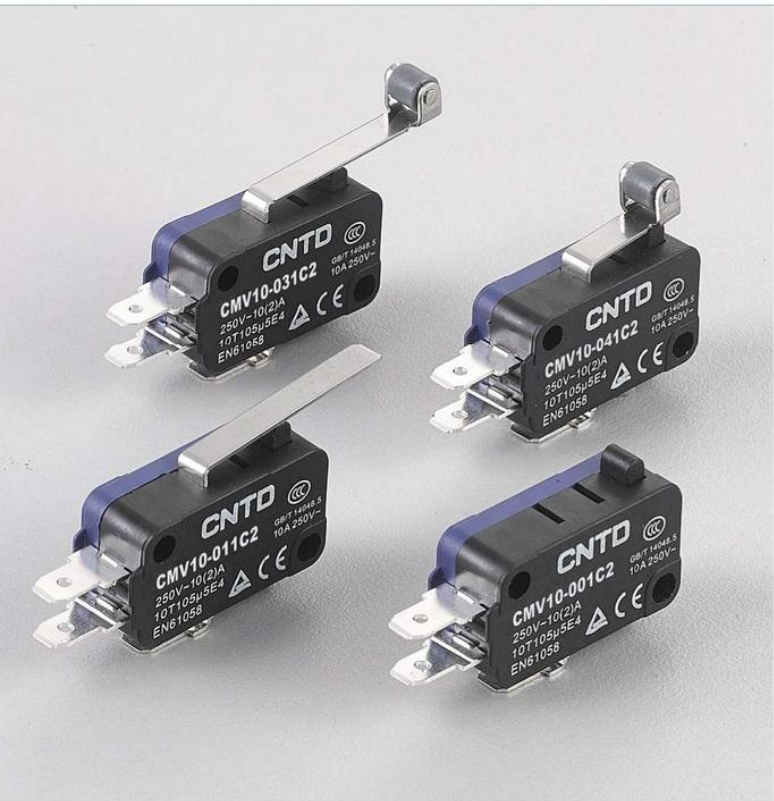


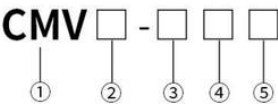


特点 Features

- 从10A及16A，种类丰富、式样齐全，畅销不衰的微动开关。
- 可用于门开闭时电流遮断等用途上。
- 热可塑性壳体。
- From 10A or 16A, a wide variety, complete style, popular micro switch.
- It can be used for current blocking when the door is opened or closed.
- Thermoplastic shell.



选型说明 Model Designation



序号 No	项目 Item	代号 Code	说明 Description
①	系列号 Serial number	CMV	小型微动开关 Miniature snap-action switch
②	额度值 Limit value	10	10A
		16	16A
③	压板类型 Platen type	00	不带背条 Without back strap
		01	带短背条 With short back strip
		02	带超短背条 With ultra short back strip
		03	带滚轮长背条 Long back strip with roller
		04	带滚轮短背条 Short back strip with roller
		05	带长背条 With long back strip
		06	带长弯背条 With long curved back strip
		07	带自锁功能 With self-locking function
		08	按钮带微动 Button with inching
④	触头元件的形式 Form of contact element	1	一开一闭触点 One open and one close contact (C)
		2	一常闭触点 One normally closed contact (B)
		3	一常开触点 One normally open contact (A)
⑤	端子类型 Terminal type	C	250# 端子 Terminal, t=0.8
		C2	187# 端子 Terminal, t=0.5

