



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 $-80^{\circ}\text{C} \sim +500^{\circ}\text{C}$ 范围内液体、蒸汽和气体介质温度。

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；

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势所应的温度值。

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: $\leq 40\text{s}$
- 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的 1/2
- 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

It is one kind of thermometers to measure middle and low temperature on the spot. It could be used to directly measure temperature of liquid, vapor and gas ranging from -80°C to 500°C .

Features

- 1.directly display temperature on the spot
- 2.high reliability and long life expectancy
- 3.many structure forms to meet different demands

Operation Theory

Bimetallic thermometer is based on bimetal bended into ring shape. One side of bimetal expands in time of being heated, which results in revolving of indicator, then the meter indicates corresponding temperature value to pyroelectric potential.

Main Technical Parameters

- 1.Executive Standard
JB/T8803-1998
- 2.Nominal Diameter of Dial: 60, 100, 150
- 3.Accuracy Class:(1.0),1.5
- 4.Thermal Response Time: $\leq 40\text{s}$
- 5.Protection Class: IP55
- 6.Angle-adjusting Error
It shall be no more than 1% of its measuring range
- 7.Return Error
It shall be no more than the absolute value of basic error limit.
- 8.Repeat
The repeat range shall be no more than 1/2 of absolute value of basic error limit.
- 9.Measuring Range

测温范围 $^{\circ}\text{C}$ Measuring Range	适应范围 Application Range	
	工业、商业 for Industry & Commerce	实验室、小型 for Laboratory
-80~+40	✓	✓
-40~+80	✓	✓
0~50	✓	✓
0~100	✓	✓
0~150	✓	✓
0~200	✓	✓
0~300	✓	✓
0~400	✓	-
0~500	✓	-

