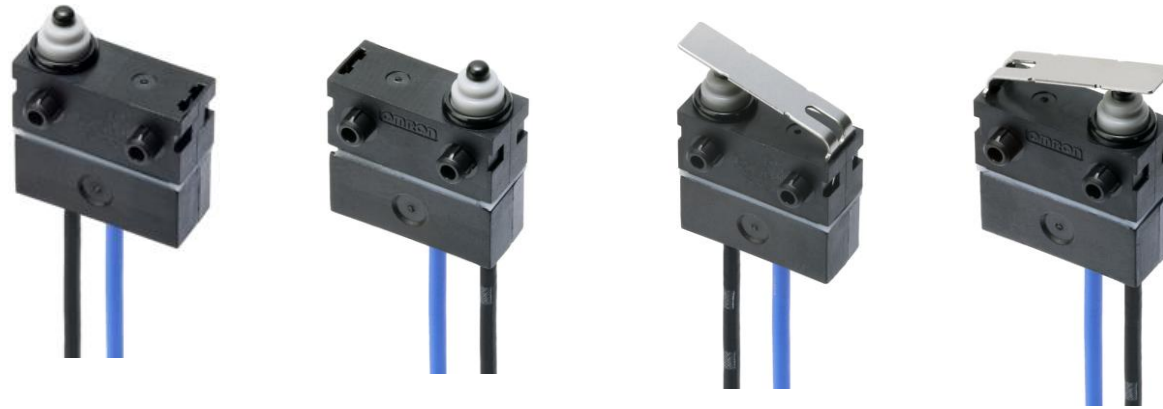


# New Product Information

## D2AW-R



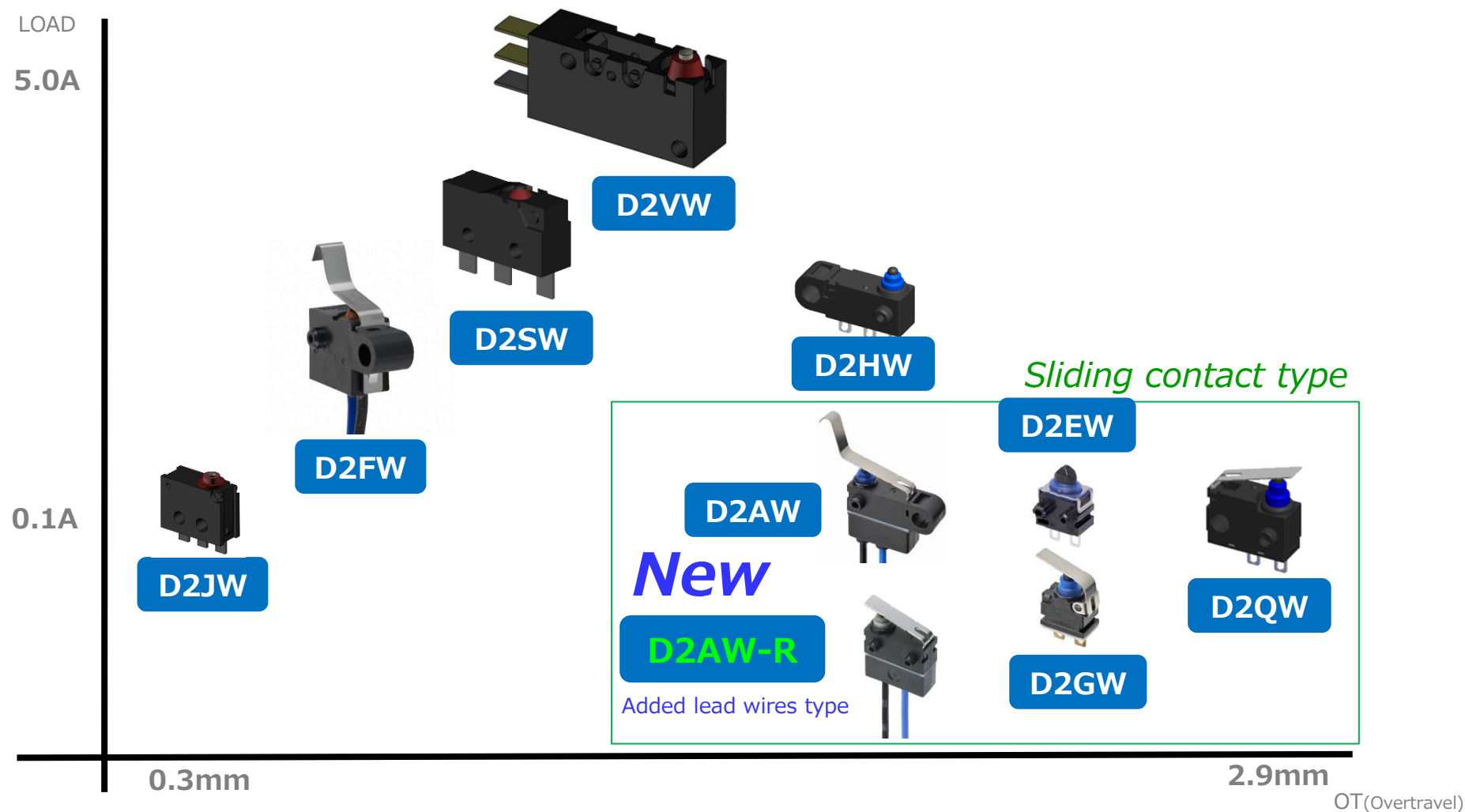
**Sealed Ultra Subminiature Basic Switch with integrated Resistors**  
**Molded lead wires type series addition**

