



- 特点 Features
- 高速采样

■ AI人工智能调节算法

■ 双PID加热制冷智能调节

■ AT自动演算功能

■ 32位MCU高速运算精度

■ 双数字显示(PV/SV)

■ 100ms的高速采样率和0.5%的显示精度

■ SSR驱动输出/继电器输出/电流输出可选

■ 端子型接线方式：利于接线和维护

■ 多种扩展功能可选，可根据需要选配4-20mA输出和RS485通讯功能

■ High-speed sampling

■ AI artificial intelligence adjustment algorithm

■ Dual PID heating and cooling intelligent adjustment

■ AT automatic calculation function

■ 32-bit MCU high-speed operation accuracy

■ Dual digital display (PV / SV)

■ High-speed sampling rate of 100ms and display accuracy of 0.5%

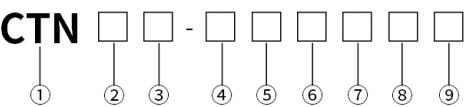
■ SSR Drive output / Relay output / Current output optional

■ Terminal type wiring method: conducive to wiring and maintenance

■ A variety of expansion functions are available, and 4-20mA output and RS485 communication functions can be configured as required



选型说明 Model Designation



序号 No	项目 Item	代号 Code	说明 Description
①	产品系列 Product series	CTN	标准型数码双显示PID温度控制器 Standard digital dual display PID temperature controller
		CTZ	高精度数码双显示PID温度控制器 High precision digital dual display PID temperature controller
②	显示数位 Digit	4	9999 (4位Digit)
③	外形尺寸 Dimensions	S	48×48
		V	48×96
		M	72×72
		L	96×96
		H	96×48
④	电源电压 Voltage supply	2	24-48VAC/DC 50/60HZ
		4	AC100-240V 50/60Hz
		A-Z	A-Z字母组合，代表其他或定制电源电压 A-Z letter combinations, representing other or custom power supply voltages
⑤	控制输出 Control output	1	继电器Relay
		2	SSR输出Output
		3□	模拟量输出 A: 0~20mA, 4-20mA, B: 0-5V, 1-5V Analog output: A: 0~20mA, 4-20mA, B: 0-5V, 1-5V

⑤	控制输出 Control output	4	可控硅过零输出 SCR zero-crossing output
		5	可控硅自带 (5A) SCR built-in
		6	SSR + relay output
		A-Z	A-Z字母组合, 代表其他或定制控制输出模式 A-Z letter combination represents other or custom control output modes
⑥	报警输出 Alarm output	1	1路继电器 Way relay
		2	2路继电器 Way relay
		3	1路固态 Solid state
		4	2路固态 Solid state
		A-Z	A-Z字母组合, 代表其他或定制控制输出模式 A-Z letter combination represents other or custom control output modes
⑦	分度号 Graduation	无 None	热电偶输入K、E、J、L、T、R、S; 热电阻输入PT100、Cu50(全功能) Thermocouple input K, E, J, L, T, R, S, Thermal resistance input PT100, Cu50 (full function)
		A-Z	A-Z字母组合, 代表其他或定制分度号 A-Z letter combinations, representing other or custom index numbers
⑧	变送输出 Transmission output	无 None	无此项功能 No such function
		T	带变送输出功能 With transmission output function
⑨	特殊规格 Special specifications	无 None	无此项功能 No such function
		R	带RS485通讯功能 With RS485 communication function

电气规格 Electrical Specification

额定电压 Rated voltage	100-240VAC, 50/60Hz
电源功耗 Power consumption	≤5VA
工作环境 Operating ambient	环境温度: -10°C~60°C 相对湿度: 35% - 85% RH (无冷凝) Ambient temperature: -10°C~60°C Relative humidity: 35% - 85% RH (No-condensing)
存储温度 Storage Temperature	-25°C-65°C (避免结冰或结露 Avoid freezing)
分辨率 Resolution	1°C, 0.1°C (可调Adjustable)
接线方式 Wiring method	接线端子 Connecting terminal
测量精度 Measuring accuracy	±0.5%FS
内存保护 Memory Protection	非易失性内存 Non-volatile memory
安装环境 Installation conditions	安装种类 II, 污染等级2 Installation type II, Pollution degree 2
继电器输出 Relay output	继电器触点: AC220V/DC30V,3A Relay contact: AC220V/DC30V,3A
逻辑电平输出 Logic level output	ON时: DC12V或DC24V; OFF时: DC0.5V以下; 最大电流: 30mA ON: 12VDC or 24VDC; OFF: below 0.5VDC; maximum current: 30mA

