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

选型说明 Model Designation

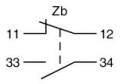
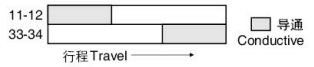
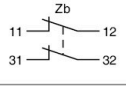
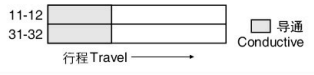
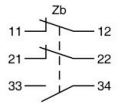
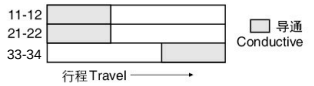
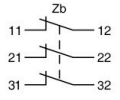
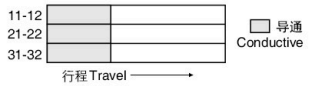
C4N - □ □ □ NR
① ② ③ ④

序号 No	项目 Item	代号 Code	说明 Description	强制断开有 / 无 Forced disconnection Yes/No
①	产品系列 Product series	C4N	设计代号 Design code	
②	导管 / 连接器尺寸 Conduit/ connector size	1	Pg13.5(1 导管型 Conduit type)	
		2	G1/2(1 导管型 Conduit type)	
		3	Pg11(1 导管型 Conduit type)	
		4	M20(1 导管型 Conduit type)	
		9	M16(1 导管型 Conduit type)	
		5	Pg13.5(2 导管型 Conduit type)	
		0	Pg11(2 导管型 Conduit type)	
		6	G1/2(2 导管型 Conduit type)	
		7	M16(2 导管型 Conduit type)	
		8	M20(2 导管型 Conduit type)	
③	内藏开关 Hidden switch	3	1NC/1NO(慢动型 Slow motion type)	
		4	2NC(慢动型 Slow motion type)	
		5	2NC/1NO(慢动型 Slow motion type)	
		6	3NC(慢动型 Slow motion type)	
④	头部及传动杆 Head and drive rod	04	滚珠摆杆型 (金属摆杆，树脂滚珠) Ball swing rod type (metal swing rod, resin ball)	仅 NC 端有强制断开 Only NC end has forced disconnection
		04T	滚珠摆杆型 (金属摆杆，树脂滚珠 , 转轴金属) Ball swing rod type (metal swing rod, resin ball, shaft metal)	仅 NC 端有强制断开 Only NC end has forced disconnection
		04H	滚珠摆杆型 (金属摆杆，橡胶滚珠) Ball pendulum type (metal pendulum, rubber ball)	仅 NC 端有强制断开 Only NC end has forced disconnection
		05	滚珠摆杆型 (金属摆杆，金属滚珠) Ball swing rod type (metal swing rod, metal ball)	仅 NC 端有强制断开 Only NC end has forced disconnection
		05T	滚珠摆杆型 (金属摆杆，金属滚珠 , 转轴金属) Ball swing rod type (metal swing rod, metal ball, shaft metal)	仅 NC 端有强制断开 Only NC end has forced disconnection
		07	可调棒式摆杆型 Adjustable rod swing rod type	仅 NC 端有强制断开 Only NC end has forced disconnection

选型说明 Model Designation

④	头部及传动杆 Head and drive rod	08	可调滚珠摆杆 (金属摆杆，树脂滚珠) Adjustable ball swing rod (metal swing rod, resin ball)	仅 NC 端有强制断开 Only NC end has forced disconnection
		08T	可调滚珠摆杆 (金属摆杆，树脂滚珠 , 转轴金属) Adjustable ball swing rod (metal swing rod, resin ball, shaft metal)	仅 NC 端有强制断开 Only NC end has forced disconnection
		08H	可调滚珠摆杆 (金属摆杆，橡胶滚珠) Adjustable ball swing rod (metal swing rod, rubber ball)	仅 NC 端有强制断开 Only NC end has forced disconnection
		08HT	可调滚珠摆杆 (金属摆杆，橡胶滚珠 , 转轴金属) Adjustable ball swing rod (metal swing rod, rubber ball, shaft metal)	仅 NC 端有强制断开 Only NC end has forced disconnection
		09	可调滚珠摆杆 (金属摆杆，金属滚珠) Adjustable ball swing rod (metal swing rod, metal ball)	仅 NC 端有强制断开 Only NC end has forced disconnection
		09T	可调滚珠摆杆 (金属摆杆，金属滚珠 , 转轴金属) Adjustable ball swing rod (metal swing rod, metal ball, shaft metal)	仅 NC 端有强制断开 Only NC end has forced disconnection
		11	顶部柱塞型 Top plunger type	仅 NC 端有强制断开 Only NC end has forced disconnection
		12	顶部柱塞横滚珠 (塑胶滚珠) 型 Top plunger horizontal ball (plastic ball) type	仅 NC 端有强制断开 Only NC end has forced disconnection
		13	顶部柱塞竖滚珠 (塑胶滚珠) 型 Top plunger vertical ball (plastic ball) type	仅 NC 端有强制断开 Only NC end has forced disconnection
		15	单侧悬臂滚珠型 (水平) Single side cantilever ball type (horizontal)	仅 NC 端有强制断开 Only NC end has forced disconnection
		16	单侧悬臂滚珠型 (垂直) Single side cantilever ball type (vertical)	仅 NC 端有强制断开 Only NC end has forced disconnection

