

# T4N 小型安全限位开关 Miniature Safety Limit Switch

## 特征 Features

- 强制断开动作装置 (仅 NC 接点), 可以在发生接点熔断等故障时断开接点。
- 标准的镀金接点保证了接触的高可靠性, 可用于标准负载及微小负载。
- 强化了顶部密封结构, 以提高密封性能。
- 内藏接点座具有速动型: 1NC/1NO、2NC; 慢动型: 1NC/1NO、2NC
- Forced open action device (NC contacts only), it can disconnect the contact when the contact has fusing and other failures.
- Standardized gold-clad contacts provide high contact reliability. Can be used with both standard loads and microloads.
- Strengthened top seal structure improves the sealing performance.
- Built-in contact holder has fast-action type: 1NC/1NO; Slow-action: 1NC/1NO and 2NC



## 特性 Characteristics

保护等级 *1 Protection level*1	IP66
寿命 *2 Life*2	电气 Electrical
操作速度 Operating speed	1 ~ 500mm/s(T4N-1120)
操作频率 Operating frequency	最大 30 次/min Max. 30 times/min
接触电阻 Contact resistance	25mΩ 以下 25 mΩ or less
最小使用负载 *4 Minimum working load *4	DC5V 1mA 电阻负载 (N 标准参考值) 1mA resistive load below DC5V (N standard reference value)
额定绝缘电压 (UI) Rated insulation voltage (Ui)	300V
防触电保护等级 Electric shock proof protection grade	Class II (双重绝缘) Class II (double insulated)
污染度 (使用环境) degree (environmental conditions)	污染度 3(EN60947-5-1) Pollution degree 3 (EN60947-5-1)
耐电压 Withstand voltage (EN60947-5-1)	同极端子间: 2.5kV Between homopolar terminals: 2.5kV 异极端子间: 4kV Between heteropolar terminals: 4kV 各端子和非充电金属部分间: 6kV Between terminals and uncharged metal parts: 6kV
绝缘电阻 Insulation resistance	100MΩ 以上 Above 100MΩ
接点间隙 Contact gap	最小 2 × 0.5mm 速动型、 最小 2 × 2mm 慢动型 Minimum 2 × 0.5mm quick-action type, Minimum 2 × 2mm slow-action type
振动 Vibration	误动作 Malfunction
冲击 Impact	耐久 Duration
环境温度 Ambient temperature	-20 ~ +70°C (无结冰、结露) -20 ~ +70°C (No ice or dew)
环境湿度 Ambient humidity	95%RH 以下 Less than 95% RH
质量 Weight	约 73g(T4N-4120) About 73g (T4N-4120) 约 82g(配连接器) About 82g (With gland)

注 1 上述值为初始值。

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

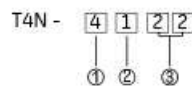
(1) 保护等级是根据 (EN60947-5-1) 规格的测试法得出的。使用前务必在实际使用的环境、条件下确认其密封性。开关盒本体具有防尘、防油构造, 但应尽可能保持头部在没有碎屑粉尘、油污、化学品的场所进行使用。否则可能导致过早磨损、损坏或故障。

(2) 耐久性的条件是使用环境温度 5°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。

## 型号说明 Model Designations



项目 Item	代号 Code	说明 Description
① 导管 / 连接器尺寸 Conduit / connector size	1	Pg13.5 (1 导管型) Pg13.5 (1 conduit type)
	2	G1/2 (1 导管型) G1/2 (1 conduit type)
	4	M20 (1 导管型) M20 (1 conduit type)*
	5	Pg13.5 (2 导管型) Pg13.5 (2 conduits type)
	6	G1/2 (2 导管型) G1/2 (2 conduits type)
	8	M20 (2 导管型) M20 (2 conduits type)
② 内藏开关 Built-in switch	1	1NC/1NO (速动型) 1NC/1NO (quick-action type)
	2	2NC (速动型) 2NC (quick-action type)
	A	1NC/1NO (慢动型) 1NC/1NO (slow-action type)
③ 头部及传动杆 Head and driving rod	B	2NC (慢动型) 2NC (slow-action type)
	20	滚珠摆杆型 (树脂摆杆, 树脂滚珠) Roller lever (resin lever, resin ball)
	22	滚珠摆杆型 (金属摆杆, 树脂滚珠) Roller lever (metal lever, resin ball)
	25	滚珠摆杆型 (金属摆杆, 金属滚珠) Roller lever (metal lever, metal resin ball)
	2G	可调滚珠摆杆, Form Lock (金属摆杆, 树脂滚珠) Adjustable roller lever, Form Lock (metal lever, resin ball)
	2H	可调滚珠摆杆, Form Lock (金属摆杆, 橡胶滚珠) Adjustable roller lever, Form Lock (metal lever, rubber ball)
	2M	可调滚珠摆杆, Form Lock (金属摆杆, 金属滚珠) Adjustable roller lever, Form Lock (metal lever, metal resin ball)
	31	顶部柱塞型 Top plunger type
	32	顶部柱塞滚珠型 Top plunger ball type
	62	单侧悬臂滚珠型 (水平) Unilateral cantilever ball type (horizontal)
72	单侧悬臂滚珠型 (垂直) Unilateral cantilever ball type (vertical)	
80	触须型 Whisker type	
87	塑料棒型 Plastic stick type	

