

SUNS

Industrial Limit Switches

ISO9001:2000



The Right Switch For
Your Applications

Material Handling

Stereoscopic Warehouse

Robotics

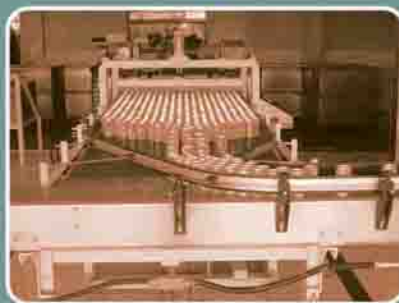
Printing Machinery

Injection Molding Machinery

Packaging Machinery

Elevator

Safety Door

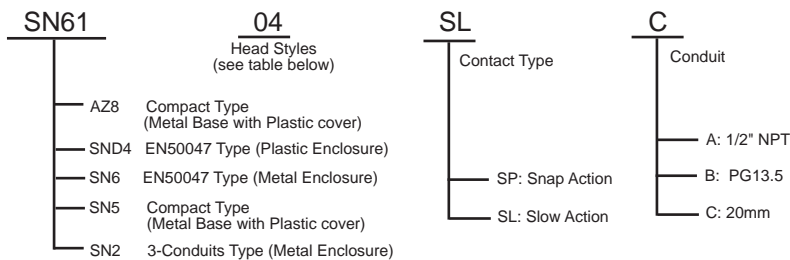


SUNS International, LLC is the leading manufacturer of high quality industrial limit switches, micro switches. SUNS offers complete ranges of control components which are reliable, available, competitive, compliant with all standards. Our manufacturing facilities are ISO9001:2000 certified and majority of our products are UL, CSA and CE approved.

At SUNS, we are committed to delivering world class products and services efficiently and effectively to our customers and their total satisfaction is our goal.

Limit Switches Selection Guide

Example:



Head Styles		AZ8 Series	SND4 Series	SN6 Series	SN5 Series	SN2 Series
Top Pin Plunger		AZ8111	SND4111	SN6111	SN5111	SN2111
Top Roller Plunger		AZ8112	SND4112	SN6112	SN5112	SN2112
Fixed Side Rotary		AZ8104	SND4104	SN6104	SN5104	SN2104
Adjustable Side Rotary		AZ8108	SND4108	SN6108	SN5108	SN2108
Side Rotary Adj. Metal Rod		AZ8107		SN6107	SN5107	
Wobber, Coil Actuator		AZ8100		SN6100		SN2100
Wobble, Cat Whisker		AZ8169				SN2169
Wobble, Plastic Rod, Coil Spring		AZ8166			SN5166	SN2166
Fixed 50mm Roller Side Rotary			SND4114			SN2114
Adj. 50mm Roller Side Rotary			SND4118			SN2118
Yoke Lever				SN6105		
Top Roller Lever			SND4162			SN2162
Side Roller Lever						SN2172
Cable Pull Switch			SND4170	SN6170		
Safety Key Operated Switch			SND4191			
Hinge Mount Safety Switch			SND4181			

METAL-BODIED LIMIT SWITCHES: SN6 SERIES



Features:

- Aluminum body and lid
- Snap action or slow make & break contacts
- Galvanically separated contacts
- Positive Opening of NC contacts
- 4 x 90° actuator positions
- Cable entry available: M 20, PG13.5 and 1/2"NPT
- Conform to EN 50041 standard

Mounting Advantages:

- Increased wiring space
- Screw terminals with self-lifting clamps for easy wiring
- Easily exchangeable contact block with latch holding device
- Earth grounding surface on same level as switching system
- Fine adjustment of switching point via adjusting screw

Specifications

Operating Speed	0.05mm-2m/sec
Operating Frequency	Mechanical: 120ops/min Electrical: 30 ops/min
Insulation Resistance	>100MΩ@500V DC
Contact Resistance	<25mΩ
Rated Voltage	600V AC (EN60947-5-1)
Rated Thermal Current	10A
Electrical Rating (UL, cUL Approved)	AC15 A600 DC13 Q300
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanically 1.5 x 10 ⁷ (operations) Electrically 5 x 10 ⁵ (operations)
Operating Temperature	-10~+80°C (14~176°F)
Humidity	< 95%RH
Weight	400-450g
Degree of Protection	IP67


Definitions of Operating Characteristics

OF Operating Force
RF Releasing Force
OT Overtravel
TT Total Travel

PT Pretravel
MD Movement Differential
OP Operating Position
PO Travel to Positive Opening

Dimensions

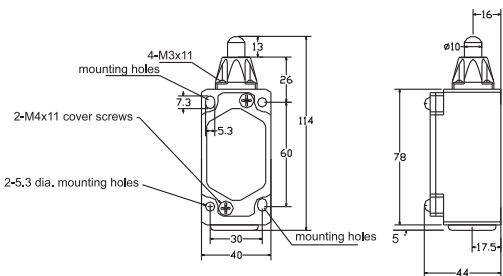
Unit:mm







4-M3x11 mounting holes


2-M4x11 cover screws

2-5.3 dia. mounting holes



Operating Characteristics

	Snap Action	Slow Action
		
		
• OF _{max}	16N	16N
• RF _{min}	3N	3N
• PT _{max}	2.5mm	1.0mm(NC) 3.0mm(NO)
• OT _{min}	3.5mm	-
• TT	6.0mm	6.0mm
• MD _{max}	1.5mm	-
• PO _{min}	4.5mm	1.8mm

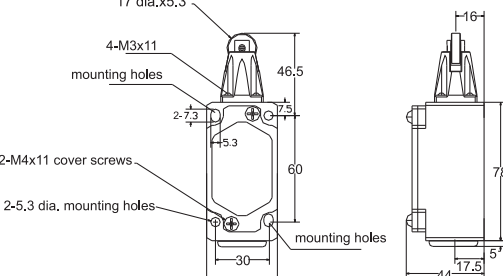


17 dia.x5.3





4-M3x11 mounting holes

2-M4x11 cover screws

2-5.3 dia. mounting holes

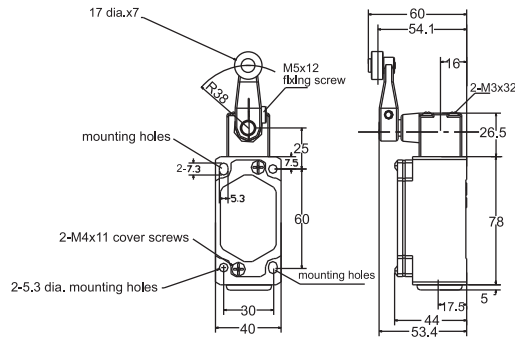


Operating Characteristics

	Snap Action	Slow Action
		
		
• OF _{max}	16N	16N
• RF _{min}	3N	3N
• PT _{max}	2.5mm	1.0mm(NC) 3.0mm(NO)
• OT _{min}	3.5mm	-
• TT	6.0mm	6.0mm
• MD _{max}	1.5mm	-
• PO _{min}	4.5mm	1.8mm



SN6104



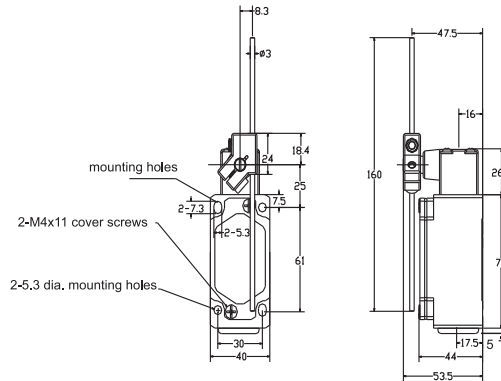
Operating Characteristics

Snap Action		Slow Action	
13	14	11	12
21	22	23	24

- OF_{max} 23N-cm 23N-cm
- RF_{min} 5N-cm 5N-cm
- PT_{max} 26° 15° (NC) 40° (NO)
- OT_{min} 59° -
- TT 85° 85°
- MD_{max} 15° -
- PO_{min} 55° 30°



