双金属温度计
Bimetal Thermometer

产品应用
Product Application

双金属温度计是一种测量中低温度的现场检测仪表。可以直接测量各种生产过程中的-80℃~+500℃范围内液体、蒸汽和气体介质温度。

Bimetal thermometer is a kind of on-site detection instrument for measuring low and medium temperatures, which can directly measure the temperature of liquid, steam and gas media in the range of -80℃~+500℃ in various production processes.

产品原理
Product Principles

双金属温度计是基于绕制成环性弯曲状的双金属片组成。一端受热膨胀时，带动指针旋转，工作仪表便显示出热电势所应的温度值。

Bimetal thermometers are based on a bimetal sheet wound into a circular bend. When one end is expanded by heat, the pointer rotates and the working instrument displays the temperature value corresponding to the thermopotential.

天康集团

产品参数
Product Parameters

- 现场显示温度，直观方便；
- 具有自动切断电源和报警功能；
- 安全可靠，使用寿命长；
- 多种结构形式，可满足不同要求。

- On-site display of temperature, intuitive and convenient;
- With automatic power cut off and alarm function;
- Safe and reliable, long service life.
- A variety of structural forms, can meet different requirements.

产品种类
Product Category

- 双金属温度计-普通型，表盘指针现场指示温度；
- 电接点双金属温度计：除现场指示温度外，通过上下给定触点，当温度达到给定值时，触点闭合或断开，使控制电路中的继电器动作，从而自动控制及报警；
- 带热电偶（阻）一体化双金属温度计，将铠装热电偶（阻）安装在双金属温度计的保护管内，既满足现场测温要求，也满足远距离传输的要求；
- 隔爆双金属温度计：用于生产现场存在碳氢化合物等爆炸性气体时的电接点型双金属温度计，测量其各种过程中（-80～+500）℃范围内液体、气体介质或固体表面的温度。除实现电接点型本身特性外，还瞒着隔爆要求。

- Bimetal thermometer-ordinary type, dial pointer indicates the temperature on the spot;
- Electric contact bimetal thermometer: in addition to field indication of temperature, through the upper and lower given contacts, when the temperature reaches the given value, contact closure or disconnection to make the control circuit in the relay action, so as to automatically control and alarm;
- With thermocouple (resistance) integrated bimetallic thermometer, armored thermocouple (resistance) installed in the bimetallic thermometer protection tube, not only to meet the requirements of field Temperature measurement requirements, but also to meet the requirements of long-distance transmission;
- Explosion-proof bimetal thermometer: Used in the production site there are hydrocarbons and other explosive gases when the electric contact type bimetal thermometer, measuring its various processes (-80 ~ +500) range of liquid, gas medium or solid surface temperature. In addition to realizing the characteristics of the electric contact type itself, it also meets the requirements of explosion-proof.

产品参数
Product Parameters

1、产品执行标准：JB/T8803。

2、标度盘公称直径：60，100，150。

3、精度等级

双金属温度计：1.0级、1.5级；

铠装热电阻（Pt100）：A级±（0.15±0.002|t|），B级±（0.30±0.005|t|）。

4、热响应时间

1. Executive Standard of the Product: JB/T8803.

2. Nominal diameter of standard disk: 60, 100, 150.

3. Accuracy level

Bimetal Thermometer: Level 1.0, Level 1.5;

Armored Thermocouple (Pt100): Level A, Level B

4. Thermal response time

保护管直径（mm） Protection tube diameter	Φ6*0.5	Φ8*1	Φ10*1	Φ12*1.5	Φ14*1.5
热响应时间（s） Thermal response time	≤40	≤40	≤40	≤60	≤90

5、防护等级：IP55、IP65、IP66。

6、角度调整误差：角度调整误差应不超过其量程的1.0%。

7、回差：温度计回差应不大于基本误差限的绝对值。

8、重复性：温度计重复性极限范围切应不大于基本误差限绝对值的1/2。

9、测温范围

5. Protection level: IP55, IP65, Ip66.
6. Angle adjustment error: the angle adjustment error should not exceed 1.0% of its range.
7. Return error: the return error of the thermometer should not be greater than the absolute value of the basic error limit.
8. Repeatability: thermometer repeatability limit range cut should not be greater than 1/2 of the absolute value of the basic error limit.
9. Temperature measurement range.

