

# ZMV Series

## Mini Size Snap-acting Switches



### Agency Approvals

Agency	Agency File Number
US	E42363

### Specifications

<b>Contact Rating</b>	3A 12VDC @ 100,000 cycles min. 3A 24VDC @ 50,000 cycles min. 3A 125/250VAC @ 10,000 cycles min. 0.01A 12/24VDC @ 1,000,000 cycles min. 0.01A 125/250VAC @ 1,000,000 cycles min.
<b>Mechanical Life</b>	1,000,000 cycles min.
<b>Insulation Resistance</b>	100 mΩ min.
<b>Dielectric Strength</b>	Min. 500VAC (50-60Hz)/minute between Live Parts
<b>Operating Temperature</b>	-40°C to 85°C
<b>Operating Force</b>	150 gf max.

### Description

ZMV series mini snap-acting switches are often found used in automotive, medical, industrial and IoT devices. Featuring a unique pin plunger whereby actuation can be actuated from any angle.

### Features & Benefits

- Compact size – ideal when space is limited
- High contact reliability to support from low range switching loads
- Adequate stroke setting for reliable & precision ON or OFF switching
- Pin plunger version can be actuated from an angle
- Internal spring design return – ensures the actuator is restored to the same position every time. These features yield consistent operation over the long life of these switches.
- IP67 for standalone switch except the metal terminal part; Full IP67 protection when potted with wire version
- RoHS compatible & compliant

### Applications

- Automotive: door latch, seat position detection, EV charging
- Medical
- Industrial
- Home appliances
- IoT devices

### Materials

<b>Case</b>	Nylon
<b>Cover</b>	
<b>Actuator Button</b>	PET+POM
<b>Movable Contact</b>	
<b>Stationary Contacts</b>	AG alloy (Gold plated if selected)
<b>Terminals</b>	Brass

#### Notes:

1. Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center. Sealing cap could possibly be damaged in case of contacts with oils or greases. Please try to avoid direct contact. If more support is needed, consult Customer Service Center.

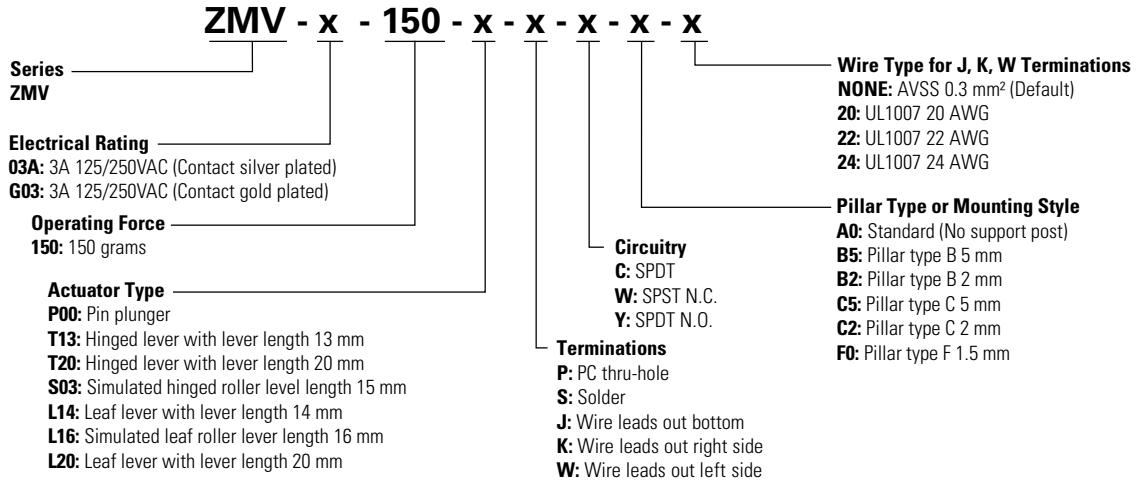
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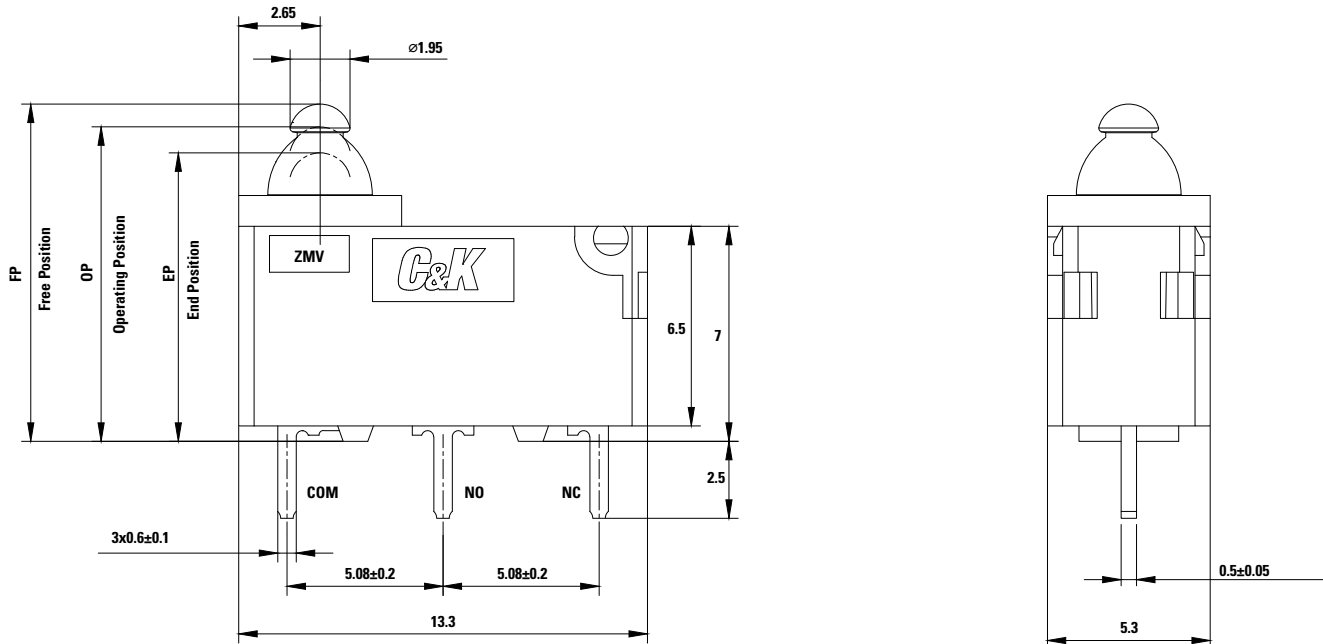
### Ordering Number

Our easy build-a-switch concept allows you to mix and match options to create the switch you need. To order, select desired option from each category and place it in the appropriate box.



