



中外技术合作企业 Sino-Foreign Technical Cooperation Enterprise
权威注册 Authoritative Registration: CE / API / TSG
国家级高新技术企业 National High-Tech Enterprise

P-063

隔爆铂电阻 Explosion-proof Pt resistance

WZP 系列
WZP Series

WZP 系列 隔爆铂电阻

(采用引进铂电阻元件)

WZP Series Explosion-proof Pt resistance

(adopted with advanced Pt resistance element)

概述

工业用隔爆铂电阻是一种温度传感器。在工业自控系统中应用极广，通过温度传感器，可将控制对象的温度参数变成电信号，传递给显示、记录和调节仪表，对系统实行检测、调节和控制。

在化工厂、生产现场常伴有各种易燃、易爆等化学气体、蒸气，如果使用普通的铂电阻非常不安全，极易引起环境气体爆炸。因此，在这些场合必须使用隔爆热电阻作温度传感器，本厂生产的隔爆铂电阻产品适用在 d II BT4~d II CT6 温度组别区间内具有爆炸性气体危险的场所内。

本厂生产的隔爆热电阻采用引进元件作感温元件，其技术性能符合 JB / T8622-1997 工业铂电技术条件和分度表。同时产品符合爆炸性环境用防爆电气设备通用要求 GB3836.1-2000、GB3836.2-2000 标准，由国家级仪器仪表防爆安全监督检验站对产品的图样、技术文件、样机进行专门审定和批准，并发给防爆合格证。

主要技术指标 Main technical Index

量程规格 Range standard

型号 Model	分度号 Graduation No	测温范围℃ Temperature measuring range	精度 等级 Accuracy degree	允许偏差△t℃ Allowable difference
WZP WZP ₂ WZPK WZPK ₂	Pt 100	-200~500	A 级	± (0.15+0.002 t)
			B 级	± (0.30+0.005 t)

注 Note: “t” 为感温元件实测温度绝对值，双支铂电阻只供应 B 级，Is absolute value of actual measuring temperature for sensing element ,double-pieces pt resistance Only supply B degree

*A 级为特殊订货。A degree is the special order

公称压力

一般是指在常温下，保护管所能承受的静态外压而不破裂，试验压力一般采用公称压力的 1.5 倍。实际上，允许公称压力不仅与保护管材料、直径、壁厚有关，而且还与其结构形式、安装方法、置入深度以及被测介质的流速、种类有关。

热电阻绝缘电阻

常温绝缘电阻的试验电压可取直流 10~100V 任意值，环境温度应在 15~35℃ 范围内，相对湿度应不大于 80%。常温绝缘电阻值应不小于 100M Ω。

Overall

Industrial explosion-proof resistance is a kind of Temperature transmitter with a wide application on Industrial automatic system . Through the temperature Transmitter , it can transfer the controlling temperature parameter into electric signal and then, Transmit into display ,recorder and adjusting instrument, to realize inspection , controlling and adjusting of system.

In chemical factory , there exist various kinds of Inflammable and explosive chemical gas , steam in the workshop , if using the common Pt resistance , It is easy to explode for the environment gas which is Very dangerous . Therefore , in this situation , Explosive proof thermal resistance should be used as The temperature transmitter . The explosive-proof Pt resistance made by our company is suitable for theDangerous place with explosive gas ,between d II BT4~d II CT6 temperature group.

The explosive-proof resistance made by our company Is adopted with advanced element as temperature sensing element ,its technical property is accordance with Industrial Pt electrical technology condition and graduation Table . At the same time , they are conforming with the

Standard of GB3836.1-2000、GB3836.2-2000 for electric Equipments in explosive Environment . And the national Supervisory & Test Station has given special check and approval to the products drawings,technical document and samples,issuing EXD certificate as well.

防爆类型和级组 Explosiveproof type and group

防爆级组 Explosive proof type : d II BT4 或 d II CT4; d II BT6 或 d II CT6 外壳防护等级: IP65 Protecting degree of outside covering

Nominal Pressure

Normally in the normal temperature , it's the static pressure the protecting pipe can withstand without breaking , the testing pressure is usually adopted 1.5 times of Nominal pressure . Actually , the allowable PN not only has a relationship with the material , diameter , thickness of pipe , also has a close relationship with its structure, installation method , inserting depth , flow speed and property of measuring medium .

Thermal resistance insulated resistance

Environment temperature should be from 15 ℃ to 35 ℃ , The relative humidity should be not more than 80 % .The normal temperature insulated resistance value should be not less than 100 M Ω .