# Line-up of sealed switches

Molded lead wire models have been added to D2AW-R with integrated resistors.

Making this switch ideal for places subject to water spray or excessive dust.

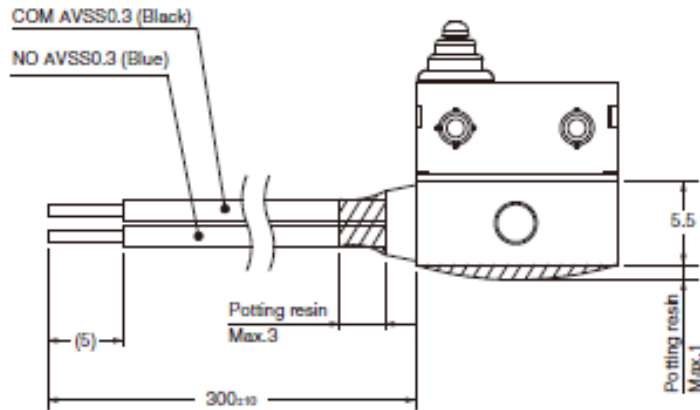
(Water-resistance performance is equivalent to IP67\*. High temperature resistance: Durable up to 85° C. \*Excluding the terminals)



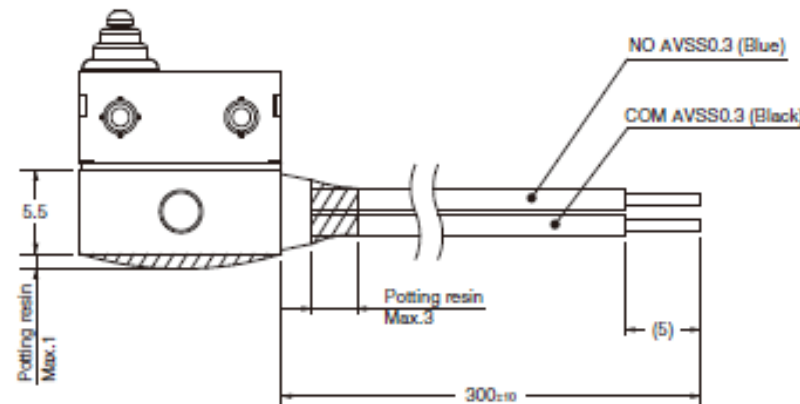
# Product features

1. Same outline as D2HW/D2AW
2. 2 chip resistors (max.) can be mounted
3. Maximum rated current of chip resistor: 0.5 W
4. PCB terminals, Press-fit terminals
5. Sliding contact mechanism

