



三实电器

www.suns-usa.com

SUNS INTERNATIONAL, LLC

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SUNS International, is an OEM manufacturer and contract service provider of Industrial Control Components such as: limit switches, micro switches, push button switches, foot switches, machine counters, hour meters etc.

Our mission is to deliver world class products and services efficiently and effectively to our customers and their total satisfaction is our goal. As an established member in the industry, we will continue our endeavors in delivering better products and services to our new and existing customers. With this dedication and long term commitment, SUNS International is poised to become a leader in the industry.

QUALITY POLICY of SUNS

ISO9001 Certified Manufacturer since 1998.

SUNS is committed to providing the highest quality products at competitive price to our customers by:

- * Consistently meeting or exceeding our customer's expectations for product quality and performance;
- * Timely delivery of products and services to meet and exceed our customer's requirements;
- * Ensuring our employees are best trained for their position to provide quality products and service to our customers;

The implementation of our Quality Policy is evidence of our commitment to continuous improvement of all products and services.

Product Index



SWITCHES

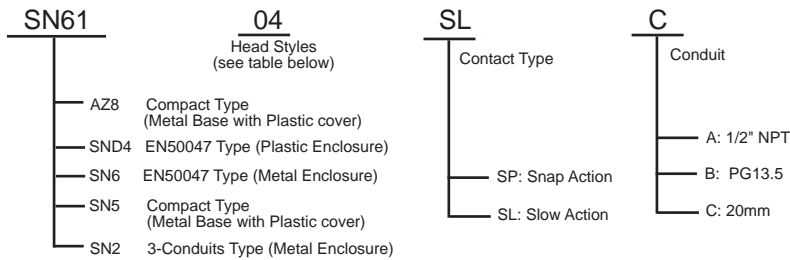
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SUNS International, LLC is the leading manufacturer of high quality industrial limit switches, micro switches. SUNS offers complete ranges of control components which are reliable, available, competitive, compliant with all standards. Our manufacturing 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

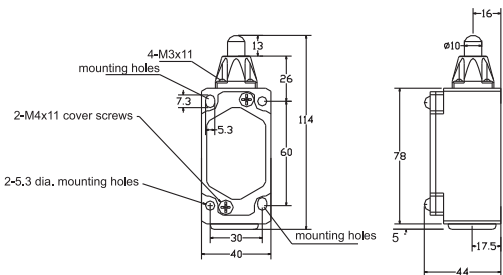
Definitions of Operating Characteristics

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





Dimensions

Unit:mm




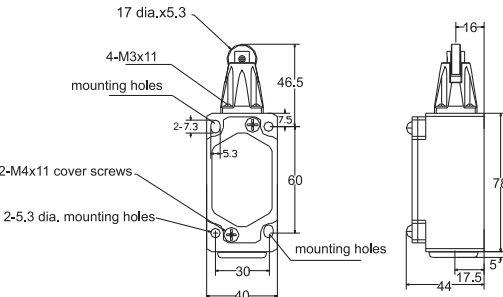


Operating Characteristics





	Snap Action	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

SN6111





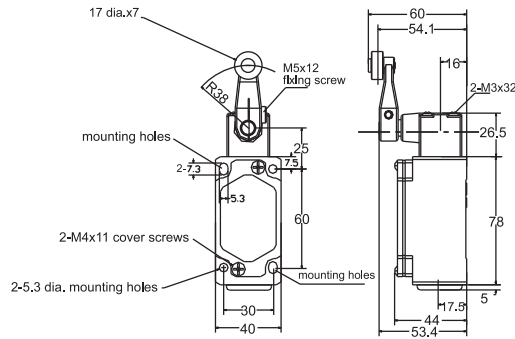
Operating Characteristics

	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

SN6112



SN6104



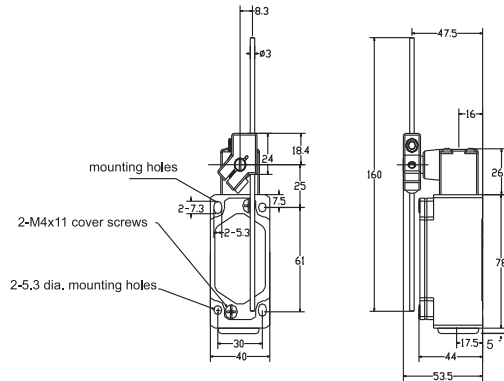
Operating Characteristics

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



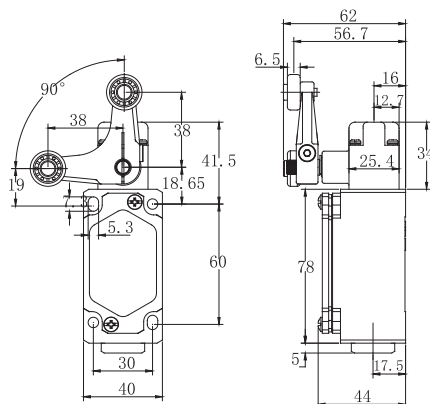
Operating Characteristics

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

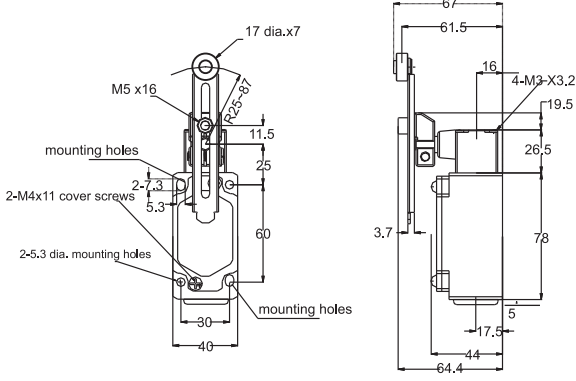
Snap Action		Slow Action	
13	14	11	12
21	22	23	24

- 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






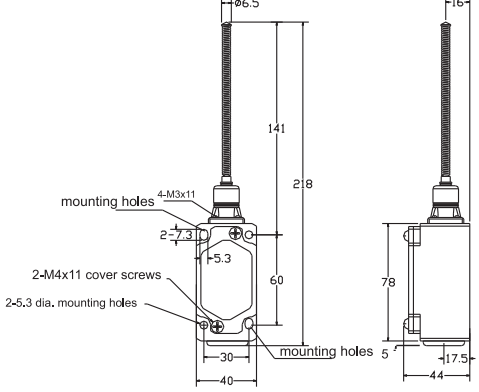


Operating Characteristics


	Snap Action	Slow Action
		
	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°

SN6108





Operating Characteristics

	Snap Action
	
	13 — 14
	21 — 22
• 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

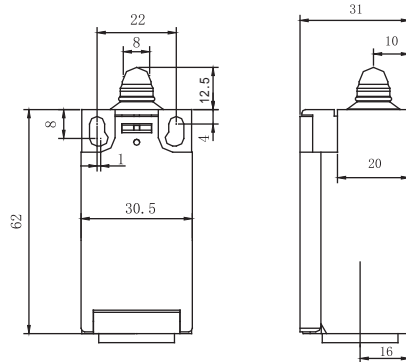
- | | | | |
|----|-----------------|----|----------------------------|
| OF | Operating Force | PT | Pretravel |
| RF | Releasing Force | MD | Movement Differential |
| OT | Overtravel | OP | Operating Position |
| TT | Total Travel | PO | Travel to Positive Opening |

Dimensions

Unit:mm



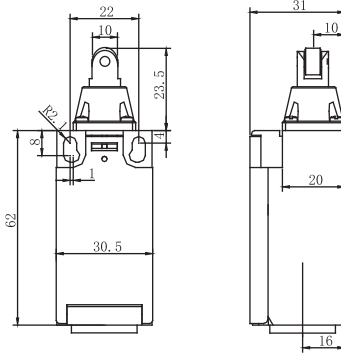
SND4111



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

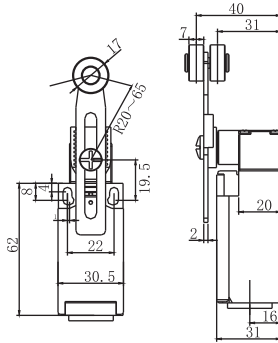
PLASTIC-BODIED LIMIT SWITCHES: SND4 SERIES



Operating Characteristics

	Snap Action	Slow Action
• 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

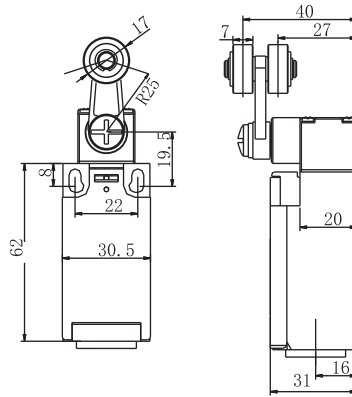
SND4112



Operating Characteristics

	Snap Action	Slow Action
• 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°

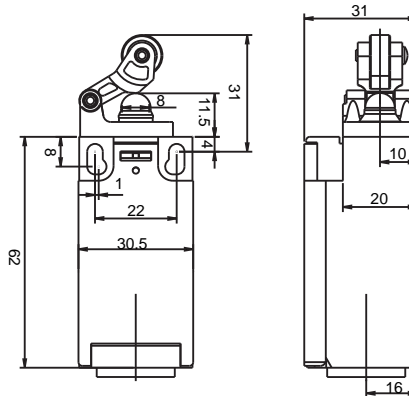
SND4108



Operating Characteristics

	Snap Action	Slow Action
• 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



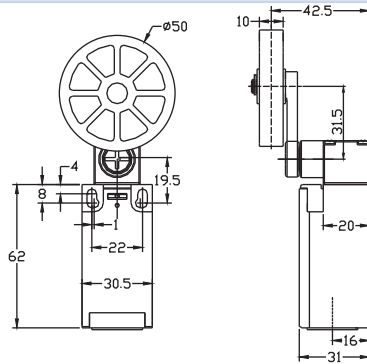
Operating Characteristics

	Snap Action	Slow Action
• 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

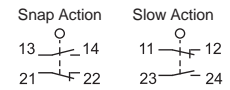
SND4162



SND4114



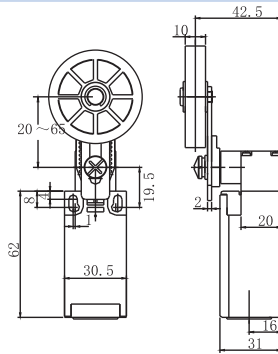
Operating Characteristics



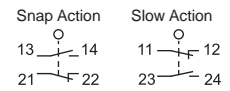
- OF_{max} 11N-cm 11N-cm
- RF_{min} 3.3N-cm 3.3N-cm
- PT_{max} 28° 15° (NC) 40° (NO)
- OT_{min} 50° -
- TT 78° 78°
- MD_{max} 15° -
- PO_{min} 55° 30°



SND4118



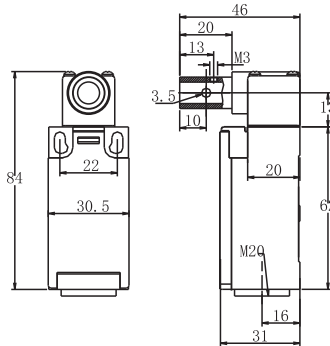
Operating Characteristics



- 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°

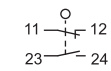


SND4181-SL



Operating Characteristics

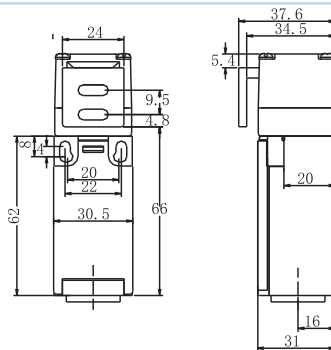
Slow Action



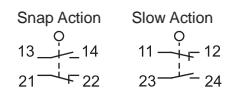
- OF_{max} 11N-cm
- RF_{min} 3.3N-cm
- PT_{max} 15° (NC) 40° (NO)
- TT 360°
- PO_{min} 20°



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

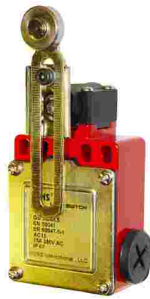
Unit:mm

Operating Characteristics

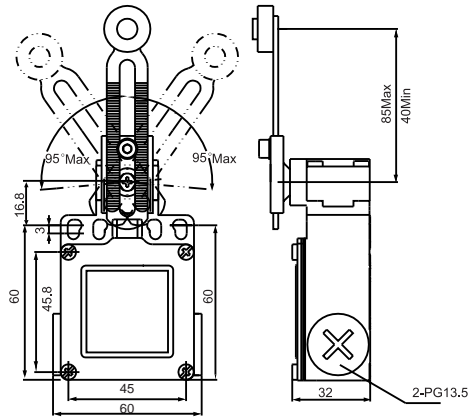
Snap Action

- OF_{max} 5.88N
- RF_{min} 0.49N
- PT_{max} 20°
- OT_{min} 75°
- MD_{max} 14°
- PO_{min} 55°

SN2104

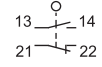


SN2108



Operating Characteristics

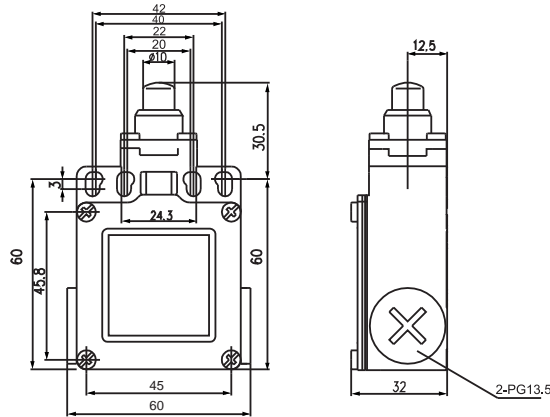
Snap Action



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

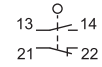


SN2111



Operating Characteristics

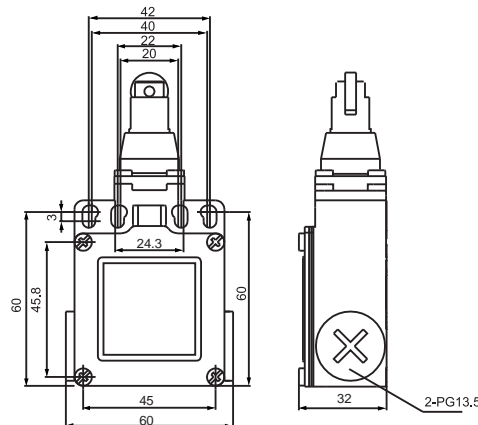
Snap Action



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

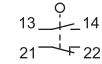


SN2112



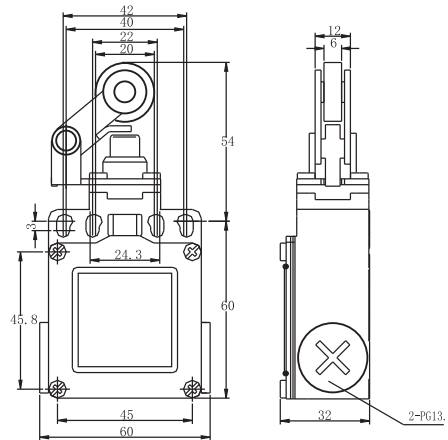
Operating Characteristics

Snap Action



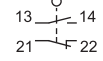
- OF_{max} 8.82N
- RF_{min} 1.47N
- PT_{max} 1.8mm
- OT_{min} 4mm
- MD_{max} 1mm
- PO_{min} 3.0mm

3 CONDUIT METAL-BODIED LIMIT SWITCHES: SN2 SERIES



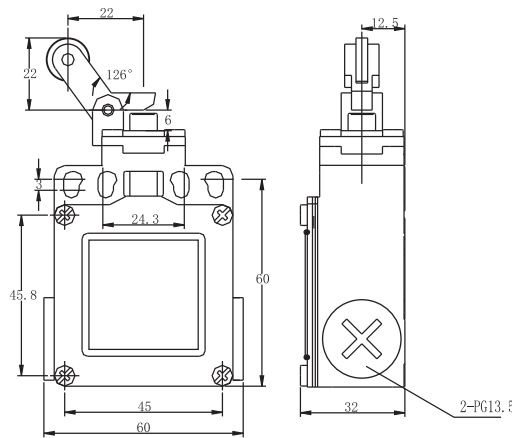
Operating Characteristics

Snap Action



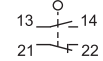
- OF_{max} 8.82N
- RF_{min} 1.47N
- PT_{max} 1.8mm
- OT_{min} 4mm
- MD_{max} 1mm
- PO_{min} 3.0mm

SN2162



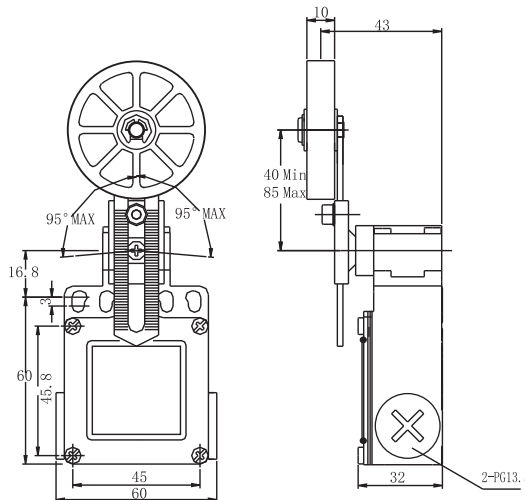
Operating Characteristics

Snap Action



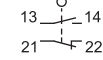
- OF_{max} 8.82N
- RF_{min} 1.47N
- PT_{max} 1.8mm
- OT_{min} 4mm
- MD_{max} 1mm
- PO_{min} 3.0mm

SN2172



Operating Characteristics

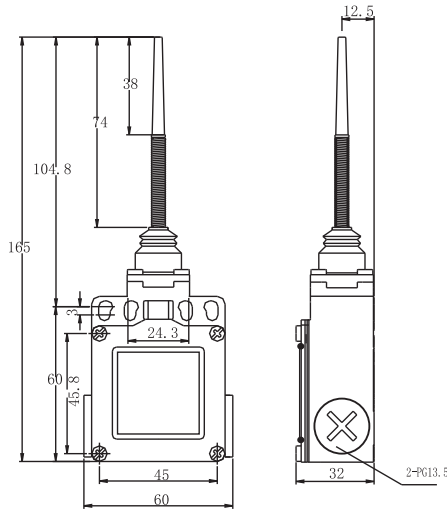
Snap Action



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

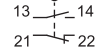
SN2118

3 CONDUIT METAL-BODIED LIMIT SWITCHES: SN2 SERIES



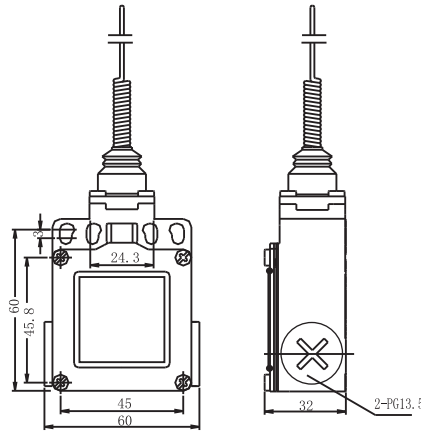
Operating Characteristics

Snap Action



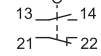
- OF_{max} 0.88N
- PT_{max} 50mm
- OT_{max} 20mm

SN2166



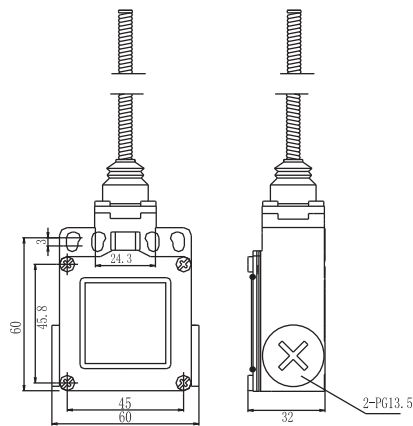
Operating Characteristics

Snap Action



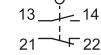
- OF_{max} 0.88N
- PT_{max} 30mm
- OT_{max} 20mm