特性 Characteristics

操作速度 Operation speed	0.1mm~1m/s(按钮型 Button type)
动作频率 Operating frequency	电气:20次/分 Electrical: 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 min. (at 500VDC)
最小使用负载 Minimum working load	DC24V 10mA 以上 Min DC24V 10mA
额定绝缘电压UI Rated insulation voltage	380V
额定冲击耐受电压Uimp Rated impulse withstand voltage	4kV
约定自由空气发热电流Ith Convention free air heating current	CMV10 10A CMV16 16A
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
	CMV10系列: 载电流与无载电流零件间1500VAC, 50/60Hz持续1分钟 CMV10 series: 1500VAC, 50/60 HZ for 1 minute between current-carrying and non-current-carrying metal parts
	CMV16系列: 载电流与无载电流零件间2000VAC, 50/60Hz持续1分钟 CMV16 series: 2000VAC, 50/60 HZ for 1 minute between current-carrying and non-current-carrying metal parts
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/Sec ² (约 100G' S) 误动作耐久 :200m/Sec ² (约 100G' S) Mechanical durable: 1,000m/Sec ² (about 100G' S) Malfunction: 200m/Sec ² (about 100G' 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	泛用型 : 85%RH 以下 (+5~+35°C) General purpose type: 85% RH max(+5~+35°C)
电气寿命 Electrical life	CMV10 30万次以上(AC240V/3A阻性负载) More than 300,000 cycles (AC 240V/3A resistive load) 5万次以上(AC240V/10A阻性负载) More than 50,000 cycles (AC 240V/10A resistive load)
	CMV16 30万次以上(AC240V/5A阻性负载) More than 300,000 cycles (AC 240V/5A resistive load) 5万次以上(AC240V/16A阻性负载) More than 50,000 cycles (AC 240V/16A resistive load)

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25~35°C、环境湿度40~70%RH时的数值。

Note 1. The above values 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 25~35°C and humidity of 40 to 70% RH. For other detailed conditions, please contact us.

国际认证规格 International Certification Specifications

认证规格 Certification specifications	规格 Specifications	文件No. Document
CCC	GB/T 14048.5	请咨询昌得代表处 Please consult the CNTD Representative Office
TUV	EN 61058	
CE		

安全标准认证额定值 Safety Standard Certified Rating

额定电压 Rated voltage	型式 Type	CMV10	CMV16
AC250V		10A	16A
DC250V		0.3A	0.3A

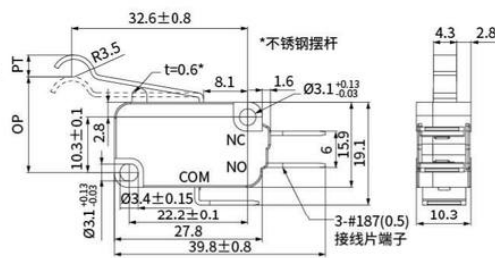
测试条件50000次, T105(0~105°C)

Test conditions 50000 cycles, T105 (0-105 °C)

外观和尺寸 Appearance and Dimension

CMV10-061C2

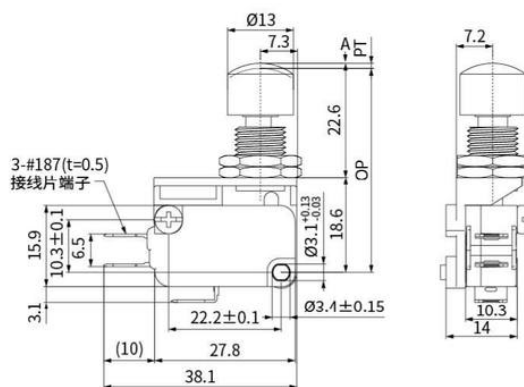
带长弯背条
With long curved
back strip



动作特性 Operating Characteristics	CMV10-061C2
操作力 OF (最大Max.)	1.2N
回弹力 RF (最小Min.)	0.14N
预行程 PT (最大Max.)	4.0mm
过行程 OT (最小Min.)	1.5mm
行程移动分辨率 MD (最大Max.)	1.5mm
动作位置 OP(mm.)	18.7±1.2mm

CMV10-081C2

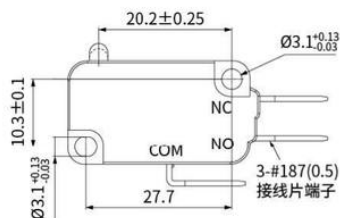
按钮带微动
Button with inching



动作特性 Operating Characteristics	CMV10-081C2
操作力 OF (最大Max.)	2.4N
回弹力 RF (最小Min.)	0.49N
预行程 PT (最大Max.)	1.2mm
过行程 OT (最小Min.)	1.0mm
行程移动分辨率 MD (最大Max.)	0.4mm
动作位置 OP(mm.)	40.5±0.5mm