外形尺寸 Overall Dimension

型号 Model	面板尺寸 Panel size	壳体尺寸(长宽高) Shell size (length, width and height)	开孔尺寸 Hole size
CTN4S	48x48	48x48x71	45x45
CTN4V	48x96	48x96x71	46x92
CTN4H	96x48	96x48x71	92x46
CTN4M	72x72	72x72x71	68x68
CTN4L	96x96	96x96x71	92x92

国际认证规格 International Certification Specifications

认证规格 Certification specifications	规格 Specifications	文件No. Document
CE	EN 61010-1	请咨询昌得代表处 Please consult the CNTD Representative Office

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

CE(EN 61010-1)

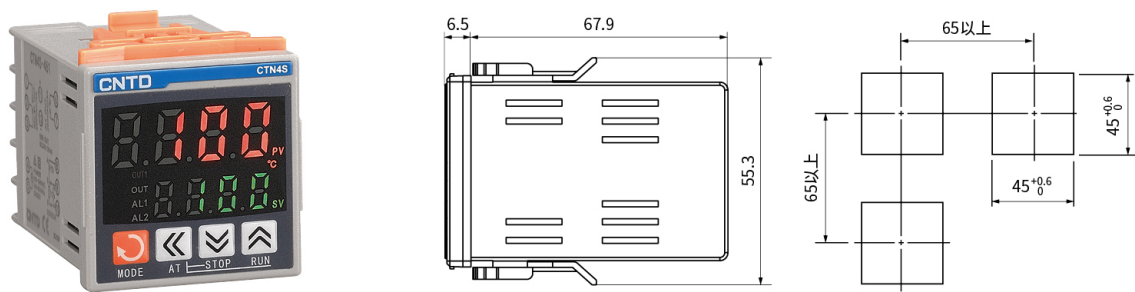
类型与额定值 Type and Rating

AC-15 AC380V、AC250V 3A

DC-12 DC24V~48V 3A

外观和尺寸 Appearance and Dimension

CTN4S
48×48mm



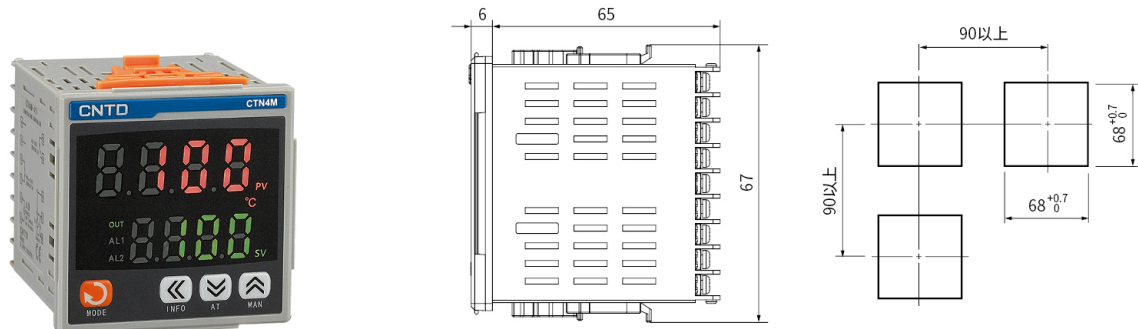
常用型号 Common Model

产品型号 Product model	控制输出形式 Control output form	报警功能 Alarm function	额定电压 Rated voltage	通讯功能 Communication function	温度输入 Temperature input
CTN4S-411	继电器输出 Relay output	一路继电器报警 One-line relay alarm	100-240VAC	/	热电偶K/E/J/L/T/R/S，热电阻PT100 CU50 Thermocouple K/E/J/L/T/R/S, thermal resistance PT100 CU50
CTN4S-412	继电器输出 Relay output	二路继电器报警 Two way relay alarm	100-240VAC	/	
CTN4S-421	固态输出 Solid state output	一路继电器报警 One-line relay alarm	100-240VAC	/	
CTN4S-422	固态输出 Solid state output	二路继电器报警 Two way relay alarm	100-240VAC	/	
CTN4S-461	继电器+固态输出 Relay + solid state output	一路继电器报警 One-line relay alarm	100-240VAC	/	
CTN4S-43A1	模拟量输出4-20mA Analog output 4-20mA	一路继电器报警 One-line relay alarm	100-240VAC	/	
CTN4S-411R	继电器输出 Relay output	一路继电器报警 One-line relay alarm	100-240VAC	RS485通讯 RS485 communication	
CTN4S-421R	固态输出 Solid state output	一路继电器报警 One-line relay alarm	100-240VAC	RS485通讯 RS485 communication	
