

TZ-8 立式限位开关

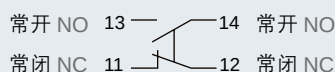
Vertical Limit Switch



特点 Features

- 双回路型限位开关
- 结构坚固，由锌合金及强化塑胶组成
- 体积小，可防水、防油
- 内藏触点座有双簧片机构，机械寿命更长
- 具有较大的过行程
- 使配线更加简易的导管设计
- 引动器种类多，方便使用
- Double circuit type of limit switch
- High mechanical strength, consists of intensive plastic and aluminum cast
- Small size, water-proof and oil-proof construction
- Built-in contact box has double-spring and long mechanical life
- Smooth operation with larger over travel distance
- Conduit design for convenient cabling
- Various actuators for different applications

接点型式 Contact Form



额定值 Ratings

额定电压 Rated Voltage	非电感性负载 Noninductive Load (A)				电感性负载 Inductive Load (A)			
	电阻性负载 Resistance Load		灯泡负载 Lamp Load		电感性负载 Inductive Load		马达负载 Motor Load	
	NC	NO	NC	NO	NC	NO	NC	NO
125VAC	5	5	1.5	0.7	3	3	2	1
250VAC	5	5	1	0.5	3	3	1.5	0.8
8VDC	5	5	3	3	5	4	3	3
14VDC	5	5	3	3	4	4	3	3
30VDC	5	5	3	3	4	4	3	3
125VDC	0.4	0.4						
250VDC	0.2	0.2						
突入电流 Inrush Current	N.C.:24A 以下、N.O.:12A 以下 N.C: below 24A, N.O: below 12A							

- 注 :1、电感性负载之功率因素在 0.4 以上 (AC)。时间常数在 7msec 以下 (DC)。
2、灯泡负载之突入电流为稳定状态电流之 10 倍。马达负载之突入电流为稳定状态电流之 6 倍。
3、带弹簧系列产品，操作体的使用范围为从弹簧的前端到弹簧全长的 1/3 以内。

NOTES: 1. Inductive load has a power factor of 0.4 min.(AC) and a time constant of 7 msec. max.(DC).
2. Lamp load has an inrush current of 10 times the steady-state current, while motor load has an inrush current of 6 times the steady-state current.
3. Product with spring, its usable range of operating part is within one third of the whole spring length from the front end of spring.

动作特性 Operating Characteristics

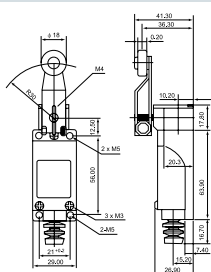
型号	Model	TZ-8	TZ-8104 TZ-8105	TZ-8108 TZ-8109	TZ-8107	TZ-8111	TZ-8112/8122	TZ-8166/8167/8168/8169
操作力	Operating force	OF(最大)(Max.)	750g	750g	750g	900g	900g	150g
回弹力	Release force	RF(最小)(Min.)	100g	100g	100g	150g	150g	-
预行程	Pre-travel	PT(最大)(Max.)	20°	20°	20°	1.5mm	1.5mm	30mm
过行程	Over travel	OT(最小)(Min.)	50°	50°	50°	4mm	4mm	-
行程移动分辨率	Movement differential	MD(最大)(Max.)	12°	12°	12°	1mm	1mm	-
动作位置	Operating position	OP(mm.)	-	-	-	26 ± 0.8mm	37 ± 0.8mm	-

规格 Specifications

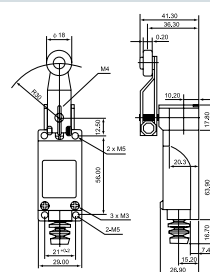
操作速度 Operation speed	5mm 至 0.5m/s 5mm-0.5m/s
动作频率 Operating frequency	电气 :30 次 / 分 Electrical: 30 operations/min
接点电阻 Contact resistance	25mΩ 以下 (初期) 25mΩ max. (initial value)
绝缘电阻 Insulation resistance	100MΩ 以上 (在 500VDC 下) 100mΩ min. (below 500VDC)
电介强度 Dielectric strength	非连续端子间 1,000VAC, 50/60Hz 持续 1 分钟 1000VAC, 50/60 Hz for 1 minute between terminals of the same polarity 载电流与无载电流零件间 1,500VAC, 50/60Hz 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute between current-carrying and non-current-carrying metal parts 端子和接地之间 1,500VAC, 50/60Hz 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute between each terminal and ground
振动 Vibration	10 至 55Hz, 1.5mm 双振幅 10-55Hz, 1.5mm double amplitude
冲击 Shock	机械耐久 :1,000m/Sec ² (约 100G' S) 误动作耐久 :300m/Sec ² (约 30G' S) Mechanical durable: 1,000m/Sec ² (about 100G'S) Malfunction: 300m/Sec ² (about 30G'S)
周围温度 Ambient temperature	使用时 : -20~+70℃ (没有结冰) Using: -20~+70℃ (With no icing)
湿度 Humidity	95%RH 以下 <95% RH
电气寿命 Electrical life	500,000 次以上 500,000 operations above
保护构造 Degree of protection	IP65

外观和尺寸 Appearance and Dimension

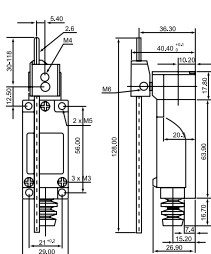
TZ-8104



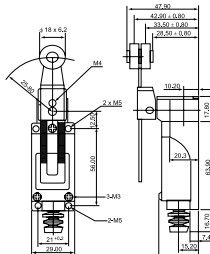
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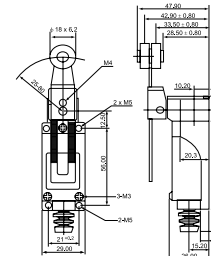
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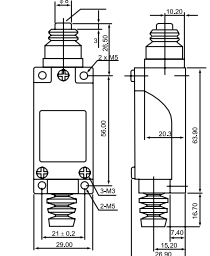
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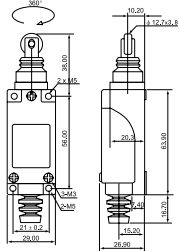
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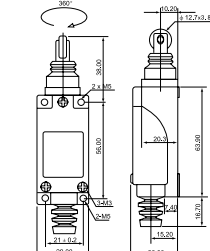
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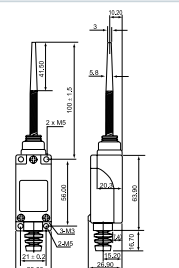
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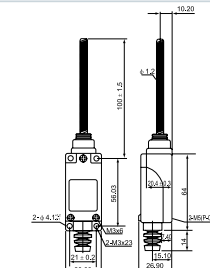
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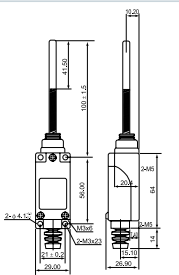
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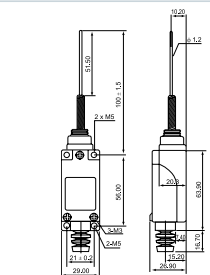
TZ-8167



TZ-8168



TZ-8169



CZ-8□N 立式限位开关 Vertical Limit Switch

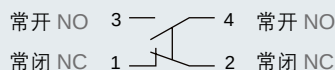


特点 Features

- 双回路型限位开关
- 结构坚固，由锌合金及强化塑胶组成
- 体积小，可防水、防油
- 内藏触点座有双簧片设计，机械寿命长
- 具有较大的过行程
- 引动器种类多，方便使用
- 优化尾部出线设计，以提高密封性能

- Double circuit type of limit switch
- High mechanical strength, consists of intensive plastic and aluminum cast
- Small size, water-proof and oil proof construction
- Built-in contact box has double-spring and long mechanical life
- Smooth operation with larger over travel distance
- Various actuators for different application
- Optimize tail line design to improve sealing performance

接点型式 Contact Form



额定值 Ratings

额定电压 Rated Voltage	非电感性负载 Noninductive Load (A)				电感性负载 Inductive Load (A)			
	电阻性负载 Resistance Load		灯泡负载 Lamp Load		电感性负载 Inductive Load		马达负载 Motor Load	
	NC	NO	NC	NO	NC	NO	NC	NO
125VAC 250VAC	5	5	1.5	0.7	3	3	2	1
	5	5	1	0.5	3	3	1.5	0.8
8VDC 14VDC 30VDC 125VDC 250VDC	5 5 5 0.4 0.2	5 5 5 0.4 0.2	3 3 3 — —	3 3 3 — —	5 4 4 — —	4 4 4 — —	3 3 3 — —	3 3 3 — —
突入电流 Inrush Current	N.C.:24A 以下、N.O.:12A 以下 N.C: below 24A, N.O: below 12A							

注：1、电感性负载之功率因素在 0.4 以上 (AC)，时间常数在 7msec 以下 (DC)。
2、灯泡负载之突入电流为稳定状态电流之 10 倍。马达负载之突入电流为稳定状态电流之 6 倍。
3、带弹簧系列产品，操作体的使用范围为从弹簧的前端到弹簧全长的 1/3 以内。

NOTES: 1. Inductive load has a power factor of 0.4 min.(AC) and a time constant of 7 msec. max.(DC).
2. Lamp load has an inrush current of 10 times the steady-state current, while motor load has an inrush current of 6 times the steady-state current.
3. Product with spring, its usable range of operating part is within one third of the whole spring length from the front end of spring.

规格 Specifications

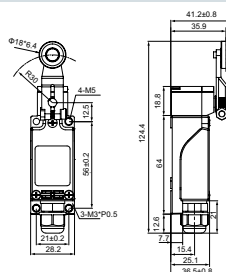
操作速度 Operation speed	5mm 至 0.5m/s 5mm-0.5m/s
动作频率 Operating frequency	电气 :30 次 / 分 Electrical: 30 operations/min
接点电阻 Contact resistance	25mΩ 以下 (初期) 25mΩ max. (initial value)
绝缘电阻 Insulation resistance	100MΩ 以上 (在 500VDC 下) 100mΩ min. (below 500VDC)
电介强度 Dielectric strength	非连续端子间 1,000VAC, 50/60Hz 持续 1 分钟 1000VAC, 50/60 Hz for 1 minute between terminals of the same polarity 载电流与无载电流零件间 1,500VAC, 50/60Hz 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute between current-carrying and non-current-carrying metal parts 端子和接地之间 1,500VAC, 50/60Hz 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute between each terminal and ground
振动 Vibration	10 至 55Hz, 1.5mm 双振幅 10-55Hz, 1.5mm double amplitude
冲击 Shock	机械耐久 :1,000m/Sec ² (约 100G' S) 误动作耐久 :300m/Sec ² (约 30G' S) Mechanical durable: 1,000m/Sec ² (about 100G'S) Malfunction: 300m/Sec ² (about 30G'S)
周围温度 Ambient temperature	使用时 : -20~+70℃ (没有结冰) Using: -20~+70℃ (With no icing)
湿度 Humidity	95%RH 以下 <95% RH
电气寿命 Electrical life	500,000 次以上 500,000 operations above
保护构造 Degree of protection	IP65

动作特性 Operating Characteristics

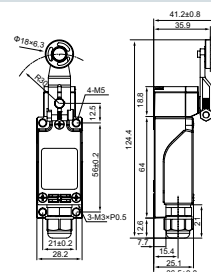
型号	Model	CZ-8□N	CZ-8104N CZ-8105N	CZ-8108N CZ-8109N	CZ-8107N	CZ-8111N	CZ-8112N CZ-8122N	CZ-8166N/8167N/8168N/8169N
操作力	Operating force	OF(最大)(Max.)	750g	750g	750g	900g	900g	150g
回弹力	Release force	RF(最小)(Min.)	100g	100g	100g	150g	150g	-
预行程	Pre-travel	PT(最大)(Max.)	20°	20°	20°	1.5mm	1.5mm	30mm
过行程	Over travel	OT(最小)(Min.)	50°	50°	50°	4mm	4mm	-
行程移动分辨率	Movement differential	MD(最大)(Max.)	12°	12°	12°	1mm	1mm	-
动作位置	Operating position	OP(mm.)	-	-	-	26 ± 0.8mm	37 ± 0.8mm	-

外观和尺寸 Appearance and Dimension

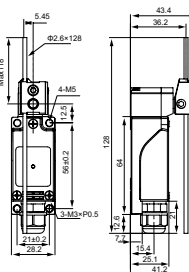
CZ-8104N



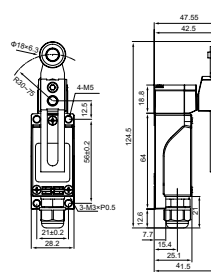
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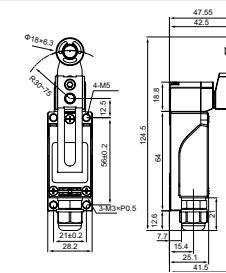
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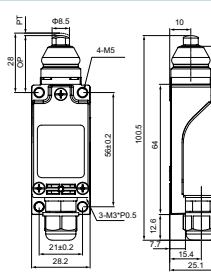
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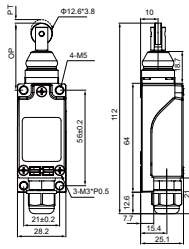
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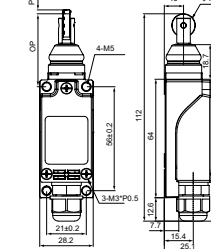
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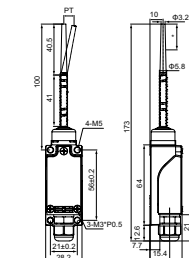
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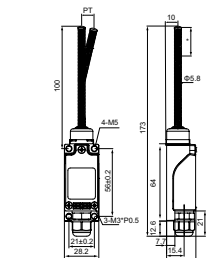
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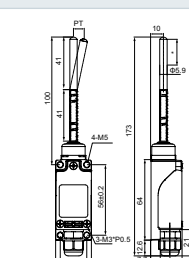
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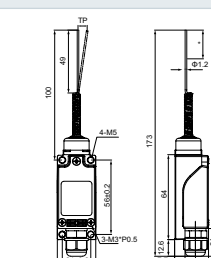
CZ-8167N



CZ-8168N



CZ-8169N



CSA 立式限位开关 (经济型)

Vertical Limit Switch(Economical)



特点 Features

- 双回路型限位开关
- 结构坚固，由锌合金及强化塑胶组成
- 可防水、防油
- 内藏触点座有双簧片设计，机械寿命长
- 具有较大的过行程
- 引动器种类多，方便使用

- Double circuit type of limit switch
- High mechanical strength, consists of intensive plastic and aluminum cast
- Water-proof and oil proof construction
- Built-in contact box has double-spring and long mechanical life
- Smooth operation with larger over travel distance
- Various actuators for different application

接点型式 Contact Form

常开 NO 13 — 14 常开 NO
常闭 NC 11 — 12 常闭 NC

额定值 Ratings

额定电压 Rated Voltage	非电感性负载 Noninductive Load (A)				电感性负载 Inductive Load (A)			
	电阻性负载 Resistance Load		灯泡负载 Lamp Load		电感性负载 Inductive Load		马达负载 Motor Load	
	NC	NO	NC	NO	NC	NO	NC	NO
125VAC	5	5	1.5	0.7	3	3	2	1
250VAC	5	5	1	0.5	3	3	1.5	0.8
8VDC	5	5	3	3	5	4	3	3
14VDC	5	5	3	3	4	4	3	3
30VDC	5	5	3	3	4	4	3	3
125VDC	0.4	0.4						
250VDC	0.2	0.2						
突入电流 Inrush Current	N.C.:24A 以下, N.O.:12A 以下 N.C: below 24A, N.O: below 12A							

- 注: 1. 电感性负载之功率因素在 0.4 以上 (AC)。时间常数在 7msec 以下 (DC)。
2. 灯泡负载之突入电流为稳定状态电流之 10 倍。马达负载之突入电流为稳定状态电流之 6 倍。
3. 带弹簧系列产品，操作体的使用范围为从弹簧的前端到弹簧全长的 1/3 以内。

NOTES: 1. Inductive load has a power factor of 0.4 min.(AC) and a time constant of 7 msec. max.(DC).
2. Lamp load has an inrush current of 10 times the steady-state current, while motor load has an inrush current of 6 times the steady-state current.
3. Product with spring, its usable range of operating part is within one third of the whole spring length from the front end of spring.

动作特性 Operating Characteristics

型号	Model	CSA	CSA-001	CSA-003	CSA-012	CSA-021 CSA-021M	CSA-041	CSA-031 CSA-031M	CSA-051	CSA-061	CSA-071	CSA-081
操作力	Operating force	OF (最大)(Max.)	800g	800g	800g	400g	400g	400g	400g	150g	150g	150g
回弹力	Release force	RF (最小)(Min.)	400g	400g	400g	100g	100g	100g	100g	50g	50g	50g
预行程	Pre-travel	PT (最大)(Max.)	1.8mm	1.8mm	1.8mm	20°	20°	20°	20°	30mm	30mm	30mm
触发位置	Tripping position	TP ± 10%	2.0mm	2.0mm	2.0mm	22.5°	22.5°	22.5°	22.5°	22.5°	22.5°	22.5°
行程移动分辨率	Movement differential	MD (最大)(Max.)	1.2mm	1.2mm	1.2mm	10°	10°	10°	10°	14°	14°	14°
过行程	Over travel	OT (最小)(Min.)	4.0mm	4.0mm	4.0mm	75°	75°	75°	75°	20mm	20mm	20mm
总行程	Total travel	TT (最小)(Min.)	5.8mm	5.8mm	5.8mm	95°	95°	95°	95°	50mm	50mm	50mm
摇臂转换分角度	Rotary indexing					22.5°	22.5°	22.5°	22.5°			

规格 Specifications

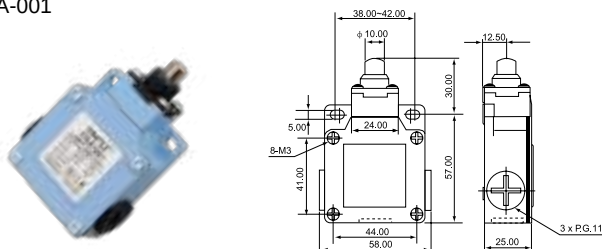
操作速度 Operation speed	5mm 至 0.5m/s 5mm-0.5m/s
动作频率 Operating frequency	电气:30 次 / 分 Electrical: 30 operations/min
接点电阻 Contact resistance	25mΩ 以下 (初期) 25mΩ max. (initial value)
绝缘电阻 Insulation resistance	100MΩ 以上 (在 500VDC 下) 100mΩ min. (below 500VDC)
电介强度 Dielectric strength	非连续端子间 1,000VAC, 50/60Hz 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute between current-carrying and non-current-carrying metal parts 载电流与无载电流零件间 1,500VAC, 50/60Hz 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute between current-carrying and non-current-carrying metal parts 端子和接地之间 1,500VAC, 50/60Hz 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute between each terminal and ground
振动 Vibration	10 至 55Hz, 1.5mm 双振幅 10-55Hz, 1.5mm double amplitude
冲击 Shock	机械耐久: 1,000m/Sec ² (约 100G ² S) 误动作耐久: 300m/Sec ² (约 30G ² S) Mechanical durable: 1,000m/Sec ² (about 100G ² S) Malfunction: 300m/Sec ² (about 30G ² S)
周围温度 Ambient temperature	使用时: -20~+70°C (没有结冰) Using: -20~+70°C (With no icing)
湿度 Humidity	95%RH 以下 <95% RH
电气寿命 Electrical life	300,000 次以上 300,000 operations above
保护构造 Protection level	IP66

注: 导管连接器尺寸常规默认为 M18x1.5; 导管连接器尺寸 PG11.5, 型号加 (-P), 例: CSA-012-P。

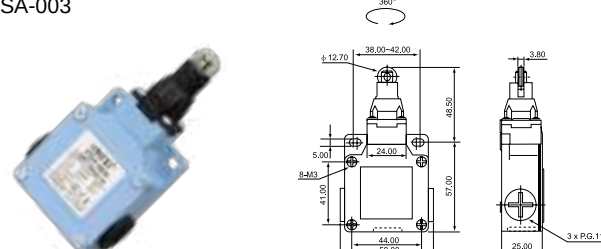
NOTES: The default size of conduit connector is M18x1.5. Conduit connector size is PG11.5, with product model number plus (-P), example: CSA-012-P.