187# 端子 Terminal

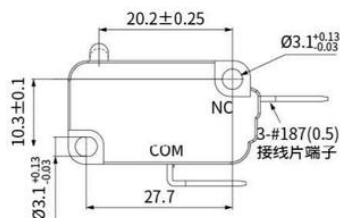
一常开一常闭触点 1NO1NC



CMV □ - □ 1 □

187# 端子 Terminal

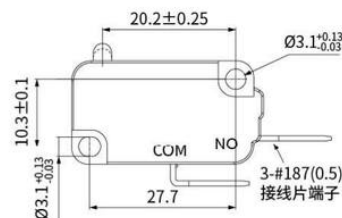
一常闭触点 1NC



CMV □ - □ 2 □

187# 端子 Terminal

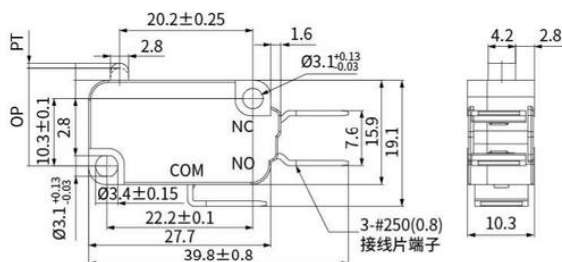
一常开 1NO



CMV □ - □ 3 □

CMV10-001C

不带背条
Without back
strap

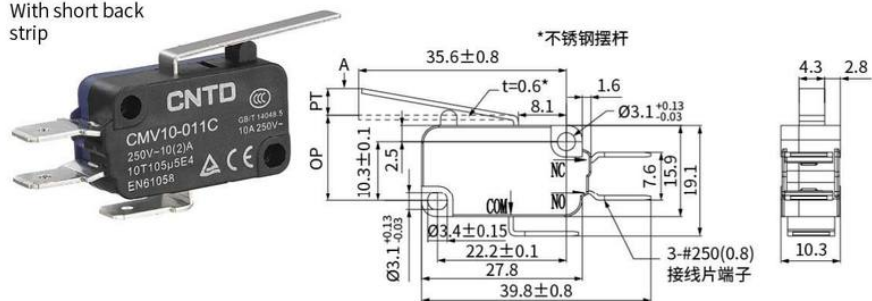


动作特性 Operating Characteristics	CMV10-001C
操作力 OF (最大Max.)	2.4N
回弹力 RF (最小Min.)	0.49N
预行程 PT (最大Max.)	1.2mm
过行程 OT (最小Min.)	1.0mm
行程移动分辨率 MD (最大Max.)	0.4mm
动作位置 OP(mm.)	14.7±0.4mm

外观和尺寸 Appearance and Dimension

CMV10-011C

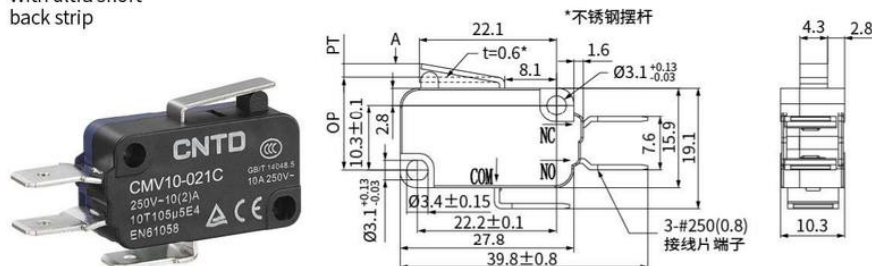
带短背条
With short back
strip



动作特性 Operating Characteristics	CMV10-011C
操作力 OF (最大Max.)	1.23N
回弹力 RF (最小Min.)	0.14N
预行程 PT (最大Max.)	4.0mm
过行程 OT (最小Min.)	1.6mm
行程移动分辨率 MD (最大Max.)	1.5mm
动作位置 OP(mm.)	15.2±1.2mm