SN6107



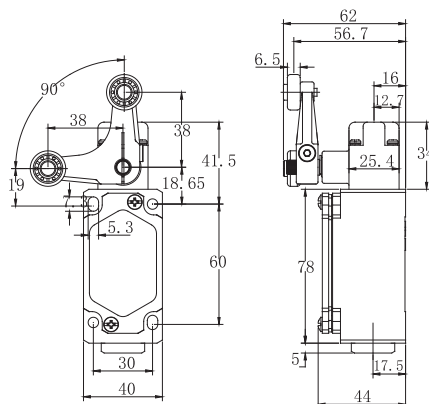
Operating Characteristics

Snap Action		Slow Action	
13	14	11	12
21	22	23	24

- OF_{max} 23N-cm 23N-cm
- RF_{min} 5N-cm 5N-cm
- PT_{max} 26° 15° (NC) 40° (NO)
- OT_{min} 59° -
- TT 85° 85°
- MD_{max} 15° -
- PO_{min} 55° 30°



SN6105




Operating Characteristics

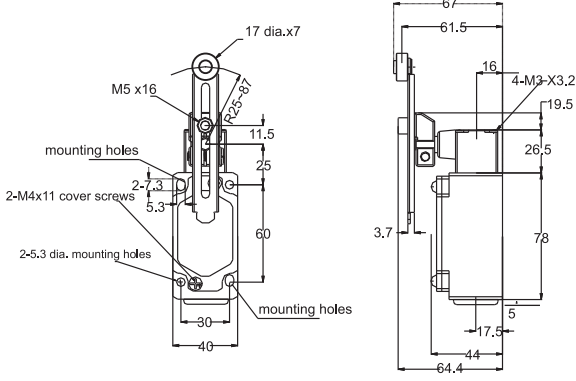
Snap Action		Slow Action	
13	14	11	12
21	22	23	24

- OF_{max} 23N-cm 23N-cm
- RF_{min} 5N-cm 5N-cm
- PT_{max} 26° 15° (NC) 40° (NO)
- OT_{min} 69° -
- TT 95° 95°
- MD_{max} 15° -
- PO_{min} 55° 30°



METAL-BODIED LIMIT SWITCHES: SN6 SERIES






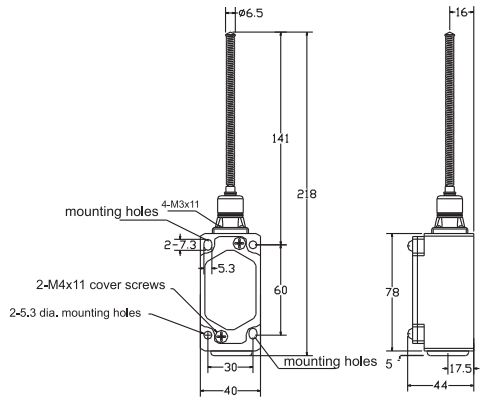


Operating Characteristics


	Snap Action	Slow Action
		
• OF _{max}	23N-cm	23N-cm
• RF _{min}	5N-cm	5N-cm
• PT _{max}	26°	15° (NC) 40° (NO)
• OT _{min}	59°	-
• TT	85°	85°
• MD _{max}	15°	-
• PO _{min}	55°	30°

SN6108





Operating Characteristics

	Snap Action
	
• OF _{max}	10N-cm
• PT _{max}	18°

SN6100

PLASTIC-BODIED LIMIT SWITCHES: SND4 SERIES



Features

- Glass-fiber reinforced plastic enclosure (94V-0)
- Snap action or slow make & break contacts
- Galvanically separated contacts
- Positive Opening of NC contacts
- Cable entry available: M 20, PG13.5 and 1/2"NPT
- Hinged snap lid for quick and easy access (screwdriver release)
- Lid hinges open to 135° (can also be easily detached)
- Screw terminals with self-lifting clamps for easy wiring
- 4 x 90° actuator positions
- Conform to EN 50047 standard

Specifications

Operating Speed	0.05mm-2m/sec
Operating Frequency	Mechanical: 120ops/min Electrical: 30 ops/min
Insulation Resistance	>100MΩ@500V DC
Contact Resistance	<25mΩ
Rated Voltage	500V AC (EN60947-5-1)
Rated Current	10A
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanically 1.5 x 10 ⁷ (operations) Electrically 5 x 10 ⁵ (operations)
Operating Temperature	-10~+80°C (14~176°F)
Humidity	< 95%RH
Weight	70g
Degree of Protection	IP65

Definitions of Operating Characteristics

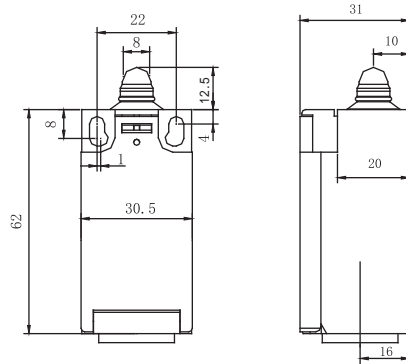
- | | | | |
|----|-----------------|----|----------------------------|
| OF | Operating Force | PT | Pretravel |
| RF | Releasing Force | MD | Movement Differential |
| OT | Overtravel | OP | Operating Position |
| TT | Total Travel | PO | Travel to Positive Opening |

Dimensions

Unit:mm



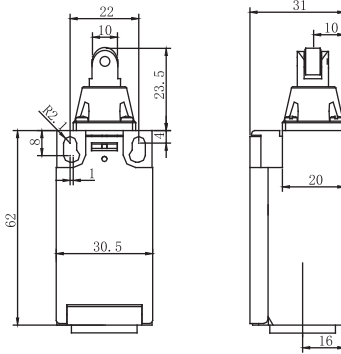
SND4111



Operating Characteristics

	Snap Action	Slow Action
• OF _{max}	9.8N	9.8N
• RF _{min}	1.6N	1.6N
• PT _{max}	2.5mm	1.0mm(NC) 3.0mm(NO)
• OT _{min}	3.5mm	-
• TT	6.0mm	6.0mm
• MD _{max}	1.5mm	-
• PO _{min}	4.5mm	1.8mm

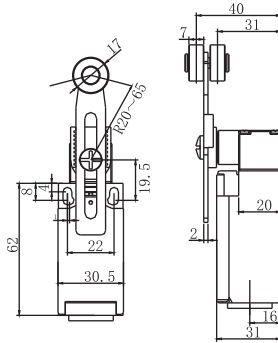
PLASTIC-BODIED LIMIT SWITCHES: SND4 SERIES



Operating Characteristics

	Snap Action	Slow Action
	13 — 14	11 — 12
	21 — 22	23 — 24
• OF _{max}	9.8N	9.8N
• RF _{min}	1.6N	1.6N
• PT _{max}	2.5mm	1.0mm(NC) 3.0mm(NO)
• OT _{min}	3.5mm	-
• TT	6.0mm	6.0mm
• MD _{max}	1.5mm	-
• PO _{min}	4.5mm	1.8mm

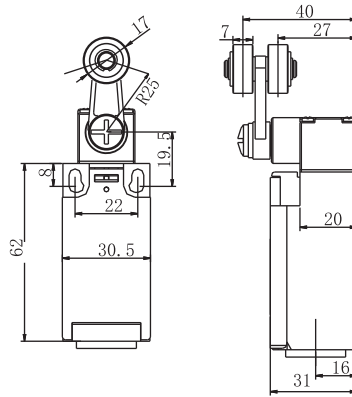
SND4112



Operating Characteristics

	Snap Action	Slow Action
	13 — 14	11 — 12
	21 — 22	23 — 24
• OF _{max}	11N-cm	11N-cm
• RF _{min}	3.3N-cm	3.3N-cm
• PT _{max}	28°	15° (NC) 40° (NO)
• OT _{min}	50°	-
• TT	78°	78°
• MD _{max}	15°	-
• PO _{min}	55°	30°

