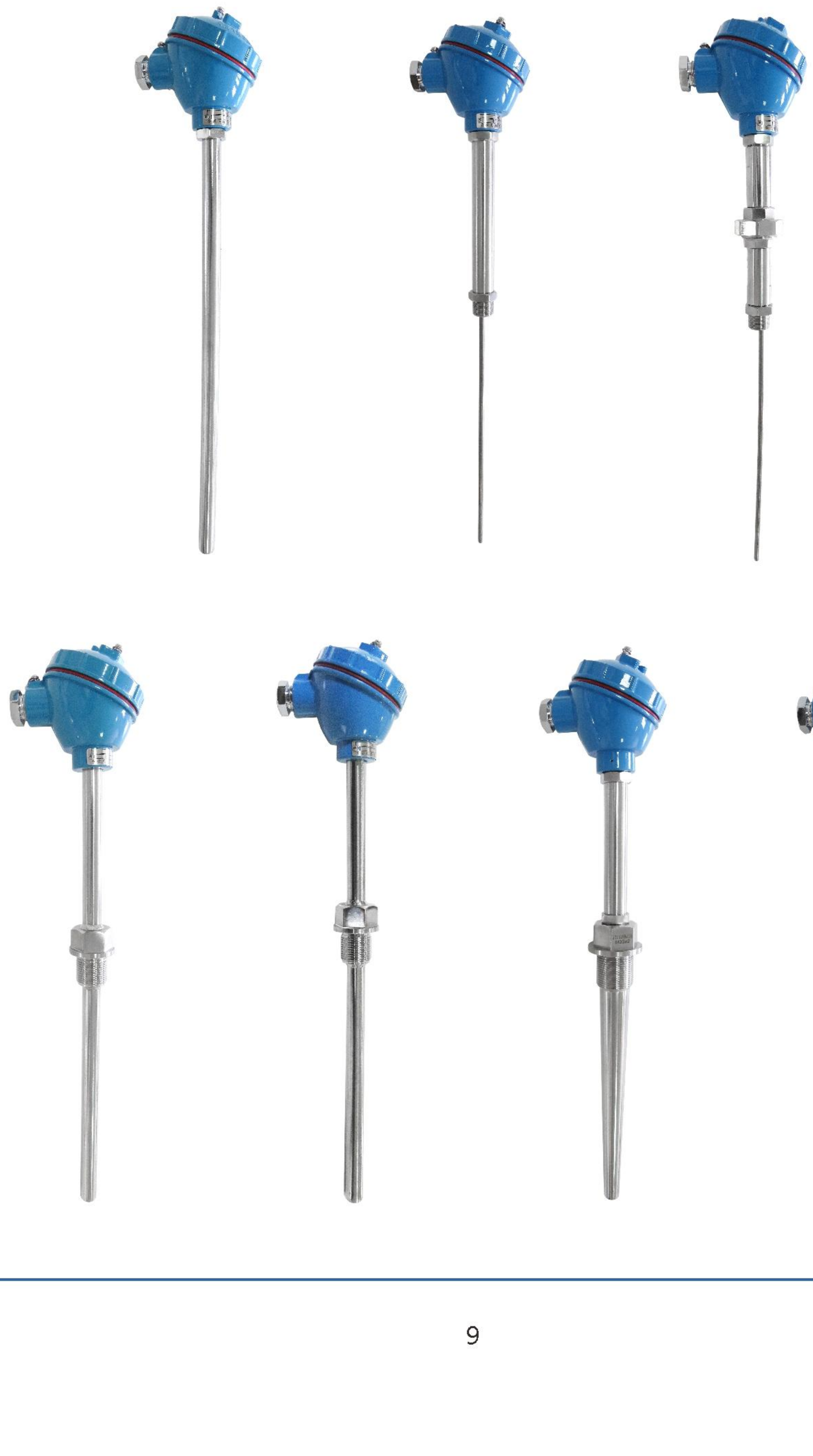
天康集团

装配热电偶

Assembly Thermocouple



产品应用
Product Application

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（0～1300）℃范围内液体、蒸汽和气体介质以及固体表面温度。

Usually used in conjunction with display instruments, recording instruments, electronic computers and so on. Direct measurement of various production processes (0~1300)℃ range of liquid, steam and gas media and solid surface temperature.

