SENSseries LB 480
The best choice for high demands

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- 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
- Daily functional check and continuous self-monitoring
- High interference immunity (SIL standard)
- Gas-density compensation

Continuous water cooling for the entire detector (can also be retrofitted)

Stainless steel housing

Operation via HART communicator, Siemens Simatic PDM or AMS/DeltaV

High durability confirmed in various temperature, shock and vibration tests.

For cascaded systems: Status messages of the Slaves are transferred to the Master. Complete functional monitoring of the slaves is possible.

Excellent IP protection: IP 65, 66, 67, 68, 69K

Monitoring of detector temperature with adjustable max./min. threshold for cooling control

Monitored current output

CPU monitoring through Watch Dog Timer

Cable chamber offering increased safety, easy and safe connection in the field for all four wires
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 as a 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.

Automatic gas-density compensation

The automatic gas-density compensation ensures an extremely precise measurement during applications with a extremely fluctuating gas pressure. The influence of the gas density is determined via a pressure sensor, or if necessary by a radiometric detector, and is entered into the level measurement.

### LB 480

**Detector operating data**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply</td>
<td>100 … 240 VAC, ±10 %, 50 … 60 Hz, 8 VA</td>
</tr>
<tr>
<td>Cable connections</td>
<td>4 cable entries M20 closed with blind plug</td>
</tr>
<tr>
<td>Maximum cable length</td>
<td>3300 m (120 Ω), 1600 m (250 Ω), 800 m (500 Ω)</td>
</tr>
<tr>
<td>Wire cross-section</td>
<td>0.5 … 1.5 mm² (up to 2.5 mm² without wire-end sleeve)</td>
</tr>
<tr>
<td>Housing material</td>
<td>Stainless steel ISO 1.4301 / AISI 304 (others upon request)</td>
</tr>
<tr>
<td>Water cooling</td>
<td>Option (can also be retrofitted), max. 6 bar</td>
</tr>
<tr>
<td>Cascading</td>
<td>up to 17 detectors</td>
</tr>
</tbody>
</table>

**Detectors and weights**

<table>
<thead>
<tr>
<th>Scintillator size Ø x length [mm]</th>
<th>Weight [kg]</th>
<th>Weight with cooling system [kg]</th>
<th>Collimator</th>
</tr>
</thead>
<tbody>
<tr>
<td>CrystalSENS (point detectors)</td>
<td>50 x 50 (NaI/Tl)</td>
<td>11</td>
<td>14,5</td>
</tr>
<tr>
<td>UniSENS (rod detectors)</td>
<td>50 x 500 (polymer)</td>
<td>14</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>50 x 1000 (polymer)</td>
<td>18</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>50 x 1500 (polymer)</td>
<td>22</td>
<td>35,5</td>
</tr>
<tr>
<td></td>
<td>50 x 2000 (polymer)</td>
<td>27</td>
<td>44</td>
</tr>
</tbody>
</table>

**Ambient temperature operation and storage**

-40 … +60 °C (-40 … +140 °F) for NaI/Tl and/or
-40 … +55 °C (-40 … +131 °F) for polymer

### Detector certificates & tests

**IP protection**

IPX5 / IPX6 / IPX7 / IPX8 / IPX9K

**Explosion protection**

ATEX: II 2 G Ex db eb IIC T5 / Ex tb IIC T95 °C
II 2 G Ex db eb IIC T6 / Ex tb IIIC T80 °C
-40 °C … 80 °C
-40 °C … 65 °C

**Vibration / Shock**

Vibration: 1.9 g / mechanical Shock: 30 g
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
max. impedance: 500 Ω (active)
Resolution better than 0.006 mA
Stability ±0.001 %/°C (-40 … 60 °C)
Voltage supply: 12 V … 24 V (passive)
max. impedance at 12 V: 250 Ω (passive)
max. impedance at 24 V: 500 Ω (passive)

**Digital outputs**

Open Collector alternatively for: Max. alarm, min. alarm, warning messages, hold signal, interference radiation detection, detector temperature
Permissible load at ohmic load:
max. 100 mA at 5 … 36 VDC

**Interfaces**

RS 485 for software update, cascading, gas-density compensation

**Data backup**

In non-volatile memory