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热电阻允许通过电流
通过铂电阻的测量电流最大不超过 5mA。

Thermal resistance allowable electric current
The Max value of measuring electric current through Pt resistance should not be more than 5 mA.

原理和结构

隔爆热电阻和装配式热电阻的结构，原理基本相同，所区别的是，隔爆型产品的接线盒（外壳）在设计上采用防爆特殊的结构，接线盒用高强度铝合金压铸而成，并具有足够的内部空间、壁厚和机械强度，橡胶密封圈的热稳定性均符合国家防爆标准，所以，当接线盒内部的爆炸性混合气体发生爆炸时，其内压不会破坏接线盒，而由此产生的热能不能向外扩散一传爆。

由于产品采用上述防爆特殊结构，使产品完全符合使用在 d II BT4 至 d II CT6 防爆温度组别区间范围内，只要用户严格遵守产品使用规则，产品就能达到可靠的防爆效果。

Principle and structure

Comparing explosion proof heat resistance and assembly heat resistance, their principles are basically the same, the differences are the junction box(exterior shell) of explosion proof ones adopts special structure for explosion proof,the junction boxes are casted by high strength aluminium alloy and its inner space is enough, wall thickness, mechanical strength, heat stability of rubber sealing ring are all in conformity with state explosion proof standard. Hence, when the explosive mixed gas explodes, its inner pressure will not damage junction box and the caused heat energy will not expand-explode.

As a result of adoption of above mentioned explosion proof special structure, the products are totally in compliance with the range between d II BT4 and d II CT6. Only if strictly obeying product usage rules, products can reach reliable explosion proof effects.

隔爆热电阻的防爆标志表示方法 Explosive proof mark for explosive-proof thermal resistance



电气设备的类别、级别和温度组别说明
Electric equipment type , degree and temperature group instrument

电气设备分为二类 the electric device is divided into two groups :

I 类 - 煤矿井下用电气设备; Coal mine underground electric equipment

II 类 - 工厂用电气设备。Electric equipment for factory

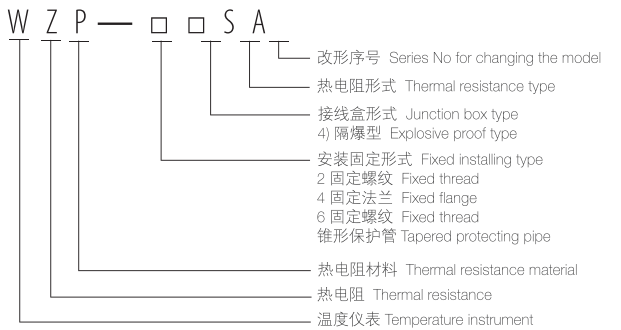
防爆等级
隔爆热电阻的防爆等级按其适用于爆炸性气体混合物最大安全间隙分为 A、B、C 三级。

Explosive proof degree
The explosive proof degree of explosive-proof resistance is divided into three levels ,A,B,C as per the max safety gap of Explosive gas mixture which the resistance is suitable for.

温度组别
隔爆热电阻的温度组别按其外露部分最高表面温 T1~T6 六组。

Temperature group
Temperature group of explosive-proof resistance ls divided into six group , T1~T6,as per the exposing parts

温度组别 Temperature Group	允许最高表面温度℃ bAllowable Max surface temperature
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85



※ 隔爆铂电阻的可燃气体，蒸汽级别温度组别请 参照隔爆型，本安型热电偶举例表格。（本书第 24 页）

flammable gas of explosion-proof platinum resistance please refer to tables in page 24.



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隔爆热电阻的种类和规格 The type and standard of explosive-proof thermal resistance

