

装配热电偶

Assembled sheathed thermocouple

应用

通常和显示仪表、记录仪表、电子计算机等配套使用。直接测量各种生产过程中的 $0^{\circ}\text{C} \sim 1300^{\circ}\text{C}$ 范围内液体、蒸汽和气体介质以及固体表面温度。

工作原理

热电偶的电极由两根不同导体材质组成。当测量端与参比端存在温差时，就会产生热电势，工作仪表便显示出热电势所对应的温度值。

特点

1. 装配简单，更换方便；
2. 压簧式感温元件，抗振性能好；
3. 测量范围大；
4. 机械强度高，耐压性能好。

主要技术参数

1. 产品执行标准：IEC584，GB/T30429-2013。
2. 常温绝缘电阻

热电偶在环境温度为 $15\sim 35^{\circ}\text{C}$ ，相对湿度 $45\%\sim 75\%$ ，试验电压为 $500 \pm 50\text{V}$ （直流）电极与外套管之间的绝缘电阻 $\geq 1000\text{M}\Omega \cdot \text{m}$ 。即1m长的试样的绝缘电阻为 $1000\text{M}\Omega$ ；10m长的试样的绝缘电阻为 $100\text{M}\Omega$ 。

Application

It is usually used along with display instruments, recording instruments, electronic computers and so on. It is able to directly measure the temperature of liquid, steam and gas and solid surface in a variety of production processes within the range of $0 \sim 1300^{\circ}\text{C}$.

Working principle

The electrode of sheath thermocouple are consisted by two different materials of conductor. When there is a temperature difference between the measuring end and the reference end, it will generate the thermal electric potential. The working instrument will show the corresponding temperature value of the thermal electric potential.

Characteristics

1. Easy assembly and convenient change;
2. Pressure-spring type temperature sensing element with good anti-vibration performance;
3. Wide measuring scope;
4. High mechanical strength and good pressure resistance.

Main technical parameters

Product implementation standard :IEC584, GB/T30429-2013.

Insulation resistance in normal temperature

For thermocouple, the environment temperature is $15\sim 35^{\circ}\text{C}$, the relative humidity is $45\%\sim 75\%$, the test voltage is $500 \pm 50\text{V}(\text{DC})$, the insulation resistance between electrode and outer sleeve $\geq 1000\text{M}\Omega \cdot \text{m}$.

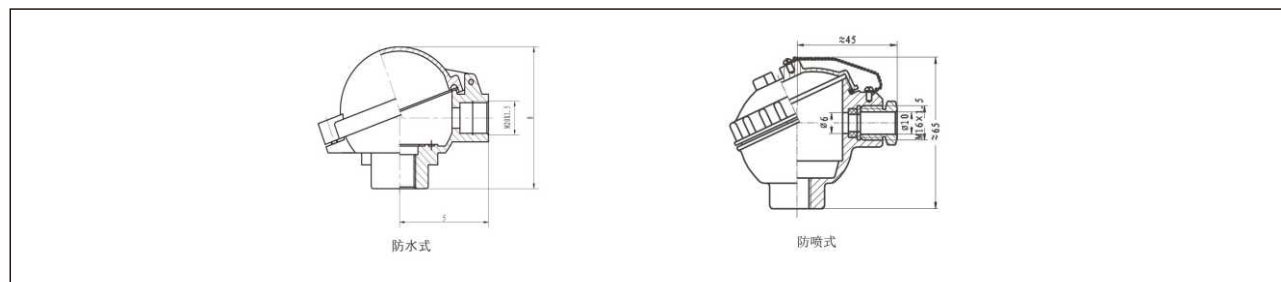
That is to say, the insulation resistance for sample of 1m is $1000\text{M}\Omega$; the insulation resistance for sample of 10m is $100\text{M}\Omega$.

测温范围及允差

Temperature measurement range and tolerance error

型 号 Model	分度号 Graduation	允差等级 Tolerance level			
		I		II	
		允差值 Tolerance value	测温范围 $^{\circ}\text{C}$ Range of temperature measurement $^{\circ}\text{C}$	允差值 Tolerance value	测温范围 $^{\circ}\text{C}$ Range of temperature measurement $^{\circ}\text{C}$
WRN	K	$\pm 1.5^{\circ}\text{C}$	$-40\sim +375$	$\pm 2.5^{\circ}\text{C}$	$-40\sim +333$
		$\pm 0.004\text{Itl}$	$375\sim 1000$	$\pm 0.0075\text{Itl}$	$333\sim 1200$
WRM	N	$\pm 1.5^{\circ}\text{C}$	$-40\sim +375$	$\pm 2.5^{\circ}\text{C}$	$-40\sim +333$
		$\pm 0.004\text{Itl}$	$375\sim 1000$	$\pm 0.0075\text{Itl}$	$333\sim 1200$
WRE	E	$\pm 1.5^{\circ}\text{C}$	$-40\sim +375$	$\pm 2.5^{\circ}\text{C}$	$-40\sim +333$
		$\pm 0.004\text{Itl}$	$375\sim 800$	$\pm 0.0075\text{Itl}$	$333\sim 900$
WRF	J	$\pm 1.5^{\circ}\text{C}$	$-40\sim +375$	$\pm 2.5^{\circ}\text{C}$	$-40\sim +333$
		$\pm 0.004\text{Itl}$	$375\sim 750$	$\pm 0.0075\text{Itl}$	$333\sim 750$
WRC	T	$\pm 0.5^{\circ}\text{C}$	$-40\sim +125$	$\pm 1.0^{\circ}\text{C}$	$-40\sim +133$
		$\pm 0.004\text{Itl}$	$125\sim 350$	$\pm 0.0075\text{Itl}$	$133\sim 350$

