HRTL 96B
Laser light scanner featuring background suppression for object detection and accurate positioning
**HRTL 96B**, optimised for positioning tasks and reliable object detection.

Dynamic, precise, robust and reliable.

Featuring large detection ranges and background suppression, our 96B series universal laser light scanners are optimally designed for positioning tasks and reliable object detection, for example in the areas of compartment occupation check and shelf positioning. The scanner’s switching behaviour is independent from the drive-in direction, and the integrated propagation time measurement of the radiated light enables this device to be used even under extreme environmental conditions such as gloss, light or obstacle contours.

The light scanner impresses with very easy operation featuring visible red light, teachable switching points and a sophisticated diagnostic function. In addition, a time lock prevents inadvertent changes to the switching points, and thus guarantees the maximum possible detection reliability.
Areas of application

- Position detection
- Projection monitoring
- Loading control
- Fill-level measurement
- Object detection
- Control of autonomous transport systems (e.g. DTS, telpher line)
- Collision prevention
HRTL 96B.

Universally applicable laser light scanner.

- Very simple operation.
  - 2 (optionally 3) teachable switching points
  - Time lock to prevent inadvertent switching point changes

- Universally applicable due to:
  - Large scanning range 100–5,000 mm (6% diffuse reflection)
  - Fast response behaviour < 5 ms

- Propagation time measurement of the radiated light enables secure object detection and accurate positioning (e.g., shelf positioning).
  - Resolution < 5 mm
  - Repeatability < 1 mm

- Proven housing design, robust metal construction.

- Diagnostic function enables continuous monitoring and correction of sensor properties.

- Interfaces: analogue and serial.
Areas of application for HRTL 96B laser light scanner with background suppression.

- Shelf positioning
- Push-through protection
- Collision protection for cranes
- Wood plate detection
Very easy, time-saving operation.

- Scanning range adjustment Q1/Q2
- Key pad
- Indicator diodes for Q1/Q2 switching outputs

- Time lock prevents inadvertent changes to switching points
- Adaptation to extreme applications by means of configuration
- Diagnostic function enables among other things the display of the sensor and teach parameters as well as the performance reserve
## Technical data

<table>
<thead>
<tr>
<th>Technical data</th>
<th>HRTL 968 – scanner with background suppression</th>
</tr>
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<tbody>
<tr>
<td><strong>Function characteristics</strong></td>
<td>Scanner with background suppression</td>
</tr>
<tr>
<td><strong>Dims. excl. plug, W x H x D</strong></td>
<td>30 x 90 x 70 mm</td>
</tr>
<tr>
<td><strong>Voltage supply</strong></td>
<td>10 ... 30 V DC</td>
</tr>
<tr>
<td><strong>Switching frequency</strong></td>
<td>100 Hz</td>
</tr>
<tr>
<td><strong>Response time</strong></td>
<td>&lt; 5 ms</td>
</tr>
<tr>
<td><strong>Outputs</strong></td>
<td>2x push-pull</td>
</tr>
<tr>
<td><strong>Connection type</strong></td>
<td>M12, 5-pin</td>
</tr>
<tr>
<td><strong>Protection class</strong></td>
<td>IP 69K, ECOLAB</td>
</tr>
<tr>
<td><strong>Scanning range</strong></td>
<td>6,000 mm/25,000 mm (using reflective tape)</td>
</tr>
<tr>
<td><strong>Switching points</strong></td>
<td>2, independent from each other, adjustable</td>
</tr>
<tr>
<td><strong>Principle of physics</strong></td>
<td>Propagation time measurement of the radiated light</td>
</tr>
<tr>
<td><strong>Operation</strong></td>
<td>Teach-in</td>
</tr>
<tr>
<td><strong>Configuration</strong></td>
<td>Window function, adaptation of characteristic curves (analogue output), hysteresis, factory-set standard setting</td>
</tr>
<tr>
<td><strong>Ambient temperature</strong></td>
<td>-30 °C ... +50 °C</td>
</tr>
<tr>
<td><strong>Reflectivity</strong></td>
<td>4 ... 90 %</td>
</tr>
<tr>
<td><strong>Light spot size</strong></td>
<td>8 mm at 5 m distance</td>
</tr>
<tr>
<td></td>
<td>5 mm at 1 m distance</td>
</tr>
<tr>
<td><strong>Deactivation</strong></td>
<td>Deliberate switch-on/switch-off of the laser transmitter</td>
</tr>
<tr>
<td><strong>Interfaces (optional)</strong></td>
<td>Analogue current/voltage, Serial RS 232, RS 485</td>
</tr>
<tr>
<td><strong>Object detection</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td>&lt; 5 mm</td>
</tr>
<tr>
<td><strong>Standard deviation</strong></td>
<td>±10 mm at ±3 sigma</td>
</tr>
<tr>
<td><strong>Edge detection/shelf positioning</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Repeatability</strong></td>
<td>&lt; 1 mm</td>
</tr>
</tbody>
</table>
Optoelectronic Sensors
Cubic Series
Cylindrical Sensors, Mini Sensors, Fibre Optic Amplifiers
Measuring Sensors
Special Sensors
Light Curtains
Forked Sensors
Double Sheet Monitoring, Splice Detection
Accessories
Identification Systems
Data Transmission Systems
Distance Measurement
Barcode Readers
RF-IDent-Systems
Modular Interfacing Units
Industrial Image Processing Systems
Optical Data Transmission Systems
Optical Distance Measurement/Positioning
Hand-Held Readers
Safety Sensors
Safety Systems
Safety Services
Safety Laser Scanners
Safety Light Curtains
Transceivers and Multiple Light Beam Safety Devices
Single Light Beam Safety Devices
AS-i-Safety Product Range
Safety Sensor Technology for PROFIBUS DP
Safety Switches and Safety Locking Devices
Safety Relays and Safety Interfaces
Sensor Accessories and Signal Devices
Safety Engineering Software
Machine Safety Services