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Passion for Sensors

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INNOVATION

PosCon 3D

Edge measurement in a new dimension.

A new dimension.

The *PosCon 3D* – distance-independent measurement of object edge positions.

The innovative Baumer *PosCon 3D* edge sensor is the most powerful in its class. Such features were previously only offered in complex laser measuring systems. This all goes together with very easy installation and operability.

With the *PosCon 3D* you can measure:
- edge positions
- object width or gap dimensions
- object center positions

The *PosCon 3D* will save you cost from the planning stage all the way through to implementation and system operation.

PosCon 3D – Your edge specialist.

Powerful.

- Object width measurement independent of surface finish or color.
- Integrated, high-performance coordinate transformation.
- Edge position measurement with resolutions up to 40 µm.
- High measuring rate: up to 200 measurements per second.

Reliable.

- Reliable measurements, even with changing background and different lighting conditions.
- Distance-independent measurement.
- The measuring field can be narrowed to allow for pinpoint object measurements.
- The sensor does not require a reflector prone to soiling.

Convenient.

- Just four steps to get ready: install, connect, select language and measuring mode – that's it.
- The *qTarget*™ design is referencing the optical axis to the mounting holes.
- Easy handling, similar to a light sensor.

The operating principle.

This extremely compact sensor does not require a reflector, processing device or externally installed software.

The laser line projected by the *PosCon 3D* is reflected from the surface and depicted on a 2-dimensional optical receiver using the triangulation principle. The required optical image quality is ensured by the specially developed multilens system.
The exact distances to the object surface are measured along the laser line and then calculated by means of smart algorithms and powerful coordinate transformation.
The position of an object's edge, width or gap dimension is transferred over the existing electrical interface.
For objects moving along the Y axis, the precise measurement location on the object can be determined by means of sync-input.

The 3 dimensions:

X axis	Edge position along the laser line.
Z axis	Edge position independent of distance from object to sensor.
Y axis	Edge position along the moving direction by means of sync-input.

Versatile application potential.

The different functions and modes can easily be selected on the touch display or via the sensor interface.

Function	Edge	Width	Gap
Mode (selection)			
			

PosCon 3D – The intelligent sensor.

Integrated coordinate transformation
- Measurement without complex sensor alignment.

Innovative touch display
- Functions are selected on the display and stored.
- Measuring values are displayed in millimeters.
- No installation of software on a PC required.

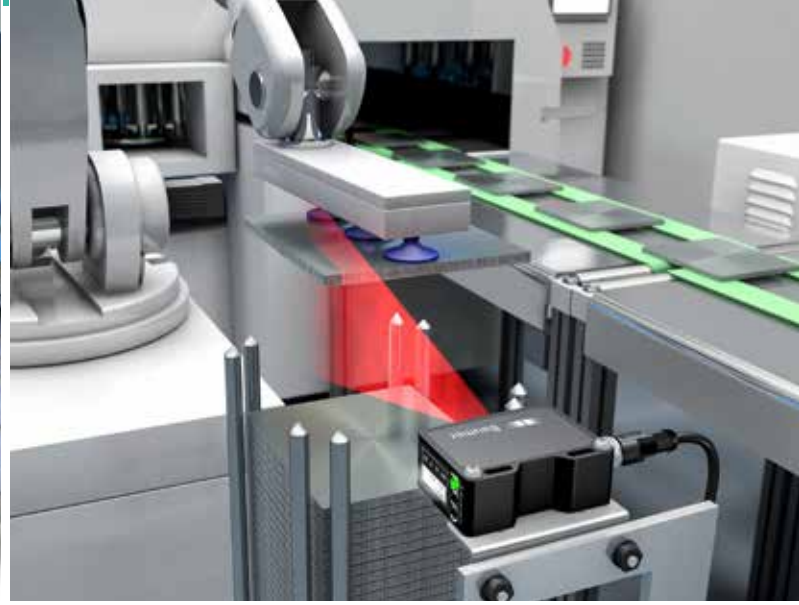
Interfaces
- Connector for all common interfaces.
- Numerous mounting options.

***qTarget*™**
- The *qTarget*™ design is referencing the sensor light beam to the mounting holes.
- Convenient, early system integration by the sensor's CAD data.

Visible laser line
- The visible laser line simplifies commissioning and signals sensor activity during operation.
- The sensor does not require a reflector.

Distance-independent measurement
- Measuring of edge position and object width, gap control and detection of object center position, even at radial or axial runout.

Configurable measuring field
- Easy suppression of disruptive objects by narrowing the measuring field.



Positioning.
Example: Solar wafer positioning in the electronics industry. Prior to the metalization process, solar wafer and mask must be carefully aligned to each other. *PosCon 3D* ensures ultra-precise mask positioning even in tight spots and when mounted at an angle.

