Optical special sensors
Contrast sensors

Dimensions	**65 x 65 x 36mm**
Measuring range	typ. 1 ... 500 mm

- ✓ **Large selection of light guides (reflected light and transmitted light operation) as well as attachment**
- ✓ **optics Super-bright white light LED**
- ✓ **High scan frequency Grayscale detection**
- ✓ **Insensitive to ambient light Brightness**
- ✓ **readjustment switchable Averaging**
- ✓ **switchable**
- ✓ **TEACH possibilities via PC or PLC 2**
- ✓ **digital inputs**
- ✓ **2 digital outputs**
- ✓ **1 analog output (0V ... +10V and 4 ... 20mA) switchable Switching state**
- ✓ **display via 2 yellow LEDs**
- ✓ **RS232 interface (USB or Ethernet adapter optional)**
- ✓ **Parameterizable via Windows® software, Scope function**
- ✓ **Temperature compensated**
- ✓ **Automatic threshold tracking can be switched on Switching**
- ✓ **thresholds can be parameterized relative or absolute**
- ✓ **Different switching threshold functions (window, upper / lower threshold)**

Distinction of the slightest differences in brightness

Description

The **OK630180** is a contrast sensor that can reproduce even the smallest differences in brightness almost in real time. Analog and digital signals are available at the output. The use of photoconductive light guides makes it possible to control both in transmitted and reflected light mode.

A large selection of light guide variants is available. In conjunction with the respective attachment optics, spot sizes starting from a diameter of 0.2mm at an object distance of 10 mm up to object distances of 500mm and spot sizes of 50 mm can be achieved in reflected light mode on the one hand, and transmitter-receiver distances of up to 1,000mm can be bridged in reflected light mode on the other.

The sensor can be conveniently parameterized with the aid of the Windows® PC software. Via the parameters set in the software integrated scope function, the signal course can be tracked virtually in real time.

The sensor can control both passive and active objects. The analog output of the sensor provides information about the current contrast value, while via the digital output it can be checked whether the respective object is within the permissible tolerance range.

With a scan frequency of up to 200kHz, even high-speed applications can be implemented.

Application examples Position control

- ▶ of color marks Control of brightness
- ▶ deviations
- ▶ Intensity control of self-illuminators (LEDs, displays, ...)

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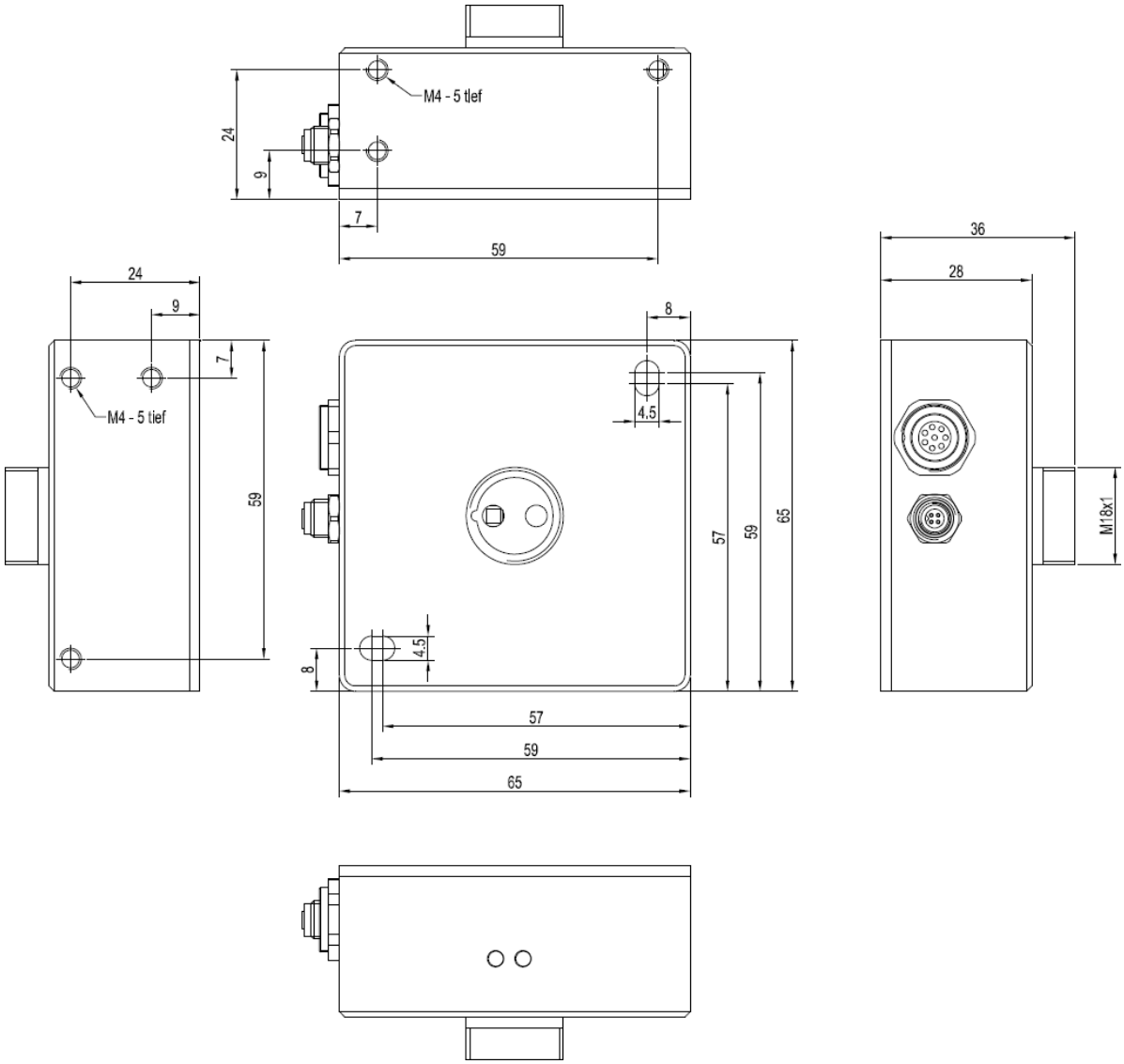
DIMENSIONS



