

DTECT® Object 3D

Looking for instant 3D insights?



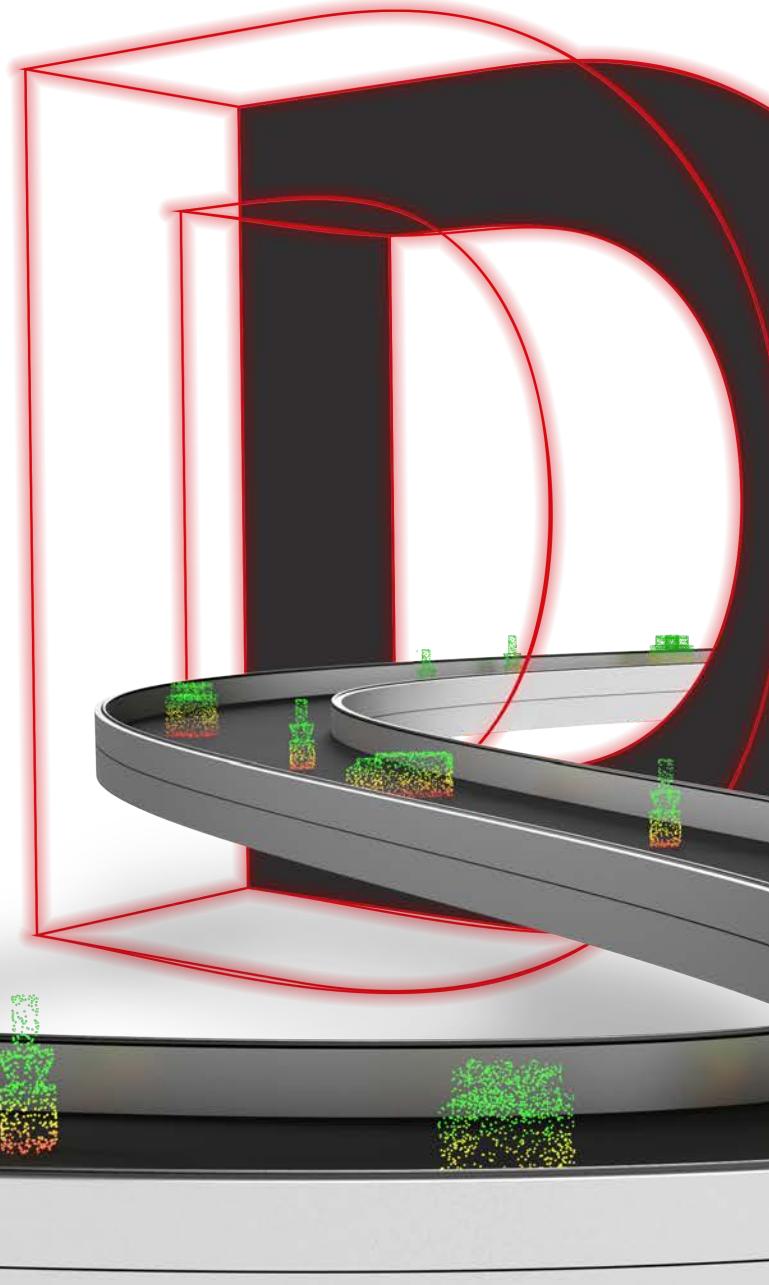
DTECT® Object 3D

The next generation in object detection

The DTECT® Object 3D is the market's first sensor based on the active stereo principle. Combining the power of active stereo vision with the simplicity of a sensor, it learns the part's volume for real-time comparison during operation.

