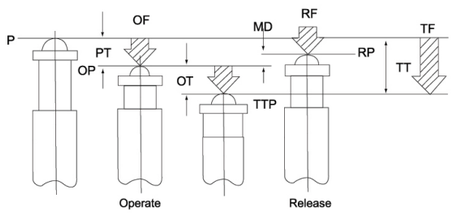
动作特性 Operating Characteristics

型式 Models	CM1300	CM1301	CM1303 CM1303M	CM1305	CM1306	CM1307	CM1308 CM1308X	CM1309	CM1701 CM1706	CM1702	CM-1703 CM-1703M	CM-1704 CM-1704M	CM1705	CM-1743 CM-1743M
OF 最大 (Max.)	350g	300g	300g	350g	350g	350g	350g	350g	70g	160g	100g	160g	10g	160g
RF 最小 (Min.)	114g	50g	50g	114g	114g	114g	114g	114g	14g	28g	22g	42g	3g	42g
PT 最大 (Max.)	0.4mm	4mm	4mm	0.4mm	0.4mm	0.4mm	0.4mm	0.4mm	10mm	5mm	7.1mm	2.7mm	20mm	2.7mm
OT 最小 (Min.)	0.13mm	1.6mm	1.6mm	1.6mm	1.6mm	5.5mm	3.58mm	3.58mm	5.6mm	2mm	4mm	2.4mm	5.6mm	2.4mm
MD 最大 (Max.)	0.05mm	1.3mm	1.3mm	0.05mm	0.05mm	0.05mm	0.05mm	0.05mm	1.27mm	1mm	1.02mm	0.5mm	3mm	0.5mm
FP 最大 (Max.)		20.6mm	31.8mm						28.2mm	24.8mm	36.5mm	32.5mm		43.6mm
OP(mm)	15.9 ± 0.4	17.4 ± 0.8	28.6 ± 0.8	28.2 ± 0.5	21.5 ± 0.5	21.8 0.8	33.4 ± 1.2	33.4 ± 1.2	19 ± 0.8	19 ± 0.4	30.2 ± 0.8	30.2 ± 0.4	19 ± 0.8	43.1 ± 0.8

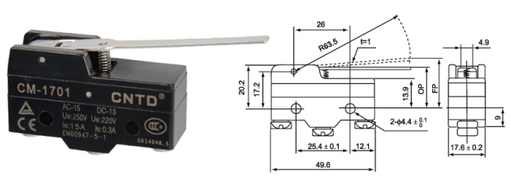


OF: 动作力
RF: 回复力
TF: 总行程动作力
FP: 自由位置
OP: 动作位置
RP: 返回位置
TTP: 总行程位置
PT: 预行程位置
OT: 过行程
MD: 响应差的行程
TT: 总行程

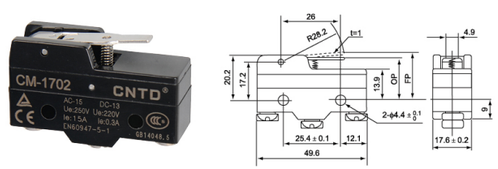
OF: Operating Force
RF: Releasing Force
TF: Total Force
FP: Free Position
OP: Operating Position
RP: Releasing Position
TTP: Total Tavel Position
PT: Pre Travel
OT: Over Travel
MD: Movement Differential
TT: Total Tavel

外观和尺寸 Appearance and Dimension

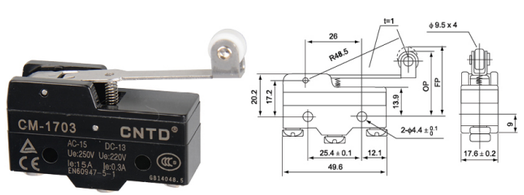
CM-1701



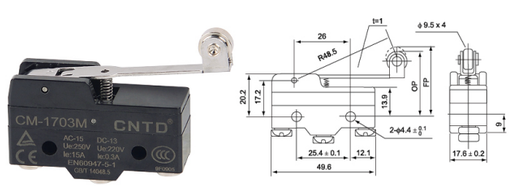
CM-1702



CM-1703



CM-1703M



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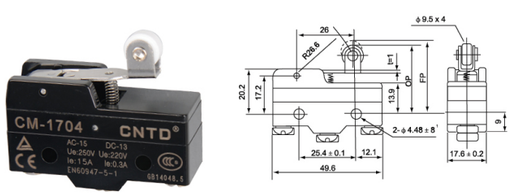
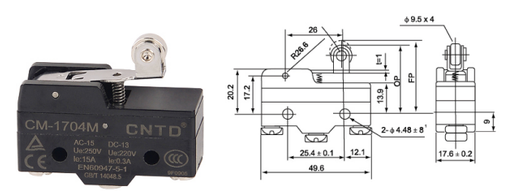
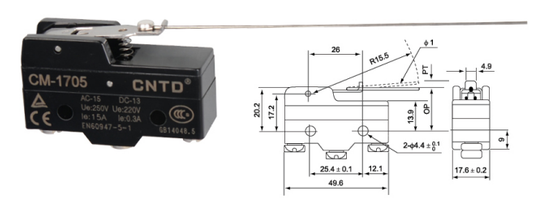


