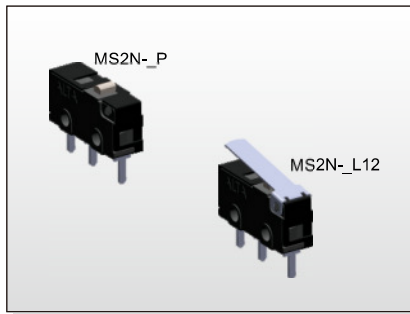


# MICRO SWITCH MS2N SERIES



## FEATURES

- ※Subminiature switch conforming to UL.
- ※PCB terminal.
- ※Highly reliable with long operating life.

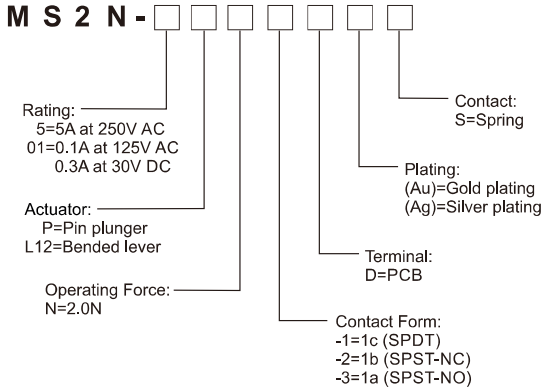
## APPLICATION

- ※Kitchen appliances
- ※Vacuum cleaner, Printers
- ※Smart locks
- ※White goods

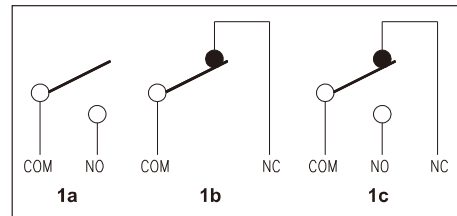
## SPECIFICATION

Contact Rating	0.1A at 125V AC/0.3A at 30V DC	MS2N-01
	5A at 250V AC	MS2N-5
Mechanical Durability	1,000,000 cycles	
Electrical Durability	10,000 cycles min.	MS2N-01
	Movable type: 50,000 cycles Spring type: 10,000 cycles	MS2N-5
Contact Resistance	100mΩ max.	MS2N-01
	50mΩ max.	MS2N-5
Insulation Resistance	100MΩ min.	
Dielectric Strength	Between terminals of same polarity "AC 1000V 1min"	
	Between current-carrying metal parts and ground "AC 2500V 1min"	
	Between each terminal and non-current-carrying metal part "AC 2500V 1min"	
Vibration Resistance	10~55HZ Double amplitude: 1.5mm (For Pin Plunger)	
Shock Resistance	300m/s <sup>2</sup> (For Pin Plunger)	
Operating Speed	0.1~1mm/s (Without Load)	
Operating Frequency	300/min (Without Load)	
Operating Temp.	-40°C ~ +105°C	

## HOW TO ORDER



## CIRCUIT

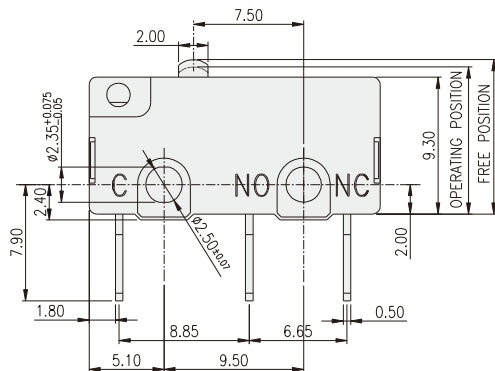


**Note:**  
 These values are for the pin plunger models.

## TYPE

Actuator	Terminal Type	Spring Type	
		Silver Alloy	Gold Alloy
Pin Plunger	PCB Terminal	MS2N-5PN-1D(Ag)S	MS2N-01PN-1D(Au)S
		MS2N-5PN-2D(Ag)S	MS2N-01PN-2D(Au)S
		MS2N-5PN-3D(Ag)S	MS2N-01PN-3D(Au)S
Simulated Roller Lever		MS2N-5L12N-1D(Ag)S	MS2N-01L12N-1D(Au)S
		MS2N-5L12N-2D(Ag)S	MS2N-01L12N-2D(Au)S
		MS2N-5L12N-3D(Ag)S	MS2N-01L12N-3D(Au)S