SN2169



Operating Characteristics

Snap Action

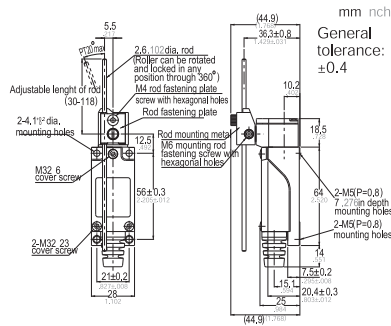


- OF_{max} 0.88N
- PT_{max} 50mm
- OT_{max} 20mm

SN2100



AZ-8107

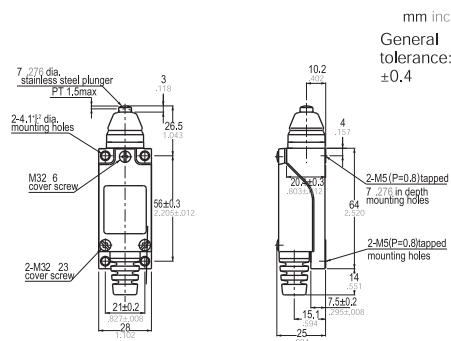


Operating Characteristics

- Snap Action
13 14
21 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

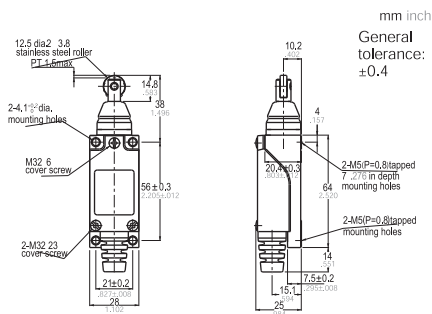


Operating Characteristics

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



AZ-8112

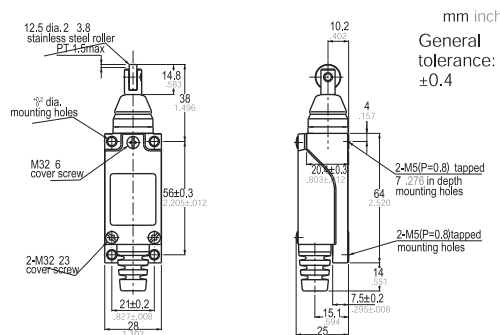


Operating Characteristics

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



AZ-8122




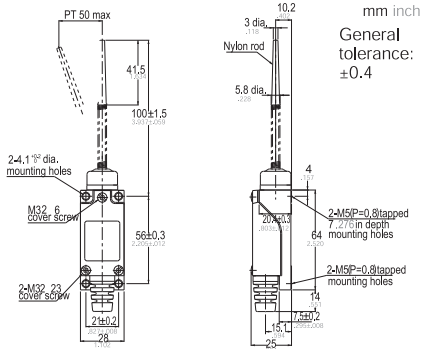
Operating Characteristics

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

COMPACT LIMIT SWITCHES: AZ-8 SERIES








mm inch
General tolerance: ±0.4


Operating Characteristics

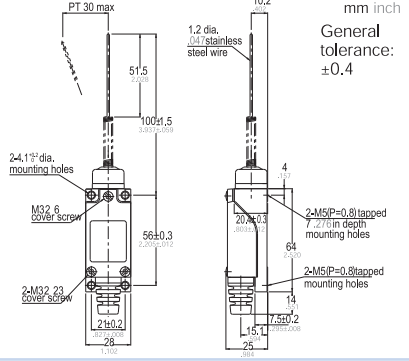
Snap Action



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

AZ-8166






mm inch
General tolerance: ±0.4


Operating Characteristics

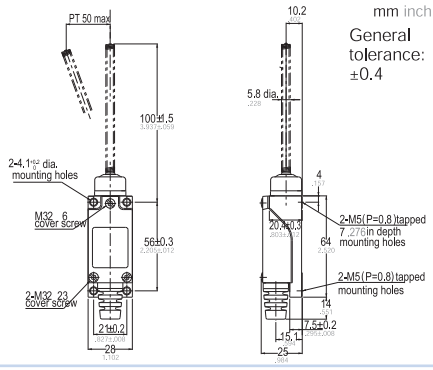
Snap Action



- 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

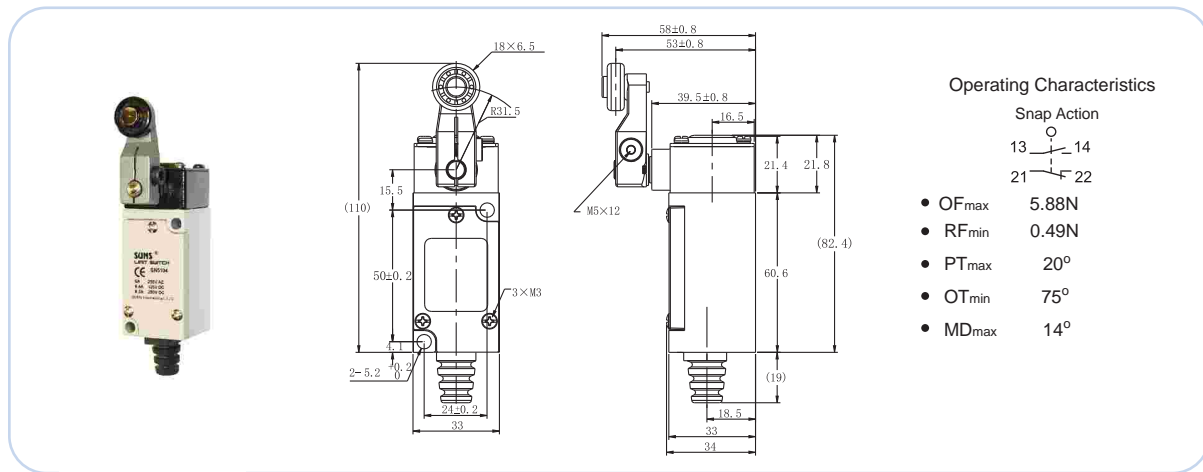
Operating Speed	0.05mm-2m/sec
Operating Frequency	Mechanical: 120ops/min Electrical: 30 ops/min
Insulation Resistance	>100MΩ@500V DC
Contact Resistance	<25mΩ
Rated Voltage	250V AC (EN60947-5-1)
Rated Current	10A
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between 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

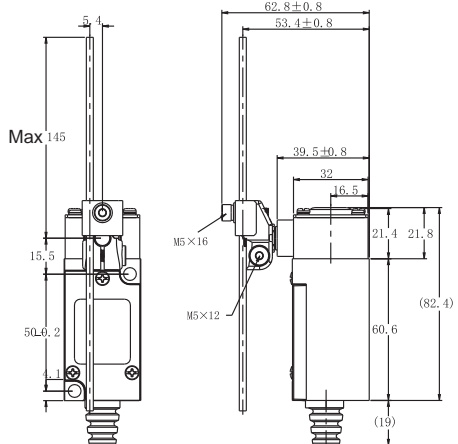


SN5104

COMPACT LIMIT SWITCHES SN5 SERIES

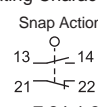







Operating Characteristics

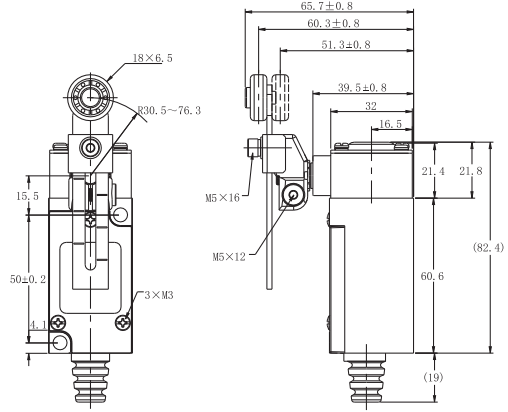
Snap Action



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

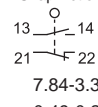
SN5107






Operating Characteristics

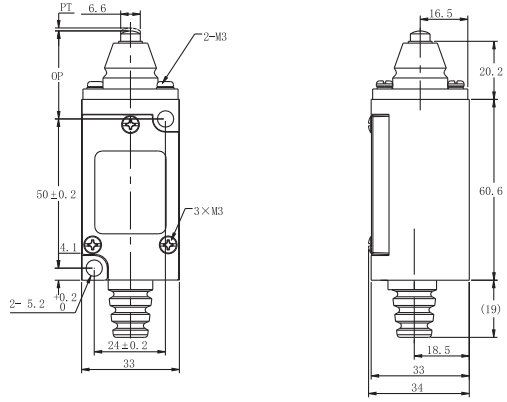
Snap Action



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

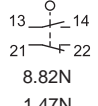
SN5108





Operating Characteristics

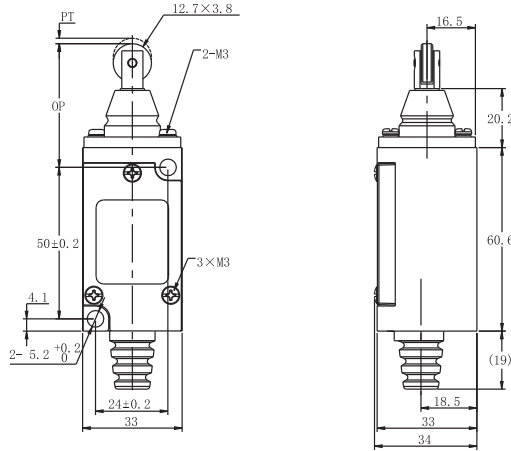
Snap Action



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

SN5111

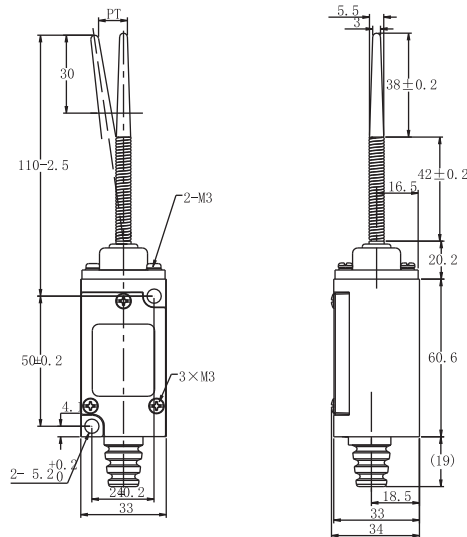
COMPACT LIMIT SWITCHES SN5 SERIES



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

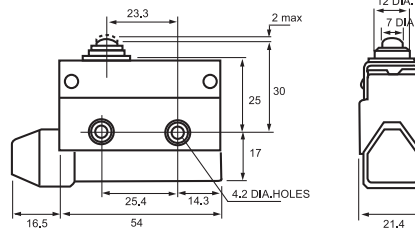
OF	Operating Force	PT	Pretravel
RF	Releasing Force	MD	Movement Differential
OT	Overtravel	OP	Operating Position
TT	Total Travel	PO	Travel to Positive Opening

Dimensions

Unit:mm



SN7100

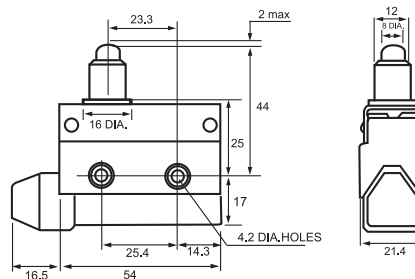


Operating Characteristics

- 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

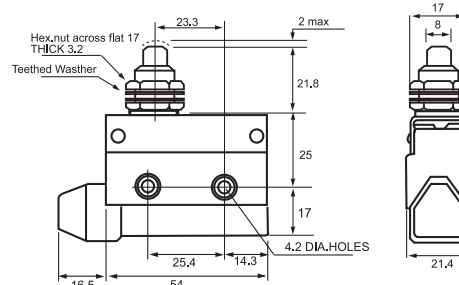


Operating Characteristics

- 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

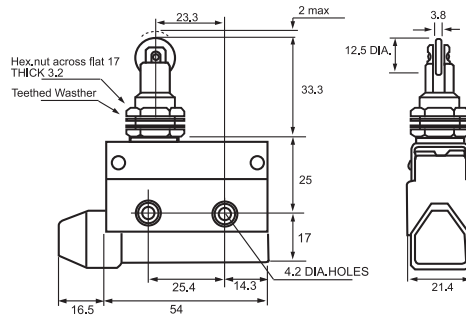


Operating Characteristics

- 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

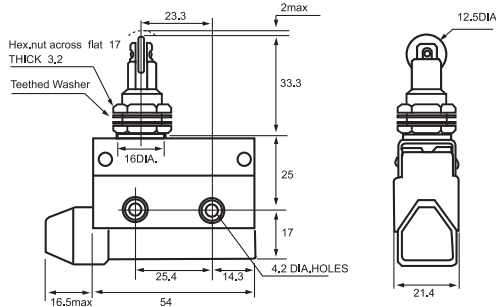


Operating Characteristics

- 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

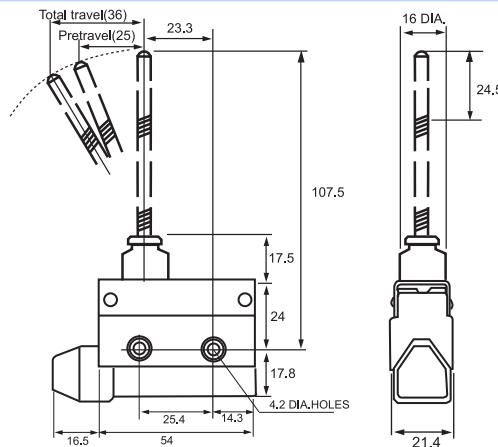


Operating Characteristics

- 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

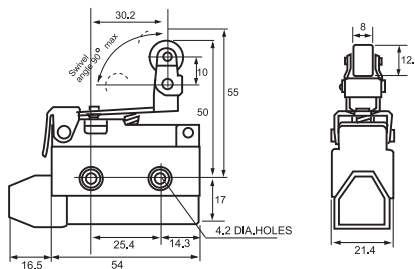


Operating Characteristics

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



SN7144




Operating Characteristics

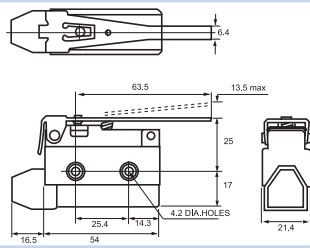
- OF_{max} 2.75N
- RF_{min} 0.98N
- PT_{max} 6.5mm
- OT_{min} 2.0mm
- MD_{max} 1.5mm
- FP_{max} 56mm
- OP 50±1.6mm

MINIATURE LIMIT SWITCHES SN7 SERIES






SN7120

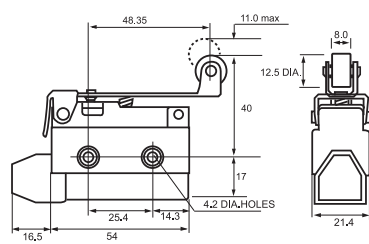


Operating Characteristics

- 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

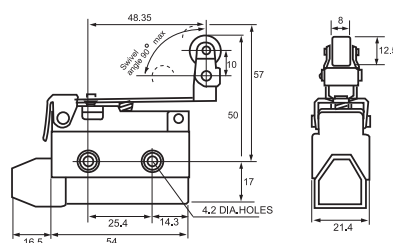


Operating Characteristics

- 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

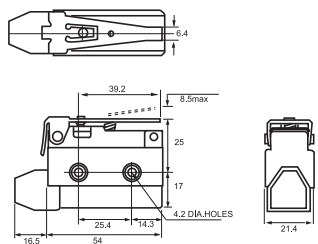


Operating Characteristics

- 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

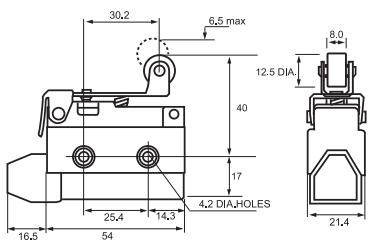


Operating Characteristics

- 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

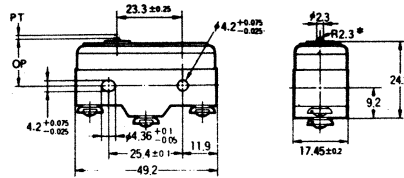
- | | |
|--------------------|-------------------------------|
| OF Operating Force | PT Pretravel |
| RF Releasing Force | MD Movement Differential |
| OT Overtravel | OP Operating Position |
| TT Total Travel | PO Travel to Positive Opening |

Dimensions

Unit:mm



Z-15G

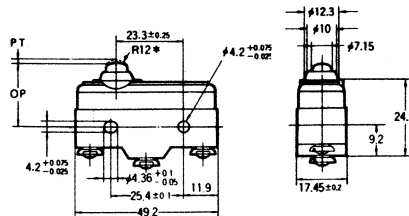


Operating Characteristics

- 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

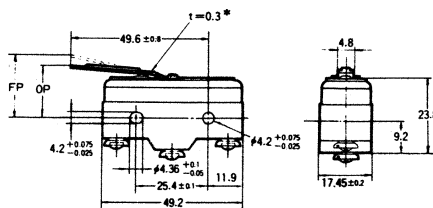


Operating Characteristics

- 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

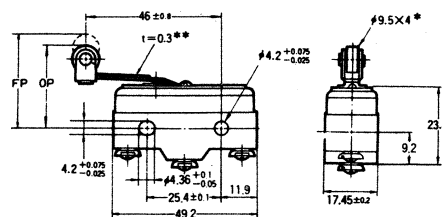


Operating Characteristics

- 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




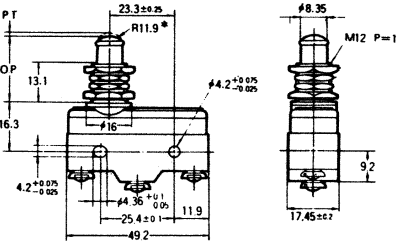
Operating Characteristics

- 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






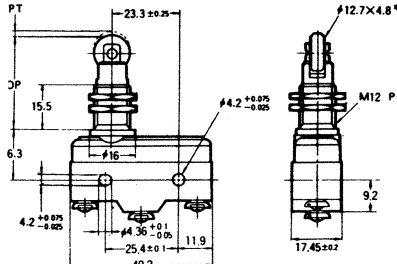


Operating Characteristics

- 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




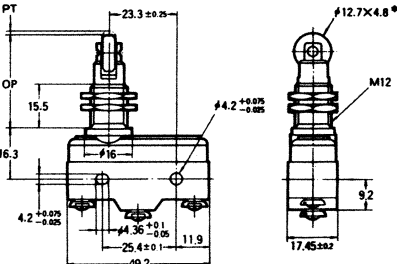


Operating Characteristics

- 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




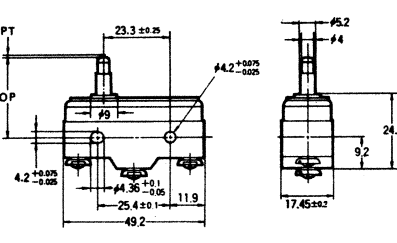


Operating Characteristics

- 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

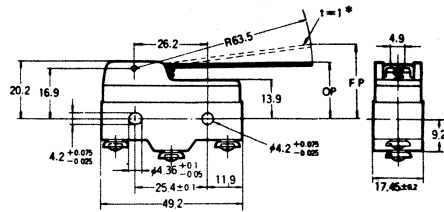
- OF_{max} 3.43N
- RF_{min} 1.12N
- PT_{max} 0.4mm
- OT_{min} 1.6mm
- MD_{max} 0.05mm
- OP 28.2±0.6mm

