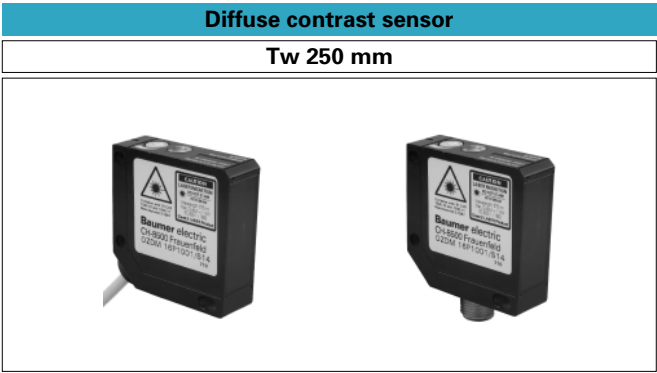


Diffuse laser  
sensors  
Series 16



PNP	light operate
	dark operate
	light/dark operate
NPN	light operate
	dark operate
	light/dark operate

cable
OZDM 16P1001
OZDM 16P3001
OZDM 16N1001

connector
OZDM 16P1001/S14
OZDM 16P3001/S14
OZDM 16N1001/S14

technical data
optimum operating range <sup>1)</sup>
sensing distance adjustable Tw
beam focal point
repeatability (lateral approach)
min. detectable contrast <sup>2)</sup>
output indicator
power indicator
light source
wave length
laser class (IEC 825-1/1996) for Europe
laser class (21CFR 1040.10) for USA
voltage supply range
max. supply current average value / peak value
max. switching current
voltage drop
response time / release time
sensitivity adjustment (digital output)
short circuit protection
reverse polarity protection
temperature range
housing material
protection class
<sup>1)</sup> within this range the received signal is insensitive to small changes in the object distance
<sup>2)</sup> at constant temperature, at 40 mm sensing distance and between 0 and 100% diffuse reflection

40...80 mm
250 mm
80 mm
< 0,1 mm at focal point
$\Delta \leq 8\%$ diffuse reflection (grey)
yellow LED
green LED
pulsed red laser diode
675 nm
1
2
12 - 30 VDC
60 mA / 65 mA
200 mA
$\leq 1,8$ VDC
$\leq 0,05$ ms
14 turn pot
yes
yes
-10...+50 °C
die-cast zinc
IP 67

40...80 mm
250 mm
80 mm
< 0,1 mm at focal point
$\Delta \leq 8\%$ diffuse reflection (grey)
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IP 67

Analog PNP	light operate

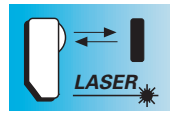
OZDM 16P1901

OZDM 16P1901/S14

technical data complementary
analog output
reaction time (10 to 90% of signal change)
analog signal versus diffuse reflection factor:
analog output range
linear range
repeatability (at constant temperature) <sup>1)</sup>
temperature drift reference room temperature
<sup>1)</sup> within linear range and at 40 mm sensing distance

4 - 20 mA
$\leq 0,1$ ms
0% diffuse reflection up to mirror reflection
0...100% <sup>2)</sup> corresponds to typ. 4,5 - 14,5 mA <sup>3)</sup>
$\leq \pm 5\%$ FS (linear range)
$\leq \pm 3\%$ FS (linear range)
$\leq \pm 5\%$ FS (linear range) within full temp.range
<sup>2)</sup> diffuse reflection factor (measured with red light of 675 nm wave length)
<sup>3)</sup> within optimum operating range

4 - 20 mA
$\leq 0,1$ ms
0% diffuse reflection up to mirror reflection
0...100% <sup>2)</sup> corresponds to typ. 4,5 - 14,5 mA <sup>3)</sup>
$\leq \pm 5\%$ FS (linear range)
$\leq \pm 3\%$ FS (linear range)
$\leq \pm 5\%$ FS (linear range) within full temp.range
<sup>2)</sup> diffuse reflection factor (measured with red light of 675 nm wave length)
<sup>3)</sup> within optimum operating range



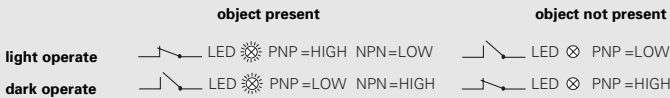
## Series 16

- Diffuse laser contrast sensor
- Accurate detection of printing marks, object edges etc.
- Digital switching and analog current output
- Adjustable sensitivity
- Visible red light for alignment aid

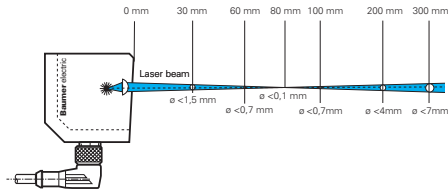
### connection diagram



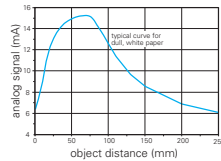
### output state



### beam diameter chart



### signal chart OZDM 16P1901



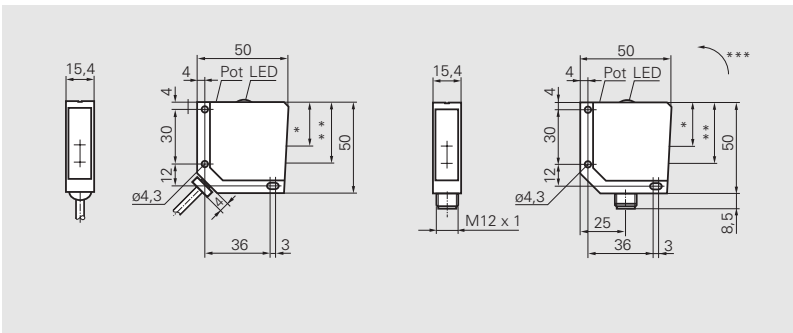
### connectors

ES 14		
ES 24		
ESW 33AH0200	4 pin	2 m PUR halogen-free
ESG 34AH0200	4 pin	2 m PUR halogen-free

### accessory

mounting bracket	113917
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for details see accessories section



- \* emitter axis 19 mm
- \*\* receiver axis 25,5 mm
- \*\*\* When detecting shiny objects it is recommended to tilt the sensor 5° to 20° from perpendicular to the sensing plane.

Tw adjustable  
up to 250 mm

Diffuse  
contrast  
sensor

Visible red  
light

Class 1  
LASER Product

IEC 825-1/1996

**CAUTION**  
LASER RADIATION  
DO NOT STARE  
INTO BEAM  
LASERDIODE  
Wavelength: 630 - 680 nm  
Max. Output: 1 mW  
Class 2 LASER Product

21CFR 1040.10