## MS2N-[ ] [ ] P [ ] [ ] D



## OPERATING CHARACTERISTICS

ITEM	SPEC.
OPERATING FORCE	2.0N MAX
RELEASE FORCE	0.25N MIN.
PRE TRAVEL	0.60mm MAX.
OVER TRAVEL	0.50mm MIN.
MOVEMENT DIFFERENTIAL	0.20mm MAX.
OPERATING POSITION	10.10±0.5 mm

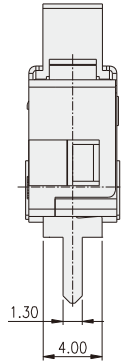
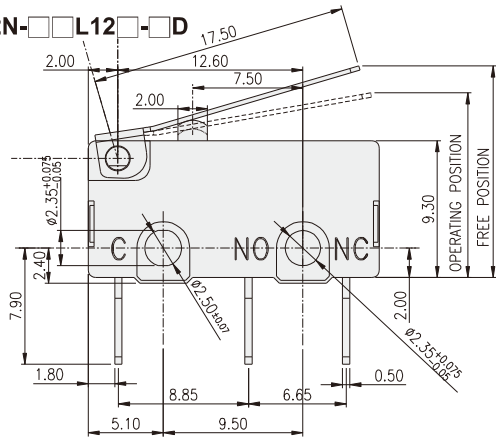




MICRO SWITCH  
**MS2N** SERIES



MS2N-□□L12□-□D



OPERATING CHARACTERISTICS

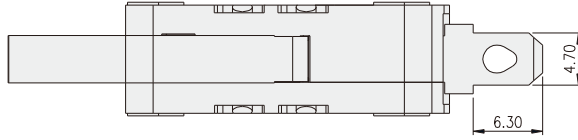
ITEM	SPEC.
OPERATING FORCE	0.70N MAX
RELEASE FORCE	0.094N MIN.
OVER TRAVEL	0.50mm MIN.
MOVEMENT DIFFERENTIAL	0.50mm MAX.
OPERATING POSITION	12.55±0.90 mm
FREE POSITION	14.45mm MAX



MICRO SWITCH  
**MS3 SERIES**

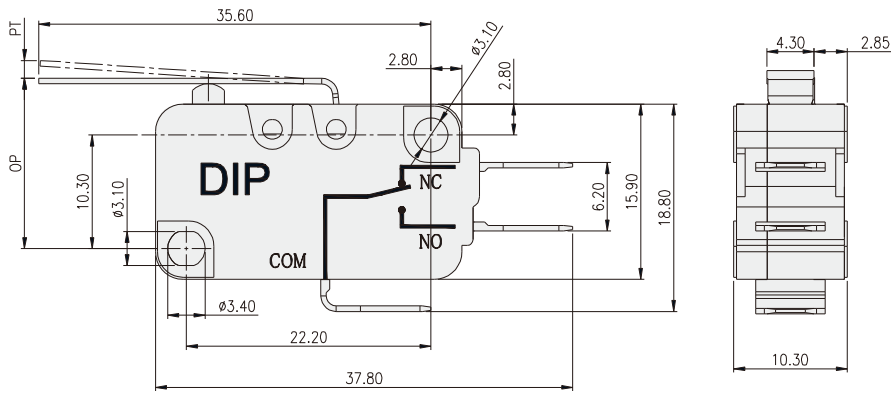


**MS3-5L2E1A**

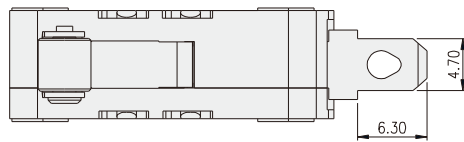


OPERATING CHARACTERISTICS

ITEM	SPEC.
OPERATING FORCE	0.29N MAX.
OVERTRAVEL	1.6mm MIN.
MOVEMENT DIFFERENTIAL	0.80mm MAX.
OPERATING POSITION	15.20±1.20mm
PRETRAVEL	4.0mm MAX.