CMV10-021C

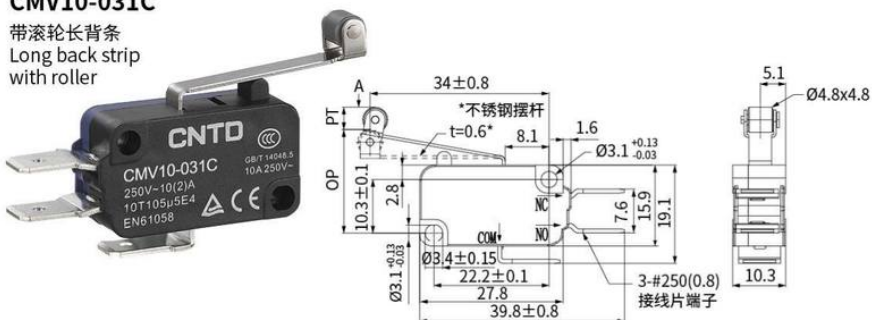
带超短背条
With ultra short
back strip



动作特性 Operating Characteristics	CMV10-021C
操作力 OF (最大Max.)	2.4N
回弹力 RF (最小Min.)	0.49N
预行程 PT (最大Max.)	1.6mm
过行程 OT (最小Min.)	0.8mm
行程移动分辨率 MD (最大Max.)	0.6mm
动作位置 OP(mm.)	15.2±0.5mm

CMV10-031C

带滚轮长背条
Long back strip
with roller

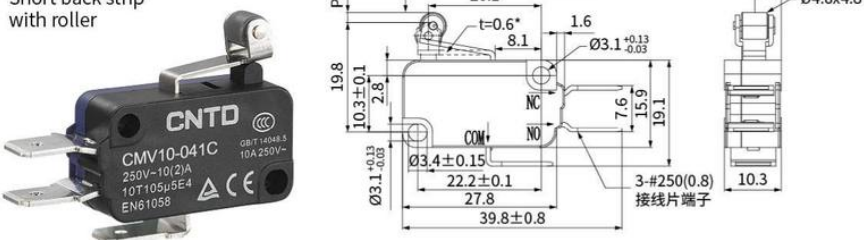


动作特性 Operating Characteristics	CMV10-031C
操作力 OF (最大Max.)	1.23N
回弹力 RF (最小Min.)	0.14N
预行程 PT (最大Max.)	4.0mm
过行程 OT (最小Min.)	1.6mm
行程移动分辨率 MD (最大Max.)	1.5mm
动作位置 OP(mm.)	20.7±1.2mm

可定制金属滚轮
Custom Made Metal idler wheel

CMV10-041C

带滚轮短背条
Short back strip
with roller



动作特性 Operating Characteristics	CMV10-041C
操作力 OF (最大Max.)	2.7N
回弹力 RF (最小Min.)	0.49N
预行程 PT (最大Max.)	1.5mm
过行程 OT (最小Min.)	0.8mm
行程移动分辨率 MD (最大Max.)	0.6mm
动作位置 OP(mm.)	20.7±0.6mm

可定制金属滚轮
Custom Made Metal idler wheel

适用导线 Applicable conductor

电线名称 Wire name	推荐使用电线 Wire is recommended		
	线芯数 Number of cores	导体 Conductor	成品外径 Nom OD
塑料橡皮绝缘软电线 Plastic rubber insulated flexible wire	2芯 2-core 3芯 3-core 4芯 4-core	0.5~0.75mm ²	圆形 Circular φ6~φ9
600V 塑料绝缘 塑料外皮电缆(VVF) 600V plastic insulation Plastic sheathed cable	2芯 2-core	φ1/φ1.2/φ1.6	

若电线含有硅油，可能会导致接触不良。为确保电气设备的正常运行，请避免使用含硅油的产品。
The presence of silicone oil in wire may result in inadequate contact. To ensure the proper functioning of electrical equipment, please refrain from using products containing silicone oil.

安全要点 Safety Essentials

与 #187 接线片端子的连接使用 187 接线片用插座，将其对准端子，直接插入，如果在端子的横向及上下方施加过大的外力，可能会导致端子变形和外壳破损。

与 #250 接线片端子的连接使用 #250 接线片用插座，将其对准端子，直接插入吗，如果在端子的横向及上下方施加过大的外力，可能会导致端子变形和外壳破损。

Connect to the #187 lug terminal using a socket for the lug 187, align it with the terminal, and insert it directly. If excessive force is applied to the lateral and upper and lower sides of the terminal, the terminal may be deformed and the housing may be damaged. Connect to the #250 lug terminal using the #250 lug socket, align it with the terminal, and directly insert it. If excessive force is applied to the lateral, upper and lower side of the terminal, it may cause deformation of the terminal and damage to the shell.