接线盒形式 Junction box form



典型型号示例 Wire-connection mode

W 温度仪表 Temperature instrument

R 热电偶 Thermocouple

感温元件材料 Material for temperature-sensing element

N 镍铬-镍硅 Nickel chromium-nickel silicon
M 镍铬硅-镍硅 Nichrome-nickel silicon
E 镍铬-铜镍 Nickel chromium-copper nickel
C 铜-铜镍 Copper-copper nickel
F 铁-铜镍 Iron-copper nickel

偶丝对数 Number of thermal wire couple

无 单支 Non, single support
2 双支 2 double support

安装固定装置 Installation and fixation mode

1 无固定装置 Non-fixing device
2 固定螺纹 Fixed screw thread
3 活动法兰 Active flange
4 固定法兰 Fixed flange
5 活络管接头式 Adjustable pipe joint type
6 固定螺纹锥形 Fixed thread cone form
7 直形管接头式 Straight pipe joint type
8 固定螺纹管接头式 Joint type of fixed threaded pipe

接线盒形式 Junction box form

2 防喷式 Anti-spray type
3 防水式 Water-proof type

保护管直径 Diameter of protective tube

0 $\Phi 16$
1 $\Phi 20$
2 $\Phi 16$ 高铝质管 High-aluminum tube
3 $\Phi 20$ 高铝质管 High-aluminum tube

附加形式 Additional form

G 变截面 Variable cross-section
B 带温度变送器 With temperature transmitter

W

R

N

2

-

2

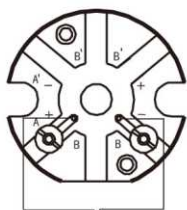
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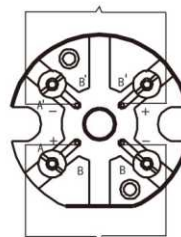
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典型型号示例 Examples of typical model