### Series (mm)

#### ZMV Mini Size Snap-Acting Switches



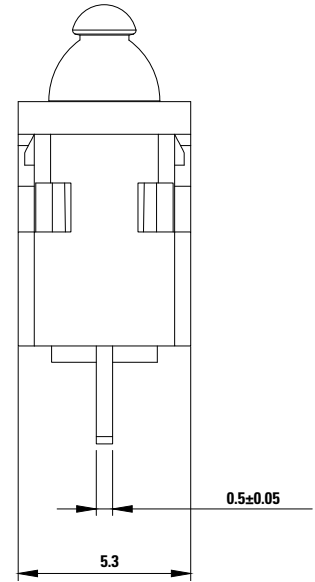
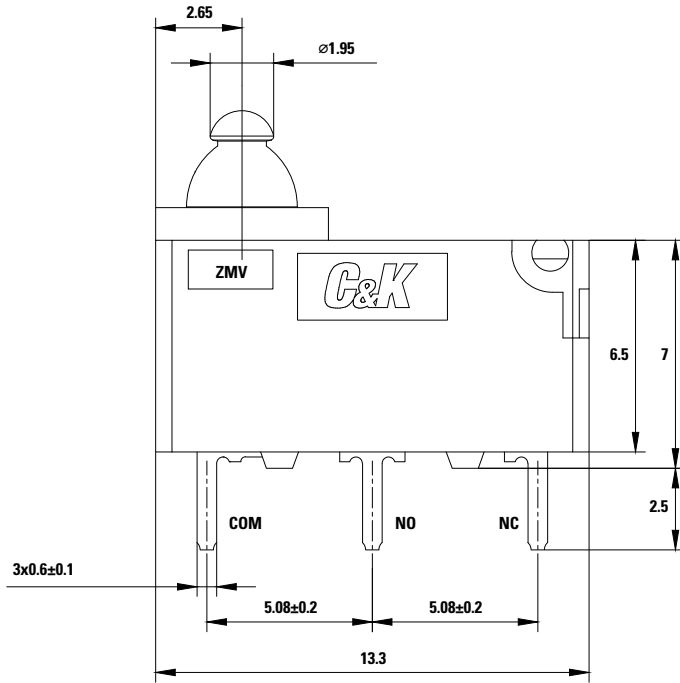
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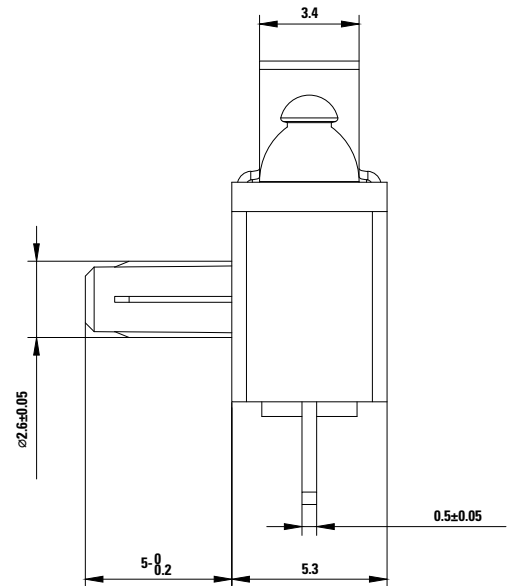
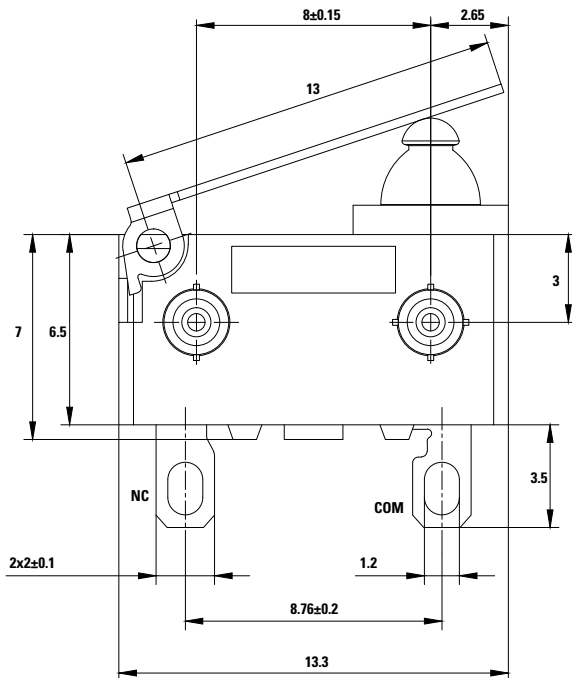