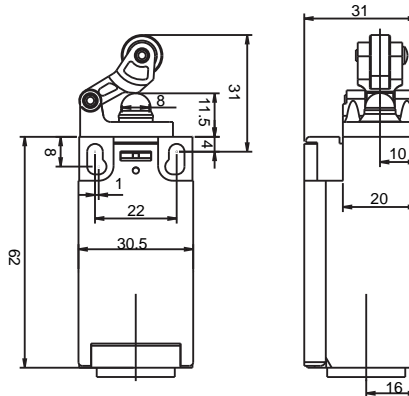
SND4108



Operating Characteristics

	Snap Action	Slow Action
	13 — 14	11 — 12
	21 — 22	23 — 24
• OF _{max}	11N-cm	11N-cm
• RF _{min}	3.3N-cm	3.3N-cm
• PT _{max}	28°	15° (NC) 40° (NO)
• OT _{min}	50°	-
• TT	78°	78°
• MD _{max}	15°	-
• PO _{min}	55°	30°

SND4104



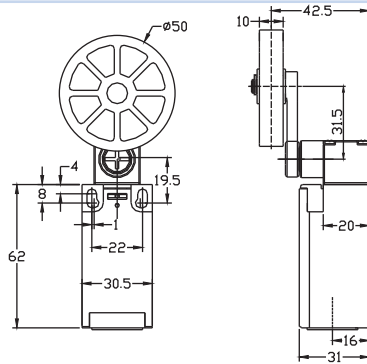
Operating Characteristics

	Snap Action	Slow Action
	13 — 14	11 — 12
	21 — 22	23 — 24
• OF _{max}	9.8N	9.8N
• RF _{min}	1.6N	1.6N
• PT _{max}	2.5mm	1.0mm(NC) 3.0mm(NO)
• OT _{min}	3.5mm	-
• TT	6.0mm	6.0mm
• MD _{max}	1.5mm	-
• PO _{min}	4.5mm	1.8mm

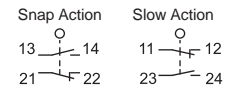
SND4162



SND4114



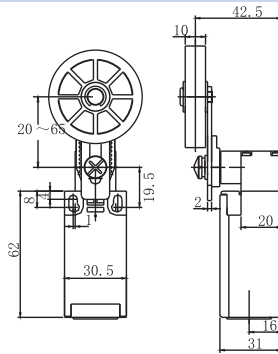
Operating Characteristics



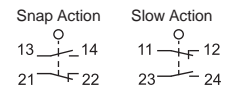
- OF_{max} 11N-cm 11N-cm
- RF_{min} 3.3N-cm 3.3N-cm
- PT_{max} 28° 15° (NC) 40° (NO)
- OT_{min} 50° -
- TT 78° 78°
- MD_{max} 15° -
- PO_{min} 55° 30°



SND4118



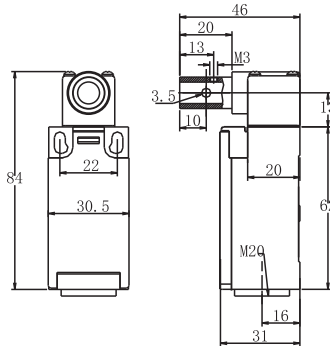
Operating Characteristics



- OF_{max} 11N-cm 11N-cm
- RF_{min} 3.3N-cm 3.3N-cm
- PT_{max} 28° 15° (NC) 40° (NO)
- OT_{min} 50° -
- TT 78° 78°
- MD_{max} 15° -
- PO_{min} 55° 30°

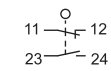


SND4181-SL



Operating Characteristics

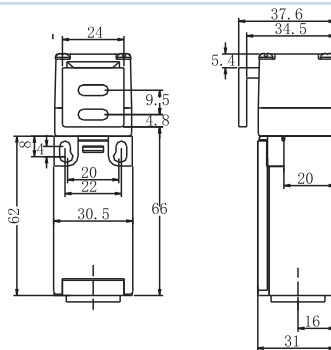
Slow Action



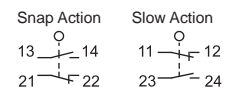
- OF_{max} 11N-cm
- RF_{min} 3.3N-cm
- PT_{max} 15° (NC) 40° (NO)
- TT 360°
- PO_{min} 20°



SND4191



Operating Characteristics



- OF_{max} 12N 12N
- PT_{max} 3.9mm 3.1mm(NC) 4.0mm(NO)
- OT_{min} 17.6mm -
- MD_{max} 1.6mm -
- PO_{min} 7.3mm 3.9mm

3 CONDUIT METAL-BODIED LIMIT SWITCHES: SN2 SERIES



Features

- Aluminum body and lid
- Wide range of actuators available
- Positive Opening of NC contacts
- 4 x 90° actuator positions
- 3 Cable conduits for easy wiring
- Cable entry available: M 20, PG13.5 and 1/2"NPT
- EN50047 Compatible

Specifications

Operating Speed	0.05mm-2m/sec
Operating Frequency	Mechanical: 120ops/min Electrical: 30 ops/min
Insulation Resistance	>100MΩ@500V DC
Contact Resistance	<25mΩ
Rated Voltage	500V AC (EN60947-5-1)
Rated Current	10A
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanically 1.5 x10 ⁷ (operations) Electrically 5 x10 ⁵ (operations)
Operating Temperature	-10~+80°C (14~176°F)
Humidity	< 95%RH
Weight	300g(10.6oz)
Degree of Protection	IP66

Definitions of Operating Characteristics

- OF Operating Force
- RF Releasing Force
- OT Overtravel
- TT Total Travel

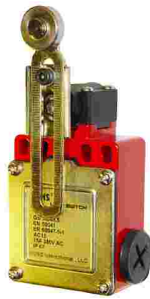
- PT Pretravel
- MD Movement Differential
- OP Operating Position
- PO Travel to Positive Opening

Dimensions

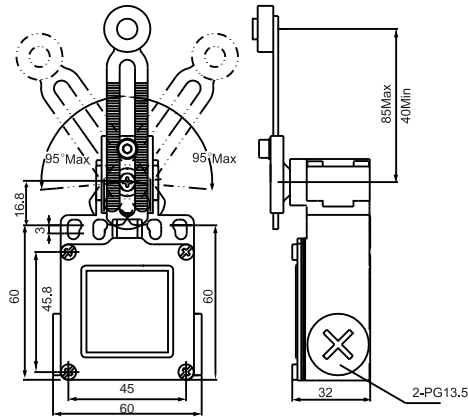
Unit:mm

• OF _{max}	5.88N
• RF _{min}	0.49N
• PT _{max}	20°
• OT _{min}	75°
• MD _{max}	14°
• PO _{min}	55°

SN2104

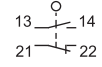


SN2108



Operating Characteristics

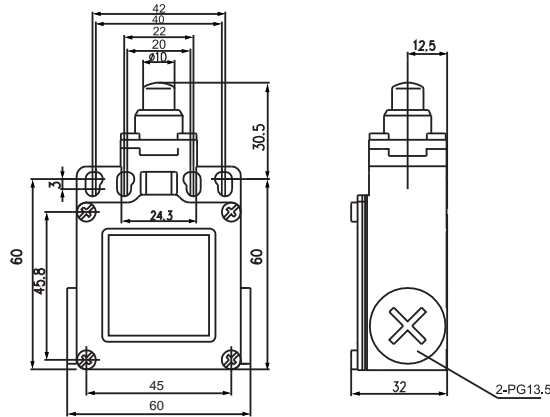
Snap Action



- OF_{max} 7.84-3.35N
- RF_{min} 0.49-0.21N
- PT_{max} 20°
- OT_{min} 75°
- MD_{max} 14°
- PO_{min} 55°