接线盒形式 Junction box form

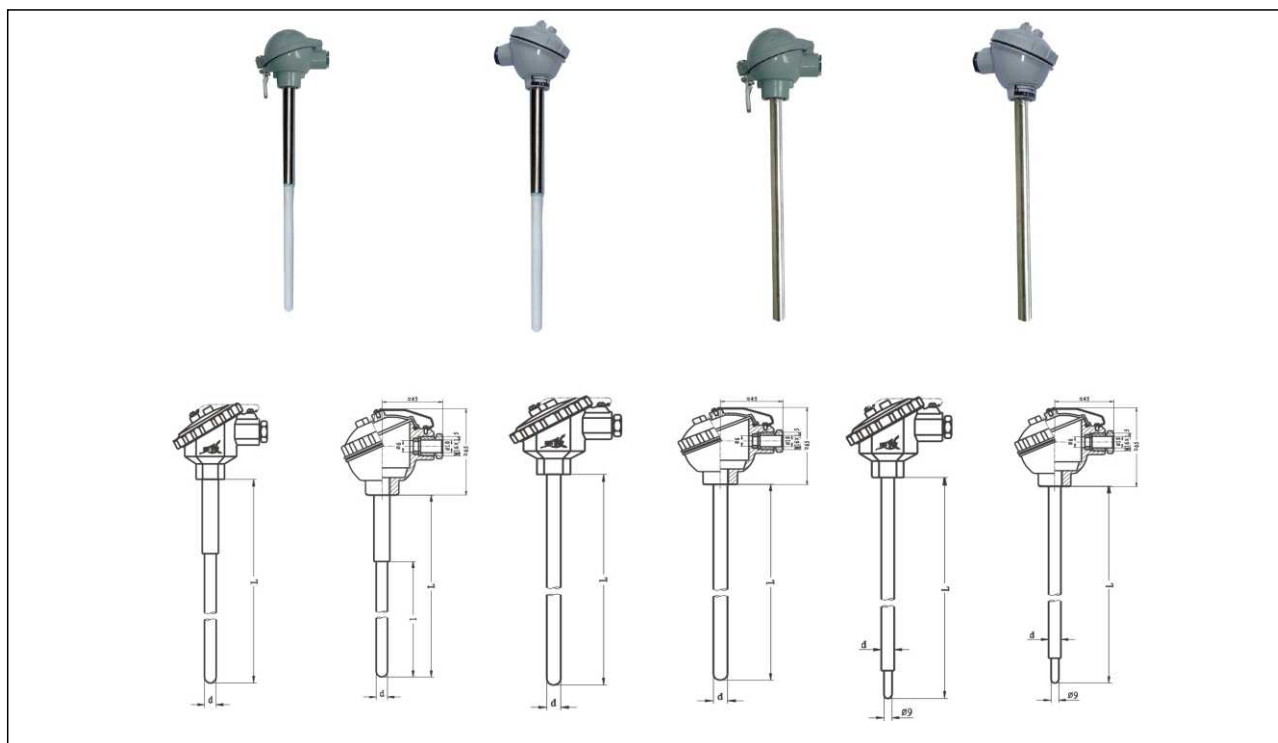


单支接线方法



双支接线方法

无固定装置热电偶 Non-fixed assembly thermocouple



型 号 Model	分度号 Graduation	测温范围 °C Range of temperature measurement °C	热响应时间 Thermal response time	保护管材质 Material for protective tube	规 格 Specification	
					d	L
WRM-122 WRM ₂ -122	N	0~1200	<240s	高铝质 High-aluminum	Φ16	300×150 350×200 400×250 450×300 500×350 550×400 650×500 900×750 1150×1000 1650×1500 2150×2000
WRN-122 WRN ₂ -122	K					
WRM-123 WRM ₂ -123	N				Φ20	
WRN123 WRN ₂ -123	K					
WRM-132 WRM ₂ -132	N				Φ16	
WRN-132 WRN ₂ -132	K					
WRM-133 WRM ₂ -133	N				Φ20	
WRN-133 WRN ₂ -133	K					

1)型号122、123为防喷式，防护等级IP65；型号132、133为防水式，防护等级IP55；

2)保护管其余材质根据协议订货。

1) Model 122 and 123 are anti-spraying type with the protective grade being IP65; Model 122 and 123 are waterproof type with the waterproof grade being IP55;

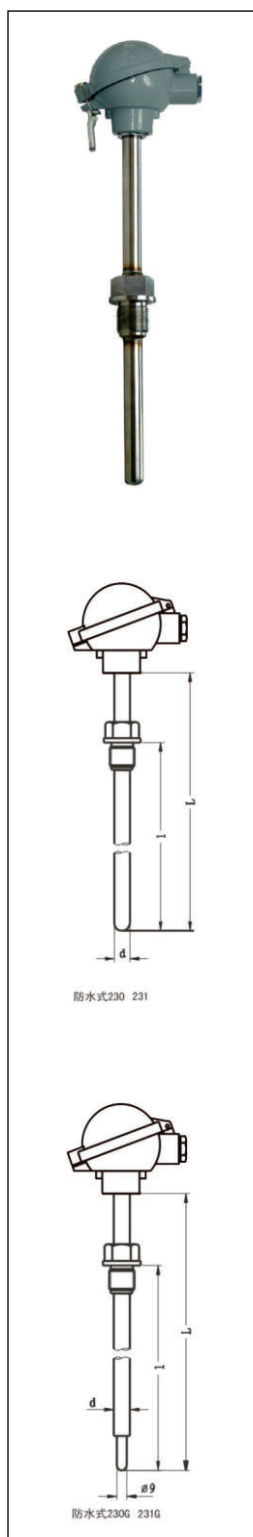
2) The material for the rest protective tube is ordered according to the agreement.

型 号 Model	分度号 Graduation	测温范围 °C Range of temperature measurement °C	热响应时间 Thermal response time	保护管材质 Material for protective tube	规格 Specification	
					d	L
WRM-130 WRM ₂ -130	N	0~800	<90s	1Cr18Ni9Ti	Φ 16	150 200 250 300 350 400 500 750 1000 1500 2000 2150
		0~1100		0Cr25Ni20		
WRM-130G WRM ₂ -130G		0~800	<24s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRN-130 WRN ₂ -130	K	0~800	<90s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRN-130G WRN ₂ -130G		0~800	<24s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRE-130 WRE ₂ -130	E	0~800	<90s	1Cr18Ni9Ti		
WRE-130G WRE ₂ -130G			<24s			
WRC-130 WRC ₂ -130	T	0~350	<90s	1Cr18Ni9Ti		
WRC-130G WRC ₂ -130G			<24s			
WRF-130 WRF ₂ -130	J	0~600	<90s	1Cr18Ni9Ti		
WRF-130G WRF ₂ -130G			<24s			
WRM-131 WRM ₂ -131	N	0~800	<90s	0Cr25Ni20	Φ 20	
		0~1100		1Cr18Ni9Ti		
WRM-131G WRM ₂ -131G		0~800	<24s	0Cr25Ni20		
		0~1100		1Cr18Ni9Ti		
WRN-131 WRN ₂ -131	K	0~800	<120s	0Cr25Ni20		
		0~1100		1Cr18Ni9Ti		
WRN-131G WRN ₂ -131G		0~800	<24s	0Cr25Ni20		
		0~1100		0Cr25Ni20		
WRE-131G WRE ₂ -131G	E	0~800	<120s	1Cr18Ni9Ti		
WRE-131 WRE ₂ -131			<24s			
WRC-131 WRC ₂ -131	T	0~350	<120s	1Cr18Ni9Ti		
WRC-131G WRC ₂ -131G			<24s			
WRF-131 WRF ₂ -131	J	0~600	<120s	1Cr18Ni9Ti		
WRF-131G WRF ₂ -131G			<24s			

- 1) 型号130、131为防水式，防护等级IP55；
2) 型号120、121为防喷式，防护等级IP65，其它参数同130、131；
3) 保护管其余材质根据协议订货。

- 1) Model 130 and 131 are water proof type with the protective grade being IP55.
2) Model 120 and 121 are anti-spaying type with the waterproof grade being IP65; the other parameters are the same as model 130 and 131.
3) The material for the rest protective tube is ordered according to the agreement.

