

A press release by SensoPart Industriesensorik GmbH, Gottenheim near Freiburg/Breisgau, Germany

A far-sighted solution from SensoPart: Compact time of flight sensors with a 5 m range



[Abb_1_FT55TOF_Coil.jpg]



[Abb_2_FT55TOF_Schaltkneuppel.jpg]

SensoPart has added two new sensors to its F 55 compact range: they use time of flight measurement to reliably detect or measure objects of any colour and surface characteristic at a distance of up to 5 metres. The class 1 laser sensors are available with either a digital or analogue output and are much smaller than most distance sensors of the same performance category.

Two variations: proximity switch with background suppression or distance sensor

Users have the choice of two product variations: the proximity switch with background suppression is available either with one or two switching outputs and has an operating range of 0 to 5 m. The precise distance sensor is equipped with an analogue output and an additional switching output with a scanning zone function, which can be adjusted independently of the analogue measuring range (0.1 to 5 m). To develop these new sensors, the performance data of an existing distance sensor with a larger housing ($95 \times 93 \times 42 \text{ mm}^3$), which already uses time of flight technology, was adapted to the much smaller F55 housing ($50 \times 50 \times 23 \text{ mm}^3$) and enhanced accordingly.

Long range and high measuring accuracy

The new F55 sensors attain an operating or scanning range of up to 5 m with white objects and even reach 3 m with very dark objects. Thanks to their excellent black range, the new sensors are also able to reliably detect challenging objects, such as those with dark and uneven, structured, sloping or curved surfaces. The sensors, themselves, can be positioned at a considerable distance from the process. Laser safety class 1 guarantees safe use without any additional precautions. They have a clock frequency of up to 500 Hz, making them much faster

than most other sensors of their performance category. The same applies to their outstanding repeatability, which is in the mm range.

Sensor installation is simple and straightforward thanks to a compact, user-friendly design and a standardised operating concept for the entire F 55 series. Specially-developed mounting accessories guarantee fine adjustment of the sensor light spot on the object to be detected.

The proximity switch with precise background suppression is ideal for reliable detection of objects with an irregular or dark surface, e.g. plastic elements in automotive production or checking occupancy of storage bays in a high bay warehouse. Typical applications for the analogue distance sensor are coil diameter control during unwinding, exact positioning of robots and level and stack height measurement.

Reliable time of flight measurement

Short laser light pulses are emitted by the sensor during time of flight measurement; the light reflected by the target object is recorded and the time of flight is determined. In contrast to photoelectric proximity switches, this procedure enables reliable detection of any materials and surfaces, from deep black to high gloss. A clear reception signal is always obtained even with extraneous light and critical backgrounds, such as reflective jackets, signal lamps or reflective metal bars.

SensoPart is one of the pioneers of time of flight measurement with its existing F 90 range – this sophisticated technology is now available in the new F 55 sensors, for distances from 0 to 5 metres, with a compact design and a matching price.

Highlights of FT 55 time of flight sensors



[Abb_3_FT55TOF_frei.jpg]

- F 55 product family expanded with long-range sensors
- Compact design 50 x 50 x 23 mm³
- Long operating or scanning range up to 5 m (3 m for black object surfaces)
- Reliable object detection in front of any background using time of flight measurement
- High switching frequency for fast processes (up to 500 Hz)
- Outstanding repeatability in mm range
- Easy to use, standardised operating concept for all sensors in the F 55 series
- Two product variations: proximity switch with background suppression and distance measurement sensor with analogue output
- Universal use: automotive production, plastic industry, metal and wood processing, packing and bottling industry, storage and conveying technology, paper and printing industry

© SensoPart Industriesensorik GmbH 2014, Gottenheim
Publication free if source is quoted

SensoPart Industriesensorik GmbH

The sensor manufacturer SensoPart, based in Wieden near Todtnau, and also in Gottenheim near Freiburg since 2001, develops, produces and sells sensors for industrial applications. The main focus is on optoelectronic sensors, particularly laser sensors, which are used in so many industrial applications, and high-performance vision sensors for the detection of objects, colours or data matrix codes.

The past years have been marked by a strong growth in turnover and the regular launch of new, innovative products. SensoPart has received several distinctions for its work, for example the Dr. Rudolf-Eberle Prize, 1st place in the Baden-Württemberg Prize for the Promotion of Young Companies, and has been awarded the German Sensor Application Prize several times. Further information can be found online under: <http://www.sensopart.com>.