### Actuator Type (mm)

#### P00 Pin Plunger



### T13 Hinged Lever with Lever Length 13 mm

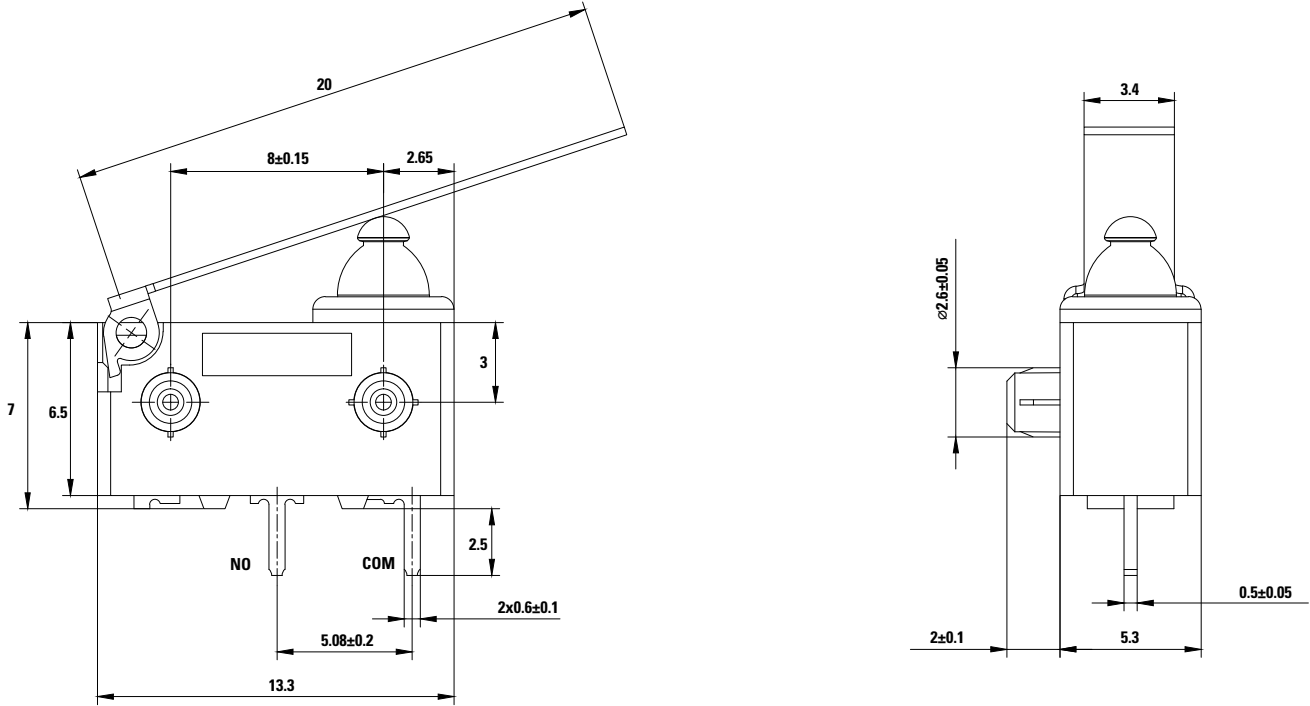


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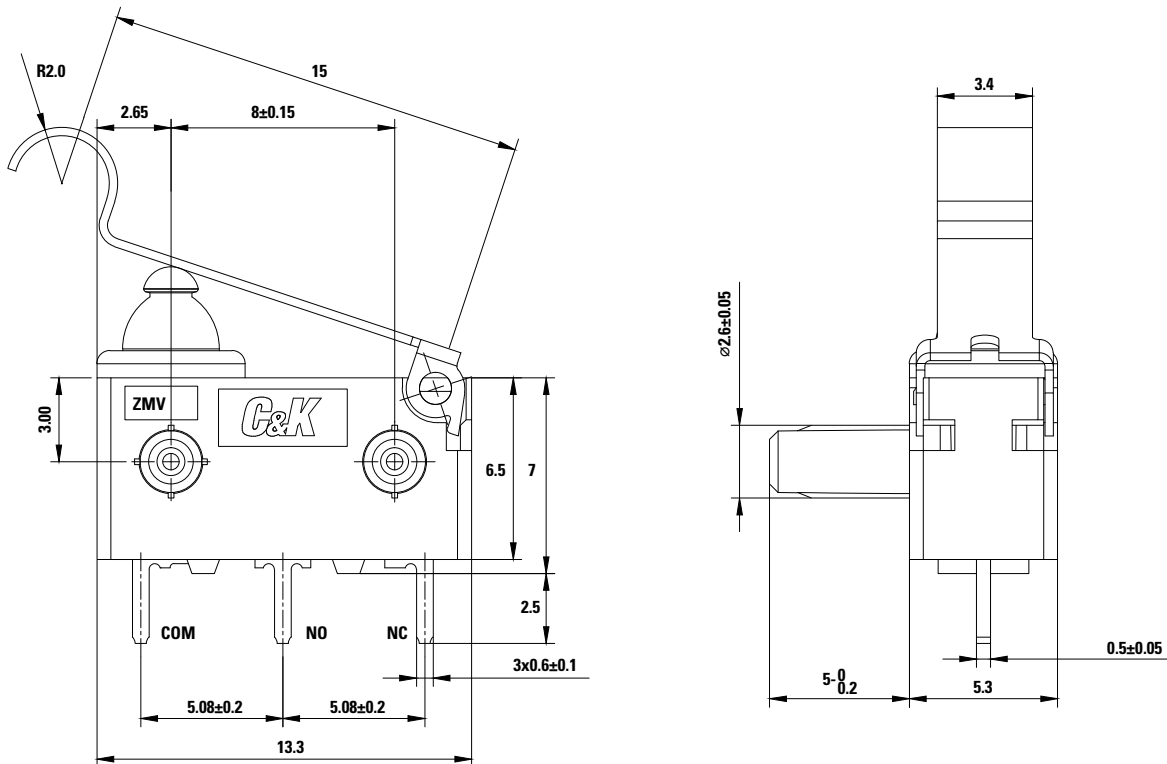
## Mini Size Snap-acting Switches