Z-15GS

GENERAL-PURPOSE MICRO SWITCHES Z-15 SERIES



Z-15GW

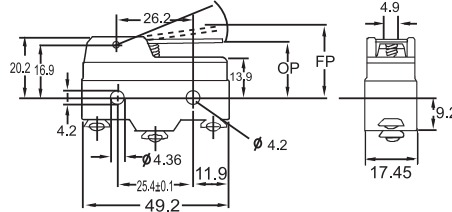


Operating Characteristics

- 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

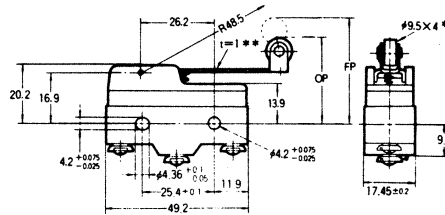


Operating Characteristics

- 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

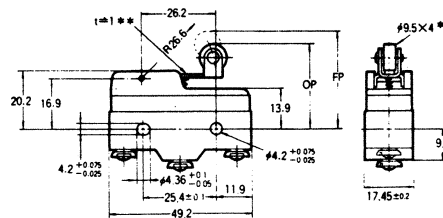


Operating Characteristics

- 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

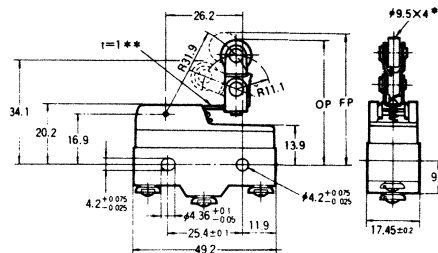


Operating Characteristics

- 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



CONTROL UNIT FPB SERIES



FEATURES

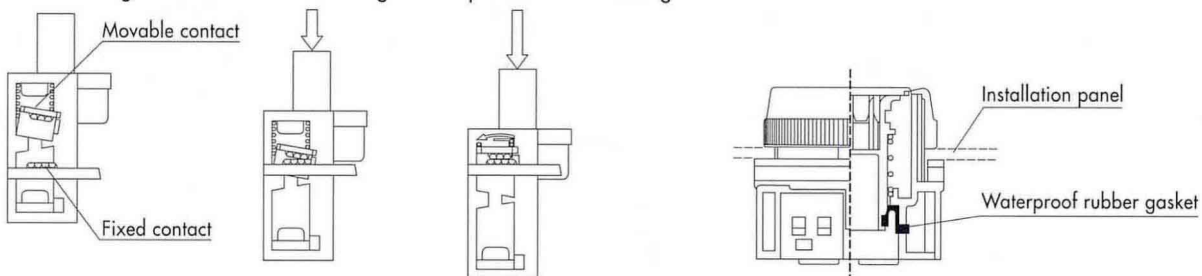
The protective structure is IP65(jet-proof type) and oil-proof type. Hence these switches can serve for a wide range of applications. The contact unit is attachable and detachable in one simple movement. Nut material: Metal or Plastic For Option

PUSH-BUTTON SWITCHES ILLUMINATING PUSH-BUTTON SWITCHES

Type	Appearance	Type	Appearance	Type	Appearance
Flat	FPB 	Extended(transformer)	ITSE 	Extended(direct)	IDSE
Extended	EPB 	Mushroom(transformer)	ITSM 	Mushroom(direct)	IDSM
Mushroom	MPB 	Knob Selector		Transformer type	
Push-lock mushroom type	LMB 	SELECTION SWITCHES		Direct type	PILOT LIGHT

CONTACT MECHANISM

Before contacting Start of contacting Completion of contacting



CONTROL UNIT FPB SERIES

PUSH BUTTON-SELECTOR SWITCHES-ILLUMINATING PUSH BUTTON SWITCHES

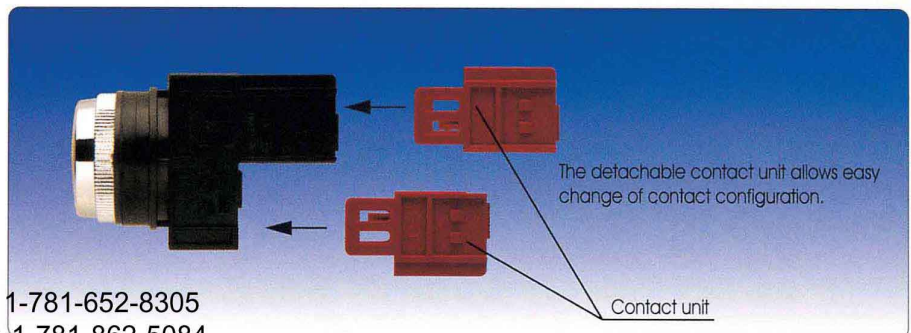
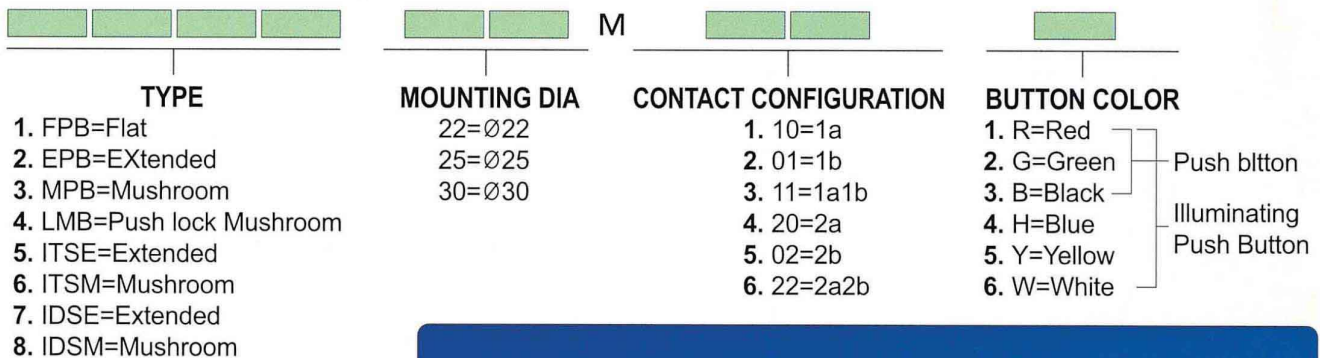
SPECIFICATIONS

ITEM	PUSH-BUTTON SWITCH, SELECTOR SWITCH	ILLUMINATING PUSH-BUTTON SWITCH
Protective structure	IP65 and oil-proof type	
Ambient temperature	-5~40°C	
Rated insulation voltage	AC, DC600V	AC, DC600V(full-voltage illuminator:AC, DC250V)
Rated supply current	10A	
Mechanical durability	Push-button switch, illuminating push-button switch:5 million times, Selector switch:1 million times	
Electrical durability	1 million times	
Frequency of operation	1800 times/hr	
Rated working voltage v	Rated working current A	
	AC	DC
	AC-15 class (inductive load)	DC-13 class (inductive load) DC-12 class (resistive load)
24	10	6 6
48	10	2 3
110	6	0.7 2
220	4	0.3 1
440	1.5	- -
		Transformer Type
		110V, 220V 50/60 Hz (ITS) E-10 FILAMENT BULB
		Direct Type
		6.3V, 110V, 220V(IDS)

The values and testing conditions in the table above are in compliance with JIS C4520(General Specification for Control Switches) and JIS C4521 (Control Button Switches).

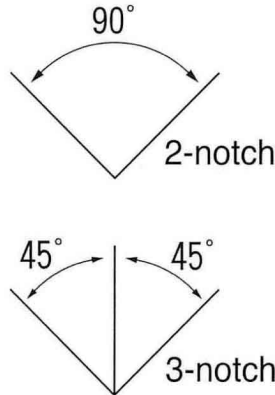
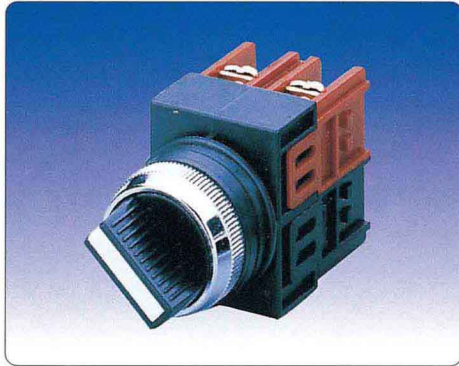
MODEL DESIGNATION

Push Button and illuminating Push Button Switch

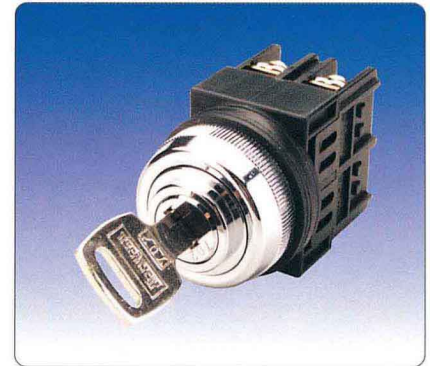


CONTROL UNIT FPB SERIES

SELECTOR SWITCHES



KEYLOCK SWITCH



MODEL DESIGNATION

TYPE	MOUNTING DIA	OPERATING SYSTEM	CONTACT CONFIGURATION
1. LKOS=Lever Selector 2. SKOS=Knob Selector 3. SKL=Keylock Switch	1. 22=Ø22 2. 25=Ø25 3. 30=Ø30	1. 2=2-notch 2. 3=3-notch	1. 10=1a 7. 30=3a 2. 01=1b 8. 03=3b 3. 11=1a1b 9. 33=3a3b 4. 20=2a 10. 40=4a 5. 02=2b 11. 04=4b 6. 22=2a2b 12. 44=4a4b

PILOT LIGHT

TP TYPE



• TRANSFORMER PILOT LIGHT
ACV : 110,220,380,440V
E-10 6.3V FILAMENT BULB

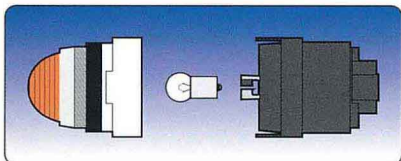
PILOT LIGHT

TRANSFORMER PILOT LIGHT
ACV: 110, 220, 380, 440
E-10 FILAMENT BULB



	Ø22	Ø25	Ø30
R	CA-22MR	CA-25MR	CA-30MR
G	CA-22MG	CA-25MG	CA-30MG
Y	CA-22MY	CA-25MY	CA-30MY
B	CA-22MB	CA-25MB	CA-30MB
W	CA-22MW	CA-25MW	CA-30MW

TP TYPE



ITEM NO.	MOUNTING DIA	COLOR
TP-22M	Ø22	G: GREEN R: RED
TP-25M	Ø25	Y: YELLOW B: BLUE
TP-30M	Ø30	W: WHITE



PILOT LIGHT
ACV:110, 220
E-10 NEON BULB

ITEM NO.	MOUNTING DIA	COLOR
CA22M-N	Ø22	RED:R YELLOW:Y BLUE:B GREEN:G WHITE:W
CA25M-N	Ø25	
CA30M-N	Ø30	

PUSH-BUTTON SWITCH,ILLUMINATED PUSH BUTTON & SELECTOR (ECONOMIC TYPE)

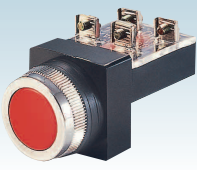
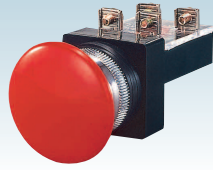
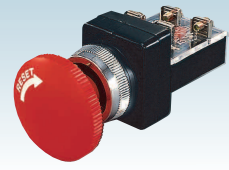
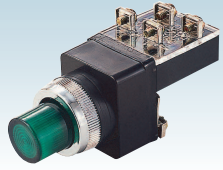
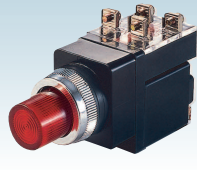


Specifications

Item	Dielectric Strength	Rated Insulation Voltage	Ambient Air Temperature	Operating Frequency (operations/h)		Service Life (operations)	
				Push-Button	Selector Switch	Mechanically	Electrically
Technical Data	2500V AC 50/60Hz for 1 Minute	600V AC	-20~50°C	1200	120	10 ⁶	5x10 ⁵

Contact Rating

Rated Current and Voltage	AC	125V	250V	600V
		10A	6A	2A
	DC	110V	220V	600V
		2A	1.1A	0.4A

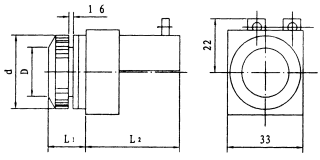
Picture & Description

Type	FPB-25(30)	MPB-25(30)	LMB-25(30)	IDS-25
Pushbutton Style	Flat Pushbutton	Mushroom Head Pushbutton	Push-Locked Pushbutton	Illuminated Pushbutton Direct Type(E-10 Neon Bulb)
Pictures				
Color	R,G,B	R,G	R	R,G,Y,B,W
Type	ITS-25(30)	SKOS-25(30)	LKOS-25(30)	
Pushbutton Style	Illuminated Pushbutton With Transformer (AC 110,220,380,440V)	Knob Operated Selector Switch, 2 Position and 3 Position	Lever Operated Selector Switch, 2 Position and 3 Position	
Picture				
Color	R,G,Y,B,W	R,G,B	R,G,B	
Contact Configuration	10=1NO,01=1NC,11=1NC, 22=2NO+2NC			

Dimensions

Unit: mm

Type	Dimensions (mm)			
	D	d	L1	L2
FPB-25(30)	21(24.5)	30(34)	16(18.5)	40/48
MPB-25(30)	40	30	31	40/48
LMB-25	40	30	35	42/50
IDS-25	19	30	33	46/55
ITS-25	19	30	33	45/55
SKOS-25(30)	21	30	30	45/51
LKOS-25(30)	21	30	33	43/51




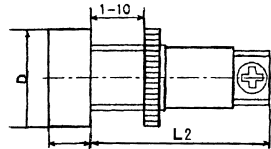

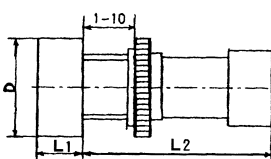

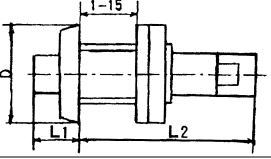

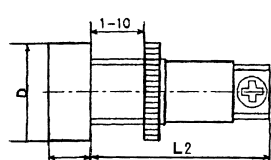
PB SERIES PUSHBUTTON




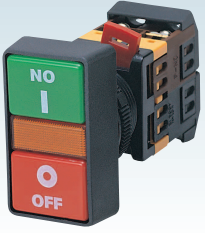
Specifications

Item	Dielectric Strength	Rated Insulation Voltage	Rated Current and Voltage	Ambient Air Temperature °C	Operating Frequency (operations/h)	Service Life (operations)	
						Mechanically	Electrically
Technical Data	2500V AC 50/60Hz for 1 Minute	600V AC	AC 250V, 3A	-25~40°C	1200	10 ⁶	5x10 ⁵

Dimensions

Unit: mm


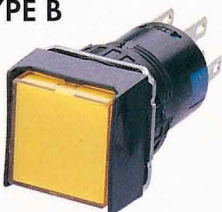

Type	Picture	Dimensions (mm)	Mounting Hole	Contact Configuration
PB-XA			φ 22 φ 25	10=1NO 01=1NC 11=1NO+1NC
PB-XA-A			φ 22 φ 25	01=1NC 10=1NC 11=1NO+1NC
PB-16			φ 16	01=1NC
PB-XB (S)			φ 22 φ 25	Pilot light

PICTURE				
DESCRIPTIONS	22mm, 25mm Pushbutton with neon lamp BA9S AC 110V, 220V	22mm, 25mm Pushbutton with neon lamp BA9S AC 110V, 220V	22mm, 25mm Pushbutton with neon lamp BA9S AC 110V, 220V	30mm Pushbutton with neon lamp BA9S AC 110V, 220V
Type	APBB - 22 & 25N	AS - 22 & 25N	AB - 22 & 25N	PPBB - 30N
Rated Current and Voltage	10A 600VAC	10A 600VAC	10A 600VAC	10A 600VAC

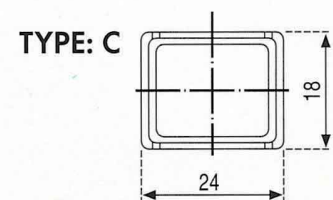
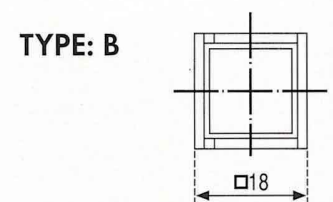
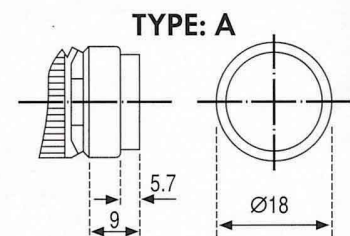
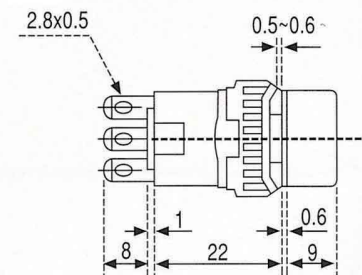


SPECIFICATIONS

RATED VOLTAGE(max)		250V AC/DC		
ACI DUTY max A		3A		
RATED WORKING VOLTAGE	RATED WORKING CURRENT			
	AC		DC	
	INDUCTIVE LOAD	RESISTIVE LOAD	INDUCTIVE LOAD	RESISTIVE LOAD
24V	XX	XX	0.7A	1.0 A
110V	0.7A	1.0A	0.1A	0.2A
220V	0.5A	0.5A	XX	XX
AMBIENT TEMPERATURE		-25°C ~ 55°C		

TYPE	SPECIFICATIONS		
	ILLUMINATED PUSHBUTTON	PUSH LOCK ILLUMINATED PUSHBUTTON	PILOT LIGHT
	ITEM NO.		
	LAL16S	LAL16Z	LAL16D
	BULB SPECIFICATIONS		
	AC/DC 6V; 12V; 24V; FILAMENT BULB		
	AC 110V; 220V NEON BULB		
	CONTACT CONFIGURATION		
	1A1B1C	:::	
	2A2B2C		
	COLOR		
	RED; YELLOW; BLUE; GREEN; WHITE		
	MECHANICAL DURABILITY(TIMES)		
	1,000,000	100,000	:::
ELECTRICAL DURABILITY			
100,000	50,000	:::	


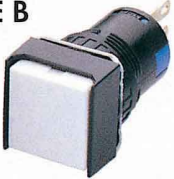

DIMENSIONS(mm)

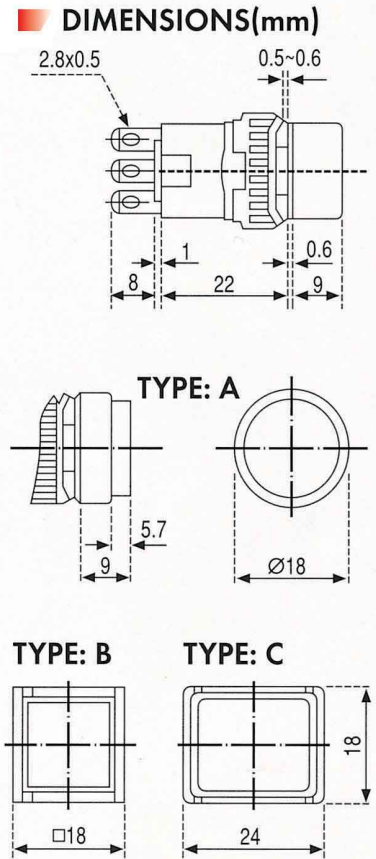


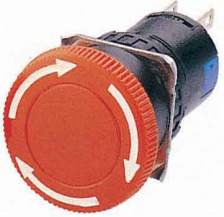


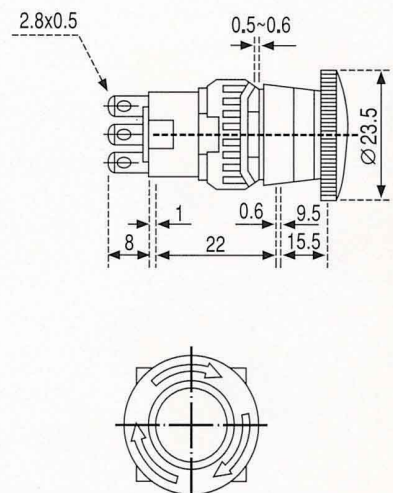
Ø16 CONTROL UNIT

SUNS International, LLC

TYPE	SPECIFICATIONS	
TYPE A 	PUSHBUTTON	PUSH LOCK PUSHBUTTON
	ITEM NO.	
	LAB16S	LAB16Z
	CONTACT CONFIGURATION	
TYPE B 	1A1B 1C	
	2A2B 2C	
	COLOR	
TYPE C 	MECHANICAL DURABILITY (TIMES)	
	1,000,000	100,000
	ELECTRICAL DURABILITY	
	100,000	50,000






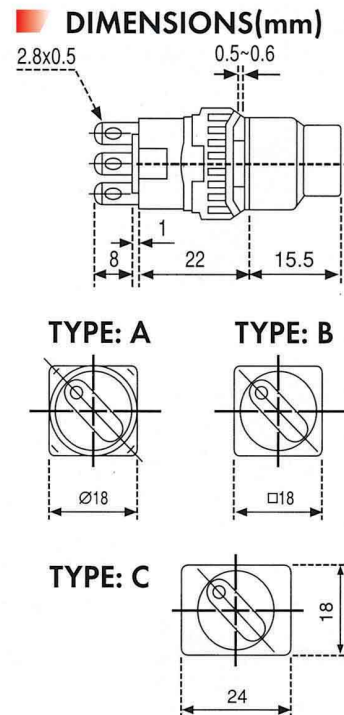
	SPECIFICATIONS	
	PUSHBUTTON LATCH HEAD TURN TO RELEASE	
	ITEM NO.	
	LAB16-V	
	CONTACT CONFIGURATION	
	1A1B 1C	
	2A2B 2C	
	MECHANICAL DURABILITY (TIMES)	
	100,000 TIMES	
	ELECTRICAL DURABILITY	
100,000 TIMES		






