

PT10109 GSM Wireless Geiger-Muller Radiation Detector

The PT10109 is a wireless sensor, which integrates a GSM/GPRS modems and a Geiger-Muller detector. It has been designed for surveying petroleum, natural gas, and LPG production facilities for Naturally Occurring Radioactive Materials (NORM). The instrument is sensitive to gamma radiation with energy levels from 50keV to 2.2MeV with an effective dose rate measurement range between 0.01-200 $\mu\text{Sv/h}$. The PT10109 is designed to operate within harsh industrial environments as well as hazardous areas ATEX ZONE-0.

It can be permanently attached to field infrastructure and operated from an internal battery without the need for costly cabling and conduit runs, thus eliminating most of the permit and labour costs for layout planning and installation. The typical mode of operation is that the PT10109 automatically performs a few readings of effective dose radiation per day and after each reading transmits the measurement data to a remote PLC/RTU by GSM/GPRS infrastructure.

Features:

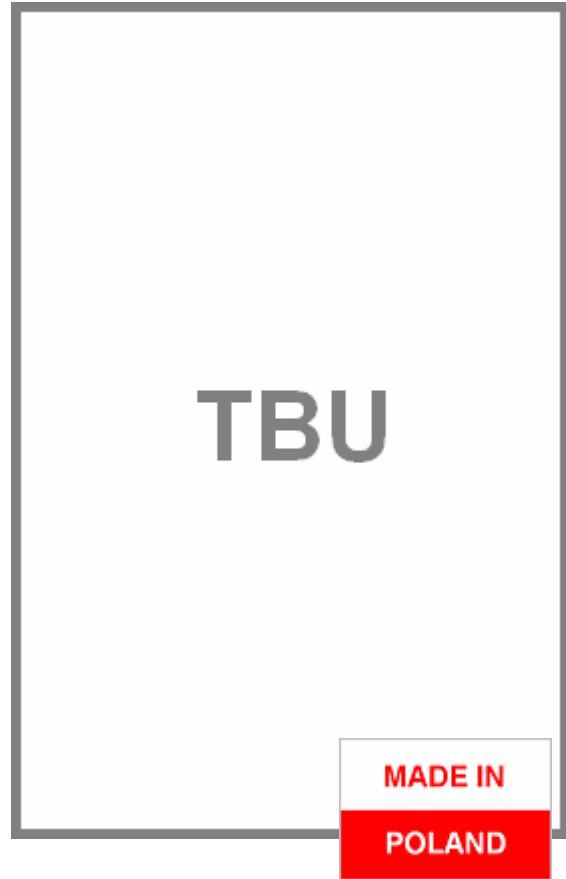
- o Device to be permanently attached to field infrastructure
- o GSM/GPRS wireless interface for remote reading of radiation
- o Design for 3 years maintenance free operation
- o Quad-band GSM/GPRS modem
- o Energy-compensated Geiger-Muller tubes, effective capacity of detecting chamber 12.90 mm³
- o Sensitive to gamma radiation with an energy level from 50keV to 2.2MeV
- o Range of gamma radiation effective dose rate 0.01-200 $\mu\text{Sv/h}$
- o Operating temperature range -40°C to 85°C
- o Powered from internal battery
- o Construction of device enclosures under EN 60079-18 (encapsulation 'ma'), ingress protection IP68
- o IrDA port for configuration download
- o Remote self-diagnostic function

Designed to meet EC Declaration of Conformity requirements:

- o EN 301 511 Radio spectrum matters
- o EN 61000-6-2 Immunity standard for industrial environments
- o EN 61000-6-4 Emission standard for industrial environments
- o EN 60079-0 Electrical apparatus for explosive gas atmospheres. General requirements
- o EN 60079-18 Electrical apparatus for explosive gas atmospheres - Part 18: Construction, test and marking of type of protection encapsulation "m" electrical apparatus

Applications:

- o Survey of petroleum, natural gas, and LPG production facilities to measure radiation levels from NORM



BLOCK DIAGRAM of PT10109 GSM Wireless Geiger-Muller Detector