T20 Hinged Lever with Lever Length 20 mm



S03 Simulated Hinged Roller Lever Length 15 mm

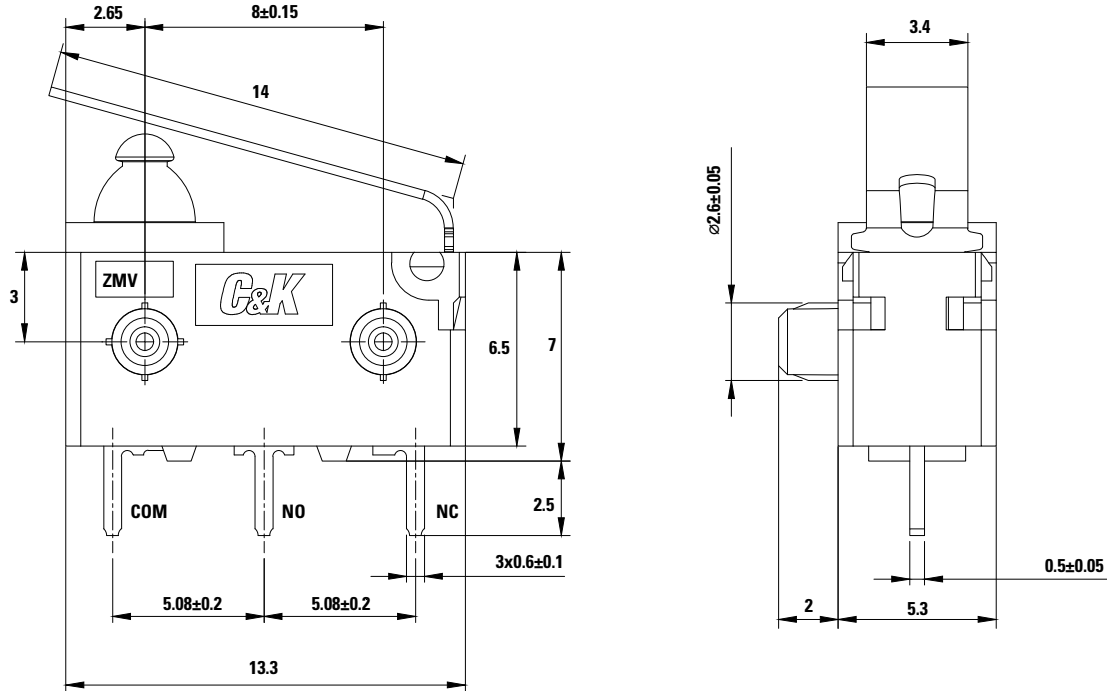


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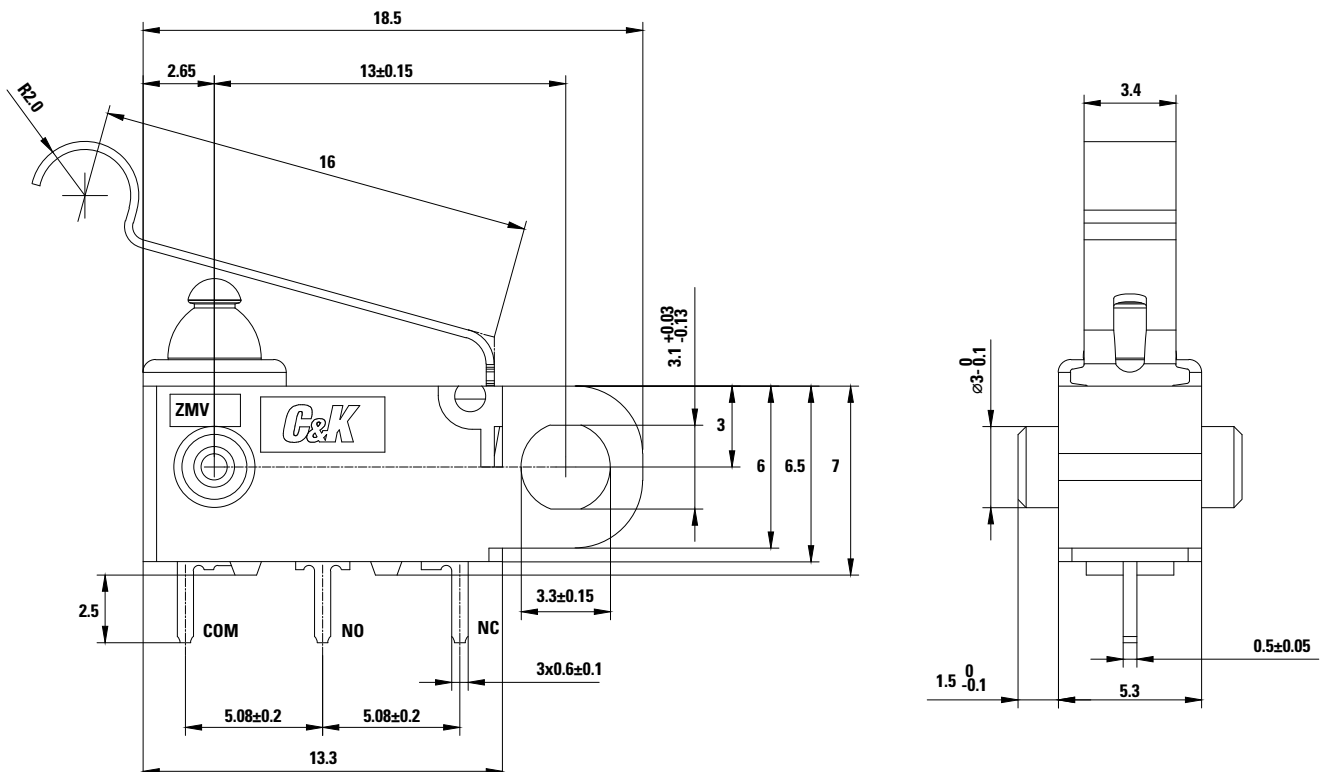
## Mini Size Snap-acting Switches