CM-1704M

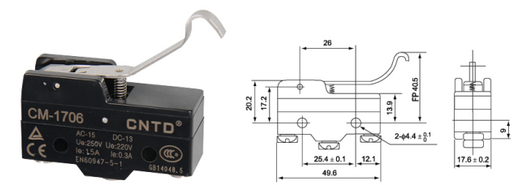


外观和尺寸 Appearance and Dimension

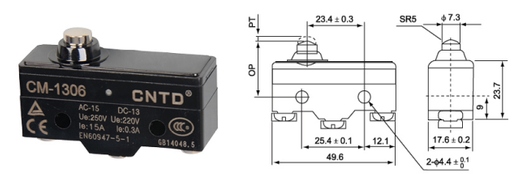
CM-1705



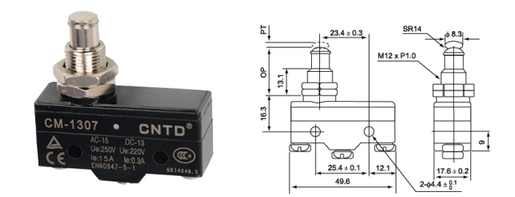
CM-1706



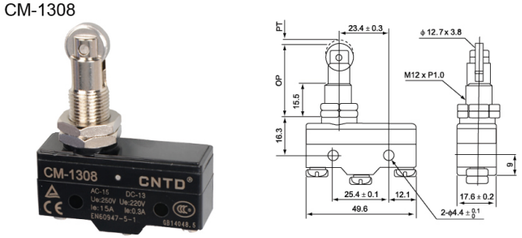
CM-1306



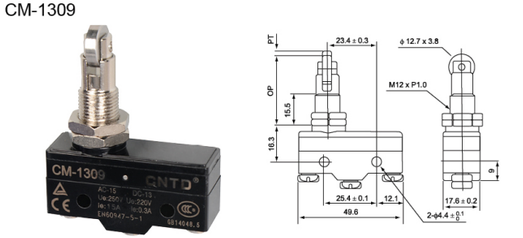
CM-1307



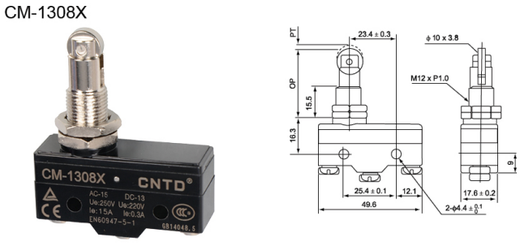
CM-1308



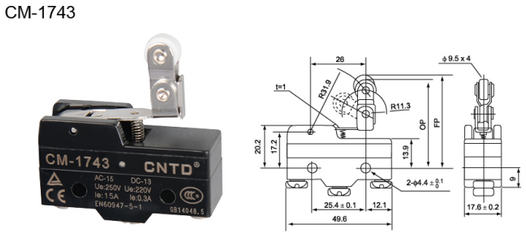
CM-1309



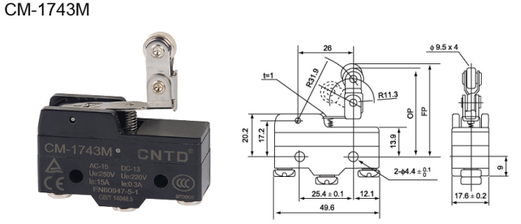
CM-1308X



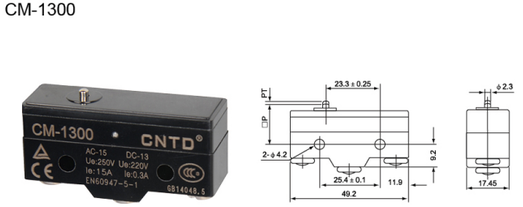
CM-1743



CM-1743M

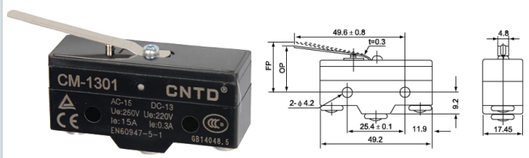


CM-1300

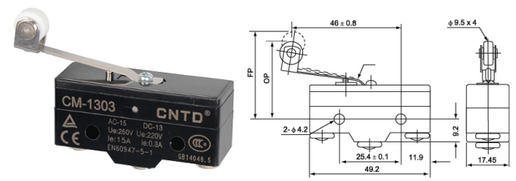


外观和尺寸 Appearance and Dimension

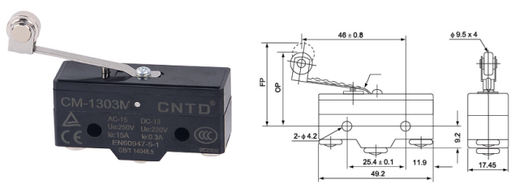
CM-1301



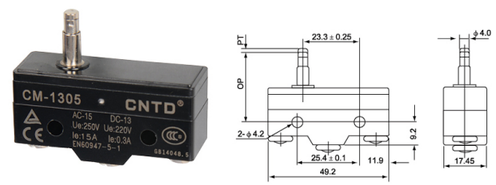
CM-1303



CM-1303M



CM-1305



端子保护罩 Terminal Cover

CAP-Y

CAP-C

CAP-B

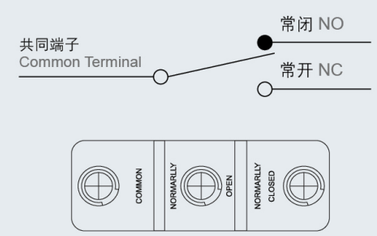
CNTD® 昌得电气

特点 Features

- 工程塑胶壳体，强度更高
- 引动器种类广泛，其中包含动作位置可调整的款式 (如 CM1701N)
- 高精确度广泛操作速度范围

- Engineering plastics shell for resistant construction
- Various actuators and some with adjustable operating position (such as CM1701N)
- High accuracy wide range of operation speed

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)				突入电流 (A) Inrush Current	
	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	NC	NO
125VAC	15		3	1.5	15		5	2.5	30 以下 max.	15 以下 max.
250VAC	15		2.5	1.25	15		3	1.5		
500VAC	3		1.5	0.75	2.5		1.5	0.75		
8VDC	15		3	1.5	15		5	2.5		
14VDC	15		3	1.5	10		5	2.5		
30VDC	6(2)		3	1.5	5		5	2.5		
125VDC	0.4		0.4	0.4	0.05		0.05	0.05		
250VDC	0.2		0.2	0.2	0.03		0.03	0.03		