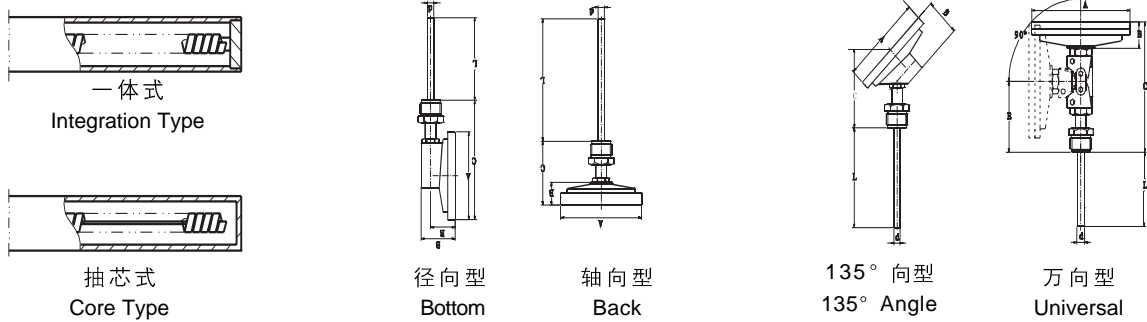
10.正常工作大气条件

10.Ambient Condition for Normal Operation

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

11.测量端形式

11.Measuring End



12.外形尺寸

12.Figure & Size

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

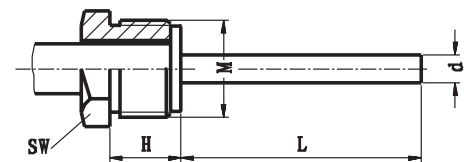
安装固定形式

Mounting & Fixing

可动外螺纹管接头

Movable Outer Threaded Tube Connector

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

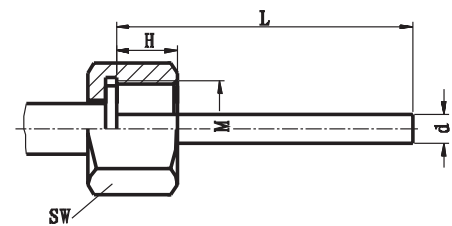


可动外螺纹管接头
Movable Outer Threaded Tube Connector

可动内螺纹管接头

Movable Inner Threaded Tube Connector

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

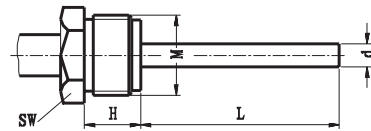


可动内螺纹管接头
Movable Inner Threaded Tube Connector



固定螺纹接头 Threaded Connector

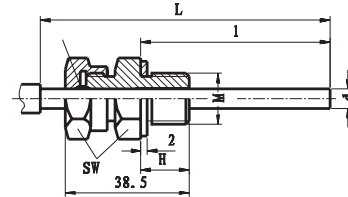
M	H	SW	Φ6 Φ8 Φ10
M16 × 1.5	12	18	
M20 × 1.5	16	22	
M27 × 2	20	30	
NPT1/4	15	18	
NPT1/2	19	22	
NPT3/4	25	30	



固定螺纹接头
Threaded Connector

卡套螺纹接头 Threaded Connector with Fastener

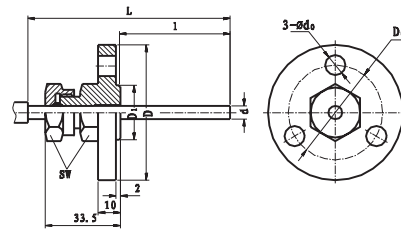
M	H	SW	d
M12 × 1.5	15	19	Φ6
M16 × 1.5	15	22	Φ8
M20 × 1.5	16	24	Φ10



卡套螺纹接头
Threaded Connector with Fastener

卡套法兰接头 Flange with Fastener

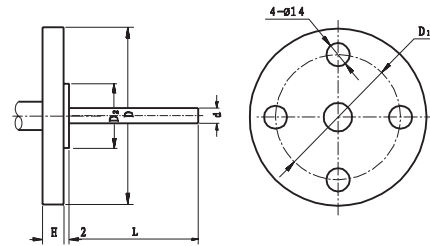
D	D ₁	D ₂	s w	d ₀	d
Φ60	Φ42	Φ24	Φ22	Φ9	Φ8 Φ10



