

GAMMA AND NEUTRON ENVIRONMENTAL MONITORING MOBILE STATION **SATURN 5702**

MAIN FEATURES

- *Ideal solution for monitoring in particle accelerator facilities*
- *Completely modular system*
- *Removable detectors for remote measurements*
- Trolley-mounted gamma and neutron monitoring station
- Gamma detector: ion chamber based gamma radiation monitoring unit ICP-T
- Neutron detector: neutron rem counter for pulsed fields LUPIN BF3-NP
- Local dedicated displays for data visualisation
- Independent relays available for interlock operations: good functioning, pre-alarm and alarm outputs



DESCRIPTION

SATURN 5702 is a mobile station equipped with two detectors for gamma and neutron dose rate monitoring. The station includes:

- Ion chamber-based gamma radiation monitoring unit: ICP-T or ICP-T-PF
- Neutron rem counter for pulsed fields: LUPIN BF3-NP

The detectors and the electronics are housed in a trolley-mounted mechanical structure. The height of the trolley can be customized according to the customer needs, for example to centre the detectors with the beam line height. Each detector can be removed from the trolley to be employed remotely, up to 20 m. An ALU alarm column is mounted on the top, providing luminous and acoustic warning signals related to the status of the mobile station: good functioning, pre-alarm and alarm. The status indication is also available through 4 relay contacts for connection with external devices.

ICP-T

The ion chamber-based gamma radiation monitoring unit ICP-T features a special electrometer for measuring very intense pulsed radiation fields, such as those generated by research particle accelerators (ICP-T-PF version). Please refer to specific data sheet for further details.

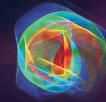
LUPIN BF3-NP

The neutron rem counter for pulsed fields unit LUPIN BF3-NP features an excellent performance for detection in pulsed neutron fields. Please refer to specific data sheet for further details.

SATURN I RTM

The detectors are connected via external cables to a standard 19" electronics rack equipped with two dedicated SATURN I RTM ratemeter units. Each ratemeter features a display, 3 function keys with status LEDs, and a plug for external keyboard. Please refer to specific data sheet for further details.

SATURN 5702 can be connected to a remote host PC running a data management software (5700 sMON) through ETH or RS485/422 connection.



TECHNICAL SPECIFICATIONS

SATURN 5702:

- Weight: about 130 kg
- Dimensions: 60x68x160 cm (typical)
- Temperature Range: -20 ÷ +50°C

ICP-T

- Energy range: 30 keV ÷ 10 MeV
- Measurement range: 10 nSv/h ÷ 10 Sv/h (÷ 100 mSv/h with ICP-T-PF)
- Sensitivity: approx. 2×10^{-8} A/R/h (Cs-137)
- Electrometer characteristics:
 - 9 decades with auto-ranging (ICP-T, for environmental area monitoring)
 - 7 decades with auto-ranging (ICP-T-PF, for pulsed fields monitoring)

LUPIN BF3-NP

- Energy range: thermal (0.025 eV) ÷ 10 GeV
- Measurement range: 10 nSv/h ÷ 100 mSv/h
- Neutron sensitivity: 0.6 cps/uSv/h
- Gamma sensitivity: < 0.5 uSv/h at 50 mSv/h (Cs-137)

SATURN I RTM

- Independent display unit for each detector
- Acquisition and control unit
 - Dose rate measurements: instantaneous, 1 minute average and 1 minute maximum
 - LCD display 2x16 characters with LED and siren for alarm, pre-alarm and good functioning

OPTIONS

- RS485/422 connection
- Separate racks and relays for gamma and neutron electronics

ACCESSORIES AVAILABLE UPON REQUEST

1. TOUCHKEY2 external keyboard
2. Warranty extension from 12 months to 24 months



Front panels with local displays



Front panels of separate racks option