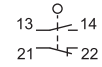


SN2111



Operating Characteristics

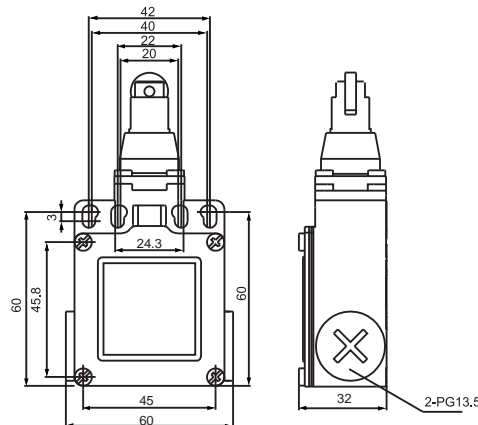
Snap Action



- OF_{max} 8.82N
- RF_{min} 1.47N
- PT_{max} 1.8mm
- OT_{min} 4mm
- MD_{max} 1mm
- PO_{min} 3.0mm

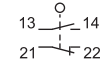


SN2112



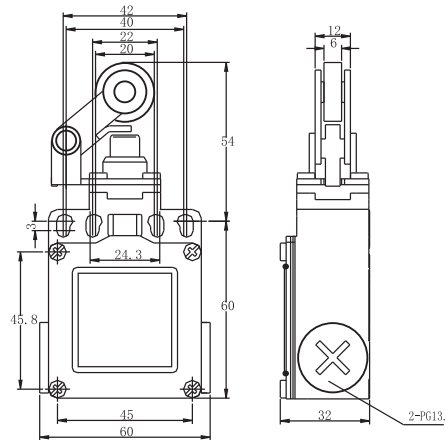
Operating Characteristics

Snap Action



- OF_{max} 8.82N
- RF_{min} 1.47N
- PT_{max} 1.8mm
- OT_{min} 4mm
- MD_{max} 1mm
- PO_{min} 3.0mm

3 CONDUIT METAL-BODIED LIMIT SWITCHES: SN2 SERIES



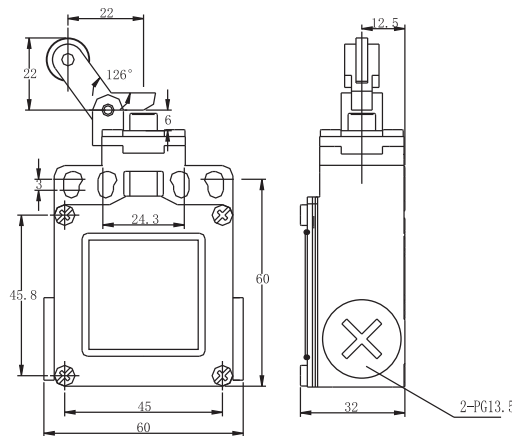
Operating Characteristics

Snap Action



- OF_{max} 8.82N
- RF_{min} 1.47N
- PT_{max} 1.8mm
- OT_{min} 4mm
- MD_{max} 1mm
- PO_{min} 3.0mm

SN2162



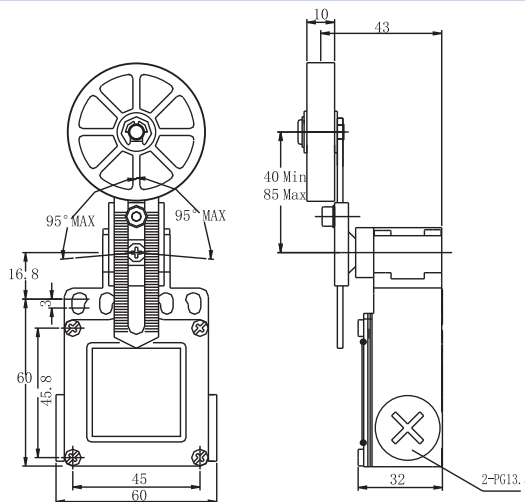
Operating Characteristics

Snap Action



- OF_{max} 8.82N
- RF_{min} 1.47N
- PT_{max} 1.8mm
- OT_{min} 4mm
- MD_{max} 1mm
- PO_{min} 3.0mm

SN2172



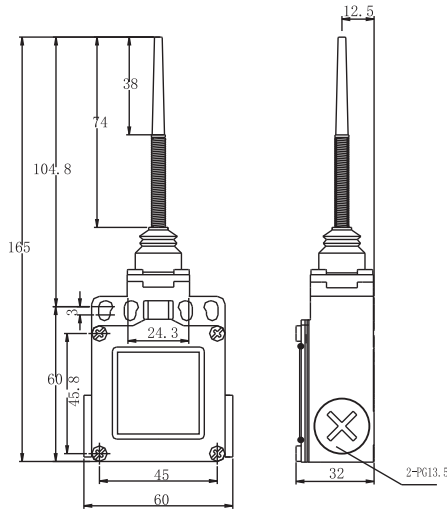
Operating Characteristics

Snap Action



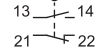
- OF_{max} 7.84-3.35N
- RF_{min} 0.49-0.21N
- PT_{max} 20°
- OT_{min} 75°
- MD_{max} 14°
- PO_{min} 55°

SN2118



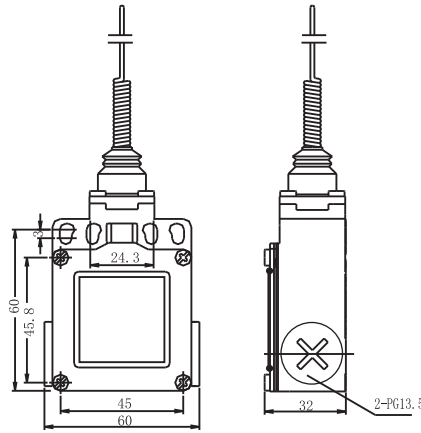
Operating Characteristics

Snap Action



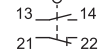
- OF_{max} 0.88N
- PT_{max} 50mm
- OT_{max} 20mm

SN2166



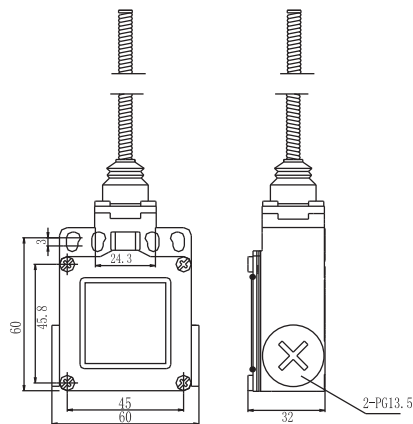
Operating Characteristics

Snap Action



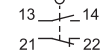
- OF_{max} 0.88N
- PT_{max} 30mm
- OT_{max} 20mm

SN2169



Operating Characteristics

Snap Action



- OF_{max} 0.88N
- PT_{max} 50mm
- OT_{max} 20mm

SN2100

COMPACT LIMIT SWITCHES: AZ-8 SERIES



Features

- Designed for applications of small mounting space
- Constructed with Metal based and plastic cover
- Wide range of actuators available
- Pre-molded flexible cable gland for fast and simple wiring termination
- Positive Opening of NC contacts
- Improved current carrying capacity to 10A

Specifications


Operating Speed	0.05mm-2m/sec
Operating Frequency	Mechanical: 120ops/min Electrical: 30 ops/min
Insulation Resistance	>100MΩ@500V DC
Contact Resistance	<25mΩ
Rated Voltage/Current	10A/250VAC (EN60947-5-1)
Dielectric Strength	1000VAC for 1 min between current carrying parts 2000VAC for 1 min between non-current carrying parts
Service Life	Mechanically 1.0 x10 ⁷ (operations) Electrically 5 x10 ⁵ (operations)
Operating Temperature	-10~+80°C (14~176°F)
Humidity	< 95%RH
Degree of Protection	IP64