规格 Specifications

操作速度 Operation speed	0.05mm 至 1m/s(柱塞型 Plunger type) 0.05mm-1m/s
动作频率 Operating frequency	电气 :20 次 / 分 Electical: 20 operations/min.
接点电阻 Contact resistance	15mΩ 以下 (初期) 15mΩ max. (initial value)
绝缘电阻 Insulation resistance	100MΩ 以上 (在 500VDC 以下) 100mΩ min. (at 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 20Hz): 1.5mm 变振幅误动作耐久 : 10 至 55Hz (*10 to 20Hz): 1.5 Vibration amplitude action duration: 10 to 55Hz
冲击 Shock	机械耐久 :1,000m/Sec²(约 100G’S) 误动作耐久 :300m/Sec²(约 30G’S) Mechanical durable: 1, 000m/Sec² (about 100G'S) Malfunction: 300m/Sec² (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	泛用型 : 85%RH 以上 密封型 : 95%RH General purpose type: 85% RH max., Sealed type: 95% RH max.
电气寿命 Electrical life	500,000 次以上 500,000 operations above
重量 Weight	约 22 至 58g About 22 to 58g

动作特性 Operating Characteristics

型式 Models	CM1300N	CM1301N	CM1303N CM1303NM	CM1305N	CM1306N	CM1307N	CM1308N CM1308XN	CM1309N	CM1701N CM1706N	CM1702N	CM1703N CM1703NM	CM1704N CM1704NM	CM1705N	CM1743N CM1743NM
OF 最大 (Max.)	350g	300g	300g	350g	350g	350g	350g	350g	70g	160g	100g	160g	10g	160g
RF 最小 (Min.)	114g	50g	50g	114g	114g	114g	114g	114g	14g	28g	22g	42g	3g	42g
PT 最大 (Max.)	0.4mm	4mm	4mm	0.4mm	0.4mm	0.4mm	0.4mm	0.4mm	10mm	5mm	7.1mm	2.7mm	20mm	2.7mm
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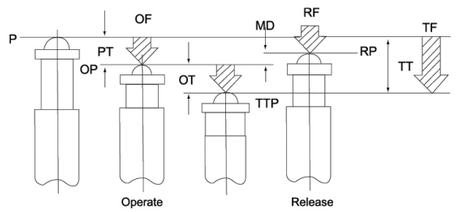
MD 最大 (Max.)	0.05mm	1.3mm	1.3mm	0.05mm	0.05mm	0.05mm	0.05mm	0.05mm	1.27mm	1mm	1.02mm	0.5mm	3mm	0.5mm
FP 最大 (Max.)		20.6mm	31.8mm						28.2mm	24.8mm	36.5mm	32.5mm		43.6mm
OP(mm)	15.9 ± 0.4	17.4 ± 0.8	28.6 ± 0.8	28.2 ± 0.5	21.5 ± 0.5	21.8 0.8	33.4 ± 1.2	33.4 ± 1.2	19 ± 0.8	19 ± 0.4	30.2 ± 0.8	30.2 ± 0.4	19 ± 0.8	43.1 ± 0.8



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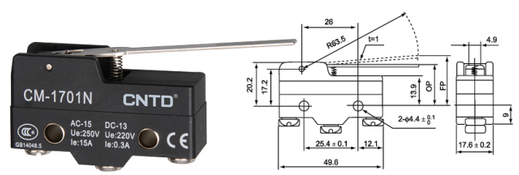
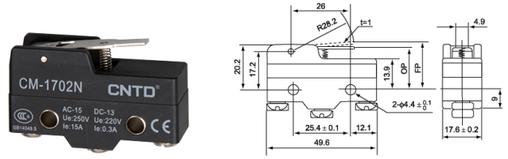
MD: Movement Differential
TT: Total Tavel