测温范围 ℃ Temperature measurement range	精度 Accuracy
-80~40，-50~300，-50~200，-50~150，-50~100， -50~50，-40~80，-40~60，-30~150，-20~200， -20~150，-20~100，-20~80，-20~60，0~50， 0~60，0~80，0~100，0~120，0~150，0~200， 0~250,0~300，0~350，0~400，0~500，0~600	1.0，1.5，2.0

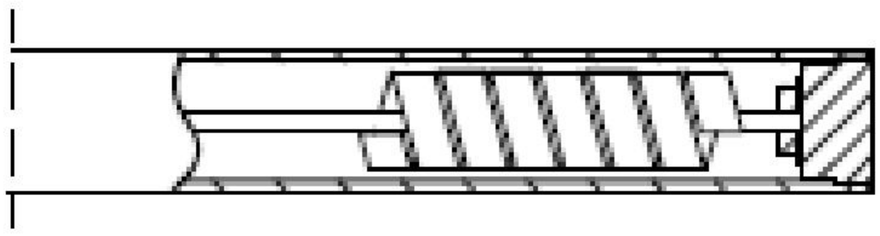
10、正常工作大气条件

Normal atmospheric operating conditions

工作场所 Workplace	保护管直径（mm） Protection tube diameter	保护管直径（mm） Protection tube diameter
掩蔽场所 Shelter	-25~+25	5~100
户外场所 Outdoor places	-40~+85	5~100

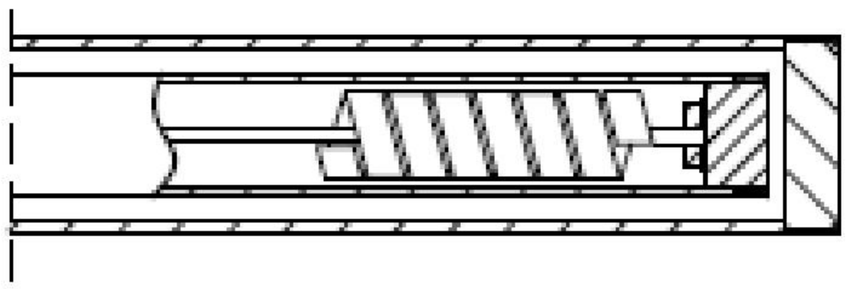
11、测量端形式

Form of measuring end



一体式

Integrated



抽芯式

Core pulling type

12、电接点型电气参数及接线方式

● 电气参数

额定功率：10VA；

工作电压：220/380V.A.C；

最大允许电流：0.7A。

● 接线方式

12. Electrical parameters and wiring of the electrical contact type

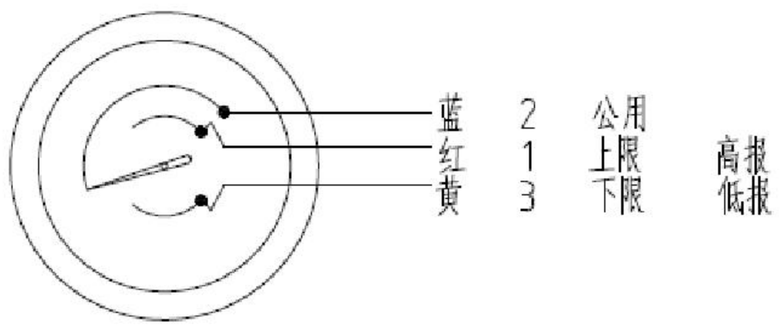
●Electrical parameters

Rated power: 10VA

Working voltage: 220/380VA.C;.

Maximum allowable current: 0.7A.

●Wiring method



型号命名方法
Model naming method

W	温度仪表 Temperature Instruments
S	金属膨胀式 Metal expansion type
S	感温元件双金属片 Temperature sensing element bimetal
X	电接点结构（可为空白） Electrical contact structure (can be blank)
P	远传结构（可为空白） Remote structure (can be blank)

表壳公称直径 Nominal diameter of case	
3	60
4	100
5	150

位置特征 Location characteristics	
0	轴向 Axial
1	径向 Radial
2	135°向 135° orientation
8	万向 Universal

安装固定装置 Fixed installation	
0	无固定装置 No fixed installation
1	可动外螺纹 Movable external thread
2	可动内螺纹 Movable internal thread
3	固定螺纹 Fixed thread
4	固定法兰 Fixed flange
5	卡套螺纹 Ferrule thread
6	卡套法兰 Ferrule flange