卡套法兰接头
Flange with Fastener

固定法兰 Fixed Flange

D	D ₁	D ₂	H	d ₀	d
Φ105	Φ75	Φ5	Φ16	Φ14	Φ8 Φ10



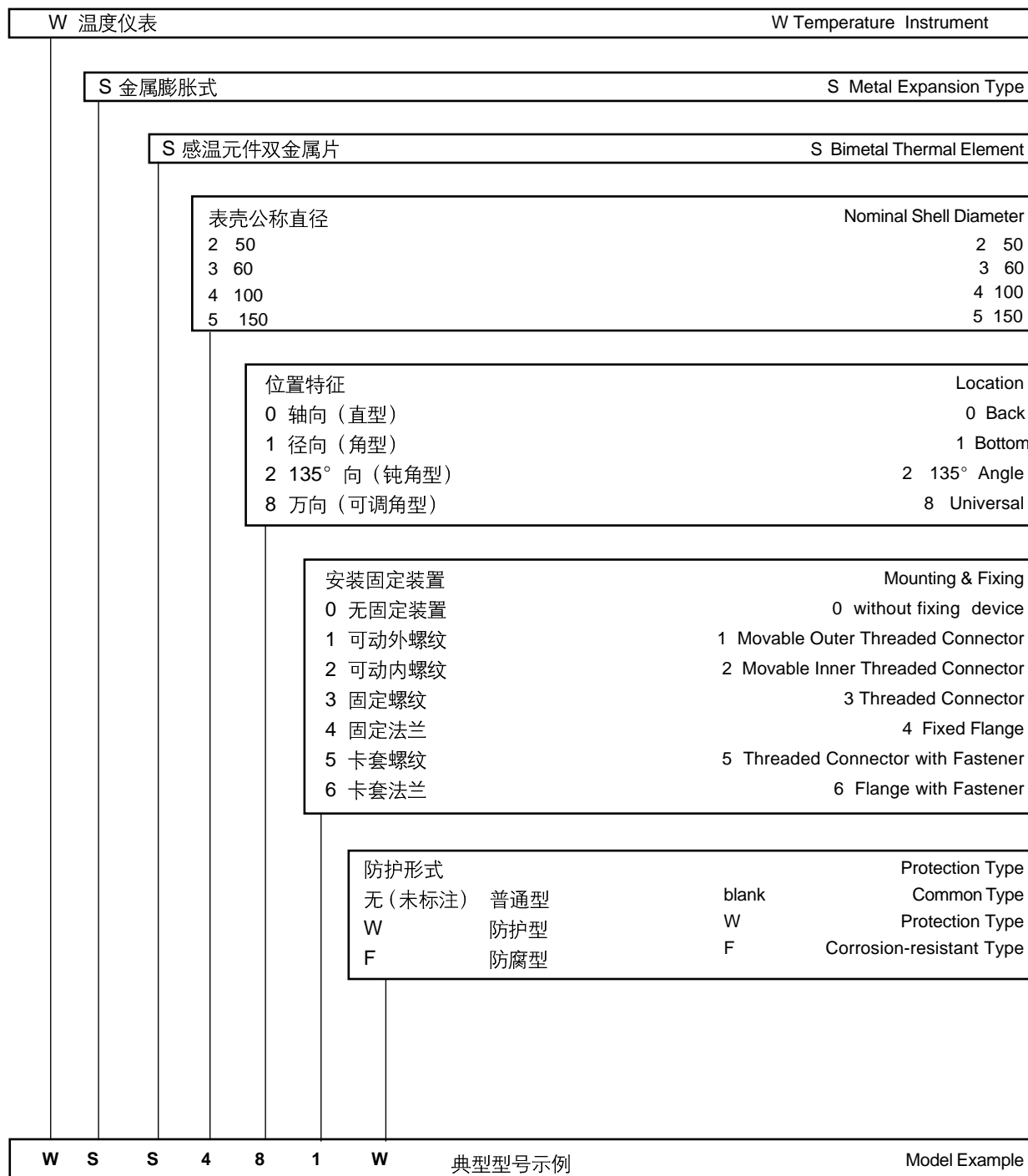
固定法兰
Fixed Flange

注: 可提供 ANSI、JB、HG 等标准法兰

Remarks: We may provide flanges of ANSI, JB, HG or other standard.

型号命名方法

Type Naming Method



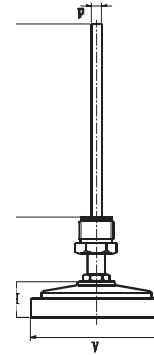


型号及规格

Type & Specification



轴向往型

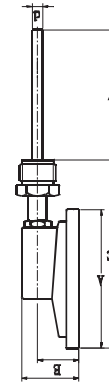


Back Type

型号 Type	测温范围 Measuring Range C	精度等级 Accuracy Class	保护管材料 Protection Tube Material	规格 Specification		安装固定装置 Mounting & Fixing Device
				D	L	
WSS-300				Φ60		无固定装置 without Fixing Device
WSS-400				Φ100		
WSS-500				Φ150		
WSS-301	-80~+40		1Cr18Ni9Ti	Φ60	75	可动外螺纹 Movable Outer Threaded Connector
WSS-401				Φ100		
WSS-501				Φ150		
WSS-302	-80~+40		304	Φ60	100	可动内螺纹 Movable Inner Threaded Connector
WSS-402				Φ100		
WSS-502				Φ150		
WSS-303	0~+80		316	Φ60	200	固定螺纹 Threaded Connector
WSS-403				Φ100		
WSS-503				Φ150		
WSS-304	0~100	1.5	316L	Φ60	300	
WSS-404				Φ100		
WSS-504				Φ150		
WSS-305	0~150		哈氏 C-276 H · Alloy C-276	Φ60	400	固定法兰 Fixed Flange
WSS-405				Φ100		
WSS-505				Φ150		
WSS-306	0~200			Φ60	750	卡套螺纹 Threaded Connector with Fastener
WSS-406				Φ100		
WSS-506				Φ150		
WSS-307	0~400			Φ60	1000	卡套法兰 Flange with Fastener
WSS-407				Φ100		
WSS-507				Φ150		
WSS-308	0~500			Φ60		
WSS-408				Φ100		
WSS-508				Φ150		