外观和尺寸 Appearance and Dimension

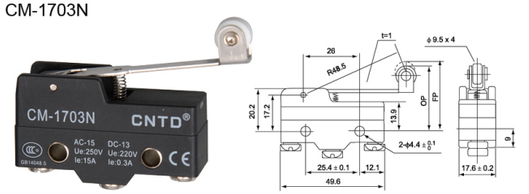
CM-1701N



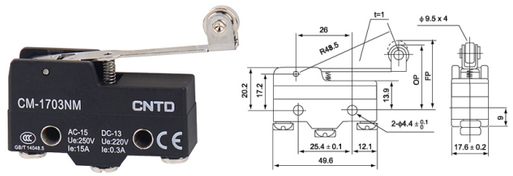
CM-1702N



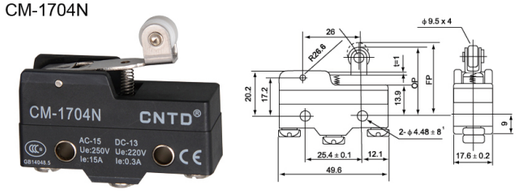
CM-1703N



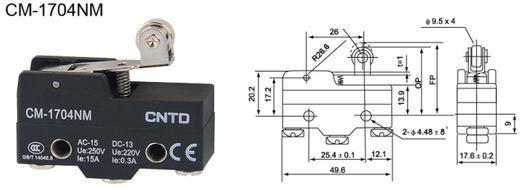
CM-1703NM



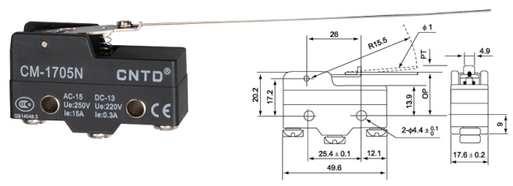
CM-1704N



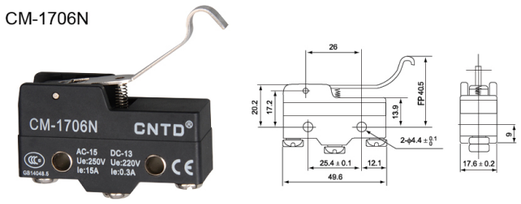
CM-1704NM



CM-1705N

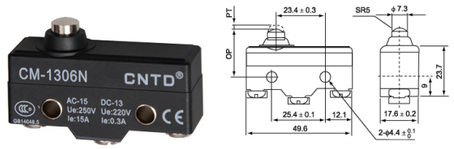


CM-1706N

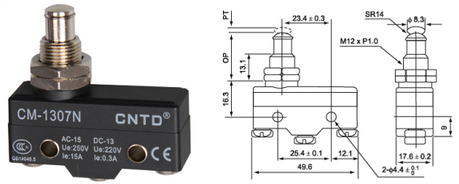


外观和尺寸 Appearance and Dimension

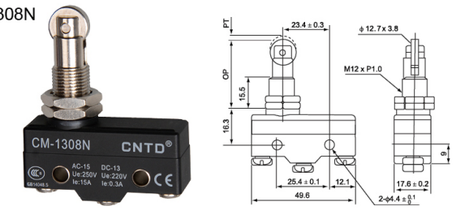
CM-1306N



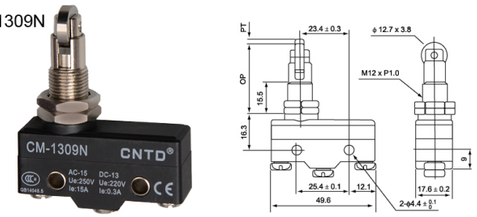
CM-1307N



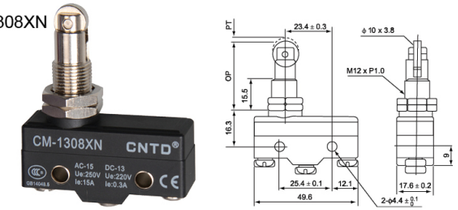
CM-1308N



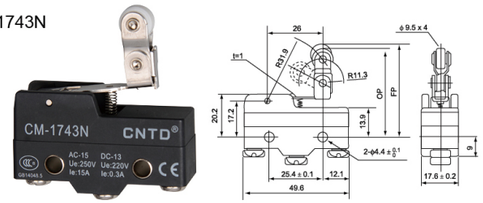
CM-1309N



CM-1308XN



CM-1743N



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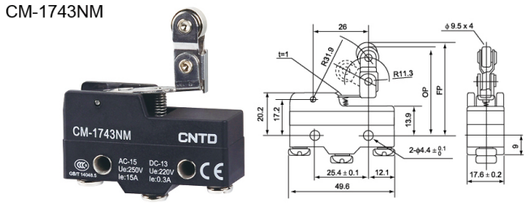

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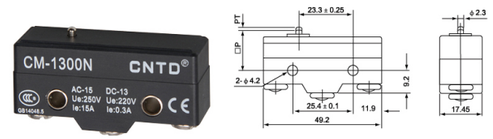

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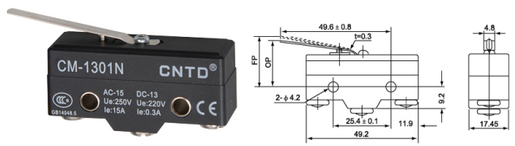

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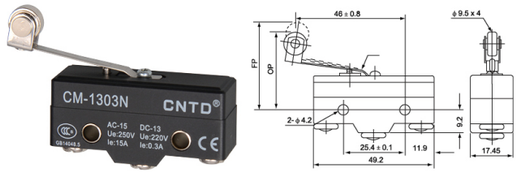

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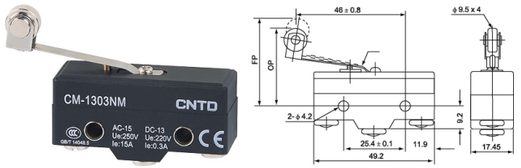

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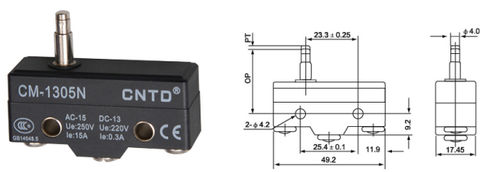


特点 Features

- 引动器种类广泛，其中包含动作位置可调整的款式（如 CZ-7121）
- 外壳包覆强化塑胶、防水、防油，较 CM 型卧式限位开关有更高的机械强度，耐冲击
- Various actuators and some with adjustable operating position (such as CZ-7121)
- Shell covered with intensive plastic for water-proof and oil-proof. The mechanical strength is better than CM series of horizontal limit switch

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	2.5
250VAC	10		2.5	1.25	10		3	1.5
480VAC	3		1.5	0.75	2.5		1.5	0.75
8VDC	10		3	1.5	6		6	5
14VDC	10		3	1.5	6		6	5
30VDC	8		3	1.5	6		5	2.5
125VDC	0.5		0.4	0.4	0.05		0.05	0.05
250VDC	0.25		0.2	0.2	0.03		0.03	0.03

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

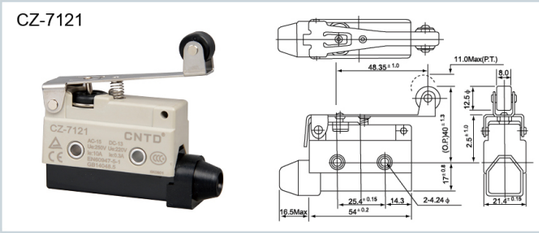
操作速度 Operation speed	0.05mm 至 0.5m/s 0.05mm-0.5m/s
动作频率 Operating frequency	电气 :20 次 / 分 Electical: 20 operations/min.
接点电阻 Contact resistance	25mΩ 以下 (初期) 25mΩmax. (initial value)
绝缘电阻 Insulation resistance	100MΩ 以上 (在 500VDC 以下) 100mΩ above(at 500VDC)
电介强度 Dielectric strength	非连续端子间 1,000VAC, 50/60Hz 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	误动作耐久 :10 至 55Hz, 1.5mm 双振幅 Malfunction Duration: 10-55Hz, 1.5mm double amplitude
冲击 Shock	机械耐久 :1,000m/Sec²(约 100G’S) 误动作耐久 :300m/Sec²(约 30G’S) Mechanical durable: 1,000m/Sec²(about 100g's) Malfunction: 300m/Sec²(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
电气寿命 Electrical life	500,000 次以上 500,000 operations above
重量 Weight	约 60g About 60g