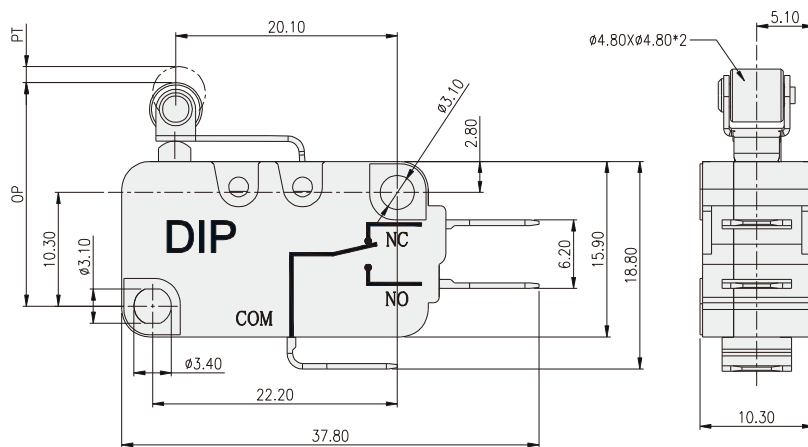


**MS3-5L5E1A**

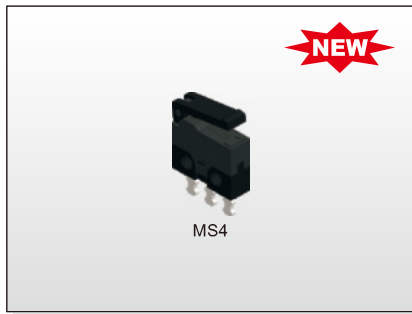


OPERATING CHARACTERISTICS

ITEM	SPEC.
OPERATING FORCE	0.59N MAX.
RELEASE FORCE	0.04N MIN.
OVERTRAVEL	0.80mm MIN.
MOVEMENT DIFFERENTIAL	0.50mm MAX.
OPERATING POSITION	20.70±0.60mm
PRETRAVEL	1.60mm MAX.



# MICRO SWITCH MS4 SERIES



MS4

## FEATURES

- ※8.2x2.7x6.15mm
- ※PCB
- ※Vertical & Right Angle

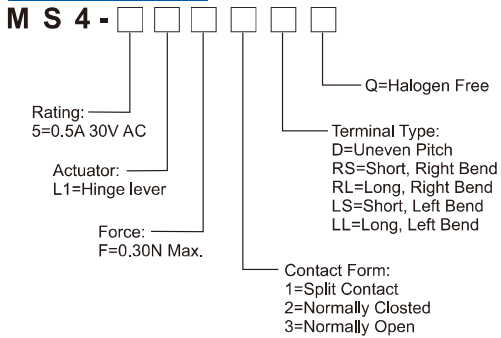
## APPLICATION

- ※Mapping device
- ※Small audio equipment
- ※OA equipment
- ※Portable electronic devices

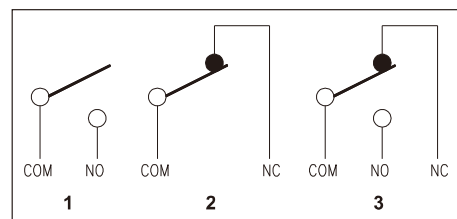
## SPECIFICATION

Contact Rating	0.3A, 30V DC
Mechanical Durability	100,000 cycles (60 Operations/min)
Electrical Durability	50,000 cycles (20 Operations/min)
Contact Resistance	100mΩ max.
Insulation Resistance	100MΩ min. (at 500V VDC)
Dielectric Strength	Between terminals of the same polarity: 250 V AC(50Hz or 60Hz) shall be applied across terminals for 1 minute
	Between each terminal and ground: 250 V AC(50Hz or 60Hz) shall be applied across terminals for 1 minute
Operating Frequency	Machanical: 60 operations/min max. Electrical: 20 operations/min max.
Operating Temp.	-40°C ~ +85°C

