

WSS 工业双金属温度计 安装使用说明书

Installation and Use Instructions of

WSS Industrial Bimetal

Thermometer

重庆川仪十七厂有限公司 Chongqing Chuanyi Instrument No.17 Factory Co., Ltd.

用户在川仪心中,川仪在用户身边!

SIC Always by Your Side!

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WSS 工业双金属温度计 安装使用说明书

Installation and Use Instructions of WSS Industrial Bimetal Thermometer

警告!

Warning!



- 1、安装使用前,请认真阅读本使用说明书;
- 1. Please carefully read the Instructions before installation and use;
- 2. 隔爆产品严禁带电条件下开盖;
- 2. Strictly prohibit uncovering any electrified explosion-proof products;
- 3. 本产品技术规范可能发生改变, 恕不另行通知。
- 3. Changes may happen on the Product Technical Specification,

1概述

1 Overview

WSS 系列工业双金属温度计是一种适合测量中、低温的现场检测工业仪表,可直接测量气体、液体等介质的温度。广泛应用于石油、化工、冶金、机械、电力、原子能、宇航等行业,包含生产 1 区以下的危险场所。

WSS series industrial bimetal thermometer is a sort of field test industrial instruments applicable for the measurement of medium and low temperature and can be directly used to measure the temperature of gases, liquids and other mediums. The product is also widely applied in multiple industries including petroleum, chemical industry, metallurgy, machinery, electric power, atomic energy and astronavigation etc. as well as in dangerous places below Production Area 1 (inclusive).

我公司生产的双金属温度计主要有三类: WSS 通用型, WSSX 电接点型, WSS□一体化型。产品具有现场直接显示温度, 无汞害, 结构坚固, 耐振动, 不易破损, 品种规格齐全, 安装方式灵活, 保护管材质选择宽泛等特点。

The bimetal thermometer manufactured by our company mainly includes three types: WSS general type, WSSX electric contact and WSS integrating type. All thermometer products are designed with various features or properties

本产品采用标准: JB/T 8803-2015, 以及相关防爆标准 GB3836.1-2010, GB3836.2-2010。

Executive standard of the product: JB/T 8803-2015 as well as the relevant explosion-proof standards such as GB3836.1 -2010 and GB3836.2-2010.

2 安装与使用

2 Installation and use

为防止在安装调试过程中出现人为损坏,以下按结构类型分别简 述安装使用注意事项:

In order to protect against any artificial damages during installation and commissioning, matters needing attention are correspondingly described as below according to the respective structural types:

2.1 WSS 通用型

2.1 WSS general type

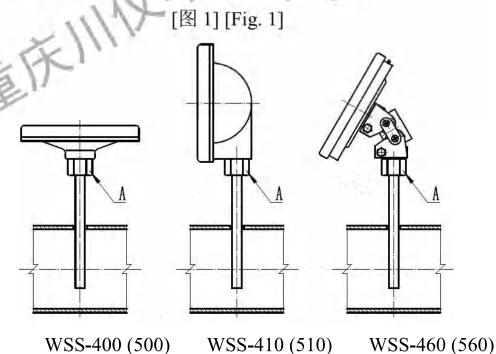
2.1.1 WSS 通用型无固定装置

2.1.1 WSS general type non-fastening devices

- 2.1.1.1 安装示意图(如图1),此结构一般直接插入被测介质。
- 2.1.1.1 Installation diagram (as Fig. 1); generally, the structure is directly inserted into tested mediums.
- 2.1.1.2 安装注意事项

型号:

- 2.1.1.2 Installation notes
 - ●严禁拧动 A 处螺栓, 防止损坏内芯指针组件;
- Strictly prohibit twist bolts located in A preventing damages of inner core pointer modules;
 - •小心表盘玻璃磕碰,导致碎裂。
 - Be careful not to dump or break dial plate glasses.



