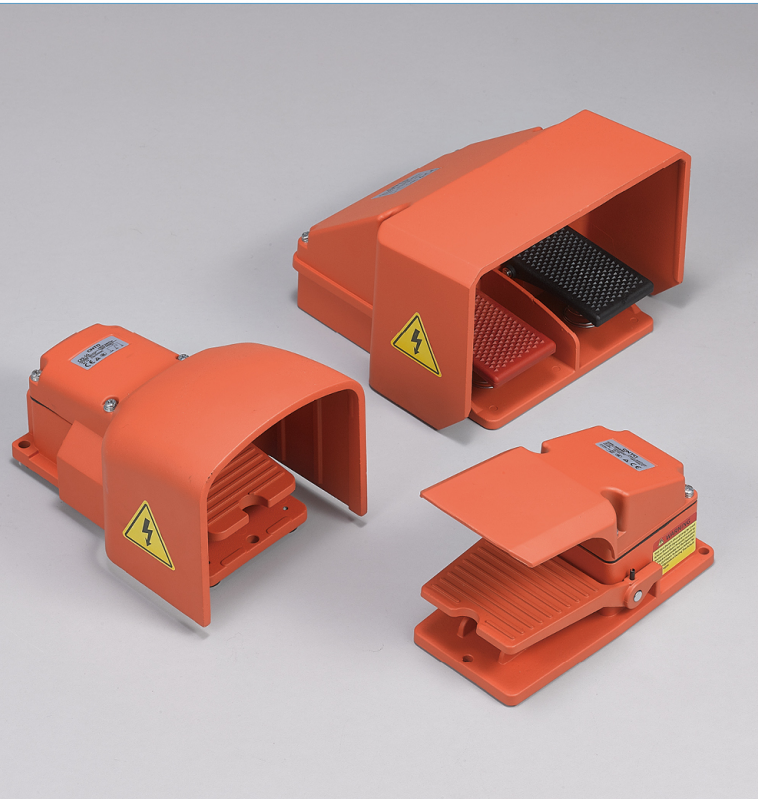
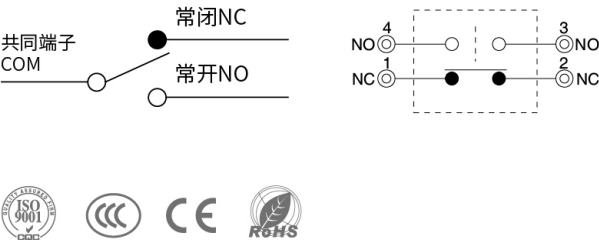
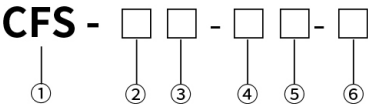




- 特点 Features
- 系列化、多功能化全范围高级脚踏开关。
 - 表面经烤漆加工，其基本颜色为警告性橙红色，具有耐摩擦、耐高低温、耐化学品腐蚀，有着较高的安全防护性能。
 - 内置CM-1704瞬动型微动开关，获得CCC、TUV、CE认证。
 - 电缆线引出端设置有电缆锁头，抗拉强度高、防护性能优良。
 - Series, multi-functional full range of advanced foot switch.
 - The surface is baked plastic processing, its basic color is warning orange-red, with friction resistance, high and low temperature resistance, chemical corrosion resistance, has a high safety protection performance.
 - Built-in CM-1704 instantaneous micro switch, CCC, TUV, CE certification.
 - The leading end of the cable is provided with a cable lock, which has high tensile strength and excellent protection performance.