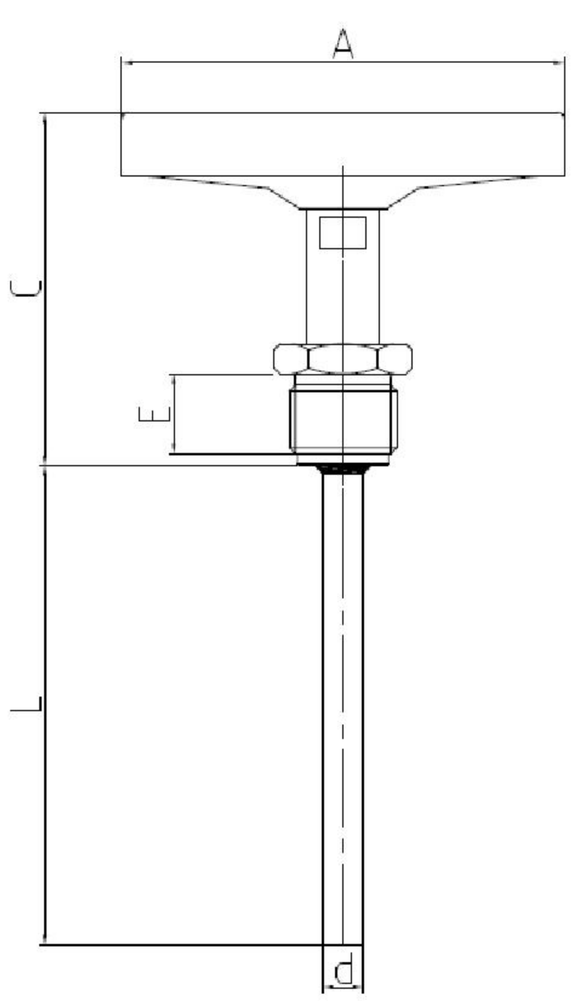
套管形式（见附件） Sleeve form (see attachment)

W	S	S	X		-	4	8	1	-		典型型号示例 Typical Model Example

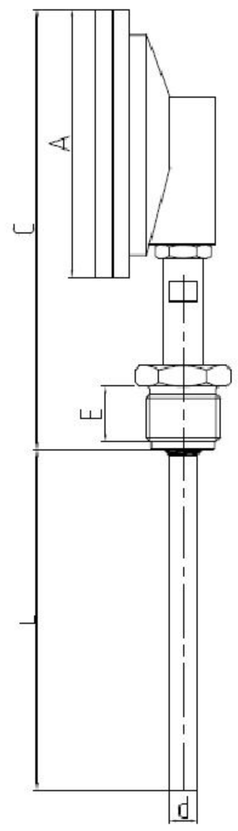
标准尺寸
Standard size

形式 Form	A	C	E	L	d
轴向型 Axial type	Φ65	73	优先选用 Prior selection M20*1.5，E=15 M27*2，E=20	75 100 150 200 300 400 500 750 1000	Φ6 Φ8 Φ10
	Φ105	73			
	Φ155	73			
径向型 Radial type	Φ65	110			
	Φ105	110			
	Φ155	110			
135°向型 135 ° orientation	Φ105	85			
	Φ155	85			
万向型 Universal type	Φ105	178			
	Φ155	178			
远传型 Remote transmission type	Φ105	200			
电接点型 Electric contact type	Φ105	200			

结构示意图
Structure diagram



WSS-401



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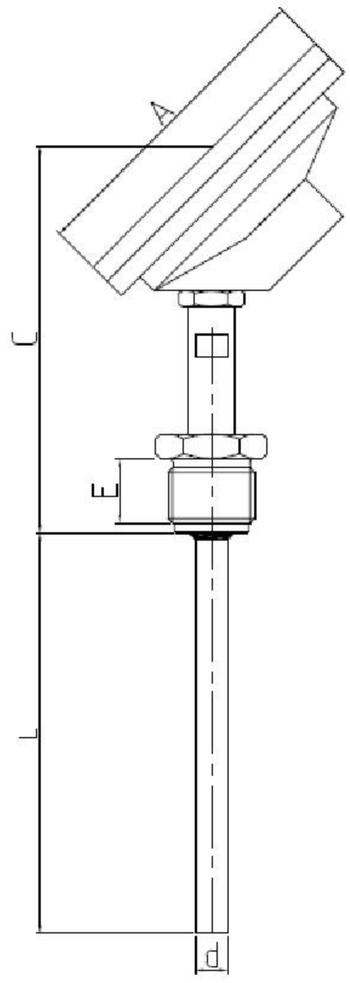

