

Siman



SDA Series Laser Ranging Sensor

The SDP series is a high-precision laser rangefinder developed by Siman Sensing Technologies using the interferometric time-of-flight (iToF) method. Even in challenging environments with strong ambient light interference or extremely low reflectivity of target objects, its advanced interference resistance algorithms and signal processing capabilities ensure millimeter-level measurement accuracy and exceptional reliability.

The SDP series sensors feature RS485 communication, 4-20mA output, and dual I/O outputs. Equipped with an OLED display, they show real-time measurement distance and support parameter configuration via buttons. These sensors are widely used in vehicle positioning, stacker cranes, storage/retrieval system positioning (x-axis and y-axis), conveyor and traverse vehicle positioning, automated guided systems, collision prevention, and crane positioning. For more product details, visit: www.siman.asia

warn	Follow the equipment usage guidelines! This product is not a safety sensor and cannot be used for personnel protection.
	<ul style="list-style-type: none">➤ Main measurement laser (610nm~690nm): Class 2 laser product, safe under normal operating conditions.➤ This product has no explosion-proof structure, and it is forbidden to use in flammable and explosive environment.➤ Do not remove this product.➤ Be sure to turn off the power before operating. Do not connect wires while powered on!<ol style="list-style-type: none">Avoid use in dust/steam or corrosive gas environment;Where corrosive gases are generated;➤ Do not use this product in water.➤ When used outdoors, pay attention to adding a waterproof cover.

hookup
485+ analog
<div><div>传感器</div><div><div>棕线 +V</div><div>蓝线 0V</div><div>黄线 RS485A</div><div>绿线 RS485B</div><div>白线 模拟量输出</div><div>红线 模拟地</div><div>黑线 大地</div></div><div><div>+ 9~35V DC</div><div>- 0V</div><div>485 设备</div><div>模拟输入设备</div></div></div>
switching value

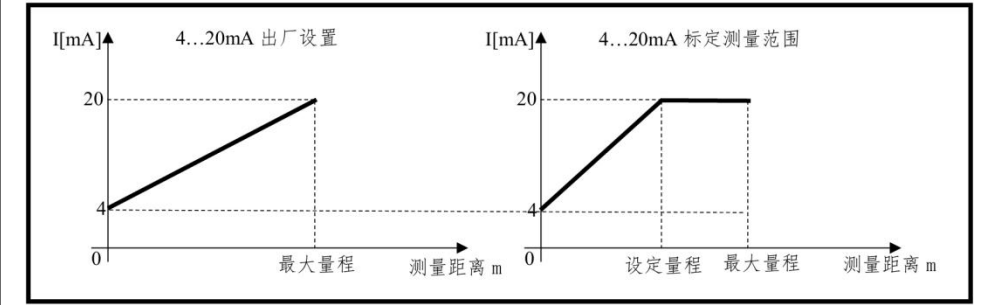
<div>传感器</div> <div><div>棕线 +V</div><div>蓝线 0V</div><div>黄线 OUT1</div><div>绿线 OUT2</div><div>黑线 大地</div></div> <div><div>+ 9~35V DC</div><div>- 0V</div><div>负载</div><div>负载</div></div>
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Key settings
<div><div><div>0.140m</div><div>长按3秒set</div><div>激光 开</div><div>短按set</div><div>激光 关</div><div>+/-</div><div>激光 关</div><div>短按set</div><div>激光 关</div></div><div><div>长按3秒set</div><div>开关 1: min</div><div>短按set</div><div>OUT1阈值min</div><div>开关 1: min</div><div>短按set</div><div>开关 1: min</div><div>短按+, 按0.01递增</div><div>长按+, 可持续增加</div><div>OUT1阈值max</div><div>开关 1: min</div><div>短按-, 按0.01递减</div><div>长按-, 可持续减少</div><div>OUT2阈值min</div><div>开关 1: max</div><div>短按set</div><div>OUT2阈值max</div><div>开关 2: min</div><div>短按set</div><div>OUT2阈值max</div><div>开关 2: max</div></div><div><div>长按3秒set</div><div>模拟 量程</div><div>短按set</div><div>模拟 量程</div><div>+</div><div>模拟 量程</div><div>短按set</div><div>模拟 量程</div></div><div><div>长按3秒set</div><div>4 8 5 ID 000</div><div>短按set</div><div>4 8 5 ID 000</div><div>+</div><div>4 8 5 ID 001</div><div>-</div><div>4 8 5 ID 254</div><div>短按set</div><div>4 8 5 波特率 9600</div><div>波特率默认固定9600</div></div></div> <div>默认开启指示激光开关, 不影响正常测距</div> <div>可配置两路开关量功能</div> <div>模拟量对应量程上限, 下限固定为0m</div> <div>当前设备地址默认000</div>
contact us
<div><div><div>Siman</div><div>Ximan Sensing Technology Co., LTD</div><div>URL: www.siman.asia</div><div>Wanda Mall 1, Qingpu District, Shanghai</div><div>11 Changchun Road, High-tech Zone,</div><div>Zhengzhou City, Henan Province</div><div>Email: 17317261651@163.com</div></div><div><div></div><div>Scan the QR code to follow us</div></div></div>