动作特性 Operating Characteristics

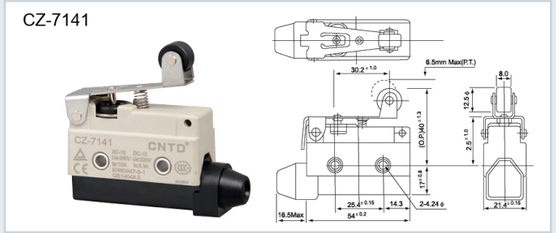
型号	Model	CZ-7	CZ-7100	CZ-7110	CZ-7310	CZ-7311	CZ-7312	CZ-7120	CZ-7140	CZ-7121	CZ-7141	CZ-7124	CZ-7144	CZ-7166
操作力	Operating force	OF 最大 (Max.)	600g	600g	600g	600g	600g	150g	220g	180g	240g	200g	280g	120g
回弹力	Release force	RF 最小 (Min.)	100g	100g	100g	100g	100g	40g	60g	50g	80g	60g	100g	
预行程	Pre-travel	PT 最大 (Max.)	2.0mm	2.0mm	2.0mm	2.0mm	2.0mm	13.5mm	8.5mm	11.0mm	6.5mm	11mm	6.5mm	250mm
过行程	Over travel	OT 最小 (Min.)	0.8mm	5.0mm	6.0mm	6.0mm	6.0mm	4.0mm	2.5mm	3.0mm	2.0mm	3.0mm	2.0mm	11mm
行程移动分辨率	Movement differential	MD 最大 (Max.)	0.8mm	0.8mm	0.8mm	0.8mm	0.8mm	3.2mm	2.0mm	2.4mm	1.5mm	2.4mm	1.5mm	
动作位置	Operating position	OP(mm.)	30.5 ± 0.8mm	44 ± 1.2mm	21.8 ± 1.2mm	33.3 ± 1.2mm	33.3 ± 1.2mm	25 ± 1mm	25 ± 1mm	40 ± 1mm	40 ± 1mm	50 ± 1.2mm	50 ± 1.2mm	
自由位置	Free Position	FP						35mm	32mm		46mm		56mm	

外观和尺寸 Appearance and Dimension

CZ-7121



CZ-7141



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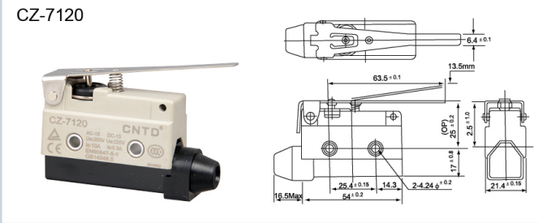

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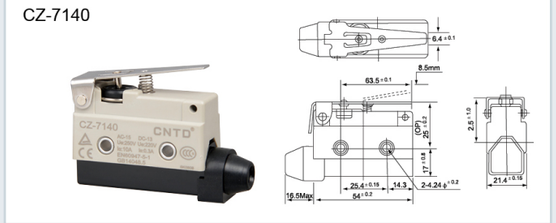

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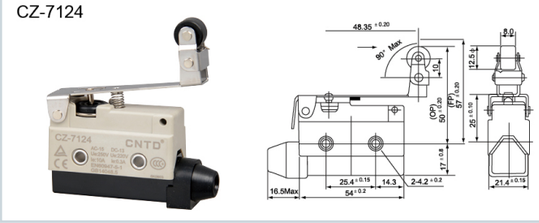

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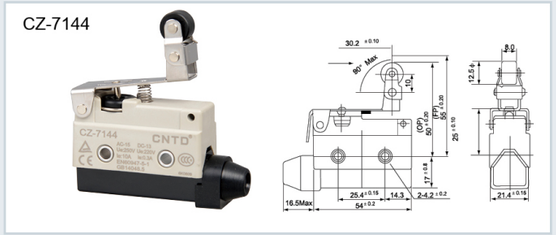

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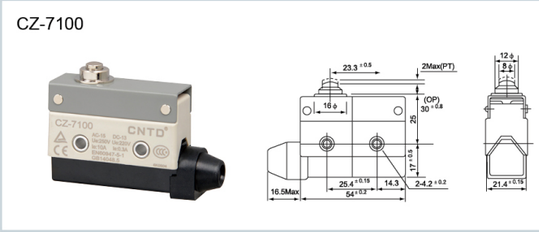

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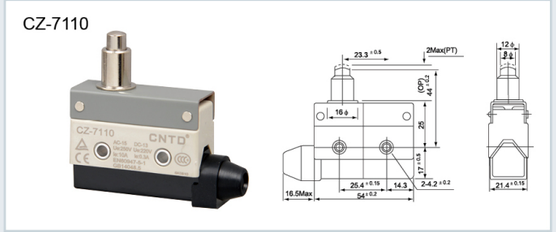

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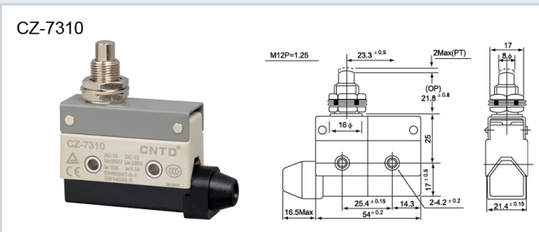

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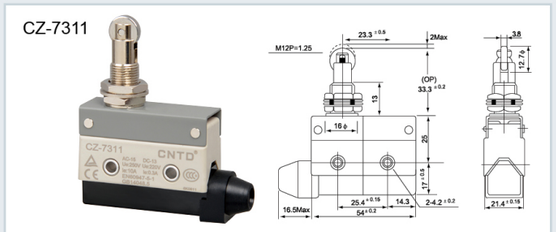

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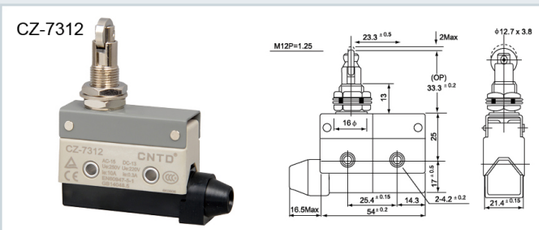

