

Benewake dual servo volume measuring unit

1. Product description

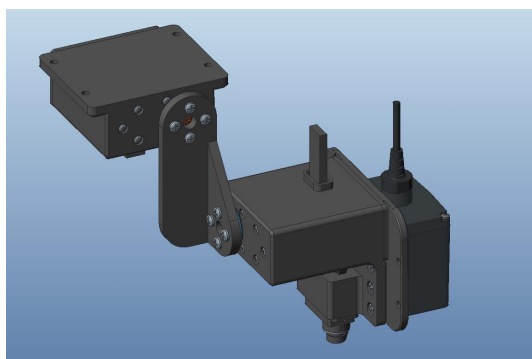
The dual servo volume measuring unit is single-point LiDAR based volume measuring system. It is designed for measuring the volume of large pile of cereal, ore, pile etc. With its large field of view of $120^{\circ} \times 120^{\circ}$, it can also generate high-density point clouds to reconstruct 3D model. Benefiting from Benewake's high performance single-point LiDAR, this unit has a very long detection range, which can be up to 180m. And, to meet all kinds of customer needs, this unit supports multi communication interfaces.

Features :

- Large FoV ($120^{\circ} \times 120^{\circ}$)
- High accuracy
- 3D model reconstruction
- Multi communication interfaces supported

Main application:

- Coal pile volume measurement
- Granary volume measurement
- Silo volume measurement



2. Technical specification

Table 1 Main technical parameters of dual servo volume measuring unit

Parameter		Value
Performance parameters	Detecting range (TF03-180)	0.1m-180m
	Measuring error ¹	1%
	Ambient light immunity	100Klux
	Operating temperature	-10°~70°
	Enclosure Rating	IP5X
	FoV	120°*120°

¹ The volume accuracy can be improved according to the type selection of steering gear, and 1% is the repeated accuracy in the laboratory



	Photobiological safety (TF03-180)	Class 1 (EN60825)
Electrical parameters	Power supply	12V
	Average current	<1A
	Power consumption	<12W
	Peak current	<5A
	Communication interface	TCP
	Size	117*142*105.6mm(Non motion state)
	Weight	舵机: 330g/控制盒: 802g
	Housing material	Aluminum alloy
	Storage temperature	-20℃~70℃
	Cable Length	1m

3. Product size

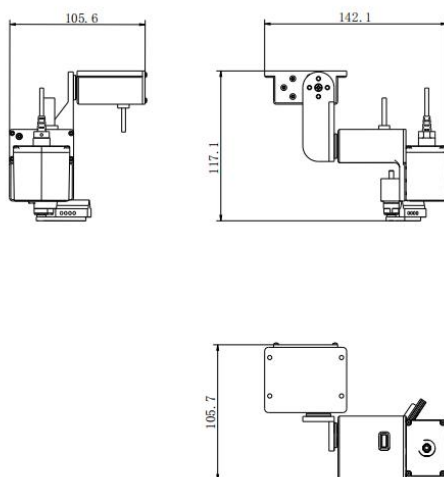


Figure 1 Size of Benewake dual servo volume measuring unit

4. Communication interface

As this volume measuring unit is normally used in large scenarios, which has a very long data communication distance, so the default data communication interface of this unit is TCP, set up with LoRa module.

Table 2 Communication interface of TCP

Parameter	Value
Interface number	1



Interface standard	RJ45
Frequency	10/100Mbps

Please refer to ‘Benewake dual servo volume measuring unit user manual’ for detailed information.

5. Configurable parameters

To adapt specific application scenarios, there are several parameters can be modified.

Table 3 Configurable parameters of Benewake's dual servo volume measuring unit

Parameters	Description	Default setting
Set Scanning Angle for First-stage Servo	Actual executable angle for the unit	/
Set Scanning Angle for Second-stage Servo	Actual executable angle for the unit	/
Set Starting Angle for First-stage Servo	Actual Starting angle for the unit	/
Set Starting Angle for Second-stage Servo	Actual Starting angle for the unit	/
Set Total Height	Installation Height of LiDAR	/
Get Range Value	Lidar Ranging	/
Get Volume Value	After the movement of double steering gear stops, the command of acquiring volume value is sent	/
Cleaning Interval ²	Set the self-cleaning wiper's working time interval	4h

Please refer to ‘Benewake dual servo volume measuring unit user manual’ for detailed information.

6. Certification

Here are the certifications of Benewake's LiDAR, TF03-180.



² Only units with TF02-Pro-W and TF03-C can set cleaning time interval.

