

Siman

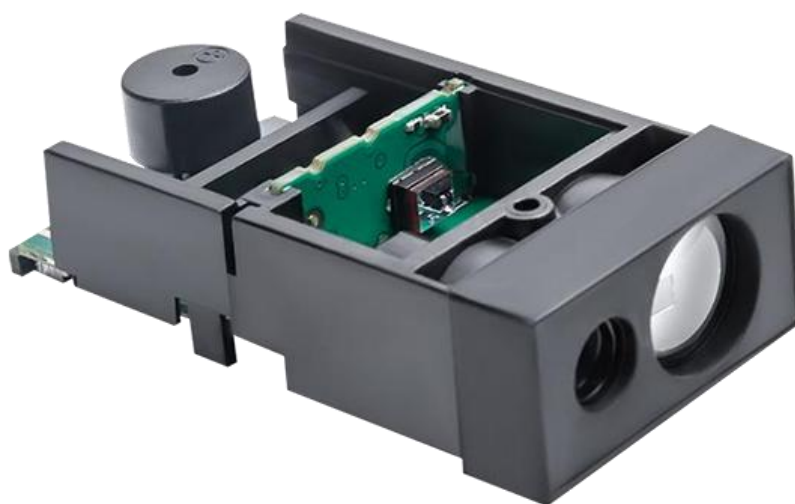
西曼传感

SDBM-60 测距模组

产品手册 1.0

SDBM-60TF3

SDBM-60TF20



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一、产品概述

郑州西曼传感技术有限公司一直致力于激光领域的研发,开发出的激光测距传感器集光学、电子、机械等技术为一体,可以快速而准确的获取距离值。

SDBM60 和 SDBM60-plus 激光测距模块采用相位法,通过激光的发射和接收非接触式检测到目标物体之间的距离。

SDBM60 和 SDBM60-plus 激光测距模块是为快速、精准地测量距离而开发出的。即使在恶劣的环境中,依然可以表现出优异的性能。

产品特点:

小尺寸: 50*26* 13mm

重量轻: 9g

精确: 正负 3 毫米

最远量程: 60 米

室外阳光下配合反光板可测: 35 米

性价比高

功耗低

支持二次开发

易集成

应用场景:

- 隧道边坡变形检测
- 低速目标跟踪定位
- 煤炭、港口、钢厂
- 料位、液位
- 安防
- 长度、高度、厚度测量

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二、性能参数

性能参数			
测量范围	0.03...60m 室内 90%反射率	供电电压	DC3.3V
频率	3...20hz	功耗	<0.27W
重复精度	2mm	规格尺寸	48.3×26×13mm
准确度	±3mm	重量	9g
测量目标物体	静态或动态目标的自然表面或专用反射板	工作温度	-20~60℃
光源	波长 635nm 红色可见激光	存储温度	-40~70℃
激光安全等级	2 (IEC 60825-1:2014, EN 60825-1:2014)	数据接口	UART
典型光斑大小 (椭圆形)	10m 处: 5x3mm 25m 处: 10x6mm 50m 处: 15x10mm 100m 处: 30x20mm	激光寿命	10000h 以上
订货型号			
频率	型号		
3Hz	SDBM-60TF3		
20Hz	SDBM-60TF20		

Laser safety level	SDBM-60
Illuminant	0.03... 90% reflectivity in the 60m room
Measure the target object	3...20hz
Accuracy	2mm
Repeatability precision	±3mm
Frequency	Natural surfaces or dedicated reflection plates for static or dynamic targets
Measuring range	635nm red visible laser
Model	2 (IEC 60825-1:2014, EN 60825-1:2014)
Typical spot size(oval)	At 10m: 5x3mm 25m: 10x6mm At 50m: 15x10mm 100m: 30x20mm
Service voltage	DC3.3V
Power dissipation	<0.27W
Specification and dimension	48.3×26×13mm
Weight	9g
Working temperature	-20~60℃
Storage temperature	-40~70℃
Data interface	UART
Laser life	Over 10,000 h

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model	SDC
measuring range	0.05...30/60/100/150/200m
resolution ratio	0.1mm
repeatability precision	0.5mm
accuracy	1mm
Measurement rate	1...30...100Hz
response time	Min 10ms
Measure the target object	Natural surface or special reflective plate
Environmental light impact	Outdoor sunlight 100 kLux
illuminant	From 650 to 660 nm, <1 mW, class II
Spot size diameter	6mm@10m; 30mm@50m: 60mm@100m
service voltage	DC7~26V
average current	100mA@10V
power dissipation	<1.5W
Case material	aluminium
Dust proof lens material	High transmittance quartz glass
specification and dimension	57*57*108mm
levels of protection	IP67
weight	445g
working temperature	-20~60℃
Laser life	Over 100,000h
install	With mounting bracket, available with reflector panel