Determination of sheet metal thickness.
Example: *PosCon 3D* is installed further down below in order not to interfere with the sheet metal separation process.
Despite the sub-optimal installation position, *PosCon 3D* will reliably determine the sheet metal thickness within one tenth of a millimeter and clearly recognize whether two sheets have been erroneously removed from the stack.

Powerful.

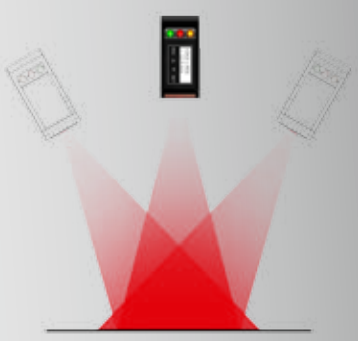
PosCon 3D sensors master easily and precisely tasks in edge positioning, object width measurement or gap control that so far only very complex and costly sensing systems have been up to.

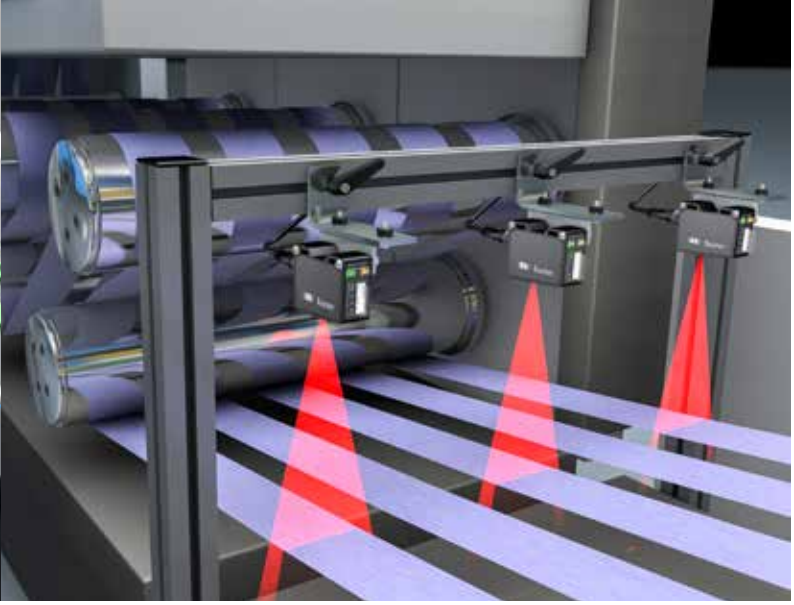
Additional benefits
- Measurement field can be narrowed to suppress disruptive edges and objects.
- Detection of even very dark objects.
- Optional *PosCon 3D* parameterization via RS485 interface for eased installation of several sensors.
- Sync input for reproducible measurements at object reference points.

Integrated coordinate transformation.

The sensor can be installed in any position within a lateral angle of +/−30° to bypass mounting obstacles and enhance application flexibility. The integrated coordinate transformation will correct any angle error right in the sensor and hence eliminates all time-consuming programming effort.

Cost reduction in system planning and commissioning.





Width measurement.
Example: Accurate measurement of tapes.
The *PosCon 3D* ensures continuous process monitoring in the production and further processing of plastic tapes. High precision measurement is even ensured in oscillating movements of the tape towards the sensor.

Gap Control.
Example: Monitoring correct closing of cardboard boxes.
The sensor accurately checks the correct closure of cardboard boxes. Even with boxes varying in height, the sensor reliably and precisely monitors the gap between the closure flaps.

Reliable.

The sensor reliably measures objects with different colors and surfaces; even when these are changing. Substantial ambient light will not affect the measurement, either. And of course, the sensor does not need a reflector.

