

SLDL5300 Rapid Scanning Series

Soltascan 3D Radar Level Volume Measuring Instrument



■ operational principle

The SLDL5300 Soltascan3D Radar Material Level and Volume Measurement Instrument utilizes terahertz radar waves to perform 360° panoramic high-resolution 800Hz high-speed scanning. Featuring **parallel radar scanning technology with five sensors**, it **supports coordinated operation across up to 255 units**. By integrating point cloud stitching, AI, machine learning, and 3D modeling technologies, the system transmits scan data to edge servers where proprietary algorithms process information through precise fitting and noise filtering. This enables rapid acquisition of material 3D dimensions, generation of visualized 3D images, and calculation of parameters including material level, volume, and weight. Measurement results are shared via industrial IoT networks for multi-device synchronization, allowing direct access to data and 3D visualizations through DCS systems.

■ product features

- Continuous non-contact measurement
 - Not affected by environmental factors such as temperature, pressure, humidity, or dust
 - Can measure the surface of irregular powders or solid materials
 - Capable of detecting the morphology of cone tops, cone bases, and side wall accumulation
 - Provide minimum, maximum, and average distance data
 - Capable of stable operation in extremely dusty environments
 - Realize High-Precision Calculation of Silo Volume
 - Supports 2-channel 4-20mA signals, HART, PA, FF, Modbus, TCP/IP, AUBUS, and Ethernet-APL protocols. ■
- The protocol has a maximum measurement range of up to 300 meters and enables multi-unit combined scanning.
- Equipped with self-cleaning functionality and minimal maintenance requirements

■ *technical parameter*

Measurement characteristics	
Measuring frequency	120GHz~140GHz
Scanning scope	300 meters @ horizontal 0-360°, vertical-90-90°, accuracy 0.01°, multi-unit combination available
Material of non-contact components	
Hull	Spray-painted aluminum die-cast parts
Cover shell observation window	Merlon
Antenna	PTFE+PEEK
Flange	316 stainless steel
Bulkfactor	
Radar volume	325*295*295mm
Controller volume	285*211*104mm
Weight	6.6 kg+3kg
Output form	
Output signal	Supports 4-20mA, HART, PA, FF, Modbus, TCP/IP, AUTBUS, and Ethernet-APL protocols (optional)
Accuracy	Position accuracy: 1 mm; Volume accuracy: 2% (1% requires special customization)
4-20mA fault signal	Current output unchanged, 22 mA > 3.6 mA (adjustable)
4-20mA current limit	22 mA
4-20mA output load	Max. 500 Ohm
Ambient condition	
Environment / Storage / Transport Temperature	Standard type: -40 to +185°F (-40 to 85°C); High-temperature type: -40 to +356°F (-40 to 180°C)
Relative humidity	20% to 85%
Height	16,400 ft (5,000 m)
Process conditions	
Container pressure	-0.2~3 bar
Process temperature	
Process temperature (measured at the process interface)	Standard type: -40 to +185°F (-40 to 85°C); High-temperature type: -40 to +356°F (-40 to 180°C)
Anti-vibration performance	5~500 Hz, 5 g (X/Y/Z three-axis) @GB/T 2423.10/ IEC 60068-2-6
Electromechanical data	
Cable entry / plug	1×M20×1.5 cable entry port (compatible with cables)
	1×M20×1.5 blind plug
	Or 2×1/2NPT cable inlet
Display panel	
Display screen	4 lines x 20 characters
Controller	4 keys
Levels of protection	IP67
Source	
Service voltage	12 to 2.8 VDC, 110 VAC, or 220 VDC
Power dissipation	Max. 1.5 W @ 24 VDC
Electrical Protection Measures	
Electrical protection	IP67 protection compliant with IEC60529 standards