外观和尺寸 Appearance and Dimension

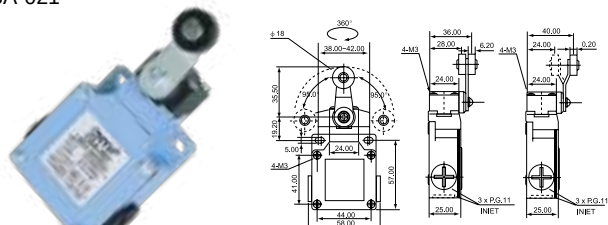
CSA-001



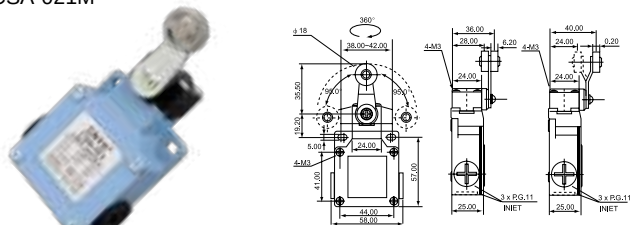
CSA-003



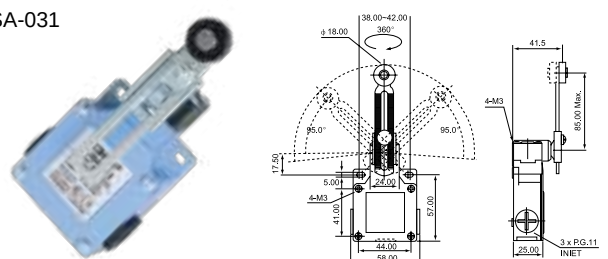
CSA-021



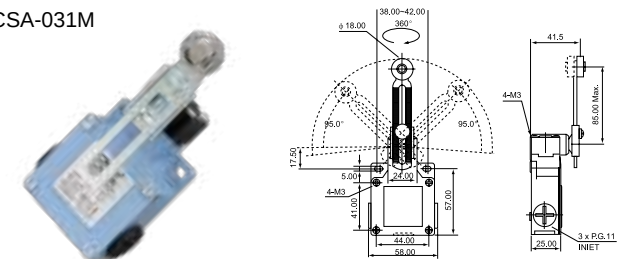
CSA-021M



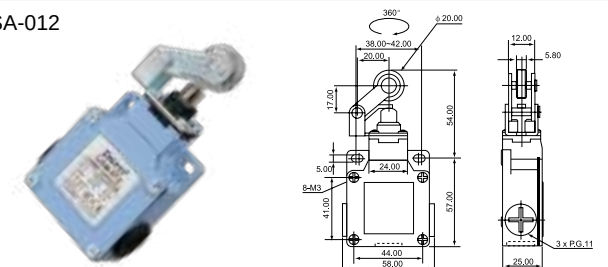
CSA-031



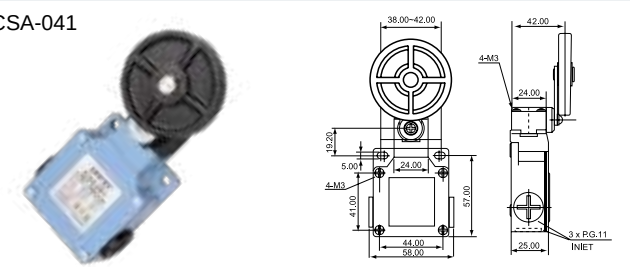
CSA-031M



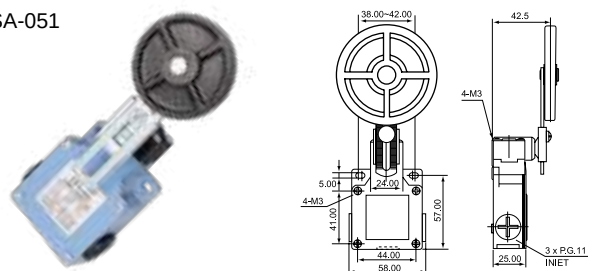
CSA-012



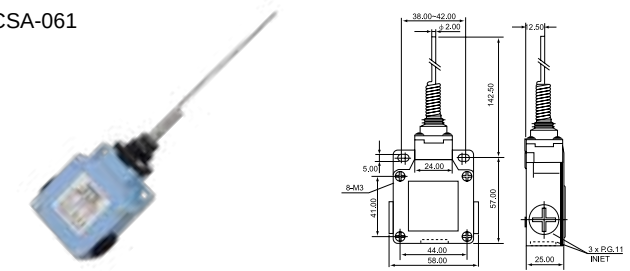
CSA-041



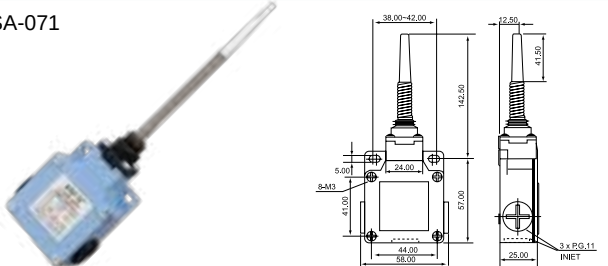
CSA-051



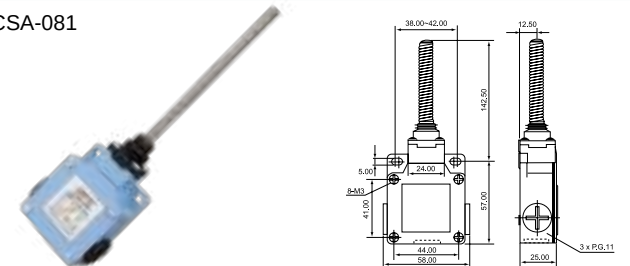
CSA-061



CSA-071



CSA-081

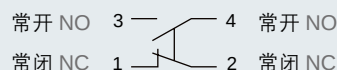




特点 Features

- 双回路型限位开关
- 具有高机械强度的一体铸造铝合金外壳
- 具耐油、防水和防压结构
- 引动器种类多，方便使用
- 内藏接点座有双簧片设计，机械寿命长

接点型式 Contact Form



额定值 Ratings

额定电压 Rated Voltage	非电感性负载 Noninductive Load (A)				电感性负载 Inductive Load (A)			
	电阻性负载 Resistance Load		灯泡负载 Lamp Load		电感性负载 Inductive Load		马达负载 Motor Load	
	NC	NO	NC	NO	NC	NO	NC	NO
125VAC	10		3	1.5	10		5	2.0
250VAC	5		2	1	5		3	1.0
480VAC	3		1.5	0.8	3		1.5	0.8
600VAC	1		1	0.5	1.5		1	0.5
8VDC	10		6	3	10		6	
14VDC	10		6	3	10		6	
30VDC	6		4	3	6		4	
125VDC	0.8		0.2	0.2	0.8		0.2	
250VDC	0.4		0.1	0.1	0.4		0.1	

注：1. 电感性负载：功率因素=0.4；时间常数=7msec。
 2. 灯泡负载之突入电流为稳定状态电流之10倍。马达负载之突入电流为稳定状态电流之6倍。
 3. 带弹簧系列产品，操作体的使用范围为从弹簧的前端到弹簧全长的1/3以内。

NOTES: 1. Inductive load has a power factor of 0.4 min.(AC) and a time constant of 7 msec. max.(DC).
 2. Lamp load has an inrush current of 10 times the steady-state current, while motor load has an inrush current of 6 times the steady-state current.
 3. Product with spring, its usable range of operating part is within one third of the whole spring length from the front end of spring.

规格 Specifications

操作速度 Operation speed	1mm 至 1m/s(CWLCA2 型) 1mm-1m/s
动作频率 Operating frequency	电气: 30 次 / 分 Electrical: 30 operations/min
接点电阻 Contact resistance	25mΩ 以下 (初期) 25mΩ max. (initial value)
绝缘电阻 Insulation resistance	100MΩ 以上 (在 500VDC 下) 100mΩ min. (below 500VDC)
电介强度 Dielectric strength	非连续端子间 1,000VAC, 50/60Hz 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute between current-carrying and non-current-carrying metal parts 载电流与无载电流零件间 1,500VAC, 50/60Hz 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute between current-carrying and non-current-carrying metal parts 端子和接地之间 1,500VAC, 50/60Hz 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute between each terminal and ground
振动 Vibration	10 至 55Hz, 1.5mm 双振幅 10-55Hz, 1.5mm double amplitude
冲击 Shock	机械耐久: 1,000m/Sec ² (约 100G' S) 误动作耐久: 300m/Sec ² (约 30G' S) Mechanical durable: 1,000m/Sec ² (about 100G'S) Malfunction: 300m/Sec ² (about 30G'S)
周围温度 Ambient temperature	使用时: -20~+80℃ (没有结冰) Using: -20~+80℃ (With no icing)
湿度 Humidity	95%RH 以下 <95% RH
电气寿命 Electrical life	500,000 次以上 500,000 operations above
保护构造 Protection level	IP66

注：导管连接器尺寸常规默认为 M20x1.5，配电缆接头：导管连接器尺寸 PG13.5，型号加 (-P)，例：CWLCA2-2-P。

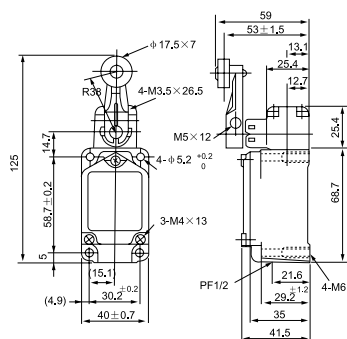
NOTES: The default size of conduit connector is M20x1.5, outfitting cable connector. Conduit connector size is PG13.5, with product model number plus (-P), example: CWLCA2-2-P.

动作特性 Operating Characteristics

型号	Model	CWL	CWLCA2-2	CWLD2	CWLNJ	CWLNJ-S2	CWLCA12-2-Q CWLCA12-2-QD	CWLCL	CWLCA32-41 CWLCA32-42	CWLD	CWLNJ-2	CWLNJ-30	CWLD1	CWLD3
操作力	Operating Force	OF(最大)(Max.)	1360g	2720g	150g	29g	1360g	142g	1200g	2720g	120g	80g	2720g	2720g
回弹力	Release Force	RF(最小)(Min.)	227g	910g	-	-	227g	28g	-	910g	-	-	910g	910g
预行程	Pre-Travel	PT(最大)(Max.)	20°	1.7mm	28mm	28mm	20°	20°	55°	1.7mm	28mm	28mm	1.7mm	1.7mm
过行程	Over Travel	OT(最小)(Min.)	30°	5.6mm	-	-	30°	30°	35°	6.4mm	-	-	5.6mm	5.6mm
行程移动分辨率	Movement Differential	MD(最大)(Max.)	12°	1mm	-	-	12°	12°	-	1mm	-	-	1mm	1mm
总行程动作力	Total Force	TF 最大(Max.)	2720g	-	-	-	2720g	200g	-	-	-	-	2720g	2720g
总行程	Total Travel	TT 最小(Min.)	50°	6.5±0.8mm	-	-	50°	50°	OP:90±10°	OP:34±2.8mm	-	-	6.5±0.8mm	9±0.8mm

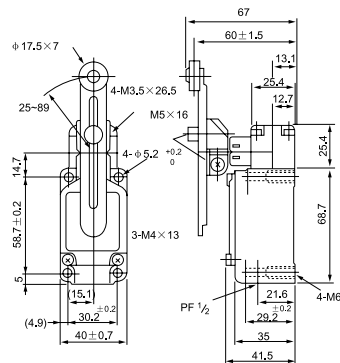
外观和尺寸 Appearance and Dimension

CWLCA2-2



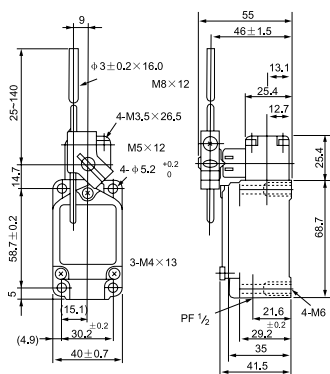
定制塑胶滚轮, 型号后加 (-G)
Customized plastic roller with (- G) after model

CWLCA12-2-Q

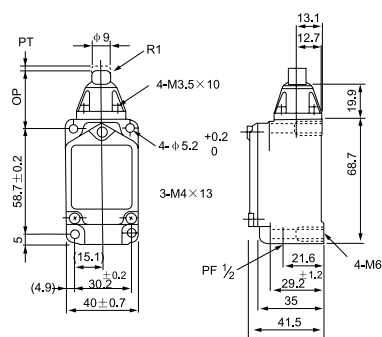


定制塑胶滚轮, 型号后加 (-G)
Customized plastic roller with (- G) after model

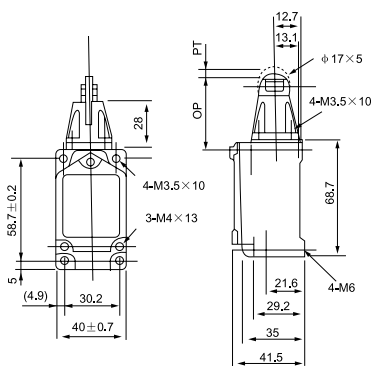
CWLCL



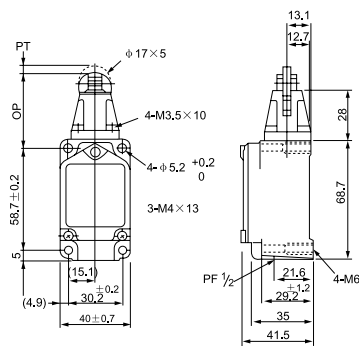
CWLD



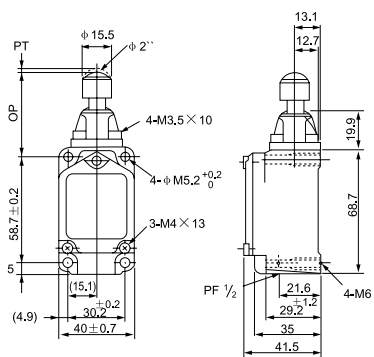
CWLD1



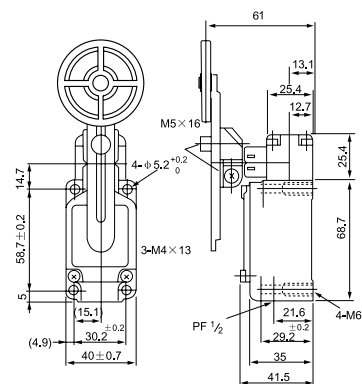
CWLD2



CWLD3



CWLCA12-2-QD



QX-01

Technical drawing showing the dimensions of the QX-01 pressure washer nozzle assembly.

The drawing includes two views: a perspective view on the left and a cross-sectional view on the right.

Key dimensions shown:

- Overall height: 140 ± 2.6
- Trigger gun length: 58.7 ± 0.2
- Nozzle diameter: $\phi 9.52^{+0.2}_{-0.0}$
- Mounting hole diameter: $\phi 3-M4 \times 13$
- Internal diameter: $\phi 30.2$
- Base width: 40 ± 0.7
- Trigger gun diameter: $\phi 21.6$
- Internal diameter at base: $\phi 29.2$
- Base thickness: 35
- Total base width: 41.5
- Bottom mounting hole diameter: $\phi 4-M6$

Technical drawing of a 12V 100W car horn. The drawing includes a photograph of the unit on the left and two technical views on the right: a front view and a side view. Dimensions are provided in millimeters (mm).

Dimensions:

- Overall height: 140 ± 2.5
- Height of the horn tip: 51.5
- Height of the mounting bracket: 58.7 ± 0.2
- Height of the base: 5
- Width of the base: 40 ± 0.7
- Width of the mounting bracket: 30.2
- Width of the horn tip: 4.9
- Width of the mounting bracket: 4.9
- Width of the base: 41.5
- Width of the mounting bracket: 35
- Width of the horn tip: 29.2
- Width of the mounting bracket: 21.6
- Width of the base: 68.7
- Width of the mounting bracket: 4-h

Mounting holes:

- 4-φ5.2 +0.2 / -0
- 3-M4 × 13

[illegible]

The image shows a technical drawing of a mechanical device, likely a pressure switch or valve. It includes a perspective view on the left and a detailed cross-sectional view on the right with various dimensions.