CTN4S-43A1R	模拟量输出4-20mA Analog output 4-20mA	一路继电器报警 One-line relay alarm	100-240VAC	RS485通讯 RS485 communication	
CTN4S-411T	继电器输出 Relay output	一路继电器报警、带变送输出 One relay alarm, with converter output	100-240VAC	/	
CTN4S-421T	固态输出 Solid state output	一路继电器报警、带变送输出 One relay alarm, with converter output	100-240VAC	/	

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

CTN4M
72×72mm



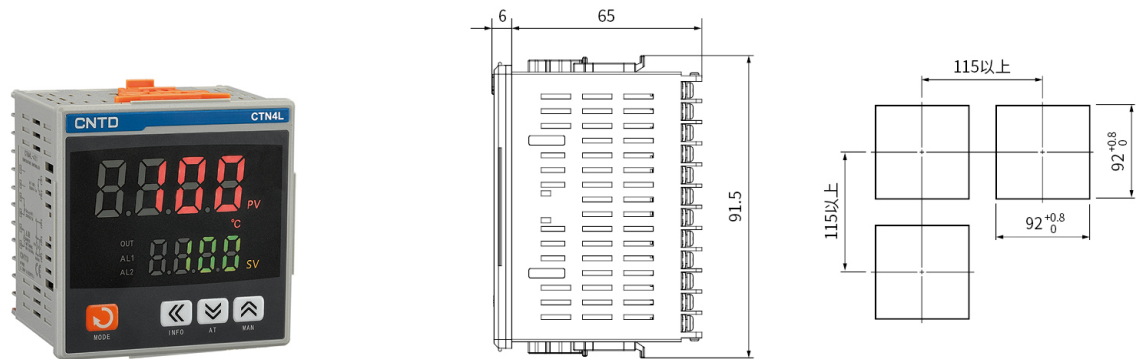
常用型号 Common Model

产品型号 Product model	控制输出形式 Control output form	报警功能 Alarm function	额定电压 Rated voltage	通讯功能 Communication function	温度输入 Temperature input
CTN4M-411	继电器输出 Relay output	一路继电器报警 One-line relay alarm	100-240VAC	/	热电偶K/E/J/L/T/R/S，热电阻PT100 CU50 Thermocouple K/E/J/L/T/R/S, thermal resistance PT100 CU50
CTN4M-412	继电器输出 Relay output	二路继电器报警 Two way relay alarm	100-240VAC	/	
CTN4M-421	固态输出 Solid state output	一路继电器报警 One-line relay alarm	100-240VAC	/	
CTN4M-422	固态输出 Solid state output	二路继电器报警 Two way relay alarm	100-240VAC	/	
CTN4M-461	继电器+固态输出 Relay + solid state output	一路继电器报警 One-line relay alarm	100-240VAC	/	
CTN4M-43A1	模拟量输出4-20mA Analog output 4-20mA	一路继电器报警 One-line relay alarm	100-240VAC	/	
CTN4M-411R	继电器输出 Relay output	一路继电器报警 One-line relay alarm	100-240VAC	RS485通讯 RS485 communication	
CTN4M-421R	固态输出 Solid state output	一路继电器报警 One-line relay alarm	100-240VAC	RS485通讯 RS485 communication	
CTN4M-43A1R	模拟量输出4-20mA Analog output 4-20mA	一路继电器报警 One-line relay alarm	100-240VAC	RS485通讯 RS485 communication	
CTN4M-411T	继电器输出 Relay output	一路继电器报警、带变送输出 One relay alarm, with converter output	100-240VAC	/	
CTN4M-421T	固态输出 Solid state output	一路继电器报警、带变送输出 One relay alarm, with converter output	100-240VAC	/	