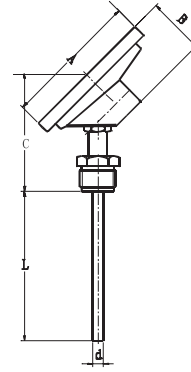


径向型



Bottom Type

型号 Type	测温范围 Measuring Range C	精度等级 Accuracy Class	保护管材料 Protection Tube Material	规格 Specification		安装固定装置 Mounting & Fixing Devices
				D	L	
WSS-310				Φ60		无固定装置 without Fixing Device
WSS-410				Φ100		
WSS-510				Φ150		
WSS-311	-80~+40		1Cr18Ni9Ti	Φ60	75	可动外螺纹 Movable Outer Threaded Connector
WSS-411				Φ100		
WSS-511				Φ150		
WSS-312	-80~+40		304	Φ60	100	可动内螺纹 Movable Inner Threaded Connector
WSS-412				Φ100		
WSS-512				Φ150		
WSS-313	0~+80	1.5	316	Φ60	300	固定螺纹 Threaded Connector
WSS-413	0~100			Φ100		
WSS-513				Φ150		
WSS-314	0~150		316L	Φ60	1000	固定法兰 Fixed Flange
WSS-414	0~200			Φ100		
WSS-514				Φ150		
WSS-315	0~400		哈氏 C-276 H · Alloy C-276	Φ60		卡套螺纹 Threader Connector with Fastener
WSS-415				Φ100		
WSS-515				Φ150		
WSS-316	0~500			Φ60		卡套法兰 Flange with Fastener
WSS-416				Φ100		
WSS-516				Φ150		



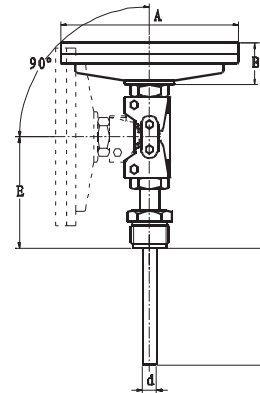
135° 向型

135° Angle Type

型号 Type	测温范围 Measuring Range °C	精度等级 Accuracy Class	保护管材料 Protection Tube Material	规格 Specification		安装固定装置 Mounting & Fixing Devices
				D	L	
WSS-420	-80~+40	1.5	1Cr18Ni9Ti	Φ100	75	无固定装置 without Fixing Device
WSS-520				Φ150		可动外螺纹 Movable Outer Threaded Connector
WSS-421				Φ100		固定螺纹 Threaded Connector
WSS-521	Φ150			可动内螺纹 Movable Inner Threaded Connector		
WSS-422	0~50			Φ100		固定法兰 Fixed Flange
WSS-522	0~100			Φ150		
WSS-432	0~150			Φ100		卡套螺纹 Threaded Connector with Fastener
WSS-532	0~200			Φ150		
WSS-424	0~300			Φ100		卡套法兰 Flange with Fastener
WSS-524	0~400			Φ150		
WSS-425	0~400			Φ100		
WSS-525	0~500			Φ150		
WSS-426				Φ100		
WSS-526				Φ150		



万向型



Universal Type

型号 Type	测温范围 Measuring Range °C	精度等级 Accuracy Class	保护管材料 Protection Tube Material	规格 Specification		安装固定装置 Mounting & Fixing Devices
				D	L	
WSS-480	-80~+40	1.5	1Cr18Ni9Ti	Φ100	75	无固定装置 without Fixing Device
WSS-580				Φ150		可动外螺纹 Movable Outer Threaded Connector
WSS-481				Φ100		
WSS-581	Φ150			100		可动内螺纹 Movable Inner Threaded Connector
WSS-482	Φ100			150		
WSS-582	Φ150			200		固定螺纹 Threaded Connector
WSS-482	Φ100			300		
WSS-582	Φ150			400	固定法兰 Fixed Flange	
WSS-484	Φ100			500		
WSS-584	Φ150			750	卡套螺纹 Threaded Connector with Fastener	
WSS-485	Φ100			1000		
WSS-585	Φ150			卡套法兰 Flange with Fastener		
WSS-486	Φ100					
WSS-586	Φ150					