Dimensions and Features:

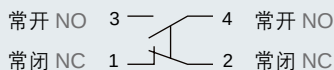
- Overall Dimensions:**
 - Height: 125
 - Width: 41.5 max
 - Depth: 68.7
- Internal Components and Dimensions:**
 - Top flange: 2- ϕ 17.5 $\times$ 7
 - Internal thread: 4-M3,5 $\times$ 26,5
 - Internal thread: M5 $\times$ 16
 - Internal thread: 4- ϕ 5,2 $^{+0.2}_{-0}$
 - Internal thread: 3-M4 $\times$ 13
 - Internal thread: 4-M4
 - Internal thread: PF $\frac{1}{2}$
 - Internal thread: 4-M4
- Other Dimensions:**
 - Top flange thickness: 9
 - Internal flange thickness: 14.7
 - Internal flange thickness: 58.7 $\pm$ 0.2
 - Internal flange thickness: 15.4
 - Internal flange thickness: 49 $\pm$ 0.7
 - Internal flange thickness: 15.4
 - Internal flange thickness: 49 $\pm$ 0.7
 - Internal flange thickness: 15.4
 - Internal flange thickness: 49 $\pm$ 0.7
 - Internal flange thickness: 15.4
 - Internal flange thickness: 49 $\pm$ 0.7



特点 Features

- 引动器种类多，方便使用
 - 使配线更加简易的导管设计
 - 金属外壳，高机械强度
 - 内藏触点座有双簧片设计，机械寿命长
- Various actuators for different applications
 - Conduit design for convenient cabling
 - Metal shell with high mechanical strength
 - Built-in contact box has double-spring and long mechanical life

接点型式 Contact Form



额定值 Ratings

额定电压 Rated Voltage	非电感性负载 Noninductive Load (A)				电感性负载 Inductive Load (A)			
	电阻性负载 Resistance Load		灯泡负载 Lamp Load		电感性负载 Inductive Load		马达负载 Motor Load	
	NC	NO	NC	NO	NC	NO	NC	NO
125VAC	5	5	1.5	0.7	3	3	2	1
250VAC	5	5	1	0.5	3	3	1.5	0.8
8VDC	5	5	3	3	5	4	3	3
14VDC	5	5	3	3	4	4	3	3
30VDC	5	5	3	3	4	4	3	3
125VDC	0.4	0.4						
250VDC	0.2	0.2						
突入电流 Inrush Current	N.C.:24A 以下、N.O.:12A 以下 N.C: below 24A, N.O: below 12A							

注 :1、电感性负载之功率因素在 0.4 以上 (AC)。时间常数在 7msec 以下 (DC)。
2、灯泡负载之突入电流为稳定状态电流之 10 倍。马达负载之突入电流为稳定状态电流之 6 倍。
3、带弹簧系列产品，操作体的使用范围为从弹簧的前端到弹簧全长的 1/3 以内。

NOTES: 1. Inductive load has a power factor of 0.4 min.(AC) and a time constant of 7 msec. max.(DC).
2. Lamp load has an inrush current of 10 times the steady-state current, while motor load has an inrush current of 6 times the steady-state current.
3. Product with spring, its usable range of operating part is within one third of the whole spring length from the front end of spring.

动作特性 Operating Characteristics

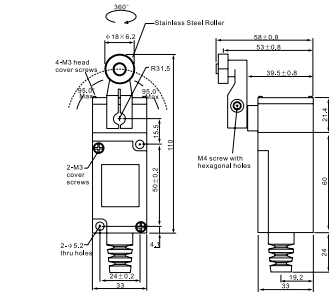
型号	Model	CHL	CHL-5000	CHL-5030	CHL-5050	CHL-5100	CHL-5200	CHL-5220	CHL-5300	CHL-5330	CHL-5381	CHL-5391
操作力	Operating force	OF (最大)(Max.)	750g	750g	750g	750g	900g	900g	150g	150g	150g	550g
回弹力	Release force	RF (最小)(Min.)	100g	100g	100g	200g	200g	200g	30g	30g	30g	100g
预行程	Pre-travel	PT (最大)(Max.)	20°	20°	20°	1.8mm	1.8mm	1.8mm	30mm	30mm	30mm	20°
触发位置	Tripping position	TP ± 10%	22.5°	22.5°	22.5°	2.0mm	2.0mm	2.0mm	22.5°	22.5°	22.5°	22.5°
行程移动分辨率	Movement differential	MD (最大)(Max.)	10°	10°	10°	1.2mm	1.2mm	1.2mm	14°	14°	14°	14°
过行程	Over travel	OT (最小)(Min.)	75°	75°	75°	4.0mm	4.0mm	4.0mm	20mm	20mm	20mm	75°
总行程	Total travel	TT (最小)(Min.)	95°	95°	95°	5.8mm	5.8mm	5.8mm	50mm	50mm	50mm	95°

规格 Specifications

操作速度 Operation speed	5mm 至 0.5m/s 5mm-0.5m/s
动作频率 Operating frequency	电气 :30 次 / 分 Electical: 30 operations/min
接点电阻 Contact resistance	25mΩ 以下 (初期) 25mΩ max. (initial value)
绝缘电阻 Insulation resistance	100MΩ 以上 (在 500VDC 下) 100mΩ min. (below 500VDC)
电介强度 Dielectric strength	非连续端子间 1,000VAC, 50/60Hz 持续 1 分钟 1000VAC, 50/60 Hz for 1 minute between terminals of the same polarity 载电流与无载电流零件间 1,500VAC, 50/60Hz 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute between current-carrying and non-current-carrying metal parts 端子和接地之间 1,500VAC, 50/60Hz 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute between each terminal and ground
振动 Vibration	10 至 55Hz, 1.5mm 双振幅 10-55Hz, 1.5mm double amplitude
冲击 Shock	机械耐久 :1,000m/Sec ² (约 100G' S) 误动作耐久 :300m/Sec ² (约 30G' S) Mechanical durable: 1,000m/Sec ² (about 100G'S) Malfunction: 300m/Sec ² (about 30G'S)
周围温度 Ambient temperature	使用时 : -20~+70℃ (没有结冰) Using: -20~+70℃ (With no icing)
湿度 Humidity	95%RH 以下 <95% RH
电气寿命 Electrical life	300,000 次以上 300,000 operations above
保护构造 Protection level	IP65

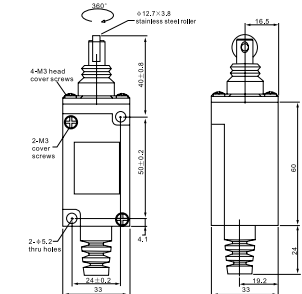
外观和尺寸 Appearance and Dimension

CHL-5000

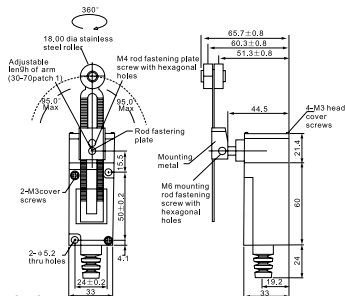


定制金属滚轮, 型号后加 (-M)
Custom made metal roller, model plus (-M)

CHL-5220

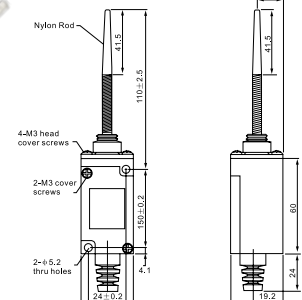


CHL-5030

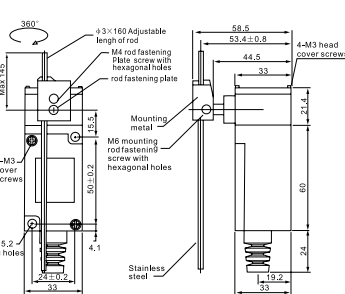


定制金属滚轮, 型号后加 (-M)
Custom made metal roller, model plus (-M)

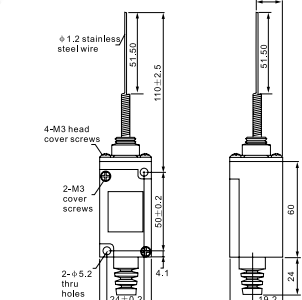
CHL-5300



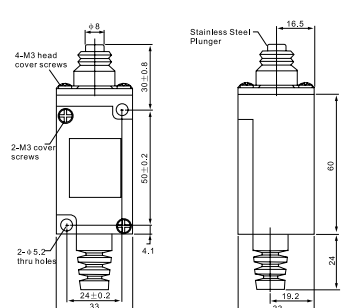
CHL-5050



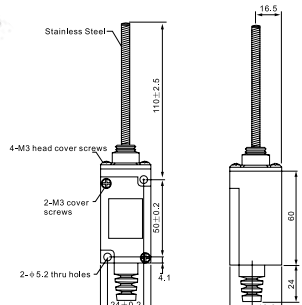
CHL-5330



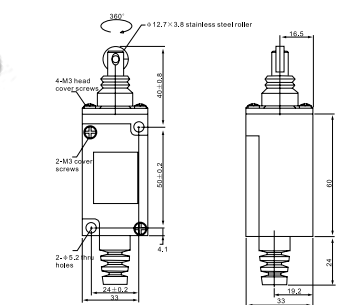
CHL-5100



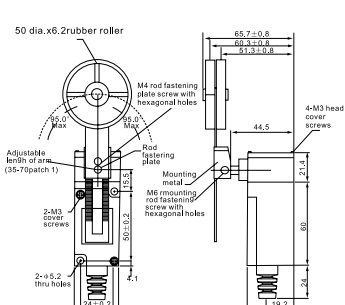
CHL-5381



CHL-5200



CHL-5391

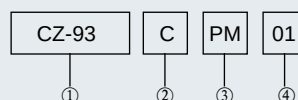


CZ-93 立式安全门限位开关

Vertical Interlock Safety Limit Switch

CNTD 昌得电气

型号说明 Model Number Structure



项次 Designation	代号 Model NO.	说明 Description
① 型号 Type	CZ-93	门式安全开关 Safety switch
② 接点型式 Type of contact blocks fitted	B	2B(2NC)
	C	1A1B(1NC/1NO)
③ 导管 / 连接器尺寸 Conduit/connector size	PG	PG 13.5XP1.5(公制牙)
	PM	M20X1.5
④ 钥匙型式 Actuating keys	None	无附钥匙 None
	01	平钥匙 Horizontal
	02	90° 钥匙 Vertical
	03	摆动钥匙 Adjustable

注：导管连接器尺寸常规默认为 M20x1.5。

NOTE: The default size of conduit connector is M20x1.5.

额定值 Ratings

额定电压 Rated Voltage	非电感性负载 Noninductive Load (A)				电感性负载 Inductive Load (A)			
	电阻性负载 Resistance Load		灯泡负载 Lamp Load		电感性负载 Inductive Load		马达负载 Motor Load	
	NC	NO	NC	NO	NC	NO	NC	NO
125 VAC	10		3	1.5	10		5	2.5
250 VAC	10		2	1	10		3	1.5
400 VAC	10		1.5	0.8	3		1.5	0.8
8 VDC	10		6	3	10		6	6
14 VDC	10		6	3	10		6	6
30 VDC	6		4	3	6		4	4
125 VDC	0.8		0.2	0.2	0.8		0.2	0.2
250 VDC	0.4		0.1	0.1	0.4		0.1	0.1

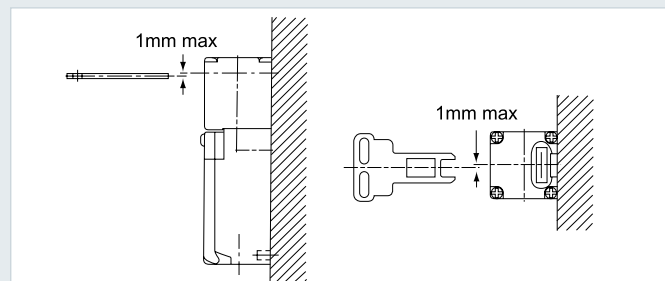
规格 Specifications

额定电流 Rating	3A 240VAC (A300)
操作速度 Operating speed	0.1m~0.5m/s
动作频率 Operating frequency	30 次 / 分 30 operations/min
接点电阻 Contact resistance	25mΩ 以下 (初期) 25mΩ max. (initial).
绝缘电阻 Insulation resistance	100mΩ 以上 (在 500VDC 以下) 100mΩ min. (at 500VDC)
绝缘电压 Rated insulation voltage(Ui)	400V
电介强度 Dielectric strength	AC2500V/Uimp 4KV
振动 Vibration	10 至 55HZ, 1.5mm 双振幅 10 to 55Hz, 1.5mm double amplitude
冲击 Shock	机械耐久: 1000m/s ² 以上 (约 100G 以上) 误动作耐久: 300m/s ² 以上 (约 30G 以上) Mechanical: Approx. 1000m/s ² (Approx. 100G'S) Electrical: Approx. 300m/s ² (Approx. 30G'S)
使用温度 Ambient temperature	-20~+70 ℃ (没有结冰) Using: -20~+70 ℃ (With no icing)
使用湿度 Ambient Humidity	< 95% RH
电气寿命 Electrical life	15 万次以上 150,000 operations/min.
防水等级 Protection level	IP65 (IEC 规格 Standard)

使用注意事项 Cautions

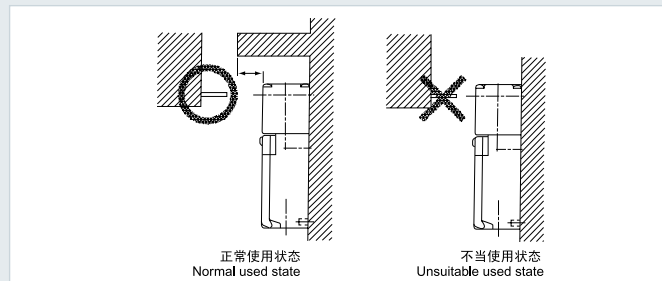
钥匙与插入孔之中心上下左右位置应在 1mm 以内，以避免机构磨损和破坏。

To prevent the wear and the space should be within 1mm between the key and middle of the insert hole.



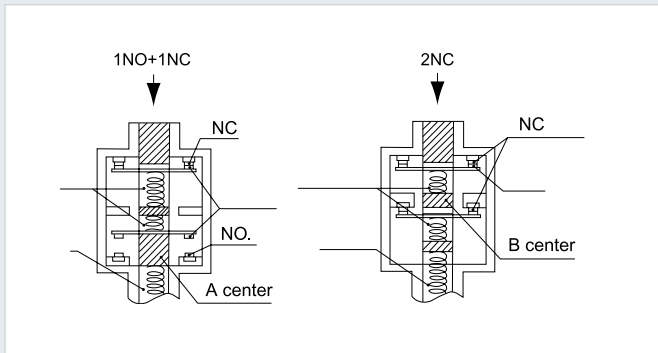
使用开关时，应于上方设置一挡板，以防止钥匙过于插入使机构损坏。而挡板与开关间 a 之距离应在 3mm 以下，以防止不动作。

When in use, there should put a plate on the top to prevent the key overinsert. To prevent nonmovement, the space between the plate and the switch should be under 3 mm.



CZ-93 立式安全门限位开关 Vertical Interlock Safety Limit Switch

强制断开机构 Forced Disconnecting Mechanism



NC 接点的强制脱离机构，作用是当接点发生熔着时，下压钥匙机构中心，可将接点强制推开，使回路切断。(EN60947-5-1 强制脱离认定)。

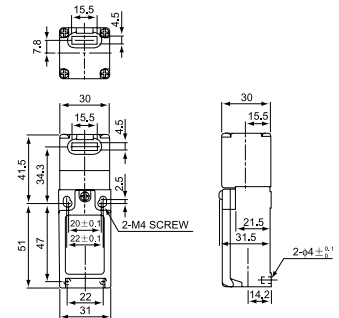
When the contact block get fire, press on the middle of the key structure, the NC strict leaving structure can push the contact block a way cut off the movement.

动作特性 Operating Characteristics

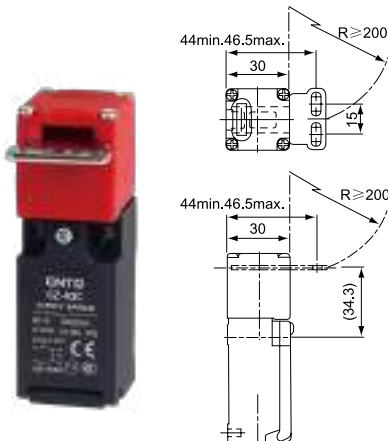
操作插入力量	Key plug in force	最大	14.7N(1,500gf)
操作抽出力	key pull out force	最大	29.42N(3,000gf)
动作距离	Pretravel		6 ± 3mm
总行程	Total travel		(28mm)
强制脱离力	Force required to have positive	最小	58.84N(6,000gf)
强制脱离距离	Positive opening travel	最小	10mm

外观和尺寸 Appearance and Dimension

CZ-93CPM



CZ-93CPM01



CZ-93BPM02

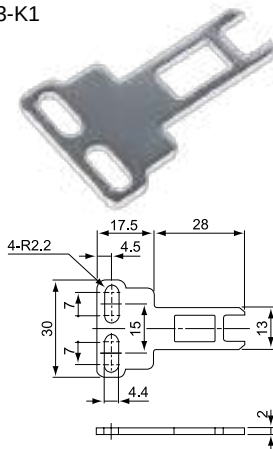


CZ-93CPM03

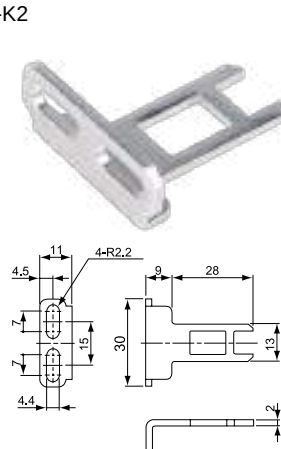


钥匙种类及尺寸 Key Dimension

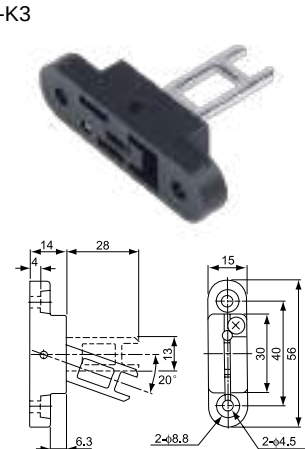
CZ93-K1



CZ93-K2



CZ93-K3

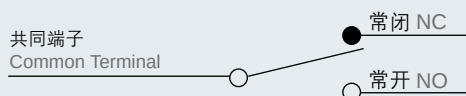




特点 Features

- 具有高机械强度的一体铸造铝合金外壳
- 具耐油，防水和防尘结构
- 引动器种类多，方便使用
- High mechanical strength, mainly consists of aluminum cast
- Water proof, oil proof and dust proof construction
- Various actuators for different applications

接点型式 Contact Form



额定值 Ratings

额定电压 Rated Voltage	非电感性负载 Noninductive Load (A)				电感性负载 Inductive Load (A)			
	电阻性负载 Resistance Load		灯泡负载 Lamp Load		电感性负载 Inductive Load		马达负载 Motor Load	
	NC	NO	NC	NO	NC	NO	NC	NO
125 VAC	5 (0.1)		1.5	0.7	3		2.5	1.3
250 VAC	3		1	0.5	2		1.5	0.8
8 VDC	5 (0.1)		2		5	4	3	
14 VDC	5 (0.1)		2		4	4	3	
30 VDC	4 (0.1)		2		3	3	3	
125 VDC	0.4		0.05		0.4	0.4	0.05	
250 VDC	0.2		0.03		0.2	0.2	0.03	

注：带弹簧系列产品，操作体的使用范围为从弹簧的前端到弹簧全长的 1/3 以内。
Note: Product with spring, its usable range of operating part is within one third of the whole spring length from the front end of spring.