选型说明 Model Designation



重型铝合金脚踏开关
Heavy duty aluminum alloy foot switch

序号 No	项目 Item	代号 Code	说明 Description
①	系列号 Serial number	CFS	标准型 Standard type
②	外形结构 Outline structure	302	使用 CM-1704 微动开关 *1 只 Use CM-1704 inching internal switch * 1
		304	使用 CM-1704 微动开关 *2 只 Use CM-1704 inching internal switch * 2
		305	内藏 CMV16-071C2 微动开关，自锁 Built-in CMV16-071C2 microswitch, self-locking
		402	使用 CM-1704 微动开关 *1 只 Use CM-1704 inching internal switch * 1
		404	使用 CM-1704 微动开关 *2 只 Use CM-1704 inching internal switch * 2
		405	内藏 CMV16-071C2 微动开关，自锁 Built-in CMV16-071C2 microswitch, self-locking
		502	使用 CM-1704 微动开关 *1 只 Use CM-1704 inching internal switch * 1
		504	使用 CM-1704 微动开关 *2 只 Use CM-1704 inching internal switch * 2
		505	内藏 CMV16-071C2 微动开关，自锁 Built-in CMV16-071C2 microswitch, self-locking
		302M	使用 CM-1704 微动开关 *1 只 (金属底座) Use CM-1704 inching internal switch * 1 (Metal base)
		304M	使用 CM-1704 微动开关 *2 只 (金属底座) Use CM-1704 inching internal switch * 2 (Metal base)
		305M	内藏 CMV16-071C2 微动开关，自锁 (金属底座) Built-in CMV16-071C2 microswitch, self-locking (Metal base)
		402M	使用 CM-1704 微动开关 *1 只 (金属底座) Use CM-1704 inching internal switch * 1 (Metal base)
		404M	使用 CM-1704 微动开关 *2 只 (金属底座) Use CM-1704 inching internal switch * 2 (Metal base)
		405M	内藏 CMV16-071C2 微动开关，自锁 (金属底座) Built-in CMV16-071C2 microswitch, self-locking (Metal base)
		502M	使用 CM-1704 微动开关 *1 只 (金属底座) Use CM-1704 inching internal switch * 1 (Metal base)
		504M	使用 CM-1704 微动开关 *2 只 (金属底座) Use CM-1704 inching internal switch * 2 (Metal base)
		505M	内藏 CMV16-071C2 微动开关，自锁 (金属底座) Built-in CMV16-071C2 microswitch, self-locking (Metal base)
③	导管 Conduit	5G	使用 CM-1306 微动开关 *1 只 Use CM-1306 inching internal switch * 1
		54G	使用 CM-1306 微动开关 *2 只 Use CM-1306 inching internal switch * 2
		602	内藏触点模块 *2 Built-in contact module * 2
		902	内藏触点模块 *2 Built-in contact module * 2
		无 None	M20
		P	Pg13.5

④	电线类型 Wire type	无 None	PVC 线缆 PVC cable
		U	PUR 线缆 (耐油) PUR cable (oil resistant)
⑤	线缆长度 Standard type	无 None	标准型, 不带线 Standard type, without wire
		L1~L5	带线型, (L1 表示 1 米线, 线长不仅限 L5) With line type, (L1 represents 1m line, and the line length is not limited to L5)
⑥	特殊规格 Special specification	无 None	常规型 Conventional type
		T □	2: 双排 3: 三排 4: 四排 2: two-row 3: three-row 4: four-row

特性 Characteristic

材质 Material	铝合金 Aluminium alloy
接触电阻 Contact resistance	50mΩ以下(初期) Below 50mΩ (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
介电耐压 Insulation resistance	1890VAC 时间 1 分钟 1890VAC time 1 minute
电气寿命 Electrical Life	30万次以上 More than 300,000 times 10万次以上 (CFS-GM35, CFS-GM45, CFS-HM55) More than 100,000 times (CFS-GM35, CFS-GM45, CFS-HM55)
环境温度 Ambient temperature	-25°C~+70°C (无凝露、无结冰) -25°C~+70°C (no condensation, no icing)
环境湿度 Ambient humidity	45%~85%RH
防护等级 Class of protection	IP50,IP66(CFS-HM5G, CFS-HM54G)

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
CE	EN 60947-5-1	

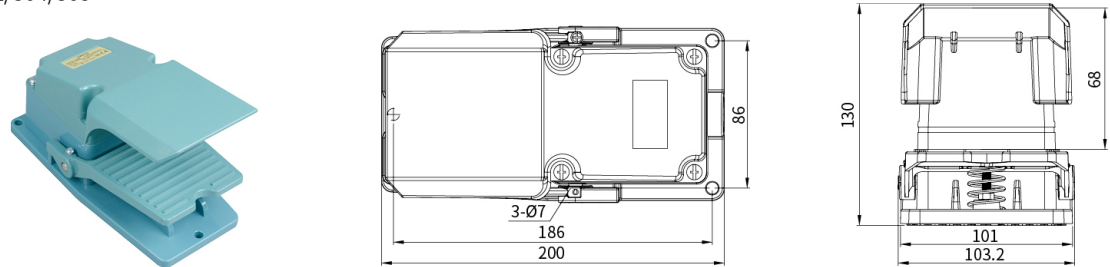
安全规格认证额定值 Safety Specification Certification Rating

CCC(GB/T 14048.5)

类型与额定值 Type and Rating
AC-15 250V/15A, AC-15 250V/16A(CFS-HM62, CFS-HM92)