产品原理
Product Principle

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。

The electrodes of the Armored Thermocouple consist of two different conductor materials. When there is a temperature difference between the measuring end and the reference end, a thermoelectric potential is generated and the working instrument displays the temperature value corresponding to the thermoelectric potential.

产品特点
Product Features

- 装配简单，更换方便；
- 弹簧压紧式感温元件，抗振性能好；
- 测量范围大；
- 机械强度高，耐压性能好；
- 接线盒防护等级IP65，IP66。

- Less thermal response time, reducing dynamic errors.
- Bendable mounting for use.
- Large measuring range.
- High mechanical strength, good pressure resistance.
- Junction box protection level IP65, IP66.

技术参数
Technical Parameter

1、产品执行标准

国际标准IEC60584；

国家标准GB/T18404、GB/T30429。

2、常温绝缘电阻

热电偶在环境温度为20±15℃，相对湿度不大于80%，试验电压为500±50V（直流）电极与外套管之间的绝缘电阻≥1000MΩ.m即1m长的试样的绝缘电阻为1000MΩ；10m长的试样的绝缘电阻为100MΩ。

1. Executive Standard of the Product
International standard IEC60584; National standard GB/T18404, GB/T304292.
2. Room temperature insulation resistance
The insulation resistance of Thermocouple is ≥1000MΩ between the electrode and the outer casing at an ambient temperature of (20±15)°C, a relative humidity of not more than 80%, and a test voltage of (500±50)V (DC). That is, the insulation resistance of a 1m-long specimen is 1000MΩ; and the insulation potential of a 10m-long specimen is 100MΩ.

3、测温范围及允差

3. Temperature measurement range and tolerance

型号 Model	分度号 Graduation	允差等级 Tolerance level			
		I		II	
		允差值 Tolerance value	测温范围（℃） Temperature measurement range	允差值 Tolerance value	测温范围（℃） Temperature measurement range
WRNK	K	-40~+375	±1.5℃	-40~+333	±2.5℃
		375~1000	±0.004ltl	333~1200	±0.0075ltl

WRMK	N	-40~+375	±1.5℃	-40~+333	±2.5℃
		375~1000	±0.004ltl	333~1200	±0.0075ltl
WREK	E	-40~+375	±1.5℃	-40~+333	±2.5℃
		375~800	±0.004ltl	333~900	±0.0075ltl
WRFK	J	-40~+375	±1.5℃	-40~+333	±2.5℃
		375~750	±0.004ltl	333~750	±0.0075ltl
WRCK	T	-40~+125	±0.5℃	-40~+133	±1.0℃
		125~350	±0.004ltl	133~350	±0.0075ltl
WRPK	S	0~+1100	±1.0℃	0~600	±1.5℃
		1100~1600	±[1+0.003(t-1100)]	600~1600	±0.0025ltl
WRQK	R	0~+1100	±1.0℃	0~600	±1.5℃
		1100~1600	±[1+0.003(t-1100)]	600~1600	±0.0025ltl
WRRK	B	/	/	600~1700	±0.0025ltl

4、热响应时间

4.Thermal Response Time

保护管直径（mm） Protection tube diameter	保护管材质 Protective tube material	热响应时间t0.5（S） Thermal response time
Φ16	非金属 Non-metallic	≤240
	金属 Metallic	≤180
Φ20	金属 Metallic	≤240
Φ25	非金属 Non-metallic	≤300
锥形保护管 Conical protective tube	金属 Metallic	

型号命名方法
Model Naming Method

W	温度仪表 Temperature Instruments

R	热电偶 Thermocouples

感温元件材料 Temperature sensing element material	
N	K 镍铬-镍硅 Nickel-chromium-nickel-silicon
E	E 镍铬-铜铬 Nickel-chromium-copper-chromium
M	N 镍铬硅-镍硅 Nickel-chromium-silicon-nickel-silicon
F	J 铁-铜镍 Iron-copper-nickel
C	T 铜-铜镍 Copper-copper-nickel
P	S 铂铑10-铂 Platinum-rhodium 10-platinum
Q	R 铂铑13-铂 Platinum-rhodium 13-platinum
R	B 铂铑30-铂铑6 Platinum-rhodium 30-platinum-rhodium 6

