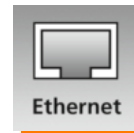


# Completeness monitoring for the packaging technology



## Innovative operating concepts for intuitive handling

- Different handling units can be taught
- Reliable detection of underfill or overfill
- Automatic position tracking
- Colour-independent and extraneous-light resistant due to time-of-flight technology (PMD).
- Switching outputs and Ethernet process data interface



### Incomplete shipments – never again

If a pallet with only one incomplete handling unit reaches the customer, he often returns all goods. This does not only lead to dissatisfaction but also to additional costs. Completeness monitoring provides the remedy. Often individual sensors are installed above each individual handling unit position. This is, however, not very flexible if the handling unit type or size changes. Then changes become necessary. If colour or texture of the handling units change, conventional sensors reach their limits.

All these problems are unknown to completeness monitoring on the basis of 3D sensors: The 3D sensor looks at the handling unit from above and compares it with the models taught in by the user. It signals any deviation via a switching output.

Continuous exchange with users and extensive handling tests have led to extraordinarily simple operation and integrability of the sensor.



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.
<b>PMD 3D sensors · Type O3D · M12 connector</b>						
PMD 3D ToF chip	Aluminium	Gorilla glass / polyamide	IP 65 / IP 67, III	40 x 30	2.61 x 3.47	<b>O3D300</b>
PMD 3D ToF chip	Aluminium	Gorilla glass / polyamide	IP 65 / IP 67, III	60 x 45	3.75 x 5.00	<b>O3D302</b>
PMD 3D ToF chip	Stainless steel	Polycarbonate / polyamide	IP 66 / IP 67, III	40 x 30	2.61 x 3.47	<b>O3D310</b>
PMD 3D ToF chip	Stainless steel	Polycarbonate / polyamide	IP 66 / IP 67, III	60 x 45	3.75 x 5.00	<b>O3D312</b>

Technical data Completeness monitoring		
Operating distance	[m]	0.3...5
Max. handling unit size		64 objects
Minimum size of objects	[mm]	
Object speed: 0...0.2 m/s		25
Object speed: > 0.2 m/s		45
Sampling rate / switching frequency	[Hz]	10
The image repetition frequency is reduced by using the position tracking function		

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		3 (configurable), 24 V PNP/NPN, according to IEC 61131-2
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

### Accessories

Type	Description	Order no.
<b>Mounting accessories</b>		
	Mounting set for O3D	<b>E3D301</b>
	Cooling element	<b>E3D302</b>
	Double cooling element	<b>E3D304</b>
	Heat conductor	<b>E3D303</b>
<b>Connection technology</b>		
	Ethernet, cross-over patch cable, 2 m, PVC cable, M12 / RJ45	<b>E11898</b>
	Ethernet jumper, 2 m, PVC cable, M12 / M12	<b>E21138</b>
	Socket, M12, 2 m black, PUR cable, 8 poles	<b>E11950</b>