

双金属温度计 Bimetallic thermometer

应用

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。

工作原理

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动势所应的温度值。

特点

- 1.现场显示温度，直观方便；
- 2.安全可靠，使用寿命长；
- 3.多种结构形式，可满足不同要求；

主要技术参数

- 1.产品执行标准:JB/T8803-1998;
- 2.标度盘公称直径: 60,100,150;
- 3.精度等级: (1.0),1.5;
- 4.热响应时间: ≤40s;
- 5.防护等级: IP55;
- 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

Application

Bimetallic thermometer is a kind of field testing instrument for measuring low and medium temperature. It can directly measure the temperature of the liquid, vapor and gas within -80℃~+500℃ in a variety of production processes.

Working principle

The bimetallic thermometer is made of a metal sheet which is made into a ring and bend shape. When one end is heated and expanded, it will lead to the rotation of the pointer and the working instrument will show the temperature value of the thermal electric potential.

Characteristics

1. It can display the temperature on-site, which is intuitive and convenient
2. It is safe and reliable with long service life;
3. With a variety of structural forms, which can meet different requirements

Main technical parameters

- 1.Product implementation standard:JB/T8803-1998
- 2.Nominal diameter of dial: 60,100,150
- 3.Precision grade: (1.0),1.5
- 4.Thermal response time: ≤40s
- 5.Protection level: IP55
- 6.Angle adjustment error
- Angle adjustment error should not more than 10% of the range
7. Return difference: the return difference of the thermometer should not be more than the absolute value of the error limitation.
8. Repeatability: the repeatability of the thermometer should be no greater than 1/2 of the absolute value of the basic error limitation.
9. Range of temperature measurement

测温范围 °C Range of temperature measurement °C	适应范围 Adaptive range	
	工业、商业 Industrial, commercial	实验室、小型 Industrial, commercial
-80~+40	✓	✓
-40~+80	✓	✓
0~50	✓	✓
0~100	✓	✓
0~150	✓	✓
0~200	✓	✓
0~300	✓	✓
0~400	✓	✓
0~500	✓	✓

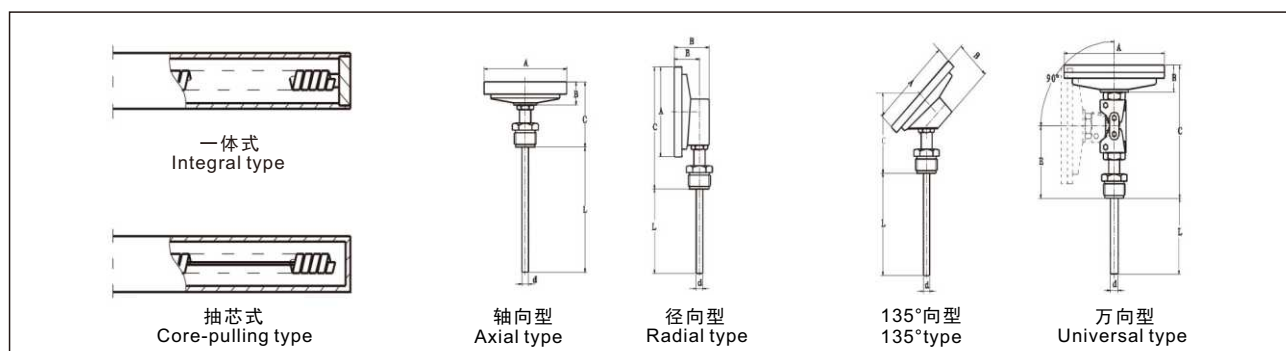
10.正常工作大气条件

Condition of normal working atmospheric pressure

工作场所 Work place	温度(°C) Temperature (°C)	相对湿度 % Relative humidity %
掩蔽场所 Sheltered place	-25~+25	5~100
户外场所 Outdoor place	-40~+85	5~100

11.测量端形式

Form in the measuring end



12.外形尺寸

Outline dimension

形式 Forms	A	B	C	E	L	D
轴向型 Axial type	65	23	73	-	75 100 150 200 300 400 500 750 1000	Φ6 Φ8 Φ10
	105	23	73	-		
	155	23	73	-		
径向型 Radial type	65	50	110	34		
	105	50	110	34		
	155	50	110	34		
135°向型 135° type	105	23	85	-		
	155	23	85	-		
万向型 Universal type	105	23	178	120		
	155	23	178	120		

