






More Precision

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





	Response time $\leq 120\mu\text{s}$
	Switching frequency $\leq 4\text{kHz}$
	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, relay (depending on the version)
- Adjustable drop-out delay 5-100ms (optional)

Applications:

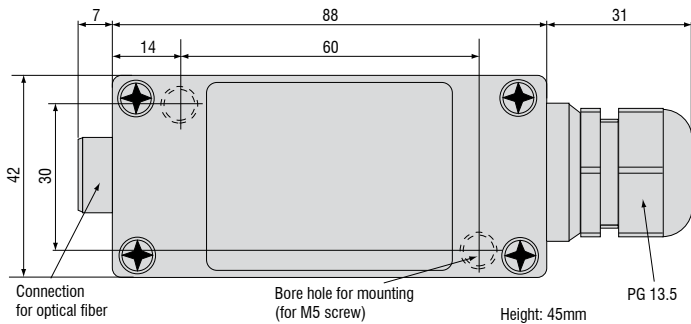
- Test & measurement tasks
- Position recognition of small parts
- Position and assembly monitoring on automatic assembly machines and feeding systems
- Presence monitoring
- Checking length and diameter

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

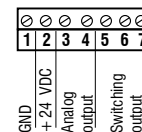
Type CLS-K	10	11	20	30	31	40	50	51
Order No.	10010023	10010024	10040025	10040027	10020028	10040029	10040030	10040031
Operating voltage VDC	10-30	10-30	24	10-30	10-30	24	10-30	10-30
Residual ripple				≤10%				
Current consumption				~ 50mA				
Switching delay				≤ 500ms				
Response time				≤ 120μs				
Temperature drift				≤ (-)0.5% /K				
Reproducibility				≤ 1% with Δθ = 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*	
Switching voltage	30VDC		0.01-250VAC 0.01-220VDC		30VDC		30VDC	
Switching current	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	
Saturation voltage	≤ 2.0V				≤ 2.0V		≤ 2.0V	
Pulse stretching 5-100ms				adjustable with potentiometer P2				
Analog output				0.1-5 VDC, output resistance 1kOhm				
Type of connection	2m cable		screw clamps 1.5mm ²		connector		screw clamps 1.5mm ²	

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

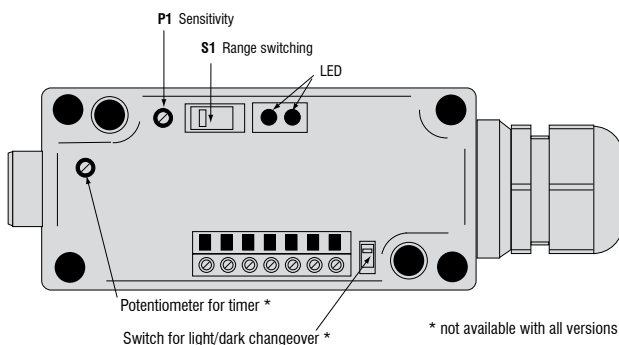
Connection cable

- 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



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