Siman

SDD-05 Series Laser Rangefinder

The SDD-05 series is a laser ranging sensor based on the SPAD scheme, which can be installed in various scenarios, with more reliable detection performance and more convenient use.

The SDD-05 series sensors feature multiple output interfaces including RS485, analog, and NPN/PNP. They provide real-time distance measurement display with button-operated parameter configuration. These sensors are widely used in resin and metal circulation control, automotive and metal welding, automated warehouse systems, and food conveyor systems. 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 (650nm): 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 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. Where corrosive gases are generated; ➢ Do not use this product in water. ➢ When used outdoors, pay attention to adding a waterproof cover.

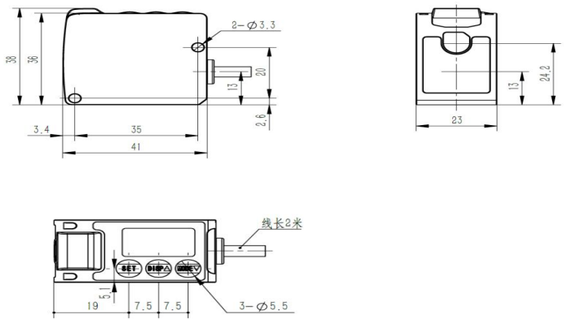
Pin definition:

pin	**Define/Thread Color**	**customer interface**
1	12-30V DC (brown)	External power is on
2	0V (blue)	External power negative
3	NPN (black)	NPN
4	PNP (white)	PNP
pin	**Define/Thread Color**	**customer interface**
1	20/12-30V DC (brown)	External power is on
2	0V (blue)	External power negative
3	0V (black)	0V
4	LOUT / VOUT+ (White)	4-20mA / 0-10V
pin	Define / Wire color	customer interface
1	12-30V DC (brown)	External power is on
2	0V (blue)	External power negative
3	485B (Black)	485B
4	485A (White)	485A

Specifications:

model	**SDD-05PN**	**SDD-05A**	**SDD-05D**
range	0.05m ~ 5m (90% reflectivity), 0.05m ~ 5m (10% reflectivity)		
Distance measurement frequency	40Hz (adjustable to 1–2 kHz)		
absolute accuracy	± 20mm		
repeatability precision	5mm		
Environmental light resistance	3KLux		
Measure laser wavelength	650nm		
Measure laser level	Class 2		
Measure laser field of view	4mm diameter @1m		
Indicate laser wavelength	N/A		
Indicate laser level	N/A		
input voltage	4 ~ 20mA: 20 ~ 30VDC, other communication: 12 ~ 30VDC		
peak point current	100mA		
average current	23mA		
Average Power Consumption	1W		
communication mode	NPN+PNP,4~20mA,0~10V, RS485		
levels of protection	IP65		
Size (length x width x height)	41 x 38 x 23 mm		
weight	40g (excluding cable)		
working temperature	-20℃ to +55℃ (no freezing)		
Cable Specifications	0.2mm 4-core PVC cable, 2m length (customizable)		
Customize range	Supports customized output protocols		

dimensional drawing:

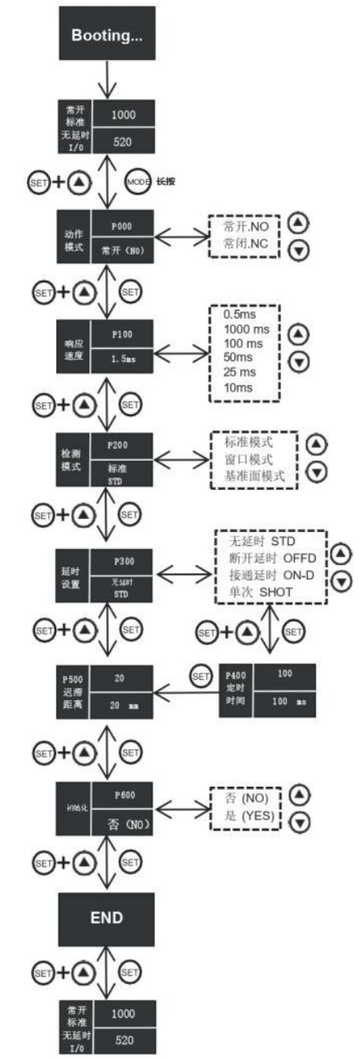


Menu actions:

In the distance measurement interface, press and hold the [MODE/▼] button for 3 seconds when the set value is stable to access the menu.

Click [SET] to enter the next menu setting. Press and hold [SET] + click [DISP/▲] to return to the previous menu setting.

Press and hold [SET] for 3 seconds to save current and previous settings, then return to the distance measurement interface.



operating process:

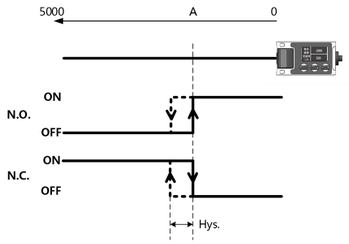
Input/Output selection: The current version has fixed input/output settings.