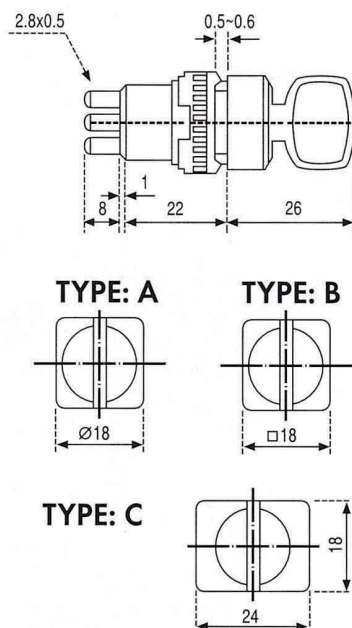


Ø16 CONTROL UNIT

TYPE A 	SPECIFICATIONS	
	SELECTOR SWITCH	
	DESCRIPTION	
	90° 2 POLES	90° 3 POLES
TYPE B 	ITEM NO.	
	LAS16-2	LAS16-3
	CONTACT CONFIGURATION	
	1A1B 1C	2A2B 2C
	2A2B 2C	
TYPE C 	MECHANICAL DURABILITY (TIMES)	
	100,000 TIMES	
	ELECTRICAL DURABILITY	
	100,000 TIMES	



TYPE A 	SPECIFICATIONS	
	KEY SWITCH	
	DESCRIPTION	
	90° 2 POLES	90° 3 POLES
TYPE B 	ITEM NO.	
	LAS16-2K	LAS16-3K
	CONTACT CONFIGURATION	
	1A1B 1C	2A2B 2C
	2A2B 2C	
TYPE C 	MECHANICAL DURABILITY(TIMES)	
	100,000 TIMES	
	ELECTRICAL DURABILITY	
	100,000 TIMES	






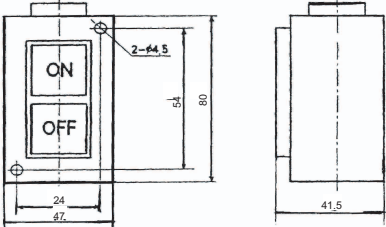

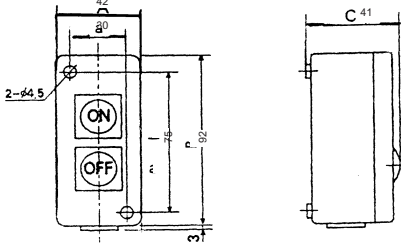

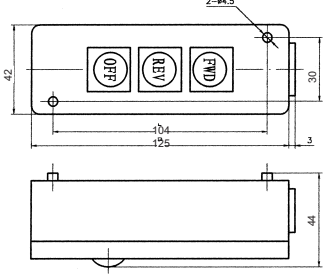

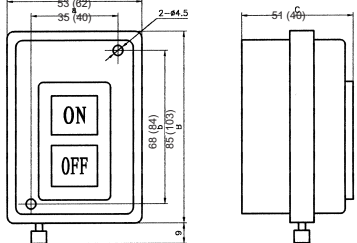

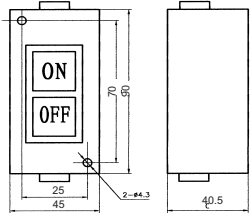
POWERBUTTON SWITCHES

Specifications

Type	Rated Voltage(V)	RatedCurrent(A)	Control Motor Capacity(KW)			Conventional Thermal Current lth(A)	Enclosure Materials
			100V	380V	600V		
BT-2	250	3			10 A	Plastic	
BT-3		5					
PE-2		5				Bakelite & Metal	
PCW-15A	380		0.75	1.5		15 A	Plastic
PWN-15A	600		0.75	1.5	2.2	15 A	Iron
PWN-30A	600		1.1	2.2	3.75	30 A	

Dimensions

Unit: mm

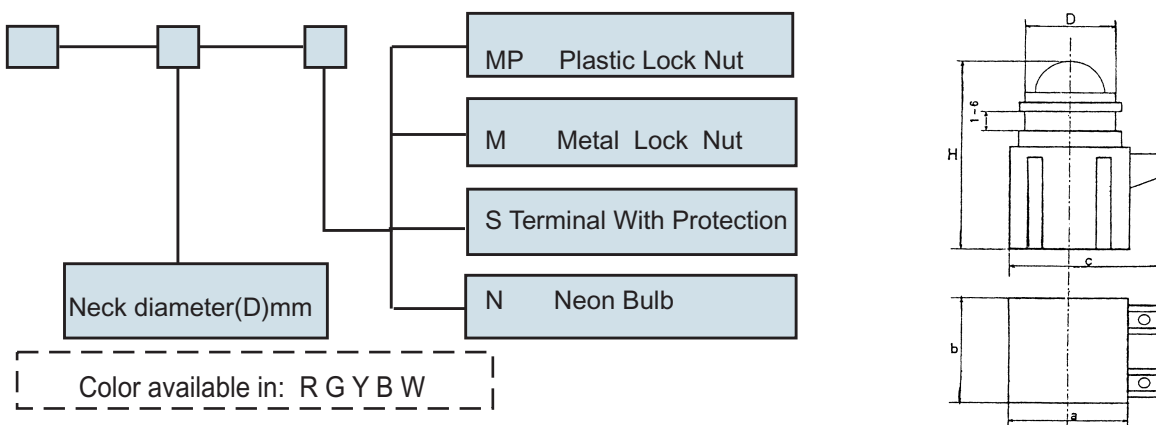
<p>PE-2</p> 	
<p>BT-2 BT-2(NEW)</p> 	
<p>BT-3 BT-3(NEW)</p> 	
<p>PWN-15A PWN-30A</p> 	 <p>PWN-15A (PWN-30A)</p>
<p>PCW-15A</p> 	

CA SERIES PILOT LIGHTS

Specifications

Item	Dielectric Strength	Ambient Air Temperature	Humidity	Rated Voltage	Distance to identify the light (m)	
					Transformer Type	Neon Bulb Type
Technical Data	1500V AC 50/60Hz for 1 Minute	-25~40°C	<90% RH	110V, 220V, 380V, 440V	5	3

Type Designation



TRANSFORMER TYPE PILOT LIGHT







Unit: mm

Type	Picture		Dimensions					Bulb Type
CA-30			CA-30					E-12 18(12)V 2W
			D	a	b	c	H	
			30	34	39		77	
			CA-30S					
			D	a	b	c	H	
			30	34	36	45	74	
CA-25			CA-25					E-10 6V 1W
			D	a	b	c	H	
			25	33	33		68	
			CA-25S					
			D	a	b	c	H	
			25	34	36	43	71	
CA-22			CA-22					E-10 6V 1W
			D	a	b	c	H	
			20	34	36		66	
			CA-22S					
			D	a	b	c	H	
			22	33	33	43	68	

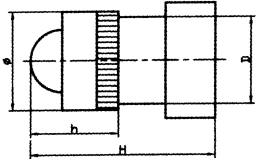
CA SERIES PILOT LIGHTS

FULL VOLTAGE TYPE PILOT LIGHT

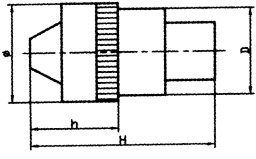
Unit: mm

Type	Picture	Rated Voltage(V)	Bulb Type
CA-30NS		AC 110V 220V 380V 440V	E-10 Neon Bulb
CA-25N CA-25NS			
CA-22			
CA-16N			
CA-12N			
PB-XB (S)			

Type	Dimensions			
	D	Φ	h	H
CA-30NS	30	34	30	63
CA-16N	16	20	16	48
CA-25NS	25	30	25	58
CA-22NS	22	30	20	55
CA-25N	25	29	21	51
CA-12N	13.5	22	10.5	44
PB-XB	22/25	30	15	53
PB-XBS	22/25	30	5	55



CA-30NS CA-25NS CA-22NS



CA-16N CA-12N CA-25N PB-XB PB-XBS

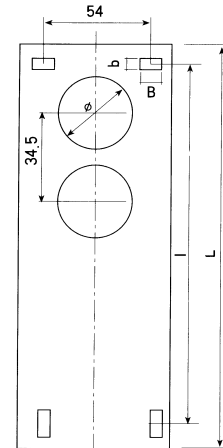
CA SERIES CONTROL STATION

Enclosure Dimensions



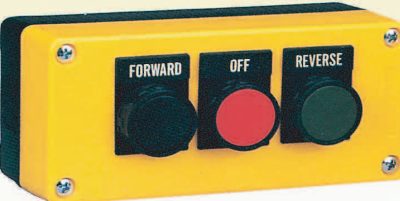
Type	Number of Elements	Dimensions				
		I	L	Height x Width(mm)	Φ (mm)	Bxb (mm)
CA-BX1	1	49	78	65x72	22 25	6x4
CA-BX2	2	80	110			
CA-BX3	3	115	150			
CA-BX4	4	150	186			



UNIT:mm



Assembled Control Stations

Type	Push Button Operator Type	Button Color	Contact Arrangement	Order Code No
One Element 	Flush With Legend Plate Engraved "START"	Green	N O	CA-BX101
	40mm Mushroom Head Momentary Action "STOP"	Red	N C	CA-BX102
	40mm Mushroom Head Latch In, Twist To Release	Red	N C	CA-BX103
Two Elements 	"START" Flush P.B.	Green	N O	CA-BX201
	"STOP" Flush P.B.	Red	N C	
Three Elements 	"FORWARD" Flush	Black	N O	CA-BX301
	"REVERSE" Flush	Black	N O	
	"STOP" Flush	Red	N C	
	"UP" Flush	Black	N O	CA-BX302
"DOWN" Flush	Black	N O		
"STOP" Flush	Red	N C	CA-BX303	
"STOP" Flush	Red	N C		
"START" Flush	Green	N O		
"NEON" Flush	X X			



SNAP SWITCH (TOGGLE SWITCH)

Specifications

Item	Dielectric Strength	Terminal Type	Conventional Thermal Current	Mounting Hole	Service Life (operations)	
					Mechanically	Electrically
Technical Data	2500V AC 50/60Hz for 1min	screw, solder, tab type	15A	φ12.5mm	10 ⁵	5x10 ⁴

UNIT:mm


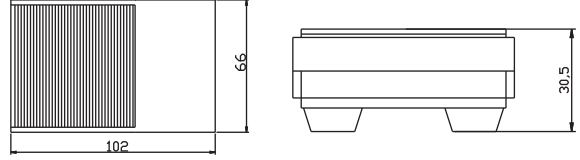

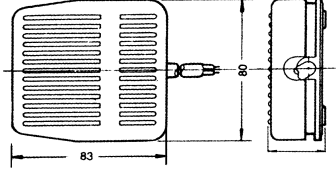

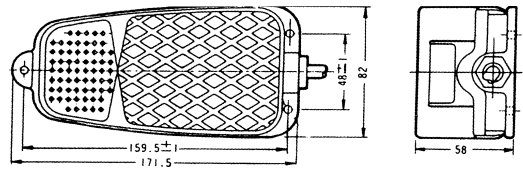

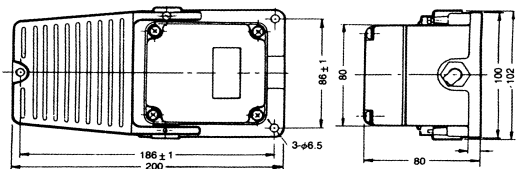

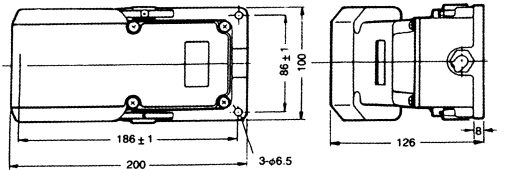
Name Plate	Type	Dimensions	Type	Dimensions
	SW-1021 2 pole ON-OFF 		SW-1221 4 pole ON-OFF 	
	SW-1121 2 pole ON-ON 		SW-1321 4 pole ON-ON 	
	SW-1122 3 pole ON-OFF-ON 		SW-1321 6 pole ON-OFF-ON 	



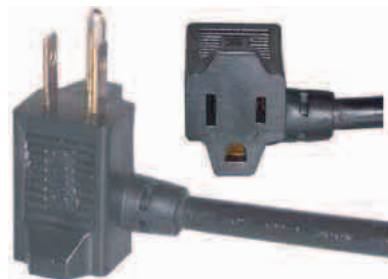
FOOT SWITCH

Type	Rated Thermal Current (A)	Rated Operating current (A)				Enclosure Materials	Weight (g)
		AC		DC			
		220V	380V	110V	220V		
FS-1	10	3.5	2	0.5	0.4	Steel	290
FS-2						Plastic	240
FS-3						Plastic	470
FS-4	15	5	3	1	0.5	Aluminum	820
FS-5						Aluminum	1000

UNIT:mm

<p>FS-1</p> 	
<p>FS-2</p> 	
<p>FS-3</p> 	
<p>FS-4</p> 	
<p>FS-5</p> 	

* U.S. style serial connector (plug/socket) available for all models





CAM SWITCHES C-16 SERIES

CONTACT RATING: 16A 300VAC

Change-over switches without "OFF" 90° switching

Code No.	Function	Stage	Name Plate	Connection Diagram
CA-001	1 pole	1		
CA-002	2 pole	2		
CA-003	3 pole	3		
CA-004	4 pole	4		
CA-005	5 pole	5		

Change-over switches without "OFF" 45° switching

CA-013	1 pole	1		
CA-014	2 pole	2		
CA-015	3 pole	3		
CA-016	4 pole	4		
CA-017	5 pole	5		

ON/OFF switches 90° switching

CA-026	2 pole	1		
CA-027	3 pole	2		
CA-028	4 pole	2		
CA-029	5 pole	3		
CA-030	6 pole	3		
CA-031	7 pole	4		
CA-032	8 pole	4		
CA-033	9 pole	5		
CA-034	10 pole	5		

ON/OFF switches 45° switching

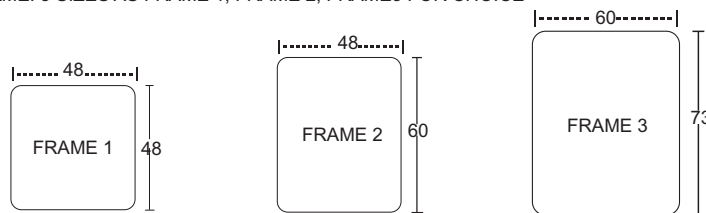
CA-098	2 pole	1		
CA-099	3 pole	2		
CA-100	4 pole	2		
CA-101	5 pole	3		
CA-102	6 pole	3		
CA-103	7 pole	4		
CA-104	8 pole	4		
CA-105	9 pole	5		
CA-106	10 pole	5		

Change-over switches with center "OFF" 45° switching

CA-109	1 pole	1		
CA-110	2 pole	2		
CA-111	3 pole	3		
CA-112	4 pole	4		
CA-113	5 pole	5		

NAME PLATE FRAME: 3 SIZES AS FRAME 1, FRAME 2, FRAME3 FOR CHOICE

Unit: mm





CAM SWITCHES C-32 SERIES

CONTACT RATING: 32A 600VAC

Change-over switches without "OFF" 90° switching

Code No.	Function	Stage	Name Plate	Connection Diagram
C32-001	1 pole	1		
C32-002	2 pole	2		
C32-003	3 pole	3		
C32-004	4 pole	4		
C32-005	5 pole	5		

Change-over switches without "OFF" 60° switching

C32-013	1 pole	1		
C32-014	2 pole	2		
C32-015	3 pole	3		
C32-016	4 pole	4		
C32-017	5 pole	5		

ON/OFF switches 90° switching

C32-026	2 pole	1		
C32-027	3 pole	2		
CA-028	4 pole	2		
CA-029	5 pole	3		
C32-030	6 pole	3		
C32-031	7 pole	4		
C32-032	8 pole	4		
C32-033	9 pole	5		
C32-034	10 pole	5		

ON/OFF switches 60° switching

C32-098	2 pole	1		
C32-099	3 pole	2		
C32-100	4 pole	2		
C32-101	5 pole	3		
C32-102	6 pole	3		
C32-103	7 pole	4		
C32-104	8 pole	4		
C32-105	9 pole	5		
C32-106	10 pole	5		

Change-over switches with center "OFF" 60° switching

C32-109	1 pole	1		
C32-110	2 pole	2		
C32-111	3 pole	3		
C32-112	4 pole	4		
C32-113	5 pole	5		

Motor Reversing Switches

C32-117	3 pole	3		
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NAME PLATE FRAME SIZE: 64X64mm

<http://www.suns-usa.com> Ph. 1-781-652-8305
Email: info@suns-usa.com Fax. 1-781-862-5084



CAM SWITCHES C-63 SERIES

CONTACT RATING: 63A 600VAC

Change-over switches without "OFF" 90° switching

Code No.	Function	Stage	Name Plate	Connection Diagram
C63-001	1 pole	1		
C63-002	2 pole	2		
C63-003	3 pole	3		
C63-004	4 pole	4		
C63-005	5 pole	5		

Change-over switches without "OFF" 60° switching

C63-013	1 pole	1		
C63-014	2 pole	2		
C63-015	3 pole	3		
C63-016	4 pole	4		
C63-017	5 pole	5		

ON/OFF switches 90° switching

C63-026	2 pole	1		
C63-027	3 pole	2		
CA-028	4 pole	2		
CA-029	5 pole	3		
C63-030	6 pole	3		
C63-031	7 pole	4		
C63-032	8 pole	4		
C63-033	9 pole	5		
C63-034	10 pole	5		

ON/OFF switches 60° switching

C63-098	2 pole	1		
C63-099	3 pole	2		
C63-100	4 pole	2		
C63-101	5 pole	3		
C63-102	6 pole	3		
C63-103	7 pole	4		
C63-104	8 pole	4		
C63-105	9 pole	5		
C63-106	10 pole	5		

Change-over switches with center "OFF" 60° switching

C63-109	1 pole	1		
C63-110	2 pole	2		
C63-111	3 pole	3		
C63-112	4 pole	4		
C63-113	5 pole	5		

Motor Reversing Switches

C63-117	3 pole	3		
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NAME PLATE FRAME SIZE: 64X64mm

<http://www.suns-usa.com> Ph. 1-781-652-8305
Email: info@suns-usa.com Fax. 1-781-862-5084

FLOAT SWITCH

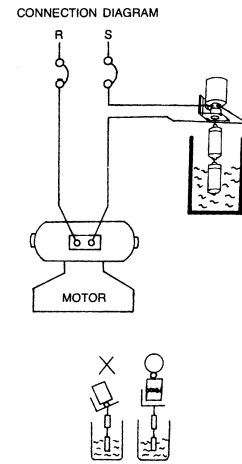
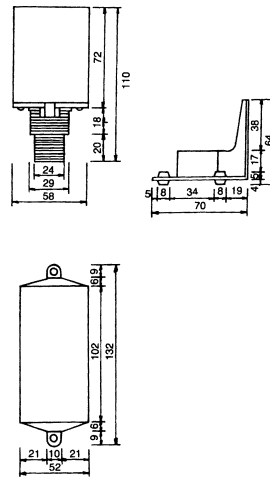
Model PD-76AB

Application:

Automatic Water Level Control
 Applicable to 1 HP and less power rating pumps for water supply and drainage
 (no additional magnetic contractor required)

Dimension and Connection Diagram

UNIT:mm



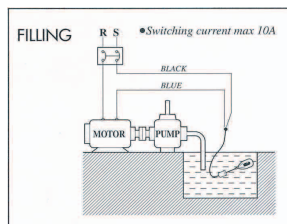
Model PS-SX

Speciations

Rating	Operating Temperature	Float Material	Cable Material	Contact Model
10A/250VAC	0~60°C	Polypropylene	Neoprene Cable	1A1B 1C

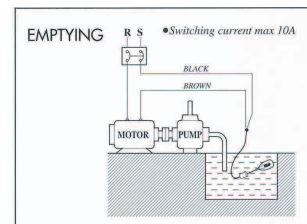


Connection Diagram



Use wires: "Black" and "Blue"

Regulator will:
 Closes when down
 Opens when up



Use wires: "Black" and "Brown"

Regulator will:
 Closes when down
 Opens when up

* Cable length 3.3 meter. Please advise if request cable over 3.3m.