MOVEMENT				
Connection to PLC			Connection to PC	
Pin	**Color**	**Occupancy**	**Pin**	**Occupancy**
1	white	GND (0V)	1	+24VDC (+Ub, OUT)
2	brown	+24VDC (±10%)	2	GND (0V)
3	green	IN0 (Digital 0: 0 ... 1V, Digital 1: +Ub - 10%)	3	RxD
4	yellow	IN1 (Digital 0: 0 ... 1V, Digital 1: +Ub - 10%)	4	TxD
5	gray	OUT0 (Digital 0: Type 0 ... 1V, Digital 1: Type +Ub - 10%)		
6	pink	OUT1 (Digital 0: Type 0 ... 1V, Digital 1: Type +Ub - 10%)		
7	blue	ANALOG (0 ... +10V)		
8	red	ANALOG (4 ... 20mA)/ ANALOG ((0 ... +10V) n.c.		

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Article no.	**OK630180**
Variant	**Contrast sensor**

TECHNICAL DATA

Operating voltage Current consumption (without load)	24V DC ±10% < 160mA
Output current (max. load)	100mA
Short circuit proof	+
Reverse polarity protected	+
Display (signal)	2x LED yellow
Input signal	IN0 and IN1 (Pin 3 and 4): digital (0V/+24V)
Output signal	OUT0 and OUT1 (pin 5 and 6): digital (0V/+Ub), npn-, pnp-capable (light, dark switching switchable)
Output signal (analog)	ANALOG voltage 0 ... +10V (Pin 7) / ANALOG current 4 ... 20mA
Interface	RS232
Switch-off delay	0 ... 100ms (adjustable via PC software)
Averaging	Max. 32768 values (adjustable via PC software)
Measurement frequency	AC operation: max. 85kHz DC operation: max. 200kHz
Switching frequency	typ. 60kHz
Analog bandwidth	typ. 180kHz (-3dB)
transmitting element	Super bright white light LED
Measuring range	with reflex light guide: typ. 1... 500mm distance (depending on photoconductive and attachment optics) with transmitted light photoconductive typ. 10... 500mm distance (depending on photoconductive and attachment optics)
Receiving element	Photodiode
Receiver-Gain switching	8 levels (AMP1 ... AMP8), adjustable via PC software
External light shielding	max. 5000 Lux
Light spot size	round: typ. Ø 0.2 ... Ø 20mm rectangular: typ. 3 x 0.5 mm ... 6 x 1mm depending on photoconductive and attachment optics
Repeatability	2 digits with 12-bit A/D conversion (corresponds to 1/2048)
Dimensions	65 x 65 x 36 mm
Material (housing)	Aluminum, black anodized
Protection class (EN 60529)	IP64
Connection	Connection to PLC: 8-pin flange socket (Binder series 712) Connection to PC: 4-pin flange socket (Binder series 707)
Temperature (operation)	-20 ... +55°C
Temperature (storage)	-20 ... +85°C
EMC test according to	DIN EN 60947-5-2

CONNECTION ACCESSORIES

Connection to PLC **VK207B45** (2m, straight) 	Connection with ... PC via RS232 **VK207F44** (2m, straight) 
Connection with ... PC via USB **VK207U44** (2m, straight) 	Connection with ... PC via Ethernet **VKSI0297** 

Safety note: In case of direct impact on personal safety, the application of these products is prohibited.