外观和尺寸 Appearance and Dimension

CFS-302/304/305

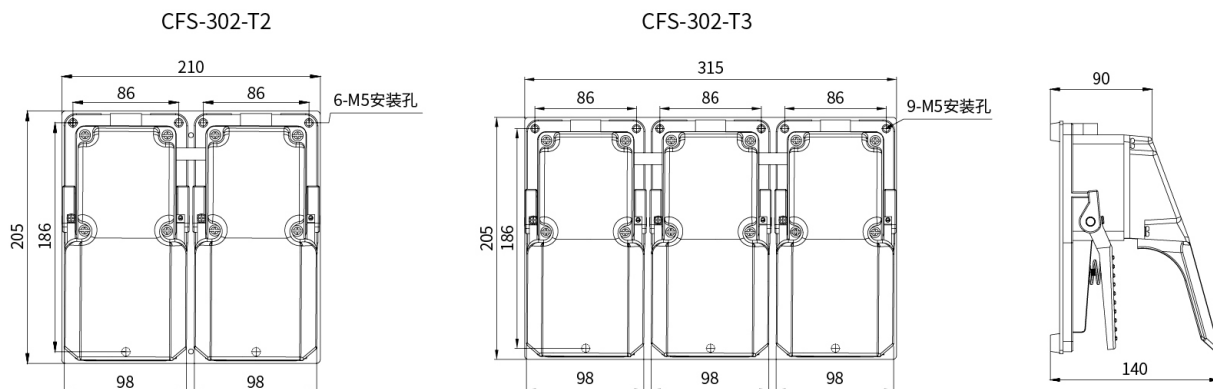


常用型号 Common Model

型号规格 Specification	形式 Form	内置开关 Built-in switch			操作力 (N) Operating force (N)
		触点型号 Contact type	触点形式 Contact form	额定电流 Rated current	
CFS-302	自复位型 Self-resetting type	CM-1704	1NO/1NC	15A	≤ 35N
CFS-304		CM-1704 微动内开关 *2 只 CM-1704 inching internal switch * 2	2*1NO/1NC		
CFS-305	自锁交替型 Self-locking alternate type	CMV16-071C2	1NO/1NC	10A	

注：以上为常用型号参考，未在表格内的参考选型说明。
Note: The above is a common model reference, not in the table reference selection description.

外观和尺寸 Appearance and Dimension



常用型号 Common Model

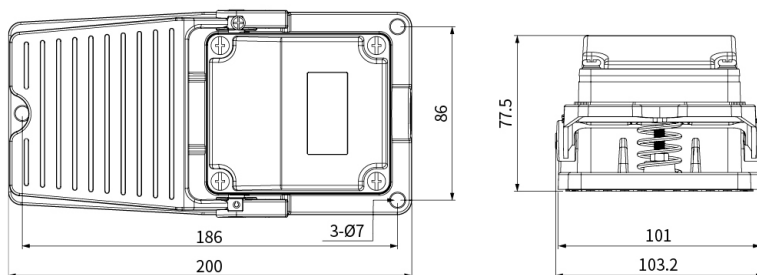
Model	Action	Switches per pedal	Total contacts	Current/switch	Force/pedal
CFS-302-T2	Momentary	1 x CM-1704	2 x (1NO+1NC)	15A	≤35N
CFS-304-T2	Momentary	2 x CM-1704	4 x (1NO+1NC)	15A	≤35N
CFS-305-T2	Latching	1 x CMV16-071C2	2 x (1NO+1NC)	10A	≤35N
CFS-302-T3	Momentary	1 x CM-1704	3 x (1NO+1NC)	15A	≤35N
CFS-304-T3	Momentary	2 x CM-1704	6 x (1NO+1NC)	15A	≤35N
CFS-305-T3	Latching	1 x CMV16-071C2	3 x (1NO+1NC)	10A	≤35N

Contact totals count all pedals; current is rated per internal switch.

注：以上为常用型号参考，未在表格内的参考选型说明。

Note: The above is a common model reference, not in the table reference selection description.

CFS-402/404/405



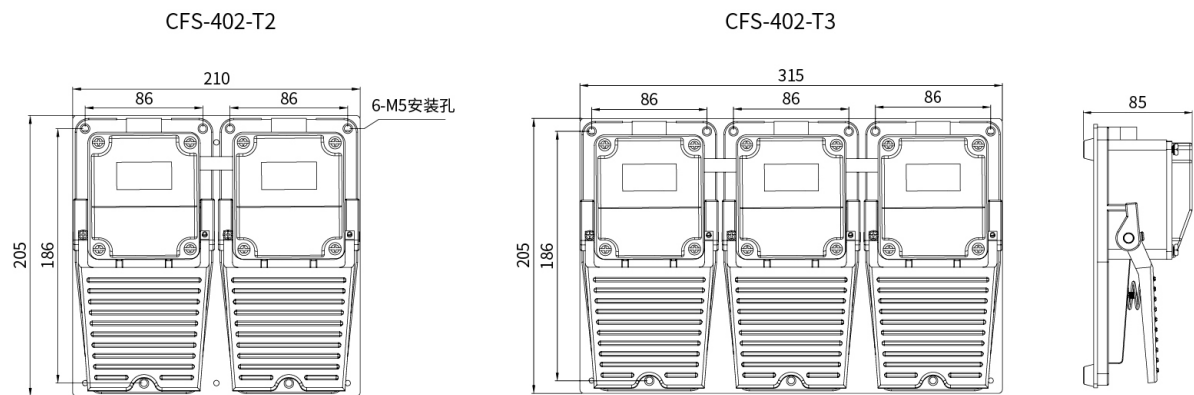
常用型号 Common Model

型号规格 Specification	形式 Form	内置开关 Built-in switch			操作力 (N) Operating force (N)
		触点型号 Contact type	触点形式 Contact form	额定电流 Rated current	
CFS-402	自复位型 Self-resetting type	CM-1704	1NO/1NC	15A	≤ 35N
CFS-404		CM-1704 微动内开关 *2 只 CM-1704 inching internal switch * 2	2*1NO/1NC		
CFS-405	自锁交替型 Self-locking alternate type	CMV16-071C2	1NO/1NC	10A	

注：以上为常用型号参考，未在表格内的参考选型说明。

Note: The above is a common model reference, not in the table reference selection description.