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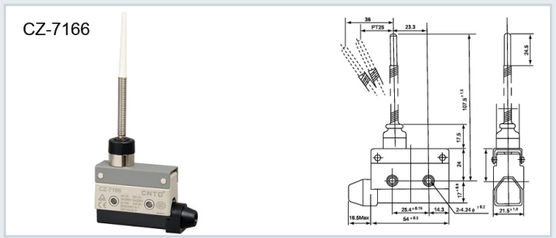
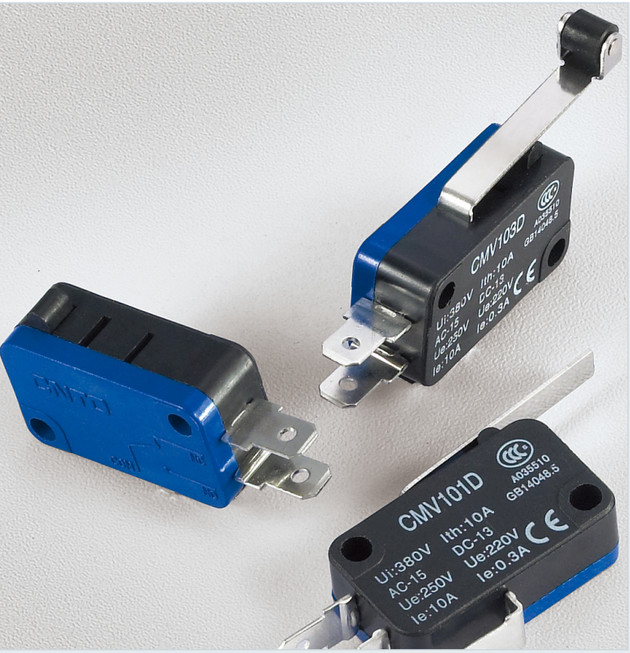




型号说明 Model Number Structure

CMV 10 0 D
① ② ③

项目 Item	代号 Code	说明 Description
① 额定电流 Rated Current	10	10A
②头部及传动杆 Head and driving rod	0	按钮型 Button type
	1	长柄型 Long handle type
	2	短柄型 Short shank type
	3	长滑轮型 Long pulley type
	4	短滑轮型 Short pulley type
	5	加长柄型 Longer handle type
	6	曲柄型 Crank type
③端子规格 Terminal specifications	C	#250 型端子 #250 terminal
	D	#187 型端子 #187 terminal

额定值 Ratings

项目 Item / 规格 Spec.	额定电压 Rated Voltage	非电感性负载 Noninductive Load (A) 电阻性负载 Resistance Load NC	电阻性负载 NO	灯泡负载 Lamp Load NC	灯泡负载 NO	电感性负载 Inductive Load (A) 电感性负载 Inductive Load NC	电感性负载 NO	马达负载 Motor Load NC	马达负载 NO	突入电流 (A) Inarush Current NC	NO
10A	250VAC	10		1.5		6		2		24 以下 max.	
	8VDC	10		3		6		3			
	30VDC	6		3		6		3			
	125VDC	0.3		0.1		0.6		0.1			
	250VDC	0.3		0.05		0.3		0.05			

规格 Specifications

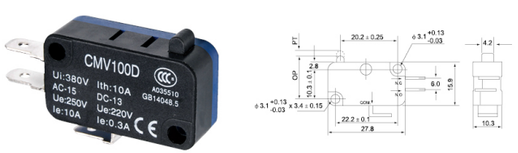
项目 Item / 型式 Type		CMV 10 型 CMV 10 type
操作速度 Operation speed		0.05mm~1m/s(按钮型 Button type)
动作频率 Operating frequency		电气 Electrical: 20 operations/min
绝缘电阻 Insulation resistance		100MΩ 以上 (在 500VDC 以下) 100mΩ above(at 500VDC)
接点电阻 Contact resistance		15mΩ 以下 (初期) 15mΩ max. (initial value)
耐电压 Withstand voltage	非连续端子间 Non-continuous terminals	1,000VAC, 50/60Hz 持续 1 分钟 1000VAC, 50/60 Hz for 1 minute
	载电流和无载电流零件间、端子和接地之间 current-carrying and non-current-carrying metal parts, Between terminal and earthing	1,500VAC, 50/60Hz 持续 1 分钟 1500VAC, 50/60 Hz for 1 minute
振动 Vibration	误动作 Misoperation	10 至 55Hz, 1.5mm 双振幅 10 to 55Hz,1.5mm pairs swing
冲击 Shock	耐久 Durable	最大 1,000m/S²(约 100G) Maximum 1000 m/S² (100G)
	误动作 Misoperation	最大 200m/S²(约 100G) Maximum 200 m/S² (100G)
寿命 Life	电气的 Electrical	30 万次以上 More than 300000 times
使用周围温度 Temperature		使用时 :-20~+70℃ (没有结冰) Using: -20~+70℃ (With no icing)
使用周围湿度 Humidity		85%RH 以下 (+5~+35℃)Below 85% RH

动作特性 Operating Characteristics

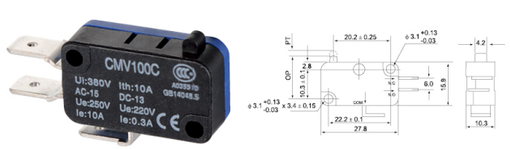
型式 Models	CMV100D	CMV101D	CMV102D	CMV103D	CMV104D	CMV105D	CMV106D
OF 最大 (Max.)	2.4N	1.23N	2.4N	1.23N	2.7N	0.69N	1.2N
RF 最小 (Min.)	0.49N	0.14N	0.49N	0.14N	0.49N	0.06N	0.14N
PT 最大 (Max.)	1.2mm	4.0mm	1.6mm	4.0mm	1.5mm	9.0mm	4.0mm
OT 最小 (Min.)	1.0mm	1.6mm	0.8mm	1.6mm	0.8mm	2.0mm	1.5mm
MD 最大 (Max.)	0.4mm	1.5mm	0.6mm	1.5mm	0.6mm	2.8mm	1.5mm
OP(mm.)	14.7 ± 0.4mm	15.2 ± 1.2mm	15.2 ± 0.5mm	20.7 ± 1.2mm	20.7 ± 0.6mm	15.2 ± 3mm	18.7 ± 1.2mm