规格 Specifications

额定值 Rating	2A 250VAC
操作速度 Operating speed	1mm~1m/s(摆杆型 Swing rod type) 0.1mm~0.5m/s(柱塞型 Plunger type)
动作频率 Operating frequency	电气：30 次 / 分 Electrical:30 operations/min.
接点电阻 Contact resistance	25mΩ 以下 (初始值) 25mΩ max.(initial)
绝缘电阻 Insulation resistance	100mΩ 以上 (在 500VDC 以下) 100mΩ min.(at 500VDC)
电介强度 Dielectric strength	不连续端子间：1000VAC, 50/60Hz, 持续 1 分钟 1000VAC, 50/60 Hz for 1 minute between terminals of the same polarity 端子和接地之间：1500VAC, 50/60Hz, 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute between current-carrying and non-current-carrying metal parts 端子和无载电流金属零件之间：1500VAC, 50/60Hz, 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute between each terminal and ground
振动 Vibration Frequency	10-55Hz, 1.5mm 双振幅 10 to 55Hz, 1.5mm double amplitude
冲击 Shock	机械耐久：1000mm/s ² 以上 (约 100G 以上) 误动作耐久：500mm/s ² 以上 (约 50G 以上) Mechanical: Approx. 1000m/s ² (Approx. 100G'S) Electrical: Approx. 500m/s ² (Approx. 50G'S)
使用温度 Ambient temperature	-20~+70 ℃ (没有结冰) Using: -20~+70 ℃ (With no icing)
湿度 Humidity	< 95% RH
电气寿命 Electrical life	20 万次以上 200,000 operations/min.
重量 Weight	约 360g(电缆线长 3m) 约 540g(电缆线长 5m) Approx. 360g(cable length 3m) Approx. 540g(cable length 5m)
防水等级 Protection level	IP67

动作特性 Operating Characteristics

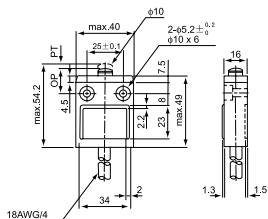
型号 Model		CZ-3	CZ-3101	CZ-3102	CZ-3103	CZ-3104 (3107/3108)	CZ-3110	CZ-3111	CZ-3112	CZ-3113	CZ-3169 (3166/3167/3168)
操作力 Operating Force	OF(最大)(Max.)	11.77N	11.77N	11.77N	11.77N	5.69N	11.77N	17.65N	17.65N	17.65N	1.47N
回弹力 Release Force	RF(最小)(Min.)	4.41N	4.41N	4.41N	4.41N	1.47N	4.41N	4.41N	4.41N	4.41N	-
预行程 Pre-Travel	PT(最大)(Max.)	1.8mm	1.8mm	1.8mm	1.8mm	25	1.8mm	1.8mm	1.8mm	1.8mm	15°
过行程 Over Travel	OT(最小)(Min.)	3mm	3mm	3mm	3mm	40	3mm	3mm	3mm	3mm	-
行程移动 分辨率 Movement Differential	MD(最大)(Max.)	0.2mm	0.2mm	0.2mm	0.2mm	3	0.2mm	0.2mm	0.2mm	0.2mm	-
动作位置 Operating Position	OP(mm.)	15.7 ± 1mm	28.5 ± 1mm	28.5 ± 1mm	28.5 ± 1mm	-	28.5 ± 1mm	24.9 ± 1mm	34.3 ± 1mm	34.3 ± 1mm	-

CZ-3

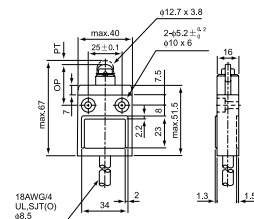
立式限位开关

Vertical Limit Switch

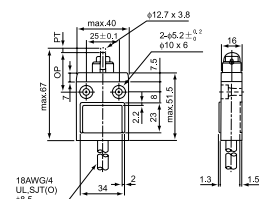
CZ-3101



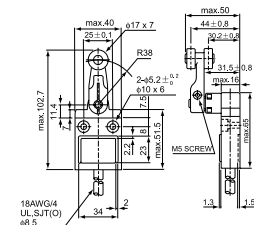
CZ-3102



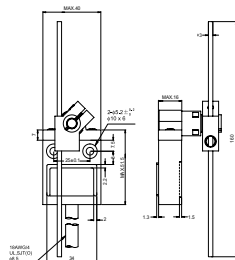
CZ-3103



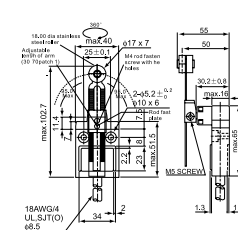
CZ-3104



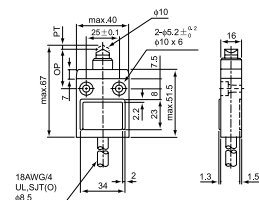
CZ-3107



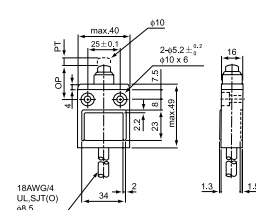
CZ-3108



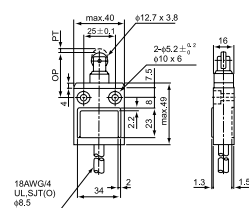
CZ-3110



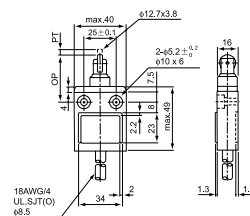
CZ-3111



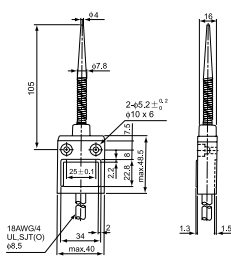
CZ-3112



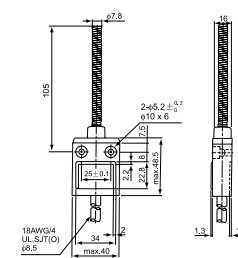
CZ-3113

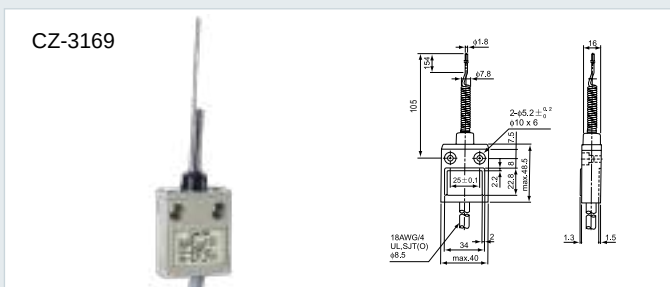


CZ-3166



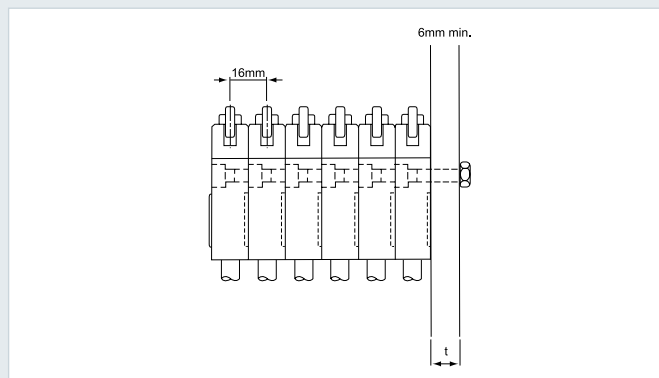
CZ-3167





多连接使用的场合 Quantity Mounted Using Attention

需连接多组使用的场合时，最多可连接 6 组开关，连接时，开关表面之凹凸槽相互配合，另板厚 t 之尺寸应在 6mm 以上为适当。
A maximum of six switches may be mounted together as a switch bank.
During the installation, the convex part of the switch back. The mounting panel shall be 6mm or thicker.



请依下表所示选择最适当之旋转扭力，施行锁紧作业，以避免伤害开关本体。

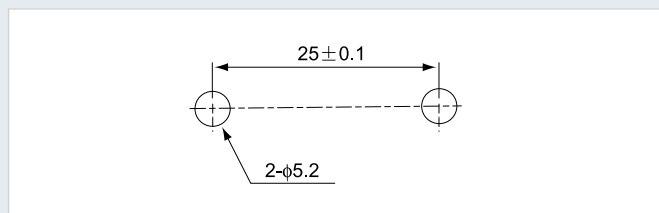
Recommended tightening torque according to the follwing form.

编号 Model	螺丝尺寸 Screw type	最适当之旋转扭力 Torque
1	M5 六角孔螺栓之固定螺丝 M5 fastening screws	43.4~52lb.in (50~60kgf.cm)
2	头部 M3.5 之安装螺丝 M3.5 installing screws	6.9~7.9lb.in (8~9kgf.cm)



安装板发生翘曲或凸起之状态，会造成安装上之不良，安装板请经筛选确认后，再予以使用。

Mount the switch body to a rigid mounting panel using two M5 screws.



CLS 立式限位开关 (经济型)

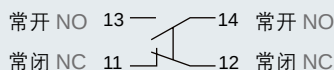
Vertical Limit Switch(Economical)



特点 Features

- 双回路型限位开关
 - 塑料经济型限位开关
 - 体积小, 可防水、防油
 - 内藏触点座有双簧片机构, 机械寿命更长
 - 具有较大的过行程
 - 引动器种类多, 方便使用
- Double circuit type of limit switch
 - Economic plastic type of limit switch
 - Small size, water-proof and oil-proof construction
 - Built-in contact box has double-spring and long mechanical life
 - Smooth operation with larger over travel distance
 - Various actuators for different applications

接点型式 Contact Form



额定值 Ratings

额定电压 Rated Voltage	非电感性负载 Noninductive Load (A)				电感性负载 Inductive Load (A)			
	电阻性负载 Resistance Load		灯泡负载 Lamp Load		电感性负载 Inductive Load		马达负载 Motor Load	
	NC	NO	NC	NO	NC	NO	NC	NO
125VAC	5	5	1.5	0.7	3	3	2	1
250VAC	5	5	1	0.5	3	3	1.5	0.8
8VDC	5	5	3	3	5	4	3	3
14VDC	5	5	3	3	4	4	3	3
30VDC	5	5	3	3	4	4	3	3
125VDC	0.4	0.4						
250VDC	0.2	0.2						
突入电流 Inrush Current	N.C.:24A 以下、N.O.:12A 以下 N.C.: below 24A, N.O.: below 12A							

- 注: 1、电感性负载之功率因素在 0.4 以上 (AC)。时间常数在 7msec 以下 (DC)。
2、灯泡负载之突入电流为稳定状态电流之 10 倍。马达负载之突入电流为稳定状态电流之 6 倍。
3、带弹簧系列产品, 操作体的使用范围为从弹簧的前端到弹簧全长的 1/3 以内。

NOTES: 1. Inductive load has a power factor of 0.4 min.(AC) and a time constant of 7 msec. max.(DC).
2. Lamp load has an inrush current of 10 times the steady-state current, while motor load has an inrush current of 6 times the steady-state current.
3. Product with spring, its usable range of operating part is within one third of the whole spring length from the front end of spring.

动作特性 Operating Characteristics

型号	Model	CLS	101 301	102/103 302/303	111 311	121/121M 321/321M	127 327	131/131M 331/331M	161 361	171 371	181 381	191 391
操作力	Operating force	OF (最大)(Max.)	700g	700g	700g	500g	700g	500g	100g	100g	100g	500g
回弹力	Release force	RF (最小)(Min.)	200g	200g	200g	100g	200g	100g	40g	40g	40g	100g
预行程	Pre-travel	PT (最大)(Max.)	1.8mm	1.8mm	1.8mm	20°	1.8mm	20°	30mm	30mm	30mm	20°
触发位置	Tripping position	TP ± 10%	2.0mm	2.0mm	2.0mm	22.5°	2.0mm	22.5°	22.5°	22.5°	22.5°	22.5°
行程移动分辨率	Movement differential	MD(最大)(Max.)	1.2mm	1.2mm	1.2mm	10°	1.2mm	10°	14°	14°	14°	10°
过行程	Over travel	OT (最小)(Min.)	3.7mm	3.7mm	3.7mm	75°	3.7mm	75°	20mm	20mm	20mm	75°
总行程	Total travel	TT (最小)(Min.)	5.5mm	5.5mm	5.5mm	95°	5.5mm	95°	50mm	50mm	50mm	95°
摇臂转动分角度	Rotary indexing					22.5°		22.5°				22.5°

规格 Specifications

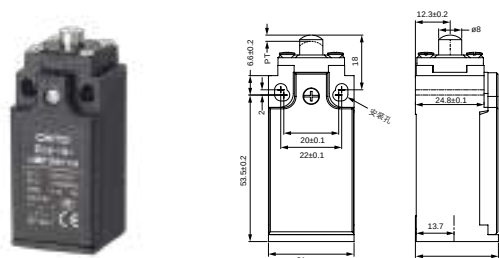
操作速度 Operation speed	5mm 至 0.5m/s 5mm-0.5m/s
动作频率 Operating frequency	电气:30 次 / 分 Electrical: 30 operations/min
接点电阻 Contact resistance	25mΩ 以下 (初期) 25mΩ max. (initial value)
绝缘电阻 Insulation resistance	100mΩ 以上 (在 500VDC 下) 100mΩ min. (below 500VDC)
电介强度 Dielectric strength	非连续端子间 1,000VAC, 50/60Hz 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute between current-carrying and non-current-carrying metal parts 载电流与无载电流零件间 1,500VAC, 50/60Hz 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute between current-carrying and non-current-carrying metal parts 端子和接地之间 1,500VAC, 50/60Hz 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute between each terminal and ground
振动 Vibration	10 至 55Hz, 1.5mm 双振幅 10-55Hz, 1.5mm double amplitude
冲击 Shock	机械耐久: 1,000m/Sec ² (约 100G' S) 误动作耐久: 300m/Sec ² (约 30G' S) Mechanical durable: 1, 000m/Sec ² (about 100G'S) Malfunction: 300m/Sec ² (about 30G'S)
周围温度 Ambient temperature	使用时: -20~+70°C (没有结冰) Using: -20~+70°C (With no icing)
湿度 Humidity	95%RH 以下 <95% RH
电气寿命 Electrical life	300,000 次以上 300,000 operations above
保护构造 Protection level	IP66

注: 导管连接器尺寸常规默认为 M20x1.5; 导管连接器尺寸 PG13.5, 型号加 (-P), 例: CLS-103-P。

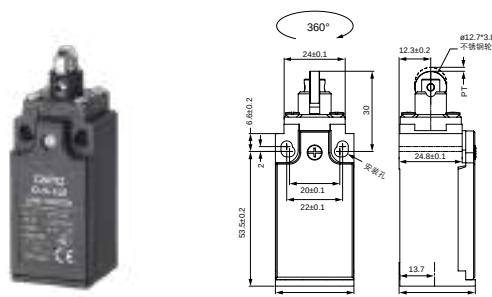
NOTES: The default size of conduit connector is M20x1.5, outfitting cable connector. Conduit connector size is PG13.5, with product model number plus (-P), example:CLS-103-P.

外观和尺寸 Appearance and Dimension

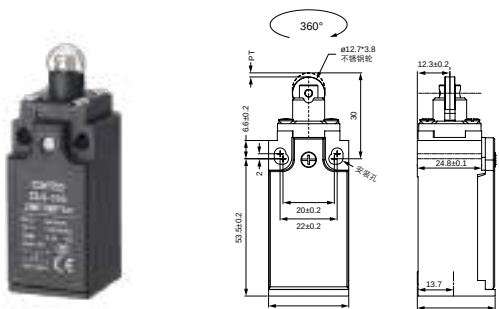
CLS-101



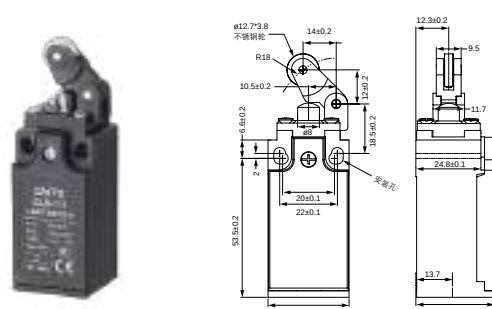
CLS-102



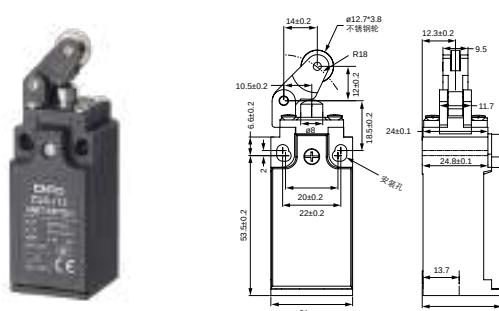
CLS-103



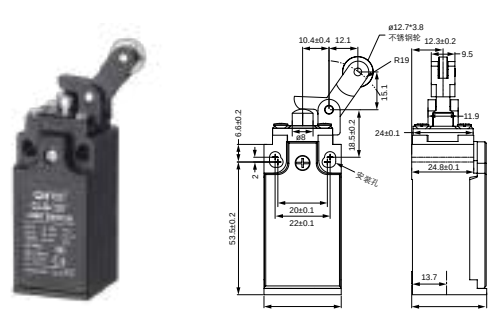
CLS-111



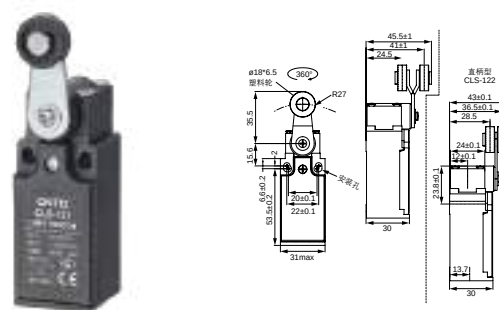
CLS-112



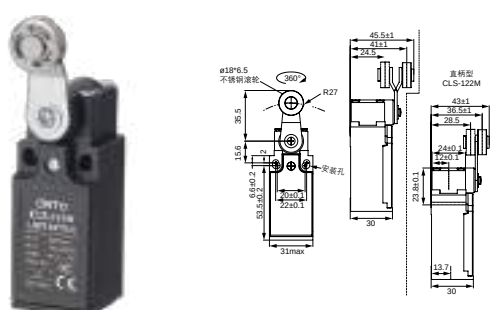
CLS-127



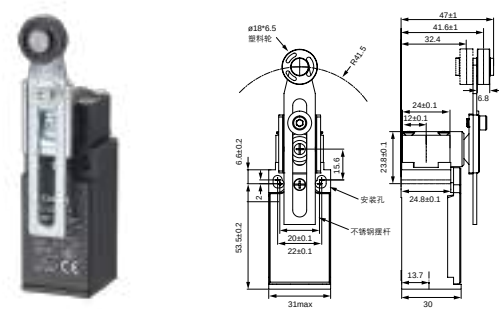
CLS-121



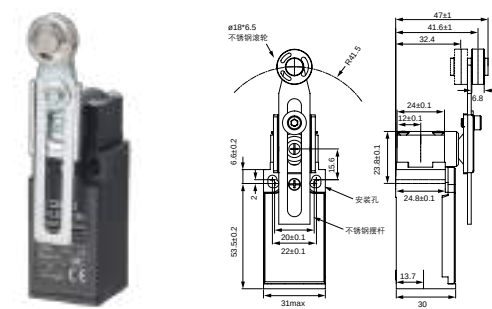
CLS-121M



CLS-131



CLS-131M



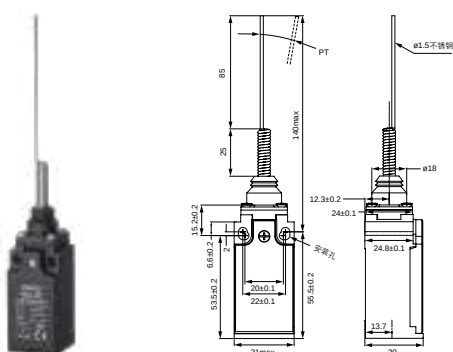
CLS-1

立式限位开关 (经济型)