外观和尺寸 Appearance and Dimension



常用型号 Common Model

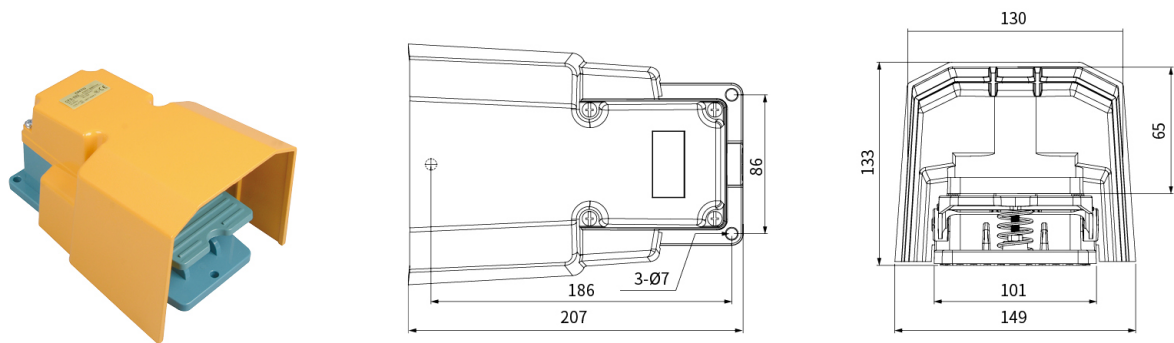
Model	Action	Switches per pedal	Total contacts	Current/switch	Force/pedal
CFS-402-T2	Momentary	1 x CM-1704	2 x (1NO+1NC)	15A	≤35N
CFS-404-T2	Momentary	2 x CM-1704	4 x (1NO+1NC)	15A	≤35N
CFS-405-T2	Latching	1 x CMV16-071C2	2 x (1NO+1NC)	10A	≤35N
CFS-402-T3	Momentary	1 x CM-1704	3 x (1NO+1NC)	15A	≤35N
CFS-404-T3	Momentary	2 x CM-1704	6 x (1NO+1NC)	15A	≤35N
CFS-405-T3	Latching	1 x CMV16-071C2	3 x (1NO+1NC)	10A	≤35N

Contact totals count all pedals; current is rated per internal switch.

注：以上为常用型号参考，未在表格内的参考选型说明。

Note: The above is a common model reference, not in the table reference selection description.

CFS-502/504/505



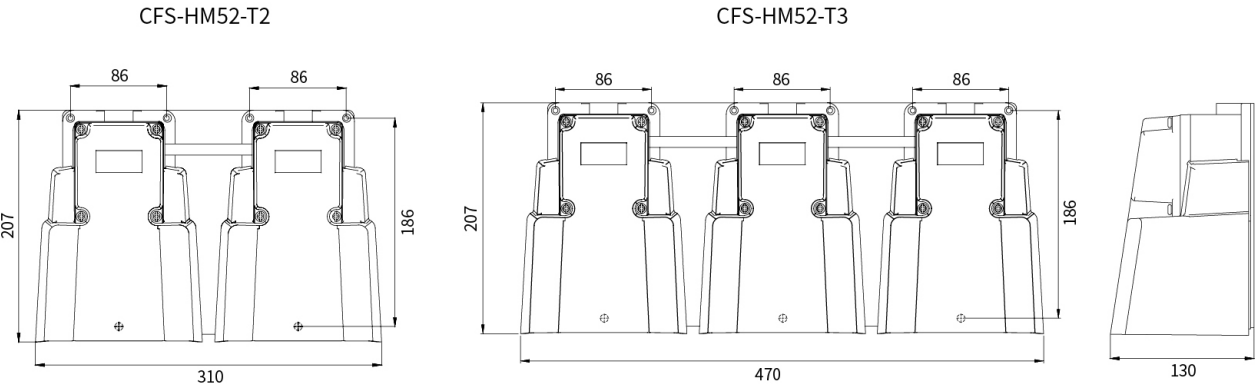
常用型号 Common Model

型号规格 Specification	形式 Form	内置开关 Built-in switch			操作力 (N) Operating force (N)
		触点型号 Contact type	触点形式 Contact form	额定电流 Rated current	
CFS-502	自复位型 Self-resetting type	CM-1704	1NO/1NC	15A	≤ 35N
CFS-504		CM-1704 微动内开关 *2 只 CM-1704 inching internal switch * 2	2*1NO/1NC		
CFS-505	自锁交替型 Self-locking alternate type	CMV16-071C2	1NO/1NC	10A	

注：以上为常用型号参考，未在表格内的参考选型说明。

Note: The above is a common model reference, not in the table reference selection description.