偶丝对数 Coupling wire pairs	
无 None	单支 Single branch
2	双支 Double branch

安装固定形式 Fixed installation	
1	无固定装置 No fixed installation
2	固定螺纹 Fixed thread
3	活动法兰 Adjustable flange
4	固定法兰 Fixed flange
5	活络管接头式 Flexible tube joint type
6	固定螺纹锥形式 Fixed thread cone type
7	直行管接头式 Straight tube fitting type
8	固定螺纹管接头式 Fixed thread tube fitting type
9	活动螺纹管接头式 Adjustable thread tube fitting type

接线盒形式 Terminal box type	
3	防水式 Waterproof

保护管直径 Protective tube diameter	
0	Φ16
1	Φ20
2	Φ16高铝质管 High Aluminum Tube
3	Φ20高铝质管 High Aluminum Tube

附加装置形式 Additional device form	
G	变截面 Variable cross-section

W	R	N	2	-	2	3	0	G	典型型号示例 Typical Model Example

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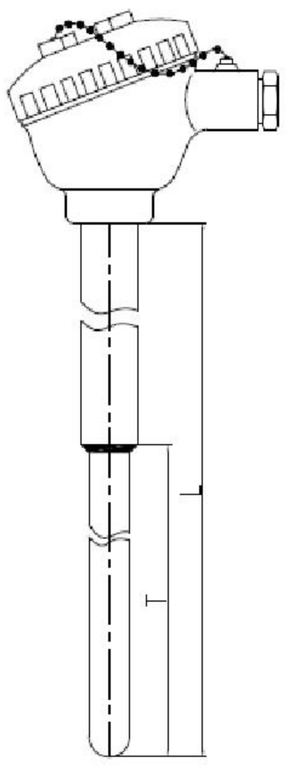
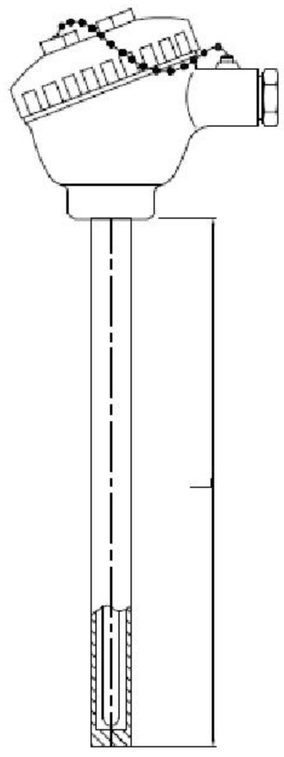
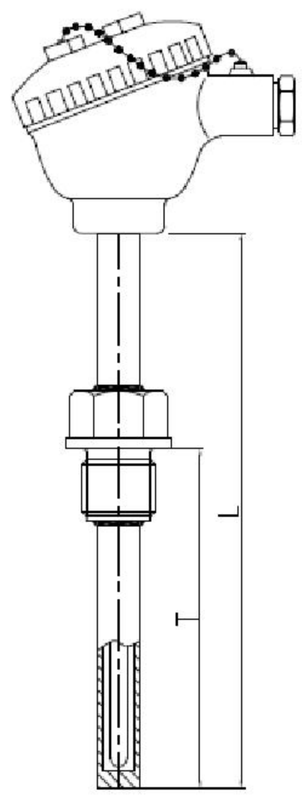
结构示意图
Structure diagram



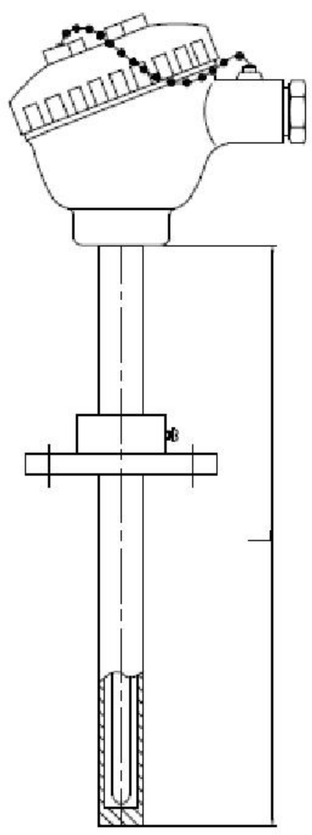
WRN-130（非金属保护管）
Non-metallic protective tube