Detection mode settings: reference plane mode, standard mode, window mode

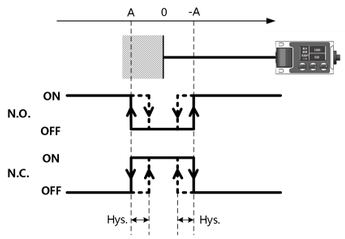
Menu item: Detection mode: Standard mode/Benchmark mode/Window mode

Press and hold [SET] for 3 seconds to save and return to the distance measurement interface. The response diagrams for different modes are as follows.

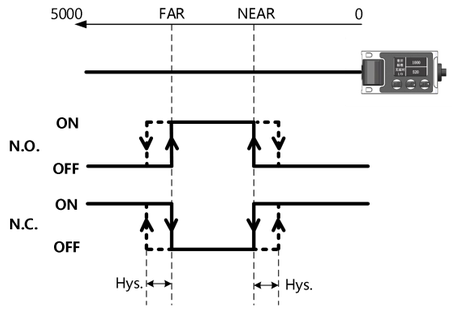
standard mode:



Base Mode:



Window mode: (Note: Hys. delay distance)



The distance measurement interface offers two modes: threshold setting via the [SET] button and manual adjustment.

[SET] Quick Settings: (Set value in no-flash state)

Standard mode: supports single-point and two-point settings.

Single-point setting: Aim at the target, press and hold [SET] for more than 3s. The [SET] will flash. Release to complete the setting. The threshold is the current target distance value.

Set two points: Align with target 1, click [SET] to save the current distance value. Align with target 2, click [SET] to complete the setting. The threshold is the average of the two measurements ((distance1 + distance2) / 2).

Base mode: Only single-point setting exists.

Single-point setting: Align with the target object, click [SET], and the setting is complete. Set the current distance value as the reference plane (distance 0).

Window mode: supports single-point and two-point settings.

Single-point setting: Align with the target object, press and hold [SET] for over 3 seconds until the [SET] icon flashes. Release to complete. NEAR and FAR distance values are ± default window value (20mm) of the target measurement (NEAR=distance-20, FAR=distance+20).

Two-point setup: Align with target 1, click [SET] to save the current distance value. Align with target 2, click [SET] to complete the setup. NEAR and FAR are the measurement values on both sides (distance1 <distance2, NEAR = distance1, FAR = distance2).

Manual tuning: For different detection modes, you can manually set the configuration values for each mode.

Under the distance measurement interface, click [MODE] to set the value to flashing.

Tune with [DISP/▲] and [MODE/▼]. Support single-tap and long-press. No action, 5s, set value no longer flicker, set value automatically saved.

Trigger conditions for detection in different modes:	
Scan Mode	Trigger conditions
standard mode	The detected value is less than the set value.
Window Mode	Near set value <Detection value <Far set value
Baseline Mode	Measured value <-set value || Measured value + set value

Switch settings:

Menu item: Output mode: I/O output

Action mode: normally open/normally closed

Press and hold [SET] for 3s to save and return to the distance measurement interface.

Initiate: (Restore factory settings)

Menu item: Initialize: Yes

Press and hold [SET] for 3s to restore factory defaults and return to the distance measurement interface.

Allowance adjustment:

Menu item: Lag distance (mm)

The upper display shows the preset offset value, and the lower display shows the adjustable setting value.

Tune with [DISP/▲] and [MODE/▼]. Support tap and long press.

Press and hold [SET] for 3s to save and return to the distance measurement interface.

Function Usage Guide (Screen Operation Flow):

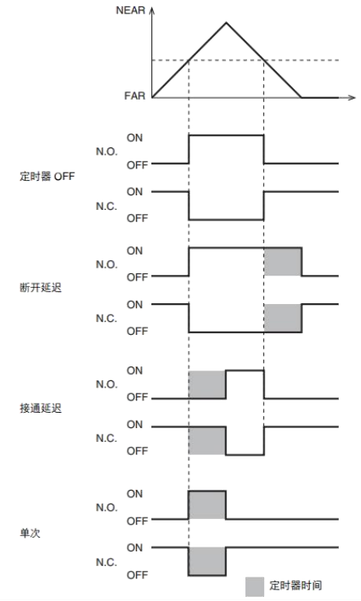
See above.

Delay setting:

This feature delays the sensor's output switching. The delay time can be set.

Menu item: Delay function: No delay/Disconnect delay/Connect delay/Single

Delay time: Set the same as the offset setting.



wrong indication:

When the target enters the blind zone or exceeds the maximum distance, the indicator light will display a red prompt and the screen will display a "---" prompt.

Order Model List:

model	range	communication interface
SDD-05PN	0.05…5m	NPN+PNP
SDD-05A		4~20mA
SDD-05D		RS485

contact us:

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