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外观和尺寸 Appearance and Dimension

CTN4L
96×96mm



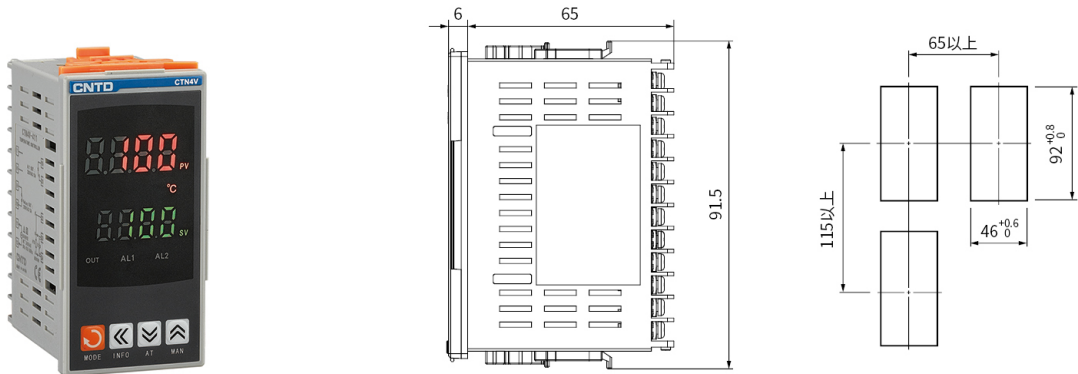
常用型号 Common Model

产品型号 Product model	控制输出形式 Control output form	报警功能 Alarm function	额定电压 Rated voltage	通讯功能 Communication function	温度输入 Temperature input
CTN4L-411	继电器输出 Relay output	一路继电器报警 One-line relay alarm	100-240VAC	/	热电偶K/E/J/L/T/R/S，热电阻PT100 CU50 Thermocouple K/E/J/L/T/R/S, thermal resistance PT100 CU50
CTN4L-412	继电器输出 Relay output	二路继电器报警 Two way relay alarm	100-240VAC	/	
CTN4L-421	固态输出 Solid state output	一路继电器报警 One-line relay alarm	100-240VAC	/	
CTN4L-422	固态输出 Solid state output	二路继电器报警 Two way relay alarm	100-240VAC	/	
CTN4L-461	继电器+固态输出 Relay + solid state output	一路继电器报警 One-line relay alarm	100-240VAC	/	
CTN4L-43A1	模拟量输出4-20mA Analog output 4-20mA	一路继电器报警 One-line relay alarm	100-240VAC	/	
CTN4L-411R	继电器输出 Relay output	一路继电器报警 One-line relay alarm	100-240VAC	RS485通讯 RS485 communication	
CTN4L-421R	固态输出 Solid state output	一路继电器报警 One-line relay alarm	100-240VAC	RS485通讯 RS485 communication	
CTN4L-43A1R	模拟量输出4-20mA Analog output 4-20mA	一路继电器报警 One-line relay alarm	100-240VAC	RS485通讯 RS485 communication	
CTN4L-411T	继电器输出 Relay output	一路继电器报警、带变送输出 One relay alarm, with converter output	100-240VAC	/	
CTN4L-421T	固态输出 Solid state output	一路继电器报警、带变送输出 One relay alarm, with converter output	100-240VAC	/	

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外观和尺寸 Appearance and Dimension

