MICRO-EPSILON

More Precision

optoCONTROL CLS1000 // Fiber optic sensor for industrial applications

Transmission sensor for translucent objects
optoCONTROL CFS3

- Large operating range between receiver and transmitter unit with up to 2000 mm
- No exact positioning of the measuring object necessary
- Simple and space-saving mounting
- Models with and without external thread

With the transmission sensor, the infrared light emitted by the controller is guided via the optical fiber to the transmitter and from there to the detecting object. There, the light beam is either interrupted or transmitted, depending on the target. The receiving unit of the sensor receives the remaining light and sends it back to the controller via the optical fiber. The remaining light component consists of either the unshielded light component or light transmitted from the object. By illuminating the transmitter through the object, it is possible to detect levels of liquids in jars as well as transparent objects. In addition to detecting transparent and semi-transparent objects, the sensor arrangement of the transmission sensor in transmitted light (180:0) is ideally suited for area detection, as a light barrier, for distinguishing sizes and diameters, for tolerance inspection and for web edge detection.

The CFS4 sensors, in combination with the performance of the CLS1000 series, provide reliable results. Here, the distance variation between the test specimen and receiver or illumination has no noticeable influence on the result. The transmission sensor can be universally used but is also suitable for special solutions (customer-specific adaptions).

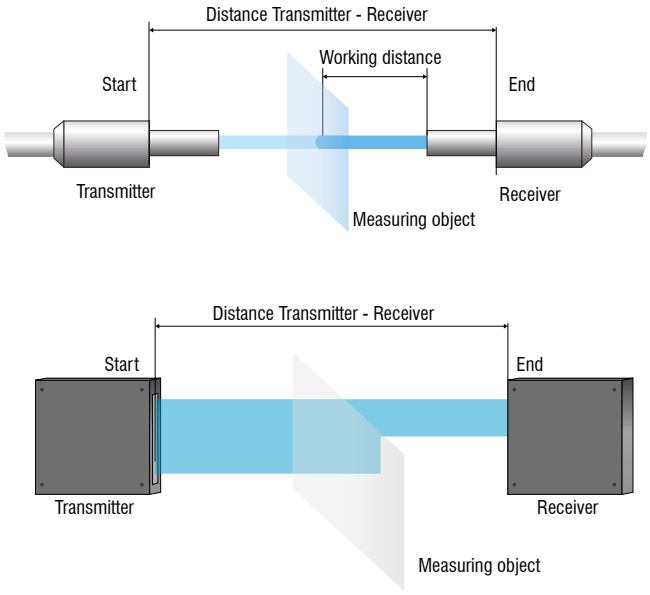
The sensors are available with different operating ranges, temperature ranges and lengths. This enables a wide range of applications. The fiber optic cable has a sensor head, which is available in different versions:

With external thread: For example, threaded sensors can be easily fixed on a mounting bracket.

Without external thread: Cylindrical sensor heads are suitable for space-saving mounting. This is achieved by simply setting a grub screw.

