

Volume detection system

Volume3D

MSS-Volume3D-KIT001



- For detection of the utilization of conveyor belts
- Preinstalled software
- Configurable sensing range
- Quick and easy replacement of system parts possible
- Shadow effect compensation
- Communication via TCP/IP

System for detecting the occupancy rate of conveyor belts

Function

The Volume3D system detects the occupancy of a passing conveyor belt from a fixed position with 2D LiDAR scanners. Depending on the configuration up to three scanners can be used.

The Volume3D system determines:

- Real-time data: detection of volume, throughflow, area cross-section and length.
- Additional parameters: width, load as well as average and maximum height of the transported goods.
- Height profile: detailed visualization of the conveyor belt load in 16 zones.
- Results of the latest measurement: provision of volume, length, maximum width and height.

You can easily set up the system with the included Windows® application.

Technical Data

General specifications	
Motion velocity	typical: 0.3 ... 1 m/s
Sensing range	
Read distance	1 ... 20 m distance to conveyor belt
Width	Conveyor belt: max. 20 m
Software	
Function	Output rate : max. 20 Hz (50 ms) Kommunikation : Ethernet (TCP/IP)
Operating system	Linux Debian 10
Compatibility	compatible with LiDAR-scanner R2000 SD/HD/UHD , R2300 (single layer)
Measurement accuracy	
Volume detection	± 3 % under reference conditions

Application

The pre-installed Windows® application allows an easy configuration of the system.

The following information is provided by the application:

Live data:

- volume [m³]
- throughflow [m³/s]
- conveyor belt load [%] and [mm]
- maximum height [mm]
- average height [mm]
- height profile of 16 zones
- length [mm]

Complete measuring data:








- volume [m³]
- length [mm]
- maximum width [mm]

Application

- maximum height [mm]

The system communicates via Ethernet using a TCP/IP connection.

Kit component

	OMD30M-R2000-B23-V1V1D-1L	R2000 UHD, 2-D LiDAR sensor for precise and highly dynamic positioning, measuring range to object up to 30 m, Ethernet
	MSEU-F601-Volume3D-001	Part of the Volume3D Smart System
	MBT-36ALS120	Spring arm for larger spring deflections for diameter 58 rotary encoder with clamping flange
	9108, 10	Measuring wheel for shaft diameter 10 mm
	V1SD-G-GN10M-PUR-E1S-V1D-G	Ethernet bus cable M12 plug straight to M12 plug straight D-coded, 4-pin, PUR cable green, Cat5e, shielded, UL approved, drag chain suitable
	V1-G-10M-PVC-V1-G	Cordset M12 socket straight to M12 plug straight A-coded, 4-pin, PVC cable grey
	V19-G-5M-PUR-ABG-V19-G	Cordset M12 socket straight to M12 plug straight A-coded, 8-pin, PUR cable grey, shielded