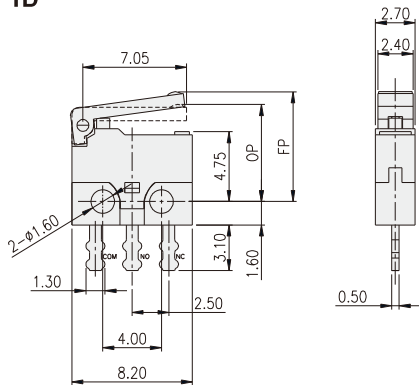
## HOW TO ORDER



## CIRCUIT



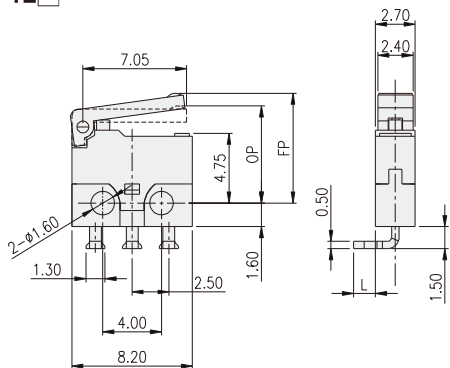
## MS4-5L1F1D



### OPERATING CHARACTERISTICS

ITEM	SPEC.
OPERATING FORCE	0.50N MAX.
RELEASE FORCE	0.03N MIN.
OVERTRAVEL	0.30mm MIN.
MOVEMENT DIFFERENTIAL	0.70mm MAX.
OPERATING POSITION	6.70±0.50mm
FREE POSITION	8.0mm MAX.
PRETRAVEL	1.80mm MAX.

## MS4-5L1F1L



PART NO	L
MS4-5L1F1LSQ	1.50
MS4-5L1F1LLQ	3.10

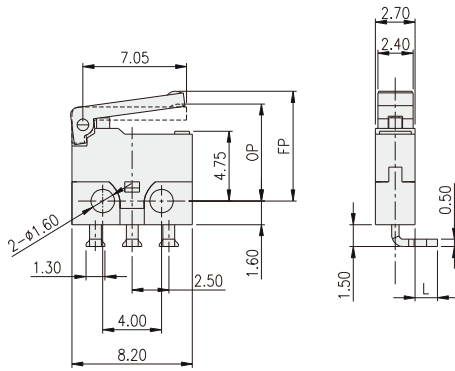
### OPERATING CHARACTERISTICS

ITEM	SPEC.
OPERATING FORCE	0.50N MAX.
RELEASE FORCE	0.03N MIN.
OVERTRAVEL	0.30mm MIN.
MOVEMENT DIFFERENTIAL	0.70mm MAX.
OPERATING POSITION	6.70±0.50mm
FREE POSITION	8.0mm MAX.
PRETRAVEL	1.80mm MAX.

MICRO SWITCH  
**MS4** SERIES



**MS4-5L1F1R** □



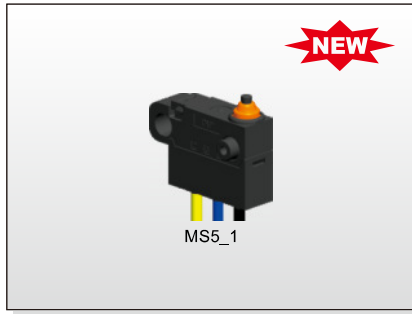
PART NO	L
MS4-5L1F1RSQ	1.50
MS4-5L1F1RLO	3.10

OPERATING CHARACTERISTICS

ITEM	SPEC.
OPERATING FORCE	0.50N MAX.
RELEASE FORCE	0.03N MIN.
OVERTRAVEL	0.30mm MIN.
MOVEMENT DIFFERENTIAL	0.70mm MAX.
OPERATING POSITION	6.70±0.50mm
FREE POSITION	8.0mm MAX.
PRETRAVEL	1.80mm MAX.



