



# More Precision

**optoCONTROL CLS1000** // Fiber optic sensor for industrial applications



# Controller optoCONTROL CLS1000

-  Large detection and operating ranges
-  Numerous teach-in modes for fast sensor adjustment
-  Detection of the finest structures
-  Extremely high resistance to ambient light up to 50,000 lx
-  LCD display for quick and easy configuration
-  Extremely robust and compact
-  Switchable NPN; PNP; PP



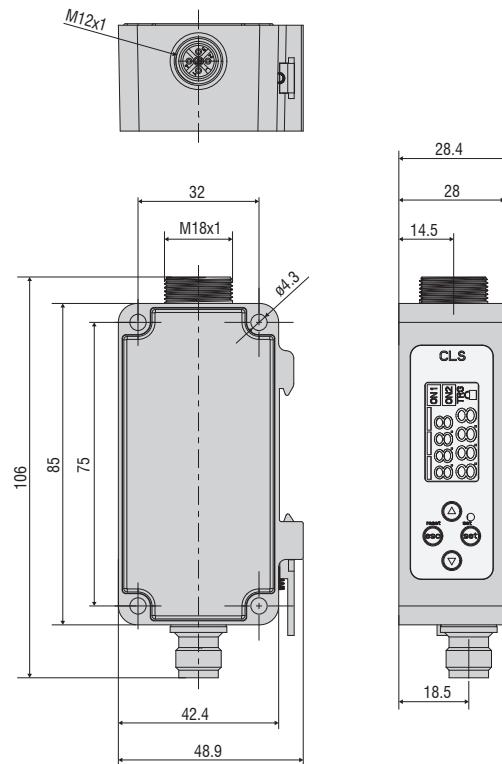
## Reliable presence detection and position control

The fiber optic sensor comprises a CFS sensor and a CLS1000 controller. The wide detection and operating ranges of up to 2000 mm make the fiber optic sensor ideal for the detection of components even at great distances.

The optoCONTROL CLS1000 optoelectronic fiber optic sensor is suitable for use in automation thanks to its variable switching outputs. The fiber optic sensor is used, for example, in position control and for position and presence detection.

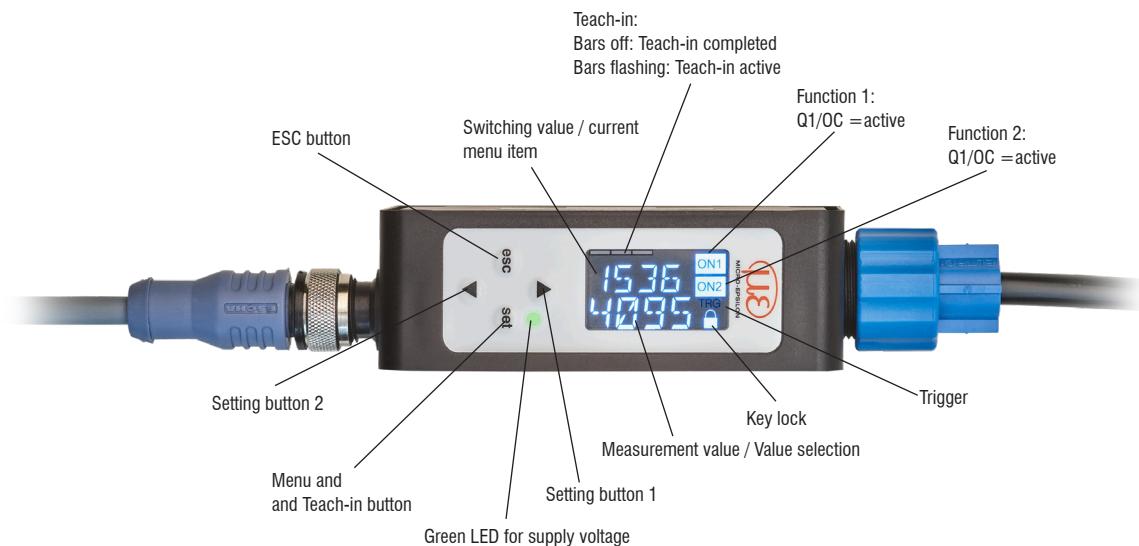
The CLS1000 controller is available in five different versions: CLS1000-QN with antivalence function (normally open/normally closed), CLS1000-2Q with two switching outputs, CLS1000-OC with optocoupler, CLS1000-AU with voltage output and CLS1000-AI with current output. Each model is available in NPN, PNP or push-pull versions, each with or without trigger.

