

# SY-DS-1 Series

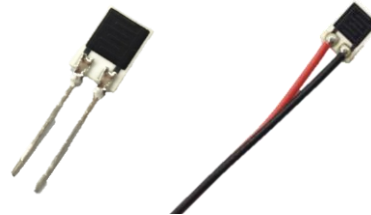
Dew Sensor

## Features

- ◆ High sensitivity in high-humidity
- ◆ Quick Response
- ◆ Easy mount on the circuit board (2 Types)
- ◆ Excellent reliability and stability

SY-DS-1N

SY-DS-1L



## Product Summary

SY-DS-1 series is a resistive dew formation sensor for detecting the start point of condensation. The principle of the sensor is based on the change in resistance of conductive polymer in a thin film on a ceramic substrate. As the sensing polymer becomes wet, its resistance value ( $k\Omega \rightarrow m\Omega$ ) will increase sharply. User is able to use the sensor to control (Switching On/Off behavior) bathroom fan or HVAC system.

## Type

### 1) SY-DS-1N

SY-DS-1 harness type without metal plate.

### 2) SY-DS-1L

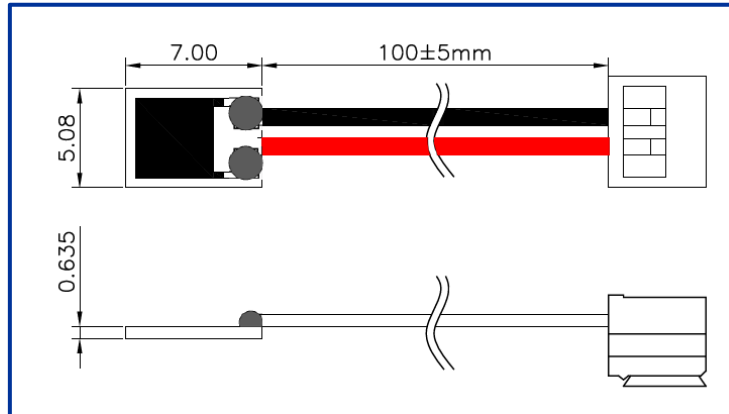
SY-DS-1 Lead pin type.

## Electrical characteristics

Rated voltage	DC AC 0.8V Max.
Operating temperature range	0°C ~ +60°C
Operating humidity range	0%RH ~ 100%RH
Storage condition range	-20°C ~ 85°C
Standard characteristic	10k $\Omega$ Max. at 80%RH
	100k $\Omega$ Max. at 93%RH
	200k $\Omega$ Min. at 98%RH

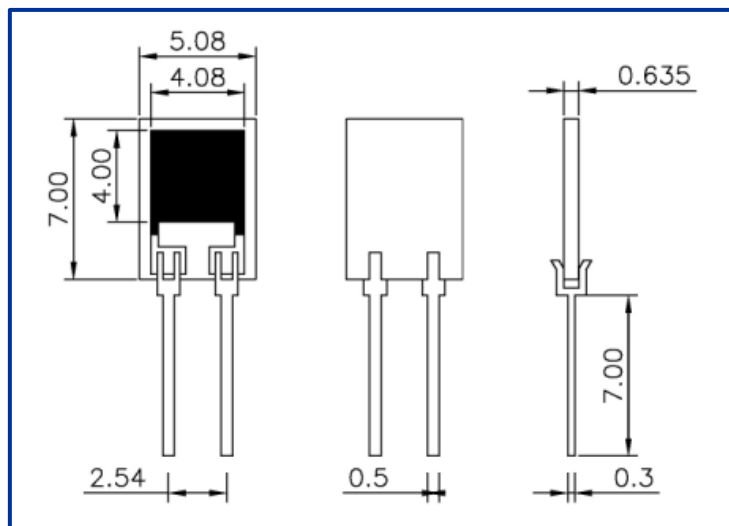
## Dimension and Component Parts

**SY-DS-1N**



No	Component parts	Material
1	Dew sensor	Alumina substrate (t=0.64mm)
2	Harness	UL 1061 #26, 100mm
3	Connector	YH200-02

**SY-DS-1L**



No.	Component parts	Material
1	Dew sensor	Alumina substrate (t=0.64mm)
2	Lead pin	Pb-free Lead pin

\* The tolerance is in compliance with control standard of supplier.

## Reliability

### 1) Temperature cycle

Here, one cycle shall be to leave for 30 minutes under  $-40^{\circ}\text{C}$ , continue to leave for 30 minutes under  $+85^{\circ}\text{C}$ . Temperature changing time is 60 minutes repeat such 5 cycles. Thereafter, to be satisfied with characteristics specification.

### 2) Dew cycle

Here, one cycle shall be to leave 1 minute under wetting at room temperature, continue to leave for 57 minutes under natural drying at room temperature. Repeat such 50 cycles. Thereafter, to be satisfied with characteristics specification.

### 3) Humidity resistance

Leave for 1,000 hours in the environment of  $40^{\circ}\text{C}$  and 95%RH. Thereafter, to be satisfied with characteristics specification.