# MICRO SWITCH MS5 SERIES



## FEATURES

- ※ Sealed IP67
- ※ 14.7x5.4x12mm
- ※ Solder Terminals & Wire with screw hole

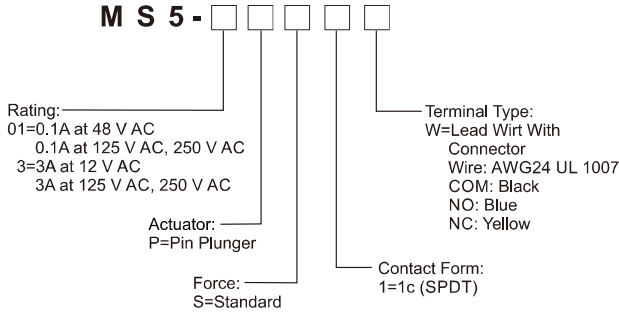
## APPLICATION

- ※ Automobile industry
- ※ Consumer electronics

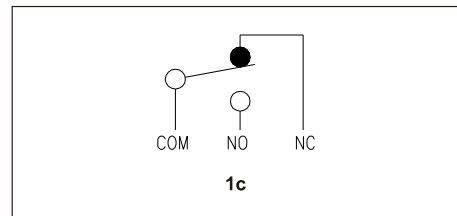
## SPECIFICATION

Contact Rating	3A at 250V AC
Mechanical Durability	500,000 cycles (30~60 Operations/min)
Electrical Durability	100,000 cycles (10~30 Operations/min)
Contact Resistance	150mΩ max.
Insulation Resistance	100MΩ min. (at 500V VDC)
Dielectric Strength	Between terminals of the same polarity: 600 V AC(50Hz or 60Hz) shall be applied across terminals for 1 minute
	Between each terminal and ground: 1500 V AC(50Hz or 60Hz) shall be applied across terminals for 1 minute
	Between each terminal and n-current-carrying metal parts 1500V AC (50Hz or 60Hz) shall be applied across terminals for 1 minute
Operating Frequency	Mechanical: 60 operations/min max. Electrical: 30 operations/min max.
Operating Temp.	-40°C ~ +85°C

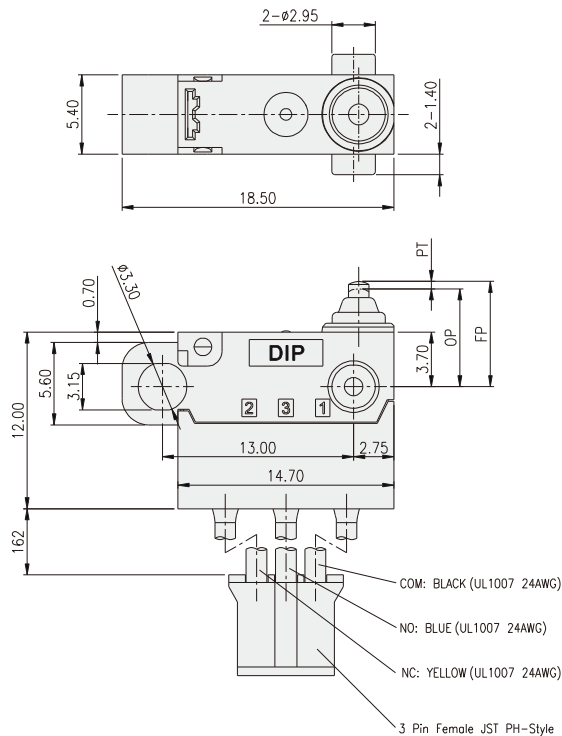
## HOW TO ORDER



## CIRCUIT

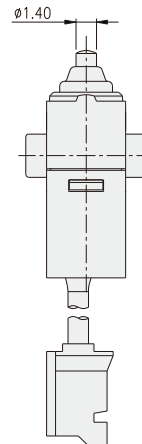


## MS5-3PS1W

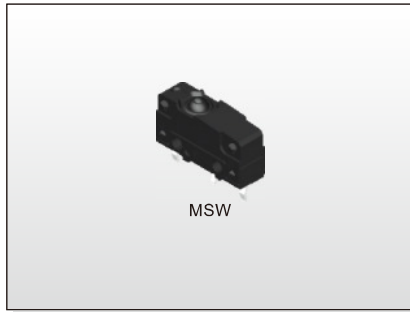


## OPERATING CHARACTERISTICS

ITEM	SPEC.
OPERATING FORCE	1.30N MAX.
RELEASE FORCE	0.13N MIN.
OVERTRAVEL	0.80mm MIN.
MOVEMENT DIFFERENTIAL	0.20mm MAX.
OPERATING POSITION	6.40~6.95mm
FREE POSITION	7.15±0.20mm
PRETRAVEL	0.80mm MAX.