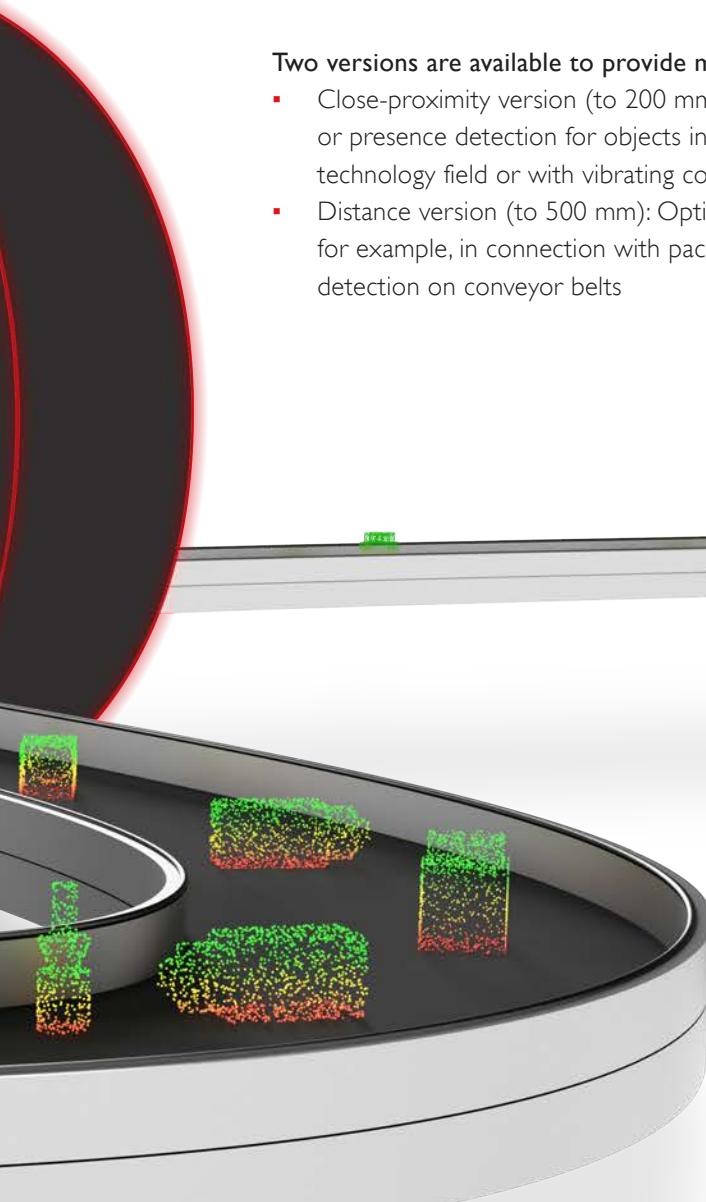
This feature set makes it the perfect solution for many applications like part orientation on a bowl feeder track, missing parts in a pack or part present in conveyor feeding.

Another ground breaking product with unique technology brought to you by SensoPart.



More information on the technology the DTECT® Object 3D employs can be found in our whitepaper "Active Stereo":

<https://info.sensopart.com/en/detect-object-3d/withepaper>



Two versions are available to provide maximum flexibility:

- Close-proximity version (to 200 mm): Ideal for completeness monitoring or presence detection for objects in the plastics and assembly technology field or with vibrating conveyors
- Distance version (to 500 mm): Optimal for inspection of completeness, for example, in connection with packaging technology or for presence detection on conveyor belts



The intuitive operation of the DTECT® Object 3D is supported by a color display on the device. The field of view or the relevant height can be adapted to the application quickly and easily using the appropriate buttons – all without external software. After the teach-in, the operational state or the sensor result of „Pass / Fail“ is visualized by the illuminated frame that is visible from all sides. Further adjustments can also be made easily and intuitively using the IO-Link interface.

With this new development, SensoPart once more underscores its commitment to making it as easy as possible for users to employ powerful sensor technology – with a revolutionary approach to object detection.

DTECT® Object 3D – See in depth, create added value

Stereo vision with structured illumination

 **IO-Link**

ECOLAB







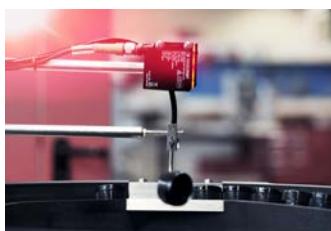
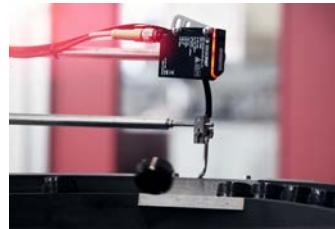
Easy as never before: intelligent position control and completeness monitoring

Whether for vibrating conveyors or in assembly: With the DTECT® Object 3D, reliable detection of object position or completeness is faster and easier than ever.

For instance, the system reliably detects whether an object is in the prone or supine position on vibrating conveyors. The required pass or fail state can be taught in at the press of a button so that complex isolation mechanisms are often no longer necessary. That saves time, and often, substantial costs. The solution is also effective for the inspection of completeness with containers or assemblies: Deviations are detected reliably – entirely without time consuming parameter configuration. This makes the system ideal for flexible production processes that demand efficiency and precision.

