



SFDM laser ranging module

The SFDM series is a high-precision laser radar designed for medium-to-long-range ranging, compatible with both indoor and outdoor environments while resisting strong electromagnetic interference. It enables positioning and collision prevention monitoring for land transport vehicles and overhead crane systems. The product is widely used in various applications including UAV height measurement (inspection drones), wind power equipment monitoring, landslide detection, and material level monitoring. For more product details, please visit: www.siman.asia

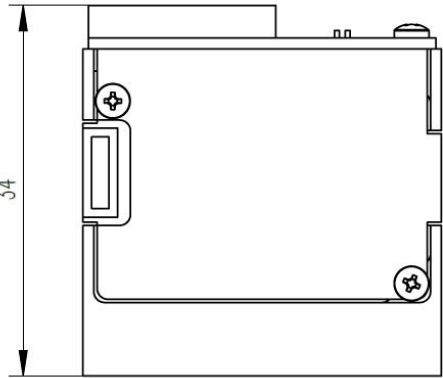
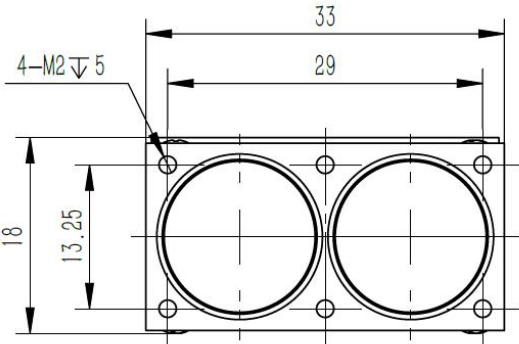
warn	Follow the equipment usage guidelines! This product is not a safety sensor and cannot be used for personnel protection.
	➤ Main measurement laser (905nm): Class 1 laser product. Safe under normal operating conditions.
	➤ The product may fail when measuring high-reflective objects (such as 3M tape) or mirrors.
	➤ This product has no explosion-proof structure, and it is forbidden to use in flammable and explosive environments.
	➤ Do not remove this product.
	➤ Be sure to turn off the power before operating. Do not connect wires while powered on! 1. Avoid use in dust/steam or corrosive gas environment; 2. Avoid use in places where corrosive gases are generated;
	➤ Do not use this product in water.
	➤ When used outdoors, pay attention to adding a waterproof cover.

hookup



pin	Thread order definition	customer interface
1	VCC 9-36V	External power is on
2	source GND	External power negative
3	gorge line GND	GND
4	TX	RX
5	RX	TX

Specifications					
model	SDFM100	SDFM200	SDFM300	SDFM600	SDFM1500
90% reflectance range	100m	200m	300m	600m	1500m
10% reflectance range	30m	70m	100m	200m	300m
fade zone	0.05m				
repeatability precision	±5cm (within 10m), ±10cm at 300m, ±100cm at 1500m				
accuracy	±10cm (within 10m), 1% (outside 10m)				
measuring frequency	1KHz (adjustable from 20 to 10KHz)				
Measure laser light source	905nm, Class 1				
Field of View (FOV)	4mrad				
Environmental light resistance	100KLux				
Control output	UART TTL				
Working voltage	9 ~ 36VDC				
Working current	100mA (peak current)				
	30mA (average current)				
Average Power Consumption	0.7W	0.7W	1.2W	1.2W	1.2W
weight	20±2g				
size	33 x 34 x 18 mm				
working temperature	-20~60℃				
Electrical connections	1.25mm, 5P,50cm scatter line				
Customize range	Supports customizing the shape structure and output protocol				
dimensional drawing					



contact us



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UART TTL			
Baud rate	460800bps (default), can be modified		
Data bit 8	Stop position 1		Check bit: None
output format			
This product uses little-endian hexadecimal for both input and output.			
Frame header	Distance value in two bytes		check bit
5C	02	11	EC
5C: Fixed frame header 1 byte			
02 11: The distance value of two bytes indicates a measured distance of 4354cm. Little-endian mode, range 0-65,535; if not detected, output 65535cm.			
EC: The parity bit is calculated by summing the bytes from 02 to 11 and then taking the bitwise complement.			
Example: The device is this product, and the host is the control receiver.			
function	direct ion	data	definition
Read product serial number	transmit by radio	5A 0D 02 0D 0D D6	10 01 indicates product serial number 272 in little-endian mode, while the host computer displays it as S00272 (with S prefixed to the 5-digit number).
	return	5A 8D 02 10 01 5F	
Read software version number	transmit by radio	5A 16 02 16 16 BB	03 02 indicates the product software version V2.3: the lower-end mode, where 02 stands for 2 and 03 for 3, with a dot (.) in between.
	return	5A 96 02 03 02 62	
Change baud rate	transmit by radio	5A 06 02 80 04 73	60 00 (9600) C0 00 (19200) 80 01 (38400) 80 04 (115200) 00 09 (230400) 00 0A (256000) 00 12 (460800) Other baud rates are not supported
	return	5A 86 02 80 04 F3	
Change measurement frequency	transmit by radio	5A 0B 02 E7 03 08	E7 03 indicates a 999 frequency division factor for the serial port data output in little-endian mode, with the set frequency

	return	5A 0B 02 E7 03 08	f=1000000/(999+1)=1000Hz.
Check function: All the above check bytes are generated by this check function			
Sum and invert from the second byte to the second-to-last byte			
<pre>uint8_t Check_Sum (uint8_t *_pbuff, uint16_t _cmdLen) { uint8_t cmd_sum=0; uint16_t i; for (i=0; i<_cmdLen; i++) { cmd_sum += _pbuff[i]; } cmd_sum = (cmd_sum); return cmd_sum; }</pre>			