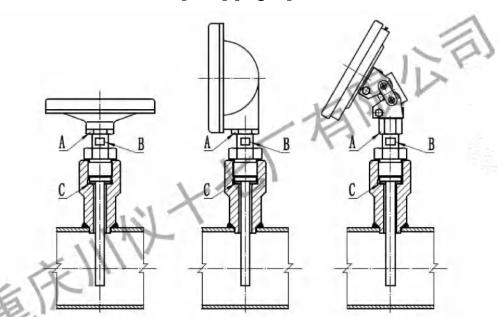
Model: WSS-400 (500) WSS-410 (510) WSS-460 (560)

2.1.2 WSS 通用型螺纹式(可动外螺纹)

2.1.2 WSS general thread type (movable external thread)

- 2.1.2.1 安装示意图(如图2),可动外螺纹安装。
- 2.1.2.1 Installation diagram (as Fig. 2); installation of movable external thread.

[图 2] [Fig. 2]



型号: WSS-401 (501) WSS-411 (511) WSS-461 (561)

Model: WSS-401 (501) WSS-411 (511) WSS-461 (561)

2.1.2.2 安装注意事项

2.1.2.2 Installation notes

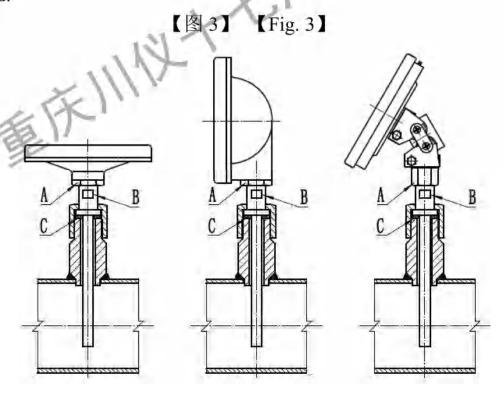
- ●严禁拧动 A 处螺栓, 防止损坏内芯指针组件;
- Strictly prohibit twist bolts located in A preventing damages of inner core pointer modules;
- ●拧动安装螺栓时,可用扳手固定住 B 处扳手位防止产品转动, 以获得最佳的表盘观测位;

- When screw and install bolts, wrenches can be used to fasten B position in case of product rotation and movement so as to acquire the optimal dial plate observation places;
 - ●安装时在 C 处位置必须添加相应材质的密封垫片;
- It requires adding sealing gasket made of relevant materials in C position while conducting installation;
 - •小心表盘玻璃磕碰,导致碎裂。
 - Be careful not to dump or break dial plate glasses.

2.1.3 WSS 通用型螺纹式(可动内螺纹)

2.1.3 WSS general thread type (movable internal thread)

- 2.1.3.1 安装示意图(如图3),可动内螺纹安装。
- 2.1.3.1 Installation diagram (as Fig. 3); installation of movable internal thread.



型号: WSS-402 (502) WSS-412 (512) WSS-462 (562)

Model: WSS-402 (502) WSS-412 (512) WSS-462 (562)

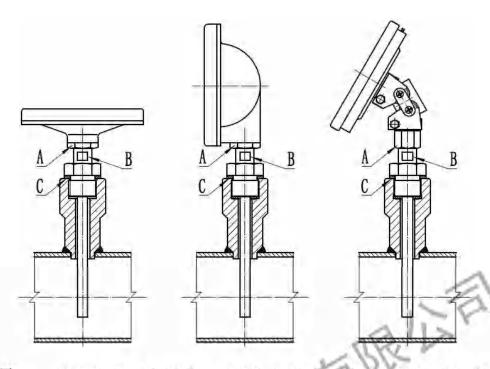
- 2.1.3.2 安装注意事项
- 2.1.3.2 Installation notes
 - ●严禁拧动 A 处螺栓, 防止损坏内芯指针组件;
- Strictly prohibit twist bolts located in A preventing damages of inner core pointer modules;
- When screw and install bolts, wrenches can be used to fasten B position in case of product rotation and movement so as to acquire the optimal dial plate observation places;
 - •安装时在 C 处位置必须添加相应材质的密封垫片;
- It requires adding sealing gasket made of relevant materials in C position while conducting installation;
 - •小心表盘玻璃磕碰,导致碎裂。
 - Be careful not to dump or break dial plate glasses.