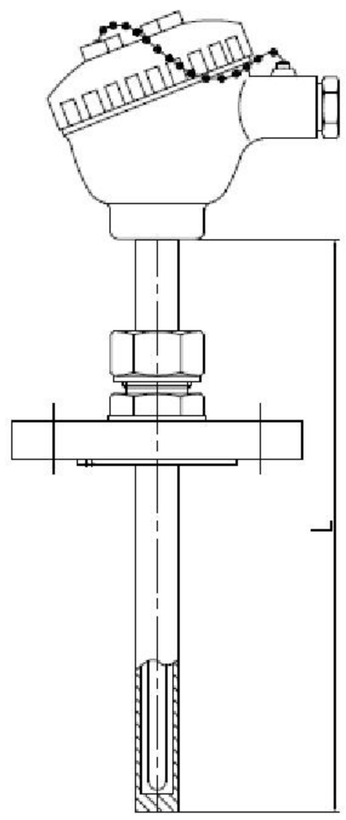
WRN-130



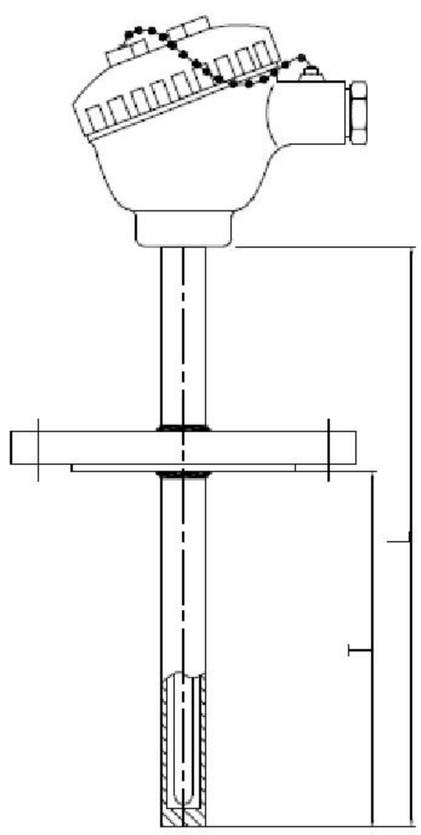
WRN-230



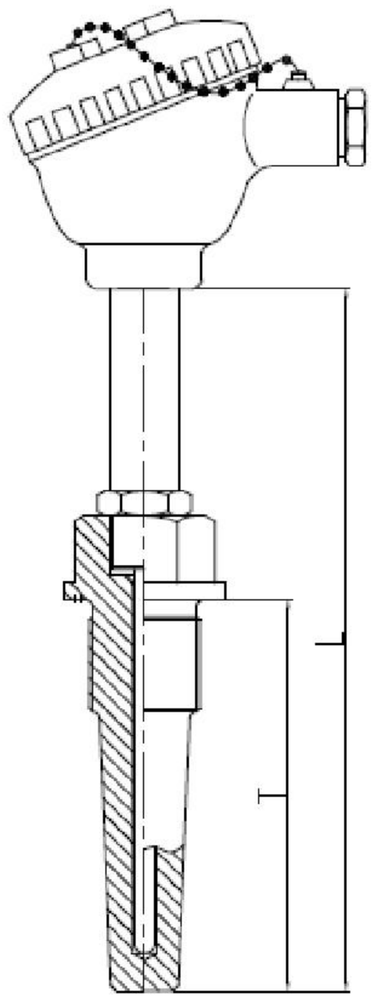
WRN-330



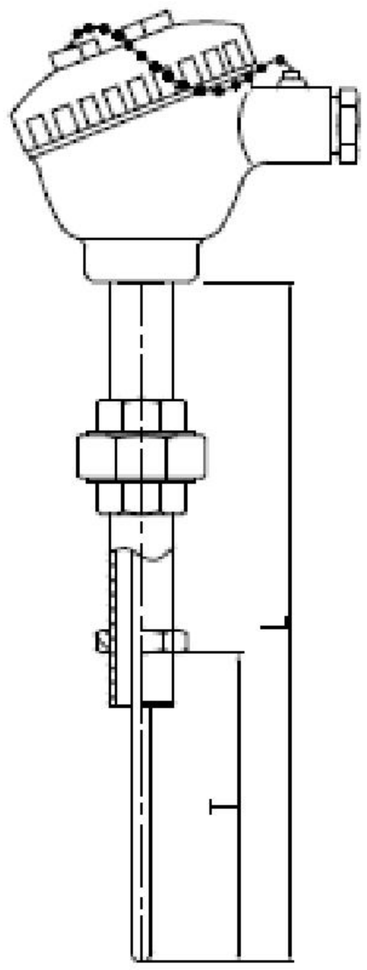
WRN-330（活动卡套法兰）
Adjustable ferrule flange



