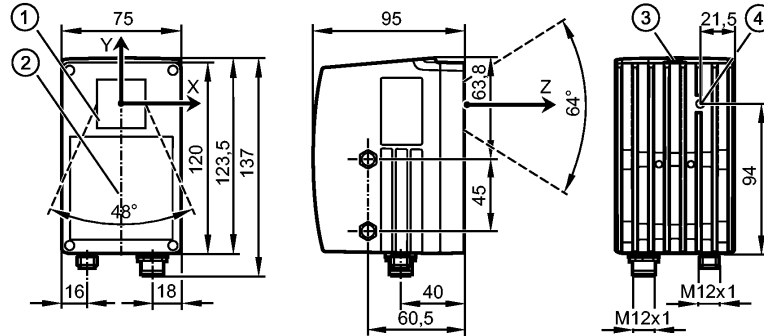


**O3D222**

O3DIRP3KG/E1/E2/GM/W/64

Object recognition

**Please note the wiring of the sensor and the sockets (see data sheet) as for 8-pole sockets the core colours are not standardised.**



- 1: lens
- 2: Illumination unit
- 3: Display / buttons / LEDs
- 4: Focus setting

Made in Germany



**Product characteristics**

PMD 3D sensor	
Connector	
Device interfaces: digital input/output; Ethernet	
Angle of aperture 64° x 48° (vertical x horizontal)	
Image resolution: 64 x 48 pixels	
PMD 3D ToF (Time of Flight) sensor for object recognition	

**Electrical data**

Operating voltage	[V]	20.4...28.8 V DC; to EN 61131-2
Current consumption	[mA]	< 2000; peak current pulsed; typ. mean value 600
Power consumption	[W]	15
Protection class		III (PELV)
Type of sensor		PMD 3D ToF chip

**Inputs**

Circuit	max. 2 (configurable) / 24 V PNP to IEC 61131-2 type 1
Trigger	external; 24 V PNP to EN 61131-2 type 1

**Outputs**

Output	max. 2 (configurable) / 24 V PNP to EN 61131-2 type 2	
Max. current load per output	[mA]	100
Voltage drop	[V]	1
Short-circuit protection		pulsed
Overload protection		yes
<b>Analogue output</b>		
current output	[mA]	4...20
- Max. load	[Ω]	300
voltage output	[V]	0...10
- Min. load	[Ω]	10000



**O3D222**

O3DIRP3KG/E1/E2/GM/W/64

**Object recognition**

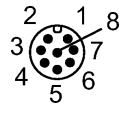
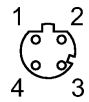
Range		
Operating distance	[mm]	200...5500; Range referred to white paper 200 x 200 mm, 90 % remission
Resolution pixels	[pixel]	64 x 48 *)
Angle of aperture	[°]	64 x 48
Image repetition rate	[Hz]	0.1...20 **)
Software / programming		
Parameter setting options		via 2 pushbuttons and 10-segment display or via PC / notebook with operating software
Interfaces		
parameter setting interface		Ethernet TCP/IP: 10BaseT / 100Base-TX
Process interface		Digital inputs/outputs and analogue output; Ethernet TCP/IP; EtherNet IP
IP address		192.168.0.69
subnet mask		255.255.255.0 (Class C)
gateway IP address		192.168.0.201
MAC address		see type label
Environment		
Ambient temperature	[°C]	-10...50
Storage temperature	[°C]	-40...85
Protection		IP 67
Immunity to extraneous light		< 8000 lx; on the object
Tests / approvals		
EMC	EN 61000-6-4	radiation of interference / industrial environments
	EN 61000-6-2	noise immunity / industrial environments
Shock resistance	DIN EN 60068-2-27:	30 g (11 ms)
Vibration resistance	DIN EN 60068-2-6:	2 g (10...150 Hz)
Elektrische Sicherheit	EN61131-2; electrical supply only via PELV circuits	
Photobiological safety	Infrared LED (850nm) Exempt group (to DIN EN 62471)	
Mechanical data		
Housing materials	housing: diecast aluminium; window: PMMA; display window: PC	
Displays / operating elements		
Display	4 x LED yellow 4 x LED green 4-digit 10-segment display	

**O3D222**

O3DIRP3KG/E1/E2/GM/W/64

Object recognition

**Electrical connection**

Connection	M12 connector
<b>Wiring</b> 	Process interface M12 Digital input/output 1: U+ 2: Trigger 3: 0 V 4: OUT 1 analogue output 5: Ready 6: OUT 2 7: IN 1 Switching input 1 8: IN 2 Switching input 2
	Parameter setting connection M12 Ethernet 1: TD + 2: RD + 3: TD - 4: RD -

**Accessories**

Accessories (included)	Protective covers
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**Remarks**

Remarks	*) additional edge pixels available 64x50 **) depending on the configuration
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Pack quantity	[piece]	1
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**Other data**

**Field of view size**

Measuring range / distance [mm]	Length [mm]	Width [mm]	Minimum object surface [mm]
200	250	170	7 x 7
1000	1260	870	37 x 37
2000	2520	1740	73 x 73
3000	3780	2610	109 x 109
4000	5040	3480	145 x 145
5500	6930	4790	200 x 200

For reliable detection the object must be detected by at least 2x2 pixels

**Repeatability of the distance measurement of an individual pixel**

Measuring range / distance [mm]	Typical repeatability (6 Sigma) of the measured distance values on grey objects (18 % reflectivity) [mm]	Typical accuracy [mm]
200...1000	± 40	± 10
1000...2000	± 130	± 20
2000...3000	± 290	± 30
3000...4000	± 540	± 40
4000...5500	± 1133	± 55