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model	SDB
measuring range	0.05...30/60/100/150m
frequency	3...20Hz
repeatability precision	2mm
accuracy	± 3mm
Measure the target object	Natural surfaces or dedicated reflection plates for static or dynamic targets
illuminant	The wavelength is 635nm red visible laser
Laser safety level	2 (IEC 60825-1:2014, EN 60825-1:2014)
Typical light spot size	At 10m: 5x3mm 25m: 10x6mm
(oval)	At 50m: 15x10mm 100m: 30x20mm
Laser life	Over 10,000 h
service voltage	DC9~35V
power dissipation	<1.5W
Case material	aluminium
Dust proof lens material	High transmittance quartz glass
specification and dimension	52*52*86mm
levels of protection	IP67
weight	230g
working temperature	-20~60℃
Connector cable	M12 * 5 aviation plug, with 1m cable

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Measuring range	SDA
Model	0.3...20m
Repeatability precision	±8.0mm @50~2000mm
	±20.0mm @2000~6000mm
	±30.0mm @6000~20000mm
Absolute accuracy	±20.0mm @300~2000mm;
	±30.0mm @2000~6000mm
	< 1% @6000~20000mm
Measurement rate	50...100...250Hz
Response time	< 10ms
Measure the target object	Natural surface or special reflective plate
Environmental light impact	Outdoor sunlight resistant to 1000 kLux
Illuminant	650 to 660 nm red visible laser
Laser safety level	2 (IEC 60825-1:2014, EN 60825-1:2014)
Typical spot size	Φ3.5cm@1m; Φ11.5cm@5m
	Φ23cm@10m; Φ50cm@20m
Laser life	More than 10 0,000 hours
Service voltage	DC9~35V
Working current	107 mA @ 12 V indicates the laser operation
	103 mA @ 12 V indicates the laser to turn off
Digital display	4-bit digital tubes display distance values
Key control	The key can easily set the parameters
Sheathing material	ABS
Dust proof lens material	acrylic
Specification and dimension	45*45*49.5mm
Case protection grade	IP65
Weight	73g ± 3g (glue volume error)

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working distance	And 0.1-5m, indoor
	0.1-3.75m Indoor room
accuracy	0.1~0.5m@ $\pm 2.5\text{cm}$; 0.5~5m@ $\pm 1\%$
resolution ratio	640*480@8fps/320*240@20fps
FOV	H60 xV45
VCSEL wavelength	940nm
power supply mode	5V, average 0.5A
power dissipation	average 1.2W
operating system	Win 10, Linux, ROS
working temperature	-10 ~ 50°C
Laser grade	CLASS 1
data transmission	The USB 2.0 protocol, the Type C Interface

Model	SDBM-100
Measuring range	0.03... 90% reflectivity in the 100m room
Frequency	1...20Hz
Repeatability precision	2mm
Accuracy	$\pm 3\text{mm}$
Measure the target object	natural target
Illuminant	The wavelength is 635nm red visible laser
Laser safety level	2 (IEC 60825-1:2014, EN 60825-1:2014)
Laser life	Over 10,000 h
Typical spot size(oval)	At 10m: 5x3mm 25m: 10x6mm
	At 50m: 15x10mm 100m: 30x20mm
Service voltage	DC3.3V
Power dissipation	$<0.27\text{W}$
Specification and dimension	63×40×18mm
Weight	13g
Working temperature	-20~60°C
Storage temperature	-40~80°C
Install	With installation hole

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Communication interface	UART
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Model	SDEM
Measuring range	3... 1000m@70% reflectivity
Resolution ratio	0.1m
Absolute accuracy	± 1m
Time to a single maximum measurement	1s
Service voltage	Voltage range is DC3...3.5V
Power dissipation	330mW@3.3V
Specification and dimension	Φ 22mm*43mm
Weight	15g
Environmental light impact	Anti-outdoor sunlight 1000 kLu
Working temperature	-20~70℃
Illuminant	The 905-nm laser light
Laser safety level	1
Laser life	Over 1,000,000 h
String level	TTL 3.3V
Communication interface	UART
	Baud rate of 1,15,200 bps

Model	SDDM
Measuring range	3... 1500m@70% reflectivity
Resolution ratio	0.1m
Absolute accuracy	± 1m
Time to a single maximum measurement	1s
Environmental light impact	Anti-outdoor sunlight 1000 kLu
Illuminant	The 905-nm laser light
Laser safety level	1
Laser life	Over 1,000,000 h
Supply voltage	Typical value of DC+3.3V
	Voltage range is 2.5...3.5V
Power dissipation	500mW@3.3V
Specification and dimension	26*24.6*11.4mm

