

# SENSseries LB 480

The best choice for high demands

## The best choice for high demands

- Compact field device with integrated evaluation unit
- Process connection via HART
- SILready developed according to IEC 61508 and FMEDA with SFF 96 %
- Quick Start menu for effective and fast start-up
- Continuous self-monitoring
- High interference immunity (SIL standard)



## SENSseries LB 480 for critical processes

The SENSseries LB 480 measurement system is especially suited for challenging applications. It was developed according to IEC 61508 and features many maintenance-oriented diagnosis functions. For instance, the performance of the detector is continuously monitored by using cosmic radiation for an additional reference measurement. SENSseries LB 480 is SILready. The system offers an excellent operational safety and system stability as well as a high interference immunity that complies with the SIL standard. In short: It is the best choice for your critical processes.

### Quick Start - for a fast and easy start-up

The user-friendly Quick Start menu guides you to an effective start-up in only a few steps. Once the most important measurement parameters (isotope and one calibration point) have been entered, the measurement is available within a very short time. Special functions and supplementary parameters can be added at a later time if required.

## LB 480

### Detector operating data

|                      |   |
|----------------------|---|
| Power supply         | 100 ... 240 VAC, $\pm 10\%$ , 50 ... 60 Hz, 8 VA<br>24 VDC (18 ... 32 VDC), 8 W |
| Cable connections    | 4 cable entries M20 closed with blind plug<br>Option: Cable glands M20          |
| Maximum cable length | 3300 m (120 $\Omega$ ), 1600 m (250 $\Omega$ ), 800 m (500 $\Omega$ )           |
| Wire cross-section   | 0.5 ... 1.5 mm <sup>2</sup> (up to 2.5 mm <sup>2</sup> without wire-end sleeve) |
| Housing material     | Stainless steel ISO 1.4301 / AISI 304 (others upon request)                     |
| Water cooling        | Option (can also be retrofitted), max. 6 bar                                    |

|  | Scintillator size<br>$\varnothing \times \text{length [mm]}$  | Weight<br>[kg] | Weight with<br>cooling system [kg] | Collimator |
|--|---|----------------|------------------------------------|------------|
| CrystalSENS<br>(point detectors)               | 50 x 50 NaI(Tl)   | 11             | 14,5                               | Option     |
| Ambient temperature<br>(Operation and storage) | -40 ... +60 °C (-40 ... +140 °F) for NaI(Tl),<br>observe possible temp. restrictions for Ex-protection! |                |                                    |            |
| Temperature stability                          | $\leq 0.002\%$ / °C (-40 ... +60 °C) for NaI(Tl)  |                |                                    |            |

### Detector certificates & tests

|                      |  |  |                                      |
|----------------------|--|--|--------------------------------------|
| IP protection        | IP65 / IP66 / IP67 / IP68 / IP69K  |  |                                      |
| Explosion protection | ATEX: II 2 G Ex db eb IIC T5 / Ex tb IIIC T95 °C<br>II 2 G Ex db eb IIC T6 / Ex tb IIIC T80 °C |  | -40 °C ... 80 °C<br>-40 °C ... 60 °C |
| Vibration / Shock    | Vibration: 1.9 g / mechanical Shock: 30 g<br>according to DIN EN 60068-6 and 60068-2-27        |  |                                      |

### Signal inputs and outputs

|                 |   |
|-----------------|---|
| Signal output   | HART 4 ... 20 mA potential-free, active or passive<br>max. impedance: 500 $\Omega$ (active)<br>Resolution better than 0.006 mA<br>Stability $\pm 0.001\%$ / °C (-40 ... 60 °C)<br>Power supply: 12 V ... 24 V (passive)<br>max. impedance at 12 V: 250 $\Omega$ (passive)<br>max. impedance at 24 V: 500 $\Omega$ (passive) |
| Analogue input  | Pt100 for temperature compensation  |
| Digital outputs | Open Collector alternatively for: Max. alarm, min. alarm, warning messages + error messages, hold signal, radiation interference detection, detector temperature<br>Permissible load at ohmic load:<br>max. 100 mA at 5 ... 36 VDC  |
| Interfaces      | RS 485 for software update  |
| Data backup     | in non-volatile memory  |