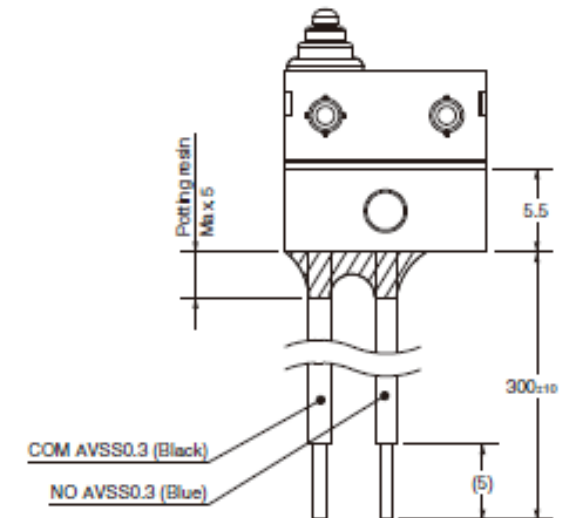
## ● Molded lead wires on left-side



## ● Molded lead wires on right-side



## ● Molded lead wires downwards

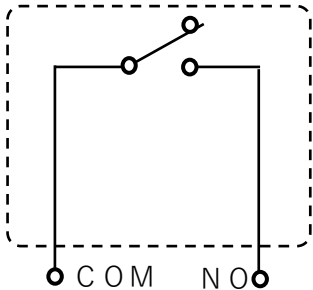
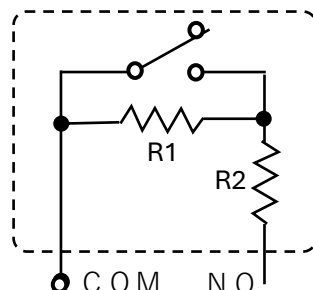


## Structure

Built-in 1-2 chip resistor(s) can be used to monitor and display the following output states:  
"ON/OFF", "Short-circuit", or "Disconnection".

# Circuit diagram

## 2 embedded chip resistors

Switch type		D2AW (w/o chip resistors)	D2AW-R (w/2 chip resistors)
Circuit No.		0	1
Circuit Diagram			
Switch	OFF	$\infty$	$R1 + R2$
	ON	$\approx 0$	$R2$
Abnormal condition	Short-circuit	0	0
	Disconnection	$\infty$	$\infty$

$\infty \Rightarrow 0$   
 ON? Short?

Output different signals

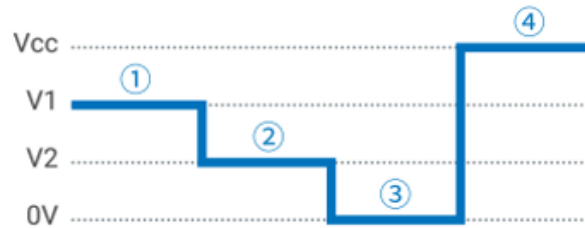
D2AW(w/o resistors) may output “ $\infty$ ” under abnormal conditions.(“ $\infty$ ” is output signal when it is OFF.) However, D2AW-R(w/2 chip resistors) can output different signals by detecting following modes: 1. OFF 2.ON 3. Short-circuit 4. Disconnection.

# Circuit diagram

## Example of usage

For the analog input (voltage) of the microcontroller, four thresholds are set.  
Determines whether a switch is ON or OFF, Disconnected, or shorted.

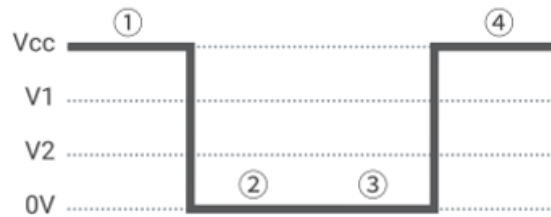
D2AW-R(with integrated Resistors)  
voltage output



[Vcc/V1/V2/0V] Four types of output can detect four states.