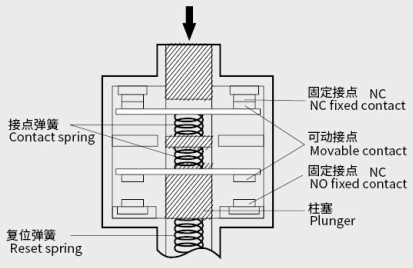
接点形式 Contact Form

型号 Model	接点 Contact	接点形式 Contact form	动作模式 Operation mode	说明 Explanation
C4N-□3□□NR	1NC/1NO (慢动型) 1NC/1NO (Slow-action)			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-□4□□NR	2NC (慢动型) 2NC (Slow-action)			仅NC接点(11-12、31-32)具有强制断开功能(⊖)。 Both NC contacts (11-12, 31-32) have direct opening. 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-□5□□NR	2NC/1NO(慢动型) 2NC/1NO (Slow-action)			仅NC接点(11-12、21-22)具有强制断开功能(⊖)。 Both NC contacts (11-12, 21-22) have direct opening. 接点 (11-12)、(21-22)、(33-34) 可作异极使用。 Contacts (11-12), (21-22), (33-34) may use different polarities.
C4N-□6□□NR	3NC(慢动型) 3NC (Slow-action)			仅NC接点(11-12、21-22、31-32)具有强制断开功能(⊖)。 All three NC contacts have direct opening. 接点(11-12)、(21-22) 和(31-32) 可作异极使用。 Contacts (11-12),(21-22)and (31-32) can be used as heteropoles.

强制断开构造 Forced Disconnecting Mechansim

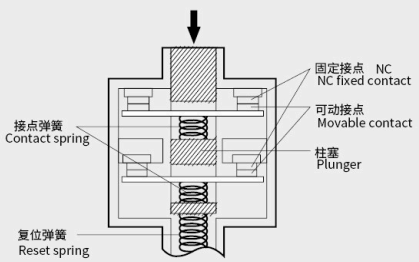
1NC/1NO接点(慢动型)
1NC and 1NO contacts (slow-action)

EN 60947-5-1的强制断开认定⊖(仅NC接点侧有强制断开功能)。熔接发生时，通过柱塞的压下NC接点分离，回路切断。
Forced disconnect find ⊖ of EN 60947-5-1 (Only NC contact side has forced disconnect function). When welding occurs, NC contact is separated by pressing the plunger and the loop is cut off.



2NC接点(慢动型)
2NC contacts (slow-action)

EN 60947-5-1的强制断开认定⊖(仅NC接点侧有强制断开功能)。
Forced disconnect find ⊖ of EN 60947-5-1 (Only NC contact side has forced disconnect function).



特性 Characteristics

保护等级 Protection level		IP67
寿命 Life	电气 Electrical	50万次以上(AC250V 3A、电阻负载) More than 500,000 times (AC250V 3A, resistive load) 30万次以上(AC250V 10A、电阻负载) More than 300,000 times (AC250V 10A, resistive load)
操作速度 Operating speed		1mm-0.5m/s(C4N-104R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 (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 (Ui)		500V
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(EN 60947-5-1) Pollution degree 3 (EN 60947-5-1)
耐电压 Withstand voltage (EN 60947-5-1)		同极端子间: 2.5kV Between homopolar terminals: 2.5kV
		异极端子间: 4kV Between heteropolar terminals: 4kV
		各端子和非充电金属部间: 6kV Between terminals and uncharged metal parts: 6kV
接点间隙 Contact gap		慢动型接点间隙：最小2×2mm Slow-action contact gap: minimum 2×2mm
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°C(没有结冰) Using：-20~+70°C(With no icing)
环境湿度 Ambient humidity		95%RH以下 Less than 95% RH

