

1) Display and control panel, 2) rotatable 270°, 3) Cover cap, removable, 4) standard lens, removable, 5) Light exit standard, 6) Light exit optional



IND. CONT. EQ  
 1TD4  
 for use in the secondary of  
 a class 2 source of supply



### Basic features

<b>Additional features</b>	Optics convertible (light exit 0°/ 90°), horizontal light spot
<b>Approval/Conformity</b>	CE cULus WEEE
<b>Basic standard</b>	IEC 60947-5-2
<b>Principle of operation</b>	Contrast sensor
<b>Series</b>	67M
<b>Style</b>	Square Connection can be rotated

### Display/Operation

<b>Adjuster</b>	Key (3x)
<b>Display</b>	Output function- LED yellow Ready - LED green Error - LED green, flashing Short circuit - LED green, flashing PNP/NPN - LED orange, flashing Switchpoint - bar display Buttons active: LED orange Time function active: LED orange
<b>Setting</b>	Contrast (switching point) Switching output PNP/NPN Factory setting (Reset) Light-on/dark-on Time function on/off Teach stat./man. Button lock off

### Electrical connection

Connection	Connector, M12x1-Male
Polarity reversal protected	yes
Protection against device mix-ups	yes
Short-circuit protection	yes

### Electrical data

Input function	Same function as SET button
Load resistance RL min. (Analog V)	2.2 kOhm
No-load current Io max. at Ue	85 mA
Operating voltage Ub	10...30 VDC
Protection class	II
Rated insulation voltage Ui	75 V DC
Rated operating current Ie	100 mA
Rated operating voltage Ue DC	24 V
Ready delay tv max.	300 ms
Ripple max. (% of Ue)	8 %
Switching frequency	20000 Hz
Turn-off delay toff max.	0.025 ms
Turn-on delay ton max.	0.025 ms
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 Half-sinus, 30 gn, 6 ms, 3x10000
EN 60068-2-6, Vibration	10...55 Hz, amplitude 1 mm, 3x2 h
Protection degree	IP67

### Remarks

Do not press key using a pointed tool.  
 Order accessories separately.  
 For additional information, refer to user's guide.  
 The sensor is functional again after the overload has been eliminated.  
 Reference object (target) for analog output: gray card, 100 x 100, 90 % remission, axial approach.  
 Reference object (target): Color bar card, 100 x 100, contrast yellow/white and blue/black, lateral approach of color bars, approach direction vertical to light spot length.

### Material

Housing material	Aluminum, Die casting, Painted
Material sensing surface	Glass
Surface protection	Painted

### Mechanical data

Dimension	32 x 64 x 82 mm
Mounting	Screw M5

### Optical features

Ambient light max.	5000 Lux
Beam characteristic	Focused
LED group per IEC 62471	Exempt Group
Light spot size	5 x 1.5 mm at 9 mm
Light type	blue light/green light/red light
Principle of optical operation	Diffuse sensor, focused
Switching function, optical	Light/dark switching
Wave length	465 nm/520 nm/630 nm

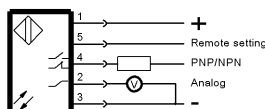
### Output/Interface

Analog output	Analog, voltage 1...5.5 V
Duration of time function	20 ms
Switching output	PNP/NPN normally open/normally closed (NO/NC)
Time function	switch-off delay

### Range/Distance

Range	6...12 mm
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## Wiring Diagrams



## Opto Symbols