安装固定形式

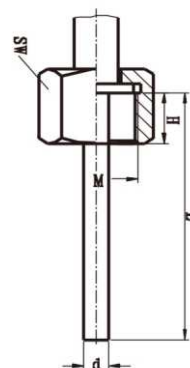
Installation and fixation form

可动外螺纹管接头 Joint of active external screw thread pipe				Φ6 Φ8 Φ10	
M	H	SW			
M16×1.5	12	18			
M20×1.5	16	22			
M27×2	20	30			
NPT1/4	15	18			
NPT1/2	19	22			
NPT3/4	25	30			

可动内螺纹管接头 Joint of active internal screw thread pipe				Φ6 Φ8 Φ10	
M	H	SW			
M16×1.5	12	18			
M20×1.5	16	22			
M27×2	20	30			
NPT1/4	15	18			
NPT1/2	19	22			
NPT3/4	25	30			

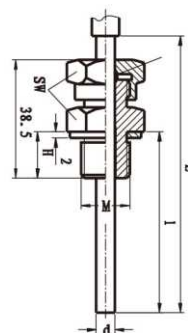
固定螺纹接头 Fixed screw thread joint

M	H	SW	Φ6 Φ8 Φ10
M16×1.5	12	18	
M20×1.5	16	22	
M27×2	20	30	
NPT1/4	15	18	
NPT1/2	19	22	
NPT3/4	25	30	



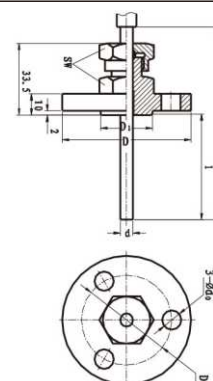
卡套螺纹接头 Sleeve screw thread joint

M	H	SW	d
M12×1.5	15	19	Φ6
M16×1.5	15	22	Φ8
M20×1.5	16	24	Φ10



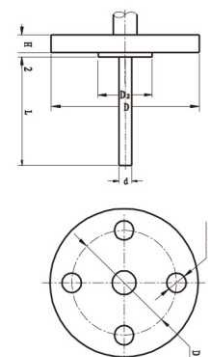
卡套法兰接头 Sleeve flange joint

D	D ₁	D ₂	SW	d ₀	d
Φ6	Φ42	Φ24	Φ22	Φ9	Φ8 Φ10



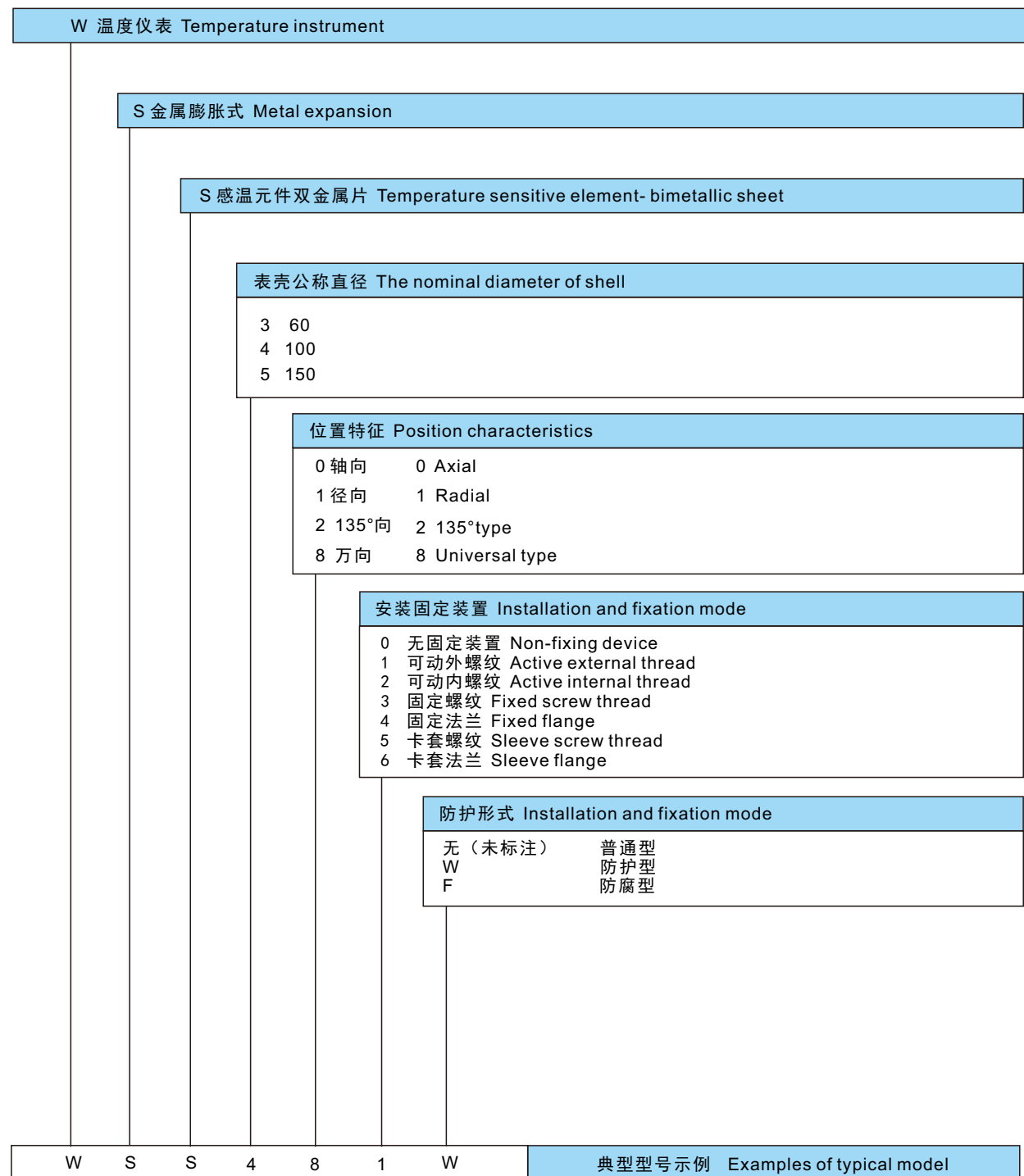
固定法兰 Fixed flange

D	D ₁	D ₂	SW	d ₀	d
Φ105	Φ75	Φ5	Φ162	Φ14	Φ8 Φ10



注：可提供ANSI、JB、HG等标准法兰
Note: ANSI, JB, HG and other standard flanges can be provided

