



Industrial imaging



Photoelectric 3D level measurement and point level detection

3D sensors



Continuous measurement of uneven surfaces

Determines min, max or mean values

Teaching of different tank shapes

Interfering structures are suppressed

Non-contact detection of opaque media for levels of up to 10 m



Flexible configuration

The system detects solid, opaque solids and bulk materials in tanks, silos or hoppers with levels of up to 10 m. The O3D reliably detects the load height in machinery for mechanical handling, e.g. belts, and the loading of pallets. The sensor determines the level via a defined background and transmits the process value via analogue output or digitally and noise immune via the Ethernet process interface. Alternatively, the O3D may be used as a point level switch.

The measuring segment of the sensor can be adapted to the shape of the respective tank. Agitators and other attachments can be suppressed via "exclusion regions". Various container shapes, such as hoppers, silos or even inclined belts can be recognised by the sensor.

This means that for bulk materials the average level is indicated, even if there are conical heaps or funnelling.



Type of sensor	Material housing	Material front pane / LED window	Protection rating, protection class	Angle of aperture [°]	Max. field of view size [m]	Order no.
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PMD 3D sensors · Type O3D · M12 connector

PMD 3D ToF chip	Aluminium	Gorilla glass / polyamide	IP 65 / IP 67, III	40 x 30	2.61 x 3.47	O3D300
PMD 3D ToF chip	Aluminium	Gorilla glass / polyamide	IP 65 / IP 67, III	60 x 45	3.75 x 5.00	O3D302
PMD 3D ToF chip	Stainless steel	Polycarbonate / polyamide	IP 65, IP 67, IP 69K / III	40 x 30	2.61 x 3.47	O3D310
PMD 3D ToF chip	Stainless steel	Polycarbonate / polyamide	IP 65, IP 67, IP 69K / III	60 x 45	3.75 x 5.00	O3D312

Technical data Level measurement and point level detection

Typ. level	[m]	0.3...6
Operating distance max.	[m]	10
Sampling rate	[Hz]	5

Accessories

Type	Description	Order no.
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Mounting accessories

	Mounting set for O3D	E3D301
	Cooling element	E3D302
	Double cooling element	E3D304
	Heat conductor	E3D303

Connection technology

	Ethernet, cross-over patch cable, 2 m, PVC cable, M12 / RJ45	E11898
	Ethernet, jumper cables, 2 m, PVC cable, M12 / M12	E21138
	Socket, M12, 2 m black, PUR cable, 8 poles	E11950

Further technical data

Operating voltage	[V DC]	20.4...28.8
Current consumption	[mA]	< 2400 peak current pulsed; typ. mean value 420
Current rating (per switching output)	[mA]	100
Short-circuit protection, pulsed		•
Overload protection		•
Ambient temperature	[°C]	-10...50
Real chip resolution		25,000 / 100,000
Resulting resolution		176 x 132 pixels
Function display	LED	2 x yellow, 2 x green
Illumination		850 nm, infrared
Ambient light	[lux]	max. 10,000 (indoor)
Trigger		external; 24 V PNP / NPN according to IEC 61131-2 type 3
Switching inputs		2 (configurable), 24 V PNP/NPN according to IEC 61131-2 type 3
Switching outputs digital		3 (configurable), 24 V PNP/NPN, according to IEC 61131-2
Switching outputs analogue		1 (can be configured as current output 4...20 mA or voltage output 0...10 V)
Parameter setting interface Ethernet		10 Base-T / 100 Base-TX
Possible parameter settings		via PC / notebook
Dimensions (H, W, D)	[mm]	72 x 65 x 85