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。
* 保护等级是根据(EN 60947-5-1) 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°C~ 35°C、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°C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.
* The protection level is gotten based on test method of (EN 60947-5-1). 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°C ~ 35°C and humidity of 40% to 70% RH. For additional details, please contact us.
Above 35°C, do not switch two or more 3A, 250VAC load circuits simultaneously.
*4.The values will vary with different switching frequency, environmental conditions, reliability level and other factors. Please confirm on the actual load in advance.

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 60947-5-1	
CE		

安全标准认证额定规格 Safety Standard Certification Rated Specifications

TUV (EN 60947-5-1)，CCC (GB14048.5)

项目 Item	使用类型 Usage type	AC-15	DC-13
额定工作电流 Rated working current(Ie)		3A	0.3A
额定工作电压 Rated working voltage(Ue)		250V	220V

注： 请使用符合IEC60269的gI或gG型10A保险丝作为短路保护装置。开关内未配保险丝。
Note: Please use gI or gG 10A fuses that comply with IEC60269 as short-circuit protection devices. The switch is not equipped with a fuse.

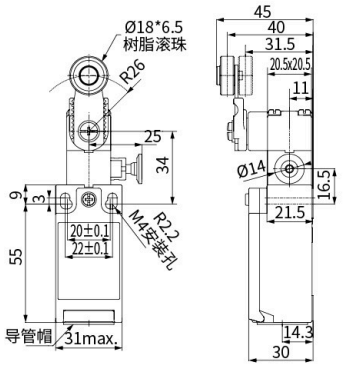
CSA(C22.2 NO.14)

类型与额定值 Type and Rating
240V/3A 阻性负载 Resistive load
0.27A/250V 阻性负载 Resistive load

外观和尺寸 Appearance and Dimension

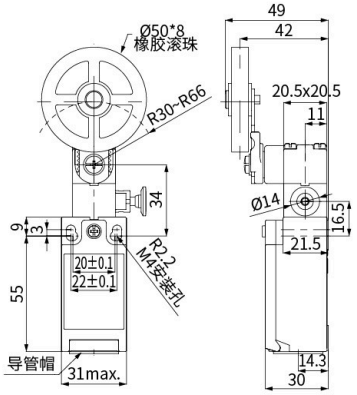
C4N-□□04NR

滚珠摆杆型 (金属摆杆，树脂滚珠)
Ball swing rod type
(metal swing rod, resin ball)



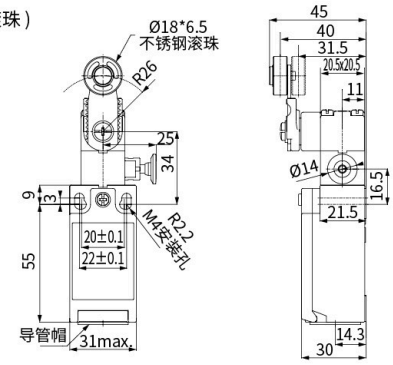
C4N-□□04HNR

金属摆杆，橡胶滚轮
Metal lever with
rubber roller



C4N-□□05NR

滚珠摆杆型 (金属摆杆，金属滚珠)
Ball swing rod type
(metal swing rod, metal ball)



慢动型 (2NC)，慢动型(3NC)

动作特性 Operating Characteristics		C4N-□□04NR	C4N-□□04HNR	C4N-□□05NR
锁定力	LF	8N		
锁定行程	LT	50°±5°		
预行程	PT	25°±5°		
过行程	OT(最大Max.)	50°		
总行程 *1	TT	(80°)		
强制断开行程	DOT(最小Min.)	35°		
强制断开力	DOF(最小Min.)	20N		

注：2NC 及 3NC 接点的开路 / 闭路动作的同时性会有差异。
*1 为参考值；

Note: Simultaneity of open/closed circuit action of 2NC and 3NC contacts will be different.
*1 is the reference value;

慢动型 (1NC/1NO)，慢动型(2NC/1NO)

