







# More Precision

opto**CONTROL** CLS1000 // Fiber optic sensor for industrial applications



# Reflex sensor for the distinction of materials and parts

## optoCONTROL CFS4

-  Detection range up to 430 mm
-  Options with light band and 90° output
-  Simple and space saving mounting
-  Models with and without external thread



In the case of the reflex sensor, the infrared light emitted by the controller is guided to the detecting object via the sensor's fiber-optic light guides and reflected there. Both diffuse and directly reflected components are present in the back-reflected infrared light. The reflected light components of the object to be detected are received by the same sensor and transmitted back to the controller via the optical fiber for evaluation.

The high-quality reflective sensor, in combination with the performance of the CLS1000 series, delivers even more precise detection of a wide variety of objects and structures. The sensors are available with a wide range of detection 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.

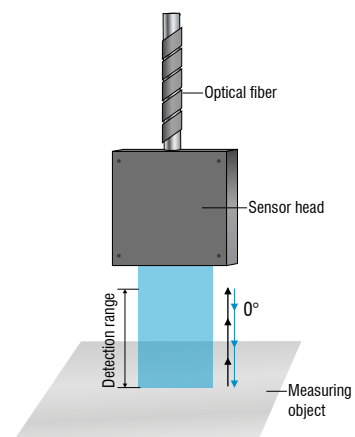
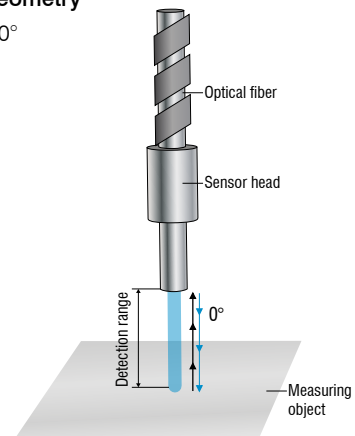
**Without external thread:** Cylindrical sensor heads are suitable for space-saving mounting. This is achieved by simply setting a grub screw.

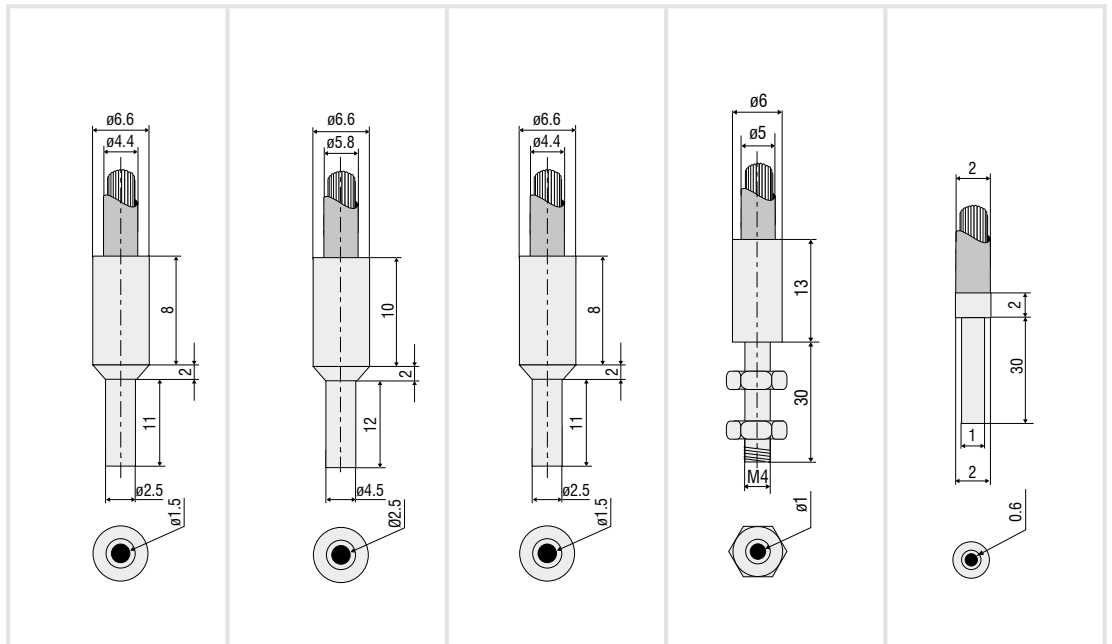
**90° deflection:** If the installation depth and the mounting space are very limited, sensors with integrated 90° deflection are the optimal solution.

**Flat sensor head:** Thanks to the light band, flat sensor heads are best suited for detecting larger objects. These can be located anywhere in the light band.

### Measurement geometry

Reflex sensor 0°:0°





Model	CFS4-A11	CFS4-A20	CFS4-A30	CFS4-C10-M	CFS4-B11-P	
Article number	10810487	10810351	10810584	10810383	10810254	
Sensor type	Reflex sensor					
Detection range <sup>1)</sup>	Start	1 mm	1 mm	1 mm	1 mm	
	End	132 mm	394 mm	430 mm	50 mm	19 mm
Measurement geometry	0°:0°					
Connection	Screwable fiber optic cable via FA socket (M18x1), standard length 1.2 m					
	max. bending radius 13.2 mm	max. bending radius 17.4 mm	max. bending radius 22.5 mm	max. bending radius 13.2 mm	max. bending radius 6 mm	
Mounting	FA (M18x1)					
Temperature range	Storage	Sensor head: -10 ... +80 °C; Fiber optic cable: -60 ... +180 °C			Sensor head: -10 ... +80 °C	Sensor head: -10 ... +80 °C;
	Operation				Fiber optic cable: -40 ... +300 °C	Fiber optic cable: -20 ... +80 °C
Humidity (non-condensing)	20 ... 80 % r.H.			20 ... 60 % r.H.	20 ... 80 % r.H.	
Protection class (DIN EN 60529)	IP64			IP40	IP64	
Sensor head	Stainless steel					
Material	Optical fiber	integrated glass fiber (Ø1.5 mm) and metal-silicone sheathing (T)		integrated glass fiber (Ø3.0 mm) and metal-silicone (T) sheathing	integrated glass fiber (Ø1.0 mm) and metal (M) sheathing	integrated glass fiber (Ø0.6 mm) and PVC plastic (P) sheathing
		Weight	50 g	90 g	114 g	60 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 <sup>-5</sup> mbar are also possible.					

<sup>1)</sup> Detection range refers to polished stainless steel.

## 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