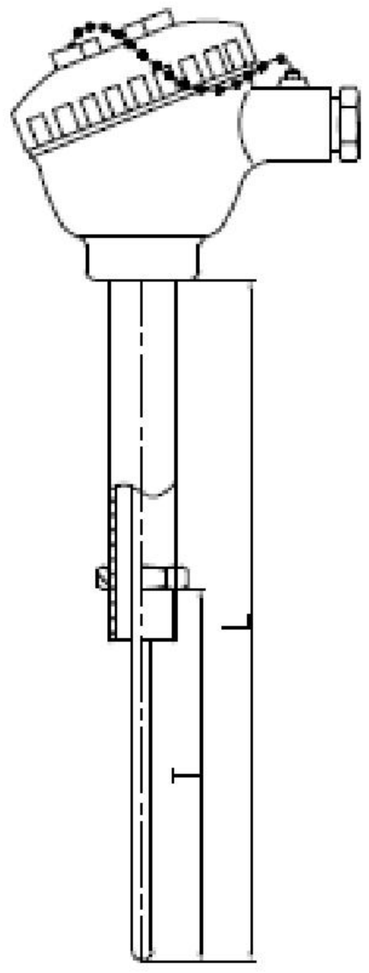
WRN-430



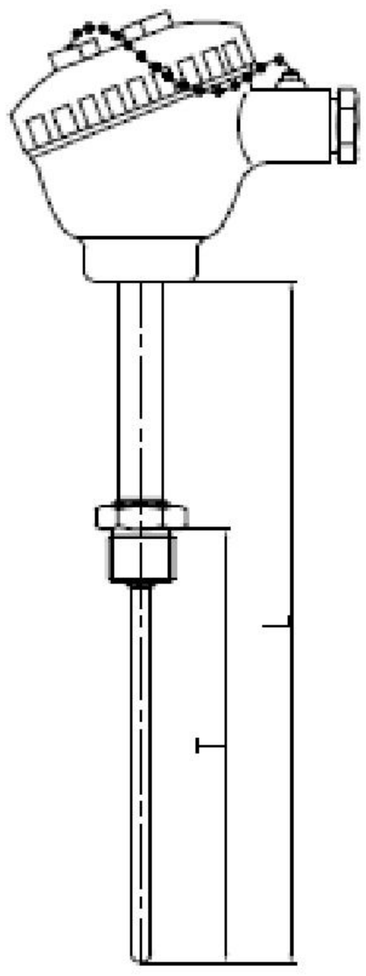
WRN-630



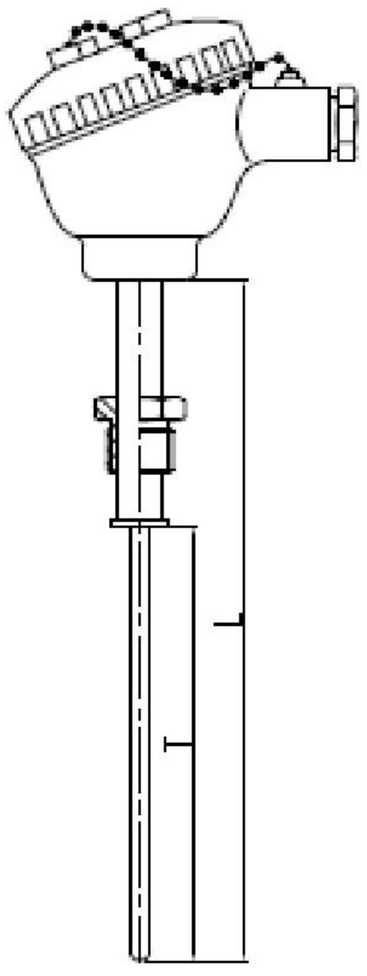