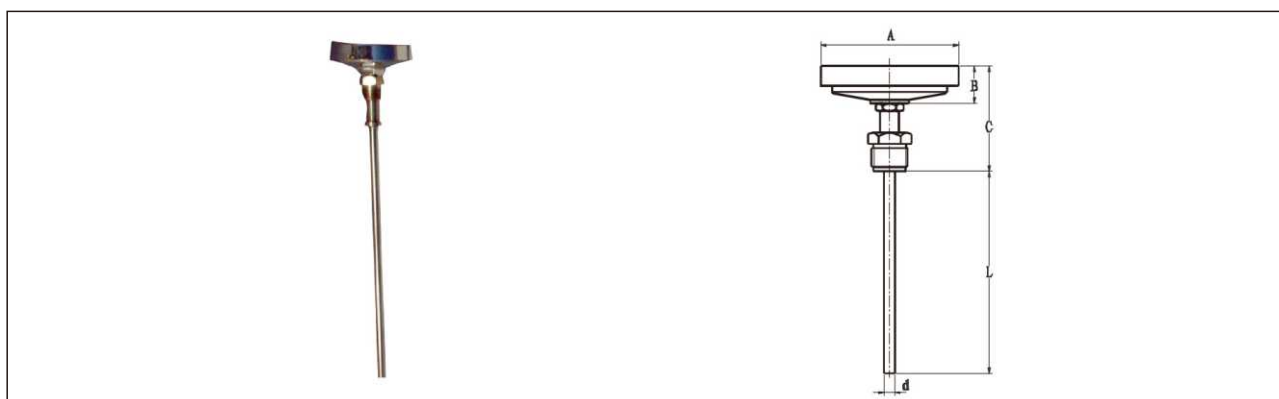
型号命名方法 Naming method if models



型号及规格 Model and specifications

轴向型

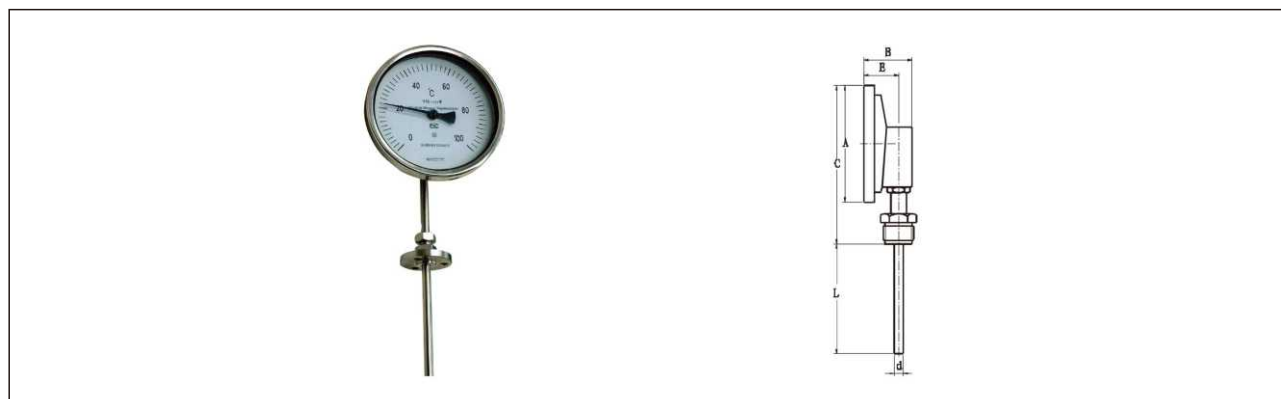
Axial type



型号 Model	测温范围 °C Range of temperature measurement °C	精度等级 Graduation	保护管材料 Material for protective tube	规格 Specification		安装固定装置 Installed with fixed device
				D	L	
WSS-300	-80~+40 -80~+40 0~+80 0~100 0~150 0~200 0~400 0~500	1.5	1Cr18Ni9Ti	Φ60	75 100 150 200 300 400 500 750 1000	无固定装置 Non-fixing device
WSS-400				Φ100		
WSS-500				Φ150		
WSS-301				Φ60		可动外螺纹 Movable external thread
WSS-401				Φ100		
WSS-501				Φ150		
WSS-302				Φ60		可动内螺纹 Movable internal thread
WSS-402				Φ100		
WSS-502				Φ150		
WSS-303			316	Φ60		固定螺纹 Fixed screw thread
WSS-403				Φ100		
WSS-503			316L	Φ150		
WSS-304				Φ60		固定法兰 Fixed flange
WSS-404			哈氏C-276 Harrington C-276	Φ100		
WSS-504				Φ150		
WSS-305				Φ60		卡套螺纹 Sleeve screw thread
WSS-405				Φ100		
WSS-505				Φ150		
WSS-306				Φ60		卡套法兰 Sleeve flange
WSS-406				Φ100		
WSS-506				Φ150		