2.1.4 WSS 通用型螺纹式 (固定外螺纹)

2.1.4 WSS general thread type (fixed external thread)

- 2.1.4.1 安装示意图(如图 4),固定外螺纹安装。
- 2.1.4.1 Installation diagram (as Fig. 4); installation of fixed external thread.

【图 4】【Fig. 4】



型号: WSS-403 (503) WSS-413 (513) WSS-463 (563)

Model: WSS-403 (503) WSS-413 (513) WSS-463 (563)

2.1.4.2 安装注意事项

2.1.4.2 Installation notes

- ●严禁拧动 A 处螺栓, 防止损坏内芯指针组件;
- Strictly prohibit twist bolts located in A preventing damages of inner core pointer modules;
- When screw and install bolts, wrenches can be used to fasten B position in case of product rotation and movement so as to acquire the optimal dial plate observation places;
 - ●安装时在 C 处位置必须添加相应材质的密封垫片;
- It requires adding sealing gasket made of relevant materials in C position while conducting installation;
 - 小心表盘玻璃磕碰,导致碎裂。

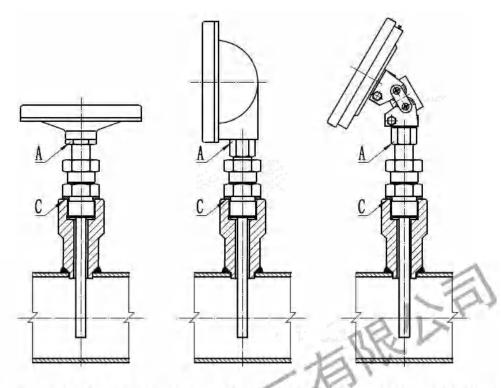
• Be careful not to dump or break dial plate glasses.

2.1.5 WSS 通用型螺纹式(卡套螺纹)

2.1.5 WSS general thread type (adjustable thread joint)

- 2.1.5.1 安装示意图(如图 5),卡套螺纹安装。
- 2.1.5.1 Installation diagram (as Fig. 5); installation of adjustable thread joint.
- 2.1.5.2 安装注意事项
- 2.1.5.2 Installation notes
 - ●严禁拧动 A 处螺栓, 防止损坏内芯指针组件;
- Strictly prohibit twist bolts located in A preventing damages of inner core pointer modules;
 - •安装时在 C 处位置必须添加相应材质的密封垫片;
- It requires adding sealing gasket made of relevant materials in C position while conducting installation;
 - •小心表盘玻璃磕碰,导致碎裂。
 - Be careful not to dump or break dial plate glasses.

【图 5】【Fig. 5】

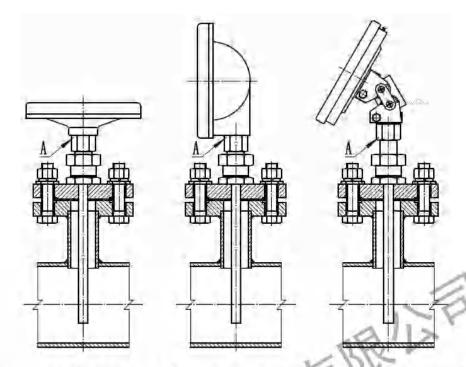


型号: WSS-405 (505) WSS-415 (515) WSS-465 (565) Model: WSS-405 (505) WSS-415 (515) WSS-465 (565)

2.1.6 WSS 通用型法兰式(卡套法兰)

2.1.6 WSS general flange type (adjustable flange joint)

【图 6】【Fig. 6】



型号: WSS-406 (506) WSS-416 (516) WSS-466 (566)