动作特性 Operating Characteristics		C4N-□□04NR	C4N-□□04HNR	C4N-□□05NR
锁定力	LF	8N		
锁定行程	LT	50°±5°		
预行程	PT1(NC断开)	25°±5°		
	PT2(NO接通)	40°±5°		
过行程	OT(最大Max.)	35°		
总行程 *1	TT	(80°)		
强制断开行程	DOT(最小Min.)	35°		
强制断开力	DOF(最小Min.)	20N		

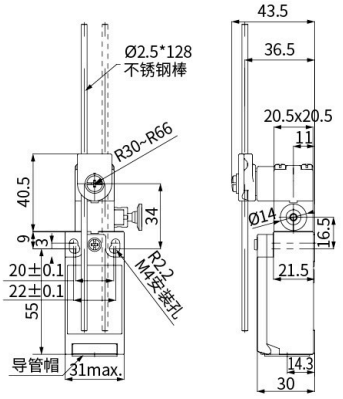
注：2NC、1NO 接点的开路 / 闭路动作的同时性会有差异。
开关动作参数特性在竖直加力方向测得；
*1 为参考值；

Note: Simultaneity of open/closed circuit action for 2NC,1NO contacts will be different.
The operating parameters of the switch are measured in the vertical afterforce direction.
*1 is the reference value;

外观和尺寸 Appearance and Dimension

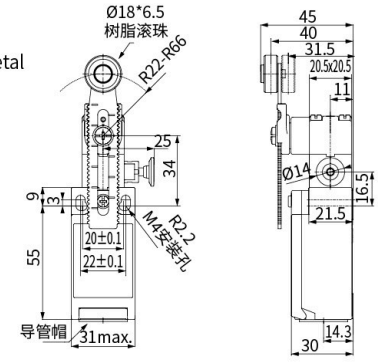
C4N-□□07NR

可调棒式摆杆型
Adjustable rod swing rod type



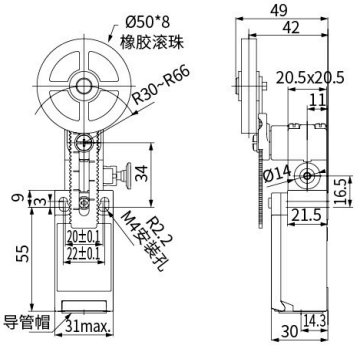
C4N-□□08NR

可调滚珠摆杆
(金属摆杆，树脂滚珠)
Adjustable ball swing rod (metal swing rod, resin ball)



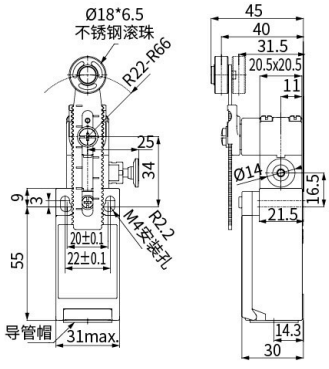
C4N-□□08HNR

可调滚珠摆杆
(金属摆杆，橡胶滚珠)
Adjustable ball swing rod
(metal swing rod, rubber ball)



C4N-□□09NR

可调滚珠摆杆
(金属摆杆，金属滚珠)
Adjustable ball swing rod
(metal swing rod, metal ball)



慢动型 (2NC)，慢动型(3NC)

动作特性 Operating Characteristics		C4N-□□07NR	C4N-□□08NR	C4N-□□08HNR	C4N-□□09NR
锁定力	LF	8N			
锁定行程	LT	50°±5°			
预行程	PT	25°±5°			
过行程	OT(最大Max.)	50°			
总行程 *1	TT	(80°)			
强制断开行程	DOT(最小Min.)	35°			
强制断开力	DOF(最小Min.)	20N			

注：2NC 及 3NC 接点的开路 / 闭路动作的同时性会有差异。
开关动作参数特性在可调摆杆设定在 35mm 时测得；
*1 为参考值；

Note: Simultaneity of open/closed circuit action of 2NC and 3NC contacts will be different.
The switch action parameter characteristics are measured when the adjustable pendulum rod is set at 35mm;
*1 is the reference value;

慢动型 (1NC/1NO)，慢动型(2NC/1NO)

