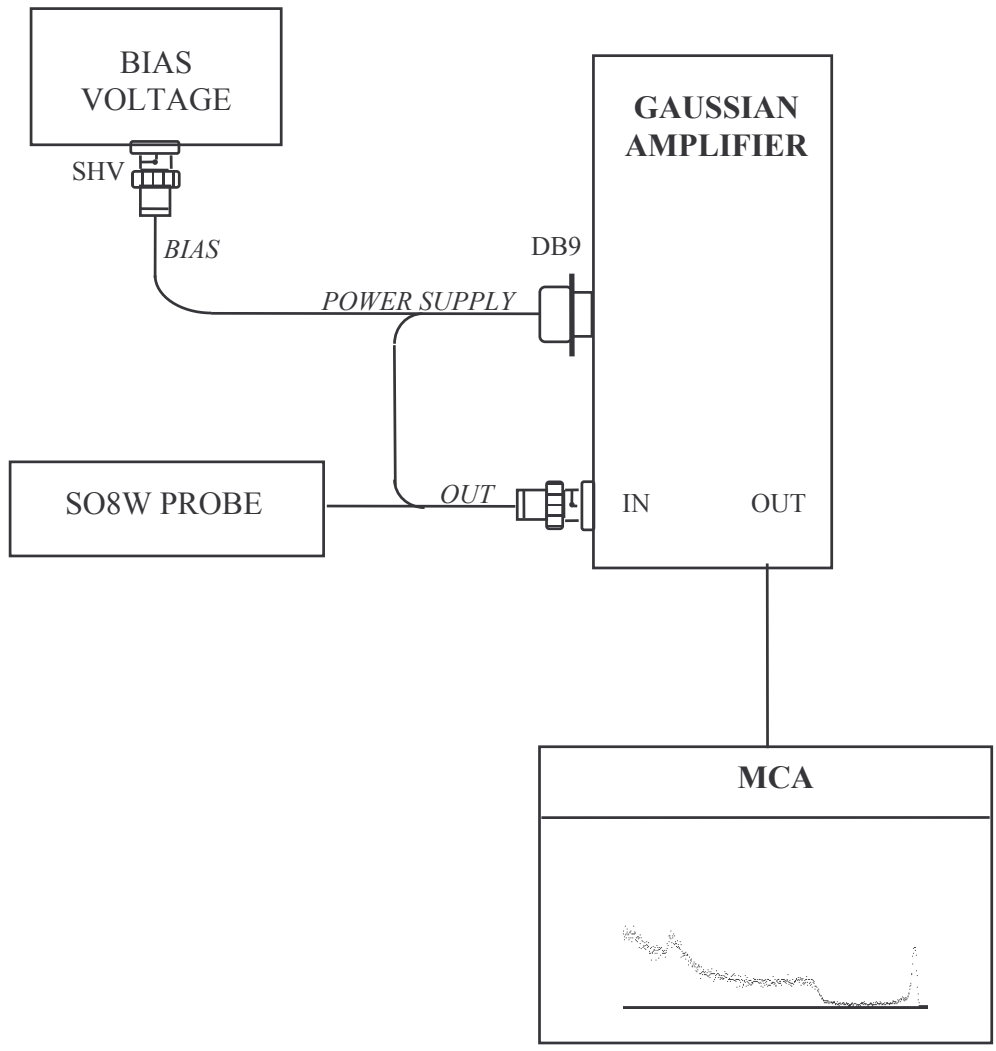
Common spectroscopic amplifier with gaussian / triangular shaping.

Hemispherical detector : gaussian or triangular shaping amplifier

Planar detector : gaussian or EURORAD model CPP (Compact Pulse Processor).

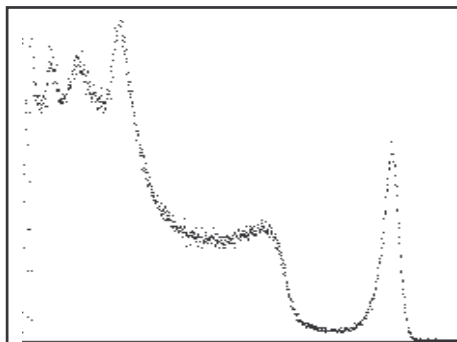
CONNECTION DIAGRAM

NIM amplifier or CPP

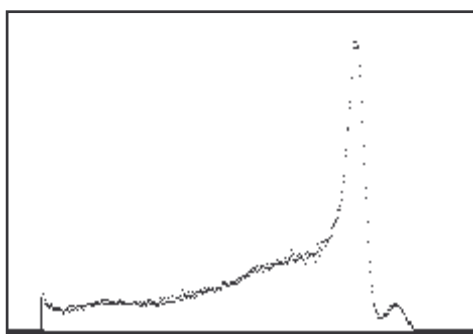


TYPICAL SPECTRA

HEMISPHERIC DETECTOR ^{137}Cs



PLANAR DETECTOR ^{57}Co



PLANAR DETECTOR AND CPP OR SELECTOR ^{137}Cs