Model: WSS-406 (506) WSS-416 (516) WSS-466 (566)

- 2.1.6.1 安装示意图(如图 6), 卡套法兰安装。
- 2.1.6.1 Installation diagram (as Fig. 6); installation of adjustable flange joint.
- 2.1.6.2 安装注意事项
- 2.1.6.2 Installation notes
 - ●严禁拧动 A 处螺栓, 防止损坏内芯指针组件;
- Strictly prohibit twist bolts located in A preventing damages of inner core pointer modules;
 - ●依据法兰规格选用相应紧固件(含法兰密封垫片);
- Select matching fastenings (including sealing gasket of flange) according to flange specifications;
 - •小心表盘玻璃磕碰,导致碎裂。
 - Be careful not to dump or break dial plate glasses.

2.2 WSSX 电接点型

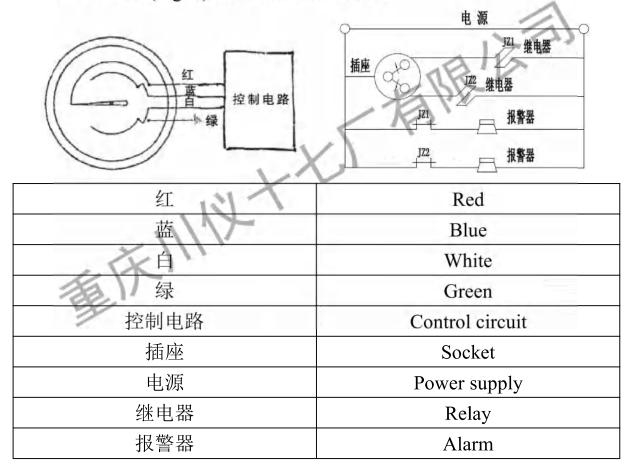
2.2 WSSX electric contact type

2.2.1 接线图及原理图

2.2.1 Wiring diagram and principle drawing

电接点通用接线图(图7)以及原理图(图8)如下:

The universal wiring diagram (Fig. 7) and principle drawing of electric contact (Fig. 8) are shown as follows:



【图7】	电接点接线图	【图8】	原理图
[Fig. 7]	Wiring diagram	[Fig. 8]	Principle drawing
	of electric contact		

电气参数: 10VA(无感负载),最高工作电压: 220/380V(AC), 最大工作电流: 0.7A。

Electrical parameters: 10VA (non-inductive load); maximum working voltage: 220/380V (AC); maximum working current: 0.7A.

2.2.2 安装示意图

2.2.2 Installation diagram

安装示意图见图 9, 其他类似通用型,参见示意图 1-6。

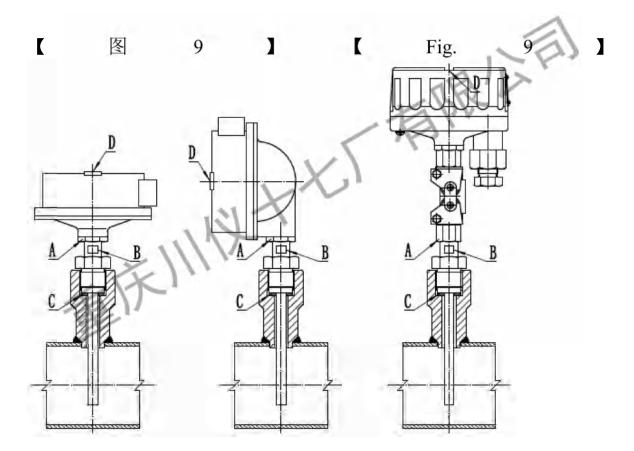
Refer to Fig. 9 for installation diagram and please see Diagram 1-6 ARRIVE. for other similar general types.