Due to the high resistance to ambient light and the possibility to adapt the controller in OEM applications, the CLS1000 can be used in almost all environments, regardless of high temperatures or confined installation spaces.

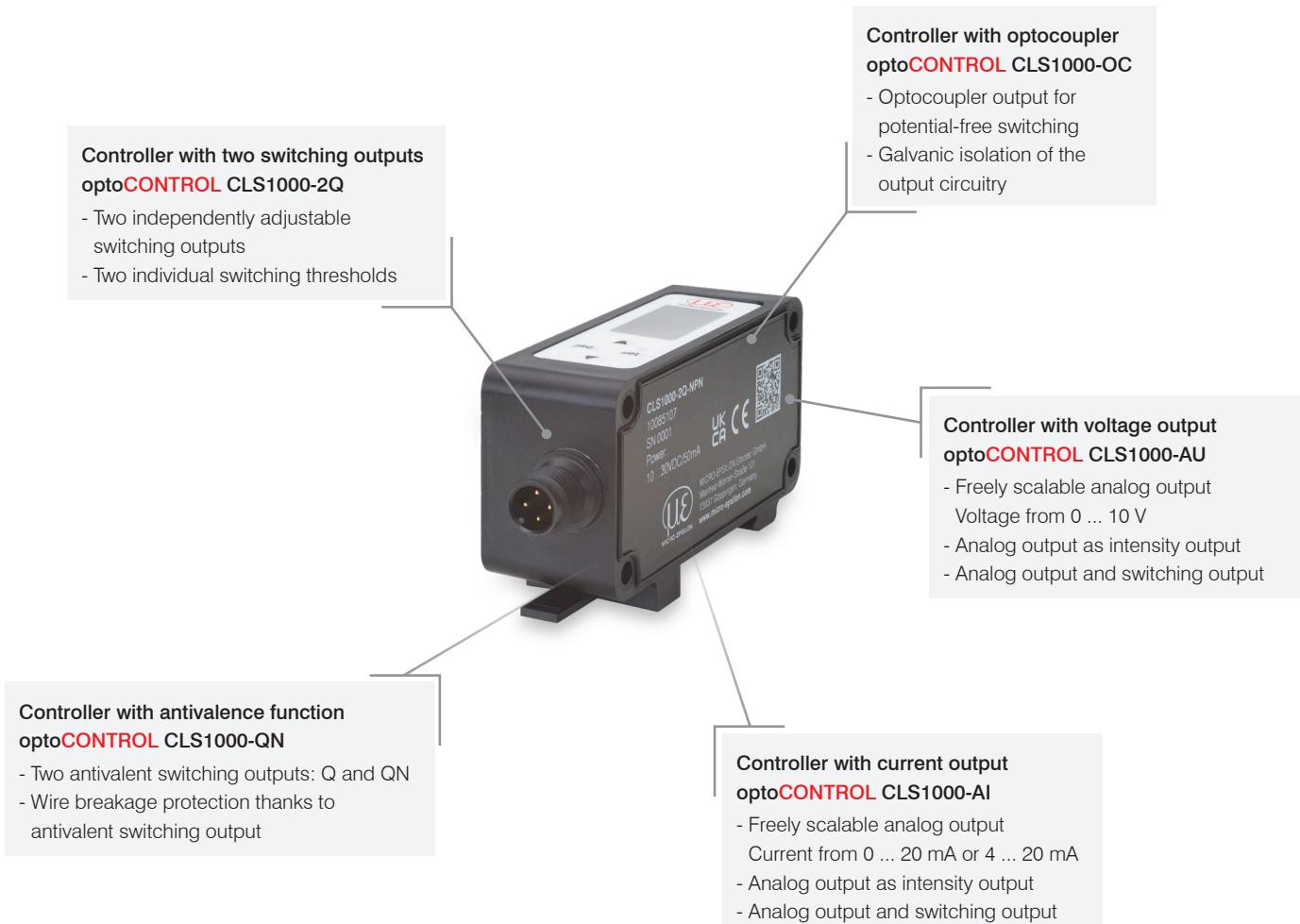


(dimensions in mm, not to scale)

## LCD Display / Control Panel



## Controller variants



# Controller with antivalence function optoCONTROL CLS1000-QN

Two antivalent switching outputs  
Q and QN

Switchable NPN; PNP; PP

Safe operation in case of wire breakage  
due to antivalent switching output



Model	CLS1000-QN-NPN	CLS1000-QN-PNP	CLS1000-QN-PP	CLS1000-QN-NPN-T	CLS1000-QN-PNP-T	CLS1000-QN-PP-T			
Article number	10085101	10085102	10085103	10085104	10085105	10085106			
Operating range	max. 2000 mm (depending on transmission sensor)								
Detection range	max. 1200 mm (depending on reflex sensor)								
Response time	100 $\mu$ s								
Switching frequency	2.5 kHz (depending on pulse/pause ratio)								
Temperature stability	$\leq 0.1\%$ FSO / K								
Light source	infrared LED 870 nm								
Permissible ambient light	50,000 lx								
Supply voltage <sup>1)</sup>	12 ... 30 VDC								
Max. current consumption	50 mA								
Switching output	switchable NPN; PNP; PP	2x NPN normally open/ normally closed (Q/QN; NO/NC)	2x PNP normally open/ normally closed (Q/QN; NO/NC)	2x PP normally open/ normally closed (Q/QN; NO/NC)	2x NPN normally open/ normally closed (Q/QN; NO/NC)	2x PNP normally open/ normally closed (Q/QN; NO/NC)			
Switching type	light/dark switching (switchable)								