径向型

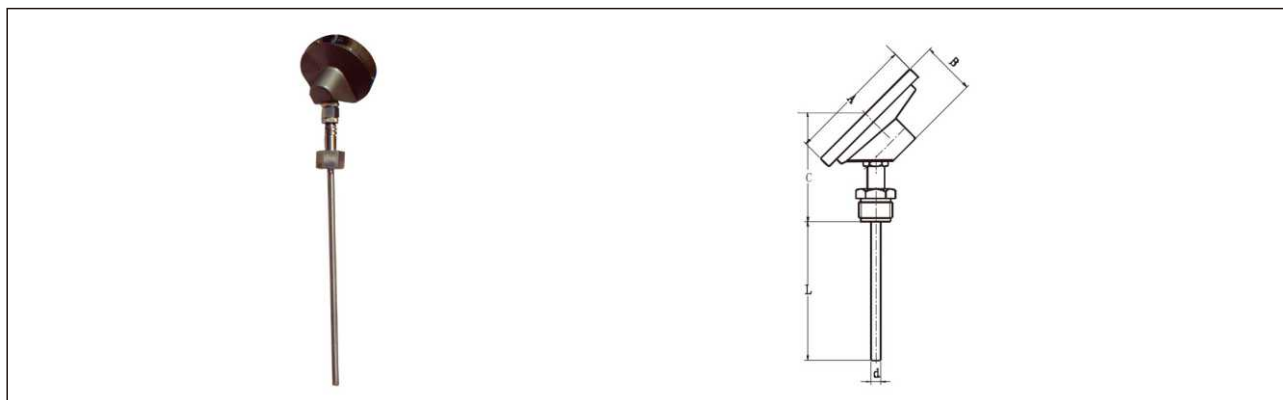
Radial type



型号 Model	测温范围 °C Range of temperature measurement °C	精度等级 Graduation	保护管材料 Material for protective tube	规格 Specification		安装固定装置 Installed with fixed device
				D	L	
WSS-310	-80~+40 -80~+40 0~+80 0~100 0~150 0~200 0~400 0~500	1.5	1Cr18Ni9Ti	Φ60	75 100 150 200 300 400 500 750 1000	无固定装置 Non-fixing device
WSS-410				Φ100		
WSS-510				Φ150		
WSS-311				Φ60		可动外螺纹 Movable external thread
WSS-411				Φ100		
WSS-511				Φ150		
WSS-312			304	Φ60		可动内螺纹 Movable internal thread
WSS-412				Φ100		
WSS-512				Φ150		
WSS-313			316	Φ60		固定螺纹 Fixed screw thread
WSS-413				Φ100		
WSS-513				Φ150		
WSS-314			哈氏C-276 Harrington C-276	Φ60		固定法兰 Fixed flange
WSS-414				Φ100		
WSS-514				Φ150		
WSS-315				Φ60		卡套螺纹 Sleeve screw thread
WSS-415				Φ100		
WSS-515				Φ150		
WSS-316				Φ60		卡套法兰 Sleeve flange
WSS-416				Φ100		
WSS-516				Φ150		

135° 向型

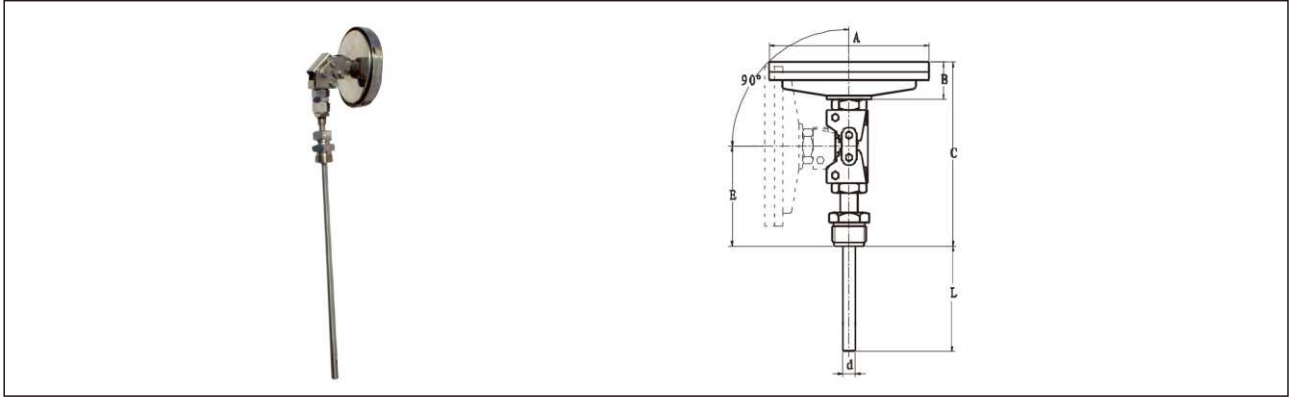
135°type



型号 Model	测温范围 °C Range of temperature measurement °C	精度等级 Graduation	保护管材料 Material for protective tube	规格 Specification		安装固定装置 Installed with fixed device
				D	L	
WSS-420	-80~+40 -80~+40 0~+80 0~100 0~150 0~200 0~400 0~500	1.5	1Cr18Ni9Ti	Φ100	75 100 150 200 300 400 500 750 1000	无固定装置 Non-fixing device
WSS-520				Φ150		
WSS-421				Φ100		可动外螺纹 Movable external thread
WSS-521				Φ150		
WSS-422			304	Φ100		可动内螺纹 Movable internal thread
WSS-522				Φ150		
WSS-432			316	Φ100		固定螺纹 Fixed screw thread
WSS-532				Φ150		
WSS-424			316L	Φ100		固定法兰 Fixed flange
WSS-524				Φ150		
WSS-425			哈氏C-276 Harrington C-276	Φ100		卡套螺纹 Sleeve screw thread
WSS-525				Φ150		
WSS-426				Φ100		卡套法兰 Sleeve flange
WSS-526				Φ150		