**Temperature drift**

Typ. temperature drift of -10...50 °C [mm]	± 15
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**Setting parameters**

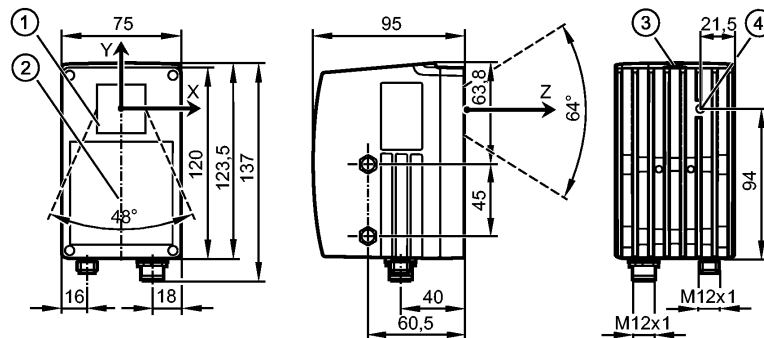
Parameter	Setting range	Factory setting
Program	volume; minimum distance; maximum distance; average distance; minimum level; maximum level; average level	average distance
Exposure time [ms]	7...36	22
Dynamics	normal; high	high
background <sup>***</sup> )	bordered; open-ended	bordered
filter	median, average value	median
Result averaging	1...50	1
Trigger mode	continuous positive edge positive edge	continuous
Idle time [ms]	0...10000	141

<sup>\*\*\*</sup>) setting "open-ended": objects in the range 5.5 ... 45 m are suppressed  
 setting "bordered": all objects must be within the operating distance 0.2 ... 5.5 m

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**Please note the wiring of the sensor and the sockets (see data sheet) as for 8-pole sockets the core colours are not standardised.**

**Preliminary version**



- 1: lens
- 2: Illumination unit
- 3: Display / buttons / LEDs
- 4: Focus setting

Made in Germany



**Product characteristics**

PMD 3D sensor

Connector

Device interfaces: digital input/output; Ethernet

Angle of aperture 64° x 48° (vertical x horizontal)

Image resolution: 64 x 48 pixels



**O3D222**

O3DIRP3KG/E1/E2/GM/W/64

**Object recognition**

PMD 3D ToF (Time of Flight) sensor for object recognition

Electrical data		
Operating voltage	[V]	20.4...28.8 V DC; to EN 61131-2
Current consumption	[mA]	< 2000; peak current pulsed; typ. mean value 600
Power consumption	[W]	15
Protection class		III (PELV)
Type of sensor		PMD 3D ToF chip
Inputs		
Circuit		max. 2 (configurable) / 24 V PNP to IEC 61131-2 type 1
Trigger		external; 24 V PNP to EN 61131-2 type 1
Outputs		
Output		max. 2 (configurable) / 24 V PNP to EN 61131-2 type 2
Max. current load per output	[mA]	100
Voltage drop	[V]	1
Short-circuit protection		pulsed
Overload protection		yes
Analogue output		
current output	[mA]	4...20
- Max. load	[Ω]	300
voltage output	[V]	0...10
- Min. load	[Ω]	10000
Range		
Operating distance	[mm]	200...5500; Range referred to white paper 200 x 200 mm, 90 % remission
Resolution pixels	[pixel]	64 x 48 *)
Angle of aperture	[°]	64 x 48
Image repetition rate	[Hz]	0.1...20 **)
Software / programming		
Parameter setting options		via 2 pushbuttons and 10-segment display or via PC / notebook with operating software
Interfaces		
parameter setting interface		Ethernet TCP/IP: 10BaseT / 100Base-TX
Process interface		Digital inputs/outputs and analogue output; Ethernet TCP/IP; EtherNet IP
IP address		192.168.0.69
subnet mask		255.255.255.0 (Class C)
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Ambient temperature	[°C]	-10...50
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**O3D222**

O3DIRP3KG/E1/E2/GM/W/64

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Vibration resistance	DIN EN 60068-2-6:	2 g (10...150 Hz)
Elektrische Sicherheit	EN61131-2; electrical supply only via PELV circuits	
Photobiological safety	Infrared LED (850nm) Exempt group (to DIN EN 62471)	

**Mechanical data**

Housing materials	housing: diecast aluminium; window: PMMA; display window: PC
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**Displays / operating elements**

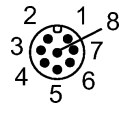
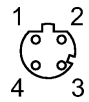
Display	4 x LED yellow 4 x LED green 4-digit 10-segment display
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**O3D222**

O3DIRP3KG/E1/E2/GM/W/64

Object recognition

**Electrical connection**

Connection	M12 connector
<p><b>Wiring</b></p> 	<p>Process interface M12 Digital input/output</p> <p>1: U+ 2: Trigger 3: 0 V 4: OUT 1 analogue output 5: Ready 6: OUT 2 7: IN 1 Switching input 1 8: IN 2 Switching input 2</p>
	<p>Parameter setting connection M12 Ethernet</p> <p>1: TD + 2: RD + 3: TD - 4: RD -</p>

**Accessories**

Accessories (included)	Protective covers
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**Remarks**

Remarks	<p>*) additional edge pixels available 64x50 **) depending on the configuration</p>
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Pack quantity	[piece]	1
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**Other data**

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background <sup>***</sup> )	bordered; open-ended	bordered
filter	median, average value	median
Result averaging	1...50	1
Trigger mode	continuous positive edge positive edge	continuous
Idle time [ms]	0...10000	141

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