Communication Note: RS485						
Baud rate	9600bps (default), can be changed to 115200bps					
Data bit 8		Stop position 1		Check bit: None		
register declaration						
address	content	number	state	explain		
0000H	error status code	1	read only	100: No fault; 101: Out of range		
0001H	running state	1	read-write	0: Stop measurement; 1: Measuring or starting measurement		
0002H	Measure distance value	2	read only	4-byte unsigned integer data, with the high bit first and the low bit last, in units of 1mm.		
0003H	From device address	1	read-write	Valid range: 0-254 (0 is the default address, 255 is the broadcast address)		
0004H	Communication baud rate	2	read-write	Valid range 9600-115200		
0005H	Distance offset	2	read-write	Signed integer, unit 1mm		
0006H	Version number	1	read only	Current program version		
Protocol format						
Read register data (Function code 03H) -Communication frame format						
Address code 1 byte	Function code 1 byte	Start address 2 bytes		Number of registers n bytes	CRC-2Byte	
Response format						
Address code 1 byte	Function code 1 byte	Data range size: 1 byte		Data Range-n*2 bytes	CRC-2Byte	
Write single register data (Function code 06H) -Communication frame format						
Address code 1 byte	Function code-1 byte	Register address-2 bytes		Write data-2 bytes	CRC-2Byte	
Response format						
Address code 1 byte	Function code-1 byte	Register address-2 bytes		Write data-2 bytes	CRC-2Byte	
Write multiple register data (Function code 10H) -Communication frame format						
Address code 1 byte	Function code-1 byte	Start address-2 bytes	Number of registers-2 bytes	Write bytes-1 byte	Write data-4 bytes	CRC-2Byte
Response format						
Address code 1 byte	Function code-1 byte	Register address-2 bytes		Write data-2 bytes	CRC-2Byte	
CRC checksum: 2 bytes, with the lower 8 bits first and the higher 8 bits last.						
Example: The device is this product, and the host is the control receiver. The following uses device address =00H (default address).						
function	direction	data			definition	
fetch Distance value	transmit by radio	00 03 00 02 00 02 64 1A			Read measurement distance	
	return	00 03 04 00 00 03 E8 EA 4D			Normal. 03 E8H=1000mm.	
		00 03 04 00 00 00 00 62 32			Invalid interval. Data 0	
		00 03 04 00 00 FF FF EB 43			Exceeds the maximum range. Maximum value	
fetch device	transmit by radio	00 03 00 03 00 01 75 DB			Read device address, 0~254	
		FF 03 00 03 00 01 61 D4			Read ID using broadcast address	