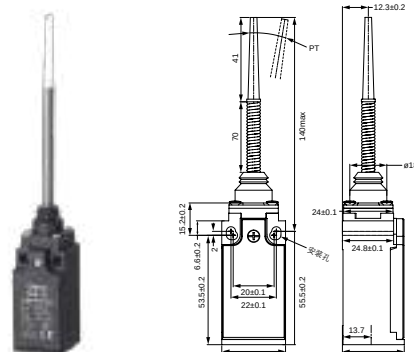
Vertical Limit Switch(Economical)

外观和尺寸 Appearance and Dimension

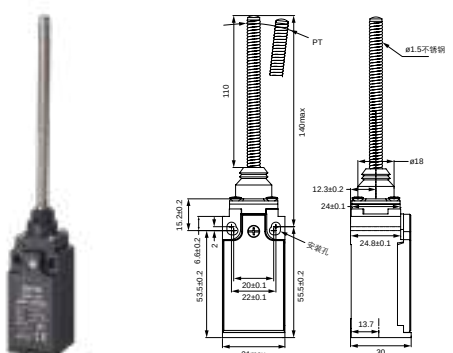
CLS-161



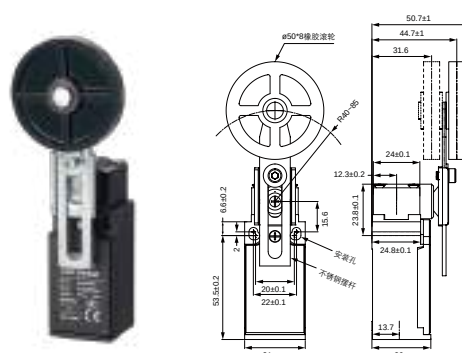
CLS-171



CLS-181



CLS-191

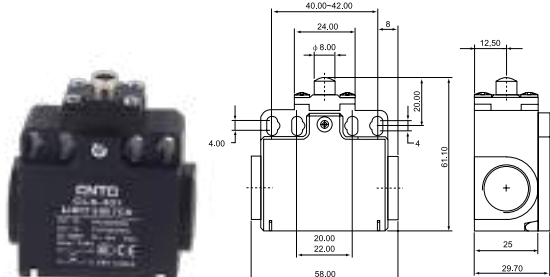


CLS-3

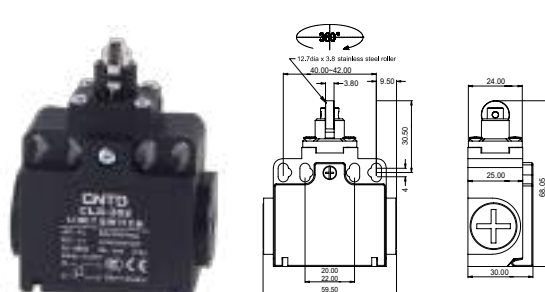
立式限位开关 (经济型)
Vertical Limit Switch(Economical)

外观和尺寸 Appearance and Dimension

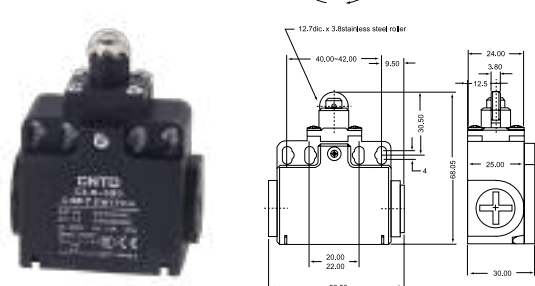
CLS-301



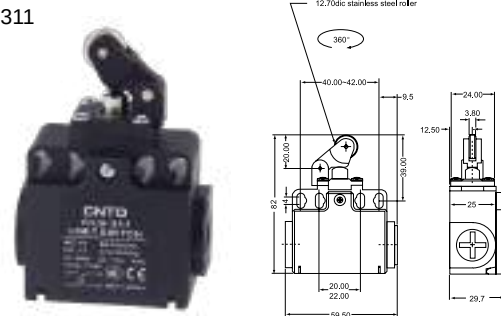
CLS-302



CLS-303

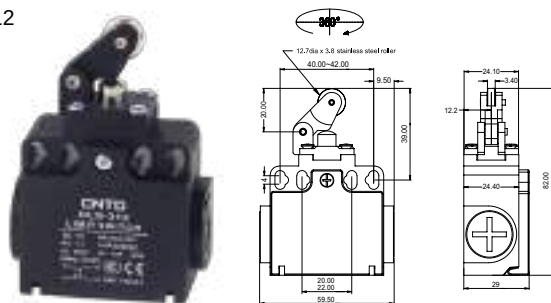


CLS-311

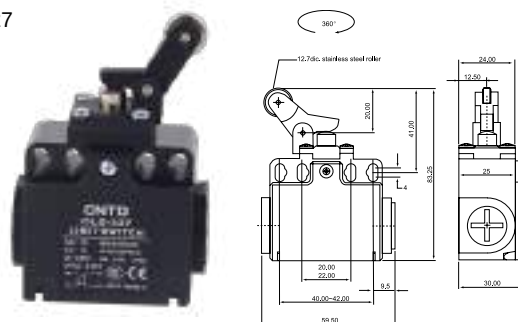


外观和尺寸 Appearance and Dimension

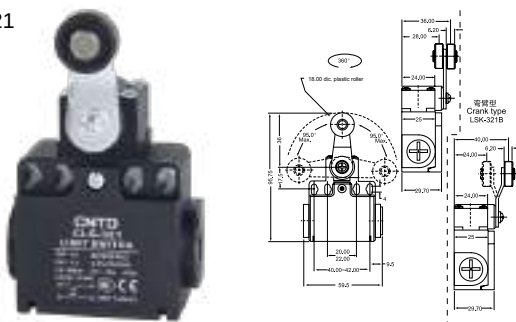
CLS-312



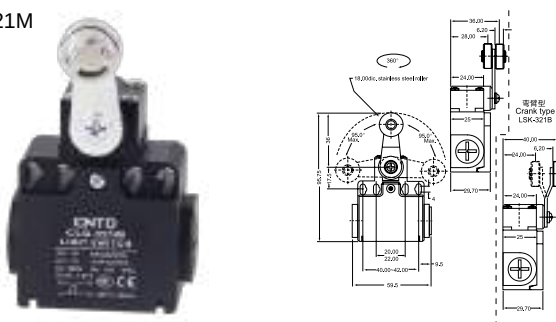
CLS-327



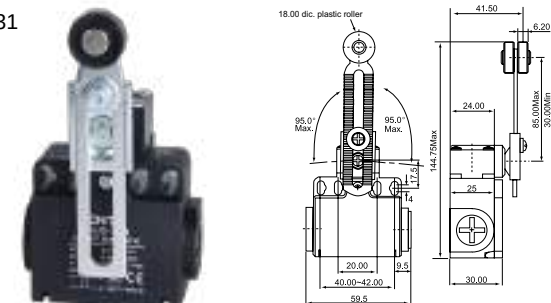
CLS-321



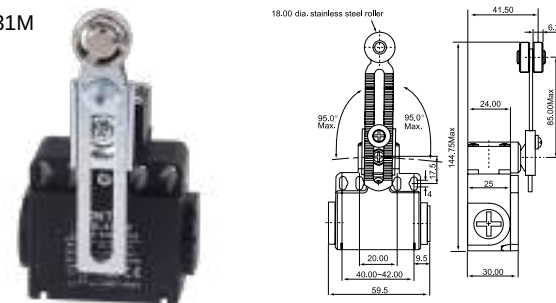
CLS-321M



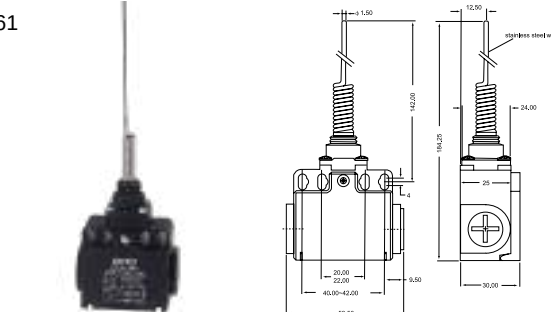
CLS-331



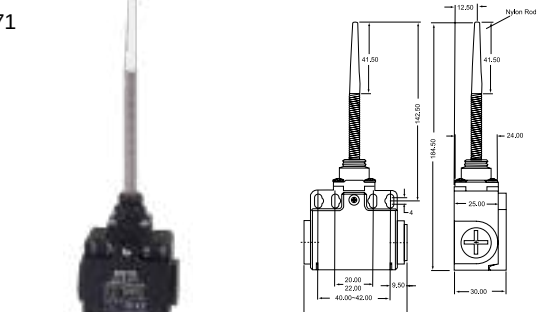
CLS-331M



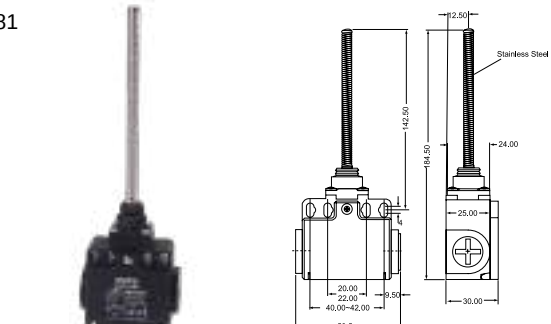
CLS-361



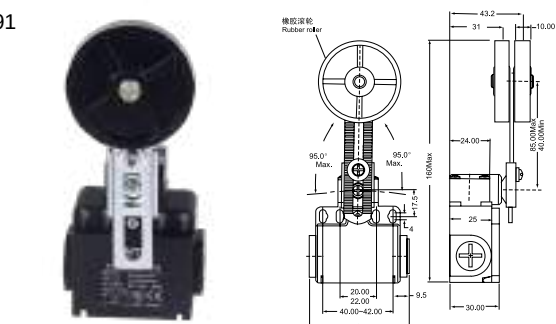
CLS-371



CLS-381



CLS-391



C4N 立式安全限位开关

Vertical Safety Limit Switch



型号说明 Model Number Structure

C4N — 4 1 2 2

① ② ③

项目 Item	代号 Code	说明 Description
① 导管 / 连接器尺寸 Conduit / connector size	1	Pg13.5 (1 导管型) Pg13.5 (1 conduit type)
	4	M20 (1 导管型) M20 (1 conduit type)
	5	Pg13.5 (2 导管型) Pg13.5 (2 conduits type)
	8	M20 (2 导管型) M20 (2 conduits type)
② 内藏开关 Built-in switch	1	1NC/1NO (速动型) 1NC/1NO (quick-action type)
	2	2NC (速动型) 2NC (quick-action type)
	A	1NC/1NO (慢动型) 1NC/1NO (slow-action type)
	B	2NC (慢动型) 2NC (slow-action type)
③ 头部及传动杆 Head and driving rod	20	滚珠摆杆型 (树脂摆杆, 树脂滚珠) Roller lever (resin lever, resin ball)
	22	滚珠摆杆型 (金属摆杆, 树脂滚珠) Roller lever (metal lever, resin ball)
	25	滚珠摆杆型 (金属摆杆, 金属滚珠) Roller lever (metal lever, metal resin ball)
	2G	可调滚珠摆杆, Form Lock (金属摆杆, 树脂滚珠) Adjustable roller lever, Form Lock (metal lever, resin ball)
	2H	可调滚珠摆杆, Form Lock (金属摆杆, 橡胶滚珠) Adjustable roller lever, Form Lock (metal lever, rubber ball)
	2M	可调滚珠摆杆, Form Lock (金属摆杆, 金属滚珠) Adjustable roller lever, Form Lock (metal lever, metal resin ball)
	31	顶部柱塞型 Top plunger type
	32	顶部柱塞滚珠型 Top plunger ball type
	62	单侧悬臂滚珠型 (水平) Unilateral cantilever ball type (horizontal)
	72	单侧悬臂滚珠型 (垂直) Unilateral cantilever ball type (vertical)
	80	触须型 Whisker type
	87	塑料棒型 Plastic stick type

注：导管连接器尺寸常规默认为 M20x1.5。

NOTE: The default size of conduit connector is M20x1.5.

特点 Features

- 强制断开动作装置 (仅 NC 接点), 可以在发生像接点熔断等故障时断开接点
- 强化顶部密封结构, 以提高密封性能
- 内藏接点座具有速动型: 1NC/1NO、2NC; 慢动型: 1NC/1NO、2NC

- Forced open action device (NC contacts only), to disconnect the contact when the contact has fusing and other failures
- Strengthened top seal structure improves the sealing performance
- Built-in contact holder has fast-action type: 1NC/1NO; Slow-action: 1NC/1NO and 2NC

规格 Specifications

保护等级 Protection level	IP66
寿命 Life	50 万次以上 More than 500,000 times (AC250V 3A, resistive load)
操作速度 Operating speed	1mm-0.5m/s (C4N-4120 型)
动作频率 Operating frequency	电气: 30 次 / 分 Electrical: 30 operations/min
接触电阻 Contact resistance	25mΩ 以下 25 mΩ or less
最小使用负载 Minimum working load	DC5V 1mA 电阻负载 (N 标准参考值) 1mA resistive load below DC5V (N standard reference value)
额定绝缘电压 (Ui) Rated insulation voltage (Ui)	300V
防触电保护等级 Electric shock protection grade	Class II (双重绝缘) Class II (double insulated)
污染度 (使用环境) Pollution degree (Using conditions)	污染度 3 (EN60947-5-1) Pollution degree 3 (EN60947-5-1)
耐电压 Withstand voltage (EN60947-5-1)	同极端子间: 2.5kV Between homopolar terminals: 2.5kV
	异极端子间: 4kV Between heteropolar terminals: 2.5kV
	各端子和非充电金属部件间: 6kV Between terminals and uncharged metal parts: 6kV
绝缘电阻 Insulation resistance	100MΩ 以上 Above 100MΩ
接点间隙 Contact gap	最小 2 × 0.5mm 速动型 最小 2 × 2mm 慢动型 Minimum 2 × 0.5mm quick-action type, Minimum 2 × 2mm slow-action type
振动 Vibration	误动作 Malfunction 10 ~ 55Hz 0.75mm 单振幅 10 ~ 55Hz 0.75mm single amplitude
冲击 Impact	耐久 Duration 误动作 Malfunction 1,000m/s ² 300m/s ²
环境温度 Ambient temperature	使用时: -20~+70℃ (没有结冰) Using: -20~+70℃ (With no icing)
环境湿度 Ambient humidity	95%RH 以下 Less than 95% RH
质量 Weight	约 82g (C4N-1120) About 82g (D4N-1120) 约 99g (C4N-5120) About 99g (D4N-5120)

注 1. 上述值为初始值。

注 2. 一旦接点连接标准负载后, 就不可用于连接更小容量的负载。否则可能导致接点表面粗糙, 从而失去接触可靠性。

*1. 保护等级是根据 (EN60947-5-1) 规格的测试法得出的。使用前务必在实际使用的环境、条件下确认其密封性。开关盒本体具有防尘、防油构造, 但应尽可能保持头部在没有碎屑粉尘、油污、化学品的场所进行使用。否则可能导致过早磨损、损坏或故障。

*2. 耐久性的条件是使用环境温度 5℃ ~ 35℃、使用环境湿度 40% ~ 70% RH。其他详细条件请另行查询。

*3. 使用环境温度为 35℃ 以上时, 禁止使用 2 回路以上的 3A AC250V 负载。

*4. 这个值会因为开关频率、环境条件、可靠性等级等因素的影响而不同。请事先在实际负载上进行确认。

Note 1. The above values are initial values.

Note 2. Once the contact is connected to a standard load, it can not be used to connect a smaller load. If so, the contact may result in rough surface, thus losing contact reliability.

*1. The protection level is gotten based on test method of (EN60947-5-1). Please make sure its sealing under actual environmental conditions before use. The switch box has dust and oil resistance structure, but it should be used in places without dust, oil and chemicals. Otherwise it may lead to premature wear, damage or malfunction.

*2. The durability is for ambient temperature of 5℃ ~ 35℃ and humidity of 40% to 70% RH. For additional details, please contact us.

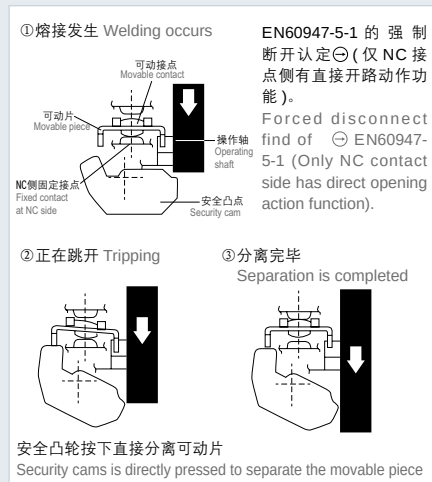
*3. When the ambient temperature is above 35℃, more than 2 circuits 3A 250VAC loads are prohibited.