2.2.3 安装注意事项

2.2.3 Installation notes

- ●严禁拧动 A 处螺栓, 防止损坏内芯指针组件;
- Strictly prohibit twist bolts located in A preventing damages of inner core pointer modules;
- ●拧动安装螺栓时,可用扳手固定住 B 处扳手位防止产品转动, 以获得最佳的表盘观测位;
- When screw and install bolts, wrenches can be used to fasten B position in case of product rotation and movement so as to acquire the optimal dial plate observation places;
 - ●安装时在 C 处位置必须添加相应材质的密封垫片;
- It requires adding sealing gasket made of relevant materials in C position while conducting installation;
 - ●法兰安装依据法兰规格选用相应紧固件(含法兰密封垫片);
- Select corresponding fastenings (including flange sealing gasket) according to flange specifications;

- ●D 处螺钉为调节电接点上下限(或双上限),用平口螺丝刀压下后旋转螺钉带动限位指针到设置温度位置;
- Bolts in D position is set for adjusting the upper and lower limits of electric contacts (or double upper limits; Screw the bolts to drive limiting pointer to the settled temperature position after pressing down with slotted screwdriver;
 - •小心表盘玻璃磕碰,导致碎裂。
 - Be careful not to dump or break dial plate glasses.



型号: WSSX-401(501) WSSX-411(511) WSSXB-461 Model WSSX-401(501) WSSX-411(511) WSSXB-461 其他参考通用型图 1-6(仅有接线盒区别)

Please refer to Fig. 1-6 of general type for other details (differences only exist in junction box)

2.2.4 防爆产品的特殊要求(仅针对 WSSXB 型产品)

2.2.4 Particular requirements for explosion-proof products

(Only applicable for WSSXB type products)

隔爆型双金属温度计的使用应符合相关防爆标准(GB3836.1-2010,GB3836.2-2010)。可用于IIB或IIC级,T1~T6的爆炸性气体场所中测温(见附表:爆炸性气体分级、分组举例表),不能用于粉末场所,且限于1区、2区危险场所,切不可在0区使用。

The use of the flameproof bimetallic thermometer should comply with the relevant explosion-proof standard (GB3836.1-2010, GB3836.2-2010). It can be used for temperature measurement in II B or C grade, and T1 ~ T6 explosive gas areas (refer to the Annexed Table: Example Table of Grading and Grouping of Explosive Gases), and cannot be used for powder; besides, the operation is only limited within 1 zone and 2 zone dangerous sites, and definitely cannot be used in the 0 zone.

隔爆型双金属温度计安装使用环境条件,要求的环境温度:-20℃~+55℃,相对湿度:≤85%。

Environment conditions for installing flameproof bimetal thermometer: the required environment temperature: - 20 $^{\circ}$ C \sim + 55 $^{\circ}$ C, relative humidity: 85% or less.

隔爆型双金属温度计的安装地点,应该避免与加热物体距离过近。表壳不可碰到被测介质的容器壁。表盖必须在切断电源后方可开盖,防止热流引爆。在使用过程中严禁拆卸任何部件,各连接件应保持连接可靠,外接地端子必须可靠接地。安装场所存在的可燃性气体温度组别与产品使用中外露部分的最高表面温度均应符合下表参数。

Flameproof bimetal thermometer's installation location should not

close to heated objects. The meter case cannot be collided by the walls of the measured mediums. Behind the table cover must be cut off power supply can open the cover and prevent heat to detonate. It is forbidden to remove any parts in the process of using, the fittings should maintain a reliable connection, and external terminals must be reliable grounding. Combustible gas temperature group existing in the installation site and products used in the maximum surface temperature of exposed portion shall be conform to the parameters listed in the table below.

温度组别	T1	Т2	Т3	T4	Т5	Т6
允许最高 表面温度	440℃	290℃	195℃	130℃	95℃	80℃

Temperatur e class	T1	T2	Т3	T4	Т5	Т6
Maximum tolerable surface temperatur e	440°C	290℃	195℃	130℃	95℃	80°C

对隔爆外壳材质有明显腐蚀的地方不能使用。测量大流量或强腐蚀性介质, 需附加保护套管。

The flame-proof shell materials with obvious corrosion are not applicable. When conducting measurement of large flow or strong corrosive mediums, it is necessary to equip additional protective casing.

