



Industrial imaging

3D sensors for mobile machines



Camera systems for mobile machines



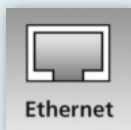
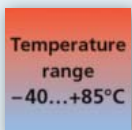
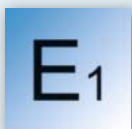
Support for system integrators with data output via Ethernet UDP

Patented pmd time-of-flight technology for quick distance detection

Optimised for reliable outdoor use

Robust design with IP 67 and IP 69K

Angle of aperture up to 95°



Mobile 3D sensors O3M

The 3D detection of scenes and objects, already a standard on the factory floor, is ready for mobile machines. Apart from new possibilities for vehicle automation (AGV, automatic guided vehicles) this results in new assistance functions for automation tasks.

Besides position data at pixel level the respective distance to the sensor system or an adjustable reference point (world coordinate system) is provided. Thanks to the permanent output of the entire 3D information via Ethernet UDP optimum conditions for customer-specific application solutions are provided to system integrators.



Type of sensor	Resolution pixels [pixel]	Angle of aperture horizontal x vertical [°]	Illumination	Max. sampling rate [Hz]	Order no.
PMD 3D sensor · Type O3M · M12 connector					
PMD 3D chip	64 x 16	70 x 23	ext. illumination required (O3M950)	25/33/50	O3M150
PMD 3D chip	64 x 16	95 x 32	ext. illumination required (O3M960)	25/33/50	O3M160

Functions and advantages

Powerful 3D time-of-flight measurement (ToF)

The principle of these 3D sensors is based on ifm's patented and award-winning pm� technology. It was specifically designed for outdoor use and difficult ambient light situations. Interference such as sunlight or materials with different reflective characteristics which occurs in the area of mobile machines does not influence the repeatability of the measured data.

Powerful electronics

The integrated 2 x 32-bit processor architecture ensures a rapid and reliable calculation of the distance image to be output with up to 50 fps. The complete electronics of the mobile 3D sensor is optimised and adapted to the demands and requirements of mobile machines.

Besides shock and vibration resistance self-diagnostic functions from the sensor to the IR system illumination unit are of course also available.

High system uptime

The system has various features to ensure uninterrupted operation. They include, among others, soiling indication as well as different status information which can be fetched from CAN.

System parameter setting and monitoring

The parameter setting of the system and live monitoring of the 3D data are carried out via the easy-to-use ifm vision wizard for Windows.

Communication interfaces







The mobile 3D sensors feature a fast Ethernet interface (100 Mbit) as well as a CAN interface. The data output of the complete 3D information is carried out via Ethernet UDP and can be processed using a process unit at the customer's end. For this version the CAN interface is only intended for parameter setting and status output.

Further technical data O3M150, O3M160	
Housing material	diecast aluminium
Device connection	M12 connector
Protection rating, protection class	IP 67 / IP 69K, III
Operating voltage [V DC]	9...32
Current consumption sensor [mA]	< 400
Current consumption system illumination unit [A]	< 5
Ambient temperature [°C]	-40...85
Interfaces	1x CAN, 1 x fast Ethernet
Supported CAN protocols	CANopen, SAE J 1939
Standards and tests (extract)	CE, E1 (UN-ECE R10)

Accessories

Description	Order no.
IR system illumination unit (850 nm) for mobile 3D sensors, angle of aperture 70 x 23	O3M950
IR system illumination unit (850 nm) for mobile 3D sensors, angle of aperture 95 x 32	O3M960
CAN/RS232 USB interface CANfox	EC2112
Adapter cable set for CANfox	EC2114
Operating software for vision sensors	E3D300
U-shaped holder, suitable for sensor or illumination unit	E3M100

Connection technology

Type	Description	Order no.
	MCI cable, connection sensor / system illumination unit, 1 m	E3M121
	MCI cable, connection sensor / system illumination unit, 2 m	E3M122
	M12 socket, voltage supply system illumination unit, 2 m, PUR cable, 4 poles	E3M131
	M12 socket, voltage supply system illumination unit, 10 m, PUR cable, 4 poles	E3M133
	Ethernet, cross-over patch cable, 2 m, PVC cable, M12 / RJ45	E11898
	Ethernet, cross-over patch cable, 10 m, PVC cable, M12 / RJ45	E12204