*4. The values will vary with different switching frequency, environmental conditions, reliability level and other factors. Please confirm on the actual load in advance.

强制断开构造 Forced Disconnecting Mechanism

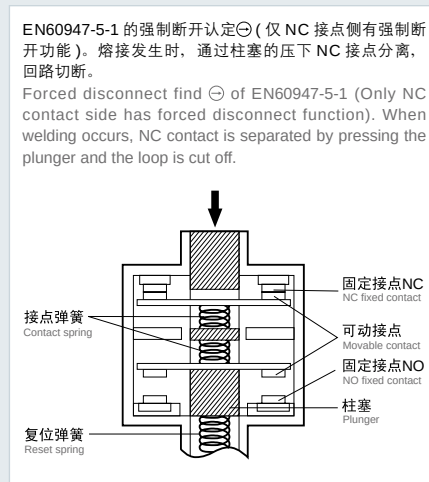
1NC、1NO 接点 (速动型)

1NC and 1NO contacts (quick-action type)



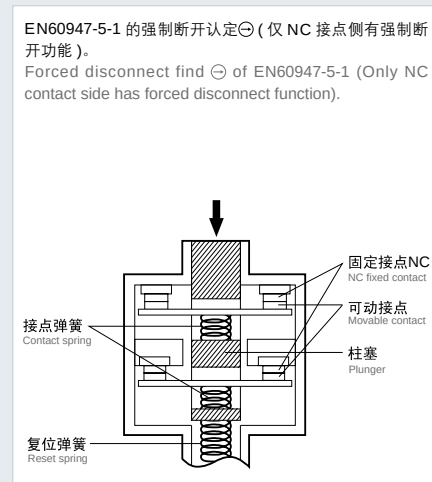
1NC、1NO 接点 (慢动型)

1NC and 1NO contacts (slow-action type)



2NC 接点 (慢动型)

2NC contacts (slow-action type)



接点形式 Contact Form

型号 Model	接点 Contact	接点形式 Contact form	动作模式 Operation mode	说明 Explanation
C4N-□1□	1NC/1NO (速动型) 1NC/1NO (Quick-action type)		13-14 31-32 行程 Travel → ■ 导通 Conductive	仅 NC 接点 (31-32) 具有强制断开功能 (⊖)。 Only NC contact (31-32) has forced disconnect function (⊖)。 接点 (13-14) 和 (31-32) 可作异极使用。 Contacts (13-14) and (31-32) can be used as heteropoles.
C4N-□2□	2NC (速动型) 2NC (Quick-action type)		11-12 31-32 行程 Travel → ■ 导通 Conductive	仅 NC 接点 (11-12、31-32) 具有强制断开功能 (⊖)。 Only NC contact (11-12、31-32) has forced disconnect function (⊖)。 接点 (11-12) 和 (31-32) 可作异极使用。 Contacts (11-12) and (31-32) can be used as heteropoles.
C4N-□A□	1NC/1NO (慢动型) 1NC/1NO (Slow-action type)		11-12 33-34 行程 Travel → ■ 导通 Conductive	仅 NC 接点 (11-12) 具有强制断开功能 (⊖)。 Only NC contact (11-12) has forced disconnect function (⊖)。 接点 (11-12) 和 (33-34) 可作异极使用。 Contacts (11-12) and (33-34) can be used as heteropoles.
C4N-□B□	2NC (慢动型) 2NC (Slow-action type)		11-12 31-32 行程 Travel → ■ 导通 Conductive	仅 NC 接点 (11-12、31-32) 具有强制断开功能 (⊖)。 Only NC contact (11-12、31-32) has forced disconnect function (⊖)。 接点 (11-12) 和 (31-32) 可作异极使用。 Contacts (11-12) and (31-32) can be used as heteropoles.

动作特性 Operating Characteristics

速动型 (1NC/1NO)(2NC)、慢动型 (2NC)

Quick-action type (1NC/1NO)(2NC), slow-action type (2NC)

型号 Model		C4N-□120	C4N-□122	C4N-□125	C4N-□126	C4N-□131	C4N-□132	C4N-□162	C4N-□172	C4N-□12H	C4N-□12G	C4N-□□80	C4N-□□87
动作特性		C4N-□220	C4N-□222	C4N-□225	C4N-□226	C4N-□231	C4N-□232	C4N-□262	C4N-□272	C4N-□22H	C4N-□22G		
Action characteristics		C4N-□B20	C4N-□B22	C4N-□B25	C4N-□B26	C4N-□B31	C4N-□B32	C4N-□B62	C4N-□B72	C4N-□B2H	C4N-□B2G		
动作力 Action force	OF 最大 Max.	5.0N				6.5N	6.5N	5.0N	5.0N	4.5N	1.5N	1.5N	
回复力 Restore force	RF 最小 Min.	0.5N				1.5N	1.5N	0.8N	0.8N	0.4N			
预行程 Pretravel	PT	18~27°				2mm	2mm	4mm	4mm	18 ~ 27°	15°	15°	
过行程 Overtravel	OT 最小 Min.	40°				4mm	4mm	5mm	5mm	40°			
响应差的行程 Poor response travel	MD 最大 Max.*1	14°				1mm	1mm	1.5mm	1.5mm	14°			
动作位置 Action position	OP	—				18.2 ± 0.5mm	28.6 ± 0.8mm	37 ± 0.8mm	27 ± 0.8mm	—			
总行程 Total travel	TT *2	(80°)				(6mm)	(6mm)	(9mm)	(9mm)	(80°)			
强制断开预行程 Forced disconnected pretravel	DOT 最小 Min.*3	50°				3.2mm	3.2mm	5.8mm	4.8mm	50°			
强制断开力 Forced disconnected force	DOF 最小 Min.*3	20N				20N	20N	20N	20N	20N			

注 2NC 接点的闭路·开路动作的同时性会有参差, 使用时请注意确认。

*1. 仅限速动型。

*2. 为参考值。

*3. 仅限慢动型。为了安全使用, 请确保所有值在最大或最小范围内。

*4. 为摆杆长度 32 mm 时的特性。

Note The simultaneity of ON / OFF operation of 2NC contacts have difference, please make sure before using it.

*1. Only for quick-action type.

*2. Reference values.

*3. Only for slow-action type. For safe use, please make sure that all values are within the range of maximum or minimum.

*4. The property value when length of lever is 32mm.

動作特性 Operating Characteristics

- 慢动型 (1NC/1NO)

Slow-action type (1NC/1NO)

型号 Model			C4N- □ A20	C4N- □ A22	C4N- □ A25	C4N- □ A26	C4N- □ A31	C4N- □ A32	C4N- □ A62	C4N- □ A72	C4N- □ A2H	C4N- □ A2G *8
动作特性 Action characteristics												
动作力 Action force	OF	最大 Max.	5.0N				6.5N	6.5N	5.0N	5.0N	4.5N	
回复力 Restore force	RF	最小 Min.	0.5N				1.5N	1.5N	0.8N	0.8N	0.4N	
预行程 Pretravel	PT	*1	18 ~ 27°				2mm	2mm	4mm	4mm	18 ~ 27°	
	PT	(2nd)*2	(44°)				(2.9mm)	(2.9mm)	(5.2mm)	(4.3mm)	(44°)	
	PT	*3	27.5 ~ 36.5°				2.8mm	2.8mm	4mm	4mm	27.5 ~ 36.5°	
	PT	(2nd)*4	(18°)				(1mm)	(1mm)	(1.5mm)	(1.5mm)	(18°)	
过行程 Overtravel	OT	最小 Min.	40°				4mm	4mm	5mm	5mm	40°	
动作位置 Action position	OP		—				18.2 ± 0.5mm	28.6 ± 0.8mm	37 ± 0.8mm	27 ± 0.8mm	—	
	OP	*5	—				17.4 ± 0.5mm	28 ± 0.8mm	36 ± 0.8mm	26.1 ± 0.8mm	—	
总行程 Total travel	TT	*6	(80°)				(6mm)	(6mm)	(9mm)	(9mm)	(80°)	
强制断开预行程 Forced disconnected pretravel	DOT	最小 Min.*7	50°				3.2mm	3.2mm	5.8mm	4.8mm	50°	
强制断开力 Forced disconnected force	DOF	最小 Min.*7	20N				20N	20N	20N	20N	20N	

*1. NC contact is open.

*2. NO contact is closed.

*3. Only for MBB type.

*4. It is the reference value of MBB type.

*5. Only for MBB type.

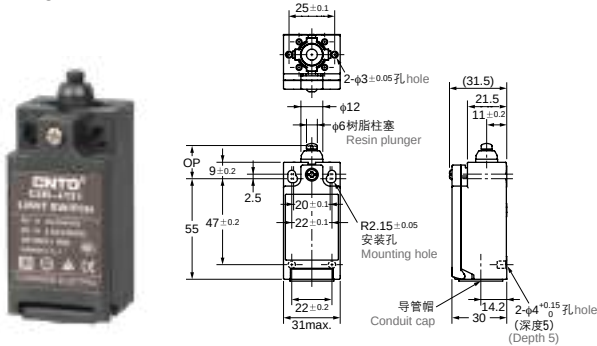
*6. Reference values

*7. For safe use, please make sure that all values are within the range of maximum or minimum.

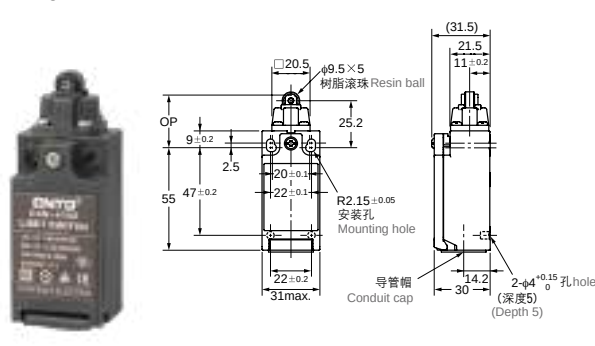
*8. The property value when length of lever is 32mm.

外观和尺寸 Appearance and Dimension

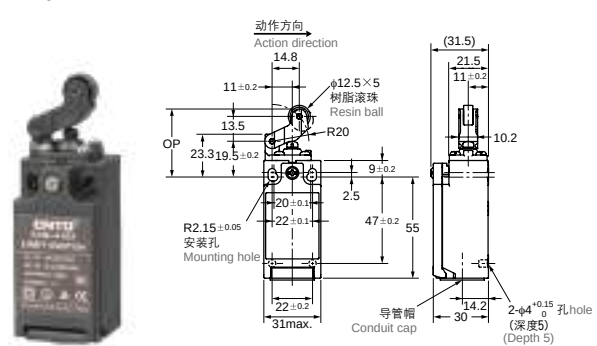
C4N-4131



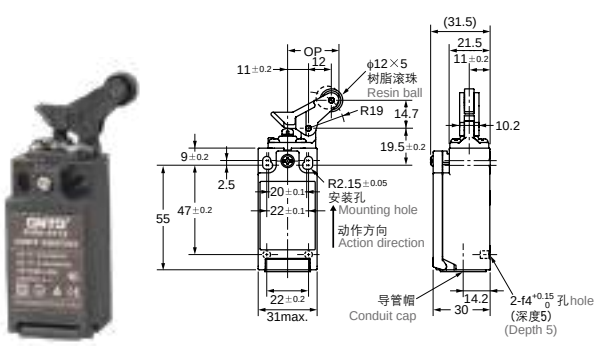
C4N-4132



C4N-4162

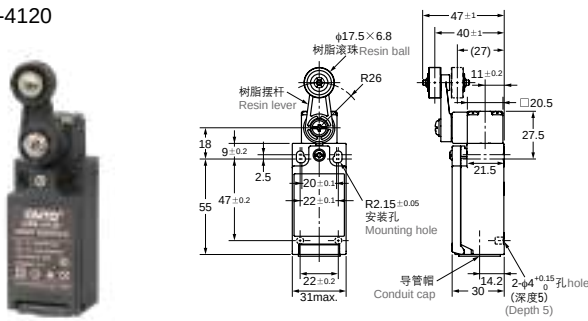


C4N-4172

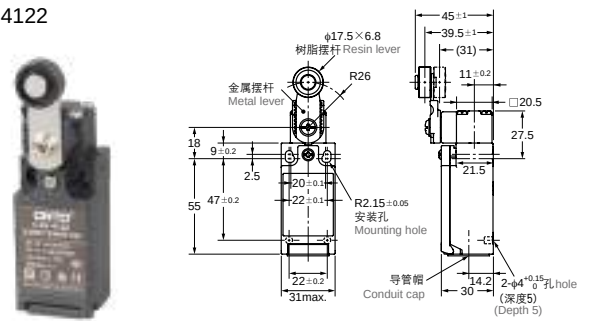


外观和尺寸 Appearance and Dimension

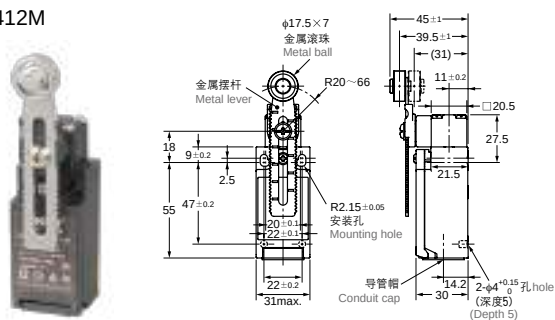
C4N-4120



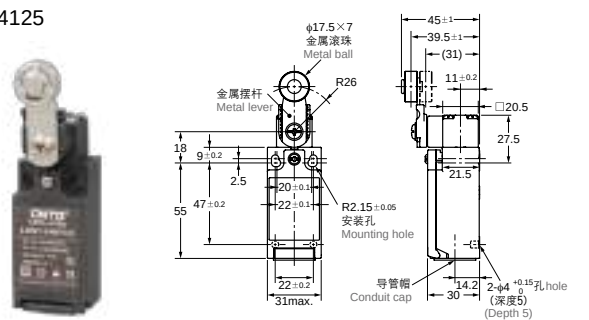
C4N-4122



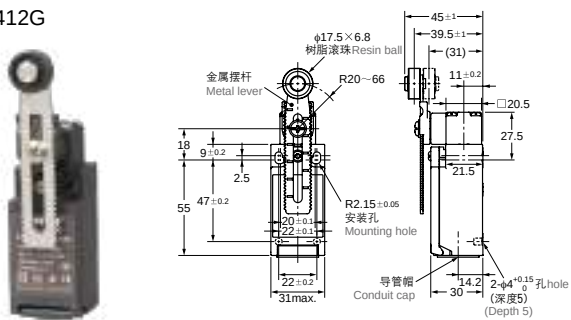
C4N-412M



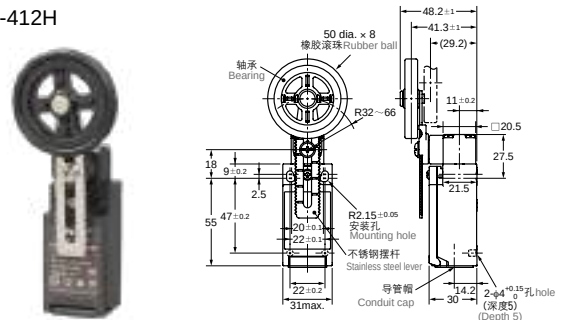
C4N-4125



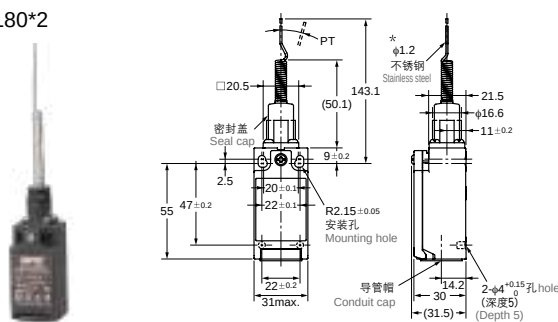
C4N-412G



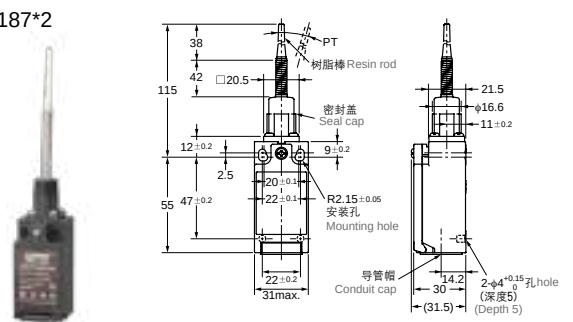
C4N-412H



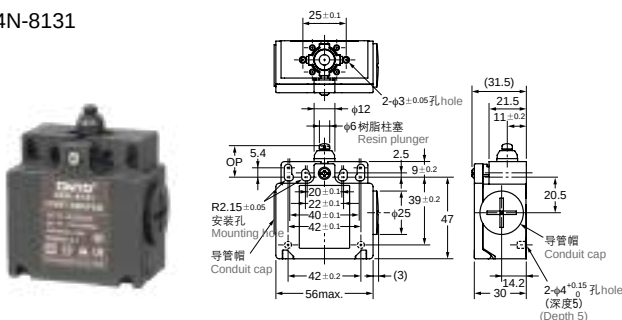
C4N-4180*2



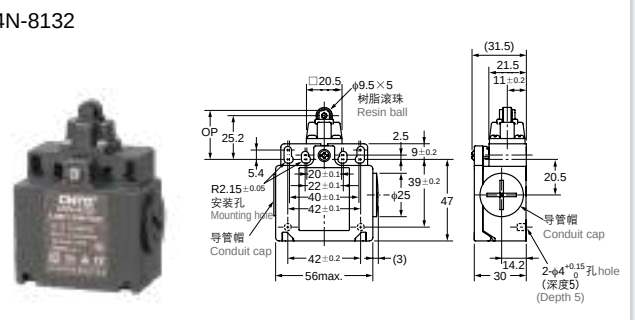
C4N-4187*2



C4N-8131



C4N-8132



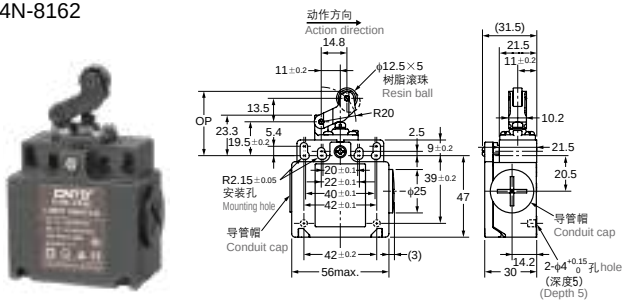
* 不锈钢垫圈和塑料棒的使用范围从前端 35mm 以内，整个动作在 70mm 以内。*2 弹簧式型号仅有 C4N □ 1 □ □、C4N □ 2 □ □、C4N □ B □ □。

* Application of stainless steel washers and plastic stick are within 35mm from the front end, the entire action is within 70mm. *2 spring type models only have C4N □ 1 □ □, C4N □ 2 □ □, and C4N □ B □ □.