外观和尺寸 Appearance and Dimension



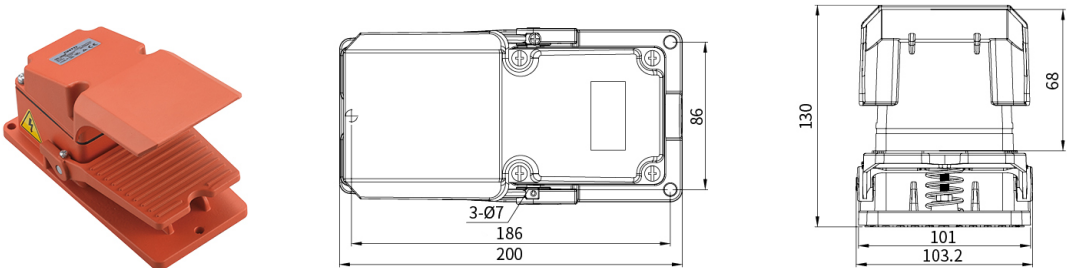
常用型号 Common Model

Model	Action	Switches per pedal	Total contacts	Current/switch	Force/pedal
CFS-502-T2	Momentary	1 x CM-1704	2 x (1NO+1NC)	15A	<=35N
CFS-504-T2	Momentary	2 x CM-1704	4 x (1NO+1NC)	15A	<=35N
CFS-505-T2	Latching	1 x CMV16-071C2	2 x (1NO+1NC)	10A	<=35N
CFS-502-T3	Momentary	1 x CM-1704	3 x (1NO+1NC)	15A	<=35N
CFS-504-T3	Momentary	2 x CM-1704	6 x (1NO+1NC)	15A	<=35N
CFS-505-T3	Latching	1 x CMV16-071C2	3 x (1NO+1NC)	10A	<=35N

Contact totals count all pedals; current is rated per internal switch.

注：以上为常用型号参考，未在表格内的参考选型说明。
Note: The above is a common model reference, not in the table reference selection description.

CFS-302M
CFS-304M
CFS-305M

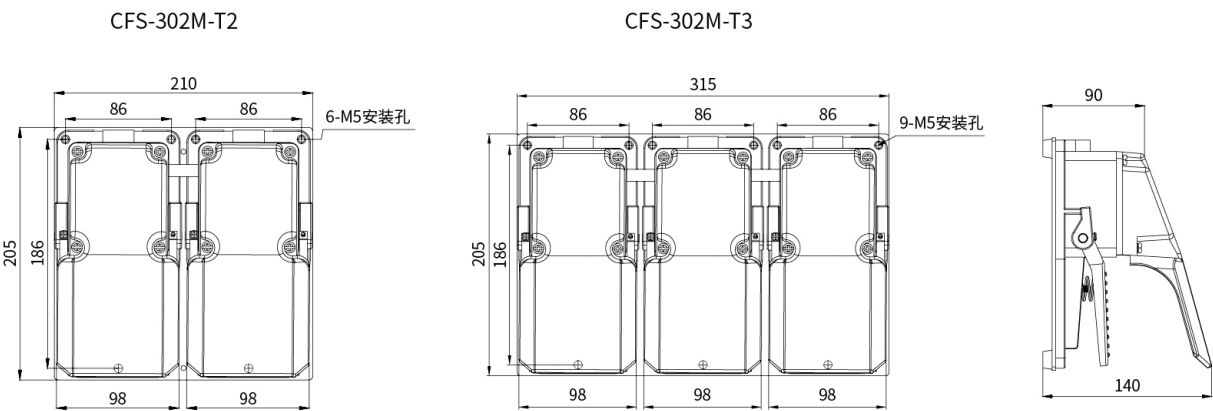


常用型号 Common Model

型号规格 Specification	形式 Form	内置开关 Built-in switch			操作力 (N) Operating force (N)
		触点型号 Contact type	触点形式 Contact form	额定电流 Rated current	
CFS-302M	自复位型 Self-resetting type	CM-1704	1NO/1NC	15A	≤ 35N
CFS-304M		CM-1704 微动内开关 *2 只 CM-1704 inching internal switch * 2	2*1NO/1NC		
CFS-305M	自锁交替型 Self-locking alternate type	CMV16-071C2	1NO/1NC	10A	

注：以上为常用型号参考，未在表格内的参考选型说明。
Note: The above is a common model reference, not in the table reference selection description.

