

## DIGITAL RATEMETERS

# SATURN I, SATURN II

### MAIN FEATURES

- **Compatible with all ELSE NUCLEAR detectors**
- **High reliability**
- **Advanced user interface**
- Data display on alphanumeric LCD screen
- Continuous management of data coming from the connected detector
- Internal archive of acquired data
- Luminous and acoustic signalling of good operation, alarm and prealarm conditions
- Interfaces available for data communication: Ethernet, serial RS232, RS485, RS422
- External keyboard for parameter settings
- Connectable to host PC with software for remote management



### DESCRIPTION

The **SATURN** ratemeter is a compact acquisition and control unit, designed for managing and processing signals from the connected detector.

The SATURN ratemeter is available in 3 versions:

- **SATURN I RTM-WM**, designed to be wall mounted, by means of its supporting lugs
- **SATURN I RTM**, designed to be installed inside a 19" rack 2U
- **SATURN II**, alternative wall-mounting version designed to be compliant with "Good Manufacturing Practice" requirements: the ratemeter is installed inside a special housing that allows to fit also the detector (typically a GM-1 or a MERCURY GMP WR probe) when necessary, so that no external cable or connection is visible.

The unit continuously acquires and processes data coming from the detector and compares results with user defined internally stored threshold parameters.

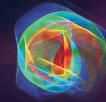
The ratemeter is equipped with LEDs, internal acoustic buzzer and relays, used to issue warnings related to failure, alarm or prealarm conditions. Two user-selected measurements can be displayed at the same time on the ratemeter display, including: instantaneous or average count rate, dose rate, activity concentration; counts, dose or activity integrated values.

Measurements, alarm/prealarm thresholds and operating parameters are stored into an internal, non-volatile memory. The user can set thresholds and parameters through an external keyboard; advanced parameters are password protected.

Each **SATURN** ratemeter can be connected to any of the following detectors:

- Geiger detector GM-1
- Geiger detector MERCURY GMP WR
- Neutron detector LUPIN
- Ionisation chamber ICP-T

The ratemeter can communicate and be managed by a host PC through an Ethernet network or RS485 thanks to the 5700 sMON control software.



## TECHNICAL SPECIFICATIONS

- Dimensions
  - SATURN I RTM-WM: (WxHxD) = 109 x 225 x 46 mm; weight: 1 kg
  - SATURN I RTM: depth = 300 mm
  - SATURN II: 157 x 71 mm, variable height and weight
- Temperature range: -25 ÷ +50 °C
- 4 relays with NC/NO contacts for status remote signalling
- 1 contact NO/NC for interlock purposes; TTL level for beam-on status input

### Display Unit

- 2x16 Alphanumeric LCD back-lit display
- Monitor status LED: green=good operation; yellow=prealarm; red=alarm
- Internal alarm buzzer
- 3 Function Keys for data/parameters visualization
- Connector for external keyboard



*SATURN I RTM front panel*

### Acquisition and control unit

- Dose rate measurements: instantaneous, 1 minute average and 1 minute maximum
- Integrated dose: referred to 10 minutes, 1 hour, 24 hours and total
- Watchdog circuit for functioning control
- Interfaces: Ethernet 10/100 (up to 100 m), RS232 (up to 30 m), RS485/422 (up to 1 km)

### Main settable parameters

- Detector type
- Measurement unit
- Alarm and prealarm thresholds
- Minimum duration for prealarm/alarm conditions
- Local acoustic alarm muting enabling
- Manual reset of alarms/failures/doses/all
- Alarm autoreset enabling
- Fail-limit levels
- Moving average settings
- Test mode with an external source for quality control purposes

## ORDER GUIDE

| Version         | Supported detectors                      |
|-----------------|--|
| SATURN I RTM-WM | GM-1<br>MERCURY GMP WR<br>ICP-T<br>LUPIN |
| SATURN I RTM    |  |
| SATURN II       |  |

| Accessories   |
|---|
| TOUCHKEY2<br>ALU<br>IP54 container for RTM-WM<br>Warranty extension |

## ACCESSORIES AVAILABLE UPON REQUEST

1. TOUCHKEY2 external keyboard
2. ALU alarm unit for status signaling
3. IP54 container (SATURN I RTM-WM)
4. Warranty extension from 12 months to 24 months



*TOUCHKEY2 external keyboard*