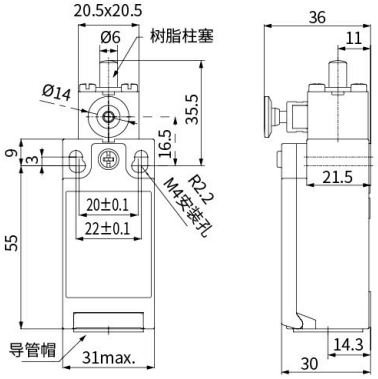
动作特性 Operating Characteristics		C4N-□□07NR	C4N-□□08NR	C4N-□□08HNR	C4N-□□09NR
锁定力	LF	8N			
锁定行程	LT	50°±5°			
预行程	PT1(NC断开)	25°±5°			
	PT2(NO接通)	40°±5°			
过行程	OT(最大Max.)	35°			
总行程 *1	TT	(80°)			
强制断开行程	DOT(最小Min.)	35°			
强制断开力	DOF(最小Min.)	20N			

注：2NC、1NO 接点的开路 / 闭路动作的同时性会有差异。
开关动作参数特性在竖直加力方向测得；
*1 为参考值；

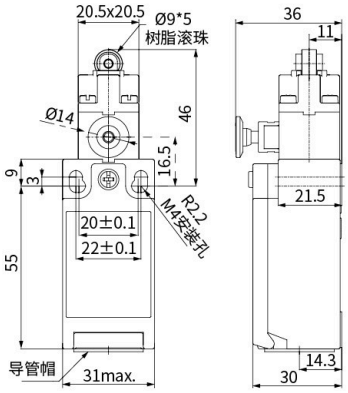
Note: Simultaneity of open/closed circuit action for 2NC,1NO contacts will be different.
The operating parameters of the switch are measured in the vertical afterforce direction.
*1 is the reference value;

外观和尺寸 Appearance and Dimension

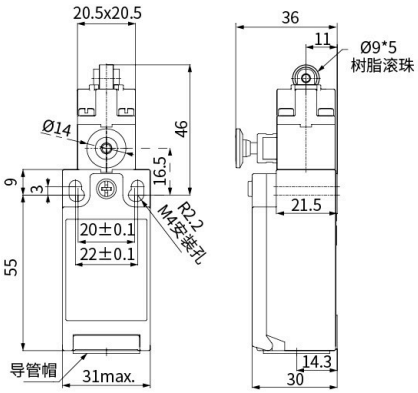
C4N-□□11NR
顶部柱塞型
Top plunger type



C4N-□□12NR
顶部柱塞横滚珠
(塑胶滚珠) 型
Top plunger horizontal ball
(plastic ball) type



C4N-□□13NR
顶部柱塞竖滚珠
(塑胶滚珠) 型
Top plunger vertical ball
(plastic ball) type



慢动型 (1NC/1NO、2NC、2NC/1NO、3NC)

动作特性 Operating Characteristics		C4N-□□11NR	C4N-□□12NR	C4N-□□13NR
锁定力	LF	15N	15N	15N
锁定行程	LT	3.5±0.3mm	3.5±0.3mm	3.5±0.3mm
预行程	PT1(NC断开)	1.7±0.3mm	1.7±0.3mm	1.7±0.3mm
	PT2(NO接通)	2.5±0.3mm	2.5±0.3mm	2.5±0.3mm
过行程	OT(最大Max.)	3.2mm	3.2mm	3.2mm
总行程 *1	TT	(6mm)	(6mm)	(6mm)
强制断开行程	DOT(最小Min.)	2.5mm	2.5mm	2.5mm
强制断开力	DOF(最小Min.)	20N	20N	20N

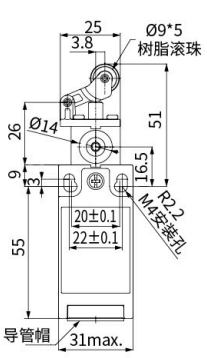
注：2NC、3NC 及 2NC/1NO 接点的开路 / 闭路动作的同时性会有差异。
开关动作参数特性在竖直加力方向测得；
*1 为参考值；

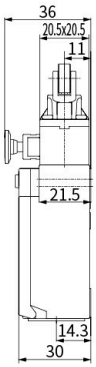
Note: Simultaneity of open/closed circuit action for 2NC, 3NC and 2NC/1NO contacts will be different.
The operating parameters of the switch are measured in the vertical afterforce direction.
*1 is the reference value;

外观和尺寸 Appearance and Dimension

C4N-□□15NR

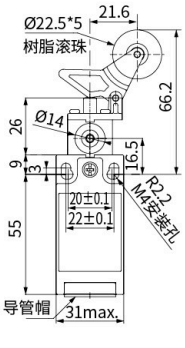
单侧悬臂滚珠型（水平）
Single side cantilever ball type (horizontal)