HIGHLIGHTS

- Up to 100 fps for use in dynamic processes
- M12, 5-pin connection for easy integration just like standard sensors
- Compact F55 housing: robust and proven
- Depth image technology with multiple patents
- Intuitive color display with depth image visualization



Examples of sectors and applications

Feed technology

- Detection of the correct position in vibrating conveyors (e.g. prone or supine position)
- Orientation of plastic gears in a vibratory bowl feeder
- Position control of rollers in a vibrating conveyor
- Monitoring the presence of objects on conveyor belts
- Orientation of plastic trays

Assembly technology

- Inspection of completeness for assemblies and components
- Inspection for the presence of specific features
- Orientation of plastic or metal parts (e.g. nuts, trays)
- Completeness inspection of a keypad

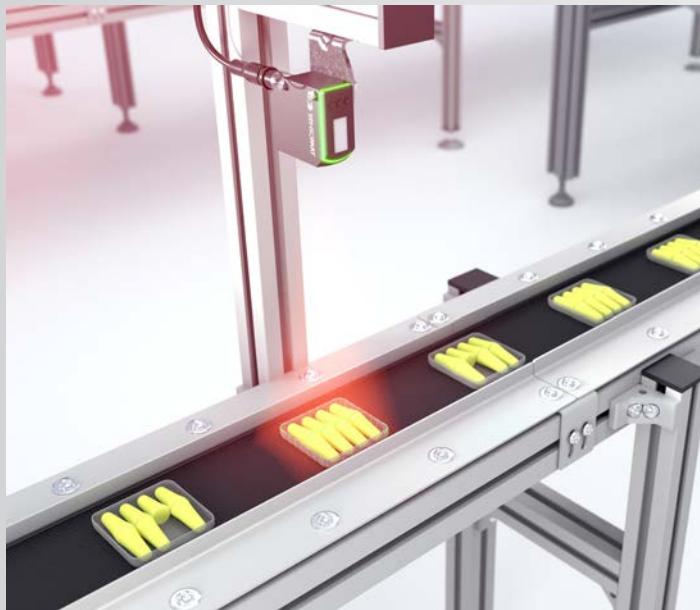
Packaging technology

- Completeness monitoring for containers or storage boxes
- Inspection of compartments in trays for completeness
- Checking the completeness of a tube or cap

DTECT® Object 3D – Product overview

Sensor	Light type	Adjustment	Working range	Special features	Additional information
DO3D-10-CH-S1-LI-W135-L-L5 626-11000	IR laser (operation) Red light (teach-in)	Teach-in via button, IO-Link	100 ... 200 mm	Laser class 1	
DO3D-10-CH-S1-LI-W230-L-L5 626-11001	IR laser (operation) Red light (teach-in)	Teach-in via button, IO-Link	150 ... 500 mm	Laser class 1	

Reliable inspection of completeness for earplugs



In packaging monitoring, every detail counts – even small deviations can lead to complaints or unnecessary rejections, for example in the packaging process for earplugs. To ensure that each box reaches the customer in perfect condition requires verification to ensure that all earplugs are present before a box is sealed. The DTECT® Object 3D performs this check and reliably determines whether the number of items is correct. This eliminates the possibility of faulty packaging from the outset. The DTECT® Object 3D sensor operates on the basis of volume, which enables reliable detection of the number of objects present – regardless of their exact position in the container. Missing earplugs are recognized unambiguously, which ensures precise completeness monitoring. The parameters can be configured conveniently using the sensor buttons and the solution can be quickly integrated in the existing processes.

Reliable inspection of completeness for storage boxes

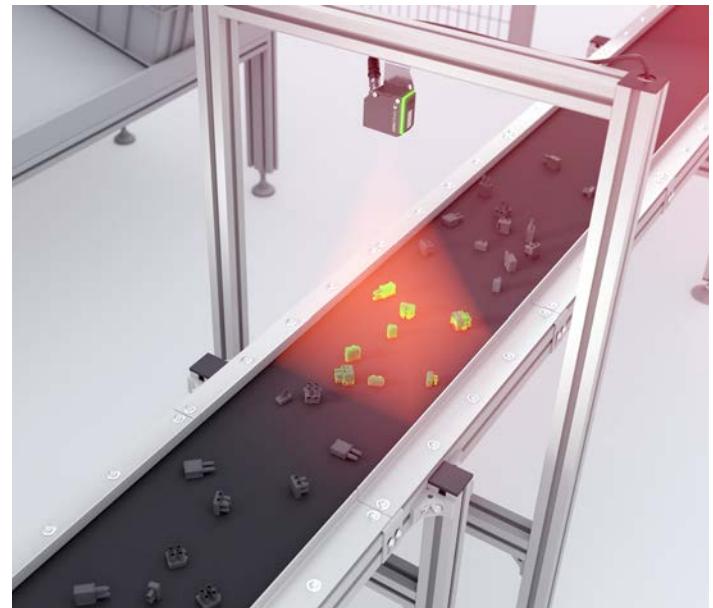
Storage boxes are indispensable for efficient transportation and storage in automated systems. However, before shipping, verification that the box has been filled properly is essential. This is a decisive factor for avoiding complaints and ensuring consistently high process quality. A sensor can be used to perform this inspection of completeness.