固定螺纹式热电偶 Fixed screw type thermocouple

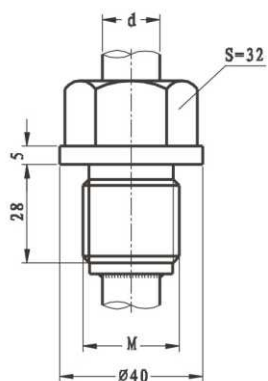


型 号 Model	分度号 Graduation	测温范围 °C Range of temperature measurement °C	热响应时间 Thermal response time	保护管材质 Material for protective tube	规 格 Specification	
					d	L
WRM-230 WRM ₂ -230	N	0~800	<90s	1Cr18Ni9Ti	Φ 16	300×150 350×200 400×250 450×300 500×350 550×400 650×500 900×750 1150×1000 1650×1500 2150×2000
		0~1100		0Cr25Ni20		
WRM-230G WRM ₂ -230G		0~800	<24s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRN-230 WRN ₂ -230	K	0~800	<90s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRN-230G WRN ₂ -230G		0~800	<24s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRE-230 WRE ₂ -230	E	0~800	<90s	1Cr18Ni9Ti		
WRE-230G WRE ₂ -230G			<24s			
WRC-230 WRC ₂ -230	T	0~350	<90s	1Cr18Ni9Ti		
WRC-230G WRC ₂ -230G			<24s			
WRF-230 WRF ₂ -230	J	0~600	<90s	1Cr18Ni9Ti		
WRF-230G WRF ₂ -230G			<24s			
WRM-231 WRM ₂ -231	N	0~800	<90s	1Cr18Ni9Ti	Φ 20	
		0~1100		0Cr25Ni20		
WRM-231G WRM ₂ -231G		0~800	<24s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRN-231 WRN ₂ -231	K	0~800	<120s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRN-231G WRN ₂ -231G		0~800	<24s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRE-231 WRE ₂ -231	E	0~800	<120s	1Cr18Ni9Ti		
WRE-231G WRE ₂ -231G			<24s			
WRC-231 WRC ₂ -231	T	0~350	<120s	1Cr18Ni9Ti		
WRC-231G WRC ₂ -231G			<24s			
WRF-231 WRF ₂ -231	J	0~600	<120s	1Cr18Ni9Ti		
WRF-231G WRF ₂ -231G			<24s			

- 1) 型号230、231为防水式，防护等级IP55；型号220、221为防喷式，防护等级IP65，其它参数同230、231；
- 2) 保护管其余材质根据协议订货；
- 3) 公称压力为4MPa。

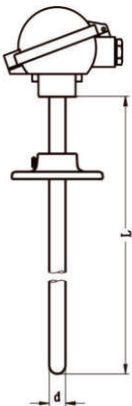
- 1) Model 230 and 231 are waterproof type type with the protective grade being IP55; Model 120 and 121 are anti-spraying type with the waterproof grade being IP65.the other parameters are the same as model 130 and 131.
- 2)The material for the rest protective tube is ordered according to the agreement.
- 3) Nominal pressure is 4MPa.

型号示例 No. of example	螺纹规格 Graduation		d
	代 号 Code	M	
WRN-230	-	M27×2	Φ16
WRN-230A	A	G3/4	
WRN-231G	-	M27×2	Φ20
WRN-231GA	A	G3/4	

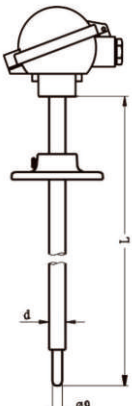


活动法兰式热电偶 Movable flange type thermocouple

型 号 Model	分度号 Graduation	测温范围 °C Range of temperature measurement °C	热响应时间 Thermal response time	保护管材质 Material for protective tube	规 格 Specification	
					d	L
WRM-330 WRM ₂ -330	N	0~800	<90s	1Cr18Ni9Ti	Φ16	150 200 250 300 350 400 500 750 1000 1500 2000 2150
		0~1100		0Cr25Ni20		
WRM-330G WRM ₂ -330G		0~800	<24s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRN-330 WRN ₂ -330	K	0~800	<90s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRN-330G WRN ₂ -330G		0~800	<24s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRE-330 WRE ₂ -330	E	0~800	<90s	1Cr18Ni9Ti		
WRE-330G WRE ₂ -330G			<24s			
WRC-330 WRC ₂ -330	T	0~350	<90s	1Cr18Ni9Ti		
WRC-330G WRC ₂ -330G			<24s			
WRF-330 WRF ₂ -330	J	0~600	<90s	1Cr18Ni9Ti		
WRF-330G WRF ₂ -330G			<24s			
WRM-331 WRM ₂ -331	N	0~800	<90s	1Cr18Ni9Ti	Φ20	
		0~1100		0Cr25Ni20		
WRM-331G WRM ₂ -331G		0~800	<24s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRN-331 WRN ₂ -331	K	0~800	<120s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRN-331G WRN ₂ -331G		0~800	<24s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRE-331 WRE ₂ -231	E	0~800	<120s	1Cr18Ni9Ti		
WRE-331G WRE ₂ -231G			<24s			
WRC-331 WRC ₂ -231	T	0~350	<120s	1Cr18Ni9Ti		
WRC-331G WRC ₂ -231G			<24s			
WRF-331 WRF ₂ -231	J	0~600	<120s	1Cr18Ni9Ti		
WRF-331G WRF ₂ -231G			<24s			