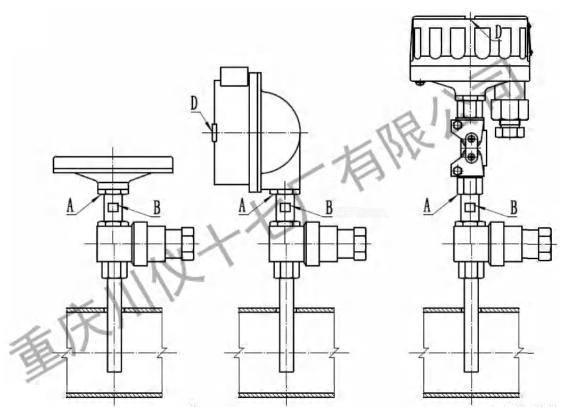
2.3 WSS□一体化型

2.3 WSS□ integrating type

2.3.1 WSS□一体化型无固定装置

2.3.1 WSS□ integrating non-fixed devices

【图 10】 【Fig. 10】



型号: WSSP-400(500) WSSXP-410 (510) WSSXBP-460 Model: WSSP-400(500) WSSXP-410 (510) WSSXBP-460

其他参考通用型图1(仅有接线盒区别)

Please refer to Fig. 1 of general type for other details (differences only exist in junction box)

- 2.3.1.1 安装示意图(如图 10),此结构一般直接插入被测介质。
- 2.3.1.1 Installation diagram (as Fig. 10); generally, the structure is

directly inserted into tested mediums.

2.3.1.2 安装注意事项

2.3.1.2 Installation notes

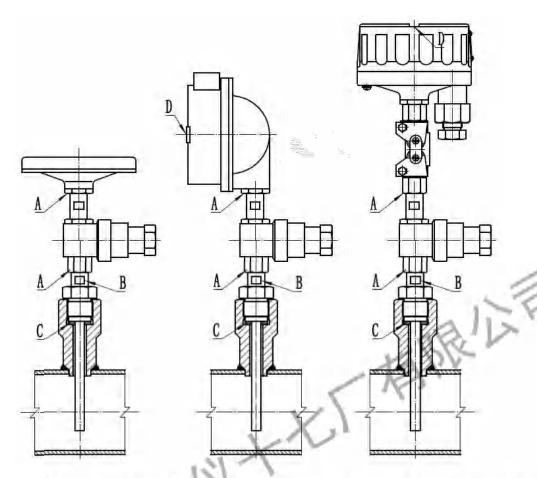
- ●严禁拧动 A 处螺栓, 防止损坏内芯指针组件;
- Strictly prohibit twist bolts located in A preventing damages of inner core pointer modules;
- When screw and install bolts, wrenches can be used to fasten B position in case of product rotation and movement so as to acquire the optimal dial plate observation places;
- ●D 处螺钉为调节电接点上下限(或双上限),用平口螺丝刀压下后旋转螺钉带动限位指针到设置温度位置;
- Bolts in D position is set for adjusting the upper and lower limits of electric contacts (or double upper limits; Screw the bolts to drive limiting pointer to the settled temperature position after pressing down with slotted screwdriver;
 - •小心表盘玻璃磕碰,导致碎裂。
 - Be careful not to dump or break dial plate glasses.

2.3.2 WSS□一体化型螺纹式

2.3.2 WSS□ integrating thread type

- 2.3.2.1 安装示意图(如图 11)。
- 2.3.2.1 Installation diagram (as Fig. 11).