CTN4V
48×96mm



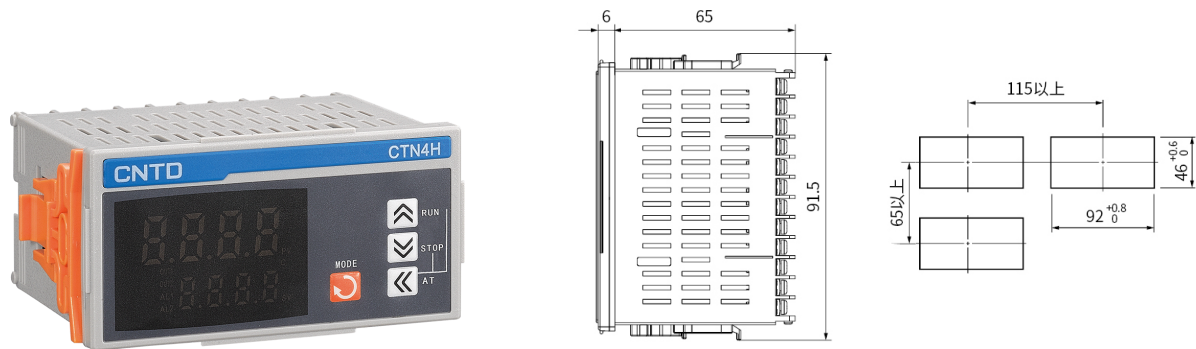
常用型号 Common Model

产品型号 Product model	控制输出形式 Control output form	报警功能 Alarm function	额定电压 Rated voltage	通讯功能 Communication function	温度输入 Temperature input
CTN4V-411	继电器输出 Relay output	一路继电器报警 One-line relay alarm	100-240VAC	/	热电偶K/E/J/L/T/R/S，热电阻PT100 CU50 Thermocouple K/E/J/L/T/R/S, thermal resistance PT100 CU50
CTN4V-412	继电器输出 Relay output	二路继电器报警 Two way relay alarm	100-240VAC	/	
CTN4V-421	固态输出 Solid state output	一路继电器报警 One-line relay alarm	100-240VAC	/	
CTN4V-422	固态输出 Solid state output	二路继电器报警 Two way relay alarm	100-240VAC	/	
CTN4V-461	继电器+固态输出 Relay + solid state output	一路继电器报警 One-line relay alarm	100-240VAC	/	
CTN4V-43A1	模拟量输出4-20mA Analog output 4-20mA	一路继电器报警 One-line relay alarm	100-240VAC	/	
CTN4V-411R	继电器输出 Relay output	一路继电器报警 One-line relay alarm	100-240VAC	RS485通讯 RS485 communication	
CTN4V-421R	固态输出 Solid state output	一路继电器报警 One-line relay alarm	100-240VAC	RS485通讯 RS485 communication	
CTN4V-43A1R	模拟量输出4-20mA Analog output 4-20mA	一路继电器报警 One-line relay alarm	100-240VAC	RS485通讯 RS485 communication	
CTN4V-411T	继电器输出 Relay output	一路继电器报警、带变送输出 One relay alarm, with converter output	100-240VAC	/	
CTN4V-421T	固态输出 Solid state output	一路继电器报警、带变送输出 One relay alarm, with converter output	100-240VAC	/	

注：以上为常用型号参考，未在表格内的参考选型说明。
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外观和尺寸 Appearance and Dimension

CTN4H
96×48mm



常用型号 Common Model

产品型号 Product model	控制输出形式 Control output form	报警功能 Alarm function	额定电压 Rated voltage	通讯功能 Communication function	温度输入 Temperature input
CTN4H-411	继电器输出 Relay output	一路继电器报警 One-line relay alarm	100-240VAC	/	热电偶K/E/J/L/T/R/S，热电阻PT100 CU50 Thermocouple K/E/J/L/T/R/S, thermal resistance PT100 CU50
CTN4H-412	继电器输出 Relay output	二路继电器报警 Two way relay alarm	100-240VAC	/	
CTN4H-421	固态输出 Solid state output	一路继电器报警 One-line relay alarm	100-240VAC	/	
CTN4H-422	固态输出 Solid state output	二路继电器报警 Two way relay alarm	100-240VAC	/	
CTN4H-461	继电器+固态输出 Relay + solid state output	一路继电器报警 One-line relay alarm	100-240VAC	/	
CTN4H-43A1	模拟量输出4-20mA Analog output 4-20mA	一路继电器报警 One-line relay alarm	100-240VAC	/	
CTN4H-411R	继电器输出 Relay output	一路继电器报警 One-line relay alarm	100-240VAC	RS485通讯 RS485 communication	
CTN4H-421R	固态输出 Solid state output	一路继电器报警 One-line relay alarm	100-240VAC	RS485通讯 RS485 communication	
CTN4H-43A1R	模拟量输出4-20mA Analog output 4-20mA	一路继电器报警 One-line relay alarm	100-240VAC	RS485通讯 RS485 communication	
CTN4H-411T	继电器输出 Relay output	一路继电器报警、带变送输出 One relay alarm, with converter output	100-240VAC	/	
CTN4H-421T	固态输出 Solid state output	一路继电器报警、带变送输出 One relay alarm, with converter output	100-240VAC	/	

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.