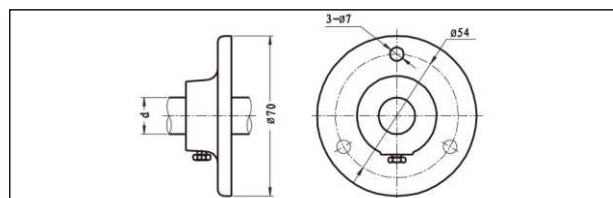


防水式 330 331



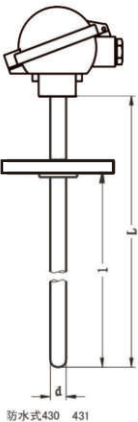
防水式 330G 331G

- 1) 型号330、331为防水式，防护等级IP55；
 - 2) 型号320、321为防喷式，防护等级IP65，其它参数同330、331；
 - 3) 保护管其余材质根据协议订货。
- 1) Model 330 and 331 are waterproof type with the protective grade being IP55.
 - 2) Model 320 and 321 are anti-spraying type with the waterproof grade being IP65. the other parameters are the same as model 130 and 131.
 - 3) The other material for protective tubes are ordered according to the agreement.

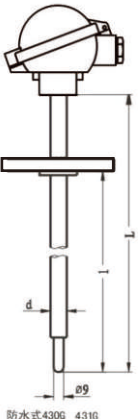


固定法兰式热电偶 Fixed flange type thermocouple

型 号 Model	分度号 Graduation	测温范围 °C Range of temperature measurement °C	热响应时间 Thermal response time	保护管材质 Material for protective tube	规 格 Specification	
					d	L
WRM-430 WRM ₂ -430	N	0~800	<90s	1Cr18Ni9Ti	Φ 16	300×150 350×200 400×250 450×300 500×350 550×400 650×500 900×750 1150×1000 1650×1500 2150×2000
		0~1100		0Cr25Ni20		
WRM-430G WRM ₂ -430G		0~800	<24s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRN-430 WRN ₂ -430	K	0~800	<90s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRN-430G WRN ₂ -430G		0~800	<24s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRE-430 WRE ₂ -430	E	0~800	<90s	1Cr18Ni9Ti		
WRE-430G WRE ₂ -430G			<24s			
WRC-430 WRC ₂ -430	T	0~350	<90s	1Cr18Ni9Ti		
WRC-430G WRC ₂ -430G			<24s			
WRF-430 WRF ₂ -430	J	0~600	<90s	1Cr18Ni9Ti		
WRF-430G WRF ₂ -430G			<24s			
WRM-431 WRM ₂ -431	N	0~800	<120s	1Cr18Ni9Ti	Φ 20	
		0~1100		0Cr25Ni20		
WRM-431G WRM ₂ -431G		0~800	<24s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRN-431 WRN ₂ -431	K	0~800	<120s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRN-431G WRN ₂ -431G		0~800	<24s	1Cr18Ni9Ti		
		0~1100		0Cr25Ni20		
WRE-431 WRE ₂ -431	E	0~800	<120s	1Cr18Ni9Ti		
WRE-431G WRE ₂ -431G			<24s			
WRC-431 WRC ₂ -431	T	0~350	<120s	1Cr18Ni9Ti		
WRC-431G WRC ₂ -431G			<24s			
WRF-431 WRF ₂ -431	J	0~600	<120s	1Cr18Ni9Ti		
WRF-431G WRF ₂ -431G			<24s			



防水式430 431



防水式430G 431G

1) 型号430、431为防水式，防护等级IP55；

2) 型号420、421为防喷式，防护等级IP65，其它参数同430、431；

3) 公称压力为4.0MPa。

1) Model 430 and 431 are waterproof type type with the protective g-grade being IP55;

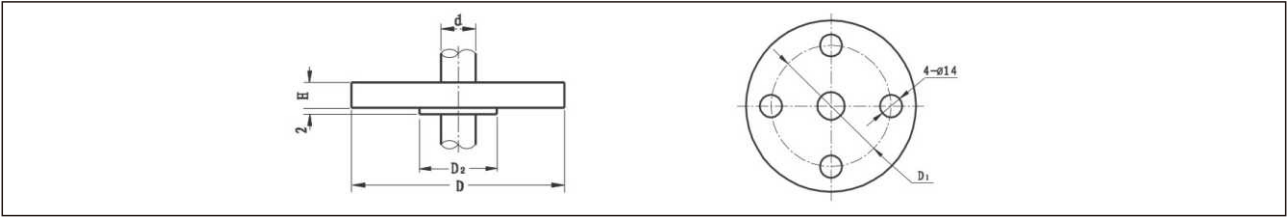
2) Model 420 and 421 are anti-spraying type with the waterproof grade being IP65; the other parameters are the same as model 430 and 431. The material for the rest protective tube is ordered according to the agreement.