WRN-53



WRN-73



WRN-83



WRN-93（活动螺纹）
Adjustable thread

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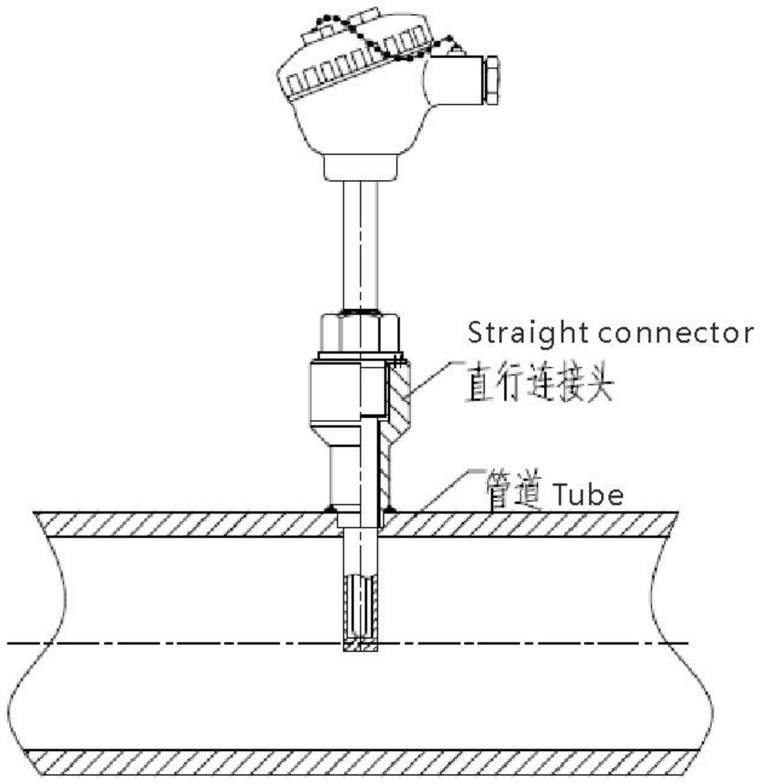
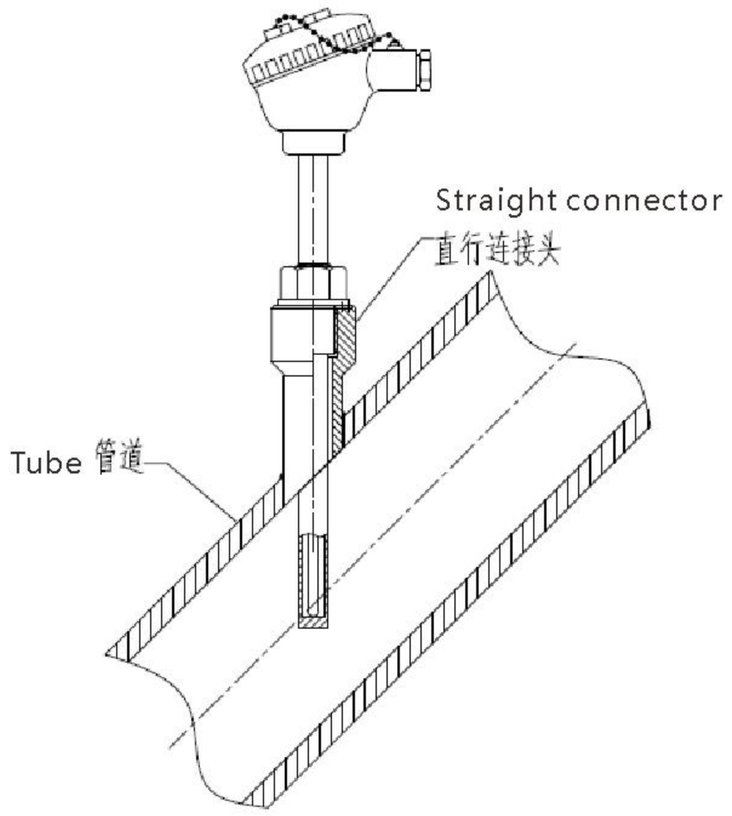
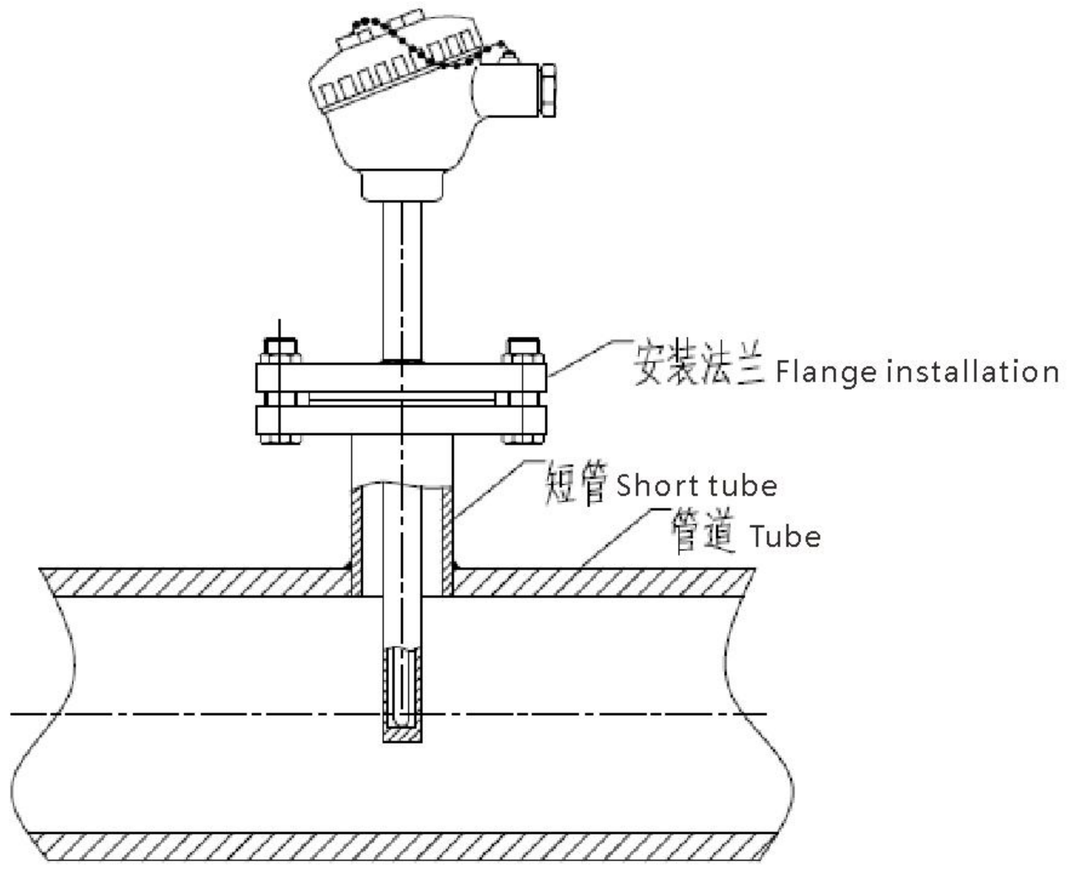
安装形式
Installation form



