



Industrial imaging

Automated collision warning for mobile machines



Camera systems for mobile machines

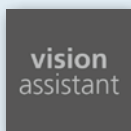
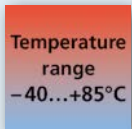


Simple application solutions thanks to preprocessed 3D data

Easy integration via predefined CODESYS function blocks

Patented PMD Time of Flight technology for quick distance detection

Intuitive logic editor for programme creation up to trigonometric functions



Mobile O3M 3D Smart Sensors

3D detection of surroundings and objects around mobile machines is already standard for future-oriented and efficiently operating vehicles. Whether vehicle automation or reliable collision warning – with the integrated functions and the intuitive logic editor, many applications can be solved quickly.

Communicative

The simple connection of the 3D smart sensors is carried out via the CAN bus for mobile applications using the CANopen or SAE-J1939 protocol and/or via the fast Ethernet interface using UDP. Digital and analogue inputs/outputs are also available via an optional I/O module.



Type of sensor	Pixel resolution [pixel]	Horizontal x vertical angle of aperture [°]	Illumination	Max. frame rate [Hz]	Order no.
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PMD 3D sensor · Type O3M · M12 connector

PMD 3D chip	64 x 16	70 x 23	ext. system illumination unit required (O3M950)	25/33/50	O3M151
PMD 3D chip	64 x 16	95 x 32	ext. system illumination unit required (O3M960)	25/33/50	O3M161
PMD 3D chip	64 x 16	97 x 44	ext. system illumination unit required (O3M970)	25/33/50	O3M171

Features and benefits

Powerful 3D Time of Flight measurement (ToF)

The principle of these 3D sensors is based on ifm's patented and award-winning PMD technology. It was specifically designed for outdoor use and difficult ambient light situations. Even interference such as sunlight or materials with different reflective characteristics do not influence the repeatability of the measured data.

Smart functions

The mobile 3D smart sensors integrate functions which enable a multitude of applications to be solved. A highly developed algorithm from the automotive industry is used ensuring, for example, reliable automatic object recognition of up to 20 objects. This function can, for example, be used as collision warning in airports during the automated docking of gangways to aircrafts, during grape harvesting with automatic line guidance along the grape row or as a collision warning on construction machines, mining vehicles or industrial trucks, e.g. forklifts.

For simple distance tasks typical functions such as minimum / maximum / average distance are available.

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. As an alternative, parameter setting can also be carried out via function blocks using the software CODESYS.

Communication interfaces

The preprocessed function data is output via the CAN bus using CANopen or SAE J 1939. If needed, the complete 3D information can be processed via Ethernet UDP and an external process unit.

Digital and analogue inputs/outputs are also available via the optional ZZ1102 I/O module.

Further technical data

Housing material	die-cast 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	1 x CAN, 1 x fast Ethernet
Supported CAN protocols	CANopen, SAE J 1939
Standards and tests (extract)	CE, E1 (UN-ECE R10)

Accessories

Type	Description	Order no.
	IR system illumination unit (850 nm) Angle of aperture [°] 70 x 23	O3M950
	IR system illumination unit (850 nm) Angle of aperture [°] 95 x 32	O3M960
	IR system illumination unit (850 nm) Angle of aperture [°] 97 x 44	O3M970
	CAN/RS232 USB interface CANfox	EC2112
	Adapter cable set for CANfox	EC2114
	U-shaped bracket, suitable for sensor or illumination unit	E3M102

Connection technology

	MCI connection cable, connection sensor / system illumination unit, 0.25 m	E3M120
	MCI connection cable, connection sensor / system illumination unit, 2 m	E3M124
	M12 connection cable, voltage supply System illumination unit, 2 m, PUR cable	E3M131
	M12 connection cable, voltage supply System illumination unit, 10 m, PUR cable	E3M133