3) Nominal pressure is 4.0MPa.

型号示例 No. of example	法兰规格 (mm) Flange specification(mm)				
	D	D ₁	D ₂	H	d
WRN-430	Φ95	Φ65	Φ46	14	Φ16
WRN-430G					
WRN-431	Φ95(Φ105)	Φ65(Φ75)	Φ46(Φ55)	14(16)	Φ20
WRN-431G					

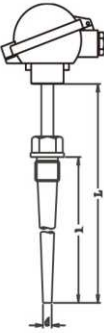
可按用户约定要求提供法兰：详见P86

The flange can be provided according to the requirements of users: for the specific information, please refer to P86.

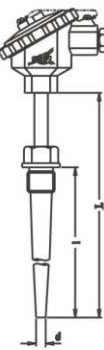


固定螺纹锥式热电偶 Fixed thread cone thermocouple

型 号 Model	分度号 Graduation	测温范围 °C Range of temperature measurement °C	热响应时间 Thermal response time	保护管材质 Material for protective tube	规 格 Specification		
					d	L	
WRM-620 WRM ₂ -620	N	0~800	<90s	1Cr18Ni9Ti	Φ 15	300×150 350×200 400×250 450×300 500×350 550×400 650×500	
		0~1100		0Cr25Ni20			
WRM-620G WRM ₂ -620G		0~800		1Cr18Ni9Ti			
		0~1100		0Cr25Ni20			
WRN-620 WRN ₂ -620	K	0~800		1Cr18Ni9Ti			
		0~1100		0Cr25Ni20			
WRN-620G WRN ₂ -620G		0~800		1Cr18Ni9Ti			
		0~1100		0Cr25Ni20			
WRE-620 WRE ₂ -620	E	0~800		1Cr18Ni9Ti			
WRE-620G WRE ₂ -620G							
WRC-620 WRC ₂ -620	T	0~350		1Cr18Ni9Ti			
WRC-620G WRC ₂ -620G							
WRF-620 WRF ₂ -620	J	0~600		1Cr18Ni9Ti			
WRF-620G WRF ₂ -620G							
WRM-630 WRM ₂ -630	N	0~800		1Cr18Ni9Ti			
		0~1100		0Cr25Ni20			
		0~800		1Cr18Ni9Ti			
WRM-630G WRM ₂ -630G		0~1100		0Cr25Ni20			
WRN-630 WRN ₂ -630	K	0~800		1Cr18Ni9Ti			
		0~1100		0Cr25Ni20			
WRN-630G WRN ₂ -630G		0~800		1Cr18Ni9Ti			
		0~1100		0Cr25Ni20			
WRE-630 WRE ₂ -630	E	0~800		1Cr18Ni9Ti			
WRE-630G WRE ₂ -630G							
WRC-630 WRC ₂ -630	T	0~350		1Cr18Ni9Ti			
WRC-630G WRC ₂ -630G							
WRF-630 WRF ₂ -630	J	0~600		1Cr18Ni9Ti			
WRF-630G WRF ₂ -630G							



防堵式620 620A

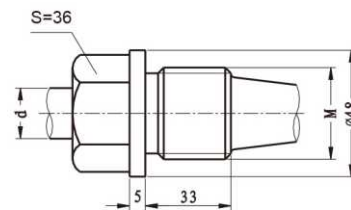


防水式630 630A

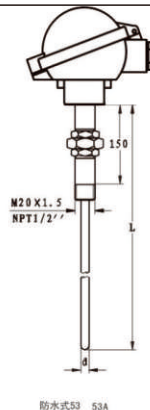
- 1) 型号620、620G为防喷式，防护等级IP65；型号630、630G为防水式，防护等级IP55；
- 2) 保护管其余材质根据协议订货；
- 3) 公称压力为≤15MPa。

- 1) Model 620 and 620G are anti-spraying type with the protective grade being IP65; Model 630 and 630G are waterproof type type with the protective grade being IP55;
- 2) The material for the rest protective tube is ordered according to the agreement.
- 3) Nominal pressure is: ≤15MPa.

型号示例 Examples of models	螺纹规格 Thread specification	
	代号 Code	M
WRN-620	-	M33×2
WRN-620	A	NPT1
WRN-630	-	M33×2
WRN-630	A	NPT1



活络管接头式热电偶 Thermocouple of joint type of adjustable pipe



型 号 Model	分度号 Graduation	测温范围 °C Range of temperature measurement °C	连接尺寸 Connection size	保护管材质 Material for protective tube	规 格 Specification	
					d	L
WRM-53 WRM ₂ -53	N	0~1100	M20×1.5	0Cr25Ni20	Φ3 Φ4 Φ5 Φ6 Φ8	245 270 295 345 395 445 545 645 745 899 1149
WRM-53A WRM ₂ -53A			NPT1/2			
WRN-53 WRN ₂ -53	K		M20×1.5	1Cr18Ni9Ti		
WRN-53A WRN ₂ -53A			NPT1/2			
WRE-53 WRE ₂ -53	E	0~700	M20×1.5			
WRE-53A WRE ₂ -53A		NPT1/2				
WRC-53 WRC ₂ -53	T	0~350	M20×1.5			
WRC-53A WRC ₂ -53A			NPT1/2			
WRF-53 WRF ₂ -53	J	0~600	M20×1.5			
WRF-53A WRF ₂ -53A			NPT1/2			