Signal input	-								
Connection	Optical	FA socket M18x1 for screwable optical fiber (length 0.3 m ... 15 m, min. bending radius 18 mm)							
Connection	Electrical	4-pin M12 socket for power supply and signals (connection cable see accessories)			5-pin M12 socket for power supply and signals (connection cable see accessories)				
Mounting	DIN rail mounting, mounting adapter, (see accessories), mounting holes								
Temperature range	Storage	-10 ... +70 °C							
Temperature range	Operation	-5 ... +55 °C							
Shock (DIN EN 60068-2-27)	20 g / 11 ms in 3 axes, two directions and 1000 shocks each								
Vibration (DIN EN 60068-2-6)	15 g / 10 ... 1000 Hz in 3 axes, 10 cycles each								
Protection class (DIN EN 60529)	IP67								
Material	Plastic housing (polycarbonate)								
Weight	200 g								
Compatibility	with all CFS sensors (FAR, FAD, FAZ and FAS)								
Control and indicator elements	Parameterization/operation via membrane keypad and LCD display on controller; LED for power on								
Special features	up to 7 teach-in modes; adjustable switching output functions on-delayed and off-delayed as well as pulse output; adjustable hysteresis 2 ... 25 %			up to 7 teach-in modes; adjustable switching output functions on-delay and off-delay as well as pulse output; adjustable hysteresis 2 ... 25%; variety of trigger types					

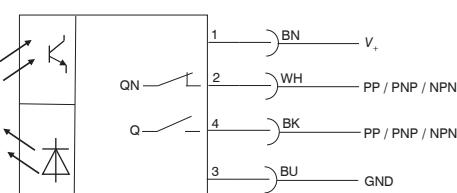
FSO = Full Scale Output

The specified data apply for a consistent room temperature of 22 °C, sensor is continuously in operation, open signal outputs.