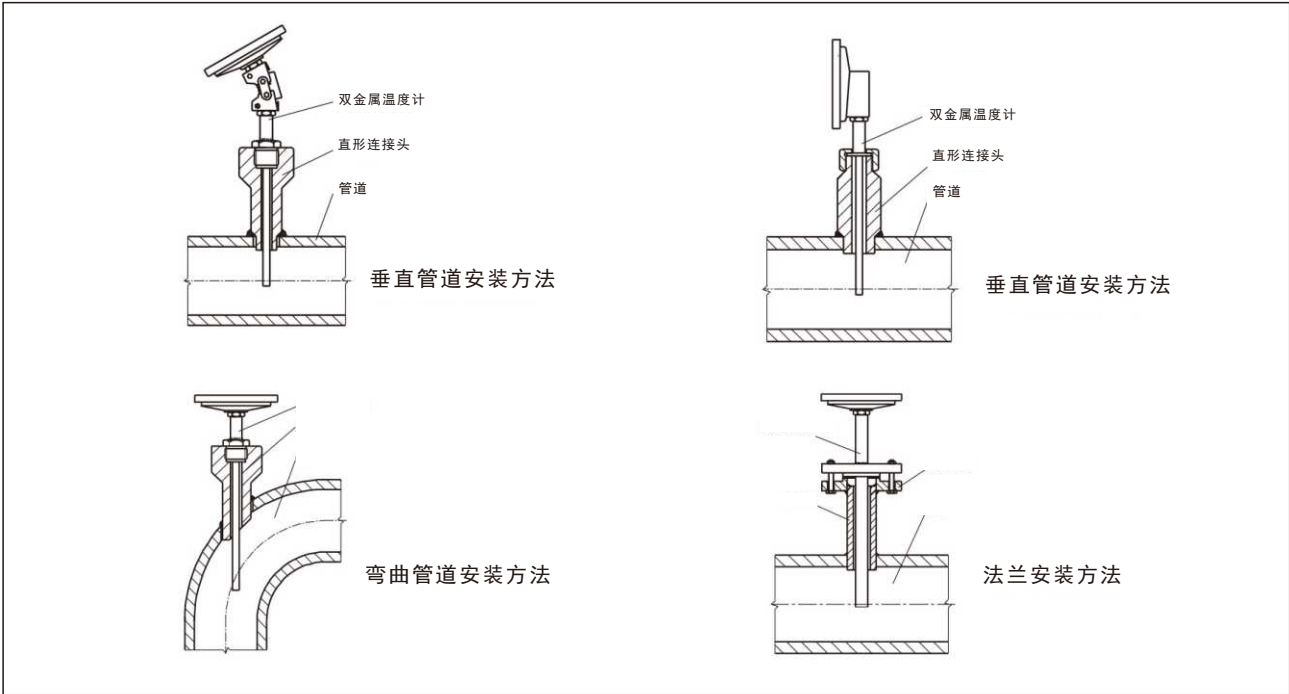
万向型

Universal type

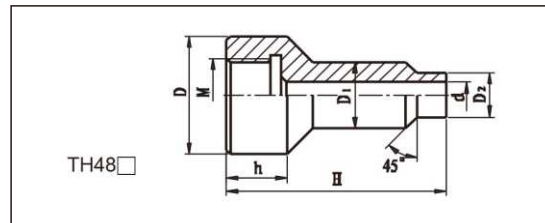


型号 Model	测温范围 °C Range of temperature measurement °C	精度等级 Graduation	保护管材料 Material for protective tube	规格 Specification		安装固定装置 Installed with fixed device
				D	L	
WSS-480	-80~+40 -80~+40 0~+80 0~100 0~150 0~200 0~400 0~500	1.5	1Cr18Ni9Ti	Φ100	75 100 150 200 300 400 500 750 1000	无固定装置 Non-fixing device
WSS-580				Φ150		可动外螺纹 Movable external thread
WSS-481				Φ100		可动内螺纹 Movable internal thread
WSS-581				Φ150		
WSS-482			304	Φ100		固定螺纹 Fixed screw thread
WSS-582				Φ150		
WSS-483			316	Φ100		固定法兰 Fixed flange
WSS-583				Φ150		
WSS-484			316L	Φ100		卡套螺纹 Sleeve screw thread
WSS-584				Φ150		
WSS-485			哈氏C-276 Harrington C-276	Φ100		卡套法兰 Sleeve flange
WSS-585				Φ150		
WSS-486				Φ100		
WSS-586				Φ150		