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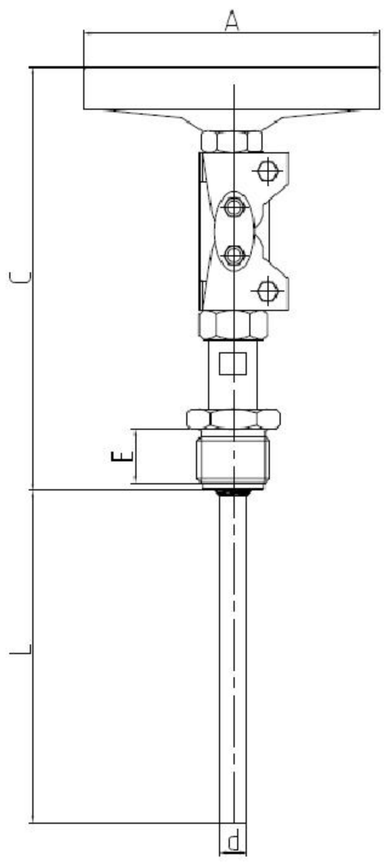

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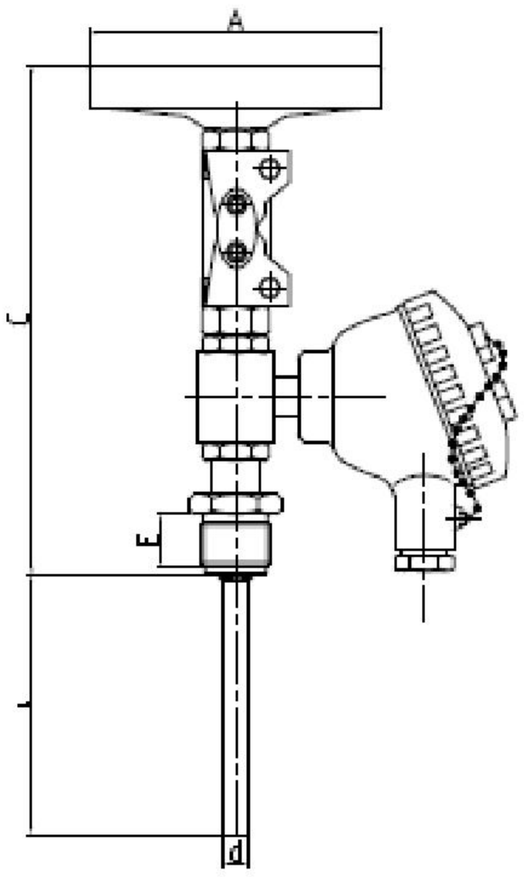
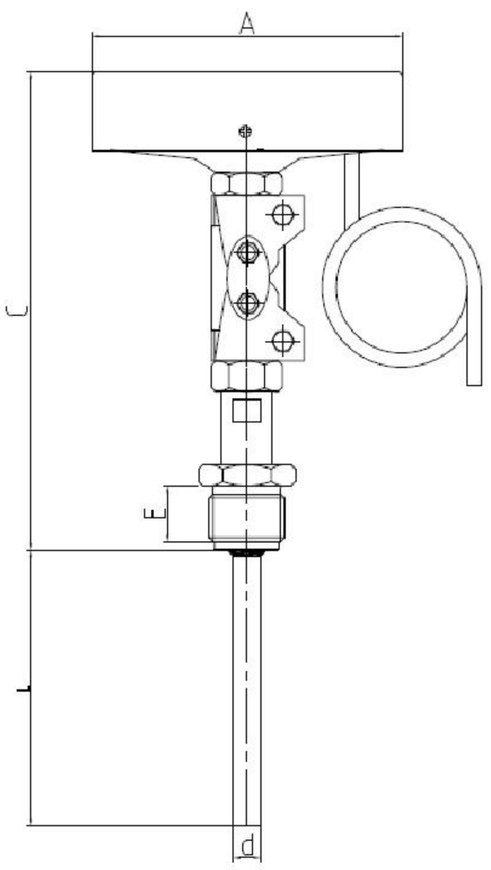


WSSP-481（远传）
Remote transmission



WSSX-481