# MICRO SWITCH MSW SERIES



MSW

## FEATURES

- ※Sealed IP67.
- ※Subminiature switch conforming to UL.
- ※PCB terminal available.
- ※Highly reliable with long operation life.

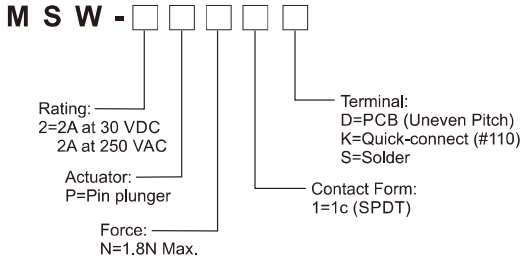
## APPLICATION

- ※Kitchen appliances
- ※Vacuum cleaner, Printers
- ※White goods
- ※Intelligent lock and low-voltage apparatus

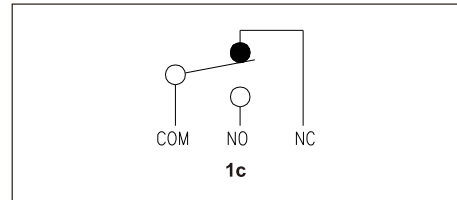
## SPECIFICATION

Contact Rating	2A at 250V AC
Mechanical Durability	1,000,000 cycles min. (60 Operations/min)
Electrical Durability	50,000 cycles min. (20 Operations/min)
Contact Resistance	50mΩ max.
Insulation Resistance	100MΩ min. (at 500V VDC)
Dielectric Strength	Between terminals of the same polarity 1,000 VAC, 50/60 Hz for 1min
	Between current-carrying metal parts and ground 1,500 VAC, 50/60 Hz for 1min
Vibration Resistance	Between each terminal and non-current-carrying metal part 1,500 VAC, 50/60 Hz for 1min
	Malfunction : 10 ~ 55 Hz, 1.5mm double amplitude
Shock Resistance	Destruction : 1,000 m/s <sup>2</sup> max.
	Malfunction : 300 m/s <sup>2</sup> max.
Operating Speed	0.1~500mm/s
Operating Frequency	Mechanical : 120 operations/min max.
	Electrical : 20 operations/min max.
Operating Temp.	-40°C~+85°C