外观和尺寸 Appearance and Dimension

CMV100D



CMV100C



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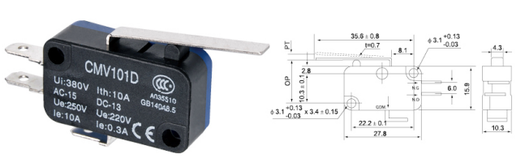


CMV101C

外观和尺寸 Appearance and Dimension

CMV102D

CMV102C

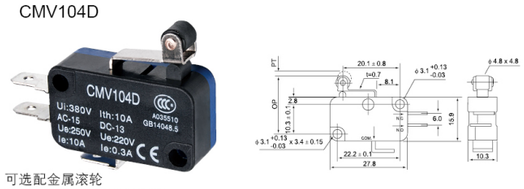
CMV103D

可选配金属滚轮
Optional Metal idler wheel

CMV103C

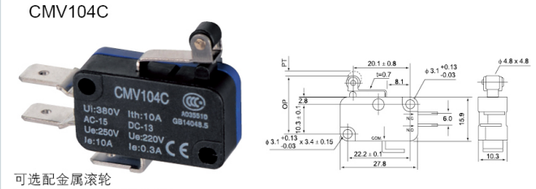
可选配金属滚轮
Optional Metal idler wheel

CMV104D



可选配金属滚轮
Optional Metal idler wheel

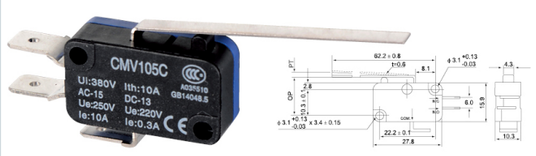
CMV104C



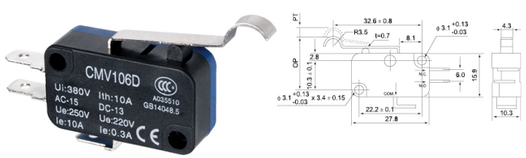
可选配金属滚轮
Optional Metal idler wheel

CMV105D

CMV105C

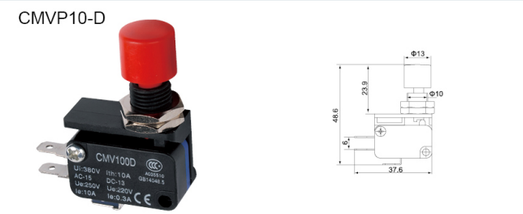


CMV106D

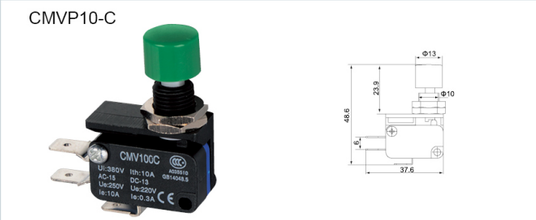


CMV106C

CMVP10-D



CMVP10-C



型号说明 Model Number Structure

CMV 16 ① 0 0 ② 1 ③ C 2 ④

项目 Item	代号 Code	说明 Description
① 额定电流 Rated Current	16	16A
②头部及传动杆 Head and driving rod	00 01 02 03 04 05 06	按钮型 Button type 长柄型 Long handle type 短柄型 Short shank type 长滑轮型 Long pulley type 短滑轮型 Short pulley type 加长柄型 Longer handle type 曲柄型 Crank type
③触点形式 Contact form	1 2 3	一常开 一常闭触点 1NO/1NC 一常闭触点 1NC 一常开触点 1NO
③端子规格 Terminal specifications	C C2	#250 型端子 #250 terminal #187 型端子 #187 terminal

额定值 Ratings

项目 Item / 规格 Spec.	额定电压 Rated Voltage	非电感性负载 Noninductive Load (A)				电感性负载 Inductive Load (A)				突入电流 (A) Inrush Current	
		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	NC	NO
16A	250VAC 8VDC 30VDC 125VDC 250VDC	16 16 10 0.6 0.3		2 4 4 0.1 0.05		10 10 10 0.6 0.3		3 6 4 0.1 0.05		40 以下 max.	

规格 Specifications

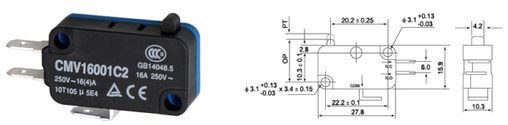
项目 Item / 型式 Type		CMV 16 型 CMV 16 type
操作速度 Operation speed		0.05mm~1m/s(按钮型 Button type)
动作频率 Operating frequency		电气 Electrical：20 operations/min
绝缘电阻 Insulation resistance		100MΩ 以上 (在 500VDC 以下) 100mΩ above(at 500VDC)
接点电阻 Contact resistance		15mΩ 以下 (初期) 15mΩ max. (initial value)
耐电压 Withstand voltage	非连续端子间 Non-continuous terminals	1,000VAC, 50/60Hz 持续 1 分钟 1000VAC, 50/60 Hz for 1 minute
	载电流和无载电流零件间，端子和接地之间 current-carrying and non-current-carrying metal parts, Between terminal and earthing	2,000VAC, 50/60Hz 持续 1 分钟 2000VAC, 50/60 Hz for 1 minute
振动 Vibration	误动作 Misoperation	10 至 55Hz, 1.5mm 双振幅 10 to 55Hz,1.5mm pairs swing
冲击 Shock	耐久 Durable	最大 1,000m/S²(约 100G) Maximum 1000 m/S² (100G)
	误动作 Misoperation	最大 200m/S²(约 100G) Maximum 200 m/S² (100G)
寿命 Life	电气的 Electrical	30 万次以上 More than 300000 times
使用周围温度 Temperature		使用时 :-20~+70℃ (没有结冰) Using: -20~+70℃ (With no icing)
使用周围湿度 Humidity		85%RH 以下 (+5~+35℃)Below 85% RH