L 图 II L Fig. II		图	11	1		Fig.	11	
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型号: WSSP-401(501) WSSXP-411(511) WSSXBP-461 Model WSSP-401(501) WSSXP-411(511) WSSXBP-461 其他参考通用型图 2-5,9(仅有接线盒区别)

Please refer to Fig. 2-5 and 9 of general type for other details (differences only exist in junction box)

2.3.2.2 安装注意事项

2.3.2.2 Installation notes

- ●严禁拧动 A 处螺栓, 防止损坏内芯指针组件;
- Strictly prohibit twist bolts located in A preventing damages of inner core pointer modules;
- 拧动安装螺栓时,可用扳手固定住 B 处扳手位防止产品转动,以获得最佳的表盘观测位;

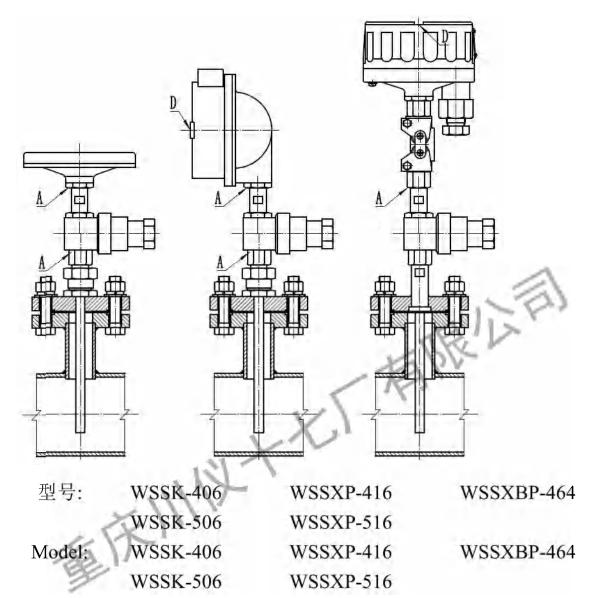
- When screw and install bolts, wrenches can be used to fasten B position in case of product rotation and movement so as to acquire the optimal dial plate observation places;
 - ●安装时在 C 处位置必须添加相应材质的密封垫片;
- It requires adding sealing gasket made of relevant materials in C position while conducting installation;
- ●D 处螺钉为调节电接点上下限(或双上限),用平口螺丝刀压下后旋转螺钉带动限位指针到设置温度位置;
- Bolts in D position is set for adjusting the upper and lower limits of electric contacts (or double upper limits; Screw the bolts to drive limiting pointer to the settled temperature position after pressing down with slotted screwdriver;
 - •小心表盘玻璃磕碰,导致碎裂。
 - Be careful not to dump or break dial plate glasses.

2.3.3 WSS□一体化型法兰式

2.3.3 WSS□ integrating flange type

- 2.3.3.1 安装示意图(如图 12)。
- 2.3.3.1 Installation diagram (as Fig. 12).

【图 12】【Fig. 12】



2.3.3.2 安装注意事项

2.3.3.2 Installation notes

- ●严禁拧动 A 处螺栓, 防止损坏内芯指针组件;
- Strictly prohibit twist bolts located in A preventing damages of inner core pointer modules;
 - ●依据法兰规格选用相应紧固件(含法兰密封垫片);
- Select corresponding fastenings (including flange sealing gasket) according to flange specifications;

- ●C 处螺钉为调节电接点上下限(或双上限),用平口螺丝刀压下后旋转螺钉带动限位指针到设置温度位置;
- Bolts in C position is set for adjusting the upper and lower limits of electric contacts (or double upper limits; Screw the bolts to drive limiting pointer to the settled temperature position after pressing down with slotted screwdriver;
 - •小心表盘玻璃磕碰,导致碎裂。
 - Be careful not to dump or break dial plate glasses.