\* 导管连接器尺寸标配 M20 × 1.5 M20×1.5 cable gland that can be equipped

Note 1. The above values are initial values.

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

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

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

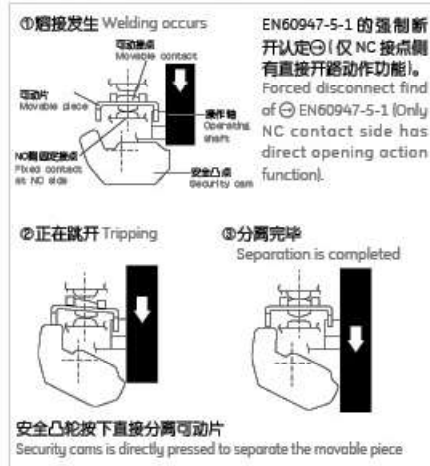
(3) When the ambient temperature is above 35°C, more than 2 circuits 3A 250VAC loads are prohibited.

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

## 强制断开构造 Forced disconnect structure

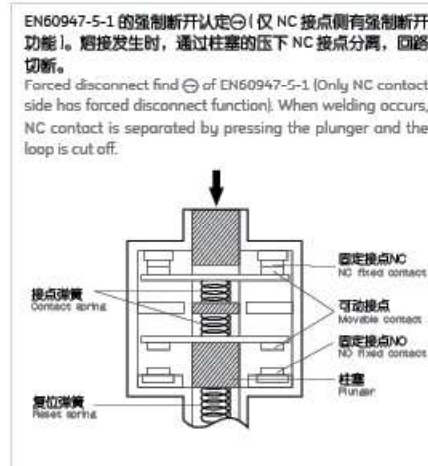
### 1NC、1NO 接点 (速动型)

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



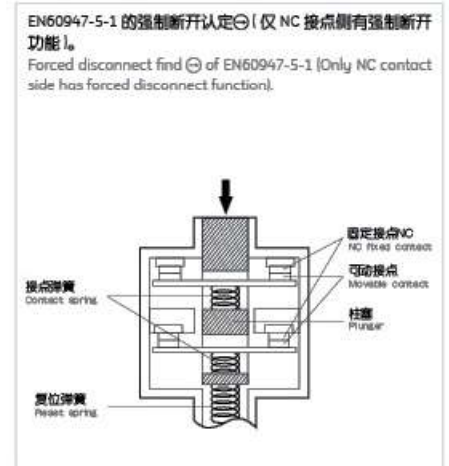
### 1NC、1NO 接点 (慢动型)

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



### 2NC 接点 (慢动型)

2NC contacts (slow-action type)



## 接点形式 Contact form

型号 Model	接点 Contact	接点形式 Contact form	动作模式 Operation mode	说明 Explanation
T4N-□1□	1NC/1NO (速动型) 1NC/1NO (Quick-action type)			仅 NC 接点 (31-32) 具有强制断开功能 (⊖)。 Only NC contact (31-32) has forced disconnect function (⊖) 接点 (13-14) 和 (31-32) 可作异极使用。 Contacts (13-14) and (31-32) can be used as heteropoles.
T4N-□2□	2NC (速动型) 2NC (Quick-action type)			仅 NC 接点 (11-12、31-32) 具有强制断开功能 (⊖)。 Only NC contact (31-32) has forced disconnect function (⊖) 接点 (11-12) 和 (31-32) 可作异极使用。 Contacts (11-12) and (31-32) can be used as heteropoles.
T4N-□A□	1NC/1NO (慢动型) 1NC/1NO (Slow-action type)			仅 NC 接点 (11-12) 具有强制断开功能 (⊖)。 Only NC contact (11-12) has forced disconnect function (⊖) 接点 (11-12) 和 (33-34) 可作异极使用。 Contacts (11-12) and (33-34) can be used as heteropoles.
T4N-□B□	2NC (慢动型) 2NC (Slow-action type)			仅 NC 接点 (11-12、31-32) 具有强制断开功能 (⊖)。 Only NC contact (31-32) has forced disconnect function (⊖) 接点 (11-12) 和 (31-32) 可作异极使用。 Contacts (11-12) and (31-32) can be used as heteropoles.