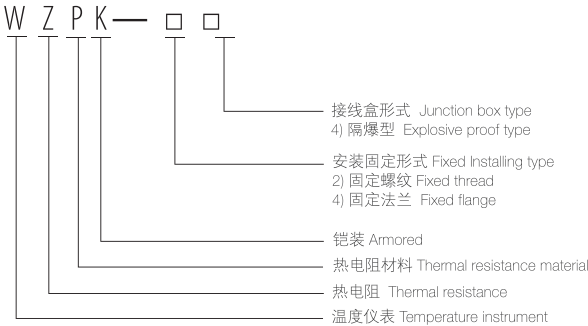
类别 Type	型号 Model	分度号 Graduation No	测温范围℃ Measuring range	保护管材料 Protecting Pipe material	热响应时间 τ 0.5S Thermal response time	公称压力 MPa Nominal pressure	结构特征 Structure features	规格 Standard		防爆等级 Explosive-proof degree
								总长 L(mm) Length	插深 l (mm) Inserting Length	
铂热电阻 Pt thermal resistance	WZP — 24SA	Pt 100	-200 ~500	ICr18Ni9Ti 不锈钢 或 0Cr18Ni12MO2Ti	≤ 90	10	隔爆接线盒： 固定螺纹安装 M27*2Explosive-proof junction box : fixed thread installed		150	dII BT4 dII BT6 或 dII CT4 dII CT6
	WZP ₂ — 24SA								200	
	WZP — 44SA								250	
	WZP ₂ — 44SA					6.4	隔爆接线盒： 固定法兰安装 Explosive-proof junction box : Fixed flanged installed		300	
	WZP — 64s WZP ₂			ICr 18Ni9Ti		30	锥形保护管 M33*2 Tapered protecting pipe		400	
									500	
									750	
									1000	
									100	
									200	
									300	

隔爆铠装热电阻的种类和规格 Type and standard for Explosive-proof armored thermal resistance

类别 Type	型号 Model	分度号 Graduation No	测温范围℃ Measuring range	保护管直径 D(mm) Protecting Pipe material	热响应时间 τ 0.5S Thermal response time	公称压力 MPa Nominal pressure	结构特征 Structure features	规格 Standard		防爆等级 Explosive-proof degree
								总长 L(mm) Length	插深 l (mm) Inserting Length	
铂热电阻 Pt thermal resistance	WZPK WZPK ₂ — 24	Pt 100	-200 +500	Φ 6 或 Φ 5	≤ 12	10	隔爆接线盒： 固定螺纹安装 M27*2Explosive-proof junction box : fixed thread installed		150	dII BT4 dII BT6 或 dII CT4 dII CT6
	WZPK WZPK ₂ — 44				≤ 8	6.4	防爆接线盒： 固定法兰安装 Explosive-proof junction box : Fixed flanged installed		200	
									300	
									400	
									500	
									750	
									1000	

注：法兰是仪表行业标准 JB / T5219-1991 属平法兰
Note: Flange is the flat flange which is in accord with Industrial standard JB / T5219-1991

隔爆铠装热电阻 Explosive-proof armored thermal resistance



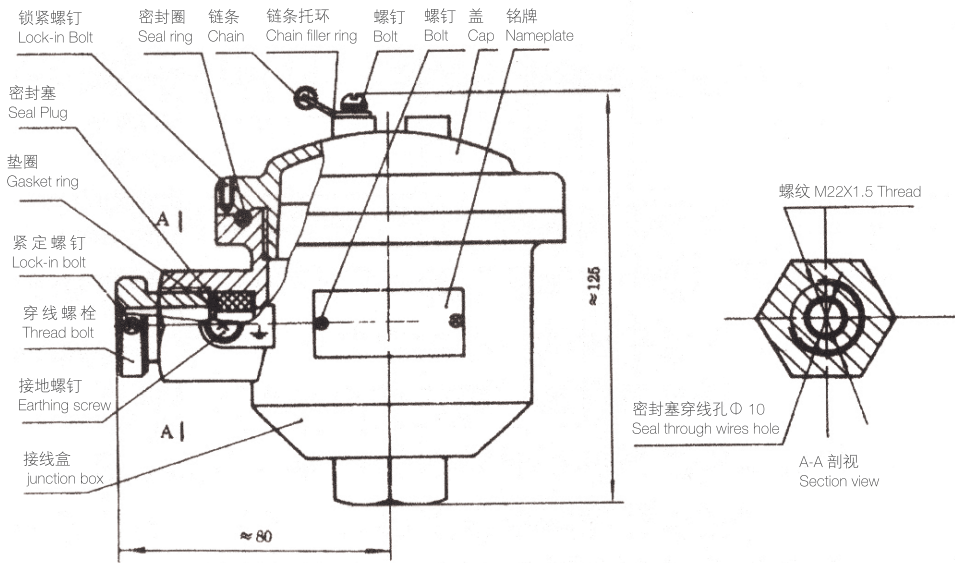
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接线盒结构示意图 Junction box structure showing table

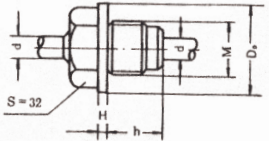
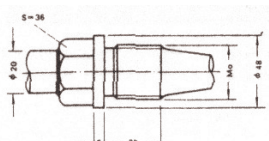
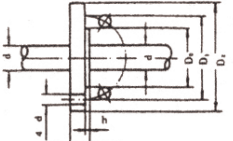


安装固定装置

安装固定装置可分固定螺纹，锥形固定螺纹，固定法兰等三种形式，其结构尺寸见表。

Fixed devices

Three kinds of fixed devices, fixed thread type, taper fixed thread and fixed flange, refer to table for details.

