

Model Number

DKE21-9,5/110/124

Print mark contrast sensor
with M12, 5-pin metal connector

Features

- Diffuse mode sensor for recording any print mark
- Dynamic TEACH-IN: automatic switching threshold adaptation with one key pressure
- Optical system exchangeable by 90°
- 30 µs response time, suitable for extremely rapid scanning processes
- 3 emitter colors: green, red and blue
- Stainless steel housing

Product information

The contrast sensor series DK10, DK2X, DKE2X and DK3X have an extreme robust and IP67 tight industrial standard housing with eight M5 metal reinforced inserts for sensor mounting. The lenses are made of high grade glass. All sensors offer different light spot shapes and orientations and have powerful push-pull outputs (NPN/PNP/push-pull).

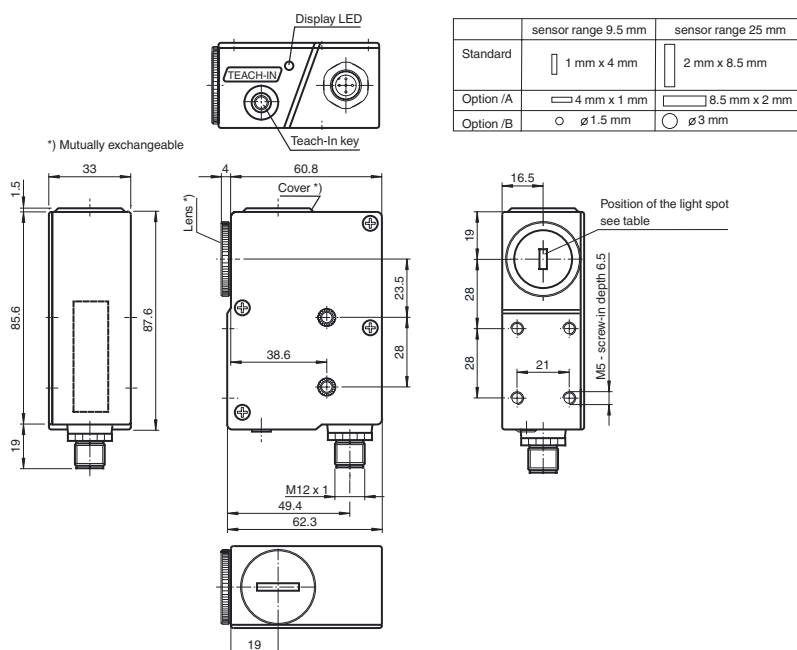
The DK10 sensor series offers laser and LED light sources, a manual sensitivity adjustment and high sensing ranges up to 800 mm.

The DK20/DK21/DKE2X standard contrast sensor series offers a very good contrast recognition and are available in extreme robust stainless-steel housings (DKE).

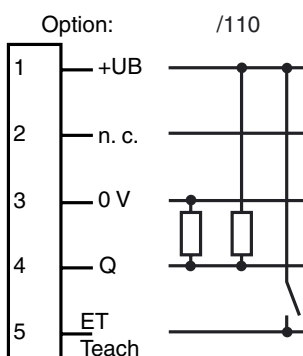
The DK31/DK34/DK35 sensor series is designed for cutting edge contrast recognition at highest sensitivity level.

The series DK20/DK34 offer a static Teach-In, the DK21/DKE21/DK31/DK35 series offer a dynamic Teach-In.

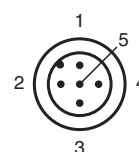
Dimensions



Electrical connection



Pinout



Technical data**General specifications**

Sensor range	9.5 mm +/-3 mm
Light source	LED
Light type	Visible green/red/blue, modulated light
Light spot representation	rectangular 1 mm x 4 mm
Angle deviation	max. $\pm 3^\circ$
Ambient light limit	
Continuous light	7000 Lux
Teach-In	Dynamic Teach-In

Functional safety related parameters

MTTF _d	650 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	0 %

Indicators/operating means

Function indicator	LED yellow; switching operation: lights up if print mark is detected Alarm display: flashing quickly, if no safe operation is possible
Control elements	Teach-In key

Electrical specifications

Operating voltage	U _B	10 ... 30 V DC
Ripple		10 %
No-load supply current	I ₀	≤ 60 mA

Input

Function input	Teach-In input
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Output

Signal output	Push-pull output, short-circuit protected, reverse polarity protected
Switching voltage	PNP: $\geq (+U_B - 2.5 \text{ V})$, NPN: $\leq 1.5 \text{ V}$
Switching current	max. 200 mA
Switching frequency	f 16.5 kHz
Response time	30 μs

Ambient conditions

Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Storage temperature	-20 ... 75 °C (-4 ... 167 °F)

Mechanical specifications

Protection degree	IP67
Connection	M12 x 1 connector, 5-pin
Material	
Housing	Stainless steel
Optical face	glass
Mass	530 g

Compliance with standards and directives

Standard conformity	
Product standard	EN 60947-5-2:2007 IEC 60947-5-2:2007
Shock and impact resistance	IEC / EN 60068. half-sine, 40 g in each X, Y and Z directions
Vibration resistance	IEC / EN 60068-2-6. Sinus. 10 -150 Hz, 5 g in each X, Y and Z directions

Approvals and certificates

CCC approval CCC approval / marking not required for products rated $\leq 36 \text{ V}$

Accessories**V15-G-5M-PVC**

Female cordset, M12, 5-pin, PVC cable

V15-W-5M-PVC

Female cordset, M12, 5-pin, PVC cable

OMH-DK

Right-Angled Mounting Bracket

OMH-DK-1

Flat Mounting Bracket

Other suitable accessories can be found at www.pepperl-fuchs.com

Relative received light strength