## 动作特性 Action characteristics

### 速动型 (1NC/1NO|2NC)、慢动型 (2NC)

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

动作特性 Action characteristics	型号 Model	T4N-□120	T4N-□122	T4N-□125	T4N-□226	T4N-□131	T4N-□132	T4N-□162	T4N-□172	T4N-□12H	T4N-□12G	T4N-□80	T4N-□87
		T4N-□220	T4N-□222	T4N-□225	T4N-□B26	T4N-□231	T4N-□232	T4N-□262	T4N-□272	T4N-□22H	T4N-□12M	T4N-□22G	
动作力 Action force	OF 最大 Max.	5.0N				6.5N	6.5N	5.0N	5.0N	4.5N	1.5N	1.5N	
回复力 Restore force	RF 最小 Min.	0.5N				1.5N	1.5N	0.8N	0.8N	0.4N			
预行程 Pretravel	PT	18~27°				2mm	2mm	4mm	4mm	18~27°	15°	15°	
过行程 Overtravel	OT 最小 Min.	40°				4mm	4mm	5mm	5mm	40°			
响应差的行程 Poor response travel	MD 最大 Max.*1	14°				1mm	1mm	1.5mm	1.5mm	14°			
动作位置 Action position	OP	—				18.2±0.5mm	28.6±0.8mm	37±0.8mm	27±0.8mm	—			
总行程 Total travel	TT *2	(80°)				(6mm)	(6mm)	(9mm)	(9mm)	(80°)			
强制断开预行程 Forced disconnected pretravel	DOT 最小 Min.*3	50°				3.2mm	3.2mm	5.8mm	4.8mm	50°			
强制断开力 Forced disconnected force	DOF 最小 Min.*3	20N				20N	20N	20N	20N	20N			

注 2NC 接点的闭路开路动作的同时性会有参差, 使用时请注意确认。  
 (1) 仅限速动型。  
 (2) 为参考值。  
 (3) 仅限慢动型。为了安全使用, 请确保所有值在最大或最小范围内。  
 (4) 为摆杆长度 32 mm 时的特性。

Note The simultaneity of ON / OFF operation of 2NC contacts have difference, please make sure before using it.  
 (1) Only for quick-action type.  
 (2) Reference values.  
 (3) Only for slow-action type. For safe use, please make sure that all values are within the range of maximum or minimum.  
 (4) The property value when length of lever is 32mm.

# T4N 小型安全限位开关 Miniature Safety Limit Switch

## 动作特性 Action characteristics

### 慢动型 (1NC/1NO)

Slow-action type (1NC/1NO)

型号 Model		T4N-□A20	T4N-□A22	T4N-□A25	T4N-□A26	T4N-□A31	T4N-□A32	T4N-□A62	T4N-□A72	T4N-□A2H	T4N-□A2G*8
动作特性 Action characteristics											
动作力 Action force	OF 最大 Max.	5.0N				6.5N	6.5N	5.0N	5.0N	4.5N	
回复力 Restore force	RF 最小 Min.	0.5N				1.5N	1.5N	0.8N	0.8N	0.4N	
预行程 Pretravel	PT *1	18 ~ 27°				2mm	2mm	4mm	4mm	18 ~ 27°	
	PT {2nd}*2	(44° )				(2.9mm)	(2.9mm)	(5.2mm)	(4.3mm)	(44° )	
	PT *3	27.5 ~ 36.5°				2.8mm	2.8mm	4mm	4mm	27.5 ~ 36.5°	
	PT {2nd}*4	(18° )				(1mm)	(1mm)	(1.5mm)	(1.5mm)	(18° )	
过行程 Overtravel	OT 最小 Min.	40°				4mm	4mm	5mm	5mm	40°	
动作位置 Action position	OP	—				18.2±0.5mm	28.6±0.8mm	37±0.8mm	27±0.8mm	—	
	OP *5	—				17.4±0.5mm	28±0.8mm	36±0.8mm	26.1±0.8mm	—	
总行程 Total travel	TT *6	(80° )				(6mm)	(6mm)	(9mm)	(9mm)	(80° )	
强制断开预行程 Forced disconnected pretravel	DOT 最小 Min.*7	50°				3.2mm	3.2mm	5.8mm	4.8mm	50°	
强制断开力 Forced disconnected force	DOF 最小 Min.*7	20N				20N	20N	20N	20N	20N	

- (1) NC 接点呈开路。
- (2) NO 接点呈闭路。
- (3) 仅限 MBB 型。
- (4) 为 MBB 型的参考值。
- (5) 仅限 MBB 型。
- (6) 为参考值。
- (7) 为了安全使用, 请确保所有值在最大或最小范围内。
- (8) 为摆杆长度 32 mm 时的特性。

- (1) NC contact is open.
- (2) NO contact is closed.
- (3) Only for MBB type.
- (4) It is the reference value of MBB type.
- (5) Only for MBB type.
- (6) Reference values.
- (7) For safe use, please make sure that all values are within the range of maximum or minimum.
- (8) The property value when length of lever is 32mm.

