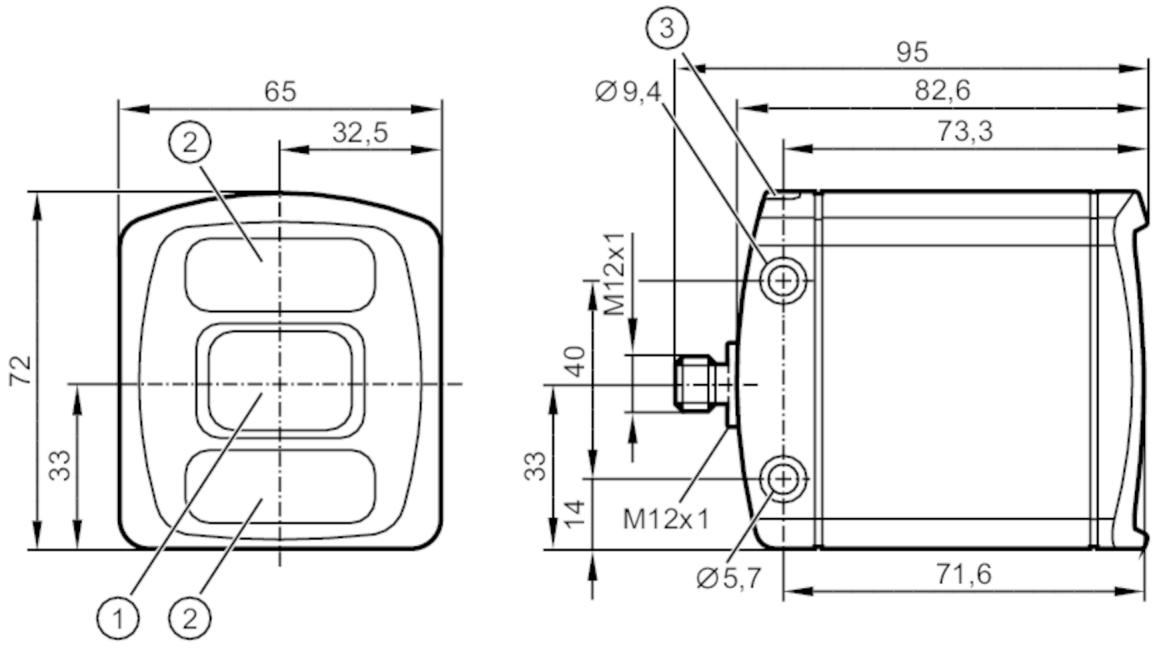
O3DC02

3D sensor

O3DIRDKG/E1/GM/S/60/ODS



1 lens
2 Illumination unit
3 LED 2-colour yellow/green

Product characteristics		
Type of light		infrared light
Image resolution 3D	[px]	176 x 132
Angle of aperture 3D	[°]	60 x 45; (nominal value without lens distortion correction)
Image repetition frequency 3D	[Hz]	10
Application		
Application		obstacle detection
Electrical data		
Operating voltage	[V]	20.4...28.8 DC; (EN 61131-2)
Current consumption	[mA]	420; (maximum mean value: < 1600 mA)
Max. current consumption	[mA]	2400; (peak current pulsed)
Power consumption	[W]	10
Protection class		III
Type of light		infrared light
Image sensor		PMD 3D ToF-Chip
Internal lighting		yes; (infrared: 850 nm invisible radiation LED)
Switch-on peak current	[mA]	2400
Detection zone		
Operating distance	[mm]	200...4000
Image resolution 3D	[px]	176 x 132

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Angle of aperture 3D	[°]	60 x 45; (nominal value without lens distortion correction)	
Image repetition frequency 3D	[Hz]	10	
Interfaces			
Communication interface		Ethernet	
Ethernet			
Number of Ethernet interfaces		1	
Transmission standard		10Base-T; 100Base-TX	
Transmission rate		10; 100	
Protocol		TCP/IP	
Factory settings		IP address: 192.168.0.69	
		subnet mask: 255.255.255.0	
		gateway IP address: 192.168.0.201	
Operating conditions			
Ambient temperature	[°C]	-10...50	
Storage temperature	[°C]	-40...85	
Protection		IP 65; IP 67	
Max. immunity to extraneous light	[klx]	8	
Tests / approvals			
EMC		DIN EN 61000-6-4	radiation of interference / industrial environments
		DIN EN 61000-6-2	immunity / industrial environments
Shock resistance		DIN EN 60068-2-27	50 g / (11 ms) not repetitive
		DIN EN 60068-2-27	40 g / (6 ms) repetitive
Vibration resistance		DIN EN 60068-2-6	2 g / (10...150 Hz)
		DIN EN 60068-2-64	2.3 g RMS / (10...500 Hz)
Photobiological safety		exempt group;	(DIN EN 62471)
Electrical protection		DIN EN 61010-2-201	electrical supply only via PELV circuits
Mechanical data			
Weight	[g]	770	
Dimensions	[mm]	72 x 65 x 82.6	
Materials		housing: diecast aluminium; front pane: Gorilla Glass; function display: PA	
Displays / operating elements			
Display		function	2 x LED, green Ethernet operation
Accessories			
Items supplied		spring washers	
Remarks			
Pack quantity		1 pcs.	

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Electrical connection - Ethernet

Connector: 1 x M12; coding: D

1	TD +
2	RD +
3	TD -
4	RD -

Electrical connection - Process connection

Connector: 1 x M12; coding: A

1	U+
2	nc
3	GND
4	nc
5	nc
6	nc
7	nc
8	nc

Other data

Field of view size

measuring range / distance [m]	Length [m]	Breite [m]
0.50	0.4	0.56
1.00	0.8	1.13
2.00	1.6	2.26
3.00	2.4	3.39
4.00	3.2	4.52

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input/output parameters

input parameters	Information on own movement of the automated guided vehicle (AGV)
	NTP-server for time synchronisation
output parameters	distance
	occupancy grid ± 5m in x and y direction of the vehicle coordinates
	occupation state of the warning zones

setting parameters

Parameter	Setting range
warning zones	three independent warning zones for obstacle detection
extrinsic calibration	calibration of the camera position in vehicle coordinates
each warning zone is defined via a convex 2D polygon with max. 6 corners and a global height	

obstacle detection

example obstacles	latency [ms]	
	typical value	typical value
	object already in the field of view of the camera	initial detection [ms]
forklift fork (lateral, 25cm above ground)	200	700
box or container (surface facing the sensor > 200x200mm)	200	700
bicycle (lateral & front)	200	700

The indications on the detection time of the obstacles are based on the following assumptions

speed of the automated guided vehicle	< 1.7 m/s
medium reflectivity of the objects	
minimum height of the objects 15cm above ground	