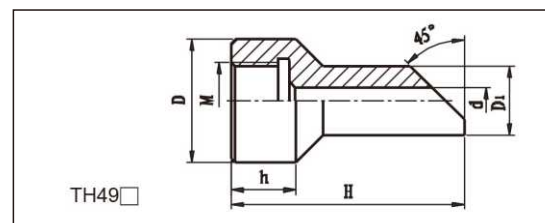
安装形式 Installation form



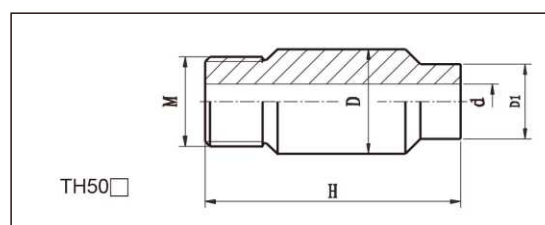
直形连接头规格 Specification for straight connection head



型号Code	M	D	D1	D2	d	h	H
TH48A	M16×1.5	Φ36	Φ18	Φ14	Φ7	27	80
TH48B	M20×1.5	Φ40	Φ18	Φ14	Φ7	27	60
TH48C	M27×2	Φ47	Φ28	Φ22	Φ17	32	60
TH48D	M33×2	Φ55	Φ36	Φ30	Φ21	34	120
TH48E	NPT1/2	Φ39	Φ27	Φ21	Φ16	35	60 120
TH48F	NPT3/4	Φ47	Φ31	Φ25	Φ20	40	
TH48G	GNPT1	Φ47	Φ41	Φ35	Φ30	45	



型号Code	M	D	D1	D2	d	h	H
TH48A	M16×1.5	Φ36	Φ18	Φ14	Φ7	27	80
TH48B	M20×1.5	Φ40	Φ18	Φ14	Φ7	27	60
TH48C	M27×2	Φ47	Φ28	Φ22	Φ17	32	60
TH48D	M33×2	Φ55	Φ36	Φ30	Φ21	34	120
TH48E	NPT1/2	Φ39	Φ27	Φ21	Φ16	35	60 120
TH48F	NPT3/4	Φ47	Φ31	Φ25	Φ20	40	
TH48G	GNPT1	Φ47	Φ41	Φ35	Φ30	45	



型号Code	M	D	D1	D2	d	h	H
TH48A	M16×1.5	Φ36	Φ18	Φ14	Φ7	27	80
TH48B	M20×1.5	Φ40	Φ18	Φ14	Φ7	27	60
TH48C	M27×2	Φ47	Φ28	Φ22	Φ17	32	60
TH48D	M33×2	Φ55	Φ36	Φ30	Φ21	34	120
TH48E	NPT1/2	Φ39	Φ27	Φ21	Φ16	35	60 120
TH48F	NPT3/4	Φ47	Φ31	Φ25	Φ20	40	
TH48G	GNPT1	Φ47	Φ41	Φ35	Φ30	45	

选型须知

- 1) 型号
- 2) 表盘直径
- 3) 精度等级
- 4) 安装固定形式
- 5) 测温范围
- 6) 长度或插入深度

例A: 万向型, 表盘直径100, 测温范围0~400℃, 1.5级 活动外螺纹M27×2, 长度450mm, WSS-481 0~400℃ L=450 M27×2

Selection notice

- 1) Model
- 2) Dial diameter
- 3) Precision grade
- 4) Installation and fixation form
- 5) Range of temperature measurement
- 6) Length or depth of insertion

Example A: Universal type, dial diameter 100, temperature measurement range 0~400℃, 1.5 external screw thread M27 * 2, length 450mm, WSS-481 0~400℃ L=450 M27×2