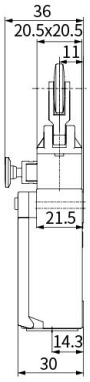




C4N-□□16NR

单侧悬臂滚珠型（垂直）
Single side cantilever ball type (vertical)





慢动型 (1NC/1NO、2NC、2NC/1NO、3NC)

动作特性 Operating Characteristics		C4N-□□15NR *2	C4N-□□16NR *3
锁定力	LF	10N	10N
锁定行程	LT	4.7±0.5mm	6±0.5mm
预行程	PT1(NC断开)	2.2±0.5mm	3±0.5mm
	PT2(NO接通)	3.2±0.5mm	4±0.5mm
过行程	OT(最大Max.)	4.3mm	5.5mm
总行程 *1	TT	(8mm)	(10mm)
强制断开行程	DOT(最小Min.)	3.2mm	4.5mm
强制断开力	DOF(最小Min.)	20N	20N

注：2NC、3NC 及 2NC/1NO 接点的开路 / 闭路动作的同时性会有差异。
开关动作参数特性在竖直加力方向测得；
*1 为参考值；
*2 开关 15 动作参数在竖直加力方向测得；
*3 开关 16 动作参数在水平加力方向测得。

Note: Simultaneity of open/closed circuit action for 2NC, 3NC and 2NC/1NO contacts will be different.
The operating parameters of the switch are measured in the vertical afterforce direction.
*1 is the reference value;
*2 Switch 15 action parameters are measured in the vertical afterforce direction;
*3 Switch 16 action parameters are measured in the horizontal afterforce direction.

安全注意事项 Safety Precautions

请避免在油渍或积水环境中使用本开关，因为这可能导致油或水渗入开关内部，损害其功能。虽然本开关具有 IP67 防护级别，但长时间置于水中仍可能导致渗水。
在接线工作完成并准备使用开关之前，确保外壳已经正确安装到位。切勿在外壳未封闭的状态下启动开关，以避免触电风险。
不建议同时控制两个或以上的标准负载电路（AC250V，3A），因为这样可能会削弱开关的绝缘性能。
确保传动杆已经推至完全锁定的位置，未锁定可能导致传动杆脱落或其他安全问题。
使用完毕后，请务必手动对开关进行复位操作，避免损坏复位机制。

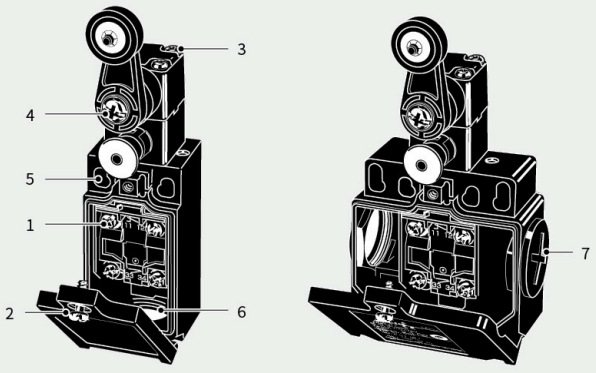
Avoid using this switch in environments with oil spills or standing water, as it could lead to oil or water infiltration inside the switch, compromising its functionality. Despite having an IP67 rating, prolonged submersion in water may still result in water ingress.
Before using the switch after completing the wiring, ensure the outer casing is correctly installed. Do not activate the switch when its cover is not properly closed to prevent the risk of electric shock.
It is not advisable to simultaneously control two or more standard load circuits (AC250V, 3A), as it might weaken the insulation properties of the switch.
Make sure the drive rod is fully locked into position, as failing to do so could result in detachment of the rod or other safety hazards.
Always manually reset the switch after use to avoid damaging its reset mechanism.

安装方式 Installation Method

正确的固定扭矩 Correct Fixing Torque

松动的螺丝可能导致设备提前故障。请确保各部件的螺丝根据规定的扭矩紧固，以保障设备的稳定性和安全性。
Loose screws may lead to premature equipment failure. Ensure that screws on each component are tightened to the specified torque for stability and safety.