垂直管道安装
Vertical pipeline installation

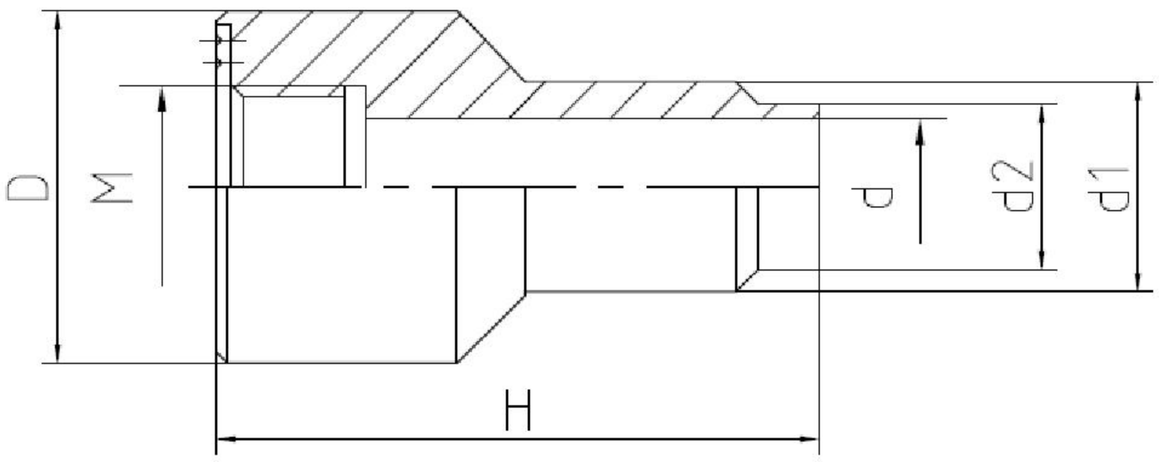


倾斜管道安装
Inclined pipeline installation



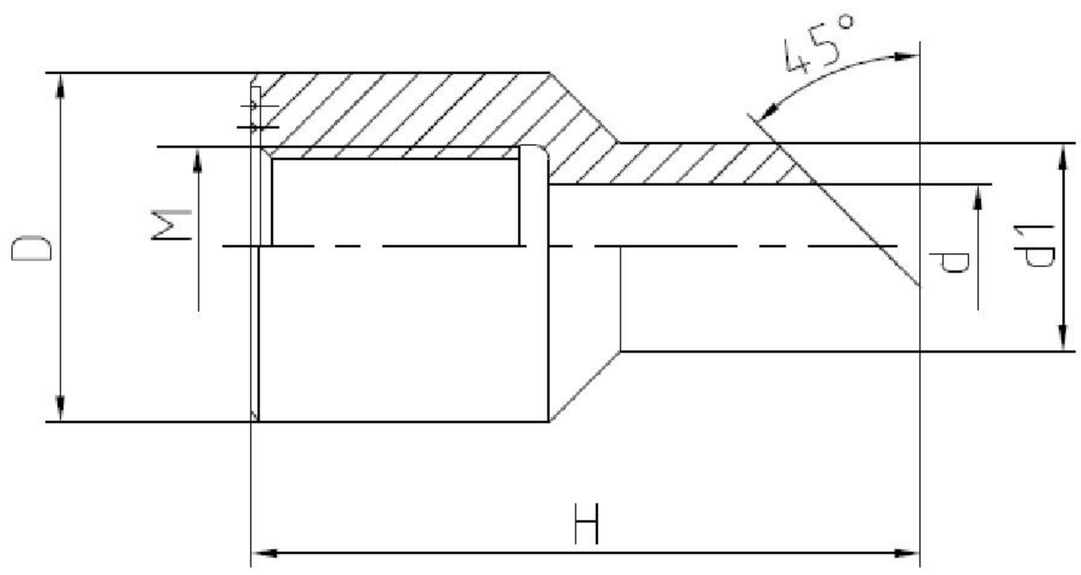
法兰安装
Flange installation

直行连接头
Straight connector



TH48□

代号 Code	M	D	d	d1	d2	H
TH48A	M12x1.5	Φ32	Φ7	Φ18	Φ12	60，120
TH48B	M16x1.5	Φ34	Φ10	Φ24	Φ14	80
TH48C	M20x1.5	Φ39	Φ10	Φ26	Φ14	60
TH48D	M27x2	Φ47	Φ22	Φ32	Φ26	60
TH48E	M33x2	Φ55	Φ22	Φ36	Φ26	120
TH48F	NPT1/2	Φ39	Φ16	Φ27	Φ21	60，120
TH48G	NPT3/4	Φ47	Φ20	Φ31	Φ25	
TH48H	NPT1	Φ47	Φ30	Φ41	Φ35	



TH49□

代号 Code	M	D	d	d1	H
TH49A	M27x2	Φ47	Φ18	Φ28	90
TH49B	M33x2	Φ55	Φ24	Φ36	150
TH49C	NPT1/2	Φ39	Φ16	Φ27	90
TH49D	NPT3/4	Φ47	Φ20	Φ31	90
TH49E	NPT1	Φ47	Φ30	Φ41	150