

# SL116A Long Distance Motion Detecting Micro Module

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## Overview

This auto-control product SL116A is based on the infrared line technology, with high sensitivity, reliability and ultra low-power working mode. It is widely used in all kinds of auto-detecting electrical equipment, particularly dry battery supplied products.

## Features

- Full-automatic Sensing: When people enter into the PIR detection range, the module will output high level. Otherwise, it will turn off high level output after delay time and output low level instead.
- Built-in Processing Chip: The module has a built-in analog-digital processing IC. The IC works with the PIR sensor, shielding RFI in the shell. It makes the product more steady.
- Built-in Analog-digital Chip: The module has a 16 bit ADC, which converts the digital signal generated by sensitive element into analog signal. And the special filter will efficiently filter all kinds of low and high frequency noise interference.
- Triggering: When the value of infrared signal detected by PIR sensor exceed the internal triggering threshold, an impulse will be generated, causing the internal chip record this signal. If the triggering signals are received continuously, the module will output high-level until the last effective triggering finish the delay time.
- Sensing Blocking Time(Default: 2.5s): The module can set a blocking time period after every output. During this period, the sensor will refuse any kind of sensing signal. The interval work between sensing output time and blocking time can be used to interval detecting products. Meanwhile, this function will effectively restrict the interference in the process of load switching.
- Optional Working Voltage: DC3-18V.
- Micro-power Consumption: When DC=3V, Quiescent current  $\leq 20\mu\text{A}$ .
- High Level Signal Output: Convenient to connect with all kinds of circuit.
- Long Detecting Range: 8m for small lens and 13m for big lens.

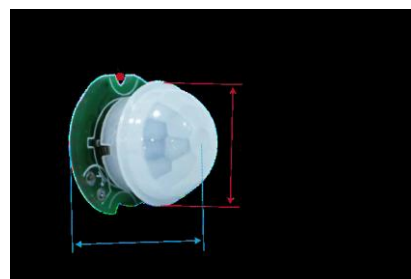
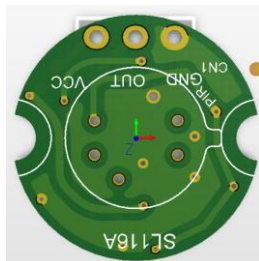
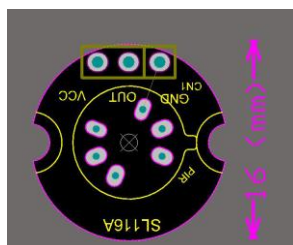
## Applications

- Human sensing lamps and lanterns
- Human detecting toys
- Security product
- Auto-sensing electric devices
- Industrial automatic control
- Battery supply auto-control products

## Technical Parameters

Operating Voltage	DC3-18V
Quiescent Current	20uA (Typical 15uA) when 3V
Voltage Output	High level 3.3V and low level 0V (Default)
Triggering Method	Repeatable triggering mode (Default)
Delay Time	149s, 4-4800s adjustable
Blocking Time	Default 2.5s
PCB Dimension	Φ 16*1.2MM
Sensing Angle	<120° taper angle (Depends on lens)
Sensing Range	8m for small lens and 13m for big lens
Working Temperature	From -20° to +50°
Lens Dimension	Φ 12.45 mm, high 10.78mm