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Weight	10g
Working temperature	-20~70°C
Communication interface	UART
	Baud rate of 1,15,200 bps
Measuring range	The maximum measurement distance is 22m;
	High-light environment: 15m
	At 10% reflectivity: 20m
Repeatability precision	± 6.0mm @300~2000mm
	± 20.0mm @2000~6000mm
	± 30.0mm @6000~20000mm
Package size	21 × 15 × 7.87mm
Weight	1.35g
Environmental light impact	Outdoor sunlight resistant to 1000 kLux
Absolute accuracy	± 20.0mm @300~2000mm
	± 30.0mm @2000~6000mm
	< 1% @6000~20000mm
Measurement rate	50,100, and 200Hz is adjustable
Measure the target object	Natural surface
Laser life	Over 1,000,000 h
Temperature compensation	have
Environmental light impact	Outdoor sunlight resistant to 1000 kLux
Reflectivity correction	Yes, the target deviation of different colors is less than 5mm
Illuminant	And the wavelength of 905nm laser light
Laser safety level	1
Field angle fov	< 2
Typical spot size	Φ 3.5cm@1m; Φ 11.5cm@5m
	Φ 23cm@10m; Φ 50cm@20m
Interface type	I2C, UART
Working voltage	Typical: 3.3V, minimum 3.0V, maximum 3.6V
Working temperature	-20~50°C
Storage temperature	-40~85°C
Anti-static grade	Human model antistatic class (HBM) 2000V
	Machine Model Antistatic Level (MM) 200V
	The charging device model antistatic level (CDM) is 500V

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SSA-25 规格参数	
激光波长	905nm
激光安全等级	Class 1(IEC 60825-1:2014)
激光通道	1
视场角（水平）	360°
扫描频率	1...25Hz
角度分辨率	0.25°@10Hz
	0.5°@15Hz
	1°@25Hz
光斑发散角	8mrad(H);3mrad(V)
水平面误差（出光水平度）	< ± 1°
工作距离(基于反射率)	0.1...25m
输出距离分辨率	1mm
准确性	绝对精度 ±30mm
	重复精度 ±20mm
点云密度	14.4K@10Hz
	10.8K@15Hz
	9K@25Hz
电源接口	12 芯带线，线长 20cm
通讯接口	4 芯带线接头，M12X1 母头，线长 20cm
响应时间	130ms@10Hz
设置区域	16 组区域
开关量输入	4 个
开关量输出	4 个
机械尺寸	65*65*70mm
功耗	5W
工作电压	DC12...30V
重量	<500g
IP 等级	IP67
工作温度	-10~+50℃
储存温度	-20~+70℃
适用环境光	<120kLux
激光器寿命	10000h 以上
电磁兼容性 EMC	IEC61000-6-2:2016-08
	IEC 61000-6-3:2006-07
抗振动	IEC 60068-2-6:2007
抗冲击	IEC 60068-2-27:2008

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SSA-25 specification parameters	
Laser wave length	905nm
Laser safety level	Class 1(IEC 60825-1:2014)
Laser channel	1
Field of angle (horizontal)	360
Scan frequency	1...25Hz
Angular resolution	0.25 @10Hz
	0.5 @15Hz
	1 @25Hz
Divergence angle of light spots	8mrad(H);3mrad(V)
Horizontal plane error (outgoing light level)	$< \pm 1$
Working distance (based on reflectivity)	0.1...25m
Output the distance resolution	1mm
Accuracy;	Absolute accuracy is ± 30 mm
	Repeat accuracy is ± 20 mm
Point cloud density	14.4K@10Hz
	10.8K@15Hz
	9K@25Hz
Power interface	12-core belt line, line length of 20cm
Communication interface	4-core cord connector, M12X1 master head, wire length of 20cm
Response time	130ms@10Hz
Set the area	16 Groups of regions
On-off input	Four
Switch output	Four
Mechanical size	65*65*70mm
Power dissipation	5W
Working voltage	DC12...30V
Weight	< 500 g
Ip grade	IP67
Working temperature	-10~+50℃
Storage temperature	-20~+70℃
Suitable for ambient light	< 120 kLux
Laser life	Over 10,000 h
Electromagnetic compatibility emc	IEC61000-6-2:2016-08
	IEC 61000-6-3:2006-07
Shock resistance	IEC 60068-2-6:2007
Anti vibration	IEC 60068-2-27:2008