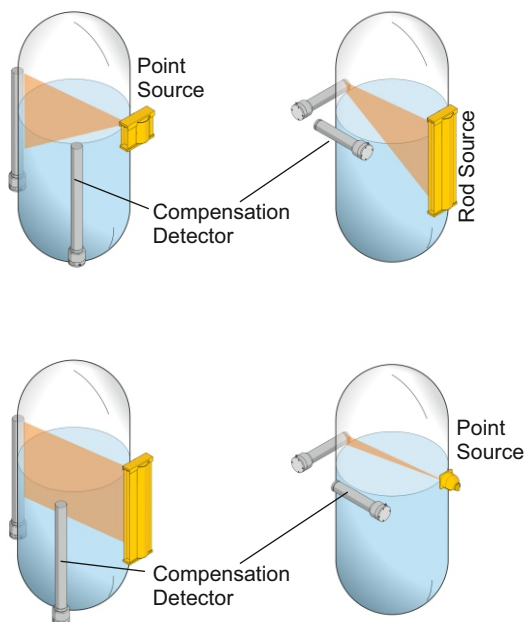


## PRC Instead of Source Exchange

### PRC (Product Radiation Compensation)

PRC-suppresses  
the background radiation



If after years of operating time a source exchange is pending, then it is worthwhile in the following cases to install a LB 480 PRC-measurement rather than replace the source:

- 1) If the bureaucratic obstacles from the authorities in particular countries are high to get approval for a source replacement.
- 2) If the cost or accessibility to the possibly heavy shields is too high in order to dismantle them for a source replacement.
- 3) If the detectors have reached an age that the risk of failure by aged electronic circuits is increased.

The pictures in example 1 to 4 show possible applications in which alternatively a PRC-measurement could be used. They illustrate that you can replace practically every level and level switch systems by a LB 480 PRC-system. The compensation detector suppresses the background radiation and allows the source continue to use.

#### Explanation:

Each radiometric detector measures the count rate coming from the source, as well as the count rate coming from the background radiation. The background radiation is the natural ambient radiation the detector would measure even without a radioactive source. It is, for the large part, weather dependent and can for example be considerably increased during rain.

The original design of the measurement takes this into consideration, so that this influence is negligible.

At the time when the source must be exchanged, the reading becomes intensified affected by the changes in background radiation.

If the background radiation could be simply switched off, the measurement could still be used, even without source exchange.

The PRC-measurement is quasi able to switch off the background radiation. Thus, the signal to noise ratio is increased many times over, and the original lifetime of the source is practically doubled.

By replacing the detectors to a PRC-system the complete electronics are automatically renewed. So, the risk of malfunction caused by aged electronic components is back to zero, which increases the operational reliability of the measurement significantly.