## 外观和尺寸 Appearance and Dimension

### T4N-4131

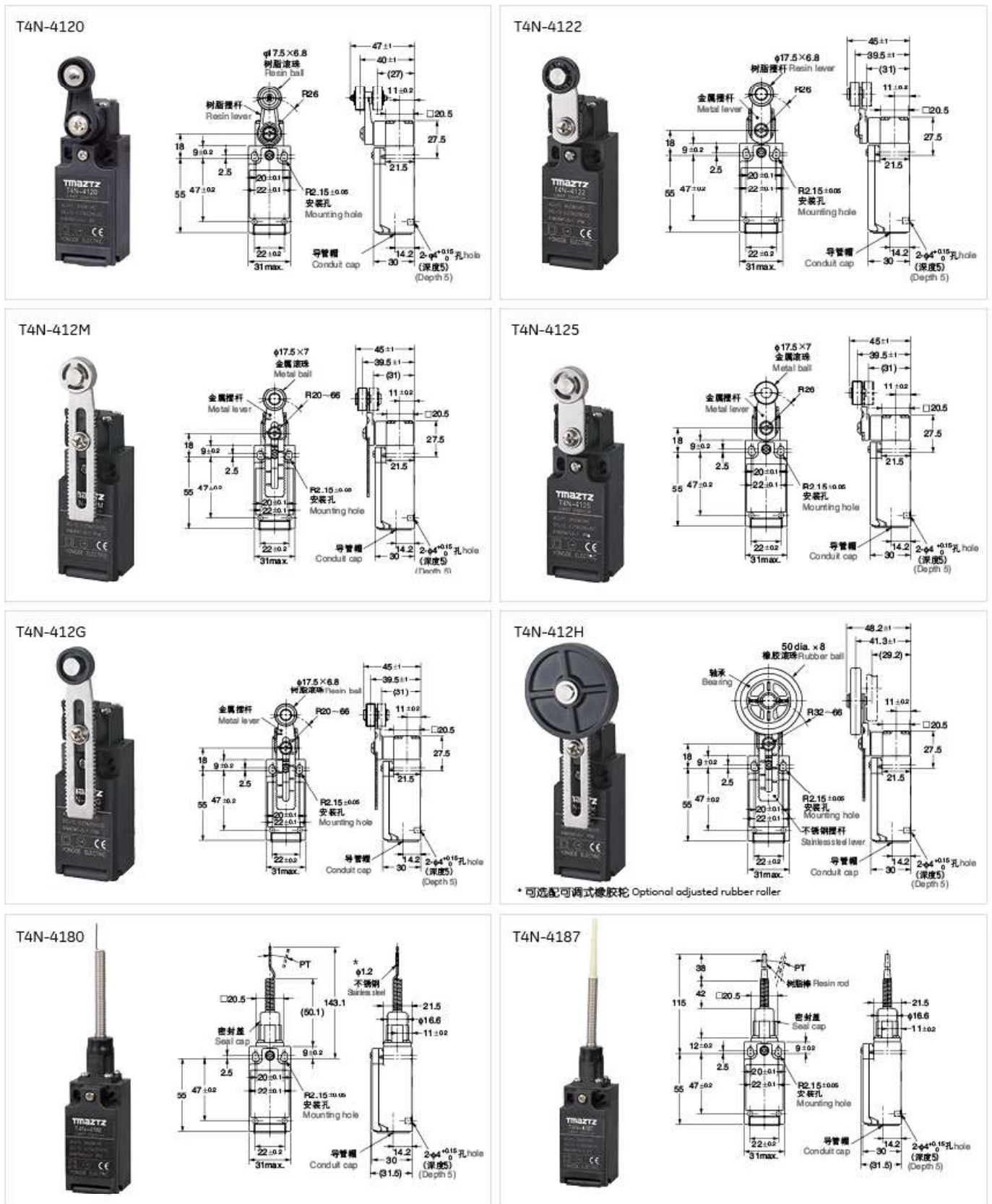
### T4N-4132

### T4N-4162

### T4N-4172

# T4N 小型安全限位开关 Miniature Safety Limit Switch

## 外观和尺寸 Appearance and Dimension



\* 不锈钢垫圈和塑料棒的使用范围从前端 35mm 以内，整个动作在 70mm 以内  
\* Use of application of stainless steel washers and plastic stick are within 35mm from the front end, the entire action is within 70mm.