

# 6150AD5/Ex

Intrinsically Safe Radiation Detector



## For Use in Explosive Environments!

The 6150AD5/Ex is a portable, battery operated dose rate meter to measure photon radiation (gamma and X radiation). It is especially designed to be used in Ex-areas. An Ex-area is a hazardous location which may contain a fire or explosion hazard due to the presence of flammable substances (gases, vapors, combustible dust).

A built-in GM counting tube (type ZP1310) serves to measure dose rates up to 1 Sv/h. At dose rates lower than 0.2 mSv/h dose rate indication fluctuates by more than 5% around its average value making accurate readings more difficult. Therefore, the probe 6150AD-18/Ex is available as an optional accessory for low dose rates. The probe connects to the meter through a probe cable of up to 10 m length. The probe 6150AD-18/Ex has a larger counting tube (type ZP1200) which only covers dose rates up to 10 mSv/h, but which is better suited for low levels because of its higher sensitivity.

As implied by the letters »AD« in its name, the 6150AD displays dose rate in both analog and digital form. Furthermore, it permanently measures dose rate mean value, dose rate maximum value, and accumulated dose. You may look at any of those values at any time just by pressing a key. At low levels, the dose rate mean value permits much more accurate readings than the normal dose rate indication with its statistical fluctuations would allow.

The instrument has alarm thresholds for both dose and dose rate, each including one programmable threshold that may be set to any value within the instrument's range. Audible single pulse detection is also supported. Particular advantages of the 6150AD are its robust and waterproof construction, and its simple operation. Automatic range selection and clear LCD indications help to avoid operational errors.



**6150 AD18 EX Probe**

# Specifications

|  | <b>6150AD5/Ex</b>  | <b>Probe 6150AD-18/Ex</b>   |
|--|--|---|
| <b>Detector</b>                          | gamma tube ZP1310 or<br>equivalent, energy<br>compensated, effective length<br>16 mm, sensitivity at Cs-137<br>approx. 500 pulses per $\mu\text{Sv}$ | gamma tube ZP1200 or<br>equivalent, energy<br>compensated, effective length<br>40 mm, sensitivity at Cs-137<br>approx. 5800 pulses per $\mu\text{Sv}$ |
| <b>Nominal energy range</b>              | 45 keV to 3 MeV  | 65 keV to 1.3 MeV   |
| <b>Analog dose rate range</b>            | 1 $\mu\text{Sv/h}$ (100 $\mu\text{R/h}$ ) - 1000 mSv/h (100 R/h)   | 0.1 $\mu\text{Sv/h}$ (10 $\mu\text{R/h}$ ) - 10 mSv/h (1 R/h)   |
| <b>Digital dose rate range</b>           | 0.0 $\mu\text{Sv/h}$ (0 $\mu\text{R/h}$ ) - 999 mSv/h (99.9 R/h)   | 0.00 $\mu\text{Sv/h}$ (0 $\mu\text{R/h}$ ) - 9.99 mSv/h (999 mR/h)  |
| <b>Digital dose range</b>                | 0.00 $\mu\text{Sv}$ (0 $\mu\text{R}$ ) - 9.99 Sv (999 R)   | 0.00 $\mu\text{Sv}$ (0 $\mu\text{R}$ ) - 99.9 mSv (9.99 R)  |
| <b>Fixed dose rate alarm thresholds</b>  | 25 $\mu\text{Sv/h}$ , 250 $\mu\text{Sv/h}$ , 1 mSv/h, 2.5 mSv/h, 10 mSv/h<br>2.5 mR, 25 mR, 100 mR, 250 mR, 1 R                                      | 7.5 $\mu\text{Sv/h}$ , 25 $\mu\text{Sv/h}$ , 100 $\mu\text{Sv/h}$ , 2 mSv/h, 3 mSv/h<br>750 $\mu\text{R}$ , 2.5 mR, 10 mR, 200 mR, 300 mR             |
| <b>Fixed dose alarm thresholds</b>       | 15 mSv, 100 mSv, 250 mSv<br>1.5 R, 10 R, 25 R  | 1 mSv, 2 mSv<br>100 mR, 200 mR  |
| <b>Dose rate alarm</b>                   | audible through intermittent sound (may be reset), visually through flashing loudspeaker symbol and flashing analog scale                            |   |
| <b>Dose alarm</b>                        | audible through intermittent sound (may be reset), visually through flashing loudspeaker symbol and flashing bar graph                               |   |
| <b>Temperature range</b>                 | -20°C to +40°C, deviation max. $\pm 10\%$ referred to indication at +20°C  |   |
| <b>Humidity</b>                          | nominal range 0 to 95% within specified temperature range  |   |
| <b>Power supply</b>                      | 9V battery (Duracell MN 1604 6LR61 only in Ex-areas)   | from 6150AD5/Ex through probe cable   |
| <b>Battery life (alkaline IEC 6LR61)</b> | approx. 100 h approx. 20 h   | including the 6150AD5/Ex: approx. 30 h approx. 12 h   |
| <b>Housing</b>                           | aluminium die-cast   | aluminium   |
|  | waterproof, protection class IP 67 according to DIN 40050  |   |
| <b>Dimensions</b>                        | height 130 mm, width 80 mm, depth 29 mm<br>height 5.1 in, width 3.2 in, depth 1.15 in  | diameter 30 mm, length 190 mm<br>diameter 1.2 in, length 7.5 in   |
| <b>Required probe cable</b>              | type 878.1.1, length 1.25 m/ 4 ft (not included), other lengths up to 10 m/30 ft on request  |   |
| <b>Approval for Ex-area</b>              | Certificate of Conformity PTB No. Ex-01.E.2128 marking EEx ib m IIC T4   |   |

