

1) Optical axis, 2) Display and control panel, 3) rotatable 270°



### Basic features

Approval/Conformity	cULus CE UKCA WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Contrast sensor
Series	21M
Style	Square Connection can be rotated

### Electrical connection

Connection	Connector, M12x1-Male, 4-pin
Contact, surface protection	Gold plated
Polarity reversal protected	yes
Protection against device mix-ups	yes
Short-circuit protection	yes

### Display/Operation

Adjuster	button
Display	Output function- LED yellow Error - LED red+green, alt. Stability - LED green
Setting	Teach-in mode normal/fine Time function on/off Light-on/dark-on Contrast (switching point)

**Electrical data**

Input function	Key disable on/off Teach Contrast (switching point)
Load capacitance max. at Ue	1 µF
No-load current Io max. at Ue	30 mA
Operating voltage Ub	10...30 VDC
Protection class	II
Rated operating current Ie	100 mA
Rated operating voltage Ue DC	24 V
Ready delay tv max.	200 ms
Residual current Ir max.	10 µA
Ripple max. (% of Ue)	15 %
Switching frequency	5000 Hz
Turn-off delay toff max.	0.1 ms
Turn-on delay ton max.	0.1 ms
Utilization category	DC -13
Voltage drop Ud max. at Ie	2 V

**Environmental conditions**

Ambient temperature	-10...55 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 gn, 11 ms, 3x6
EN 60068-2-6, Vibration	10...55 Hz, amplitude 1 mm, 3x30 min
IP rating	IP67

**Functional safety**

MTTF (40 °C)	334 a
--------------	-------

**Remarks**

Do not press key using a pointed tool.  
 Order accessories separately.  
 For additional information, refer to user's guide.  
 Reference object (target): Color bar card, 100 x 100, contrast yellow/white and blue/black, lateral approach of color bars.  
 The sensor is functional again after the overload has been eliminated.  
 Only for applications per NFPA 79 (machines with a supply voltage of maximum 600 V). Use an R/C (CYJV2) cable with suitable properties for attaching the device.  
 For more information about MTTF and B10d see MTTF / B10d Certificate

Indication of the MTTF- / B10d value does not represent a binding composition and/or life expectancy assurance; these are simply experiential values with no warranty implications. These declared values also do not extend the expiration period for defect claims or affect it in any way.

**Interface**

Duration of time function	20 ms
Switching output	PNP normally open/normally closed (NO/NC)

**Material**

Housing material	Zinc, Die casting, Powder coated Aluminium
Material sensing surface	Glass
Surface protection	Powder coated

**Mechanical data**

Dimension	12 x 50 x 42.5 mm
Mounting part	Screw M4

**Optical features**

Ambient light max.	10000 Lux
Beam characteristic	Focused
Light spot size	Ø 3.5 mm at 19 mm
Light type	White light
Principle of optical operation	Diffuse sensor, focused
Special optical feature	Coaxial Optics
Switching function, optical	Light/dark switching
Wave length	400...700 nm

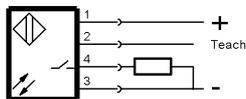
**Range/Distance**

Range	17...21 mm
-------	------------

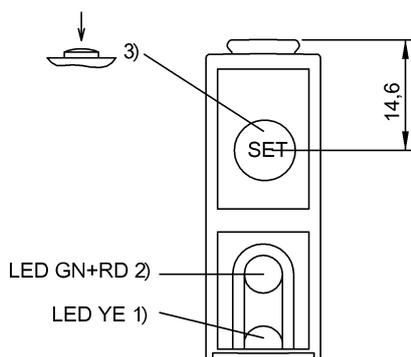
**Connector Drawings**



## Wiring Diagrams (Schematic)



## Help Views



- 1) Output function
- 2) stability/error
- 3) Sn, light/dark, T on/off

## Opto Symbols