动作特性 Operating Characteristics

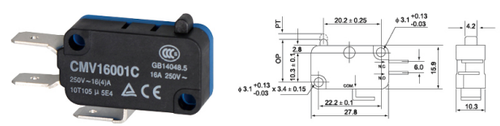
型号	Model	CMV16	CMV16001C2	CMV16011C2	CMV16021C	CMV16031C2	CMV16041C2	CMV16051C2	CMV16061C
操作力	Operating force	PT 最大 (Max.)	2.4N	1.23N	2.4N	1.23N	2.7N	0.69N	1.2N
回弹力	Release force	RF 最小 (Min.)	0.49N	0.14N	0.49N	0.14N	0.49N	0.06N	0.14N
预行程	Pre-travel	PT 最大 (Max.)	1.2mm	4.0mm	1.6mm	4.0mm	1.5mm	9.0mm	4.0mm
过行程	Over travel	OT 最小 (Min.)	1.0mm	1.6mm	0.8mm	1.6mm	0.8mm	2.0mm	1.5mm
行程移动分辨率	Movement differential	MD 最大 (Max.)	0.4mm	1.5mm	0.6mm	1.5mm	0.6mm	2.8mm	1.5mm
动作位置	Operating position	OP(mm.)	14.7 ± 0.4mm	15.2 ± 1.2mm	15.2 ± 0.5mm	20.7 ± 1.2mm	20.7 ± 0.6mm	15.2 ± 3mm	18.7 ± 1.2mm

外观和尺寸 Appearance and Dimension

CMV16001C2



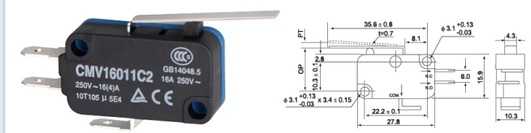
CMV16001C



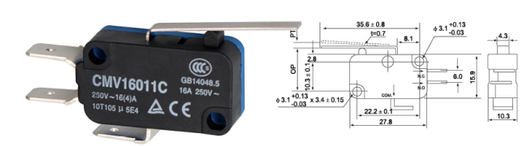
CNTD® 昌得电气

外观和尺寸 Appearance and Dimension

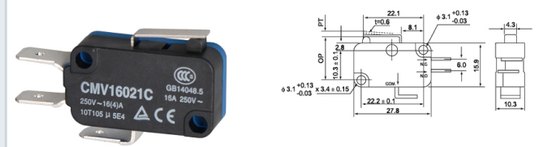
CMV16011C2



CMV16011C



CMV16021C



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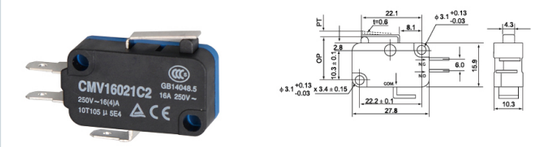

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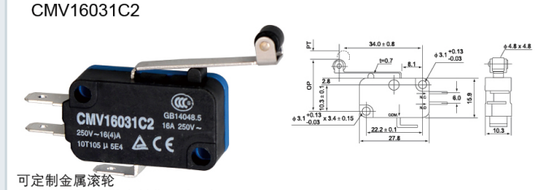
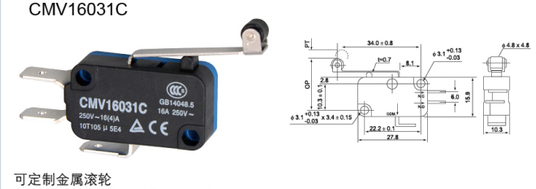


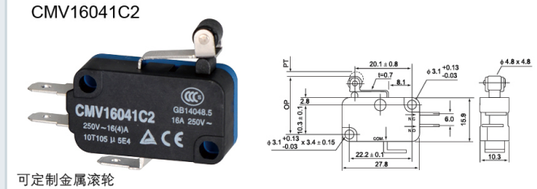
可定制金属滚轮
Custom Made Metal idler wheel

CMV16031C



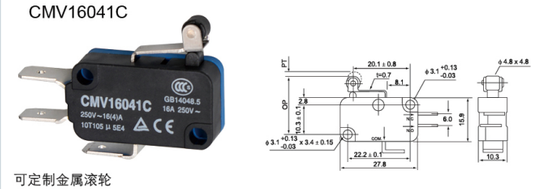
可定制金属滚轮
Custom Made Metal idler wheel

CMV16041C2



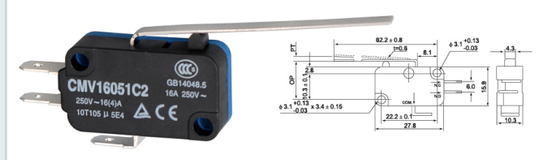
可定制金属滚轮
Custom Made Metal idler wheel

CMV16041C



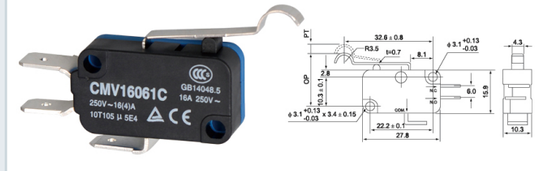
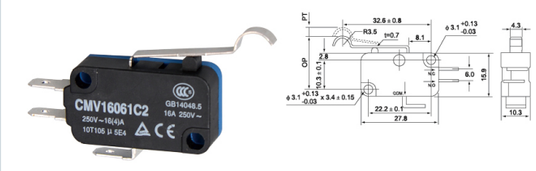
可定制金属滚轮
Custom Made Metal idler wheel

CMV16051C2



CMV16051C

CMV16061C



CMV16061C2