外观和尺寸 Appearance and Dimension



常用型号 Common Model

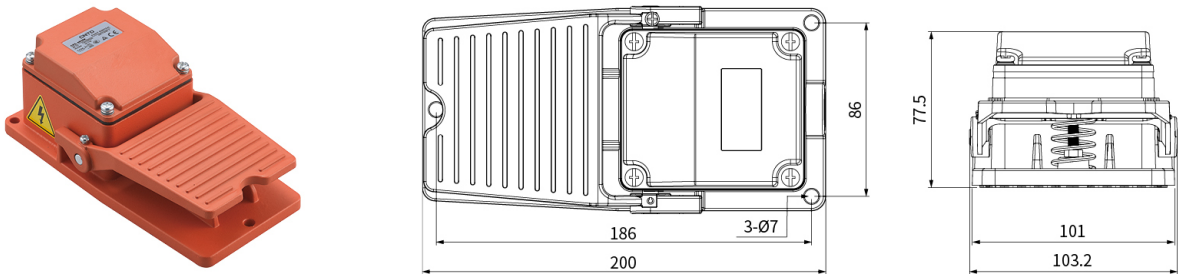
Model	Action	Switch/pedal	Contacts/pedal	Total contacts	Current/switch	Force/pedal
CFS-302M-T2	Momentary	CM-1704	1NO+1NC	2 x (1NO+1NC)	15A	<=35N
CFS-302M-T3	Momentary	CM-1704	1NO+1NC	3 x (1NO+1NC)	15A	<=35N

One switch per pedal; assembly contact totals are shown separately.

注：以上为常用型号参考，未在表格内的参考选型说明。

Note: The above is a common model reference, not in the table reference selection description.

CFS-402M
CFS-404M
CFS-405M



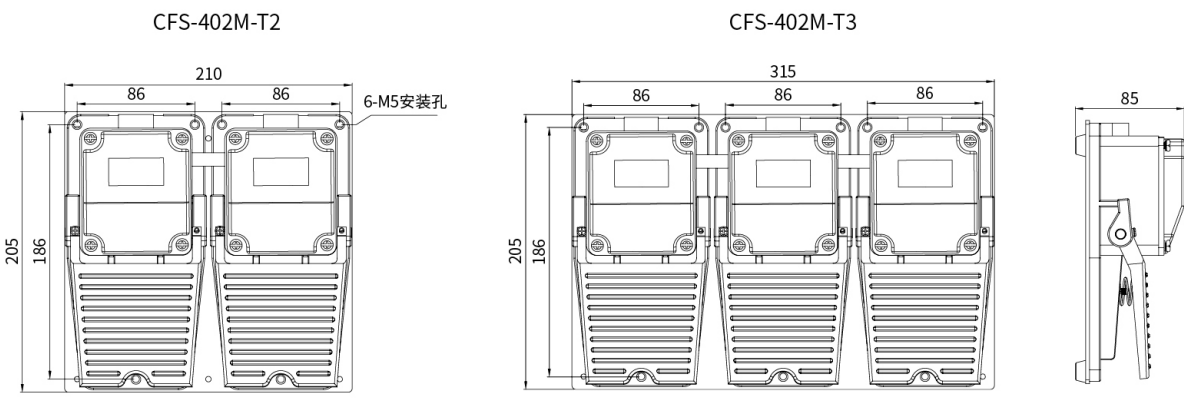
常用型号 Common Model

型号规格 Specification	形式 Form	内置开关 Built-in switch			操作力 (N) Operating force (N)
		触点型号 Contact type	触点形式 Contact form	额定电流 Rated current	
CFS-402M	自复位型 Self-resetting type	CM-1704	1NO/1NC	15A	≤ 35N
CFS-404M		CM-1704 微动内开关 *2 只 CM-1704 inching internal switch * 2	2*1NO/1NC		
CFS-405M	自锁交替型 Self-locking alternate type	CMV16-071C2	1NO/1NC	10A	

注：以上为常用型号参考，未在表格内的参考选型说明。

Note: The above is a common model reference, not in the table reference selection description.

外观和尺寸 Appearance and Dimension

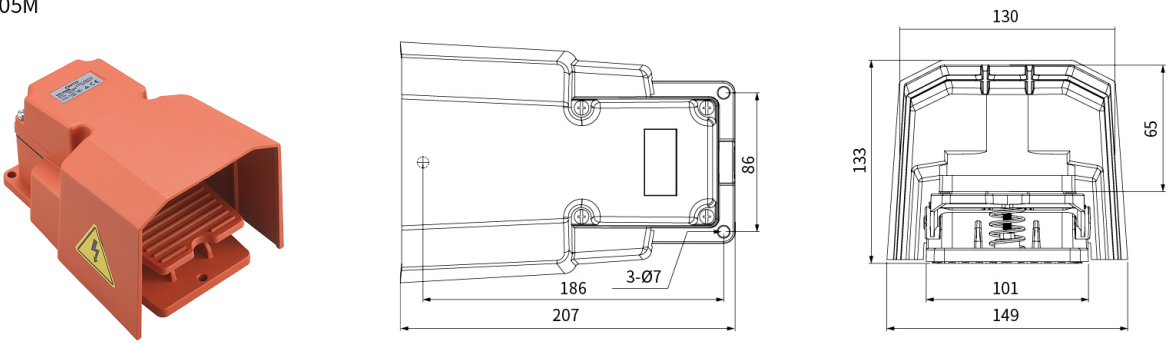


常用型号 Common Model

Model	Action	Switch/pedal	Contacts/pedal	Total contacts	Current/switch	Force/pedal
CFS-402M-T2	Momentary	CM-1704	1NO+1NC	2 x (1NO+1NC)	15A	≤35N
CFS-402M-T3	Momentary	CM-1704	1NO+1NC	3 x (1NO+1NC)	15A	≤35N

One switch per pedal; assembly contact totals are shown separately.
注：以上为常用型号参考，未在表格内的参考选型说明。
Note: The above is a common model reference, not in the table reference selection description.