操作面板功能说明 Operation Panel Function Description

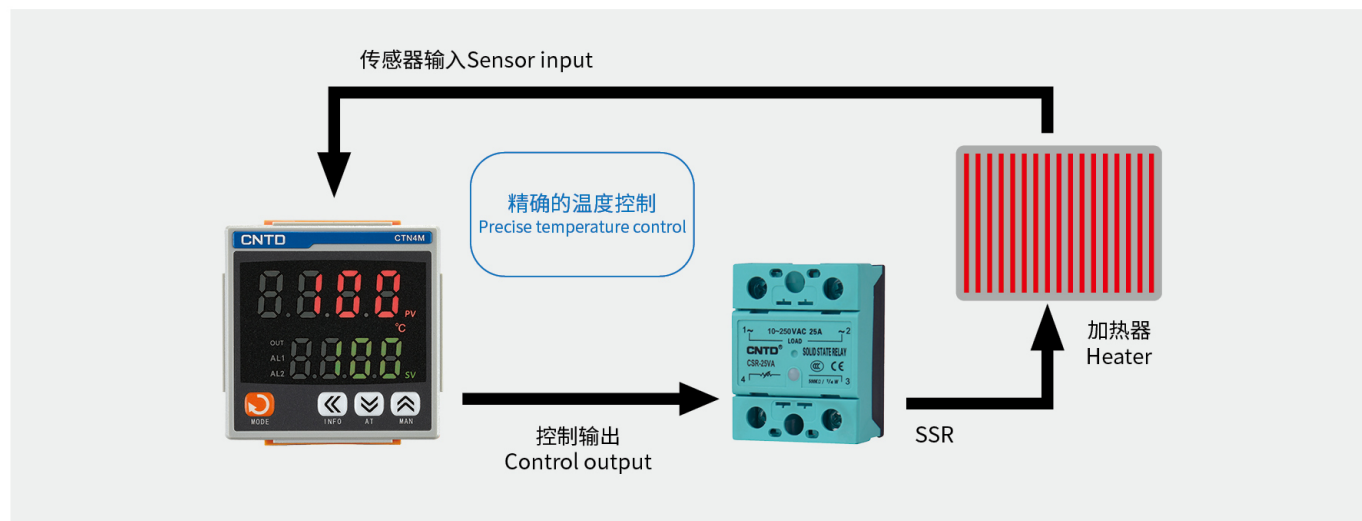


详细使用参数请扫描二维码
Please scan the QR code for detailed usage parameters

高速采样 High Speed Sampling

100ms高速采样速率可以在需要快速响应速度的应用中实现精确的温度控制。

100ms high-speed sampling rate enables precise temperature control in applications requiring fast response speed.



SSR驱动输出方式 SSR drive output method

用户可选择SSR与RELAY驱动输出，在这个的基础上增加了ON/OFF控制，手动输出量，可实现理想的温度控制。

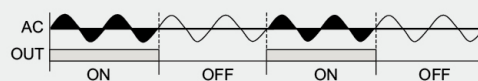
Users can choose SSR and RELAY drive output. On this basis, ON/OFF control and manual output are added to achieve ideal temperature control.

SSR驱动输出 Drive output

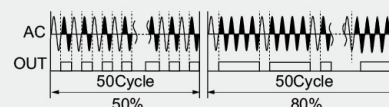


选择控制方式
Choose the control method

ON/OFF控制 Control



手动输出量 Manual output



应用场景 Application Scenario



印刷机械
Printing machines



陶瓷机械
Ceramic machinery



橡塑机械
Rubber Machinery



包装机械
Packaging Machinery



注塑机
Injection molding machine



食品机械
Food Machinery

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.