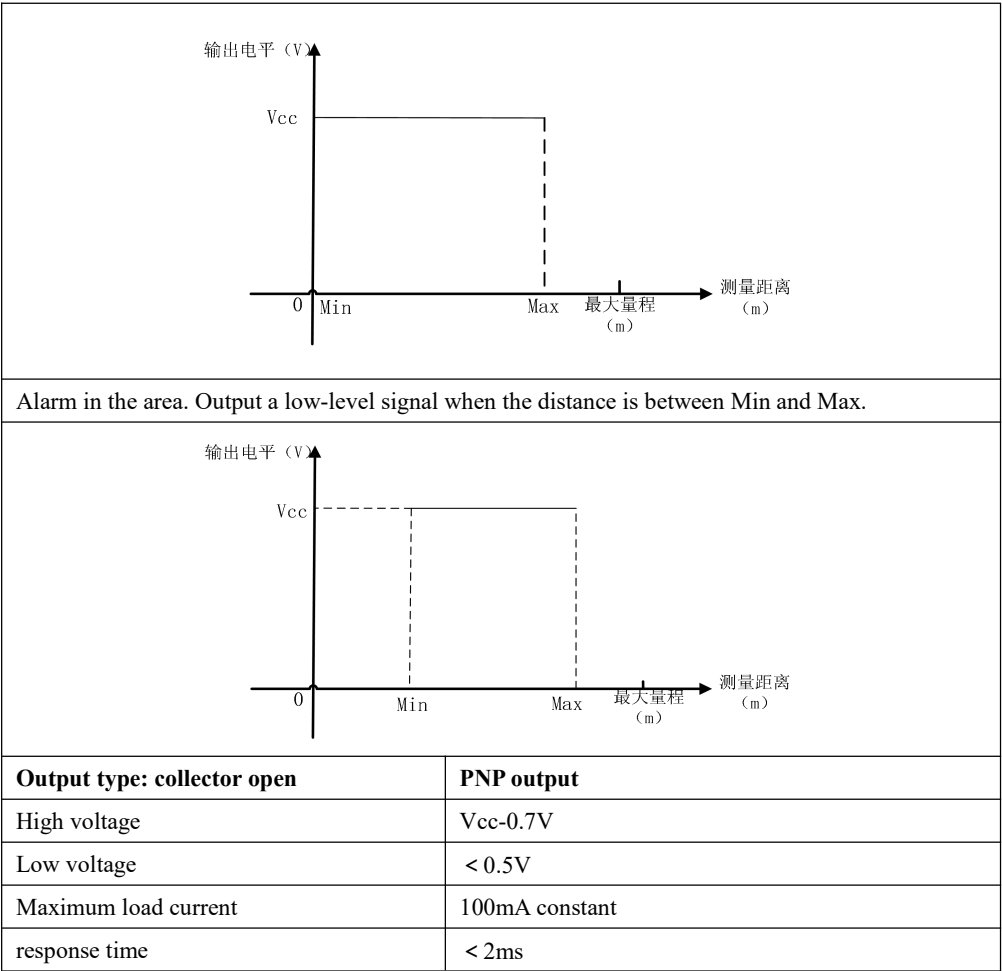
address			255
	return	00 03 02 00 00 85 84	Default address is 00
Set device address	transmit by radio	00 06 00 03 00 01 B9 DB	Set device 00 address to 01 address
	return	00 06 00 03 00 01 B9 DB	Settings applied
fetch Baud rate	transmit by radio	00 03 00 04 00 02 84 1B	Return 2580H= baud rate 9600.
	return	00 03 04 00 00 25 80 F1 C3	Note: 01 C2 00=115200
set up Baud rate	transmit by radio	00 10 00 04 00 02 04 00 01 C2 00 F6 00	Set the baud rate to 115200
	return	00 10 00 04 00 02 01 D8	Settings applied
fetch error condiction	transmit by radio	00 03 00 00 00 01 85 DB	
	return	00 03 02 00 64 84 6F	normal
		00 03 02 00 65 45 AF	Exceeds the range
fetch running state	transmit by radio	00 03 00 01 00 01 D4 1B	
	return	00 03 02 00 01 44 44	Measuring
		00 03 02 00 00 85 84	Stop measurement in Settings
set up running state	transmit by radio	00 06 00 01 00 00 D9 DB	Stop measuring
		00 06 00 01 00 01 18 1B	Enable measurement
	return	00 06 00 01 00 00 D9 DB	Measurement stopped
		00 06 00 01 00 01 18 1B	Measurement is on
Read distance offset	transmit by radio	00 03 00 05 00 02 D5 DB	
	return	00 03 04 00 00 27 10 F0 CF	Increase the offset by 1000mm
Set distance offset	transmit by radio	00 10 00 05 00 02 04 00 00 27 10 2D 50	Increase offset 2710H=1000.0mm
	transmit by radio	00 10 00 05 00 02 04 FF FF D8 F0 6D 0C	Reduce offset FF FF D8 F0=-1000mm
	return	00 10 00 05 00 02 50 18	Settings applied

Analog output: 4~20mA corresponds to 0m-[range]m (settable), maximum load 250Ω



I/O output (optocoupler output)

Alarm when the upper limit is reached, output high-level signal when the distance is less than Max



Alarm in the area. Output a low-level signal when the distance is between Min and Max.

Output type: collector open	PNP output
High voltage	Vcc-0.7V
Low voltage	< 0.5V
Maximum load current	100mA constant
response time	< 2ms