L14 Leaf Lever with Lever Length 14 mm



L16 Simulated Leaf Roller Lever Length 16 mm

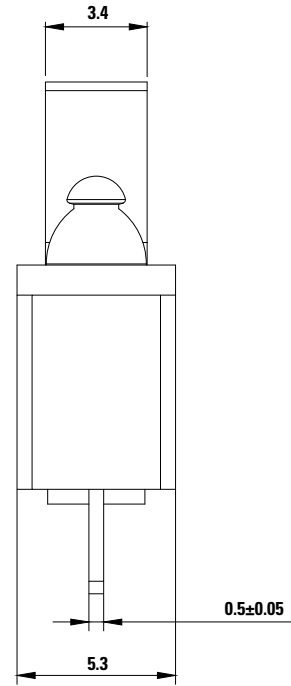
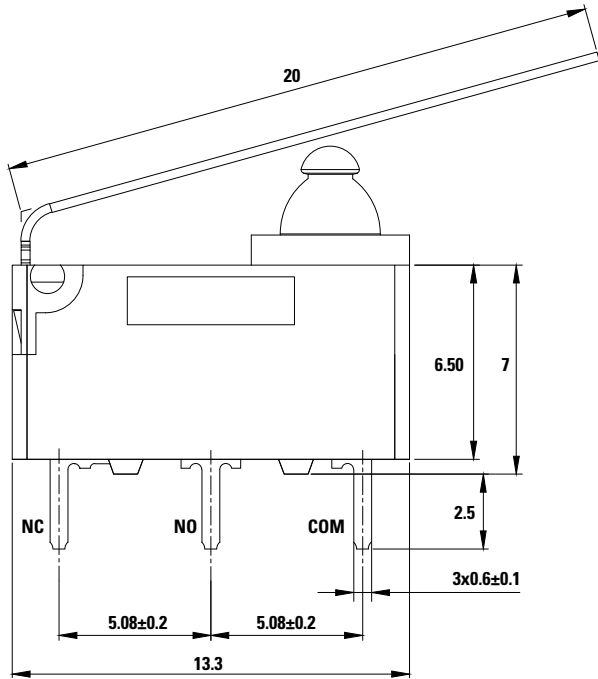


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L20 Leaf Lever with Length 20 mm



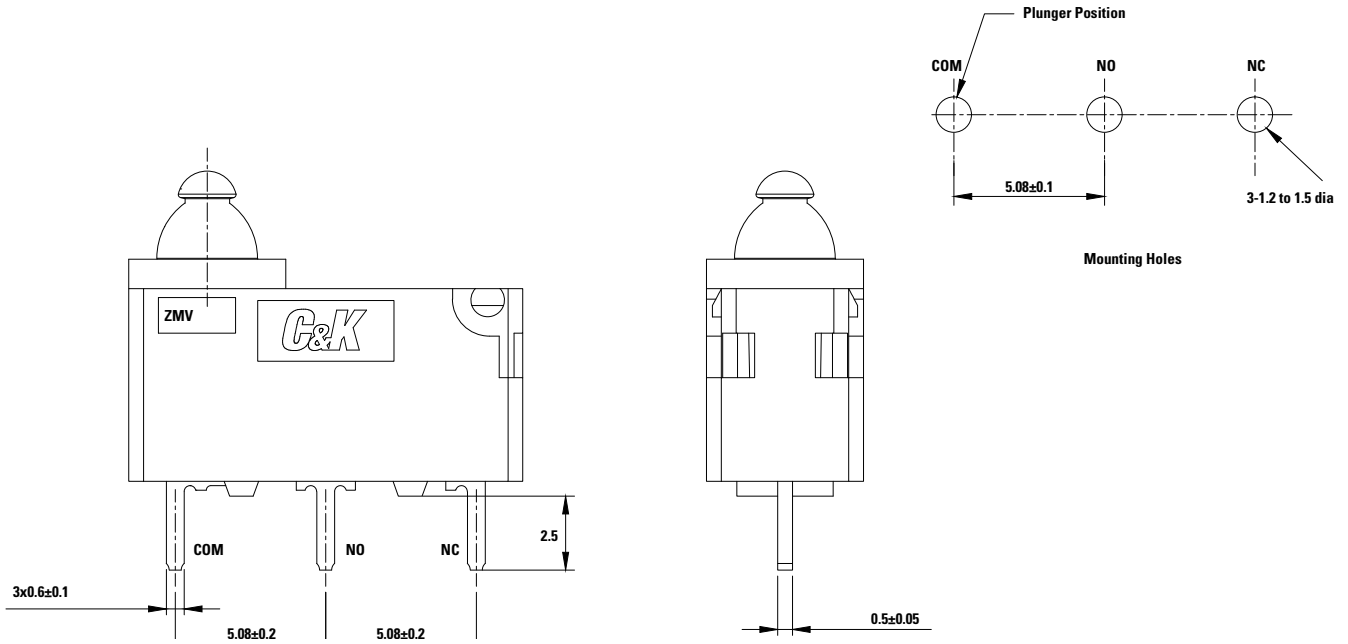
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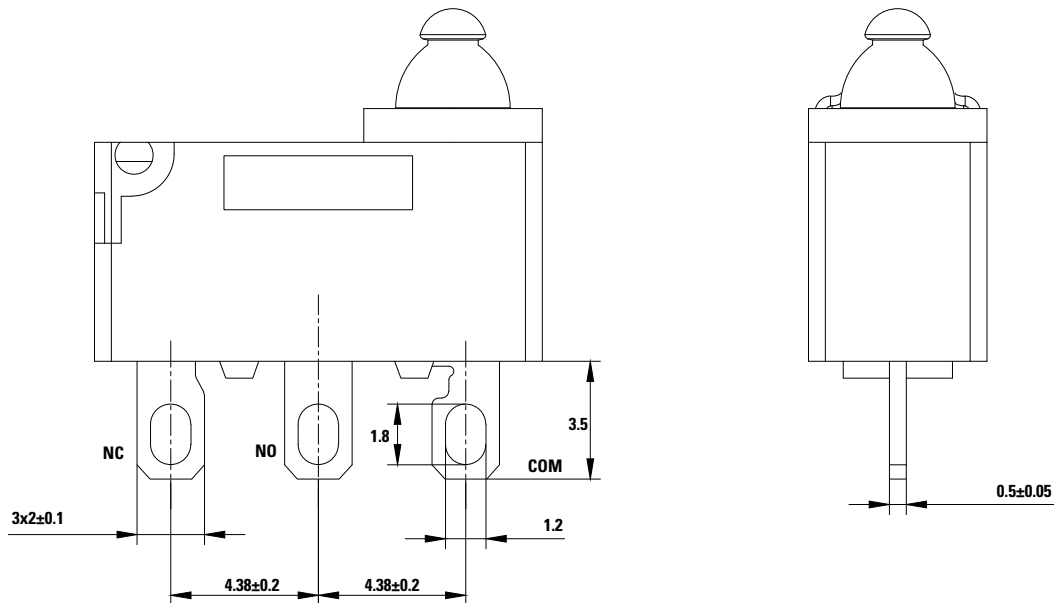