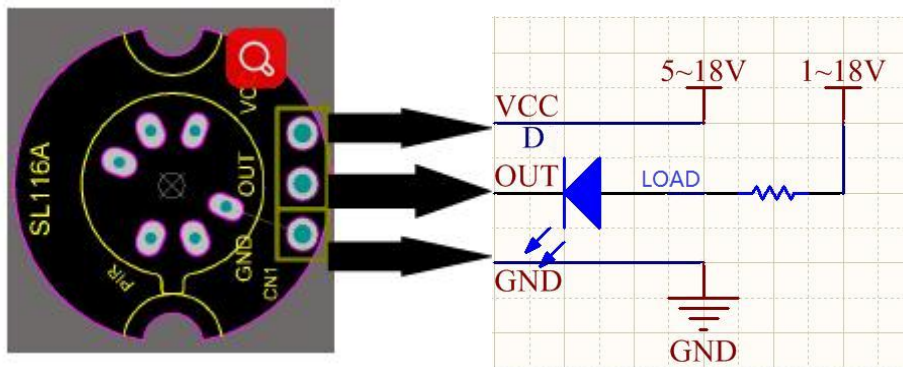
## Physical Dimension



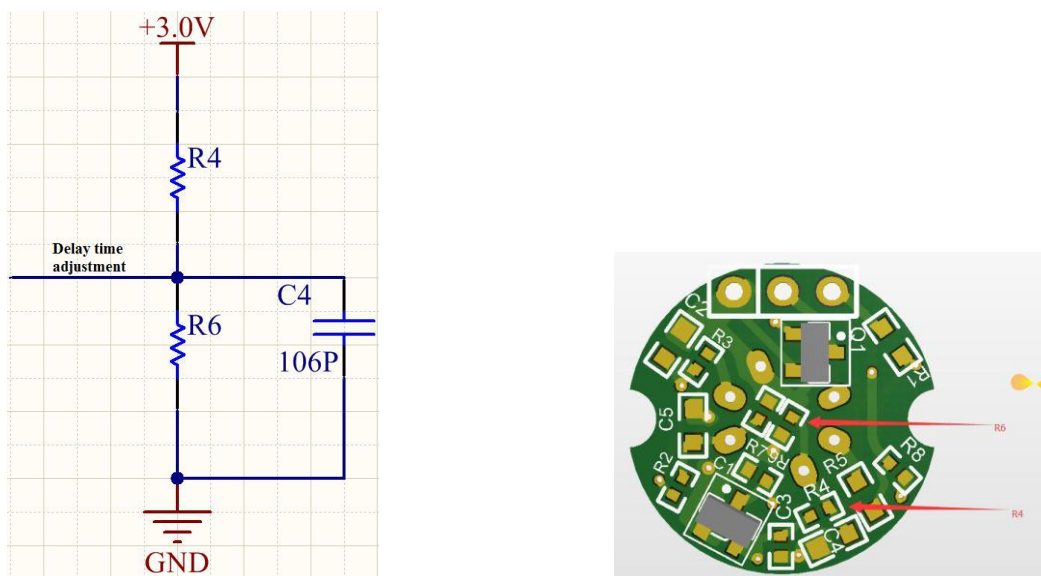
### Sensing range



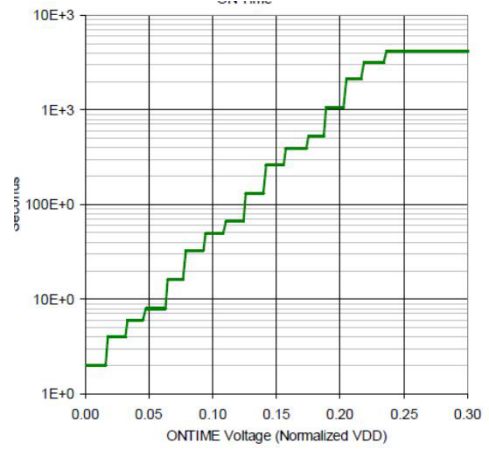
### Wiring Diagram



### Delay Time Adjustment

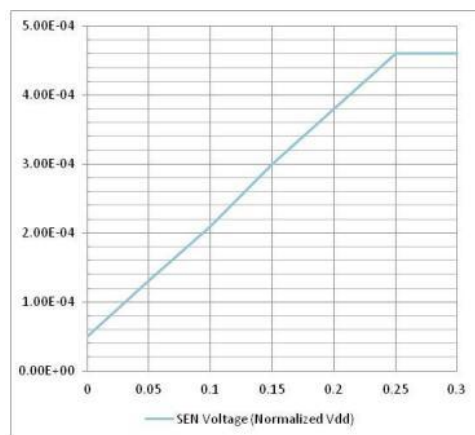
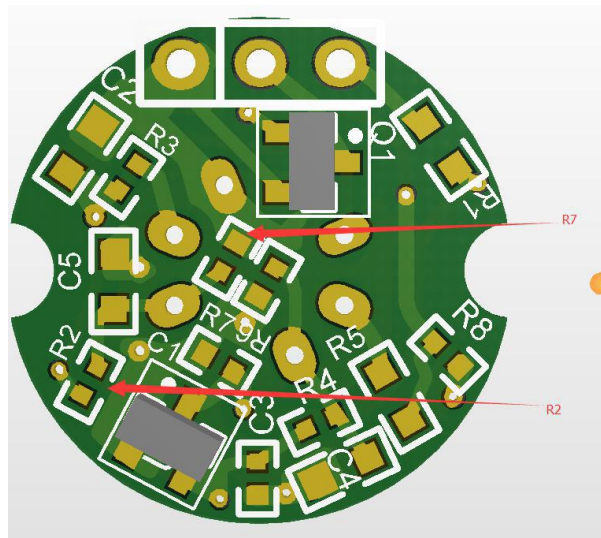
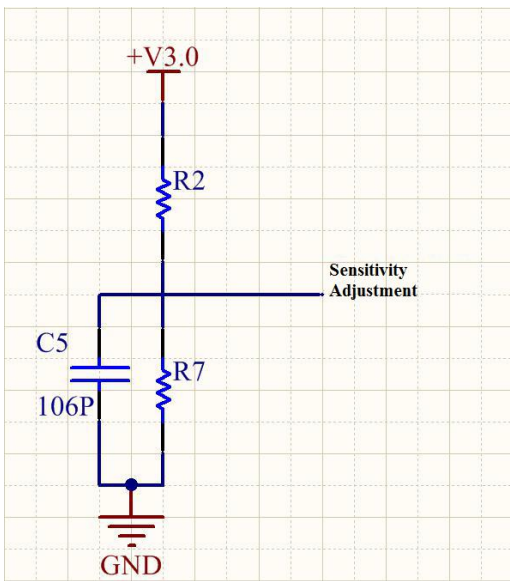


电压	On-Time 计数	On-Time 配对电阻推荐	On-Time (3.3V) 参考电压	典型时间
VDD*3/128~0	0	NC	0R	<4秒
VDD*3/128	1	1M	24k	>0.077 5秒
VDD*5/128	2	1M	39k	>0.129 7秒
VDD*7/128	3	1M	56k	>0.180 10秒
VDD*9/128	4	1M	75k	>0.232 18秒
VDD*11/128	5	1M	91k	>0.284 38秒
VDD*13/128	6	1M	110k	>0.335 56秒
VDD*15/128	7	1M	130k	>0.387 1分钟14秒
VDD*17/128	8	1M	150k	0.438 2分钟29秒
VDD*19/128	9	1M	174k	>0.490 4分钟59秒
VDD*21/128	10	1M	200k	>0.541 7分钟29秒
VDD*23/128	11	1M	220k	>0.593 9分钟59秒
VDD*25/128	12	1M	240k	>0.645 19分钟58秒
VDD*27/128	13	1M	270k	>0.696 39分钟56秒
VDD*29/128	14	1M	294k	>0.748 59分钟55秒
VDD*31/128	or	0R	NC	>0.8 1小时20分钟



Delay time ranges from 0V to 25% VDD. The delay time comes to maximum when it exceeds 25% VDD

### Sensitivity Adjustment



Take out R2, C5. The detecting distance reaches the longest when R7 is 0Ω. Sensitivity ranges from 0V to 25% VDD.



## Attention

■ There is an initialization time about 10 seconds after charging the module. During this period, this module will alternately output 0-3 times. Then it starts the normal standby status.

■ To avoid receiving interference signal to generate malfunction, please don't expose the lens directly to the light or other interferences while installing. Try to avoid floating wind in the operating environment, since it will interfere the device.

■ Please notice the right direction and angle while installing. Try to parallel the square window of the module to the direction with the most human activities to reach the best sensing effect.

■ The sensing range will be shorter when the environment increases to human surface temperature (30~32°C). It's a normal outcome of temperature influence.