Position sensors

The PMD profiler: accurate contour detection for inline quality checks

TOP PRODUCT

Photoelectric sensors

- **Inline quality control checks to ensure correct assembly of parts**
- **Quick set-up without software**
- **Distance-independent measurement for high tolerance on object positioning**
- **Immunity to extraneous light – no screening or external illumination required**
- **Optional contour visualisation via software to simplify the failure analysis**

PMD Technology

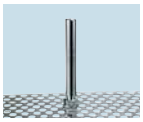
IO-Link

Precise object scan for quality control

In assembly and handling applications, the profiler does not only verify the presence of an object, but it checks whether the correct component has been used and properly installed. A push of a button is all that is required to compare the contour of an object with the taught target contour stored in the profiler. The photoelectronic line scanner reliably detects tiny differences between nearly identical components. Since the distance is not relevant, the PMD profiler does not require complicated positioning as is the case with 1D sensors. Thanks to the insensitivity to extraneous light, no screening or external illumination is required as is the case with camera systems performing to this high level of accuracy. With its user-friendly colour display and intuitive setting with only 3 pushbuttons, the sensor is ready for use within a few minutes without requiring any software. It is possible to either transmit information on the reject rate or the detected object profiles via IO-Link.

Type [H, W, D mm]	Measuring distance (Z direction) [mm]	Width of the measuring range (X direction) [mm]	Output	Laser protection class	Order no.
PMD profiler · M12 connector					
88 x 65 x 28.5	150...300	100 (at a maximum distance of 300 mm)	PNP/NPN	1	**OPD100**

Accessories

Type	Description	Order no.
Installation		
	Mounting set OPD, 12 mm	**E2D118**
	Rod, 100 mm, Ø 12 mm, M10 thread, stainless steel	**E20938**
IO-Link		
	USB IO-Link master for parameter setting and analysis of units Supported communication protocols: IO-Link (4.8, 38.4 and 230 Kbits/s)	**E30390**
	IO-Link master EtherNet/IP, 4 ports	**AL1320**
	LR DEVICE (supplied on USB flash drive) Software for online and offline parameter setting of IO-Link sensors and actuators	**QA0011**

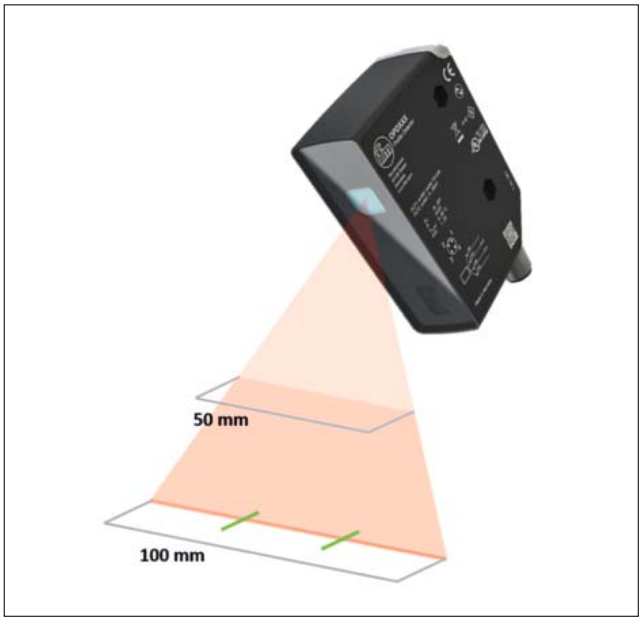
Further technical data		
Operating voltage	[V DC]	10...30
Resolution	[µm]	Z direction: 200 µm X direction: 500 µm
Accuracy	[µm]	± 500 µm (x, z dimension)
Output		2x PNP/NPN programmable OUT1: switching output (good/bad) / IO-Link OUT2: switching output (good/bad or "ready signal" output)
Protection rating, protection class		IP 65, III
Current rating	[mA]	2 x 100
Type of light / wave length		laser light 650 nm
Extraneous light immunity	[klx]	20
Switching frequency	[Hz]	5
Current consumption	[mA]	< 200, 10 V DC
Short-circuit protection, pulsed		•
Reverse polarity protection / Overload protection		• / •
Ambient temperature	[°C]	-10...55
Materials		diecast zinc, PPSU, ABS, PMMA, PBT+PC, EPDM
User interface		TFT display, 3 operating keys, operation status indication, switching status indication

Region of Interest: high degree of accuracy

To make the determination of differences between nearly identical components even more reliable, the profile evaluation can be narrowed down to the relevant object area with two markings by using the Region of Interest function.
The function can be used in the fixed mode to verify whether the object is accurately positioned. In the floating mode, the contour comparison is variable along the laser line. It is not necessary to position the parts to be tested in exactly the same way.

Quality assurance: definition of tolerances

The similarity between the reference and the target object is provided as a value between 0 and 100 %. The threshold function can be used to define the value from which the reference object is no longer acceptable. Hence, a low tolerance value will guarantee the quality of assemblies that require great accuracy.



We reserve the right to make technical alterations without prior notice. · 11.2019