

Data Sheet

Low Dose Rate - Gamma Probe LB 6360-H10

USE

Used as dose rate probe for photon radiation in radiation protection

Type Approval PTB-Bauartzulassung

23.71 (in combination with the LB 111 Micro
04.02 Gamma Counting Electronics)

Measured Radiation Quantity

Ambient dose equivalent $H^*(10)$

Ambient dose rate equivalent $\dot{H}^*(10)$

Application

Dose rate probe for environmental γ -monitoring or for local dose rate measurement.

Features

Suitable to measure low dose rate levels
(background to 20 mSv/h)

Functional Description

The probe contains following modules :

- ▶ Energy compensated proportional counter tube.
- ▶ High voltage for the proportional counter tube (high voltage setting internally or via external control voltage).
- ▶ Amplifier discriminator circuit.

The operating voltage of the counter tube can be set via a control voltage input in order to control the counter tube function (e.g. for plateau recording).



Outdoor Mounting

For outdoor installation it has to be ensured that the probe is not exposed to an unacceptable temperature increase due to direct solar radiation. The probe has to be set up such that the cable connection is located at the bottom. Pipe clamps can be used as fastening devices.

Probe Connection

The connection is made via a firmly attached, screened 6-wire cable tail with free ends. The cable screen has to be connected to the measuring electronics earth (coaxial inside the cable glands). A voltage with a nominal value of 2.39 V has to be applied as operating voltage at the control voltage connection; however, the connection may also remain disabled (internal control voltage).

Technical Data

- ▶ **Dose Rate Range**
30 nSv/h – 20 mSv/h
(PTB Type approved: 100 nSv/h – 20 mSv/h)
- ▶ **Energy Range**
PTB Type Tested : 35 keV – 1,3 MeV ± 40%
with regard to Cs-137 and 0°
- ▶ **Angular response**
± 45°
- ▶ **Intrinsic Background**
approx. 0,12 cps
measured in Salt mine by PTB
- ▶ **Calibration Factor**
0,123 µSv/h per cps
- ▶ **Output Signal**
Polarity: positive
Amplitude: + 5V
Width: 1,5 µs
Min. Repetition time: 1,5 µs
Rise & Fall time: 100 ns
Impedance: 60 Ω
- ▶ **High Voltage**
Adjustable Range:
1200 to 2000 V (external control)
1650 to 1850 V (internal set point via trimmer R 23,
external control floating)
External control input:
Nom. Value: 2,390 V
Conversion factor: 1 V corresponds to 711,3 V
Adj. Range: 0 or 1,687V to 2,812 V
Input impedance: 10 kΩ at +2,5 V
Internal Ref.-Volt.: 2,500 ± 0,020 V
- ▶ **Operating Voltage**
1700 Volt
- ▶ **Plateau length**
approx. 350 Volt
- ▶ **Connecting Cable**
7-core Shielded cable : 0,75mm²
UL-POWER-PUR-D
LIH 12Y
Outer diameter: 7.5 mm
Max. Length: ≤ 50 m
Lay out: 0 V brown
+5 V green
pulse out yellow
H.V.-Control. white
- ▶ **Supply Voltage, Current consumption**
+ 4,75 to 5,5 V: 15 to 18 mA (at background)
- ▶ **Operating Conditions**
Ambient Temp: -20 to +60°C
Rel. Humidity, condensing: 30 to 90 %
Storage Temp: max. 60°C
- ▶ **Protection Degree**
IP 65
- ▶ **Dimensions / Weight**
Outer Diameter: 53 mm
Length: 550 mm
Weight: approx. 1600 g

Energy response LB 6360-H10