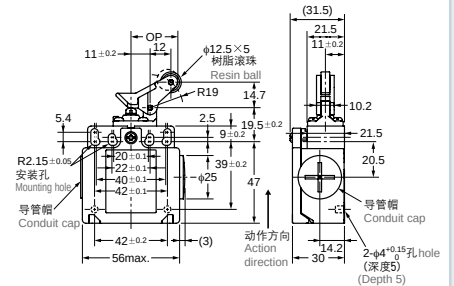
C4N 立式安全限位开关 Vertical Safety Limit Switch

外观和尺寸 Appearance and Dimension

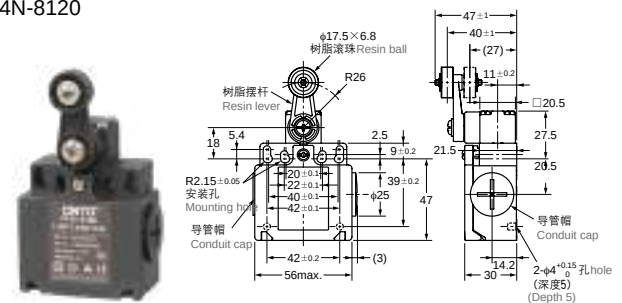
C4N-8162



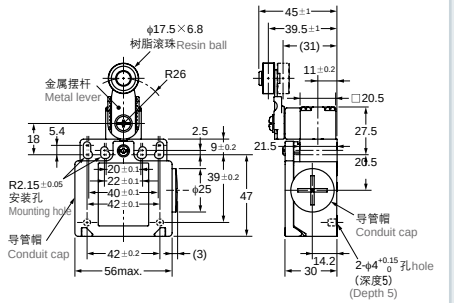
C4N-8172



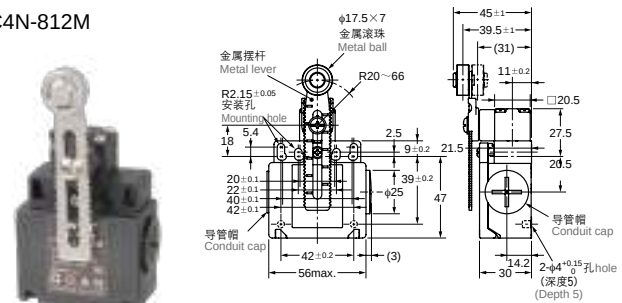
C4N-8120



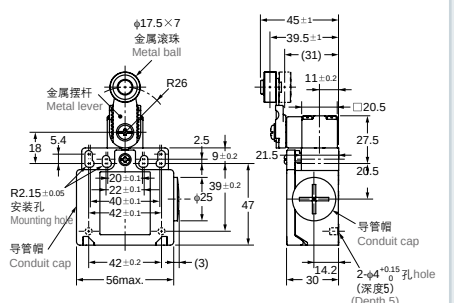
C4N-8122



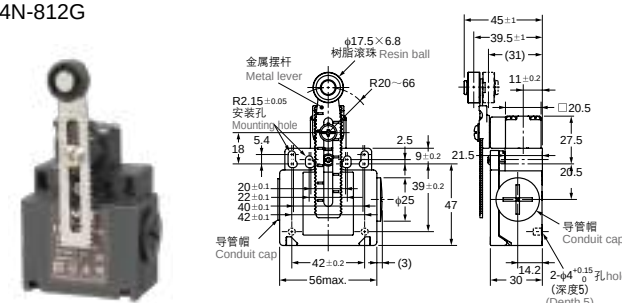
C4N-812M



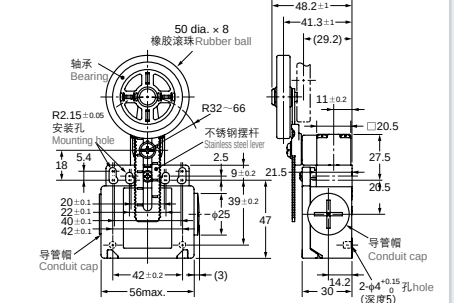
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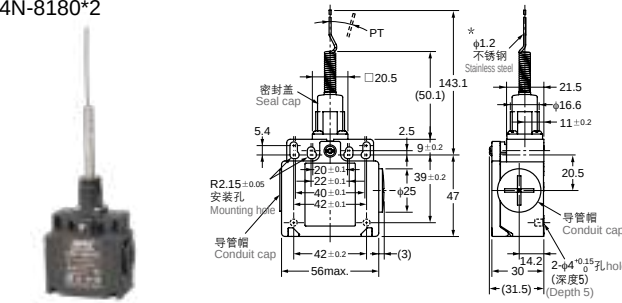
C4N-812G



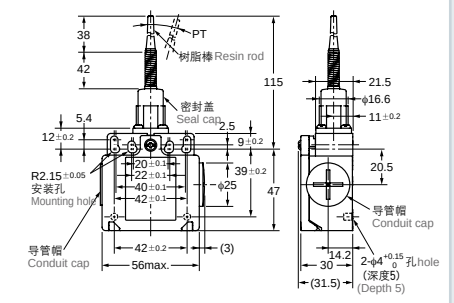
C4N-812H



C4N-8180*2



C4N-8187*2

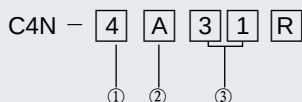


* 不锈钢垫圈和塑料棒的使用范围从前端 35mm 以内，整个动作在 70mm 以内。*2 弹簧式型号仅有 C4N □ 1 □ □、C4N □ 2 □ □、C4N □ B □ □。

* Application of stainless steel washers and plastic stick are within 35mm from the front end, the entire action is within 70mm. *2 spring type models only have C4N □ 1 □ □, C4N □ 2 □ □, and C4N □ B □ □.



型号说明 Model Number Structure



项目 Item	代号 Code	说明 Description
① 导管 / 连接器尺寸 Conduit / connector size	1	Pg13.5 (1 导管型) Pg13.5 (1 conduit type)
	4	M20 (1 导管型) M20 (1 conduit type)
	5	Pg13.5 (2 导管型) Pg13.5 (2 conduits type)
	8	M20 (2 导管型) M20 (2 conduits type)
② 内藏开关 Built-in switch	A	1NC/1NO (慢动型) 1NC/1NO (slow-action type)
	B	2NC (慢动型) 2NC (slow-action type)
③ 头部及传动杆 Head and driving rod	20	滚珠摆杆型 (树脂摆杆, 树脂滚珠) Roller lever (resin lever, resin ball)
	22	滚珠摆杆型 (金属摆杆, 树脂滚珠) Roller lever (metal lever, resin ball)
	25	滚珠摆杆型 (金属摆杆, 金属滚珠) Roller lever (metal lever, metal resin ball)
	2G	可调滚珠摆杆, Form Lock (金属摆杆, 树脂滚珠) Adjustable roller lever, Form Lock (metal lever, resin ball)
	2H	可调滚珠摆杆, Form Lock (金属摆杆, 橡胶滚珠) Adjustable roller lever, Form Lock (metal lever, rubber ball)
	2M	可调滚珠摆杆, Form Lock (金属摆杆, 金属滚珠) Adjustable roller lever, Form Lock (metal lever, metal resin ball)
	31	顶部柱塞型 Top plunger type
	32	顶部柱塞滚珠型 Top plunger ball type
	62	单侧悬臂滚珠型 (水平) Unilateral cantilever ball type (horizontal)
	72	单侧悬臂滚珠型 (垂直) Unilateral cantilever ball type (vertical)

注: 导管连接器尺寸常规默认为 M20x1.5。

NOTE: The default size of conduit connector is M20x1.5.

特点 Features

- 强制断开动作装置 (仅 NC 接点), 可以在发生像接点熔断等故障时断开接点
- 强化顶部密封结构, 以提高密封性能
- 内藏接点座具有慢动型: 1NC/1NO、2NC
- Forced open action device (NC contacts only), to disconnect the contact when the contact has fusing and other failures
- Strengthened top seal structure improves the sealing performance
- Built-in contact holder has slow-action: 1NC /1NO and 2NC

规格 Specifications

保护等级 Protection level	IP66
寿命 Life	30 万次以上 More than 300,000 times
操作速度 Operating speed	1mm-0.5m/s (C4N-4A20R 型)
动作频率 Operating frequency	最大 30 次 /min Max. 30 times/min
接触电阻 Contact resistance	25mΩ 以下 25 mΩ or less
最小使用负载 Minimum working load	DC5V 1mA 电阻负载 (N 标准参考值) 1mA resistive load below DC5V (N standard reference value)
额定绝缘电压 (UI) Rated insulation voltage (UI)	300V
防触电保护等级 Electric shock protection grade	Class II (双重绝缘) Class II (double insulated)
污染度 (使用环境) Pollution degree (Using conditions)	污染度 3 (EN60947-5-1) Pollution degree 3 (EN60947-5-1)
耐电压 Withstand voltage (EN60947-5-1)	同极端子间: 2.5kV Between homopolar terminals: 2.5kV
	异极端子间: 4kV Between heteropolar terminals: 2.5kV
	各端子和非充电金属部件: 6kV Between terminals and uncharged metal parts: 6kV
绝缘电阻 Insulation resistance	100MΩ 以上 Above 100MΩ
接点间隙 Contact gap	最小 2 × 0.5mm 速动型 Minimum 2 × 0.5mm quick-action type,
	最小 2 × 2mm 慢动型 Minimum 2 × 2mm slow-action type
振动 Vibration	误动作 Malfunction 10 ~ 55Hz 0.75mm 单振幅 10 ~ 55Hz 0.75mm single amplitude
冲击 Impact	耐久 Duration 1,000m/s ²
	误动作 Malfunction 300m/s ²
环境温度 Ambient temperature	使用时: -20~+70℃ (没有结冰) Using: -20~+70℃ (With no icing)
环境湿度 Ambient humidity	95%RH 以下 Less than 95% RH
质量 Weight	约 92g (D4N-1A20R) About 92g (D4N-1A20R)

注 1. 上述值为初始值。

注 2. 一旦接点连接标准负载后, 就不可用于连接更小容量的负载。否则可能导致接点表面粗糙, 从而失去接触可靠性。

*1. 保护等级是根据 (EN60947-5-1) 规格的测试法得出的。使用前务必在实际使用的环境、条件下确认其密封性。开关盒本体具有防尘、防油构造, 但应尽可能保持头部在没有碎屑粉尘、油污、化学品的场所进行使用。否则可能导致过早磨损、损坏或故障。

*2. 耐久性的条件是使用环境温度 5℃ ~ 35℃、使用环境湿度 40% ~ 70% RH。其他详细条件请另行查询。

*3. 使用环境温度为 35℃ 以上时, 禁止使用 2 回路以上的 3A AC250V 负载。

*4. 这个值会因为开关频率、环境条件、可靠性等级等因素的影响而不同。请事先在实际负载上进行确认。

Note 1. The above values are initial values.

Note 2. Once the contact is connected to a standard load, it can not be used to connect a smaller load. If so, the contact may result in rough surface, thus losing contact reliability.

*1. The protection level is gotten based on test method of (EN60947-5-1). Please make sure its sealing under actual environmental conditions before use. The switch box has dust and oil resistance structure, but it should be used in places without dust, oil and chemicals. Otherwise it may lead to premature wear, damage or malfunction.

*2. The durability is for ambient temperature of 5℃ ~ 35℃ and humidity of 40% to 70% RH. For additional details, please contact us.

*3. When the ambient temperature is above 35℃, more than 2 circuits 3A 250VAC loads are prohibited.

*4. The values will vary with different switching frequency, environmental conditions, reliability level and other factors. Please confirm on the actual load in advance.

C4N-□R 立式手动复位限位开关 Vertical Manual Reset Safety Limit Switch

强制断开机构 Forced Disconnecting Mechanism

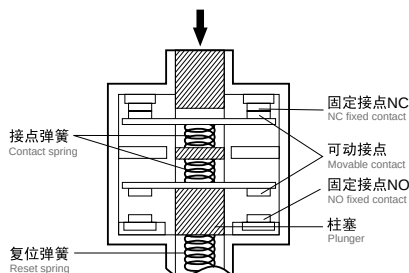
■ 1NC、1NO 接点 (慢动型)

1NC and 1NO contacts (slow-action type)

仅限 NC 接点侧有强制断开构造。
当发生溶着时，通过按下柱塞，可以分离接点，切断回路。(符合 EN60947-5-1 强制断开操作)。

Only NC contact has forced disconnect structure.

When melting occurs, the contact can be isolated by pressing the plunger to cut off the loop. (In accordance with EN60947-5-1 force disconnect operation).



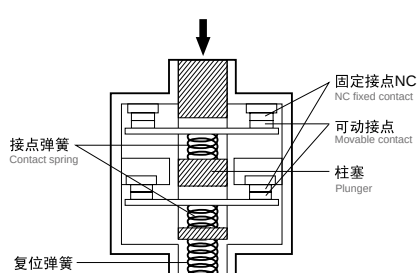
■ 2NC 接点 (慢动型)

2NC contacts (slow-action type)

双侧 NC 接点均具有强制断开构造。

当发生溶着时，通过按下柱塞，可以分离接点，切断回路。(符合 EN60947-5-1 强制断开操作)。

When melting occurs, the contact can be isolated by pressing the plunger to cut off the loop. (In accordance with EN60947-5-1 force disconnect operation).



接点形式 Contact Form

型号 Model	接点 Contact	接点形式 Contact form	动作模式 Operation mode	说明 Explanation
C4N-□A□R	1NC/1NO (慢动型) 1NC/1NO (Slow-action type)			仅 NC 接点 (11-12) 具有强制断开功能 (⊖)。 Only NC contact (11-12) has forced disconnect function (⊖)。 接点 (11-12) 和 (33-34) 可作异极使用。 Contacts (11-12) and (33-34) can be used as heteropoles.
C4N-□B□R	2NC (慢动型) 2NC (Slow-action type)			仅 NC 接点 (11-12、31-32) 具有强制断开功能 (⊖)。 Only NC contact (31-32) has forced disconnect function (⊖)。 接点 (11-12) 和 (31-32) 可作异极使用。 Contacts (11-12) and (31-32) can be used as heteropoles.

动作特性 Operating Characteristics

型号 Model		C4N-□□ 20R	C4N-□□ 22R	C4N-□□ 2GR *2	C4N-□□ 2HR	C4N-□□ 31R	C4N-□□ 32R	C4N-□□ 62R	C4N-□□ 72R
LF	最大 Max.	6.45N	6.45N	5.6N	5.4N	10.8N	10.8N	7.5	7.9N
LT	最大 Max.	55°	55°	55°	55°	4.5mm	4.5mm	7mm	7mm
PT1	*3	18~27°	18~27°	18~27°	18~27°	2mm	2mm	4mm	4mm
PT2	*4	(44°)	(44°)	(44°)	(44°)	(2.9mm)	(2.9mm)	(5.2mm)	(4.3mm)
OP		--	--	--	--	34 ± 0.5mm	44.4 ± 0.8mm	53 ± 0.8mm	27 ± 0.8mm
TT	*5	80°	80°	80°	80°	(6mm)	(6mm)	(9mm)	(9mm)
DOT	最小 Min. *6	50°	50°	50°	50°	3.2mm	3.2mm	5.8mm	5.8mm
DOF	最小 Min. *6	20N		20N	20N	20N	20N	20N	20N

注

*1. 2NC 接点的闭路 / 开路动作的同时性有所参差，使用时请务必确认。

*2. 摆杆长 32mm 时的特性值。

*3. NC 接点为开路 (OFF) 状态时的 PT 值。

*4. NO 接点闭合 (ON) 时的 PT 一般值 (仅限 1NC/1NO 型)。

*5. 参考值。

*6. 强制断路构造的负载和行程值。为保证安全，请务必保持在规定的上限和下限范围内。

Note

*1. The simultaneity of ON / OFF operation of 2NC contacts have difference, please make sure before using it.

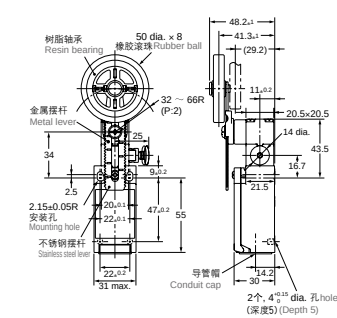
*2. The property value when length of lever is 32mm.

*3. PT value when NC contact is at open (OFF) state.

*4. PT common value when NO contact is at close (ON) state (only for 1NC/1NO types).

*5. Reference values.

*6. Load and travel values of forced disconnect structure. To ensure safety, be sure to remain within the upper and lower range.



C4N-□R

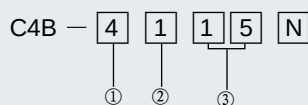
Vertical Manual Reset Safety Limit Switch



特点 Features

- 强制断开动作装置 (仅 NC 接点), 可以在发生像接点熔断等故障时断开接点
- 强化顶部密封结构, 以提高密封性能
- 内藏接点座具有速动型: 1NC/1NO; 慢动型: 1NC/1NO、2NC
- Forced open action device (NC contacts only), to disconnect the contact when the contact has fusing and other failures
- Strengthened top seal structure improves the sealing performance
- Built-in contact holder has fast-action type: 1NC / 1NO; Slow-action: 1NC / 1NO and 2NC

型号说明 Model Number Structure



项目 Item	代号 Code	说明 Description
① 导管 / 连接器尺寸 Conduit / connector size	1	Pg13.5 (1 导管型) Pg13.5 (1 conduit type)
	4	M20 (1 导管型) M20 (1 conduit type)
② 内藏开关 Built-in switch	1	1NC/1NO (速动型) 1NC/1NO (quick-action type)
	5	1NC/1NO (慢动型) 1NC/1NO (slow-action type)
	A	2NC (慢动型) 2NC (slow-action type)
③ 头部及传动杆 Head and driving rod	11	滚珠摆杆型 (树脂摆杆, 树脂滚珠) Roller lever (resin lever, resin ball)
	12	可调滚珠摆杆, Form-Lock (金属摆杆, 金属滚珠) Adjustable roller lever, Form-Lock (metal lever, metal ball)
	15	滚珠摆杆型 (金属滚珠) Roller lever (metal ball)
	16	可调滚珠摆杆, Form-Lock (树脂滚珠) Adjustable roller lever, Form-Lock (resin ball)
	17	可调棒式摆杆, Form-Lock (长条杆) Adjustable stick lever, Form-Lock (long lever)
	18	可调滚珠摆杆, Form Lock (金属摆杆, 橡胶滚珠) Adjustable roller lever, Form Lock (metal lever, rubber ball)
	70	顶滚珠柱塞型 Top ball plunger type
	71	滚珠柱塞型 Ball plunger type
	72	滚珠柱塞型 Ball plunger type
	81	线圈弹簧型 Coil spring type
	87	塑料棒型 Plastic stick type
	86	金属棒型 Metal stick type

注: 导管连接器尺寸常规默认为 M20x1.5。

NOTE: The default size of conduit connector is M20x1.5.