Definitions of Operating Characteristics

- | | | | |
|----|-----------------|----|----------------------------|
| OF | Operating Force | PT | Pretravel |
| RF | Releasing Force | MD | Movement Differential |
| OT | Overtravel | OP | Operating Position |
| TT | Total Travel | PO | Travel to Positive Opening |

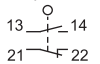
Dimensions

Unit:mm




Operating Characteristics

Snap Action



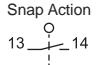
- OF_{max} 7.35N-cm
- RF_{min} 0.98N-cm
- PT_{max} 20°
- OT_{min} 75°
- MD_{max} 12°
- PO_{min} 55°

AZ-8104



Operating Characteristics

Snap Action

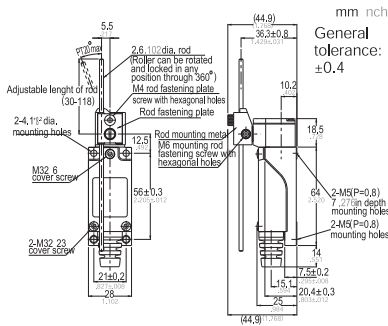


- OF_{max} 7.35N-cm
- RF_{min} 0.98N-cm
- PT_{max} 20°
- OT_{min} 75°
- MD_{max} 12°
- PO_{min} 55°

AZ-8108



AZ-8107

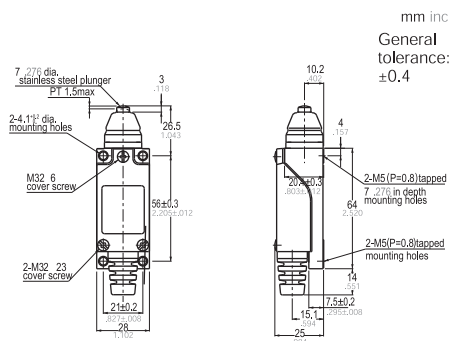


Operating Characteristics

- Snap Action
13 $\overset{\circ}{\curvearrowright}$ 14
21 \curvearrowleft 22
- OF_{max} 7.35N-cm
 - RF_{min} 0.98N-cm
 - PT_{max} 20°
 - OT_{min} 75°
 - MD_{max} 12°
 - PO_{min} 55°



AZ-8111

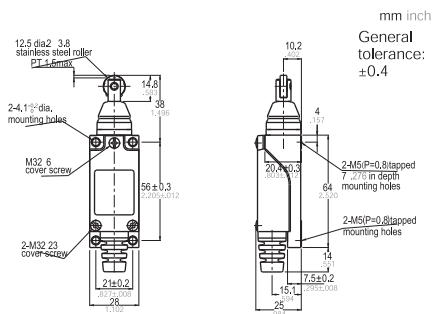


Operating Characteristics

- Snap Action
13 $\overset{\circ}{\curvearrowright}$ 14
21 \curvearrowleft 22
- OF_{max} 8.82N
 - RF_{min} 1.47N
 - PT_{max} 1.5mm
 - OT_{min} 4mm
 - MD_{max} 1mm
 - OP 26 ± 0.8 mm
 - PO_{min} 3.0mm



AZ-8112

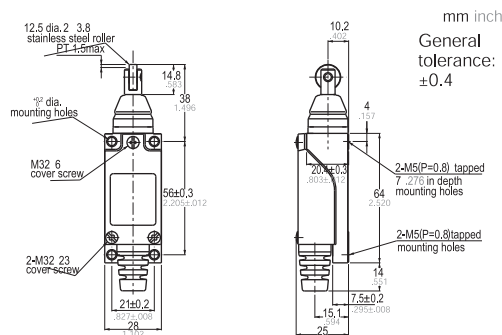


Operating Characteristics

- Snap Action
13 $\overset{\circ}{\curvearrowright}$ 14
21 \curvearrowleft 22
- OF_{max} 8.82N
 - RF_{min} 1.47N
 - PT_{max} 1.5mm
 - OT_{min} 4mm
 - MD_{max} 1mm
 - OP 37 ± 0.8 mm
 - PO_{min} 3.0mm



AZ-8122




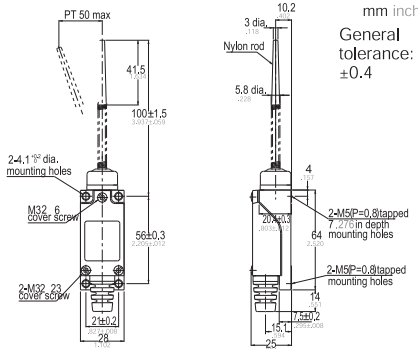
Operating Characteristics

- Snap Action
13 $\overset{\circ}{\curvearrowright}$ 14
21 \curvearrowleft 22
- OF_{max} 8.82N
 - RF_{min} 1.47N
 - PT_{max} 1.5mm
 - OT_{min} 4mm
 - MD_{max} 1mm
 - OP 37 ± 0.8 mm
 - PO_{min} 3.0mm

COMPACT LIMIT SWITCHES: AZ-8 SERIES








mm inch
General tolerance: ±0.4


Operating Characteristics

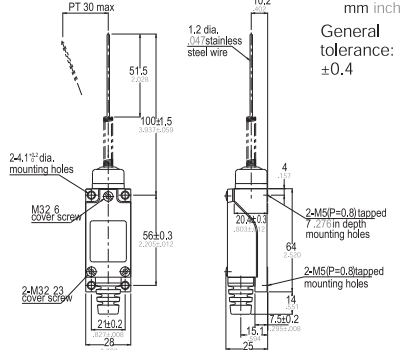
Snap Action



- OF_{max} 1.47N
- PT_{max} 50mm

AZ-8166






mm inch
General tolerance: ±0.4


Operating Characteristics

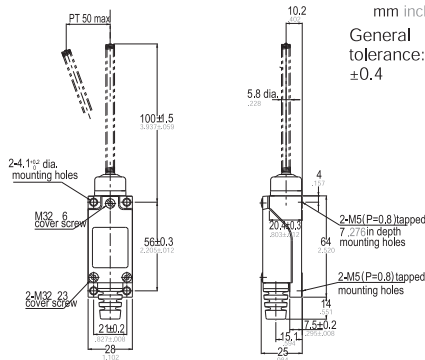
Snap Action



- OF_{max} 1.47N
- PT_{max} 30mm

AZ-8169






mm inch
General tolerance: ±0.4

Operating Characteristics

Snap Action



- OF_{max} 1.47N
- PT_{max} 30mm

AZ-8200



Features

- Designed for applications with small mounting space
- Highly rigid construction (head and cover snugly fit in box)
- Wide range of actuators available
- Pre-molded flexible cable gland for fast and simple wiring termination

Specifications

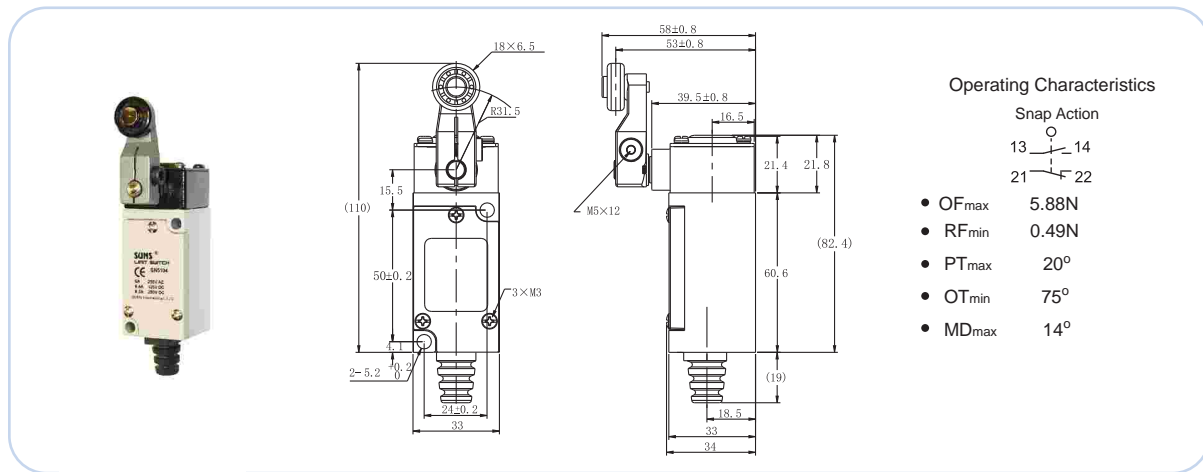
Operating Speed	0.05mm-2m/sec
Operating Frequency	Mechanical: 120ops/min Electrical: 30 ops/min
Insulation Resistance	>100MΩ@500V DC
Contact Resistance	<25mΩ
Rated Voltage	250V AC (EN60947-5-1)
Rated Current	10A
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanically 1.0 x10 ⁷ (operations) Electrically 5 x10 ⁵ (operations)
Operating Temperature	-10~+80°C (14~176°F)
Humidity	< 95%RH
Weight	130-190g(4.6-6.7oz)
Degree of Protection	IP65

