

## Industrial Light Barriers HLS for up to 800 m

OPTEL was established in 1974 and has since then been active in the development and manufacture of laser transmission and detection equipment.

The heavy duty laser light barrier systems HLS are in worldwide operation since 1987.

The HLS systems have a maximum range of approx. 800 m and are especially suited for applications in industrial environments, where adverse conditions like dust, smoke, steam or heat prevail.

A laser light barrier system HLS comprises a transmitter unit and a receiver unit. The transmitter unit contains an eye-safe semiconductor laser device, which emits light pulses at a fixed pulse rate, as long as the supply voltage is applied. The receiver unit contains a highly sensitive photodetector and the processing electronics including an alarm relay output.

The use of a semiconductor laser transmitter and a highly sensitive photodetector guarantees reliable operation and long maintenance cycles even under extremely difficult conditions. Even high background illumination, resulting from direct sunlight or white-hot steel, does not effect functionality.

In operation the emitted light pulses are picked up by the photodetector in the receiver unit and the alarm relay is switched to the 'Alarm Off' state.

If the connection between the transmitter and receiver is cut off by an object moving into the optical path or if there is a technical defect in the electronics or the external power supplies, the alarm relay is switched to the 'Alarm On' state.

Receiver units are available in different models to cover diverse requirements

The receiver HLS-S offers a variable alarm activation time, which can be individually set from about 10 msec to 1 sec. By setting an individual alarm reaction time, it is possible to avoid false alarms and consequential costly interruptions of production, due to the loss of a few light pulses, not relevant to functionality.

The receiver HLS-T is aimed at applications, which depend on a very short reaction time, offering a fixed alarm activation time of 2 msec.

Both receivers can be delivered with an additional 'Pre-Alarm' output. If the strength of the received optical signals falls below an individually adjustable threshold, an 'early warning' signal is activated, alerting maintenance staff. By setting the 'Pre-Alarm' threshold with a margin to the fixed 'Alarm' threshold, false alarms can be avoided and maintenance cycles kept to a necessary minimum.

The careful selection of materials and components and the use of rugged stainless steel housings and armoured silicone cables, ensures troublefree operation under most severe conditions.

For operation in areas of high ambient temperatures, all devices can be delivered in a special double-walled housing with pipe-fittings for the connection to air or water cooling circuits.