AUTO LIGHTER (PHOTO SWITCHES)

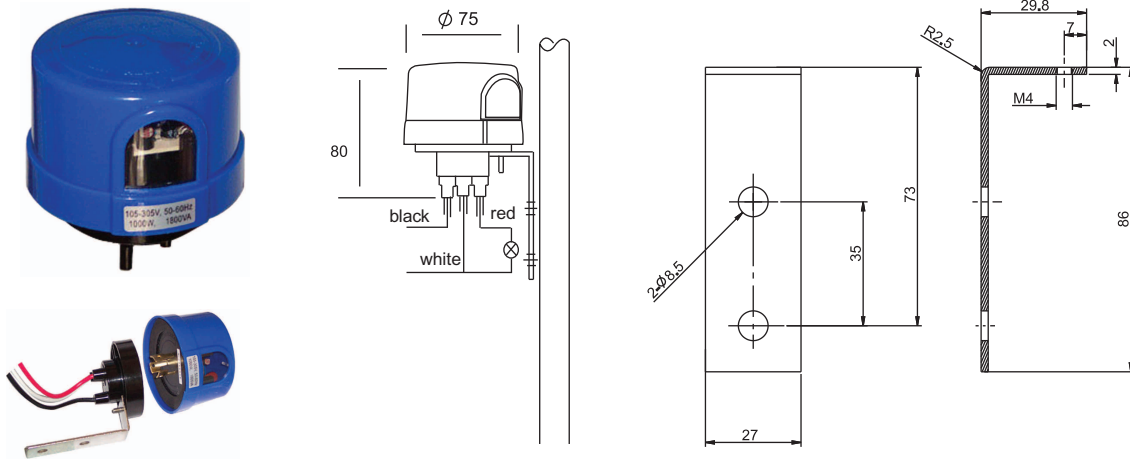
Model: PHS-06A

Specification

Item	Rated Voltage	Rated Capacity	Rated Current	Rated Frequency	Ambient Temperature	Weight
Technical Data	105-305VAC	1000W, 1800VA	10A	50/60Hz	32-122°F 0-50°C	220g

Switching Conditions:

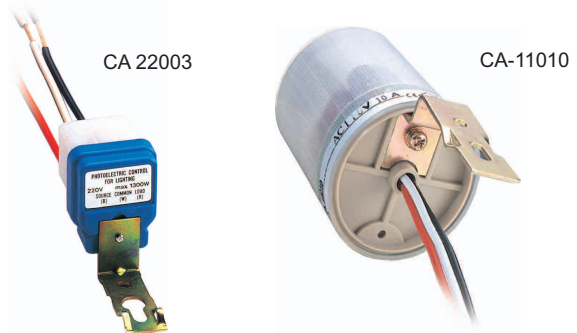
Switch ON in 30 seconds when light intensity < 10Lux
Switch OFF in 2 minute when light intensity > 70Lux



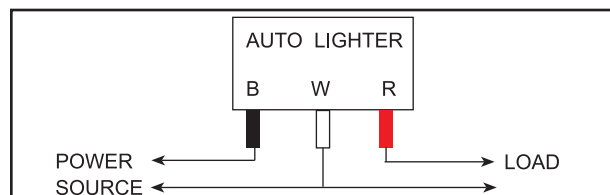
Auto Lighter CA Series

- (1) Switch on when light intensity < 10 Lux
- (2) Switch off when light intensity > 70 Lux
- (3) Suitable surrounding temperature range: -10°C~+40°C
- (4) Service life: more than 2,000 times
(operational condition: rated voltage, surroundings temperature 20°C)
- (5) Rated frequency: for bot 50Hz and 60 Hz

ORDER CODE NO	RATING
CA-22003	AC 220 3A
CA-22006	AC220V 6A
CA-22010	AC 220V 10A
CA-22015	AC220V 15A
CA-11003	AC110V 3A
CA-11006	AC110V 6A
CA-11010	AC110V 10A
CA-11015	AC110V 15A



WIRING DIAGRAM




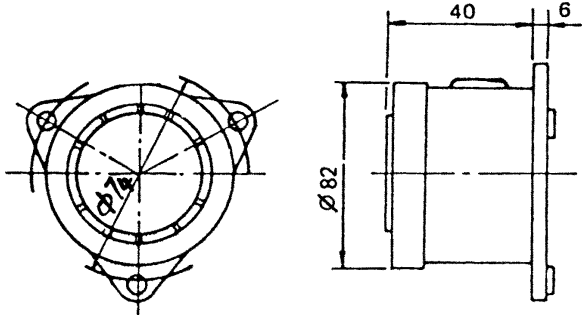
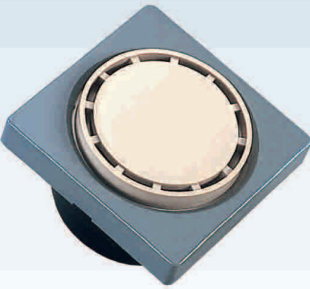
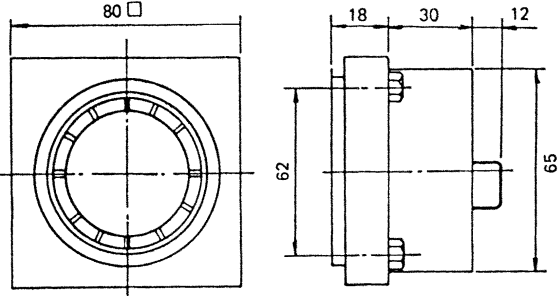

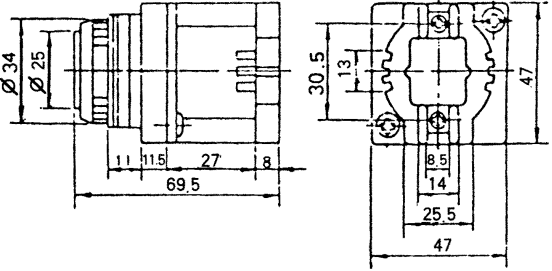
BUZZERS

Technical Data

Type	Rating	Mounting Styles	Volume (dB)	Weight
CBZ-10	DC 12V, 24V; AC 110V, 220V, 380V	Surface Mount	75±5dB (110V) 85±5dB (220V)	160g
CBZ-20	DC 12V, 24V; AC 110V, 220V, 380V	Flush Mount	75±5dB (110V) 85±5dB (220V)	190g
CBZ-30	DC 12V, 24V; AC 110V, 220V, 380V	Flush Mount	75±5dB (110V) 75±5dB (220V)	125g

Dimensions

UNIT:mm


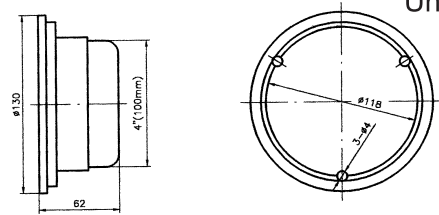

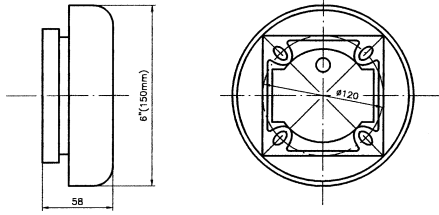

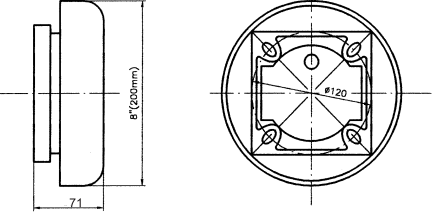

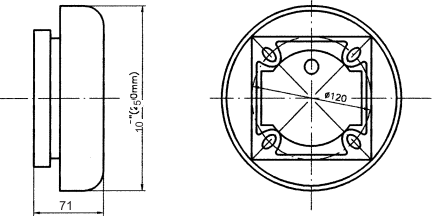
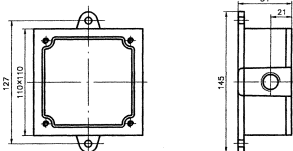
<p>CBZ-10</p> 	
<p>CBZ-20</p> 	
<p>CBZ-30</p> 	



ALARM BELLS

CB Series Alarm Bell

Type	Gong diameter	Ratings	Mounting Style	Volume (dB)	Weight
CB-4B	4 inch	DC 6V, 12V, 24V AC 110V, 220V, 380V	surface mounting	> 86	350
CB-6B	6 inch			>86	900
CB-8B	8 inch			>88	1300
CB-10B	10 inch			>88	1850

<p>CB-4B</p> 	 <p style="text-align: right;">Unit: mm</p>
<p>CB-6B</p> 	
<p>CB-8B</p> 	
<p>CB-10B</p> 	
	



Revolving Warning Light

Model: SN series

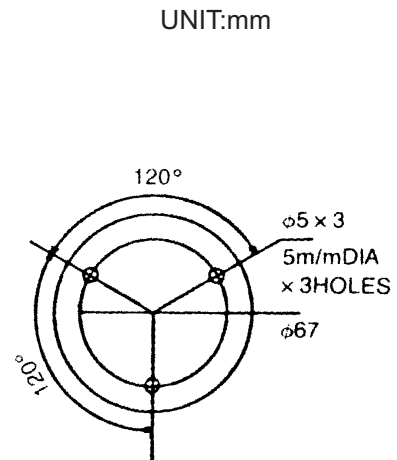
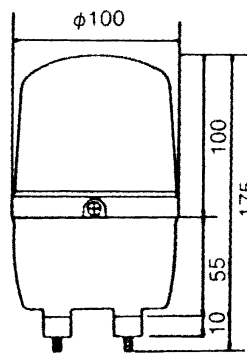
Specifications

With external plain lamp shades, available in five colors:
red ,yellow ,blue ,green and purple.

Its arc shape reflect mirror with special vacuum electroplating treatment, the lightning becomes stronger. The revolving structures is sturdy and in high stability.

Technical Data

Type	Voltage	Bulb	Flash Frequency
SN-12	DC 12V	12V 8W	180FPM
SN-24	DC 24V	24V 8W	
SN-110	AC 110V	12V 8W	
SN-220	AC 220V		
SN-220/110	AC 220V/110V		
SN-240/110	AC 240V/110V		



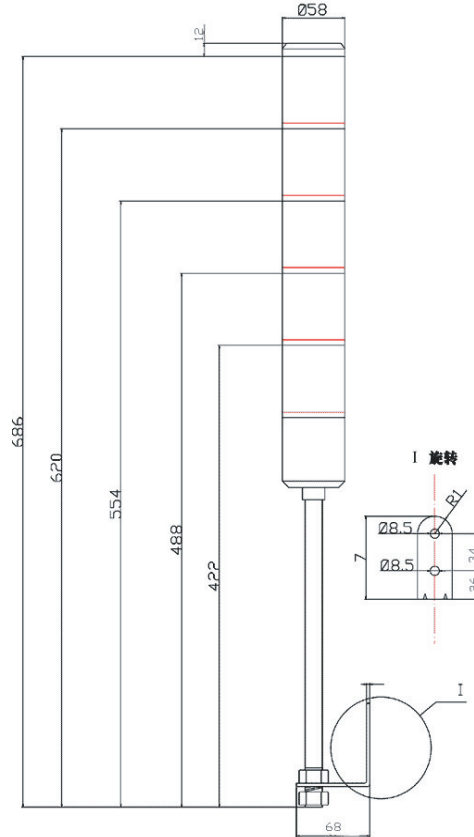


SIGNAL TOWER LIGHT STD SERIES

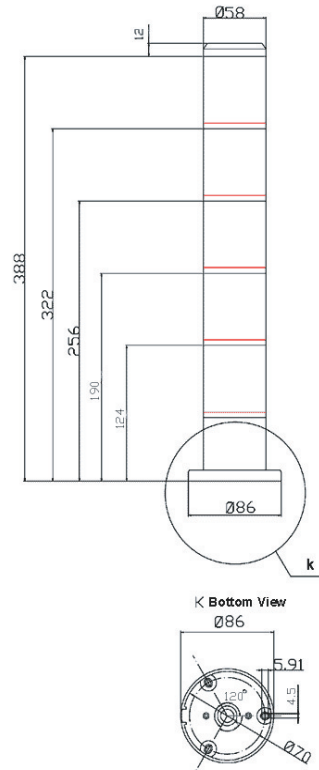
Unit: mm



1: Tower Light (Metal Tube Mount)



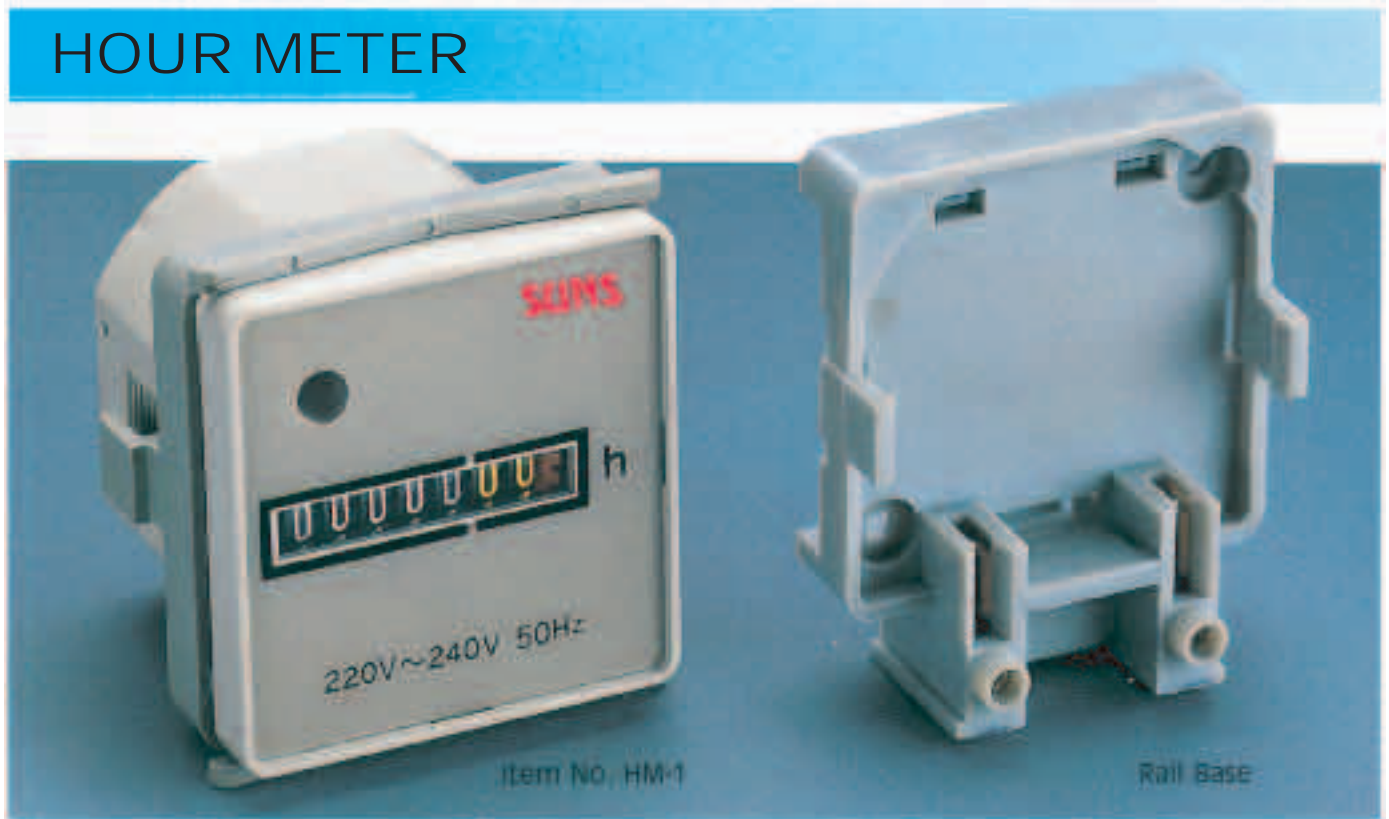
2: Tower Light (Plastic base)



CHARATERISTICS

- * Voltage available: DC 12V, 24V; AC 110V, 220V
- * Color availabe: Red, Yellow, Blue, Green, Transparent
- * Other Options: Buzzer alarm, flashing

HOUR METER

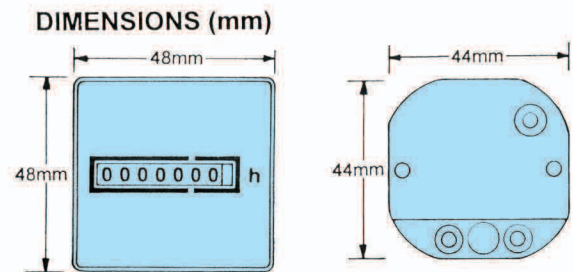


Item No. HM-1

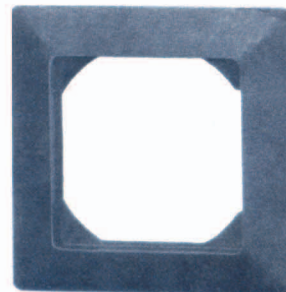
Rail Base

TECHNICAL SPECIFICATIONS

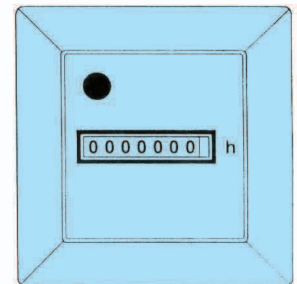
Item No.	HM-1, HM-2 (Rail Type)
Supply Voltage	AC 110, 220V/50, 60Hz
Dimensions	48 x 48 x 40 mm
Time Range	0 ~ 99,999.99 Hours
Net Weight	50g



1. This products is suitable for usage of house, industrial equipment, air conditioner, etc.
2. Time setting range available from 0 to 99,999.99 hours


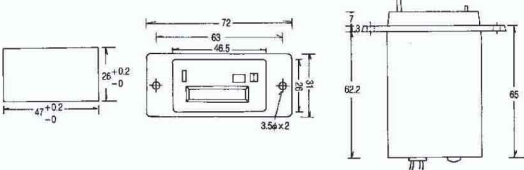

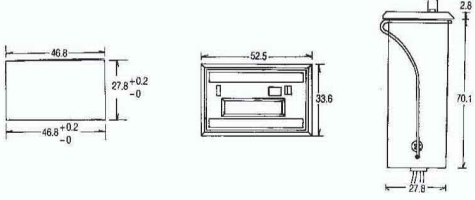

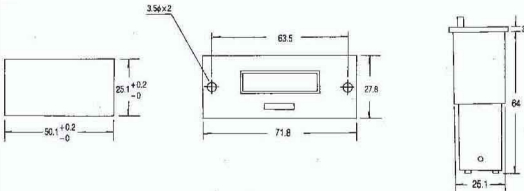

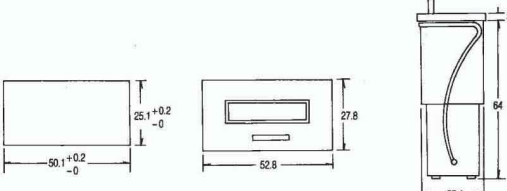

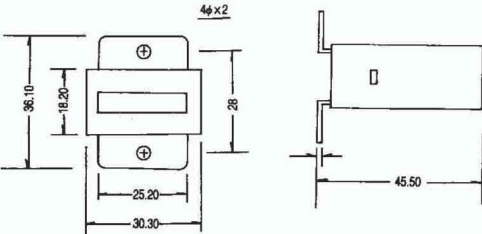

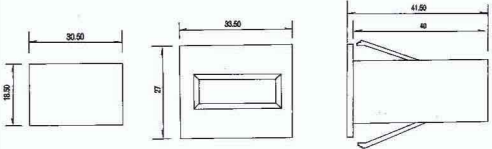
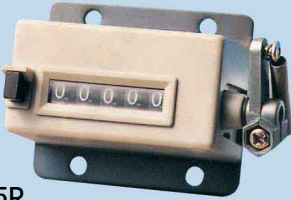
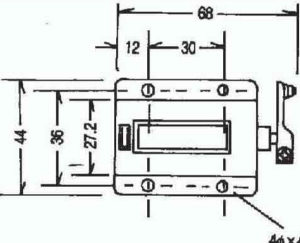