CFS-502M
CFS-504M
CFS-505M

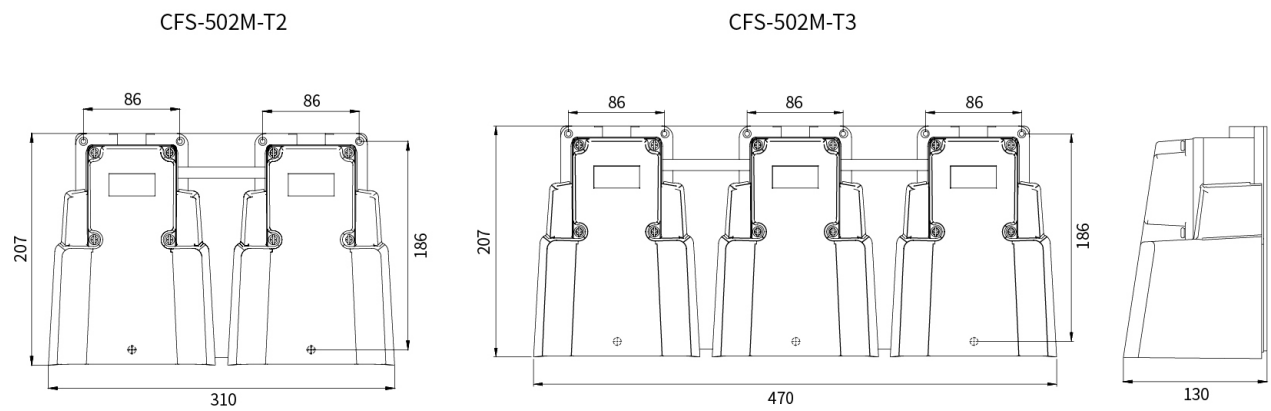


常用型号 Common Model

型号规格 Specification	形式 Form	内置开关 Built-in switch			操作力 (N) Operating force (N)
		触点型号 Contact type	触点形式 Contact form	额定电流 Rated current	
CFS-502M	自复位型 Self-resetting type	CM-1704	1NO/1NC	15A	≤ 35N
CFS-504M		CM-1704 微动内开关 *2 只 CM-1704 inching internal switch * 2	2*1NO/1NC		
CFS-505M	自锁交替型 Self-locking alternate type	CMV16-071C2	1NO/1NC	10A	

注：以上为常用型号参考，未在表格内的参考选型说明。
Note: The above is a common model reference, not in the table reference selection description.

外观和尺寸 Appearance and Dimension

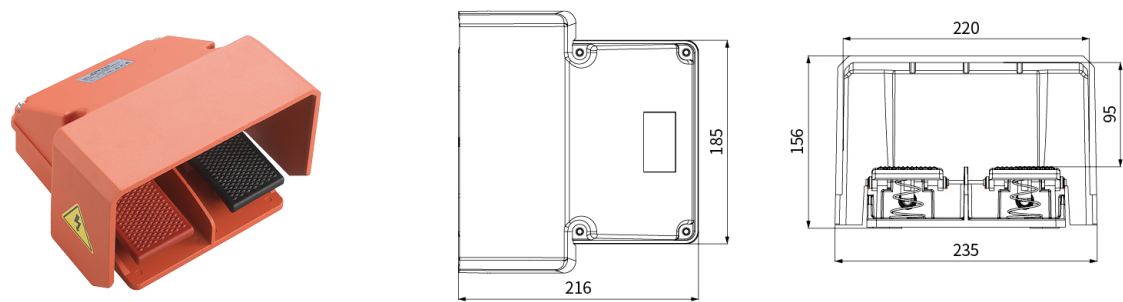


常用型号 Common Model

Model	Action	Switch/pedal	Contacts/pedal	Total contacts	Current/switch	Force/pedal
CFS-502M-T2	Momentary	CM-1704	1NO+1NC	2 x (1NO+1NC)	15A	<=35N
CFS-502M-T3	Momentary	CM-1704	1NO+1NC	3 x (1NO+1NC)	15A	<=35N

One switch per pedal; assembly contact totals are shown separately.
注：以上为常用型号参考，未在表格内的参考选型说明。
Note: The above is a common model reference, not in the table reference selection description.

