Series 46B
Photoelectric Sensors
and Light Scanners
The new *sensor generation*
Series 46B.

Reliable, high-performance, cost-effective

Series 46B sets new standards in optical sensors. With high performance reserves and large operating ranges, these sensors are ideal for use in the wood-processing industry and in machines for special applications. The highly visible, bright light spot and the reliable detection of stretch-wrapped objects reduce life-cycle costs in materials handling. Thanks to the IP 67 and IP 69K protection classes as well as the ECOLAB certification, high services lives are achieved in spite of the intense cleaning cycles encountered in packaging technology.
The most important **advantages** at a glance.

**Fast commissioning:**

With **brightVision®**:
Fast and easy alignment through the use of a very bright light spot; bright, 360° visible indicator diodes facilitate full control.

Sensor adjustment is quick and reproducible via **teach in**. The **IO-Link** interface enables access to all important parameters directly from the control, thereby making fast commissioning, quick format changes and comprehensive diagnostic options possible.

**Protection against interference:**

- Insensitive against soiling due to very high performance reserve
- Very robust housing
- Low ambient light sensitivity through **A²LS**
- High resistance to environmental influences: IP 67, IP 69K, Ecolab
- Large operating temperature range: -40°C – +60°C
- Increased availability through warning output

**Maximum performance:**

- Large operating ranges
- Scanners with 2 individually adjustable switching points
- Reliable detection of dark, stretch-wrapped and glossy objects as well as objects with coloured structure
- Format conversions and diagnostics via IO-Link interface
- Reliable differentiation between object and background
Throughbeam photoelectric sensors

For reliable **function** and high ranges.

**LSR 46B**
- Light source: red-light LED
- Operating range limit: 60 m
- Switching frequency: 500 Hz
- Switching state display visible over the full range
- Robust behaviour by optimised light spot geometry
- Simple alignment and inspection of the adjustment by the spot alignment tool SAT 5

For efficient **machinery protection**.

**SLSR 46B**
- Light source: red-light LED
- Operating range limit: 44 m
- Switching frequency: 100 Hz
- Protective photoelectric sensor AOPD type 2
- Robust behaviour by optimised light spot geometry
- This protective photoelectric sensor is already conform with EN ISO 13849-1
- Simple alignment and inspection of the adjustment by the spot alignment tool SAT 5

**Gab monitoring at high-bay storage devices**

**Foot space protection at side-tracking shelves**
Retro-reflective photoelectric sensors

Reliable function with small, misadjusted reflectors and heavy soiling.

Reliable detection of stretch-wrapped pallets.

**PRK 46B**
- Light source: red-light LED
- Operating range limit: 0.05 – 18 m
- Switching frequency: 500 Hz
- Maximum performance reserve
- Reliable object detection with small, misadjusted reflectors, large operating range or heavy soiling

**PRK 46B.2**
- Light source: red-light LED
- Operating range limit: 0.1 – 10 m
- Switching frequency: 500 Hz
- Optimised for use on roller conveyors
- Reliable function even with stretch-wrapped pallets

Detection of wood pallets

Detection of stretch-wrapped objects
Diffuse reflection light scanner with background suppression

For reliable detection of dark and glossy objects.

HRT 46B
- Light source: infrared LED
- Scanning range limit: 0 – 2500 mm
- Adjustment range: 120 – 2500 mm
- Very high performance reserve
- Very small black/white error
- Optimised for glossy, dark objects and large operating ranges

For very simple alignment with extra bright light spot.

HRTR 46B
- Light source: red-light LED
- Scanning range limit: 5 – 1800 mm
- Adjustment range: 120 – 1800 mm
- Versions with mechanical adjustment and teach in
- High performance reserve
- Very visible, bright light spot
- Remote teach via teach cable
- Manipulation protection via lockable button

Object detection on stretch packaging machinery

Vertical positioning
Two scanners in one.

For very precise positioning and detection of small parts.

**HRTR 46B-Teach**
- Light source: red-light LED
- Scanning range limit: 20 – 1800 mm
- Adjustment range: 120 – 1800 mm
- Output from two individually adjustable switching points
- Configuration and diagnostics via IO-Link interface
- Quick format conversions through adjustment of scanning range in millimeters via interface
- Optimal cost-performance ratio for simple two point regulations

**HRTL 46B**
- Light source: red-light laser
- Scanning range limit: 50 – 1200 mm
- Adjustment range: 120 – 1200 mm
- Switching frequency: 1000 Hz
- Versions in laser class 1 available
- Light spot: 3 × 5 mm² at distance of 1 m
- Precise positioning and detection of small parts

Loop control

Positioning of a robotic arm
Diffuse reflection light scanner with background suppression

For reliable detection of objects with coloured structure.

HRTR 46B small beam
- Light source: red-light LED
- Scanning range limit: 10 – 500 mm
- Adjustment range: 120 – 700 mm
- Small light spot: focussed at approx. 200 mm
- Reliable detection of objects with coloured structure located in front of a background
- Optimised for applications in the wood and packaging industries
- Typical actuation distances: 100 – 300 mm

HRT 46B, narrow beam
- Light source: infrared LED
- Scanning range: 10 – 1200 mm
- Adjustment range: 120 – 1200 mm
- Detection through a gap ≥ 6 mm
- Reliable detection of wood or plastic pallets independent of their height
- Simple alignment
- Large optics ensure low sensitivity to soiling
- Detection of overhanging objects

For detection between the rollers of a roller conveyor.

Detection of objects between rollers
Reference scanner

Safe detection of containers on conveying belts.

- Safe detection of shiny, dark or partially-transparent objects on conveying belts or in front of a fixed background
- Fast commissioning through teach in on conveying belts or backgrounds

HRTR 46B-Teach  IO-Link

Actuation distance: 200 – 500 mm
Optoelectronic Sensors
Cubic Series
Cylindrical Sensors, Mini Sensors, Fiber Optic Amplifiers
Measuring Sensors
Special Sensors
Light Curtains
Forked Sensors
Double Sheet Monitoring, Splice Detection
Inductive Switches
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
Mobile Code 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, Safety Locking Devices and Safety Command Devices
Safety Relays
Sensor Accessories and Signal Devices
Safety Engineering Software
Machine Safety Services