- 1) 型号53、53A为防水式，防护等级IP55；
- 2) 型号52、52A为防喷式，防护等级IP65，其它参数同53、53A；
- 3) 如无特殊之约定，L 仅为参考尺寸，热电偶插入深度应为热安装套管U尺寸；
- 4) 热安装套管形式详见P119。

- 1) Model 53 and 53A are waterproof type with the protective grade being IP55.
- 2) Model 52 and 52A are anti-spring type with the protective grade being IP65. The other parameters are the same as 53 and 53A.
- 3) If there is no special agreement, L is only the reference size. The insertion depth of thermocouple should be the size of thermal installation sleeve U.
- 4) The form of thermal mounting sleeve is shown in P119.

直形管接头式热电偶 Joint type thermocouple of straight pipe



型 号 Model	分度号 Graduation	测温范围 °C Range of temperature measurement °C	连接尺寸 Connection size	保护管材质 Material for protective tube	规 格 Specification	
					d	L
WRM-73 WRM ₂ -73	N	0~1100	M20×1.5	0Cr25Ni20	Φ3 Φ4 Φ5 Φ6 Φ8	245 270 295 345 395 445 545 645 745 899 1149
WRM-73A WRM ₂ -73A			NPT1/2			
WRN-73 WRN ₂ -73	K		M20×1.5	1Cr18Ni9Ti		
WRN-73A WRN ₂ -73A			NPT1/2			
WRE-73 WRE ₂ -73	E	0~700	M20×1.5			
WRE-73A WRE ₂ -53A		NPT1/2				
WRC-73 WRC ₂ -73	T	0~350	M20×1.5			
WRC-73A WRC ₂ -73A			NPT1/2			
WRF-73 WRF ₂ -73	J	0~600	M20×1.5			
WRF-73A WRF ₂ -73A			NPT1/2			

- 1) 型号73、73A为防水式，防护等级IP55；
- 2) 型号72、72A为防喷式，防护等级IP65，其它参数同73、73A；
- 3) 如无特殊之约定，L 仅为参考尺寸，热电偶插入深度应为热安装套管U尺寸；
- 4) 热安装套管形式详见P119。

- 1) Model 73 and 73A are waterproof type with the protective grade being IP55.
- 2) Model 72 and 72A are anti-spring type with the protective grade being IP65.
- 3) If there is no special agreement, L is only the reference size. The insertion depth of thermocouple should be the size of thermal installation sleeve U.
- 4) The form of thermal mounting sleeve is shown in P119.