关于安装 About Installation

安装时使用 M3 螺钉，使用平垫圈、弹簧垫圈来紧固。此时请使用 0.39-0.59N·m 的紧固转矩安装。

M3 screws are used for installation, and flat washers and spring washers are used for fastening. At this time, please use 0.39-0.59N·m fastening torque installation.

微小负载型的使用 Applications Under Minimal Load

开关接点可用于一般负载或微小负载。但是，已经连接过一般负载的接点，就不能用于连接更小容量的负载。否则，可能导致接触面的糙化，而且可能失去接触可靠性。

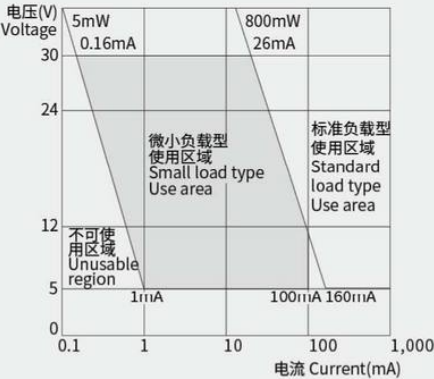
如果在开关微小负载电路时使用一般负载用开关，可能会引起接触不良。下图为开关负载区域范围定义。本目录册内产品适用于 DC24V 10mA 以上范围，当使用负载小于 DC24V 10mA 以下时，可能存在由于电流过小无法击破触点表面氧化膜或硫化膜的现象，从而导致开关接触不良。所以当使用负载小于 DC24V 10mA 以下时，请咨询昌得电气科技有限公司进行产品定制。

请设置 CR 电路等吸收电路，防止震荡和抖动所导致的噪声和脉冲缺失，对于开关时会产生冲击电流的负载，请插入接点保护电路，以免导致耐久性降低。

Switch contacts can be used for general loads or small loads. However, contacts that have already been connected to general loads cannot be used to connect smaller capacity loads. Otherwise, it may lead to roughness of the contact surface and loss of contact reliability.

If a general load switch is used when switching a small load circuit, poor contact may be caused. The following diagram shows the switching load area range definition. The products in this catalog are suitable for DC24V 10mA or above. When the load is less than DC24V 10mA or below, the oxidized film or vulcanized film on the contact surface may be unable to be broken due to too small current, resulting in poor switch contact. Therefore, when the load is less than DC24V 10mA, please consult CNTD Electrical Technology Co., Ltd. for product customization.

Please set the absorption circuit such as CR circuit to prevent noise and pulse loss caused by shock and jitter, for the load that will produce impulse current on the switch, please insert the contact protection circuit to avoid reducing durability.



使用注意事项 Using Precautions

本公司产品是作为工业产品而设计生产，严格遵守工业产品标准。我司明确声明，除非经过特殊设计并得到我司明确书面确认，我司产品不适用于以下应用场合：

- 要求极高可靠性的应用场合，包括核能、燃气、电力等要求长期稳定运行的系统。
- 要求极高安全性的应用场合，涉及人身安全与财产的情况。
- 苛刻条件、严酷环境的应用场合，包括室外、存在化学污染、电磁、振动或冲击影响的环境。
- 有火灾或爆炸风险的应用场合，包括存在易燃易爆性气体、强酸强碱化学品等物质的环境。
- 涉及军工用途、航天航空项目的应用场合。

The company's products are designed and produced as industrial products, in strict compliance with industrial product standards. We expressly declare that, unless specifically designed and expressly confirmed by us in writing, our products are not intended for the following applications:

- Applications that require high reliability, including nuclear, gas, electric and other systems that require long-term stable operation.
- Applications requiring very high security, situations involving personal safety and property.
- Applications in harsh conditions, harsh environments, including outdoor, chemical contamination, electromagnetic, vibration or shock effects.
- Applications where there is a risk of fire or explosion, including environments where flammable and explosive gases, strong acids and alkali chemicals are present.
- Applications involving military use and aerospace projects.