



# More Precision

opto**CONTROL** CLS-K // Fiber optic sensors





	Response time $\leq 120\mu\text{s}$
	Switching frequency $\leq 4\text{kHz}$
	Analog  Analog output 0.1 - 5VDC

#### Features:

- Scanning distance up to 180mm\*
- Range of up to 2m\*
  - \* depending on the fiber bundle diameter
- Switching output: NPN, PNP, optocoupler and relay
- Adjustable drop-out delay 5-100ms (optional)

#### Applications:

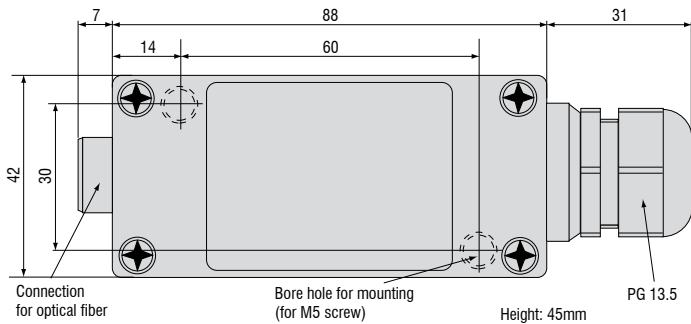
- Powerful infrared emitter
- Test & measurement tasks
- Position recognition of small parts
- Position and assembly monitoring on automatic assembly machines and feeding systems
- Presence monitoring
- Checking length and diameter

#### Advantages:

- Precise and reliable object detection
- Low drift due to transmission monitoring, making it particularly suitable for measuring tasks
- High switching frequency and short response time
- Sensor monitoring via analog signal
- Stable long-term behavior by monitoring and regulating the emission of the transmitter diode
- High light power in the non-visible infrared range

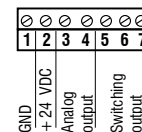
Type CLS-K	10	11	20	30	31	40	50	51				
Order No.	10010023	10010024	10040025	10040027	10020028	10022468	10040029	10040030	10040031			
Operating voltage VDC	10-30	10-30	24	10-30	10-30	10-30	24	10-30	10-30			
Residual ripple					≤ 10%							
Current consumption					~ 50mA							
Switching delay					≤ 500ms							
Response time					≤ 120μs							
Temperature drift					≤ (-)0.5% /K							
Reproducibility					≤ 1% with Δ $\theta$ = 2K							
Switching state					LED display red and green							
Operating mode	light and dark switch output				switchable light/dark switching							
Sensitivity					adjustable via 10-level potentiometer P1							
Range switching					1:100 (Short range : Long range)							
Hysteresis					4% of the measuring range							
Protection class					IP65 (with mounted optical fiber)							
Operating temperature					0°C to +50°C							
Storage temperature					-25°C to +70°C							
Housing material	Makrolon® 8035/UL94V1, transparent cover, black lower part											
Weight, Dimensions	approx. 215g / 135g, 125x42x45mm											
Switching output (*short-circuit protected)	Transistor* 2x NPN O.C.		Relays 1x changeover contact		Optocoupler*		PNP*		Relays 1x changeover contact	Optocoupler*	PNP*	
Switching voltage	30VDC		0.01-250VAC 0.01-220VDC		30VDC		30VDC		0.01-250VAC 0.01-220VDC		30VDC	30VDC
Switching current	5-100mA		50μA-2 A		5-100mA		5-100mA		50μA-2 A		5-100mA	5-100mA
Switching power			5 μW-60W 125VA						5 μW-60W 125VA			
Max. switching frequency	4kHz		60Hz		4kHz		4kHz		60Hz		4kHz	4kHz
Saturation voltage	≤ 2.0V				≤ 2.0V		≤ 2.0V				≤ 2.0V	≤ 2.0V
Pulse stretching 5-100ms									adjustable with potentiometer P2			
Analog output	0.1-5VDC, output resistance 1kOhm											
Type of connection	2m cable		screw clamps 1.5mm <sup>2</sup>			screw clamps 1.5mm <sup>2</sup>		connector		screw clamps 1.5mm <sup>2</sup>		
Connection cable					for PC1200-x plug							

**Dimensions** in mm, not to scale



**Connections:**

**Terminal block**



**Output:**  
 CLS-K-11: NPN O.C.  
 CLS-K-20/40: Relay  
 CLS-K-30/50: Optocoupler O.C./O.E  
 CLS-K-31/51: PNP  
 All light/dark switches versions

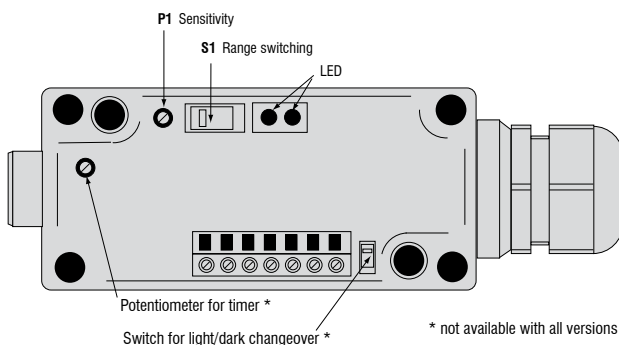
**Connection cable CLS-K-10**

brown — GND  
 pink — +24 VDC  
 green — Analog output +  
 yellow — Analog GND output  
 grey — NPN-Switching output \*1  
 white — NPN-Switching output \*2

**Output:**  
 CLS-K-10: NPN O.C.

\*1 dark switching  
 \*2 light switching

**Control and display interface**



\* not available with all versions

## High performance sensors made by Micro-Epsilon



Sensors and systems for displacement and position



Sensors and measurement devices for non-contact temperature measurement



2D/3D profile sensors (laser scanner)



Optical micrometers, fiber optic sensors and fiber optics



Color recognition sensors, LED analyzers and color online spectrometer



Measurement and inspection systems