### Terminations (mm)

#### P PC thru-hole



#### S Solder

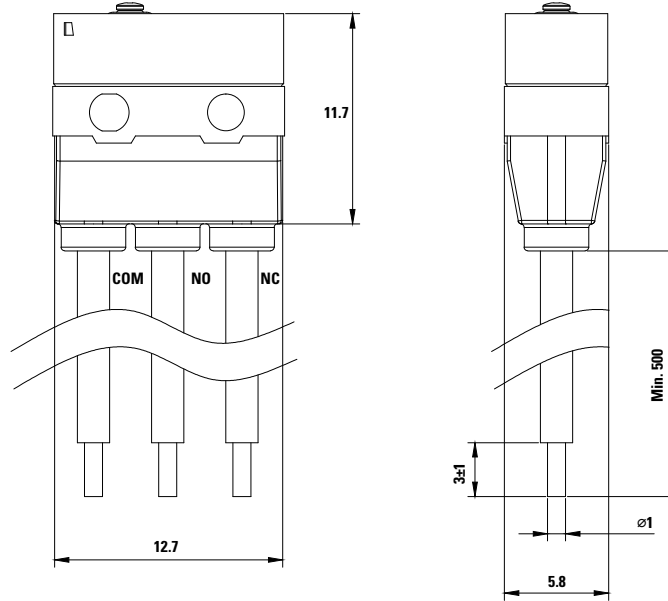


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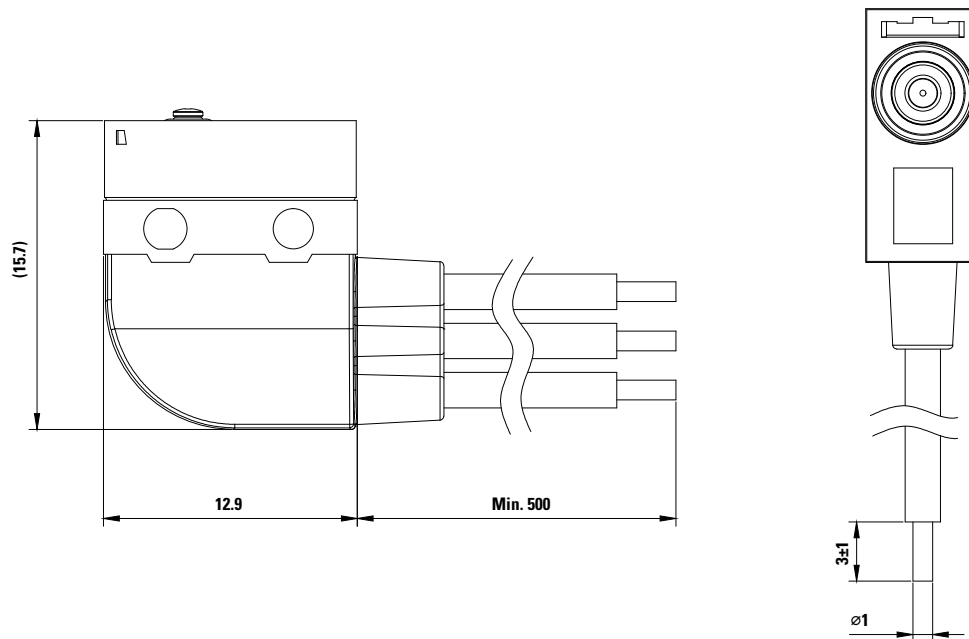


### J Wire Leads Out Bottom



**Default wire:**  
**COM:** AVSS 0.3 mm<sup>2</sup> black or equivalent  
**NO:** AVSS 0.3 mm<sup>2</sup> blue or equivalent  
**NC:** AVSS 0.3 mm<sup>2</sup> gray or equivalent

### K Wire Leads Out Right Side



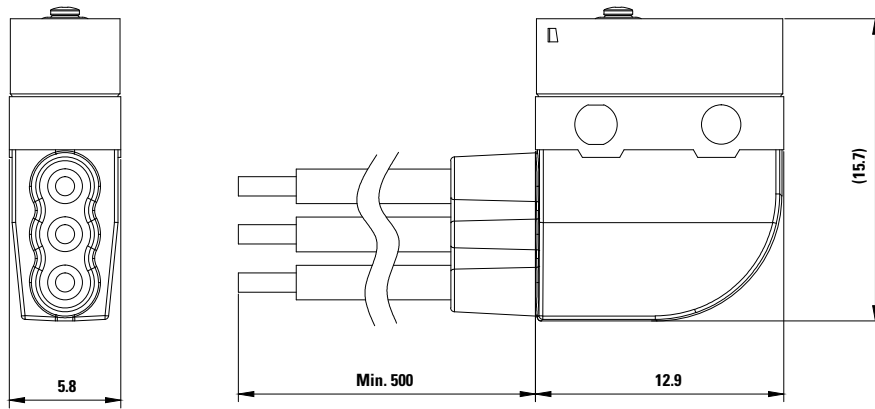
**Default wire:**  
**COM:** AVSS 0.3 mm<sup>2</sup> black or equivalent  
**NO:** AVSS 0.3 mm<sup>2</sup> blue or equivalent  
**NC:** AVSS 0.3 mm<sup>2</sup> gray or equivalent