HM-C
Adapter 72x72mm



Hour meter
with HM-C


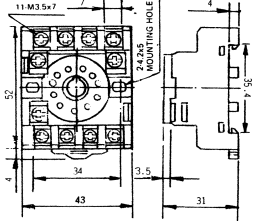

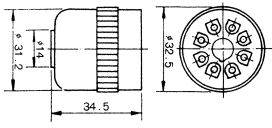

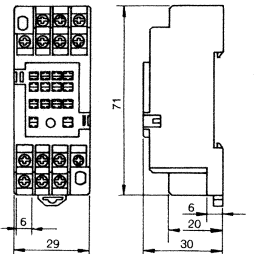
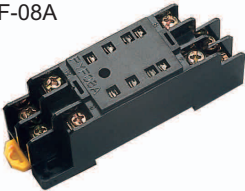
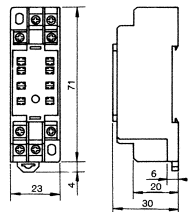

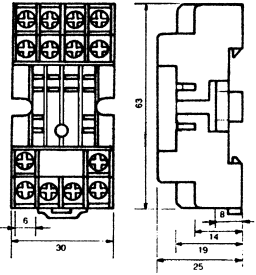
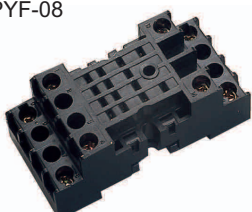
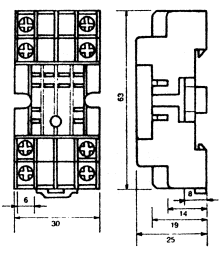
MACHINE COUNTER

Item No & Picture	Specifications	Dimensions unit:mm
 EC-5RL	<ul style="list-style-type: none"> * Voltage: AC 110V, 220V DC 12V, 24V * Tolerance: Rated Voltage -15% - + 10% * Counting Speed: AC 10CPS DC: 20CPS 	
 EC-5RSL	<ul style="list-style-type: none"> * Consumption: AC 3VA DC: 3.5W * Life: 20,000,000 times * Test: AC 1,500V/1minute * With Reset & lock keys 	
 EC-6R	<ul style="list-style-type: none"> * Voltage: AC 110V, 220V DC 12V, 24V * Tolerance: Rated Voltage -15% - + 10% * Counting Speed: AC 10CPS DC: 20CPS 	
 EC-6RS	<ul style="list-style-type: none"> * Consumption: AC 3VA DC: 3.5W * Life: 20,000,000 times * Test: AC 1,500V/1minute * With Reset keys 	
 EDC-6G	<ul style="list-style-type: none"> * Voltage: DC 12V, 6V * Tolerance: Rated Voltage -15% - + 10% * Counting Speed: 10CPS * Consumption: 3.5W 	
 EDC-6GS	<ul style="list-style-type: none"> * Life: 10,000,000 times * Test: AC 1,500V/1minute 	
 MC-5R	<ul style="list-style-type: none"> * Machine Counter * Digit: 5 * Maximum Speed: 800 times/minute * With Reset keys 	

RELAY SOCKET

Specifications

Dielectric Strength	2000V AC 50/60 Hz for 1 Minute between Terminals
Conventional Thermal Current	5A

Model/Description	Dimensions unit:mm	Model/Description	Dimensions unit:mm
 <p>PF-113A</p>		 <p>US-08</p>	
11 pin octal panel or DIN Rail Mountings.		8 pin octal, general use	
 <p>PYF-14A</p>		 <p>PYF-08A</p>	
14 blade panel or DIN Rail Mountings		8 blade panel or DIN Rail Mountings	
 <p>PYF-14</p>		 <p>PYF-08</p>	
14 blade panel or DIN Rail Mountings		8 blade, panel or DIN Rail Mountings	



Terminal Blocks

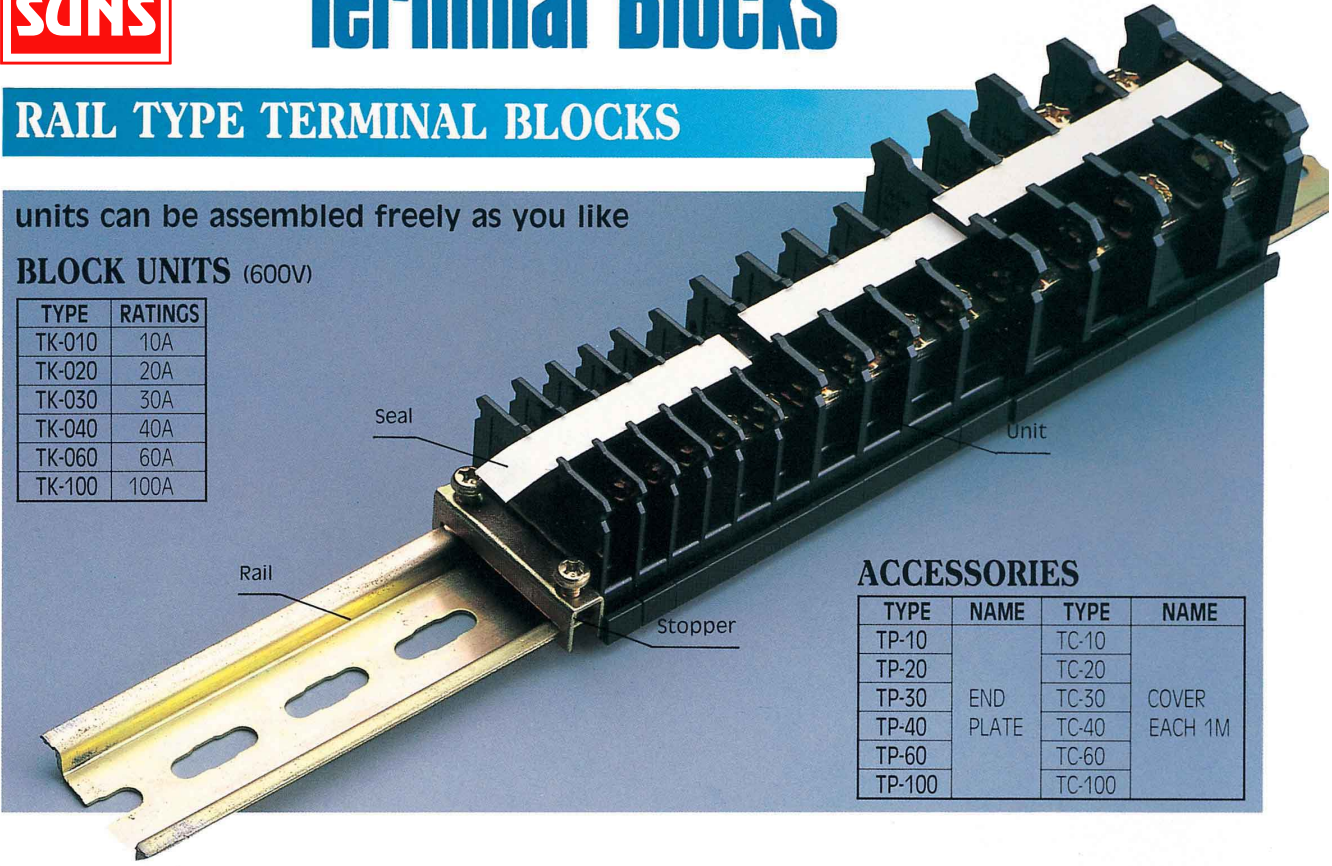
End Plate

RAIL TYPE TERMINAL BLOCKS

units can be assembled freely as you like

BLOCK UNITS (600V)

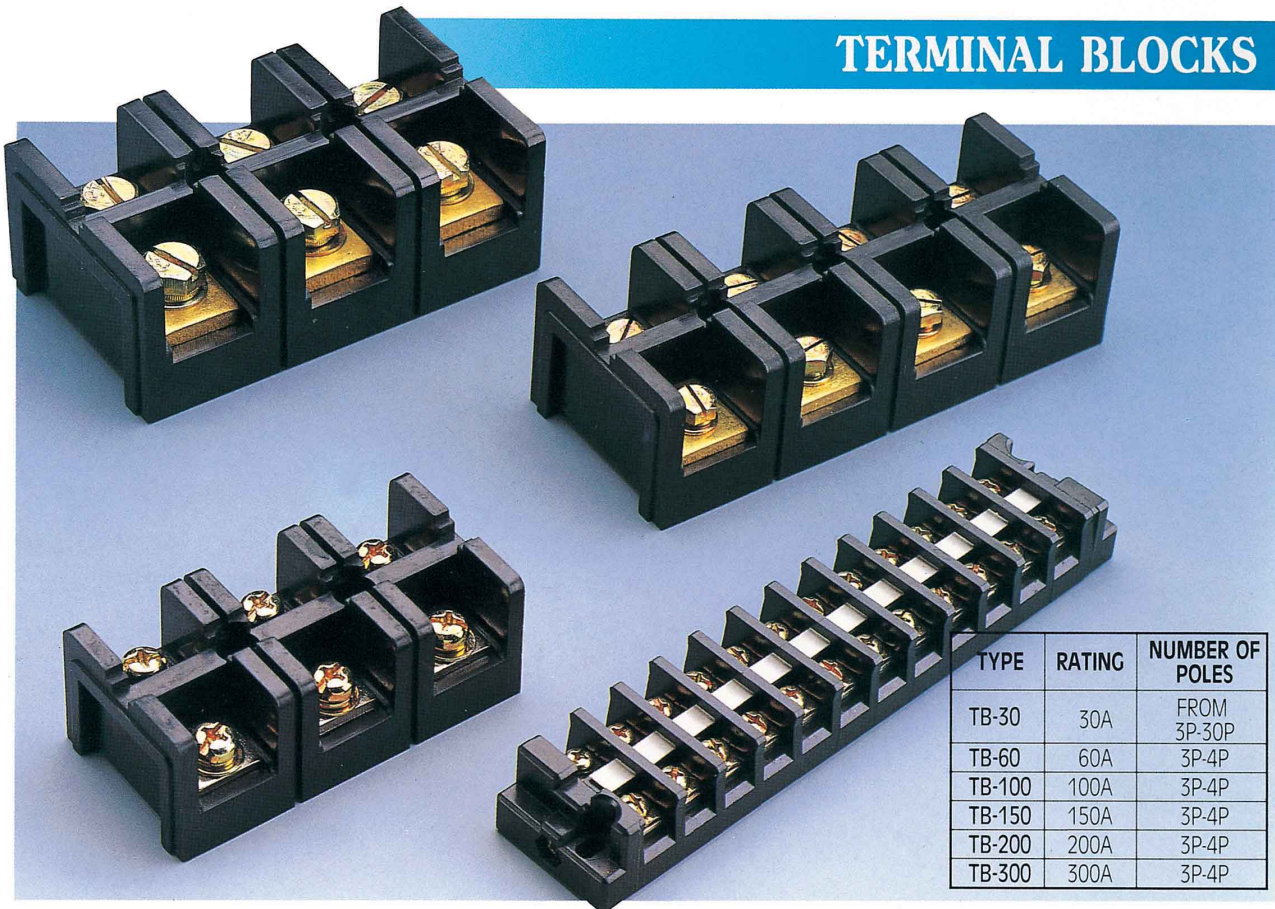
TYPE	RATINGS
TK-010	10A
TK-020	20A
TK-030	30A
TK-040	40A
TK-060	60A
TK-100	100A



ACCESSORIES

TYPE	NAME	TYPE	NAME
TP-10	END PLATE	TC-10	COVER EACH 1M
TP-20		TC-20	
TP-30		TC-30	
TP-40		TC-40	
TP-60		TC-60	
TP-100		TC-100	

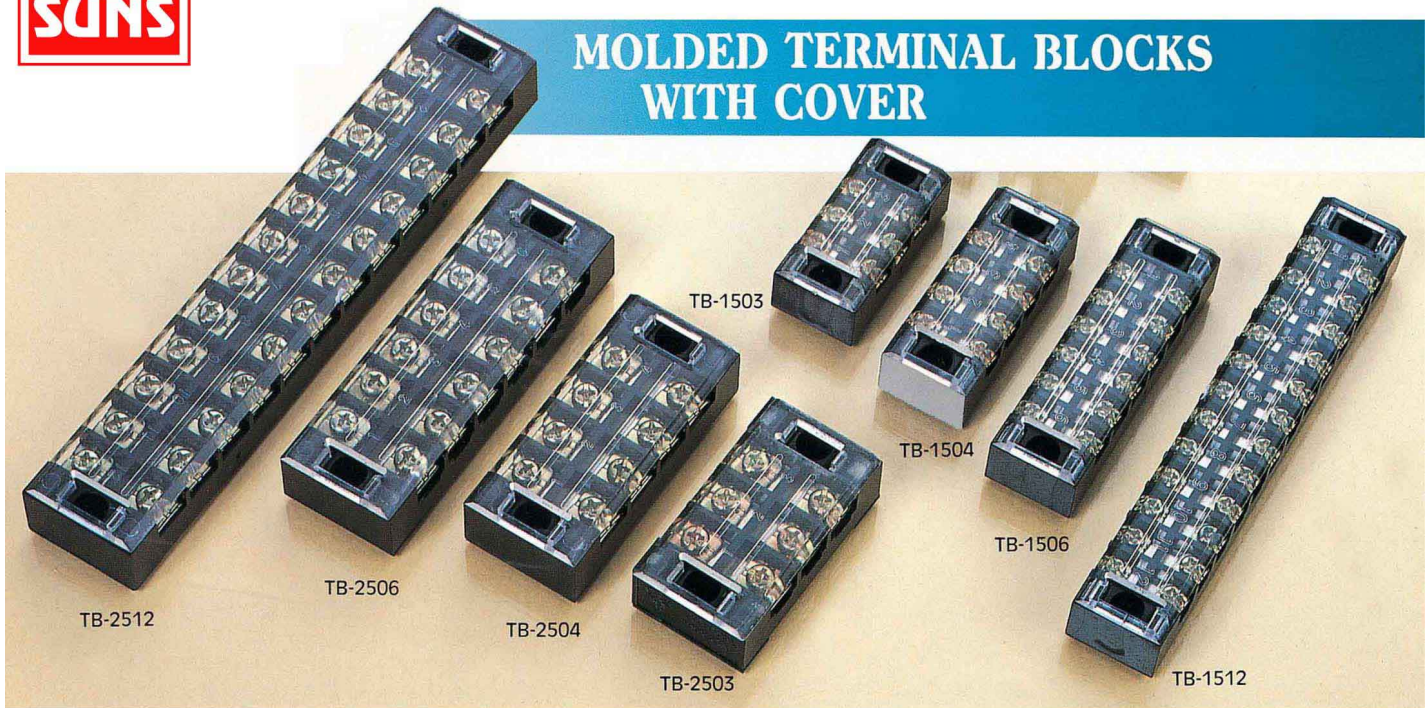
TERMINAL BLOCKS



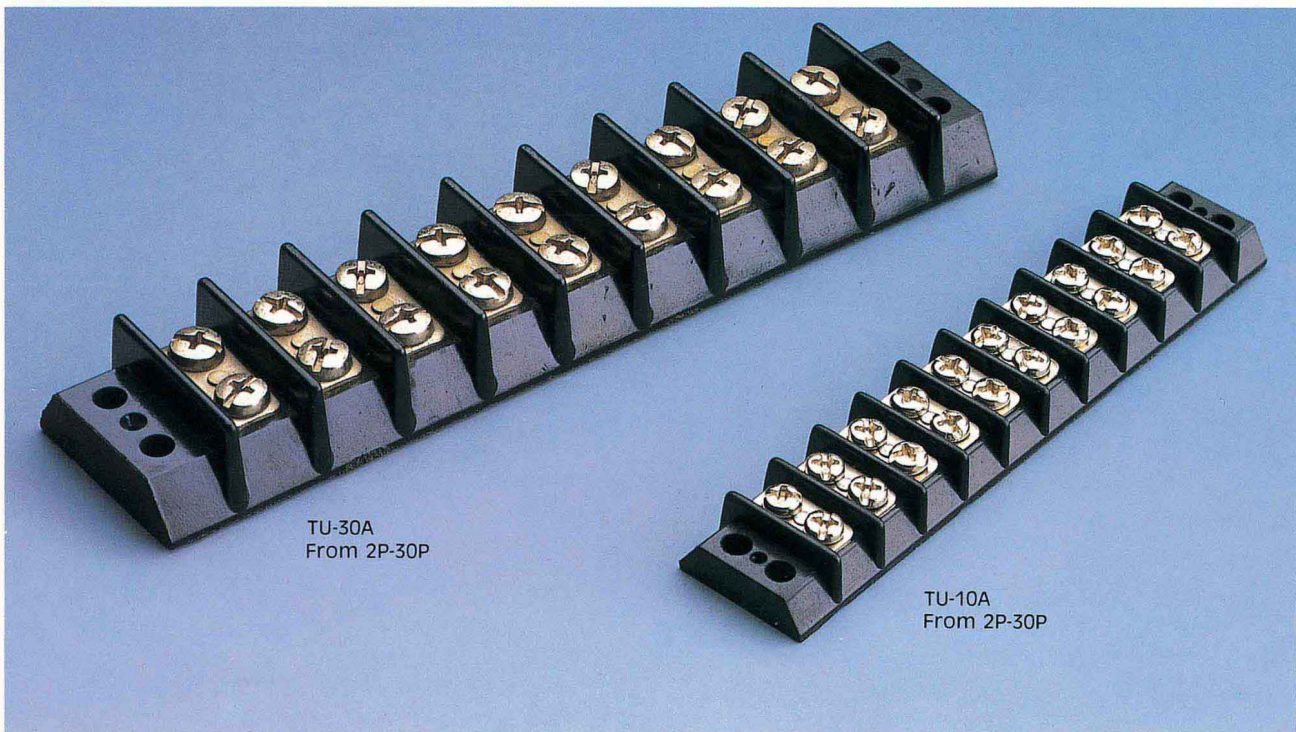
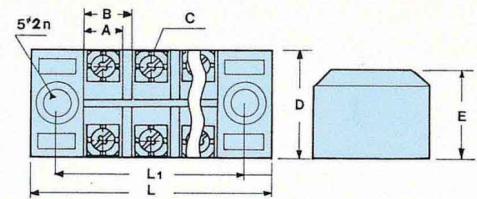
TYPE	RATING	NUMBER OF POLES
TB-30	30A	FROM 3P-30P
TB-60	60A	3P-4P
TB-100	100A	3P-4P
TB-150	150A	3P-4P
TB-200	200A	3P-4P
TB-300	300A	3P-4P



MOLDED TERMINAL BLOCKS WITH COVER



TYPE	RATINGS	NUMBER OF POLES	DIMENSIONS (mm)							PACKING		
			L	L ₁	A	B	C	D	E	Inner Box	Inner Carton	
TB-1503	600V 15A	3	46.5	36.5	7	9	M3	22	17.5	150PCS	6 BOXES	
TB-1504		4	55.5	45.5	7	9	M3	22	17.5	120PCS		
TB-1506		6	73.5	63.5	7	9	M3	22	17.5	100PCS		
TB-1512		12	128.5	118	7	9	M3	22	17.5	50PCS		
TB-2503	600V 25A	3	50.5	40	8	10.5	M4	28	19	120PCS		4 BOXES
TB-2504		4	61.5	51	8	10.5	M4	28	19	100PCS		
TB-2506		6	82.5	72	8	10.5	M4	28	19	70PCS		
TB-2512		12	147	136	8	10.5	M4	28	19	40PCS		



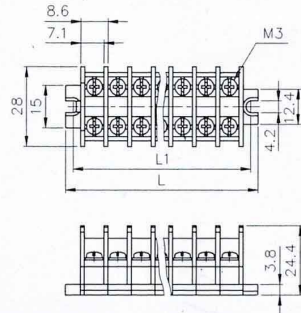
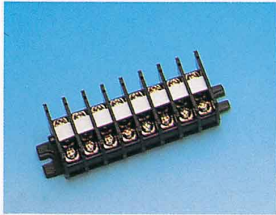
TU-30A
From 2P-30P

TU-10A
From 2P-30P

Terminal Blocks (Rail Type)

unit can be assembled freely as you like

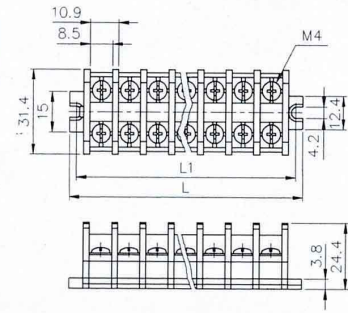
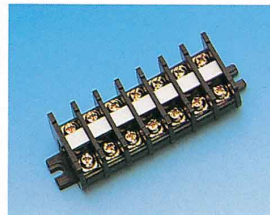
FTB-10