Definitions of Operating Characteristics

- | | |
|--------------------|--------------------------|
| OF Operating Force | PT Pretravel |
| RF Releasing Force | MD Movement Differential |
| OT Overtravel | OP Operating Position |
| TT Total Travel | |


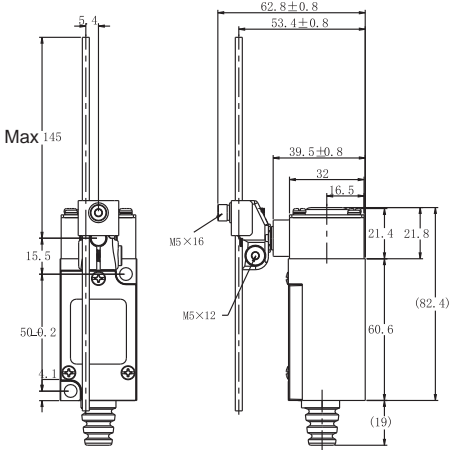
Dimensions

Unit:mm




SN5104

COMPACT LIMIT SWITCHES SN5 SERIES


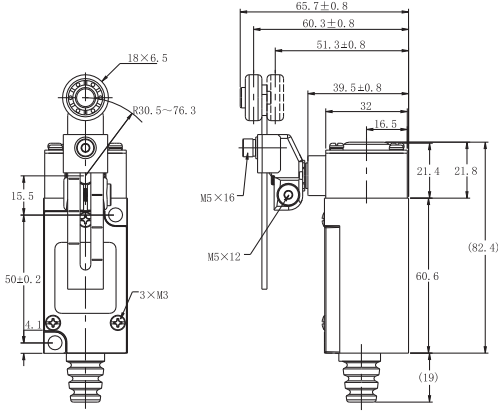
Operating Characteristics

Snap Action




- OF_{max} 7.84-1.99N
- RF_{min} 0.49-0.12N
- PT_{max} 20°
- OT_{min} 75°
- MD_{max} 14°

SN5107


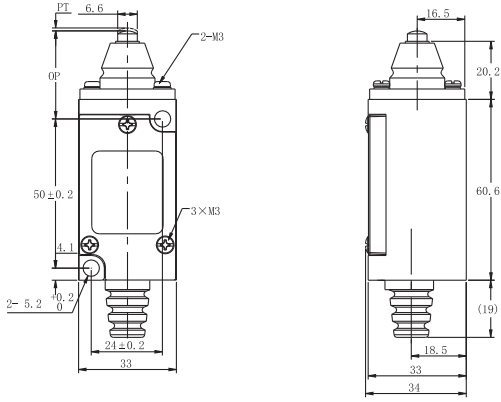
Operating Characteristics

Snap Action




- OF_{max} 7.84-3.35N
- RF_{min} 0.49-0.21N
- PT_{max} 20°
- OT_{min} 75°
- MD_{max} 14°

SN5108

Operating Characteristics

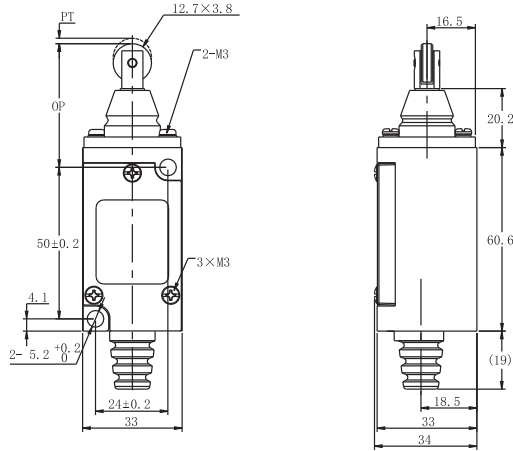
Snap Action



- OF_{max} 8.82N
- RF_{min} 1.47N
- PT_{max} 1.5mm
- OT_{min} 4mm
- MD_{max} 1mm

SN5111

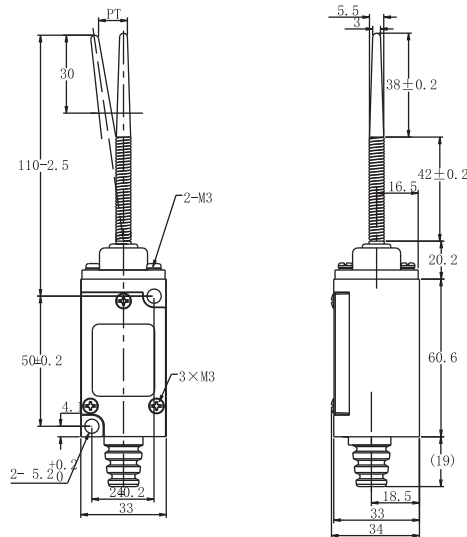
COMPACT LIMIT SWITCHES SN5 SERIES



Operating Characteristics

- Snap Action
-
- OF_{max} 8.82N
 - RF_{min} 1.47N
 - PT_{max} 1.5mm
 - OT_{min} 4mm
 - MD_{max} 1mm

SN5112



Operating Characteristics

- Snap Action
-
- OF_{max} 0.88N
 - PT_{max} 50mm
 - PT_{max} 20mm

SN5166

MINIATURE LIMIT SWITCHES SN7 SERIES



SPECIFICATIONS

Operating Speed	0.05mm-0.5m/sec (panel mount plunger)
Operating Frequency	Mechanical: 120ops/min Electrical: 30 ops/min
Contact Resistance	<15MΩ
Insulation Resistance	>100MΩ min at 500V DC
Rated Current/Voltage	10A/250VAC
Operating Temperature	-20 ~ +60°(14~+140°F)
Dielectric Strength	1000V AC (For 1 min)between current carrying parts 2000V AC (For 1 min)between non-current carrying parts
Service Life	Mechanically 1.0x10 ⁷ (operations) Electrically 5 x10 ⁵ (operations)
Humidity	<95%RH
Weight	~60g
Degree of Protection	IP64 (switch)

Definitions of Operating Characteristics

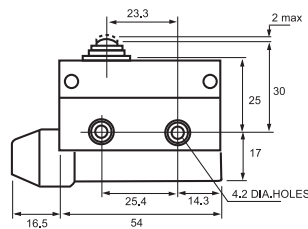
OF	Operating Force	PT	Pretravel
RF	Releasing Force	MD	Movement Differential
OT	Overtravel	OP	Operating Position
TT	Total Travel	PO	Travel to Positive Opening

Dimensions

Unit:mm



SN7100

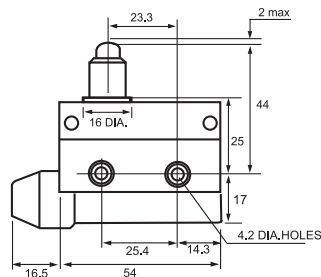


Operating Characteristics

- OF_{max} 5.88N
- RF_{min} 0.98N
- PT_{max} 2.0mm
- OT_{min} 0.8mm
- MD_{max} 0.8mm
- OP 30±0.8mm