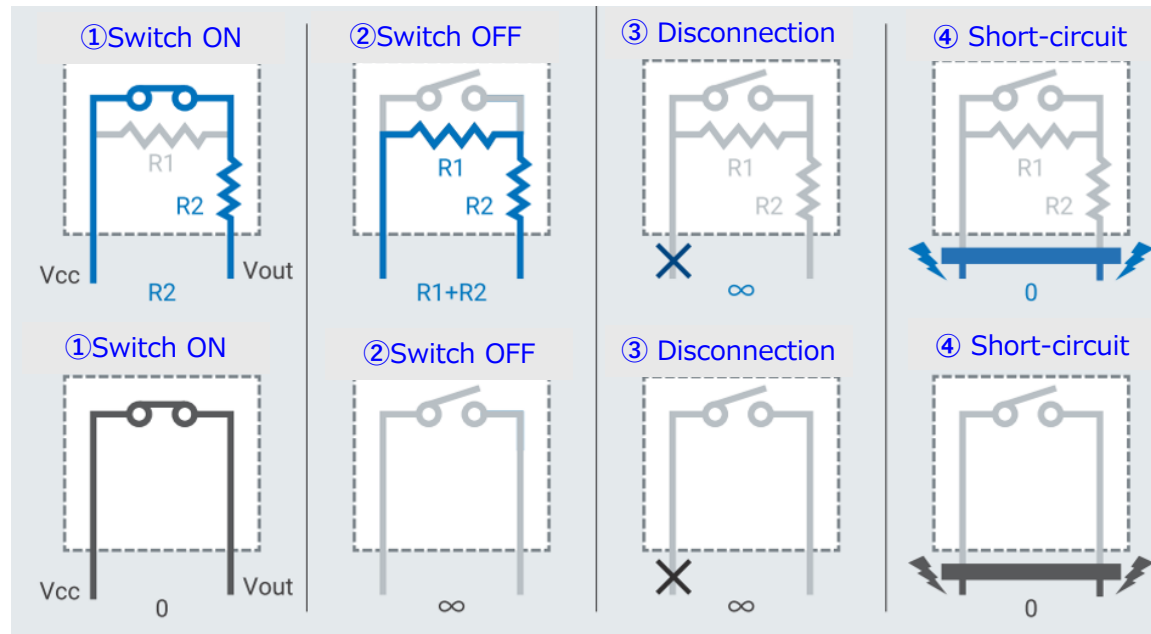
④ Short-circuit ①ON ②OFF ③ Disconnection

D2AW-R(Normal switch) voltage output

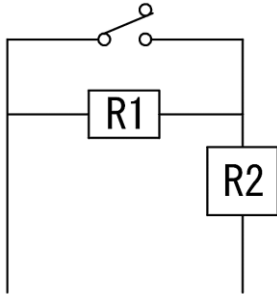
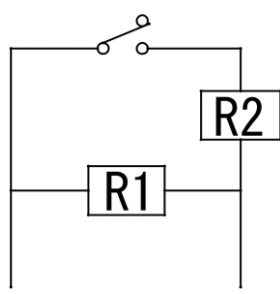


[Vcc/0V] There are only two types of outputs, and the following cannot be determined.

①ON or ④ Disconnection  
②OFF or ③Short-circuit



# D2AW-R SPECIFICATIONS

		R1	R5
Rating voltage		5 to 14 VDC	
Resistance value ※1	Resistor1	5110 $\Omega$	3920 $\Omega$
	Resistor2	1620 $\Omega$	511 $\Omega$
Output resistance ※2	FP-OP	6730 $\Omega \pm 5\%$	3920 $\Omega \pm 5\%$
	OP-TTP	1620 $\Omega \pm 5\%$	452 $\Omega \pm 5\%$
Resistor power ratings		0.5W	
Circuit diagram ※2		 <p>A circuit diagram showing a switch in series with two resistors, R1 and R2, connected in series. The switch is at the top, followed by R1, and then R2 at the bottom.</p>	 <p>A circuit diagram showing a switch in series with two resistors, R1 and R2, connected in parallel. The switch is at the top, followed by a parallel combination of R1 and R2 at the bottom.</p>

\*1. The resistance value and power rating of resistors 1 and 2 can be changed.

Contact your OMRON sales representative for details.

\*2. Avoid use outside of the operating temperature range of -40°C to +85°C.

Temperature might cause output resistance to fluctuate which induces malfunction.



# APPLICATIONS

Possible applications using the feature to detect different modes  
(1.ON 2. OFF 3. Short-circuit 4. Disconnection)

1. Security devices (anti-theft, anti-tamper)
2. FA devices (failure diagnosis)

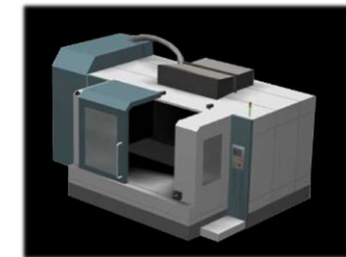
## Security devices

D2AW-R switches are ideal for alarming/security devices.(Smart meter cover, anti-theft device cover, safety boxes, automatic locking systems, etc.)



## FA devices

D2AW-R switches are useful for failure diagnosis. D2AW-R can detect irregular conditions such as wire disconnection and switch failure. Remote detection is also possible. This new product reduces man-hours to detect failure and send alerts for parts replacement.



**Thank You**