CFS-602



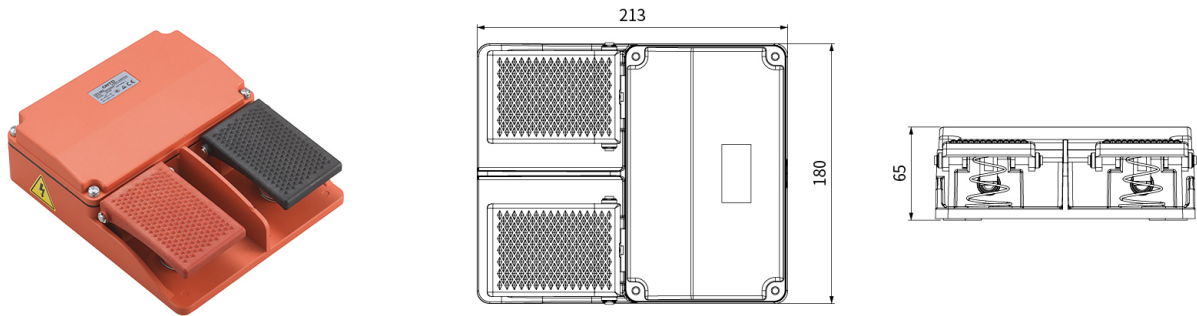
常用型号 Common Model

型号规格 Specification	形式 Form	内置开关 Built-in switch			操作力 (N) Operating force (N)
		触点型号 Contact type	触点形式 Contact form	额定电流 Rated current	
CFS-602	自复位型 Self-resetting type	内置触点模块 *2 Built-in contact module *2	2*1NO1NC	16A	≤ 35N

注：以上为常用型号参考，未在表格内的参考选型说明。
Note: The above is a common model reference, not in the table reference selection description.

外观和尺寸 Appearance and Dimension

CFS-902

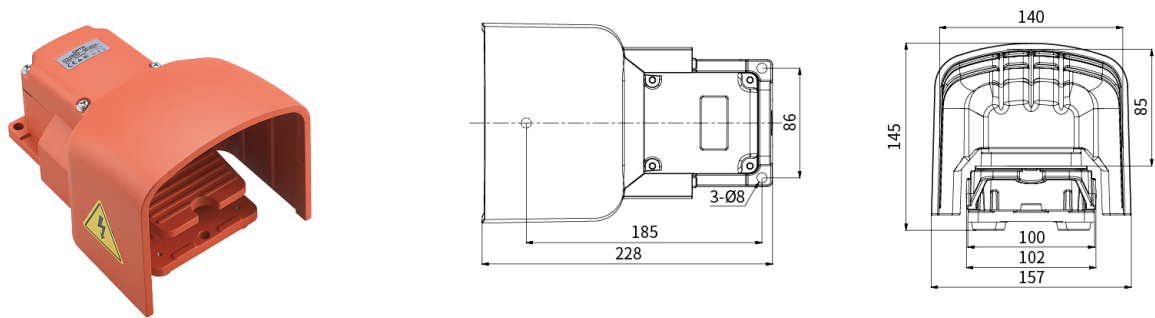


常用型号 Common Model

型号规格 Specification	形式 Form	内置开关 Built-in switch			操作力 (N) Operating force (N)
		触点型号 Contact type	触点形式 Contact form	额定电流 Rated current	
CFS-902	自复位型 Self-resetting type	内藏触点模块 *2 Built-in contact module * 2	2*1NO1NC	16A	≤ 35N

注：以上为常用型号参考，未在表格内的参考选型说明。
Note: The above is a common model reference, not in the table reference selection description.

CFS-5G
CFS-54G



常用型号 Common Model

型号规格 Specification	形式 Form	内置开关 Built-in switch			操作力 (N) Operating force (N)
		触点型号 Contact type	触点形式 Contact form	额定电流 Rated current	
CFS-5G	自复位型 Self-resetting type	CM-1306	1NO/1NC	15A	≤ 35N
CFS-54G		CM-1306 微动内开关 *2 只 CM-1306 inching internal switch * 2	2*1NO/1NC		

注：以上为常用型号参考，未在表格内的参考选型说明。
Note: The above is a common model reference, not in the table reference selection description.

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。

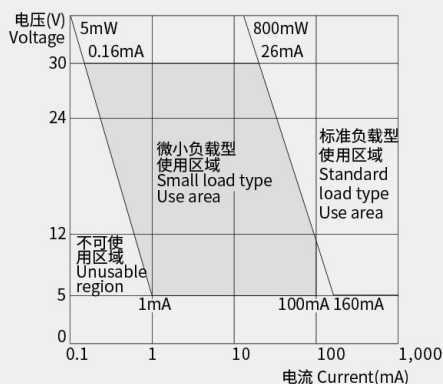
如果在开关微小负载电路时使用一般负载用开关，可能会引起接触不良。下图为开关负载区域范围定义。本目录册内产品适用于 DC24V 10mA 以上范围，当使用负载小于 DC24V 10mA 以下时，可能存在由于电流过小无法击破触点表面氧化膜或硫化膜的现象，从而导致开关接触不良。所以当使用负载小于 DC24V 10mA 以下时，请咨询昌得电气科技有限公司进行产品定制。

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.