编号 Number	类型 Types of	正确紧固转矩 Correct tightening torque
1	端子螺钉 Terminal screw	0.5~0.7N·m
2	外盖安装螺钉 Outer cover installation screws	0.5~0.6N·m
3	头部安装螺钉 Head mounting screws	1.6~1.8N·m
4	摆杆安装螺钉 Swing rod installation screw	0.5~0.7N·m
5	本体安装螺钉 Body mounting screws	1.8~2.2N·m
6	连接器，M12转接器 Connector, M12 adapter	1.3~1.7N·m
7	螺钉帽 Screw cap	1.3~1.7N·m



调整开关头部方向 Adjusting Switch Head Orientation

更改开关头部的安装方向时，只需拆卸头部上的四颗螺丝。开关头部支持四个不同的安装方向。在调整方向过程中，请注意防止任何异物进入开关头部。

To alter the orientation of the switch head, simply remove the four screws located on the head. The switch head is designed to be installed in any of the four orientations. Take care to prevent any foreign objects from entering the switch head during the adjustment process.

开关安装 Switch installation

当安装开关时，请使用 M4 尺寸的螺钉和弹簧垫圈，并按照推荐的扭矩值紧固螺钉。为了确保安全，建议使用难以松动的螺钉或采取其他等效的安全措施，以保证开关的稳固和可靠。此外，您也可以使用两个高度不超过 4.8mm、直径为 4mm 的螺栓，插入开关底部的孔中，采用四点固定方式来实现更加稳固的安装。

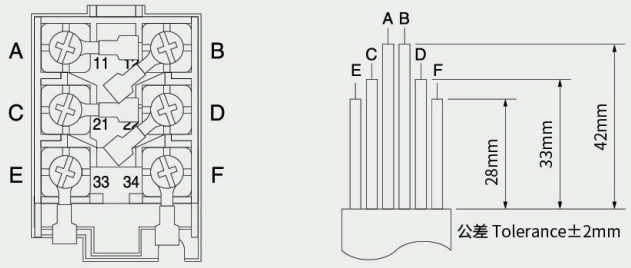
When mounting the switch, use M4 screws with spring washers and tighten them to the recommended torque. For safety, it's advisable to use screws that are not easily loosened or implement equivalent safety measures to ensure the switch's secure and reliable installation. Additionally, you can use two bolts, each less than 4.8mm in height and 4mm in diameter, inserted into the holes at the bottom of the switch for a more secure four-point installation.

接线 Wire

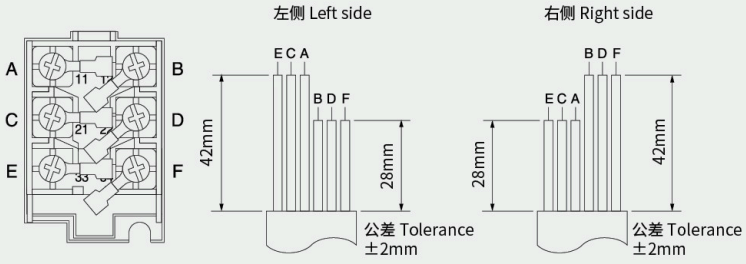
请在断电状态下进行开关接线操作，通电状态下接线可能会造成触电危险。
接线时务必注意，不要让导线的细小碎片或其他微粒进入开关内部。
使用绝缘管和 M3.5 压接端子连接时，按照图示正确放置压接端子，避免压迫到外壳或外盖。适用的导线尺寸为 AWG20 至 AWG18 或 0.5 至 0.75mm^2。
选用适当长度的导线以确保外盖平整关闭且牢固。切勿将压接端子塞进外壳缝隙，这可能导致外壳损坏或变形。
为防止端子与开关外壳内部接触，使用厚度不超过 0.5mm 的端子。

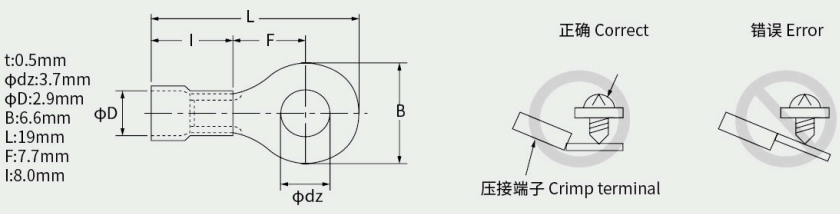
Always wire the switch with the power off to avoid the risk of electric shock.
Ensure no small wire fragments or particles enter the switch during wiring.
When connecting with an insulated tube and M3.5 crimp terminals, position the terminals as shown in the diagram to avoid pressing against the casing or cover. The suitable wire size is AWG20 to AWG18 or 0.5 to 0.75mm^2.
Use wires of appropriate length to ensure the cover closes smoothly and securely. Do not stuff the crimp terminals into gaps in the casing, as this may cause damage or deformation.
To prevent contact between the terminals and the interior of the switch housing, use terminals with a thickness of no more than 0.5mm.