### 4) Heat resistance

Leave for 1,000 hours in the environment of  $85^{\circ}\text{C}$ . Thereafter, to be satisfied with characteristics specification.

### 5) Humidity loaded

Load the voltage of DC 0.8V for 1,000 hours in the environment of  $40^{\circ}\text{C}$ , 90 to 95%RH. Thereafter, to be satisfied with characteristics specification.

### 6) High temperature loaded

Load the voltage of DC 0.8V for 1,000 hours in the environment of  $60^{\circ}\text{C}$ . Thereafter, to be satisfied with characteristics specification.

## Remarks on using

### Protection of humidity sensitive part

- ◆ Don't scratch it.
- ◆ Don't touch it with bare hands.
- ◆ Don't stain it with adhesive agent, flux, grease, oil.
- ◆ Don't expose it more than  $85^{\circ}\text{C}$  for a long time.
- ◆ Don't wash it with ionized water.
- ◆ Don't touch it with organic solvents.

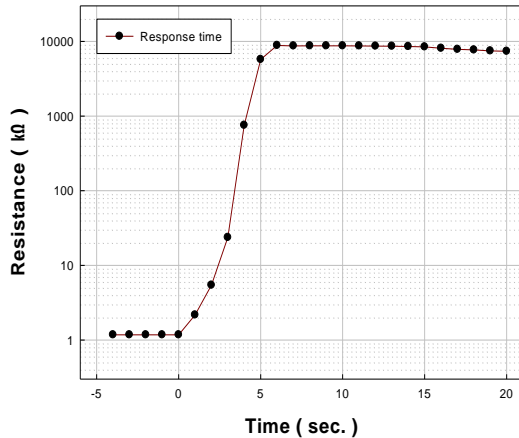
### Caution in mounting

- ◆ Don't remount harness or lead pin. It is possible that electrode may be broken.
- ◆ Don't pull the harness or lead pin powerfully. It is possible that electrode may be stripped off, or lead pin may be torn.
- ◆ Don't shock and force it. It cracks because sensor board is a ceramics.

## Characteristic Chart

### Response characteristics

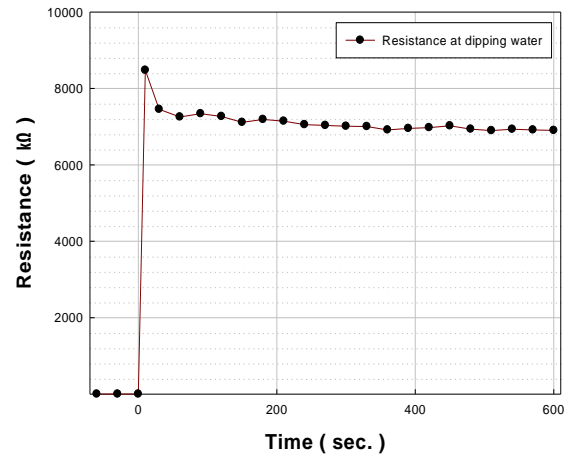
※ Test condition : 25°C, 75%RH → 25°C  
Dew condition (Dipping water)



**Fig 1.** Response time

### Resistance characteristics at dipping water

※ Test condition : 25°C Dew condition  
(Dipping water)



**Fig 2.** Characteristics

## Packaging

### SY-DS-1N

Tray : 30pcs (PET)  
Outlet Box : 5,000pcs (60trays)  
Size & Weigh : 450 x 310 x 290mm/ 6.8kg

### SY-DS-1L

Tray : 50pcs (PET)  
Inlet Box : 1,000pcs (20trays)  
Outlet Box : 23,000pcs (23 Inlet Boxes)  
Size & Weigh : 650 x 360 x 310mm/ 14.5kg

## Revision History

Date	Version	Page(s)	Changes
03 AUG 2016	1.5		First Release
06 JAN 2017	1.6		Complete Revision (Characteristics, Dimension, Reliability, Layout)
24 JAN 2018	1.7	1,4	Add Feature, Product summary, packaging
30 JAN 2018	1.8	6	Standard Characteristic Change



This publication is the proprietary product of **SAMYOUNG S&C** and is copyrighted, with all rights reserved. Under the copyright laws, no part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, in whole or in part, without the express written permission of **SAMYOUNG S&C**. Express written permission is also required before a third party may make any use of this publication.

## **SAMYOUNG S&C Co., Ltd.**

150 Sangdaewon-dong, Jungwon-gu,  
Seongnam-city, Gyeonggi-do,  
KOREA 462-807

Phone : + 82 31 741-1830  
Fax : + 82 31 741-1821  
Homepage : [www.samyoungsnc.com](http://www.samyoungsnc.com)  
E-mail : [sales@samyoungsnc.com](mailto:sales@samyoungsnc.com)

**SAMYOUNG S&C reserve the rights, without further notice, to change the product specifications and/or the information in this document.**

Copyright 2017©, **SAMYOUNG S&C**