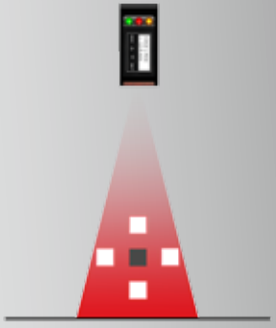
Additional benefits

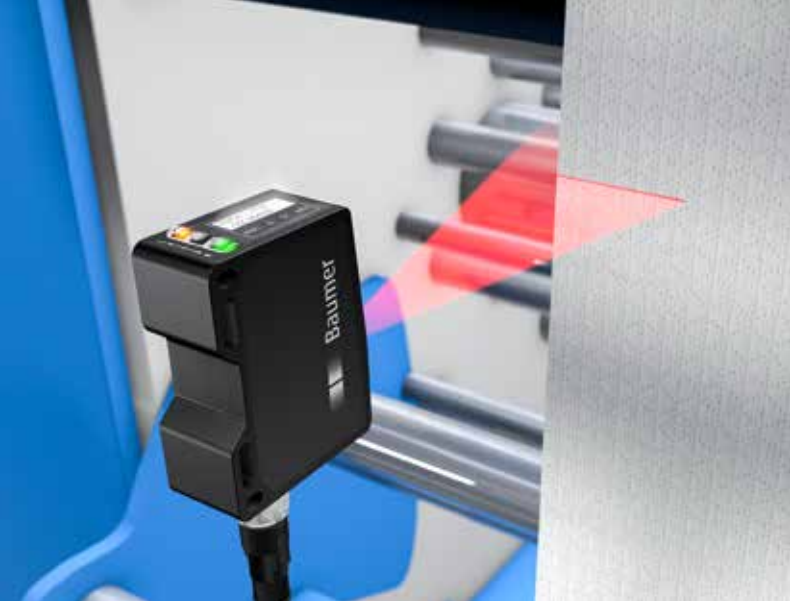
- Narrowing the measuring field allows for pinpoint object measurements.
- *PosCon 3D* will give a soiled lens warning (weak received signal).
- The switching output can be configured as process control output (acting as a limit switch).

Distance-independent measurement of edge position and object width.

An appropriate object can move within the measuring field without having any impact on the measurement. This absence of runout sensitivity makes a significant contribution to the reliable functioning of the sensor in the application.

High system availability.





Web edge control.
Example: Paper edge position measurement.
There are only four steps to get ready:
1. Sensor mount to include the paper edge in the measurement field.
2. Power on.
3. Select required language and mode (e.g. right edge) on the touch display.
4. Done. The sensor is operational.

Object centering.
Example: Centering of extruded rubber belt.
Both the belt's target position and runout error can be considered when integrating *PosCon 3D* into the system using the sensor's CAD data.
No adjustment is necessary. The sensor measurement field is reproducible and precisely aligned.

Convenient.

PosCon 3D is installed as easily as a light sensor. Only four steps to get ready: Install, align to the object, select language and measuring mode. That's it.

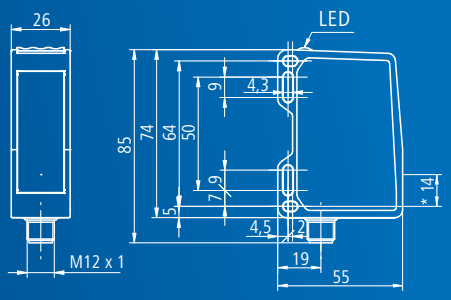
Additional benefits
- Visible laser line for easy object alignment.
- No installation of software on a PC required.
- The innovative touch display easy-to-read provides every important value, allows for parameters and menu function entries and for sensor teaching of the reference area.

qTarget™ – Optical axis alignment by design.

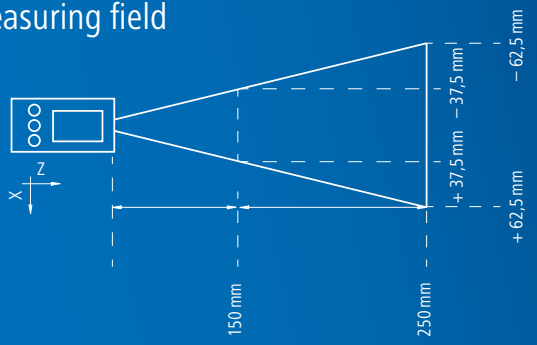
The *qTarget*™ design is referencing the optical axis to the mounting holes. This enables system integration already in the CAD stage. No later mechanical adjustmens or alignments in the application.

Time-saving installation.

PosCon 3D – Product data.



Measuring field



General data

Function	Measurement types: Left or right hand edge position, width, gap, center position.
Measuring range (distance)	150 mm ... 250 mm
Measuring range (width)	75 mm ... 125 mm
Measuring frequency	200 Hz
Resolution	< 40 µm @ 150 mm < 75 µm @ 250 mm
Minimum edge height	2 mm
Ambient light immunity	25 kLux
Light source	Red laser diode, pulsed
Laser class	1

Electrical data

Voltage supply range +Vs	15 ... 28 VDC
Output circuit	Analog and RS485, configurable output, sync/trigger
Output signal (I or U)	4 ... 20 mA / 0 ... 10 VDC

Ambient conditions

Operating temperature	–20 °C ... +50 °C
Protection class	IP 67

Order code OXE7.E25T-11111452

Accessories

Mounting kit for standard installation at an angle of 90° to the reference surface.

Mounting kit for ±30° angled installation with horizontal mounting.

Mounting kit for ±30° angled installation with vertical mounting.

For installation and connection accessories go to: www.baumer.com/accessories

To learn more about the *PosCon 3D* visit
www.baumer.com/poscon3d

Find your local partner: www.baumer.com/worldwide

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