In the triggered mode, the DTECT® Object 3D inspects every box reliably – completely independently of the color or shape of the objects. The volume-based technology ensures consistent detection with repeatable accuracy, including under challenging contrast conditions. Even black objects in black boxes are detected with precision. Furthermore, the sensor can be adjusted quickly and easily using the buttons, which enables trouble-free integration in existing processes.

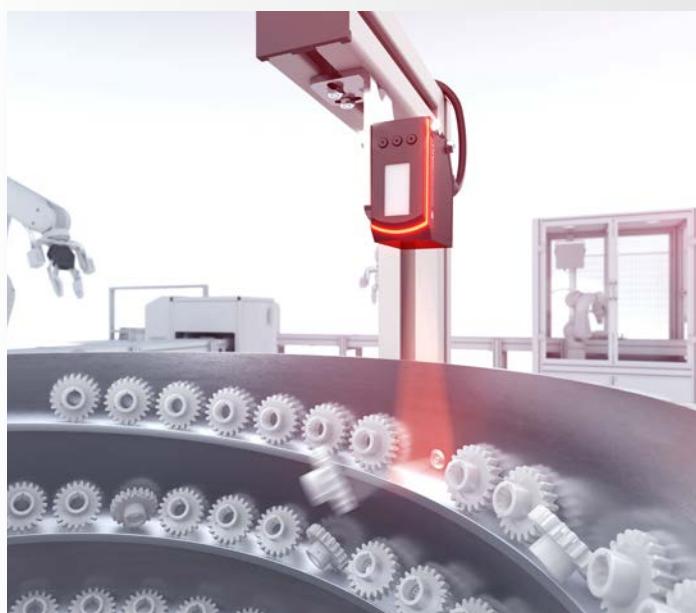


Monitoring the presence of objects on conveyor belts

Millions of objects are transported to the next processing step via conveyor belts every day. A verification of whether an object is located on the workpiece carrier must take place before the downstream process can be started. A sensor must reliably check the presence of the object to ensure trouble-free operation of the production line. The DTECT® Object 3D reliably detects whether there is an object in the field of view – regardless of its shape, color or orientation. This ensures dependable presence monitoring even with varying object types. Even under challenging contrast conditions, such as a black object on a black background, it delivers consistent results. Thanks to its intuitive operating buttons, the sensor can be set up and integrated into existing processes quickly and easily.



Reliable position control of gear wheels on a vibrating conveyor



For correct assembly in the subsequent process, gear wheels – for example, from storage boxes – must be fed on the vibratory conveyor in the correct position. A sensor must be able to reliably detect if they are orientated incorrectly. In this case, the gear wheels are automatically blown back into the bunker. The volume-based measurement principle employed by the DTECT® Object 3D sensor enables reliable differentiation between the two possible orientations of the gear wheels. Limiting the field of view to the size of the object keeps the detection process stable and reliable even if there is congestion on the conveyor. This makes mechanical separation unnecessary. The sensor can be set up quickly and easily thanks to the adjustment procedure using mechanical buttons located on the robust sensor housing. A switching output makes integration uncomplicated and can control the compressed air for the recirculation into the bunker.

SensoPart is one of the leading manufacturers of photoelectric sensors and image-processing vision sensors for factory automation. We also offer inductive and ultrasonic sensors, enabling us to cover a wide range of industrial automation tasks. Today, our products are used in numerous applications and industries – from automotive and mechanical engineering to the electronics and solar industries as well as the food and pharmaceutical industries. We are particularly proud of the renowned quality of products „Made in Germany.“ All products are developed and manufactured at our two German locations and shipped from there to destinations throughout the world.



SensoPart worldwide

With our global network and worldwide branches, we are always close – wherever you are.

Your local contact can be found at:
www.sensopart.com/contact