固定螺纹管接头式热电偶 Joint type thermocouple of fixed thread pipe

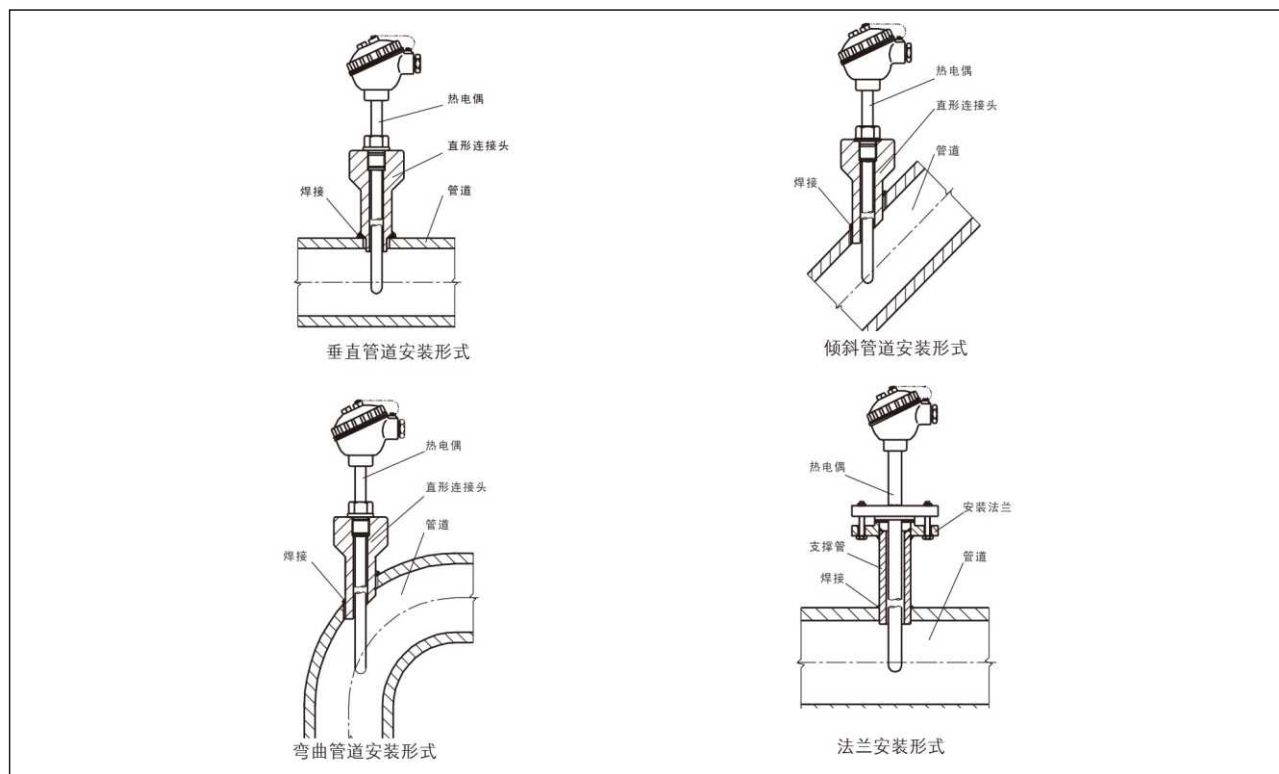


型 号 Model	分度号 Graduation	测温范围 °C Range of temperature measurement °C	连接尺寸 Connection size	保护管材质 Material for protective tube	规 格 Specification	
					d	L
WRM-82 WRM ₂ -82	N	0~1100	M20×1.5	0Cr25Ni20	Φ3 Φ4 Φ5 Φ6 Φ8	245 270 295 345 395 445 545 645 745 899 1149
WRM-82A WRM ₂ -82A			NPT1/2			
WRN-82 WRN ₂ -82	K		M20×1.5	1Cr18Ni9Ti		
WRN-82A WRN ₂ -82A			NPT1/2			
WRE-82 WRE ₂ -82	E	0~700	M20×1.5			
WRE-82A WRE ₂ -82A		NPT1/2				
WRC-82 WRC ₂ -82	T	0~350	M20×1.5			
WRC-82A WRC ₂ -82A			NPT1/2			
WRF-82 WRF ₂ -82	J	0~600	M20×1.5			
WRF-82A WRF ₂ -82A			NPT1/2			

- 1) 型号82、82A为防喷式，防护等级IP65；
- 2) 型号83、83A为防水式，防护等级IP55，其它参数同82、82A；
- 3) 如无特殊之约定，L 仅为参考尺寸，热电偶插入深度应为热安装套管U尺寸；
- 4) 热安装套管形式详见P119。

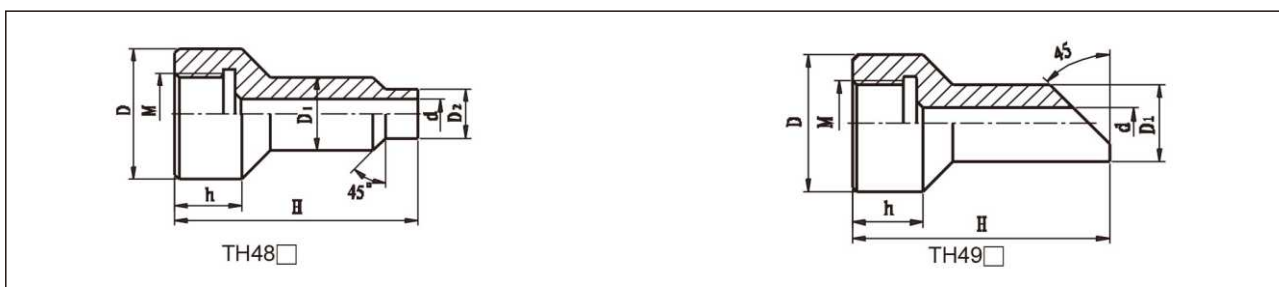
- 1) Model 82 and 82A are anti-spring type with the protective grade being IP65.
- 2) Model 83 and 83A are waterproof type with the protective grade being IP55. Other parameters are the same as model 82 and 82A.
- 3) If there is no special agreement, L is only the reference size. The insertion depth of thermocouple should be the size of thermal installation sleeve U.
- 4) The form of thermal mounting sleeve is shown in P119.

安装形式 Installation type



直形接头 Straight joint

代号 Code	M	D	D ₁	D ₂	d	h	H
TH48A	M12×1.5	Φ32	Φ18	Φ12	Φ7	27	60,120
TH48B	M16×1.5	Φ36	Φ18	Φ14	Φ7	27	80
TH48C	M20×1.5	Φ40	Φ18	Φ14	Φ7	27	60
TH48D	M27×2	Φ47	Φ28	Φ22	Φ17	32	60
TH48E	M33×2	Φ55	Φ36	Φ30	Φ21	34	120
TH48F	NPT1/2	Φ39	Φ27	Φ21	Φ16	35	60
TH48G	NPT3/4	Φ47	Φ31	Φ25	Φ20	40	
TH48H	NPT1	Φ47	Φ41	Φ35	Φ30	45	



代号 Code	M	D	D ₁	d	h	H
TH49A	M27×2	Φ47	Φ28	Φ18	30	90
TH49B	M33×2	Φ55	Φ36	Φ24	30	150
TH49C	NPT1/2	Φ39	Φ27	Φ16	30	90
TH49D	NPT3/4	Φ47	Φ31	Φ20	35	90
TH49E	NPT1	Φ47	Φ41	Φ30	40	150