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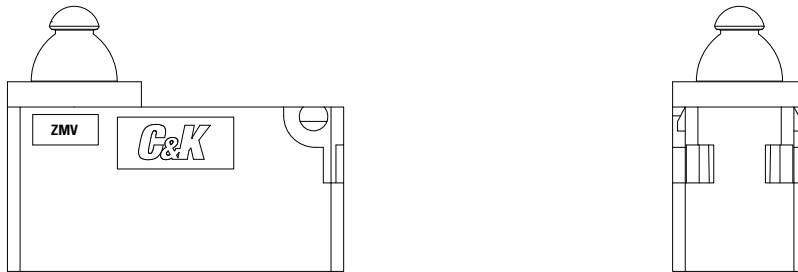
### W Wire Leads Out Left Side



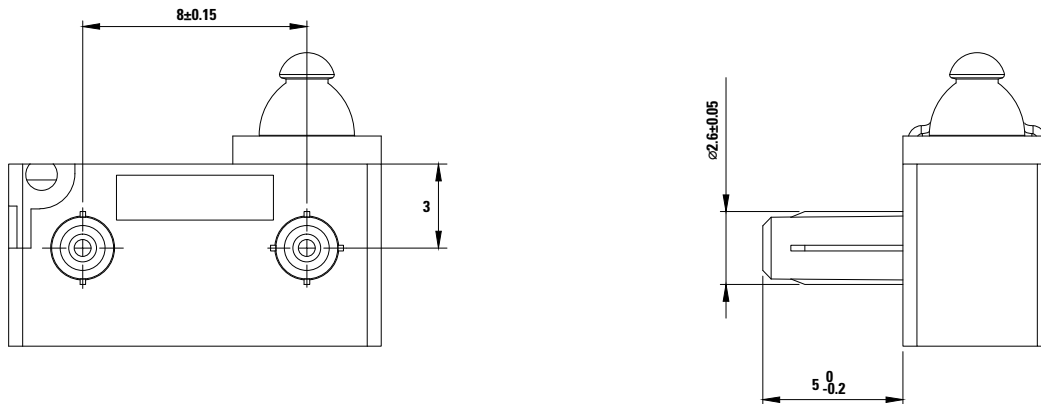
**Default wire:**  
**COM:** AVSS 0.3 mm<sup>2</sup> black or equivalent  
**NO:** AVSS 0.3 mm<sup>2</sup> blue or equivalent  
**NC:** AVSS 0.3 mm<sup>2</sup> gray or equivalent

### Pillar Type or Mounting Style

#### A0 Standard (No Support Post)



#### B5 Pillar Type B 5 mm

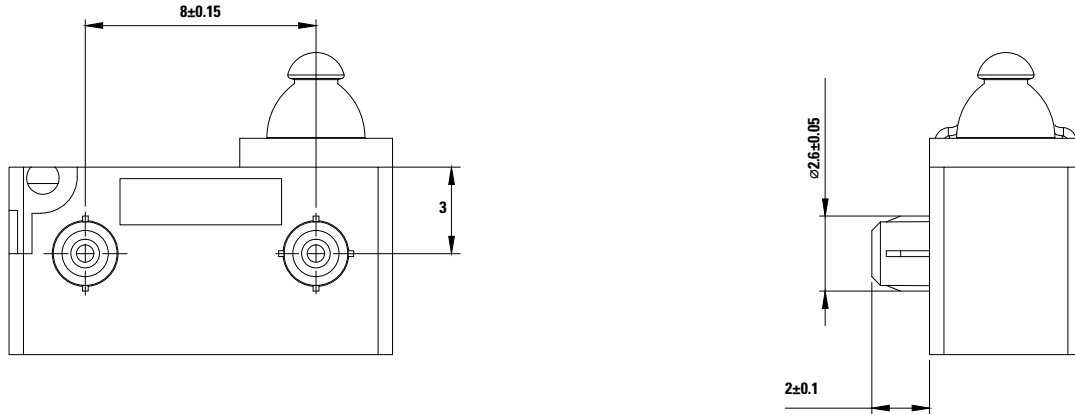


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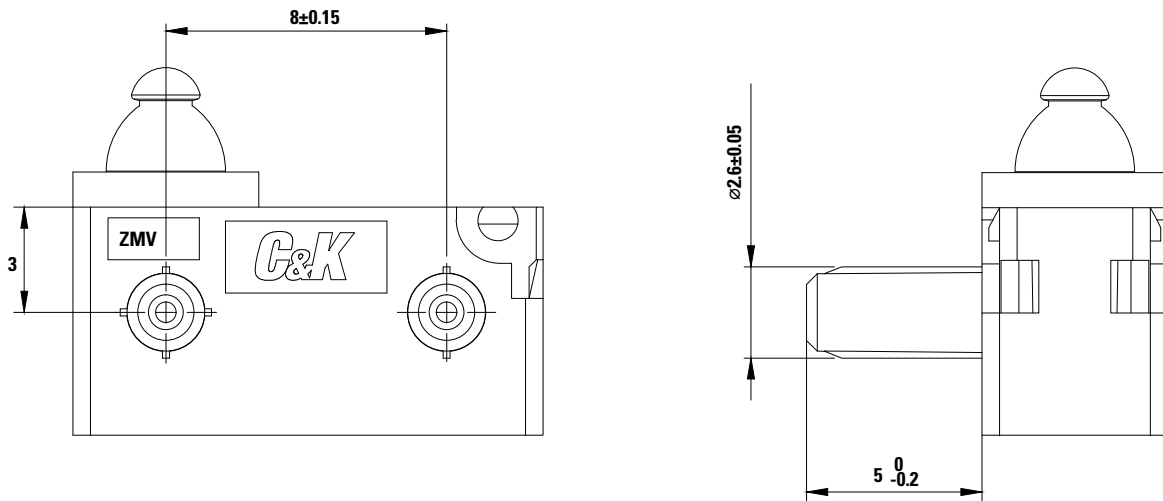
## Mini Size Snap-acting Switches