3 产品维护及贮存

3. Product Maintenance and Storage

3.1 产品维护

3.1 Product maintenance

要经常清除工业双金属温度计外露部分的杂物和易燃物,保持外露部分的清洁,防爆产品的最高表面温度不得超过相关温度组别中规定的要求。定期检查表壳和表盖,以及电缆引入装置是否良好,安装是否牢固,接地是否牢靠。

A BRILLE

Frequently clear sundries and flammables on the exposed part of industrial bimetal thermometer to keep the exposed part clean, explosion-proof products of the highest surface temperature shall not exceed the requirements of the relevant temperature group. Regularly check whether the meter case and table cover, equipment and introduced cables are in good conditions, and ensure firm installation and reliable grounding.

当电缆引入装置的密封圈和密封表壳、表盖的密封圈出现老化现象时,应更换相同的零件。不允许采用任何代用品。其余故障均应返厂修理,不得自行拆装,否则后果自负。

When the cable entry device of atlas, table cover sealing ring and sealing seal appeared aging, the same parts should be changed. Not allowed to use any substitute. The rest of the fault shall be returned to the factory repair, not to tear open outfit, otherwise the consequence is proud.

3.2 产品贮存

3.2 Product storage

双金属温度计应贮存在周围环境温度 10℃~35℃,相对湿度不高于 80%,且空气中不含可能是零部件腐蚀的介质。

All bimetal thermometers should be appropriately stored in 10-35 °C surrounding environment temperature with relative humidity less than 80%. Moreover, any mediums that may corrode components should not be contained in the air.

★友情提示:

我公司提供的包装物有可能对环境造成影响,请妥善处理!

★ Tips:

Please properly dispose the packaging materials supplied by our company that may influence the environment.

4 附表

4. Annexed Table

爆炸性气体分级、分组举例表:

Example Table of Grading and Grouping of Explosive Gases

	类	和级	II A	II B	II C
			乙烷 丙烷 丙酮 苯乙	二甲苯	煤气、氢
			烯 氯乙烯 氨苯 甲苯	民用煤	气、焦炉
	T1	1 T>450	苯氨 甲醇 一氧化碳	气	煤气
			乙酸乙酯 乙酸 丙烯	环戊烷	
			脂	115	123
444.15			丁烷 乙醇丙烯 丁醇	环氧乙	乙炔
引 温 (°C)与 别	T2 4	T2 450≥T>300	乙酸丁酯 乙酸戊酯乙酸酐	烷、环氧	乙灰
				戊烷、丁	
				二烯、乙	
			1	烯	
		11/12	戊烷 己烷 庚烷 癸烷	阜卍一	
	T3 300≥T>200	辛烷 汽油 硫化氢 环	异戊二 烯		
1		乙烷			
	T4	200≥T>135	乙醚 乙醛		
	T5	135≥T>100			二硫化碳
	Т6	100≥T>85	亚硝酸乙酯		硝酸乙酯
注: 表	中未列	入的爆炸性气体	见 GB3836.1-2010		

Classification & Grade			II A	II B	II C
Igniti	Т1	T>450	Ethane, propane,	Dimethyl	Coal gas,
on	11	1 /430	acetone, styrene, vinyl	benzene	hydrogen

tempe			chloride, phenalgin,	domestic	and coke
rature			methyl benzene,	gas,	oven gas
(°C			phenyl-sulfamic acid,	cyclopen	
) and			alcohol, carbon	tane	
group			monoxide, acetic		
S			aster, acetic acid,		
			propane ester		
	Т2	450≥T>300	Butane, ethanol, propene, butanol, butyl acetate, amyl acetate, acetic anhydride	Ethylene oxide, pentene oxide, butadien e and ethylene	Acetylene
	Т3	300≥T>200	Pentane, hexane, heptane, decane, octane, gasoline, hydrogen sulfide, cyclohexane	isoprene	
3	T4	200≥T>135	Ether, acetic aldehyde		
	T5	135≥T>100			Carbon disulfide
	Т6	100≥T>85	Nitrous ether		Ethyl nitrate

Note: See GB3836.1-2010 for explosive gases not listed in the table.

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