$L \approx 16.7 + 8.6 \times n$
 $L1 \approx 10.3 + 8.6 \times n$
 $n = P \text{ 數}$

P 數	2	3	4	5	6	7	8	9	10	11	12
L	33.9	42.5	51.1	59.7	68.3	76.9	85.5	94.1	102.7	111.3	119.9
L1	27.5	36.1	44.7	53.3	61.9	70.5	79.1	87.7	96.3	104.9	113.5

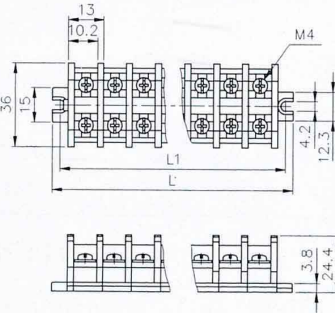
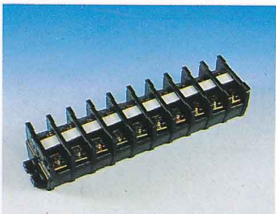
FTB-20



$L \approx 17.6 + 10.9 \times n$
 $L1 \approx 11.2 + 10.9 \times n$
 $n = P \text{ 數}$

P 數	2	3	4	5	6	7	8	9	10	11	12
L	39.4	50.3	61.2	72.1	83	93.9	104.8	115.7	126.6	137.5	148.4
L1	33	43.9	54.8	65.7	76.6	87.5	98.4	109.3	120.2	131.1	142

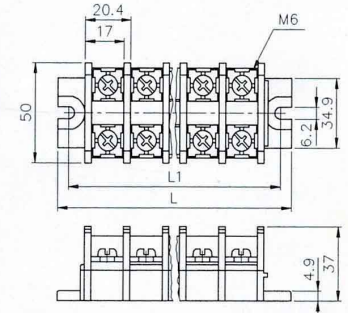
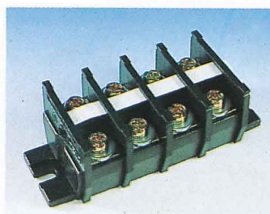
FTB-30



$L \approx 18 + 13 \times n$
 $L1 \approx 11.5 + 13 \times n$
 $n = P \text{ 數}$

P 數	2	3	4	5	6	7	8	9	10	11	12
L	44	57	70	83	96	109	122	135	148	161	174
L1	37.5	50.5	63.5	76.5	89.5	102.5	115.5	128.5	141.5	154.5	167.5

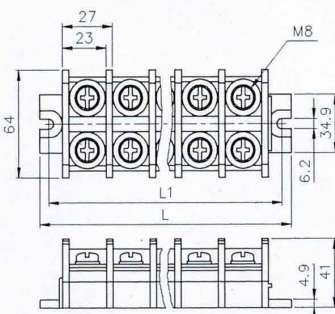
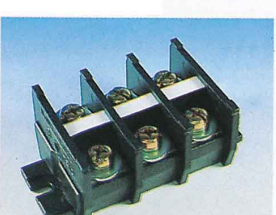
FTB-60



$L \approx 33.5 + 20.4 \times n$
 $L1 \approx 18.5 + 20.4 \times n$
 $n = P \text{ 數}$

P 數	2	3	4	5	6	7	8	9	10	11	12
L	74.3	94.7	115.1	135.5	155.9	176.3	196.7	217.1	237.5	257.9	278.3
L1	59.3	79.7	100.1	120.5	140.9	161.3	181.7	202.1	222.5	242.9	263.3

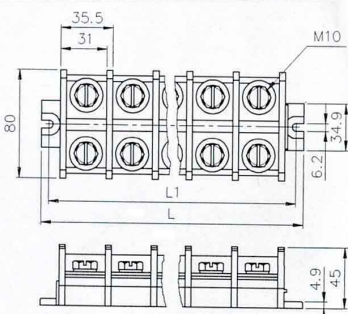
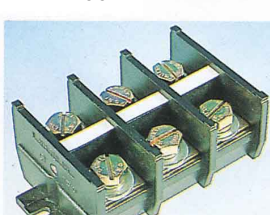
FTB-100



$L \approx 34 + 27 \times n$
 $L1 \approx 19 + 27 \times n$
 $n = P \text{ 數}$

P 數	2	3	4	5	6	7	8	9	10	11	12
L	88	115	142	169	196	223	250	277	304	331	358
L1	73	100	127	154	181	208	235	262	289	316	343

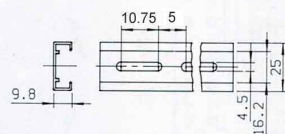
FTB-200



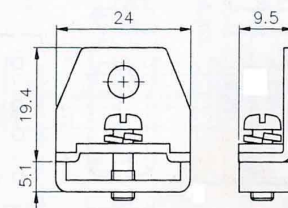
$L \approx 34.5 + 35.5 \times n$
 $L1 \approx 19.5 + 35.5 \times n$
 $n = P \text{ 數}$

P 數	2	3	4	5	6	7	8	9	10	11	12
L	105.5	141	176.5	212	247.5	283	318.5	354	389.5	425	460.5
L1	90.5	126	161.5	197	232.5	268	303.5	339	374.5	410	445.5

RAIL



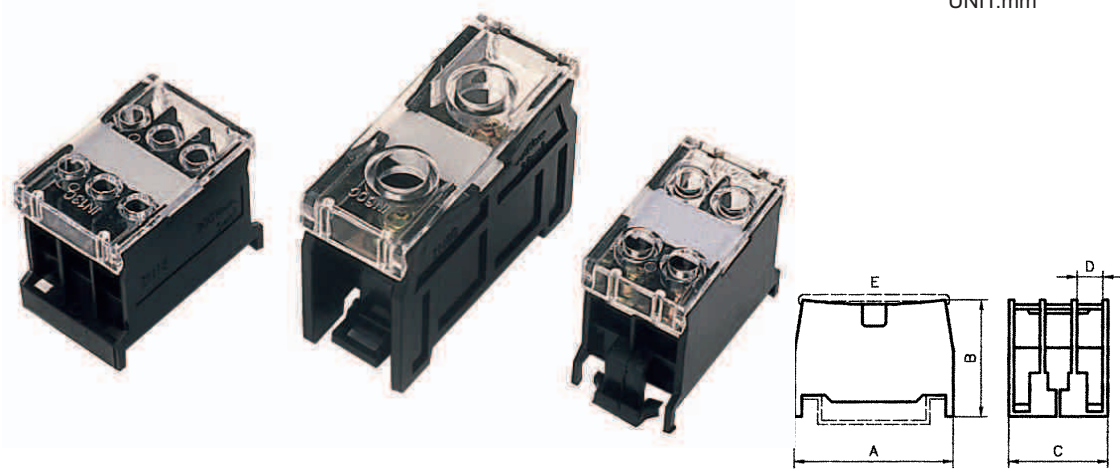
STOPPER



TERMINAL BLOCKS

IN Series (Rail Type)

UNIT:mm

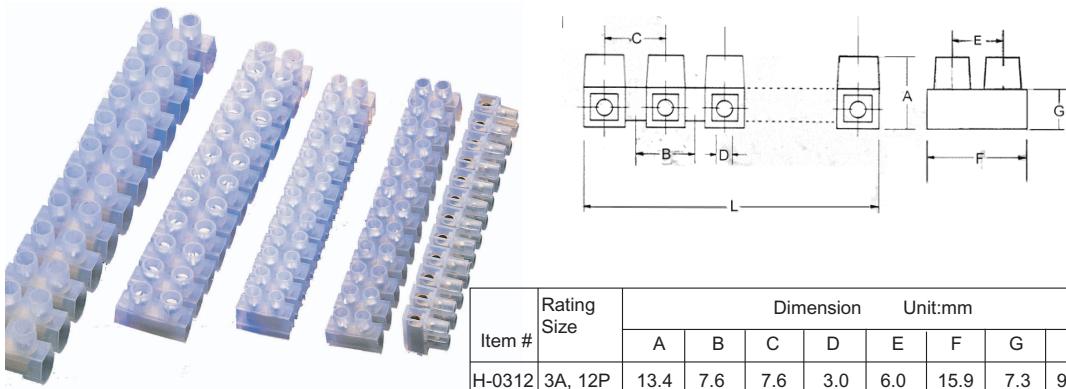


Type	Descriptions*	Dimension (mm)				
		A	B	C	D	E
IN12	2P 2mm ² 20A	40	30	20	8	37
IN13	3P 2mm 20A	40	30	25	6.7	37
IN20	2P 2mm 20A	40	30	30	9.7	37
IN30	2P 2mm 20A	45	34	43	12.2	48
IN411	2P 2mm 20A	45	34	15.5	13.5	48
IN60	2P 2mm 20A	56	38	22	17	56
IN100	2P 2mm 20A	75	45	32	24	73.5
IN200	2P 2mm 20A	86	57	39	31	86.5
IN400	IP 200mm ² 370A	125	73	62	52.3	126

IN12
IN13
IN20
IN30
IN411
IN60
IN100
IN200
IN400

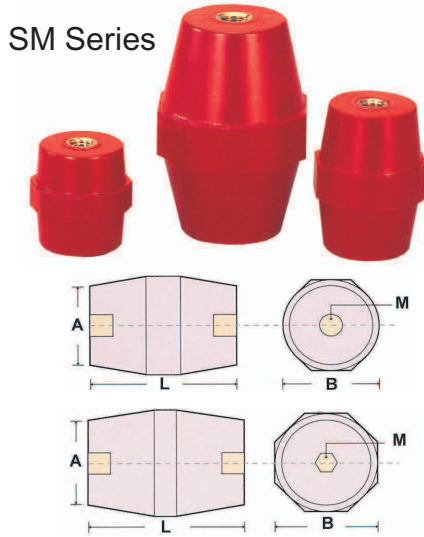
* cross-section area of wire used

H Series



Item #	Rating Size	Dimension Unit:mm							
		A	B	C	D	E	F	G	L
H-0312	3A, 12P	13.4	7.6	7.6	3.0	6.0	15.9	7.3	92.0
H-0512	5A, 12P	14.9	9.5	9.0	3.2	6.2	16.8	8.8	112.5
H-0612	6A, 12P	17.1	9.6	9.5	3.3	7.3	18.4	10.6	115
H-1512	15A, 12P	17.0	11.8	12.3	4.5	10.5	24.0	10.0	139
H-3012	30A, 12P	21.4	14.0	13.8	6.5	12.5	26.0	12.3	162

BUS BAR INSULATORS

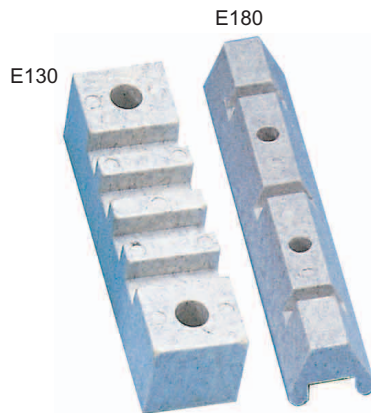


Type	Dimensions (mm)				Dielectric Strength (KV)
	Length L (mm)	Nut M	Diameter		
			A	B	
SM-20	20	M5	12	15	6
SM-25	26	M6	24	30	8
SM-30	30	M6	26	30	8
SM-35	35	M8	28	32	10
SM-40	40	M10	42	50	12
SM-401	40	M8	35	40	12
SM-402	40	M6	24	30	12
SM-50	50	M10	45	55	15
SM-51	51	M8	29	36	15
SM-55	55	M10	42	60	15
SM-70	70	M10	40	50	25
SM-76	76	M10	36	50	25

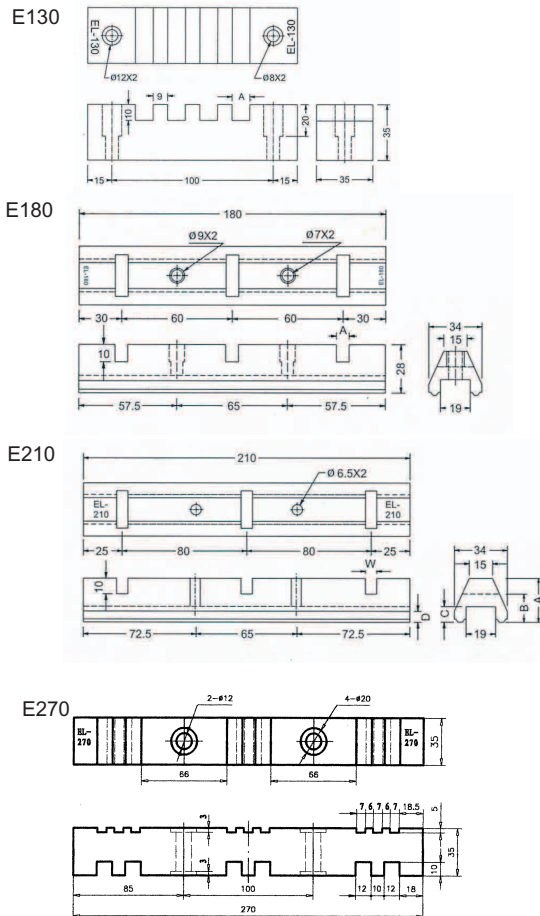
BUS-BAR SUPPORTS

Specifications


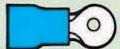










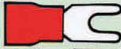


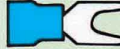











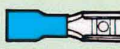






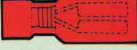




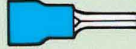
Material	Unsaturated Polymer with Fiber Glass
Withstand Voltage (KV/mm)	12



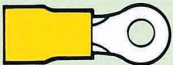
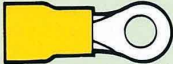



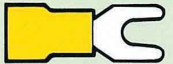












Dimensions: unit: mm











Insulated Terminals

ITEM NO.	AWG 22-16 DIN 0.5-1	STUD SIZE	ITEM NO.	AWG 16-14 DIN 1.5-2.5	STUD SIZE
RING TERMINALS			RING TERMINALS		
VF 1.25-3		#6/3.7mm	VF 2-3		#6/3.7mm
VF-1.25-3S		#4/3.2mm	VF 2-3S		#4/3.2mm
VF-1.25-4		#8/4.3mm	VF 2-4		#8/4.3mm
VF-1.25-5		#10/5.3mm	VF 2-5		#10/5.3mm
VF-1.25-6		#1/4"/6.4mm	VF 2-6		#1/4"/6.4mm
VF-1.25-8		#5/16"/8.4mm	VF 2-8		#5/16"/8.4mm
FORKED SPADE			FORKED SPADE		
VF-1.25-3Y		#6/3.7mm	VF 2-3Y		#6/3.7mm
VF-1.25-4Y		#8/4.3mm	VF 2-4Y		#8/4.3mm
VF-1.25-5Y		#10/4.3mm	VF-25Y		#10/5.3mm
VF-1.25-6Y		#1/4"/6.4mm	VF 2-6Y		#1/4"/6.4mm
MALE DISCONNECTORS			MALE DISCONNECTORS		
3110A		TAB 2.8mm	3120A		TAB 2.8mm
4110A		TAB 4.8mm	4120A		TAB 4.8mm
5110A		TAB 6.4mm	5120A		TAB 6.4mm
FEMALE DISCONNECTORS			FEMALE DISCONNECTORS		
3110B		TAB 2.8mm	3120B		TAB 2.8mm
4110B		TAB 4.8mm	4120B		TAB 4.8mm
5110B		TAB 6.4mm	5120B		TAB 6.4mm
BULLET DISCONNECTORS			BULLET DISCONNECTORS		
F1.25A		4mm BULLET	F 2A		4mm BULLET
F1.25B		4mm BULLET	F 2B		4mm BULLET
BUTT DISCONNECTORS			BUTT DISCONNECTORS		
BF-1.25			BF-2		
PIN DISCONNECTORS			PIN DISCONNECTORS		
PIN-1.25		TAB 1.9mm	PIN-2		TAB 1.9mm

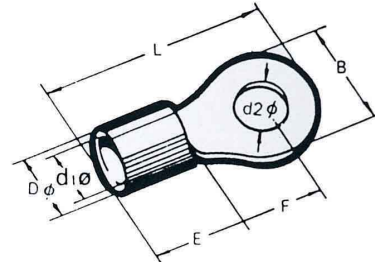
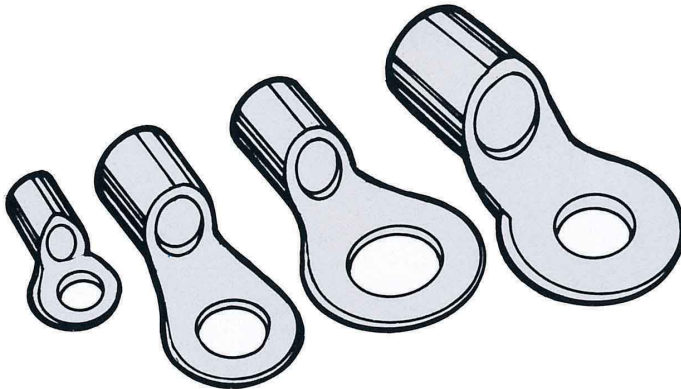
Insulated Terminals

ITEM NO.	AWG 12-10 DIN 4-6	STUD SIZE
RING TERMINALS		
VF 5.5-4		#8/4.3mm
VF 5.5-5		#10/5.3mm
VF 5.5-6		#1/4"/6.4mm
VF 5.5-8		#5/16"/8.4mm
VF 5.5-10		#3/8"/10.5mm
FORKED SPADE		
VF 5.5-4Y		#8/4.3mm
VF 5.5-5Y		#10/5.3mm
VF 5.5-6Y		#1/4"/6.4mm
MALE DISCONNECTORS		
3150A		TAB 2.8mm
4150A		TAB 4.8mm
5150A		TAB 6.4mm
FEMALE DISCONNECTORS		
3150B		TAB 2.8mm
4150B		TAB 4.8mm
5150B		TAB 6.4mm
BULLET DISCONNECTORS		
F5.5A		5mm BULLET
F5.5B		5mm BULLET
BUTT DISCONNECTORS		
BF-5.5		
PIN DISCONNECTORS		
PIN-5.5		TAB 2.8mm

ITEM	TYPE	RANGE SIZE.
FULL INSULATED		
RF250F		Wire Range 22-16 / TAB 6.4mm
BF250F		Wire Range 16-14 / TAB 6.4mm
PIGGY BACK		
MF-1.25		Wire Range 22-16 / TAB 6.4mm
MF-2		Wire Range 16-14 / TAB 6.4mm
MF5.5		Wire Range 12-10 / TAB 6.4mm
STRIPPING QUICK SPLICE		
878100		
878101		
878201		