额定值 Ratings

额定电压 (V) Rated voltage (V)	非感性负载 (A) Non-inductive load (A)				感性负载 (A) Inductive load (A)			
	阻性负载 Resistive load		灯负载 Lamp load		感性负载 Inductive load		电动机负载 Motor load	
	NC	NO	NC	NO	NC	NO	NC	NO
AC	125	10	3	1.5	10		5	2.5
	250	10	2	1	10		3	1.5
	400	10	1.5	0.8	3		1.5	0.8
DC	8	10	6	3	10		6	
	14	10	6	3	10		6	
	30	6	4	3	6		4	
	125	0.8	0.2	0.2	0.8		0.2	
	250	0.4	0.1	0.1	0.4		0.1	

注 1. 上述数值表示恒定电流。

注 2. 所谓感性负载, 是功率因数 0.4 以上 (交流)、时间常数 7ms 以下 (直流的负载)。

注 3. 所谓灯负载就是有 10 倍浪涌电流的负载。

注 4. 所谓电动机负载, 就是有 6 倍浪涌电流的负载。

Note1.The above values represent constant current.

2.The so-called inductive load refers to the load with power factor of 0.4 or more (AC) and the time constant below 7ms (DC).

3.The so-called lamp load refers to the load with 10 times of surge current.

4.The so-called motor load is the load with 6 times of surge current.

C4B-□N 立式安全限位开关

Vertical Safety Limit Switch

规格 Specifications

保护等级 Protection level		IP66
寿命 Life	电气 Electrical	50 万次以上 More than 500,000 times
操作速度 Operating speed		1mm~0.5m/s
操作频率 Operating frequency	机械 Mechanical	120 次 /min 120 times/min
	电气 Electrical	30 次 /min 30 times/min
额定频率 Rated frequency		50/60Hz
绝缘电阻 Insulation resistance		同极端子之间、及端子与不带电金属部之间 100MΩ 以上 (DC500V 兆欧表) 100MΩ or more (DC500V Megameter) between homopolars, and between terminals and uncharged metal parts
接触电阻 Contact resistance		25mΩ 以下 (初期值) 5mΩ or less (initial value)
耐电压 Withstand voltage (EN60947-5-1)	同极端子间 : 2.5kV(速动型)/4kV(慢动型) Between homopolar terminals: 2.5kV(quick-action type)/4kV(slow-action type)	
	异极端子间 : 4kV(慢动型) Between heteropolar terminals: 2.5kV(slow-action type)	
	带电金属部之间 : 4kV Between charged metal parts: 4kV	
	各端子与不带电金属部之间 : 6kV Between terminals and uncharged metal parts: 6kV	
额定绝缘电压 (UI) Rated insulation voltage (Ui)		600V(EN60947-5-1)
开闭时逆电压 Reverse voltage when on/off		1500V max (EN60947-5-1)
污染度 (使用环境) Pollution degree (environmental conditions)		污 染 度 3(EN60947-5-1) Pollution degree 3 (EN60947-5-1)
防触电保护等级 Electric shock protection grade		Class I (带接地端子) Class I (with ground terminal)
振动 Vibration	误动作 Malfunction	10 ~ 55Hz 0.75mm 单振幅 10 ~ 55Hz 0.75mm single amplitude
	耐久 Duration	1,000m/s ²
冲击 Impact	误动作 Malfunction	300m/s ²
环境温度 Ambient temperature		使用时: -20~+80℃ (没有结冰) Using: -20~+80℃ (With no icing)
环境湿度 Ambient humidity		95%RH 以下 Less than 95% RH
质量 Weight		约 250g About 250g

注 1. 上述值为初始值。

注 2. 有些型号中可能与上述内容不同, 请另外垂询。

*1. 该保护结构基于标准 (EN69047-5-1) 规定的测试方法, 请根据使用环境、使用条件来事先确认密封性。

*2. 寿命的条件为环境温度 5 ~ 35℃、环境湿度 40 ~ 70%RH 时的数值。

Note 1. The above are initial values.

Note 2. Values of some models may be different from the above, please contact us for details.

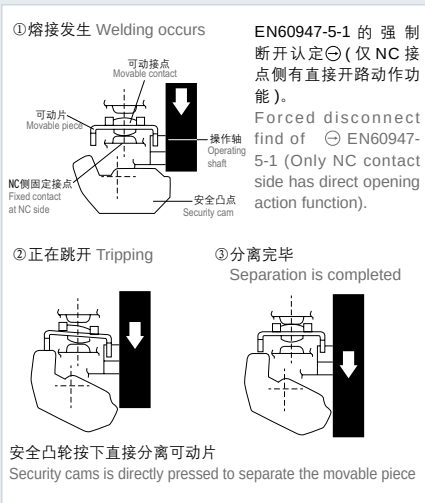
*1. The protection structure is tested based on method predetermined by standard (EN69047-5-1), please confirm the sealing in advance according to the operating environment and conditions.

*2. The conditions of life are the values under the ambient temperature of 5~35℃ and humidity of 40 to 70% RH. For other detailed conditions, please contact us.

强制断开机构 Forced Disconnecting Mechanism

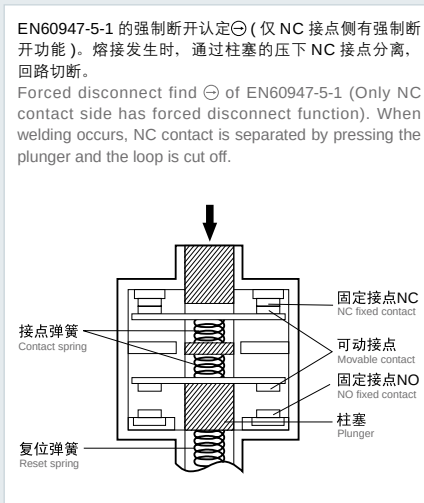
■ 1NC、1NO 接点 (速动型)

1NC and 1NO contacts (quick-action type)



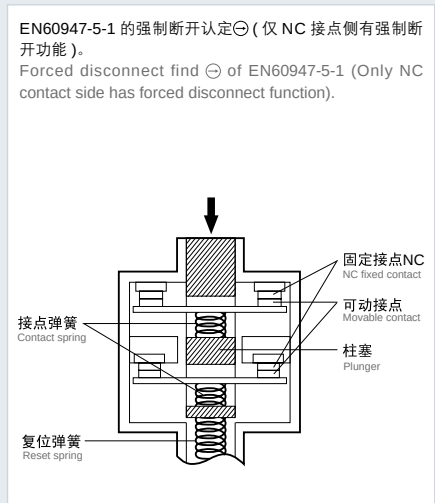
■ 1NC、1NO 接点 (慢动型)

1NC and 1NO contacts (slow-action type)



■ 2NC 接点 (慢动型)

2NC contacts (slow-action type)



接点形式 Contact form

型号 Model	接点 Contact	接点形式 Contact form	动作模式 Operation mode	说明 Explanation
C4B- □ 1 □ N	1NC/1NO (速动型) 1NC/1NO (Quick-action type)		11-12 13-14 	仅 NC 接点 (11-12) 带强制断开功能, 取得认证 (端子 No.11-12、13-14 不可作异极使用) Only NC contact (11-12) has forced disconnect function and got the certification (terminal No.11-12,13-14 can not be used as different heteropoles)
C4B- □ 5 □ N	1NC/1NO (慢动型) 1NC/1NO (Slow-action type)		11-12 23-24 	仅 NC 接点 (11-12) 带强制断开功能, 取得认证 (端子 No.11-12、13-14 不可作异极使用) Only NC contact (11-12) has forced disconnect function and got the certification (terminal No.11-12,13-14 can not be used as different heteropoles)
C4B- □ A □ N	2NC (慢动型) 2NC (Slow-action type)		11-12 21-22 	两个 NC 接点 (11-12、21-22) 带强制断开功能, 取得认证 (端子 No.11-12、21-22 可以作异极使用) Two NC contacts (11-12, 21-22) have forced disconnect function and got the certification (terminal No.11-12,21-22 can be used as different heteropoles)

动作特性 Operating Characteristics

型号 Model			C4B- □ □ 11N	C4B- □ □ 15N	C4B- □ □ 16N *1	C4B- □ □ 17N *2	C4B- □ □ 18N *2	C4B- □ □ 70N	C4B- □ □ 71N	C4B- □ □ 81N	C4B- □ □ 86N	C4B- □ □ 87N
动作特性 Action characteristics												
动作力 Action force	OF	最大 Max.	9.41N	9.41N	9.41N	2.12N	9.41N	18.63N	18.63N	1.47N	1.47N	1.47N
回复力 Restore force	RF	最小 Min.	1.47N	1.47N	1.47N	0.29N	1.47N	1.96N	1.96N			
预行程 Pretravel	PT		21° ± 3°	21° ± 3°	21° ± 3°	21° ± 3°	21° ± 3°	2mm	2mm	15	15	15
	PT	(2nd) *3 *5	(45°)	(45°)	(45°)	(45°)	(45°)	(3mm)	(3mm)			
过行程 Overtravel	OT	最小 Min.	50°	50°	50°	50°	50°	5mm	5mm			
响应差的行程 Poor response travel	MD	最大 Max. *4	12°	12°	12°	12°	12°	1mm	1mm			
强制断开预行程 Forced disconnected pretravel	DOT	最小 Min. *3*6	35°	35°	35°	35°	35°	3.2mm	3.2mm			
		*4*6	55°	55°	55°	55°	55°					
强制断开力 Forced disconnected force	DOF	最小 Min. *6	19.61N	19.61N	19.61N	19.61N	19.61N	49.03N	49.03N			
总行程 Total travel	TT	*5	(75°)	(75°)	(75°)	(75°)	(75°)	(7mm)	(7mm)			
自由位置 Free position	FP	最大 Max.						38mm	51mm			
动作位置 Action position	OP							35 ± 1mm	48 ± 1mm			

注 2NC 接点 ON/OFF 动作的同时性有差异, 使用时请确认。

*1. 摆杆长度为 31.5mm 时的特性值。

*2. 杆长为 140mm 时的特性值。

*3. 仅慢动型。

*4. 仅速动型。

*5. 参考值。

*6. 为了保证安全使用请务必加以确保。

Note The simultaneity of ON / OFF operation of 2NC contacts have difference, please make sure before using it.

*1. The property value when length of lever is 31.5mm.

*2. The property value when length of lever is 140mm.

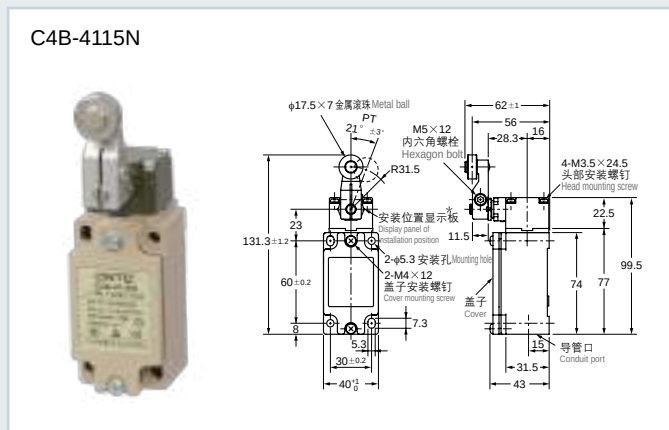
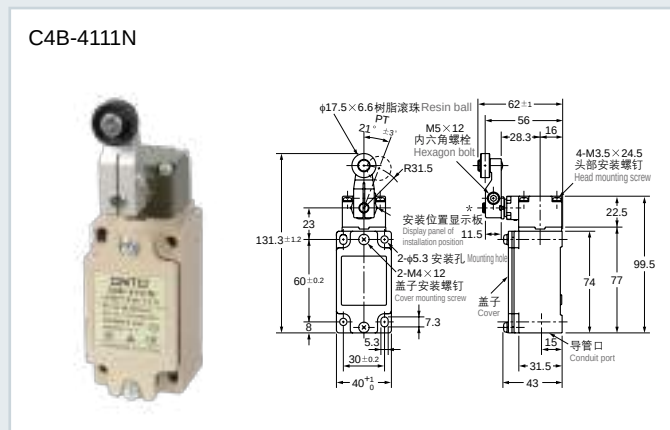
*3. Only for slow-action type.

*4. Only for quick-action type.

*5. Reference values.

*6. Please make sure in order to ensure the safe use.

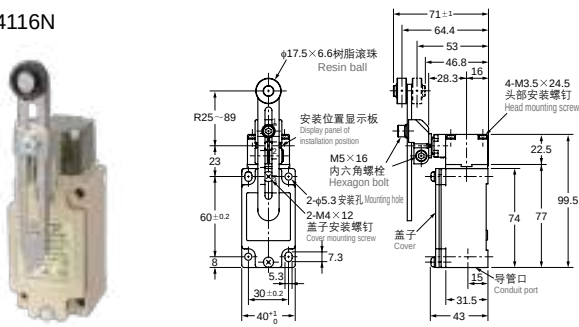
外观和尺寸 Appearance and Dimension



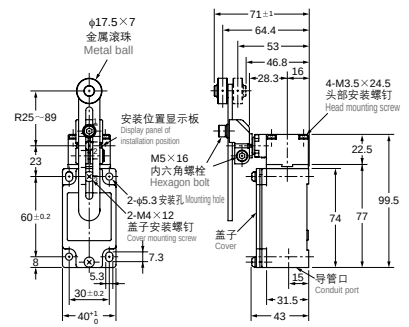
C4B-□N 立式安全限位开关 Vertical Safety Limit Switch

外观和尺寸 Appearance and Dimension

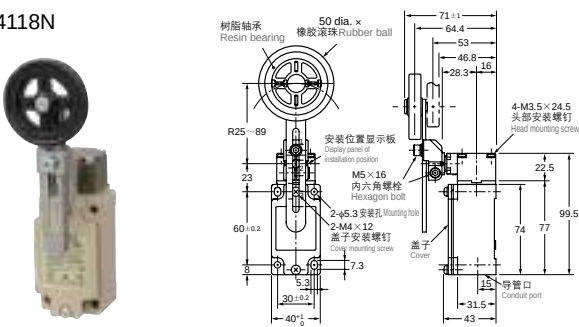
C4B-4116N



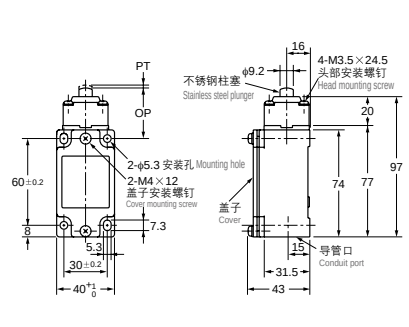
C4B-4112N



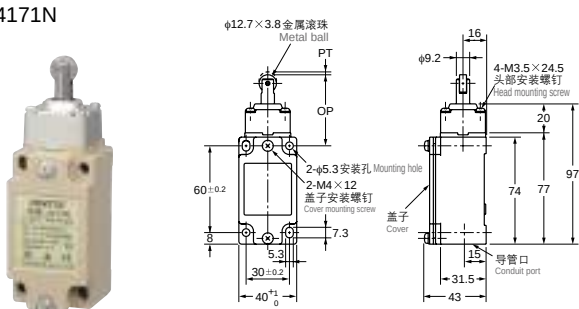
C4B-4118N



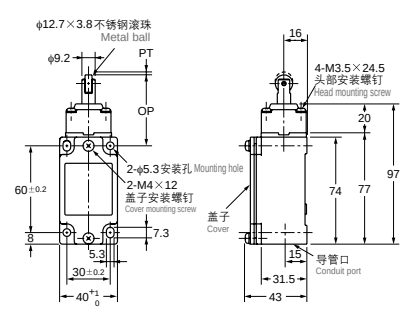
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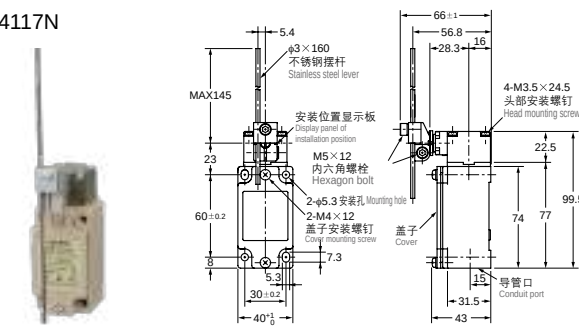
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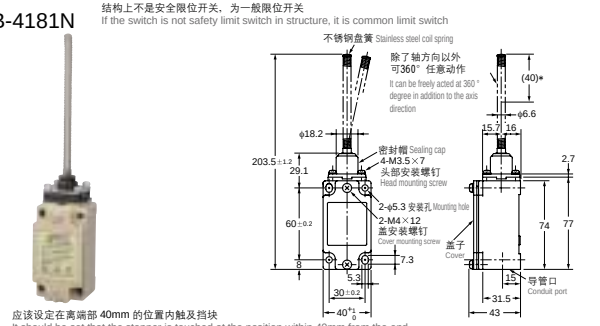
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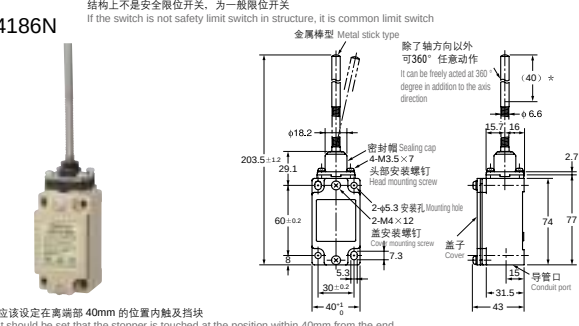
C4B-4117N



C4B-4181N



C4B-4186N



C4B-4187N