SN7110

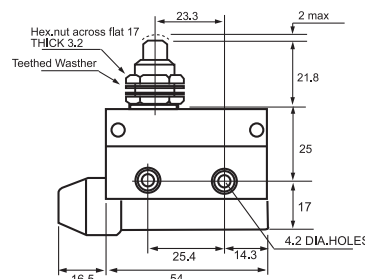


Operating Characteristics

- OF_{max} 5.88N
- RF_{min} 0.98N
- PT_{max} 2.0mm
- OT_{min} 5.0mm
- MD_{max} 0.8mm
- FP_{max} 46mm
- OP 44±1.2mm



SN7310

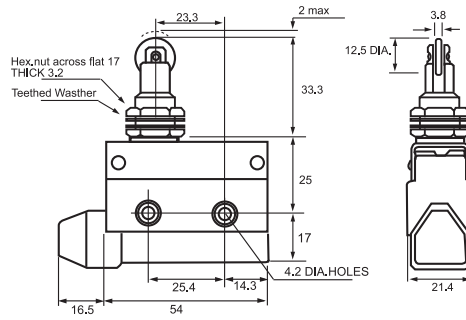


Operating Characteristics

- OF_{max} 5.88N
- RF_{min} 0.98N
- PT_{max} 2.0mm
- OT_{min} 6.0mm
- MD_{max} 0.8mm
- FP_{max} 23.8
- OP 21.8±0.8mm



SN7311

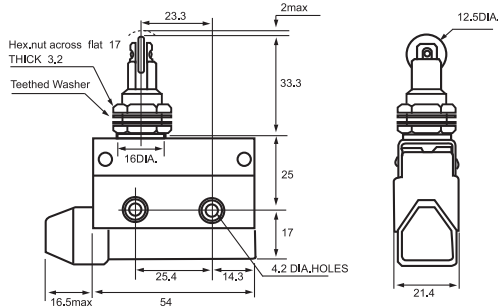


Operating Characteristics

- OF_{max} 5.88N
- RF_{min} 0.98N
- PT_{max} 2.0mm
- OT_{min} 6.0mm
- MD_{max} 0.8mm
- FP_{max} 35.3mm
- OP 33.3±1.2mm



SN7312

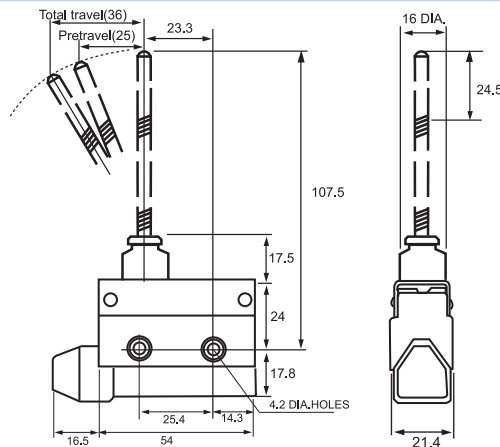


Operating Characteristics

- OF_{max} 5.88N
- RF_{min} 0.98N
- PT_{max} 2.0mm
- OT_{min} 6.0mm
- MD_{max} 0.8mm
- FP_{max} 35.3mm
- OP 33.3±1.2mm



SN7166

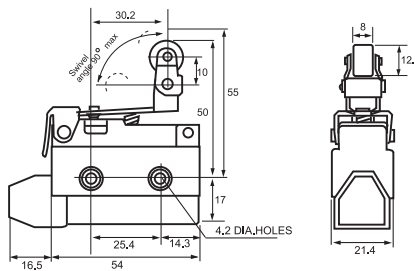


Operating Characteristics

- OF_{max} 1.18N
- PT_{max} 25mm
- OT_{min} 11mm
- OP 36mm



SN7144




Operating Characteristics

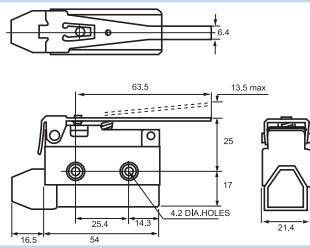
- OF_{max} 2.75N
- RF_{min} 0.98N
- PT_{max} 6.5mm
- OT_{min} 2.0mm
- MD_{max} 1.5mm
- FP_{max} 56mm
- OP 50±1.6mm

MINIATURE LIMIT SWITCHES SN7 SERIES






SN7120

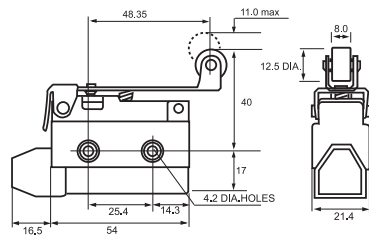


Operating Characteristics

- OF_{max} 1.47N
- RF_{min} 0.39N
- PT_{max} 13.5mm
- OT_{min} 4.0mm
- MD_{max} 3.2mm
- FP_{max} 38.5mm
- OP 25±2.0mm




SN7121

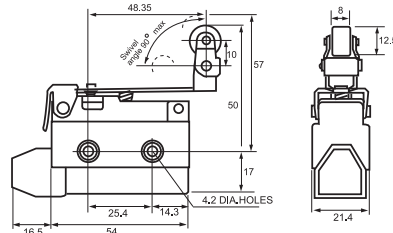


Operating Characteristics

- OF_{max} 1.77N
- RF_{min} 0.49N
- PT_{max} 11.0mm
- OT_{min} 3.0mm
- MD_{max} 2.4mm
- FP_{max} 51mm
- OP 40±1.9mm




SN7124

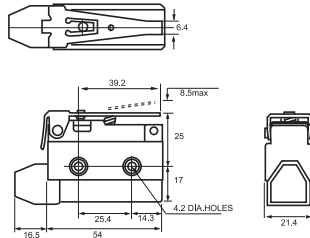


Operating Characteristics

- OF_{max} 2.16N
- RF_{min} 0.59N
- PT_{max} 11.0mm
- OT_{min} 3.0mm
- MD_{max} 2.4mm
- FP_{max} 57
- OP 50±2.0mm




SN7140

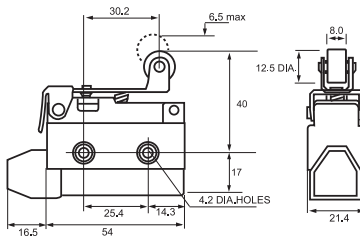


Operating Characteristics

- OF_{max} 2.16N
- RF_{min} 0.59N
- PT_{max} 8.5mm
- OT_{min} 2.5mm
- MD_{max} 2.0mm
- FP_{max} 33.5mm
- OP 25±1.3mm



SN7141



Operating Characteristics

- OF_{max} 2.35N
- RF_{min} 0.87N
- PT_{max} 6.5mm
- OT_{min} 2.0mm
- MD_{max} 1.5mm
- FP_{max} 46.5mm
- OP 40±1.6mm

Specifications

Operating Frequency	Mechanical 240 ops/min Electrical 20 ops/min
Service Life	Mechanically 1.0 x 10 ⁶ (operations) Electrically 5 x 10 ⁵ (operations)
Rated Voltage/Current	15A@250VAC
Rated Insulation Voltage	600VAC
Operating Temperature	-20~+80°C (-4~176°F)
Dielectric Strength	2500VAC 50/60Hz (For 1 min)
Degree of Protection	IP63

Definitions of Operating Characteristics

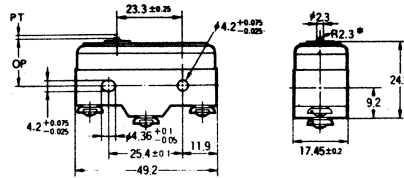
- | | |
|--------------------|-------------------------------|
| OF Operating Force | PT Pretravel |
| RF Releasing Force | MD Movement Differential |
| OT Overtravel | OP Operating Position |
| TT Total Travel | PO Travel to Positive Opening |