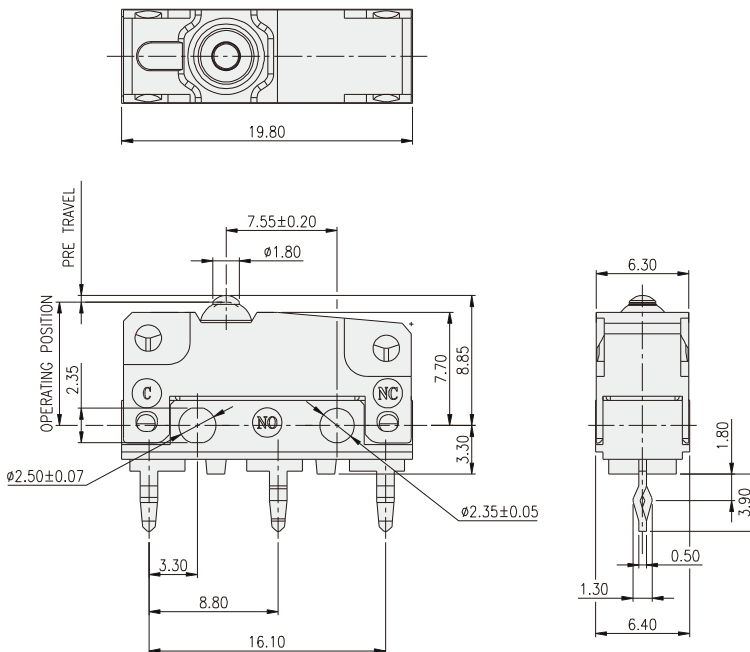
## HOW TO ORDER



## CIRCUIT



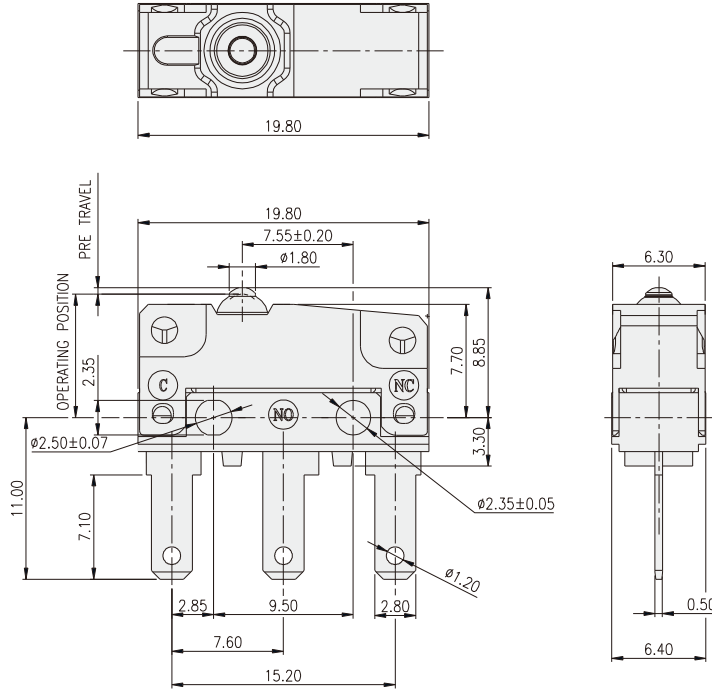
## MSW-2PN-1D



## OPERATING CHARACTERISTICS

ITEM	SPEC.
OPERATING FORCE	1.8N MAX.
RELEASE FORCE	0.2N MIN.
OVERTRAVEL	0.40mm MIN.
MOVEMENT DIFFERENTIAL	0.15mm MAX.
OPERATING POSITION	8.40±0.30mm
PRE TRAVEL	0.60mm MAX.

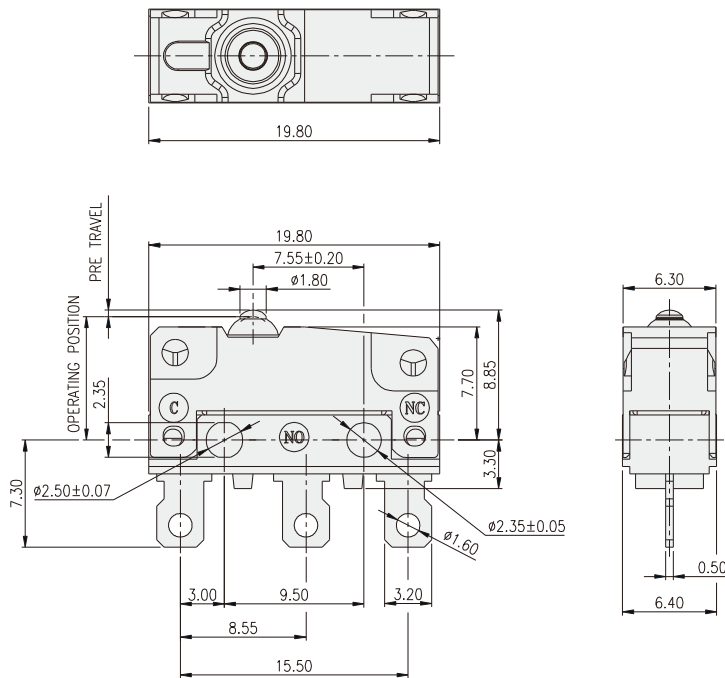
**MSW-2PN-1K**



OPERATING CHARACTERISTICS

ITEM	SPEC.
OPERATING FORCE	1.8N MAX.
RELEASE FORCE	0.2N MIN.
OVERTRAVEL	0.40mm MIN.
MOVEMENT DIFFERENTIAL	0.15mm MAX.
OPERATING POSITION	8.40±0.30mm
PRE TRAVEL	0.60mm MAX.

**MSW-2PN-1S**



OPERATING CHARACTERISTICS

ITEM	SPEC.
OPERATING FORCE	1.8N MAX.
RELEASE FORCE	0.2N MIN.
OVERTRAVEL	0.40mm MIN.
MOVEMENT DIFFERENTIAL	0.15mm MAX.
OPERATING POSITION	8.40±0.30mm
PRE TRAVEL	0.60mm MAX.