选型须知

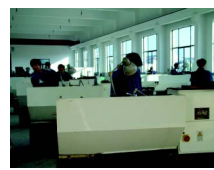
- 1) 型号
- 2) 表盘直径
- 3) 精度等级
- 4) 安装固定形式
- 5) 测温范围
- 6) 长度或插入深度

Notices in Type Selection

- 1) Type
- 2) Dial Diameter
- 3) Accuracy Class
- 4) Mounting & Fixing
- 5) Measuring Range
- 6) Length or Insert Length

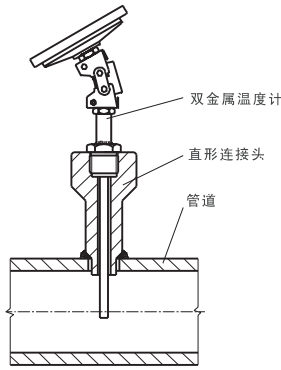
例 A: 万向型, 表盘直径 100, 测温范围 0~400°C, 1.5 级 活动外螺纹 M27 × 2, 长度 450mm, WSS-481 0~400°C L=450 M27 × 2

Example A: Universal type, 100 for dial diameter, measuring range 0~400°C, class 1.5, movable outer threaded connector M27 × 2, length 450mm, WSS-481 0~400°C L=450 M27 × 2

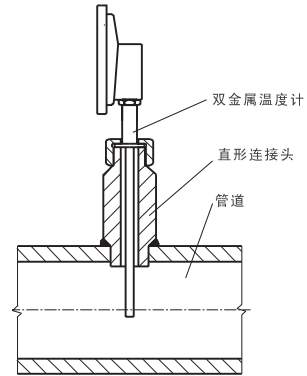


安装形式

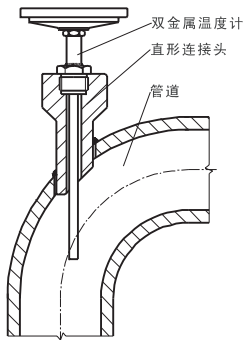
Mounting Figures



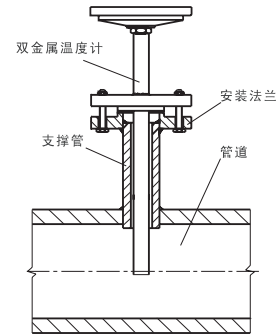
垂直管道安装方法
Vertically mounted into pipe



垂直管道安装方法
Vertically mounted into pipe



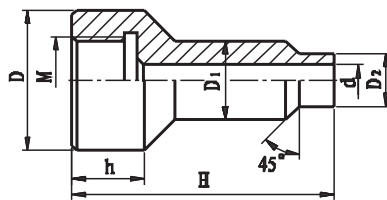
弯曲管道安装方法
Mounted into bent pipe



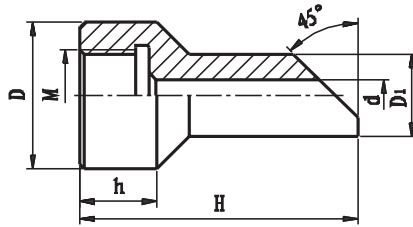
法兰安装方法
Mounted with flange connection

直形连接头规格

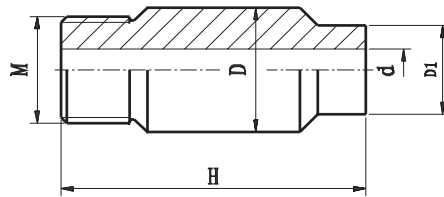
Specification of Straight Connector



代号 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
TH48F	NPT3/4	Φ47	Φ31	Φ25	Φ20	40	
TH48G	NPT1	Φ47	Φ41	Φ35	Φ30	45	120



代号 Code	M	D	D1	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



代号 Code	M	D	D1	d	H
TH50A	M16 × 1.5	Φ26	Φ28	Φ18	90
TH50B	M20 × 1.5	Φ30	Φ36	Φ24	150
TH50C	M27 × 2	Φ37	Φ27	Φ16	90
TH50D	NPT1/4	Φ16	Φ31	Φ20	90
TH50E	NPT1/2	Φ21	Φ41	Φ30	150
TH50F	NPT3/4	Φ34	Φ41	Φ30	150