Diffuse sensors Series 16

Intensity difference	Background suppression
Tw 400 mm	**Tw 450 mm**
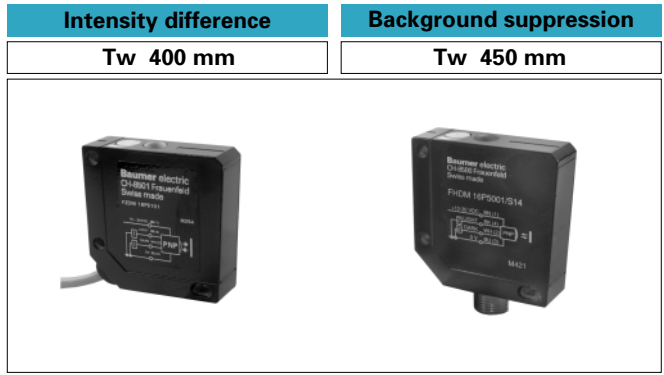
	cable	connector	cable	connector
PNP light operate				
dark operate				
light/dark operate	**FZDM 16P5101**	**FZDM 16P5101/S14**	**FHDM 16P5001**	**FHDM 16P5001/S14**
NPN light operate				
dark operate				
light/dark operate	**FZDM 16N5101**	**FZDM 16N5101/S14**	**FHDM 16N5001**	**FHDM 16N5001/S14**

technical data		
sensing distance adjustable Tw	0...400 mm	20...450 mm
sensing range Tb at Tw = 20 mm	-	5...20 mm
sensing range Tb at Tw = 450 mm	-	20...450 mm
characteristics	relative receiving signal	sensing distance diagram
output indicator	yellow LED	yellow LED
alignment aid / soiled lens indicator	flashing LED	-
light source / wave length	pulsed infrared LED / 880 nm	pulsed red LED / 660 nm
voltage supply range	10 - 30 VDC	10 - 30 VDC
max. supply current average value / peak value	29 mA / 41 mA	29 mA / 41 mA
max. switching current	200 mA	200 mA
voltage drop	≤ 1,8 VDC	≤ 1,8 VDC
response time / release time	≤ 1 ms / ≤ 1 ms	≤ 1 ms / ≤ 1 ms
sensitivity adjustment	270° pot	5 turn mechanical adjustment
short circuit protection	yes	yes
reverse polarity protection	yes	yes
temperature range	-25...+65 °C	-25...+65 °C
housing material	die-cast zinc	die-cast zinc
protection class	IP 67	IP 67

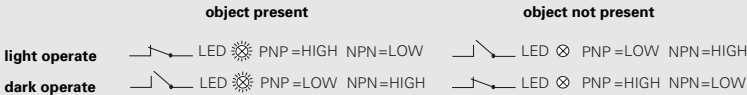| **Options**				
alarm output light	PNP	**FZDM 16P1401**	**FZDM 16P1401/S14**	
alarm output light	NPN	**FZDM 16N1401**	**FZDM 16N1401/S14**	
alarm output dark	PNP	**FZDM 16P3401**	**FZDM 16P3401/S14**	
alarm output dark	NPN	**FZDM 16N3401**	**FZDM 16N3401/S14**	
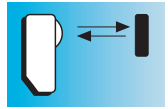
- **Fully adjustable sensing distance**
- **Background suppression by triangulation**
- **Simple installation with visible red beam**
- **Rugged metal housing**
- **Optimized for dark and shiny surfaces; insensitive against shiny backgrounds, enhanced immunity against ambient light conditions**
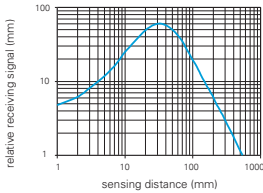
connection diagrams

PNP

BN (1) — +Vs
WH (2) — dark operate
BK (4) — light operate
BU (3) — 0 V

NPN

BN (1) — +Vs
WH (2) — dark operate
BK (4) — light operate
BU (3) — 0 V
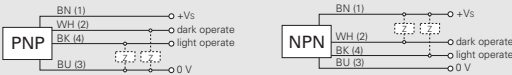
Version with alarm output must be ordered either dark operate or light operate

output states

	object present	object not present
light operate	LED ☼ PNP = HIGH NPN = LOW	LED ⊗ PNP = LOW NPN = HIGH
dark operate	LED ☼ PNP = LOW NPN = HIGH	LED ⊗ PNP = HIGH NPN = LOW

relative receiving signal

relative receiving signal (mm) vs sensing distance (mm)

sensing distance diagram

sensing distance reduction (mm) vs sensing distance on white (mm)

black 6%
grey 18%

connectors

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

for details see accessories section

accessory

mounting bracket   113917

Tw adjustable up to 450 mm

Background suppression

Visible red light

Metal housing
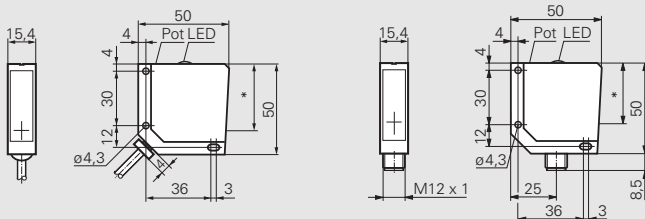
* emitter axis
  Intensity difference
  26,5 mm
  Background suppression
  34 mm