Measurement geometry

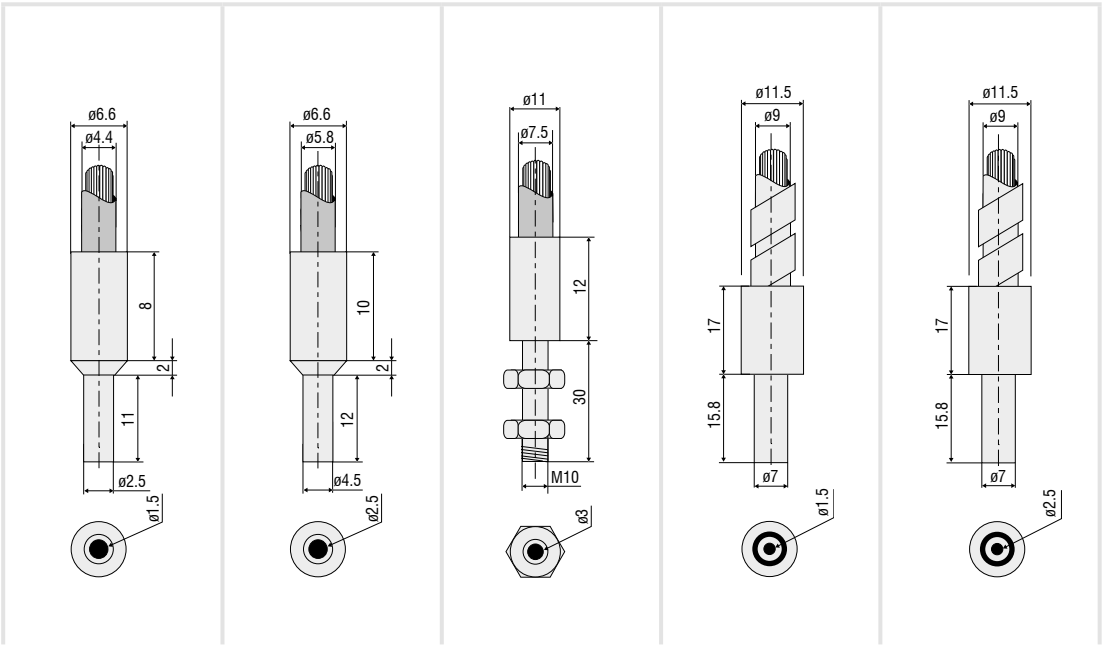
Transmission sensor 0°:180°



Transmission sensor with transmitter and receiver

90° deflection: If the installation depth and the mounting space are very limited, sensors with integrated 90° deflection are the optimal solution.

Flat sensor head: Thanks to the light band, flat sensor heads are ideal for distinguishing sizes and diameters, monitoring web edges, and area detection.



Model		CFS3-A11	CFS3-A20	CFS3-C30	CFS3-M12-600	CFS3-M20-M
Article number		10810518	10810490	10811921	10810353	10810438
Sensor type		Transmission sensor				
Operating range (transmitter-receiver distance)	Start	1 mm				
	End	500 mm	1700 mm	2000 mm	90 mm	200 mm
Working distance (measuring object - receiver)		Measuring object can be freely positioned between transmitter and receiver				
Measurement geometry		0°:180°				
Min. target size [1]		Ø0.1 µm	Ø0.2 µm	Ø0.3 µm	Ø0.05 µm	Ø0.1 µm
Connection		Screwable fiber optic cable via FA socket (M18x1),				
		Standard length 1.2 m; max. bending radius 13.2 mm	Standard length 1.2 m; max. bending radius 17.4 mm	Standard length 1.2 m; max. bending radius 22.5 mm	Length 0.6 m; max. bending radius 13.2 mm	Standard length 1.2 m; max. bending radius 15 mm
Mounting		FA (M18x1)				
Temperature range	Storage	Sensor head: -10 … +80 °C; Optical fiber: -60 ... +180 °C				Sensor head: -10 ... +80 °C Fiber optic cable: -40 ... +300 °C
	Operation					
Humidity (non-condensing)		20 … 80 % r.H.				20 … 60 % r.H.
Protection class (DIN EN 60529)		IP64				IP40
Material	Sensor head	Stainless steel				
	Optical fiber	integrated glass fiber (Ø1.5 mm) and metal-silicone (T) sheathing	integrated glass fiber (Ø2.5 mm) and metal-silicone (T) sheathing	integrated glass fiber (Ø3.0 mm) and metal-silicone (T) sheathing	integrated glass fiber (Ø0.6 mm) and metal-silicone (T) sheathing	integrated glass fiber (Ø1.0 mm) and brass spiral hose chrome-plated (M)
Weight		90 g	160 g	280 g	48 g	100 g
Compatibility		compatible with all CLS and CFO controllers				
Special features		All variants are also available with different sheath, length 0.3 ... 10 m, vibration protection, IP protection, suitable for drag chains and available for temperature ranges up to 2,000 °C. In combination with a pressure-tight feed-through, a stainless steel sheath and T250° bonding, vacuum applications down to 10^{-5} mbar are also possible.				

[1] These values apply over the entire operating range. Except the middle of the distance between the transmitter and receiver

Accessories
optoCONTROL CLS1000

Art. no.	Model	Description
11245551	PC1000-2-T	Signal / supply cable, 2 m, 5-pin unshielded
11245300	PC1000-5-T	Signal / supply cable, 5 m, 5-pin unshielded
11245301	PC1000-10-T	Signal / supply cable, 10 m, 5-pin unshielded
11245302	PC1000-2	Signal / supply cable, 2 m, 4-pin unshielded
11245303	PC1000-5	Signal / supply cable, 5 m, 4-pin unshielded
11245304	PC1000-10	Signal / supply cable, 10 m, 4-pole unshielded
11245305	PC1000/90-2	Signal / supply cable, 2 m, 4-pole unshielded, 90° outlet
11245306	PC1000/90-5	Signal / supply cable, 5 m, 4-pin unshielded, 90° outlet
2420096	PS2031	Plug-in power supply universal 100 ... 240 V / 24 V / 1 A
2420062	PS2020	PS2020 Power supply unit 24 V
10811916	Pressure-tight feedthrough for vacuum	

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