Dimensions

Unit:mm



Z-15G

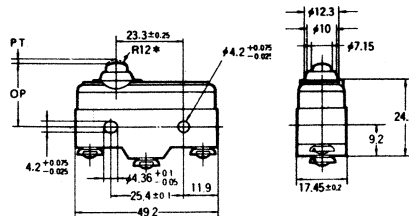


Operating Characteristics

- OF_{max} 3.43N
- RF_{min} 1.12N
- PT_{max} 0.4mm
- OT_{min} 0.13mm
- MD_{max} 0.05mm
- OP 15.9±0.4mm

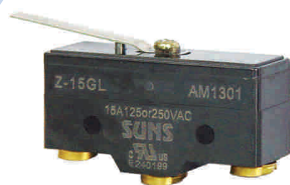


Z-15GD

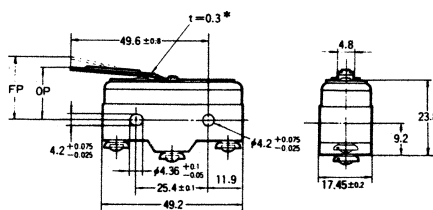


Operating Characteristics

- OF_{max} 3.43N
- RF_{min} 1.12N
- PT_{max} 0.4mm
- OT_{min} 1.6mm
- MD_{max} 0.05mm
- OP 21.5±0.5mm



Z-15GL

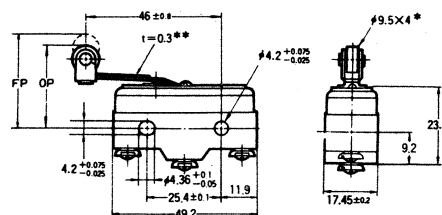


Operating Characteristics

- OF_{max} 1.47N
- RF_{min} 0.14N
- PT_{max} 4mm
- OT_{min} 1.6mm
- MD_{max} 1.3mm
- FP 20.6mm
- OP 17.4±0.8mm



Z-15GL2




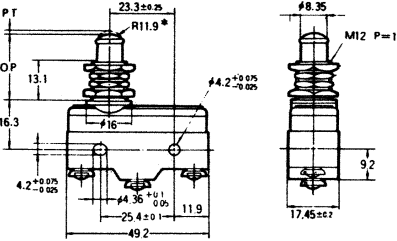
Operating Characteristics

- OF_{max} 1.47N
- RF_{min} 0.14N
- OT_{min} 1.6mm
- PT_{max} 4mm
- MD_{max} 1.3mm
- FP 31.8mm
- OP 28.6±0.8mm

GENERAL-PURPOSE MICRO SWITCHES Z-15 SERIES






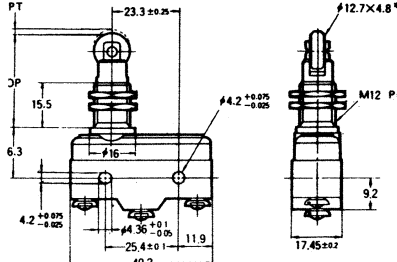


Operating Characteristics

- OF_{max} 3.43N
- RF_{min} 1.12N
- PT_{max} 0.4mm
- OT_{min} 5.5mm
- MD_{max} 0.05mm
- OP 21.8±0.8mm

Z-15GQ




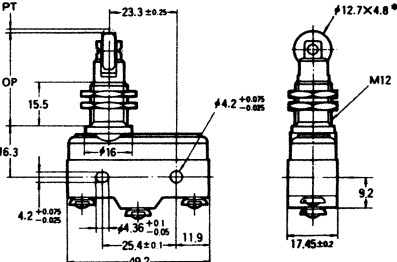


Operating Characteristics

- OF_{max} 3.43N
- RF_{min} 1.12N
- PT_{max} 0.4mm
- OT_{min} 3.58mm
- MD_{max} 0.05mm
- OP 33.4±1.2mm

Z-15GQ22




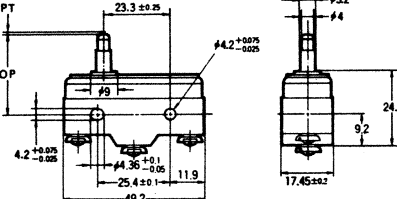


Operating Characteristics

- OF_{max} 3.43N
- RF_{min} 1.12N
- PT_{max} 0.4mm
- OT_{min} 3.58mm
- MD_{max} 0.05mm
- OP 33.4±1.2mm

Z-15GQ21





Operating Characteristics

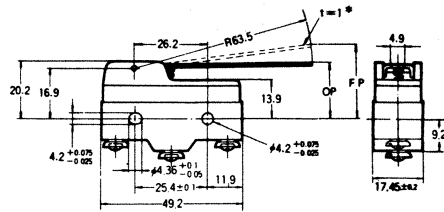
- OF_{max} 3.43N
- RF_{min} 1.12N
- PT_{max} 0.4mm
- OT_{min} 1.6mm
- MD_{max} 0.05mm
- OP 28.2±0.6mm

Z-15GS

GENERAL-PURPOSE MICRO SWITCHES Z-15 SERIES



Z-15GW

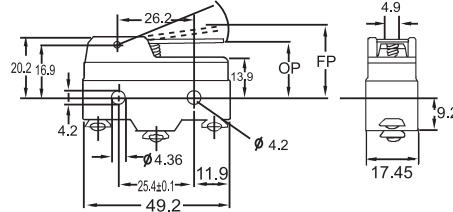


Operating Characteristics

- OF_{max} 0.69N
- RF_{min} 0.14N
- PT_{max} 10mm
- OT_{min} 5.6mm
- MD_{max} 2mm
- FP_{max} 28.2mm
- OP 19.1±0.7mm



Z-15GW1

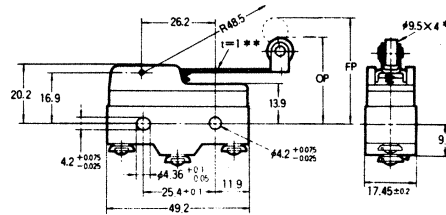


Operating Characteristics

- OF_{max} 1.03N
- RF_{min} 0.21N
- PT_{max} 6.6mm
- OT_{min} 3.7mm
- MD_{max} 0.85mm
- FP_{max} 24.5mm
- OP 18.4±0.5mm



Z-15GW2

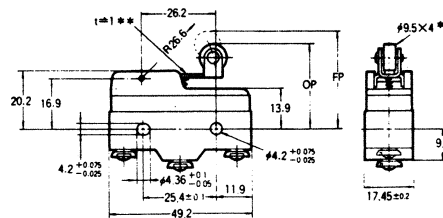


Operating Characteristics

- OF_{max} 0.98N
- RF_{min} 0.21N
- PT_{max} 7.1mm
- OT_{min} 4mm
- MD_{max} 1.02mm
- FP_{max} 36.5mm
- OP 30.2±0.8mm



Z-15GW22

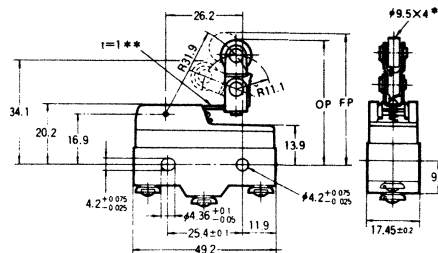


Operating Characteristics

- OF_{max} 1.57N
- RF_{min} 0.41N
- PT_{max} 2.7mm
- OT_{min} 2.4
- MD_{max} 0.8mm
- FP_{max} 32.5mm
- OP 30.2±0.4mm



Z-15GW2277



Operating Characteristics

- OF_{max} 1.67N
- RF_{min} 0.41N
- PT_{max} 3mm
- OT_{min} 2.4mm
- MD_{max} 0.8mm
- FP_{max} 43.5mm
- OP 41.3±0.8mm