Line guidance application
for the mobile 3D smart sensor O3M151

ifm electronic

Swath recognition with a tractor

Overview of the functions:

- **Automatic swath detection and line guidance**
- **Integrated algorithms to calculate the position deviation from the ideal line**
- **Indication of the volume flow [m^3/s] of the harvested material ***
- **Provision of driver steer recommendations to the machine control system**

Smart 3D sensors for agricultural machinery

In the field of agricultural machines, a reliable and efficient harvesting process is very important because of narrow harvest time windows. For many years now, ifm has been developing sensors and control technology specially for robust outdoor applications.

With the smart 3D sensor O151M from ifm, a new application solution for automatic swath or line guidance is now available. Using more than 1,000 individual measurements, a linear contour such as for example a swath is detected in a split second and automatically tracked.

Besides the actual line guidance, the volume flow of the harvested material can be determined at the same time so that the speed of the tractor unit or harvester can be adapted to match the quantity of material.

The sensor provides the machine control system with all the data required to enable assisted steering or even automatic torque control.

The corresponding configuration of the sensor, example programming for CODESYS as well as a detailed description of the application shown here, can be fully downloaded at **www.ifm.com/gb/o3m-lg** and freely used.

* In order to calculate the volume flow, the speed of the tractor must be known.

Installation on a tractor

Visualisation example

Do you need support?
Write to: info@ifm.com

What do you need for the installation?

The components

Type	Description	Order no.
	Mobile 3D smart sensor, PMD 3D chip 64 x 16, angle of aperture 70° x 23°, max. measuring rate 25/33/50 Hz, **(ext. system illumination unit O3M950 required)**	**O3M151**
	IR system illumination unit (850 nm) for mobile 3D sensors	**O3M950**
	MCI connection cable, connection sensor / system illumination unit, 2 m	**E3M122**
	M12 socket, voltage supply IR system illumination unit, 5 m	**E3M132**
	U-shaped bracket, suitable for sensor or IR system illumination unit **(2 pcs. required)**	**E3M100**
	PDM360 NG-12 process and dialogue module, 12" HMI for visualisation and data processing	**CR1201**
	M12 socket, voltage supply for CR1201, 5 m	**EVC071**
	CAN connection cable, 5 m, M12 connector / M12 socket **(2 pcs. required, for O3M151 and CR1201)**	**E11594**
	CAN / RS232 USB interface CANfox for parameter setting of the mobile 3D smart sensor	**EC2112**
	Adapter cable set for CANfox for direct connection to the mobile 3D smart sensor	**EC2114**
	Ethernet, cross-over patch cable, 5 m, PVC, M12 / RJ45, for the connection of the mobile 3D smart sensor during parameter setting via PC **(2 pcs. required, for O3M151 and CR1201)**	**E12283**
	ifm Vision Assistant software for O3M, for the parameter setting of the mobile 3D smart sensor **available free of charge at: www.ifm.com/gb/E3D300**	**E3D300**

Optional components

Type	Description	Order no.
	CAN I/O module, 8 inputs / 4 outputs, for PDM360, to control simple actuators	**CR2013**
	Wirable M12 connector, for a plug-in connection of CR2013	**E11770**
	Y splitter, M12 connector / 2 M12 sockets, only required if the electrical connection is to be set up entirely as a plug-in connection **(3 pcs. required)**	**EBC116**
	M12 cable socket, 5 m. Voltage supply for power over CAN	**EVC071**
	Terminating resistor M12 connector	**E11590**

Detailed information on the shown line guidance and all required CODESYS programming examples can be found at: **www.ifm.com/gb/o3m-lg**