B2 Pillar Type B 2 mm



C5 Pillar Type C 5 mm

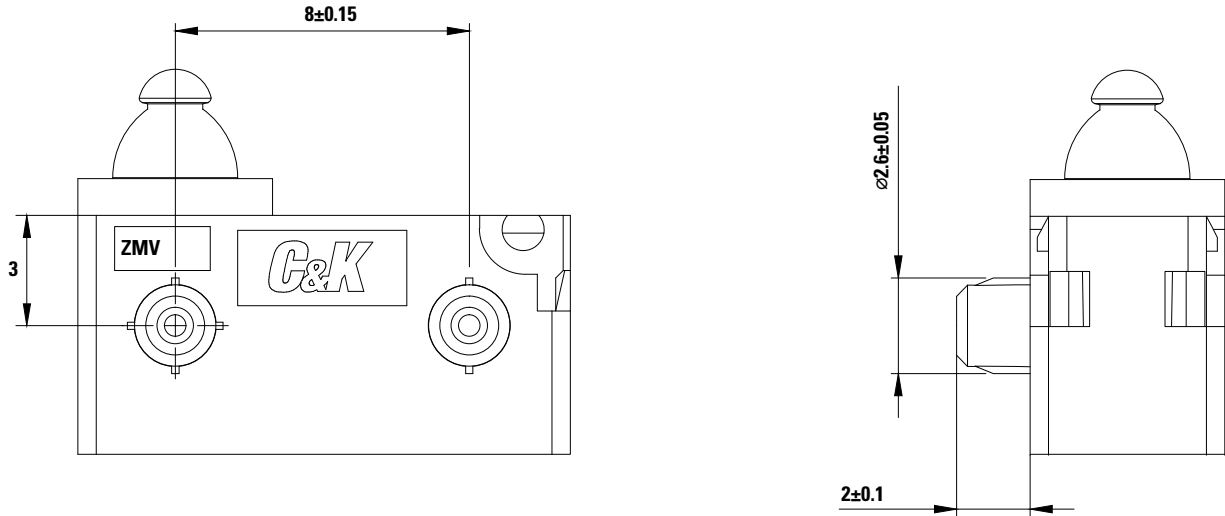


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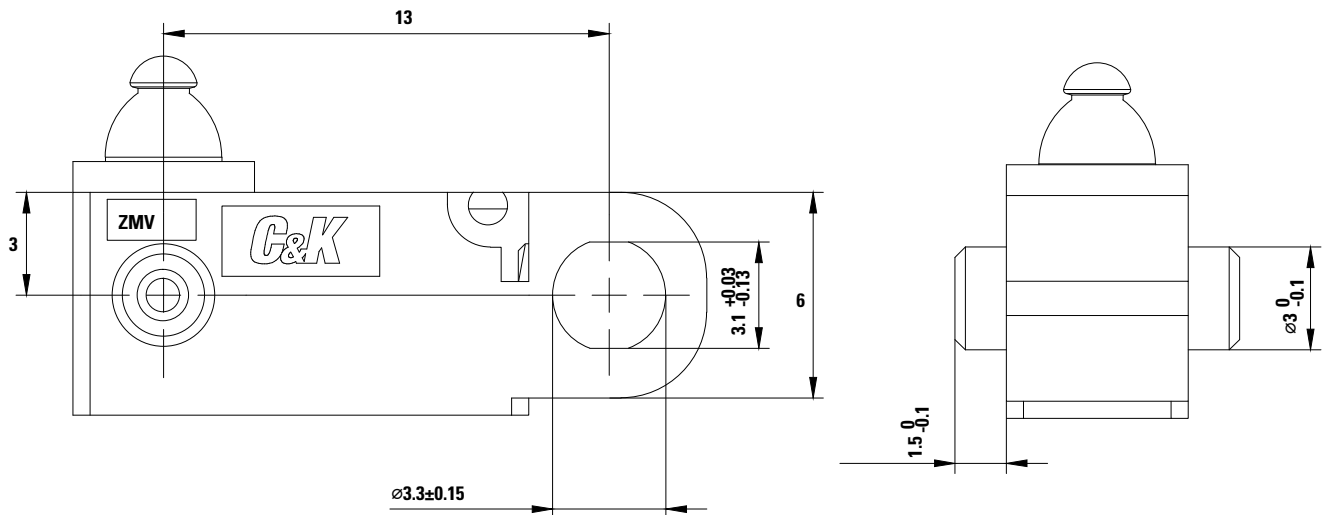
## Mini Size Snap-acting Switches



C2 Pillar Type C 2 mm



F0 Pillar Type F 1.5 mm



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### Switch Characteristics

Switch Type	Part Suffix	OF Max. (gf)	FP Max (mm)	OP (mm)	EP Min. (mm)	OT Min. (mm)	MD Max. (mm)	RF Min. (gf)
ZMVXXX150P00XXXX		150	11.2	10.4 ± 0.2	9.1	1.1	0.25	20
			7.2	6.4 ± 0.2	5.1			
ZMVXXX150T13XXXX		150	12.8	11.5 ± 0.5	10	1.0	0.5	13
			8.8	7.5 ± 0.5	6			
ZMVXXX150T20XXXX		95	15.5	13.3 ± 0.8	11	1.5	0.8	6
			11.5	9.3 ± 0.8	7			
ZMVXXX150S03XXXX		120	16.5	15.2 ± 0.5	13.5	1.2	0.5	10
			12.5	11.2 ± 0.5	9.5			
ZMVXXX150L14XXXX		220	13.3	11.4 ± 0.5	9.8	1.1	0.5	38
			9.3	7.4 ± 0.5	5.8			
ZMVXXX150L16XXXX		200	16.5	14.8 ± 0.5	12.9	1.4	0.5	38
			12.5	10.8 ± 0.5	8.9			
ZMVXXX150L20XXXX		168	15.5	12.2 ± 0.8	9.9	1.5	0.8	30
			11.5	8.2 ± 0.8	5.9			

**Note:**

OF: Operating force, FP: Free position, OP: Operating position, EP: End position, OT: Overtravel, MD: Differential motion, RF: Release force