<div>直形保护管固定螺纹 Straight protecting pipe fixed thread</div> 	用于保护 管直径 (d)	M			h	s	D ₀	流速 m/s Flow speed	最高使用压力 MPa Max using pressure
	Φ 16	M27 x 2			32	32	Φ 40		10
<div>锥形保护管固定螺纹 Taper protection tube fixed thread</div> 		M33 x 2			33	36	Φ 48	80	30
<div>固定法兰 Fixed flange</div> 	Φ 16	D ₂	D ₁	D ₀	d ₀	H	h		
		Φ 95	Φ 65	Φ 45	Φ 14	15	2		6.4



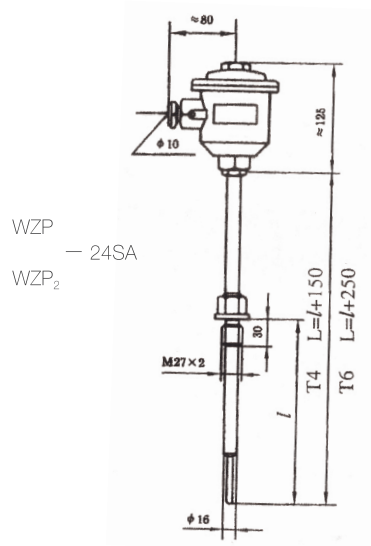
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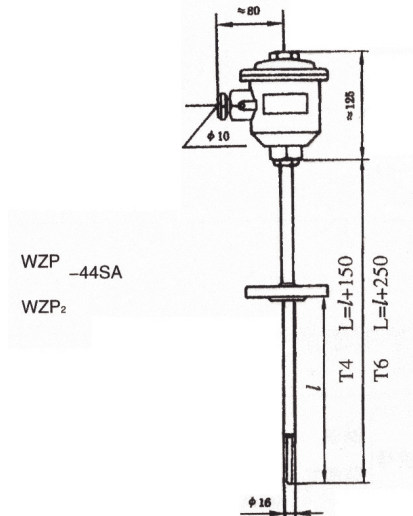
隔爆铂电阻 Explosion-proof Pt resistance

WZP 系列
WZP Series

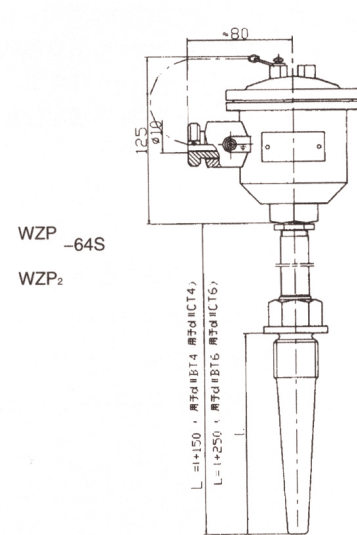
外形和尺寸 Overall dimensions and size



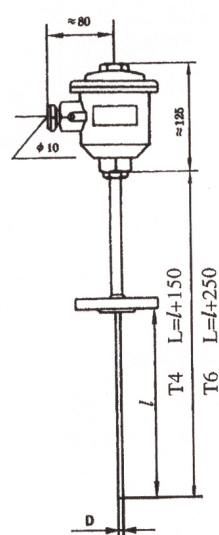
WZP — 24SA
WZP₂



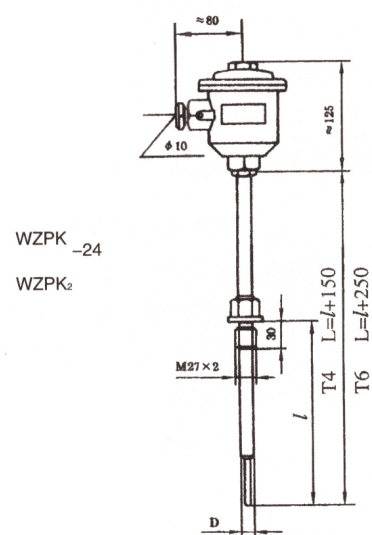
WZP — 44SA
WZP₂



WZP — 64S
WZP₂



WZPK — 44
WZPK₂



WZPK — 24
WZPK₂