Non Insulated Ring Terminals

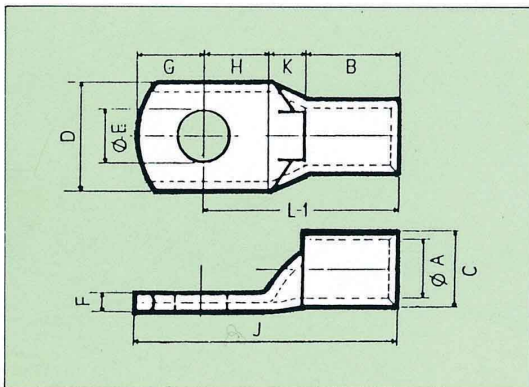


ITEM NO.	WIRE RANGE		Dφ	d1φ	E	F	B	d2φ	L					
	AWG/MCM	mm ²												
R1.25-3	22~16	0.25 1.65	3.2	1.7	4.5	4.0	5.5	3.7	11.5					
R1.25-3S						4.0	5.5	3.2	11.5					
R1.25-4						7.0	8.0	4.3	15.8					
R1.25-5						7.0	8.1	5.3	15.8					
R1.25-6						11.0	11.6	6.7	21.7					
R1.25-8						22.0	11.6	8.4	21.7					
R2-3						16~14	1.04 2.63	3.9	2.3	4.8	7.75	8.5	3.2	16.8
R2-3S											4.3	6.4	3.2	12.3
R2-4	7.75	8.5	4.3	16.8										
R2-5	7.25	9.5	5.3	16.8										
R2-6	11.0	12.0	6.4	21.8										
R2-8	11.0	12.0	8.4	21.8										
R3.5-4	12~10	2.63 4.6	5.0	3.0	6.3 6.0						7.7	8.0	4.3	18.0
R3.5-5											9.2	9.6	5.3	20.0
R5.5-4	12~10	2.63 6.64	5.4	3.4	6.8	8.25	9.5	4.3	19.8					
R5.5-5						8.25	9.5	5.3	19.8					
R5.5-6						13.7	12.0	6.4	25.8					
R5.5-8						13.7	15.0	8.4	28.0					
R5.5-10						13.7	15.0	10.5	28.0					
R8-5						8	6.64 10.52	6.9	4.5	8.5	9.3	12.0	5.3	23.8
R8-6											9.3	12.0	6.4	23.8
R8-8											13.8	15.0	8.4	29.8
R8-10	13.8	15.0	10.5	29.8										
R8-12	15.0	20.0	13.0	33.5										
R14-5	6	10.52 16.78	8.8	5.8	10						11.5	12.0	5.3	27.5
R14-6											11.5	12.0	6.4	27.5
R14-8											14.5	16.0	8.4	32.5
R14-10						14.5	16.0	10.5	32.5					
R14-12						19.8	22.0	13.0	41.3					
R22-6						4	16.78 26.66	11.3	7.7	12	13.45	16.5	6.7	33.7
R22-8											13.45	16.5	8.4	33.7
R22-10											15.95	16.5	10.5	36.7
R22-12	19.5	22.0	13.0	42.5										
R38-6	2	26.66 42.42	13	9.4	14	17.7	22.0	6.7	42.7					
R38-8						17.7	22.0	8.4	45.7					
R38-10						17.7	22.0	10.5	42.7					
R38-12						17.7	22.0	13.0	42.7					
R60-8	1/0	42.42 60.57	15.4	11.4	18	20.7	22.0	8.4	49.7					
R60-10						20.7	22.0	10.5	49.7					
R60-12						20.7	22.0	13.0	49.7					
R70-8	2/0	60.57 76.28	17.3	13.3	19	20.0	24.0	8.4	51.0					
R70-10						20.0	24.0	10.5	51.0					
R70-12						20.0	24.0	13.0	51.0					
R80-8	3/0	76.28 96.3	19.4	14.5	20	20.5	27.0	8.4	54.0					
R80-10						20.5	27.0	10.5	54.0					
R80-12						20.5	27.0	13.0	54.0					
R100-8	4/0	96.3 117.2	21.6	16.4	21	20.35	28.5	8.4	55.6					
R100-10						20.35	28.5	10.5	55.6					
R100-12						20.35	28.5	13.0	55.6					
R150-10	250-300	117.2 152.05	25.9	19.5	27	23.0	36.0	10.5	66.0					
R150-12						23.0	36.0	13.0	66.0					
R150-16						23.0	36.0	17.0	66.0					
R180-10	300-350	152.05 192.6	28	21	28.5	24.5	38.5	10.5	69.5					
R180-12						24.5	38.5	13.0	69.0					
R180-16						24.5	38.5	17.0	69.0					
R200-10	400	192.6 242.27	32	24	31.5	24.5	44.0	10.5	72.0					
R200-12						24.5	44.0	13.0	72.0					
R200-16						24.5	44.0	17.0	72.0					
R325-10	500-600	242.27 325	37	28	35.5	33.5	50.0	10.5	88.0					
R325-12						33.5	50.0	13.0	88.0					
R325-16						33.5	50.0	17.0	88.0					



Copper Tube Terminals

Tin plated electrolytic,
With cable inspection
Hole, 1.5 to 1000mm².
The copper tubing is to bs.
1172/Sabs. 404/Astmb.

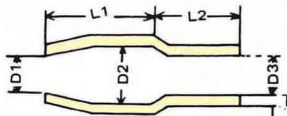


CABLE	STUD HOLE SIZE	DIMENSIONS											ITEM NO.
	fE	fA	C	D	F	G	H	K	B	L-1	J		
1.5	5.2	2.6	4.0	8.0	1.0	4	5	2	5	12	18	C1.5-5	
2.5	4.2	2.6	4.0	8.0	1.0	4	5	2	7	14	20	C2.5-4	
	5.2			10.0	0.8	5	6			15		C2.5-5	
	6.5												C2.5-6
4	5.2	3.0	4.5	10.0	1.0	5	6	2	7	15	20	C4-5	
	6.5											C4-6	
6	5.2	4.0	5.5	10.0	1.2	5	6	3	9	18	23	C6-5	
	6.5			12.0	1.0	6	9			21		C6-6	
	8.4												C6-8
10	6.5	4.4	6.0	12.0	1.2	6	7	3	9	19	25	C10-6	
	8.4						9			21		C10-8	
16	6.5	5.4	7.0	12.0	1.4	7	7	4	12	23	30	C16-6	
	8.4									25		C16-8	
25	6.5	6.7	8.5	13.0	2.0	7	7	4	12	23	32	C25-6	
	8.4			18.0	1.4	10	11			27		C25-8	
	10.5												C25-10
35	6.5	8.2	10.5	15.3	2.4	9	9	5	12	26	37	C35-6	
	8.4			18.0	2.0	10	11			28		C35-8	
	10.5												C35-10
50	8.4	9.7	12.4	17.8	2.9	10	11	6	16	33	43	C50-8	
	10.5											C50-10	
70	8.4	11.6	14.6	21.0	3.5	12	13	7	18	38	50	C70-8	
	10.5											C70-10	
	13.0											C70-12	
95	10.5	14.2	17.4	25	3.9	13	13	9	20	42	55	C95-10	
	13											C95-12	
120	13	15.0	19.0	28	4.4	14	14	10	22	46	62	C120-12	
	17					16	16			48		C120-16	
150	13	17.0	21.0	30	4.7	16	16	11	26	53	70	C150-12	
185	17	19.0	23.5	34	5	17	17	12	32	61	75	C185-16	
240	17	21.5	26.5	38	5.5	20	20	14	38	72	90	C240-16	
300	21	24.0	30.0	43	6.5	22	22	15	42	79	100	C300-16	
400	17	29.5	36.5	50.1	8	26	26	18	44	88	110	C400-16	
	21											C400-20	
500	17	31.0	38.5	56	9	28	28	20	48	96	120	C500-16	
	21											C500-20	
630	21	35.5	43.5	65	10	33	33	22	56	111	130	C630-16	
800	--	39	50.6	73.5	11.6	--	--	17	78	--	170	C800-BL	
1000	--	43	56.2	81	13.2	--	--	20	90	--	200	C1000-BL	

VINYL TUBES

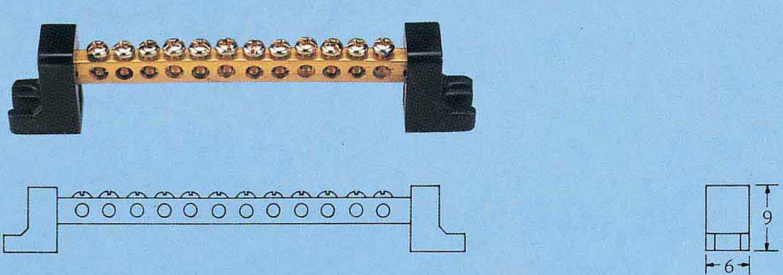
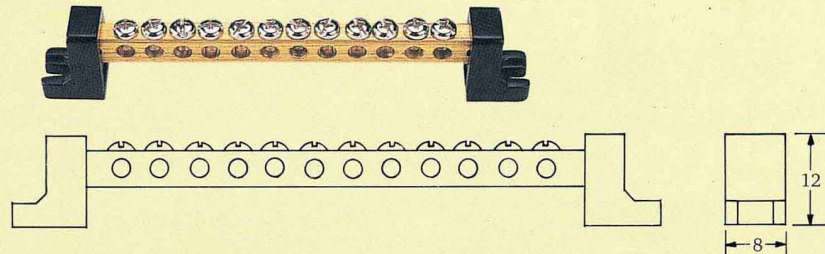


- Material: Soft P.V.C.
- Maximum service temp: 80°C
- For the insulation works of wire end terminal. Performing the work with a simple one-touch to tighten and seal against dirt, moisture and water.
- Standard color: Red, white, green, blue, yellow, black.



ITEM NO.	WIRE SUITABLE	D1	D2	D3	L1	L2	T	PKG.
P-1.25	600V 1.25mm ² , 1.25mm ² Single	2.8	3.3	3.1	6	7	0.6	100pcs
P-2	600V 2.0mm ² , 2.0mm ² , 1.2mm ² , Single, 1.6mm ² Single	3.3	4.5	3.7	7	7	0.7	
P-3.5	600V 3.5mm ²	4.8	5.7	4.1	9	8	0.8	
P-5.5	600V 5.5mm ² , 2.6mm ² Single	4.8	5.7	5.2	9	8	0.8	
P-8	600V 5.5mm 3.2mm ² Single	6.2	7.2	6.2	10	9	1.0	
P-14	600V 14mm ²	8.0	10.0	8.0	13	11	1.1	
P-22	600V 22mm ²	9.5	12.0	9.5	15	14	1.2	
P-38	600V 38mm ²	11.8	14.0	11.8	17	16	1.5	
P-60	600V 60mm ²	13.5	16.8	13.5	20	19	1.5	
P-80	600V 80mm ²	16.0	19.0	16.0	25	21.0	1.6	
P-100	600V 100mm ²	18.0	22.0	18.0	30	24.0	1.7	
P-125	600V 125mm ²	20.0	24.0	20.0	32	25.0	1.8	
P-150	600V 150mm ²	22.0	24.4	22.0	34	31.0	1.8	
P-200	600V 200mm ²	28.0	32.0	24.0	35	30.0	2.0	
P-250	600V 250mm ²	32.0	36.0	25.0	40	35.5	2.0	
P-325	600V 325mm ²	34.3	38.0	28.5	40	36.5	2.0	
P-400	600V 400mm ²	43.0	44.0	37.0	45.0	40.0	2.5	
P-500	600V 500mm ²	45.0	50.0	40.5	41.8	45.5	2.5	
P-630	600V 630mm ²	52.0	52.0	45.0	46.0	45.0	2.5	

GROUNDING BUS-BAR

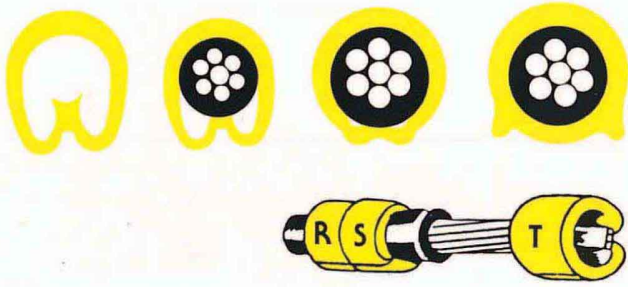
	<p>Item No.</p> <p>G-9604 G-9606 G-9608 G-9610 G-9612</p>
	<p>Item No.</p> <p>G-12804 G-12806 G-12808 G-12810 G-12812</p>

CABLE MARKERS



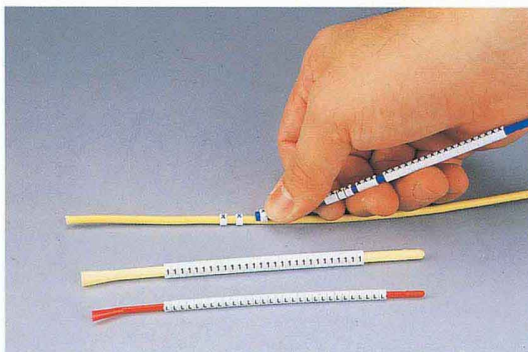
EC TYPE CABLE MARKER

- Marker tongue spans to fit various cable diameters and retracts to hold wires firmly in position
- Maximum service temperature: 85°C
- MATERIAL
Made of finest soft grade, strong, durable P.V.C. that will resist oil, grease, acid, abrasion and chemicals.
- Description
EC type cable marker features high quality flexible interior to fit various cable diameters.
- The markers stay attached on a rollar and can be despatched easily when needed.
- Bold print on yellow body to show your codes distinguishly. Any numbers can be composed by arranging letters and numbers in sequence to provide the necessary codes.
- To be fitted before the terminal is attached or solder connection made and grip cables firmly in position.



SHAPE	ITEM NO	DIA. RANGE mm MIN.-MAX.	STANDARD MARKING	STANDARD	COLOR
PLAIN CUT	T-0	2.0-3.2	Solid No. Or Letter Per Roll For 0,1,2,3,.....9 A,B,.....Z +,-,≡(earth) Blank,/(Slang)	1000pcs	Yellow Body With Black Print
	T-1	3.0-5.2		1000pcs	
	T-2	3.6-7.4		500pcs	White Body Available
	T-3	5.2-10.0		250pcs	

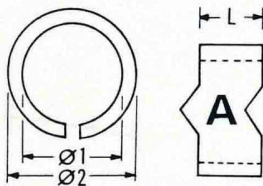
CLIP- ON CABLE MARKER



- Black legends on white background.
- Installed before or after terminations are made.
- Withstanding harsh environments and high temperature. from -22°F(- 30°C) to 194°F(90°C)
- Removable and reusable.
- Resistant to chemical environments.
- 30 pcs/Rod.
- Solid no. or letter for 0,1,2,3,.....9
A,B,C,.....Z, +, -, ≡, Blank.

Material: ACETAL

Item No.	Applicable Wire sizes	Dimension(mm)		
		L	φ 1	φ 2
LT-021	AWG 24-22	3.0	1.5	2.8
LT-022	AWG 22-20	3.0	2.0	3.4
LT-023	AWG 18-16	3.0	2.5	4.0
LT-024	AWG 16-14	3.0	3.2	4.6
LT-025	AWG 14-12	3.0	3.7	5.2
LT-026	AWG 12-10	3.0	4.2	6.0



SUNS

CABLE MARKER

FM-1 Marker

ISO 9001:2000



- Item No. : FM-1
- Material : P.V.C.
- Color : Yellow body with black mark.
- Service temperature : $-45^{\circ}\text{C} \sim +70^{\circ}\text{C}$
- Solid no. or letter for 0,1,2,3,.....9
A,B,C,.....Z,+,-,≡,Blank.

CABLE DIA	MARKER LENGTH	PACK
4.2~7.0	6	500PCS/PER REEL

Unit : mm

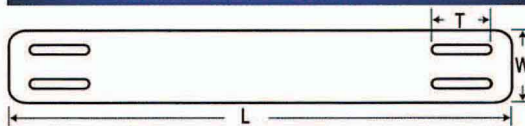
Carrier Strips for FM-1 Marker



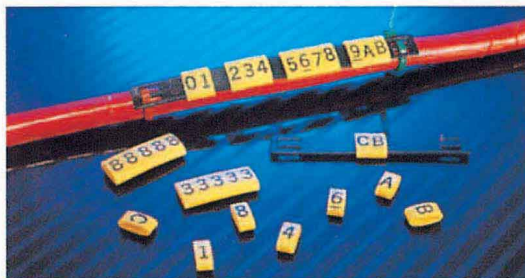
- Material : NYLON 66
- Service temperature : $-40^{\circ}\text{C} \sim +70^{\circ}\text{C}$

Unit : mm

ITEM No.	CAPACITY	L	M	T	PACK
MS-65	7MARKS	65	9.4	6	500PCS/PER BAG
MS-95	12MARKS	95	9.4	6	500PCS/PER BAG
MS-133	18MARKS	133	9.4	6	250PCS/PER BAG

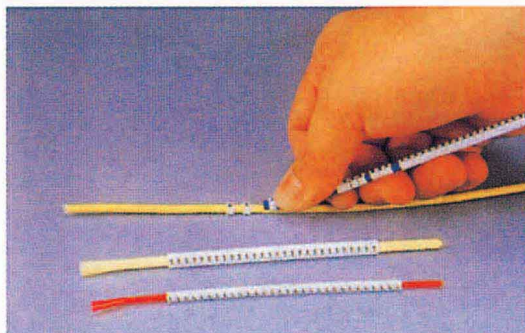


FM-1 Marker & Carrier Strips



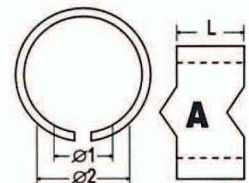
- FM-1 marker and carrier strips are ideal for identifying large cables, conduit and pipes. The carrier strips have slotted two ends allowing fastening with cable ties.

Clip on Cable Marker



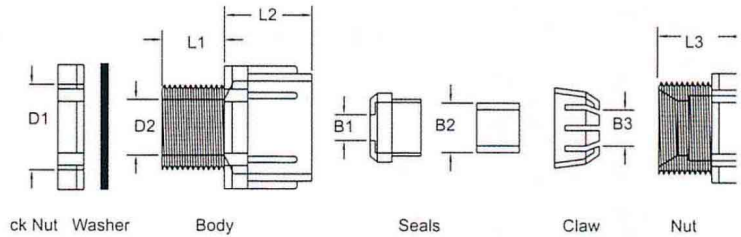
- White body with black mark.
- Installed before or after terminations are made.
- Withstanding harsh environments and high temperature. From $-22^{\circ}\text{F}(-30^{\circ}\text{C})$ to $194^{\circ}\text{F}(90^{\circ}\text{C})$
- Removable and reusable.
- Resistant to chemical environments.
- 30pcs/Rod.
- Solid no. or letter for 0,1,2,3,.....9
A,B,C,.....Z,+,-,≡,Blank.

ITEM NO	APPLICABLE WIRE SIZES	DIMENSION (mm)		
		L	φ1	φ2
LT-023	AWG 18-16	3.0	2.5	4.0
LT-024	AWG 16-14	3.0	3.2	4.6
LT-026	AWG 12-10	3.0	4.2	6.0





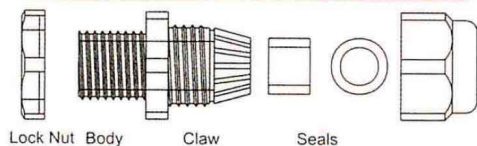
NYLON CABLE GLAND



Item No.	Mounting Hole D1	PITCH	D2	B1	B2	B3	L1	L2	L3	Cable Range	Packing
PG-16	16	1.5	10.5		7	10	12	17	16.5	5~10	50pcs
PG-20	20		13.7		9	13	13	19	19.5	6~13	
PG-25	25		18.5		11	17	13	22	21	10~18	
PG-32	32		25		15	20	15	24.5	24.5	16~22	25pcs
PG-40	40		32	22	27	31	21	26.5	27.5	20~27	10pcs
PG-50	50		41.5	32	36	41	23	30	31	30~41	
PG-63	63		53.2	43	43	51	25	33	33	40~53	

- Material: UL approved NYLON 66, 94V-2 (Black)
- Well designed for insulation, waterproof and impact resistant. Used extensively for protection and fixation of cables in control panel and apparatus.
- Application:
 1. Mount body to pre-drilled panel hole and fix it with locking nut.
 2. Insert cables through body and then seals consequently. Finally, Press them together with press nut to hold cable in position.

NYLON CABLE GLAND



Item No.	Mounting Hole	Cable Range
PG-7	12.24mm	3.5-6mm
PG-9	14.76mm	4-8mm
PG-11	18.20mm	5-10mm
PG-13.5	20.36mm	6-12mm
PG-16	22.30mm	10-14mm
PG-21	28.20mm	13-18mm
PG-29	36.24mm	18-25mm
PG-36	46.10mm	22-32mm
PG-42	54.30mm	30-38mm
PG-48	57.70mm	34-44mm

Proximity Tester

Proximity Tester (Model ST-800)

SUNS ST-800 proximity switch tester is designed to test most 3 wire DC proximity switches inductive [metal sensing] or capacitive photoelectrics or, ultrasonics. The unit is fitted with 2x 9V batteries ready for use.

Standard color coding for 3 wire proximity switches is Brown = Positive Black = Load, Blue = Negative (-) [Note: some universal DC switches can vary, try to follow makers wiring instructions]



TESTING INSTRUCTIONS

Connect the switch to the ST-800, place a suitable target in front of the switch. If the switch is functioning correctly, the unit will give audio and visual indication showing the switch operates and indicating the functionality of the switch according to the chart below

Switch type	Buzzer & LED on when	LED
PNP normally open	target in range	PNP
PNP normally closed	target not in range	PNP
NPN normally open	target in range	NPN
NPN normally closed	target not in range	NPN

If the proximity switch does not give such feedback when correctly connected to the tester, it has probably failed. [Note: The ST-800 will not test 2 wire AC or DC switches]

LED Functions

Green I/O LED	switch connected & unit on
Red (Batt) LED	battery low indicator
PNP or NPN LED	indicated switch type