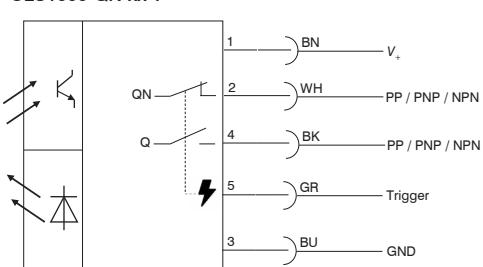
<sup>1)</sup> Residual ripple  $\leq 10\%$

## Connection diagram

CLS1000-QN-xx



CLS1000-QN-xx-T



# Connection options & Accessories optoCONTROL CLS1000

CLS1000-AU / CLS1000-AI

Controller



CLS1000-OC / CLS1000-2Q / CLS1000-QN



## Connection possibilities and accessories

**Supply voltage connection**  
PS2020 / PS2031



**Interface module for Ethernet connection**  
IF1032/ETH



**Control / machine**  
Analog output (current/voltage)  
Switching output



## Connection possibilities and accessories

**Supply voltage connection**  
PS2020 / PS2031



**Interface module for Ethernet connection**  
IF1032/ETH

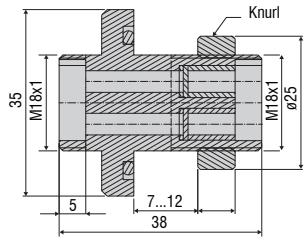
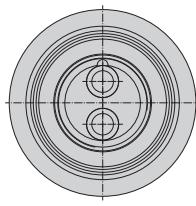


**Control / machine**  
Switching output  
(antivoltage, optocoupler, or two switching outputs)



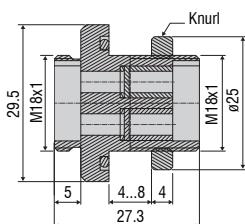
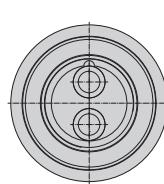
## Connection cables & Accessories

Art. no.	Model	Description	
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-pin unshielded	
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	
11245305	PC1000/90-2	Signal / supply cable, 2 m, 4-pin unshielded, 90° outlet	
11245306	PC1000/90-5	Signal / supply cable, 5 m, 4-pin unshielded, 90° outlet	
2420096	PS2031	Power supply unit universal 100 ... 240 V / 24 V / 1 A	
2420062	PS2020	PS2020 Power supply 24 V	
2420066	IF1032/ETH	Interface module for Ethernet connection	
10811916	Pressure-tight feedthrough for vacuum 7-12 mm	10812254	Pressure-tight feedthrough for vacuum 4-8 mm



Aluminum (anodized black)

Tested up to a pressure difference of 10 bar



Aluminum (anodized black)

Tested up to a pressure difference of 10 bar

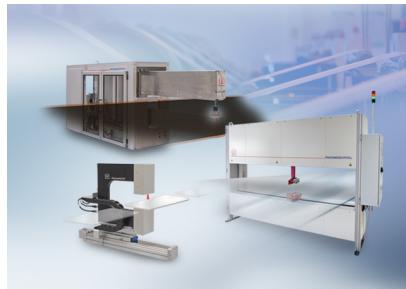
## Sensors and Systems from Micro-Epsilon



Sensors and systems for displacement, distance and position



Sensors and measurement devices for non-contact temperature measurement



Measuring and inspection systems for metal strips, plastics and rubber



Optical micrometers and fiber optics, measuring and test amplifiers



Color recognition sensors, LED analyzers and inline color spectrometers



3D measurement technology for dimensional testing and surface inspection