1导管型 (3极) 1 Conduit type (3 poles)



2导管型 (3极) 2 Conduit type (3 poles)





调整摆杆位置 Adjusting Swing Rod Position

通过在摆杆上安装螺钉，摆杆的位置可以在 360°范围内以 7.5°为单位进行精确设定。摆杆和旋转轴上的凹槽设计可以有效地防止摆杆从旋转轴上滑落。此外，通过松开螺钉，还可以调整可调式滚珠摆杆型的摆杆长度。
在将摆杆进行正反向（正 / 反）安装时，应先卸下摆杆正面的螺钉，这样可以确保在操作过程中摆杆的活动范围不会超过水平 180°。

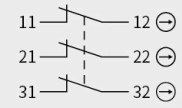
By installing screws on the swing rod, its position can be precisely set to any angle within 360 °, at increments of 7.5 °. The grooved design on both the swing rod and the rotating shaft effectively prevents the rod from slipping off the shaft. Additionally, the length of the adjustable ball-type swing rod can be modified by loosening its screws.
When installing the swing rod in either a forward or reverse (forward/reverse) direction, remove the screws on the front of the rod first to ensure that the range of motion does not exceed 180° horizontally during operation.

接点排列 Contact arrangement

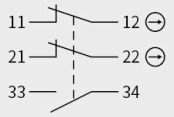
接点排列如下图所示
The arrangement of contacts is shown in the following figure

螺钉式端子型
Screw terminal type

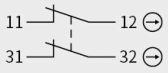
C4N-□6□□NR（3NC）



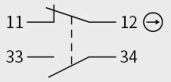
C4N-□5□□NR（2NC/1NO）



C4N-□4□□NR（2NC）



C4N-□3□□NR（1NC/1NO）



导管接口 Conduit Interface

请使用建议的连接器和适当的扭矩进行安装。使用过大的扭矩可能会导致外壳损坏。同时，请确保使用与连接器相匹配外径的电缆。
在接线过程中，对于未使用的导管口，请装上并紧固导管盖。确保按照推荐的扭矩值紧固导管盖。本开关配备有导管盖（适用于双导管型）。

Please install using the recommended connectors and appropriate torque to avoid damaging the casing due to excessive torque. Also, ensure that the cable used matches the outer diameter requirements of the connector.
During wiring, for any unused conduit openings, fit and tighten the conduit caps. The caps should be tightened to the specified torque. This switch is equipped with conduit caps, suitable for models with two conduit interfaces.

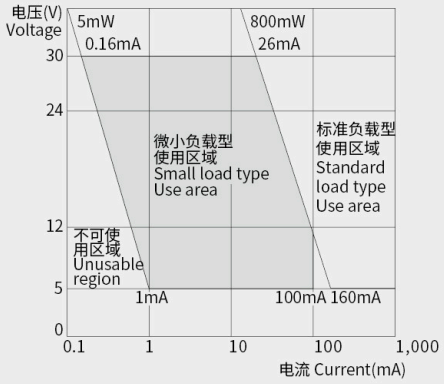
其他 Other

- 在户外会产生生锈、臭氧老化， 因此请勿在室外使用。
- 不适用于有雨水、油水、海水的环境， 需要使用时请另行查询。
- Rust and ozone aging can occur outdoors, so please do not use it outdoors.
- Not suitable for environments with rainwater, oily water, or seawater. Please check separately when needed.

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。

Contacts used for standard loads must not subsequently be used for smaller loads, because surface wear can reduce contact reliability. Standard contacts are suitable for 24VDC, 10mA or above. At lower loads, the current may not break through oxidized films on the contact surface, causing unreliable contact.
Select a contact specification suitable for the intended load before installation.
Use an appropriate CR suppression circuit to limit electrical noise and transient pulses. For loads that produce surge current at the switch, provide contact protection to avoid reducing electrical endurance.



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.