



温度变送器

Temperature transmitter

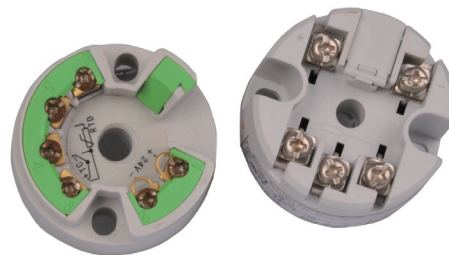
SBW 系列

SBW Series

SBW 系列 温度变送器

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Temperature transmitter



概述

SBW 系列热电偶、热电阻温度变送器是 DDZ-S 系列仪表中的现场安装式温度变送器单元。它采用二线制传送方式 (两根导线作为电源输入, 信号输出的公用传输线)。将热电偶、热电阻信号转换成与输入信号或与温度信号成线性的 4~20mA 的输出信号。变送器可以安装于热电偶、热电阻的接线盒内与之形成一体化结构。它作为新一代测温仪表可广泛应用冶金、石油、化工、电力、轻工、纺织、食品、国防以及科研等工业部门。

- 采用硅橡胶密封结构、因此耐震、耐湿、适合在恶劣现场环境中安装使用。
- 现场安装于热电偶、热电阻的接线盒内, 直接输出 4~20mA, 这样既省去昂贵的补偿导线费用, 又提高了信号长距离传送过程中的抗干扰能力。
- 变送器具有入端开路指示功能, 热电偶温度变送器具有冷端温度自动补偿功能。
- 精度高、功耗低、使用环境温度范围宽, 工作稳定可靠。
- 应用面广, 既可与热电偶、热电阻形成一体化现场安装结构, 也可作为功能模块安装在检测设备中。
- 智能型温度变送器可使用 ZBT 通讯设备、一台 386 或更高级的 PC 机, 设置变送器的型号、分度号及被测温度的量程范围。
- 数显型温度变送器可按用户实际需要调整变送器显示屏的显示方向。

Overview

SBW series thermocouple, thermal resistor temperature transmitter is field installation type temperature transmitter unit in DDZ-S series instruments. It's of 2-wire system transmission (Two wires are used as public transmission wire for power input and signal output), it transforms signal of industrial thermocouple & thermal resistance into output signal of 4~20mA which is in linear relation with input signal or temperature signal.

The transmitter could be directly mounted inside junction box of thermocouple & thermal resistance to form an integral structure. As temperature - measuring instrument of new generation, it could be widely used in metallurgy, petroleum chemical, power Light industry, textile, foodstuff, national defense, and scientific research field, etc.

- Silica rubber sealing structure, shock & moisture - proof, suitable with bad environment
- Field installed inside junction box of thermocouple & thermal resistance, output signal is 4~20mA; it could save expensive cost on compensational wire and improve interference - resistant performance during long - distance signal transmission process
- thermocouple temperature transmitter has automatic temperature compensation function at cold end.
- High accuracy and lower power consumption, wide temperature range, stable and reliable
- Wide application, it could be installed on the spot with thermocouple or thermal resistance to form integral structure, or installed in testing device
- Smart temp transmitter can be equipped with ZBT communication equipment, a set of 386 or more advanced PC, to set model & scale number of transmitter, as well as temperature range. .
- Digital display type temp transmitter it can adjust the display direction of the transmitter according requirements

主要技术指标 Main tech data

输入: 热电偶 K 型、E 型、B 型、S 型、T 型、J 型、N 型热电阻 Pt100 Cu100 Cu50 (三线制或四线制)

输出: 在量程范围内输出 4~20mA 直流信号。与热电偶输入的毫伏信号成线性; 与热电阻的输入电阻信号成线性。或与温度信号成线性。

隔离温度变送器: 输入与输出相隔离, 隔离电压为 0.5KV 增加抗共模干扰能力, 更适合计算机联网使用。

基本误差: $\pm 0.5\% \text{ FS}$

Input: Thermocouple (K E J B S T N), Thermal Resistance (Pt100, Cu100, Cu50) (3 wire System or 4 wire system)

Output : Output direct signal from 4 to 20mA within range, which is in linear with the millivolt signal input by thermocouple, or in linear with the resistance signal input by thermal resistor, or in linear with temperature signals.

Isolated temperature transmitter: the input is separated from output and separation voltage is 0.5Kv. It improves common mode interference - resisting performance and is more suitable for computer network.

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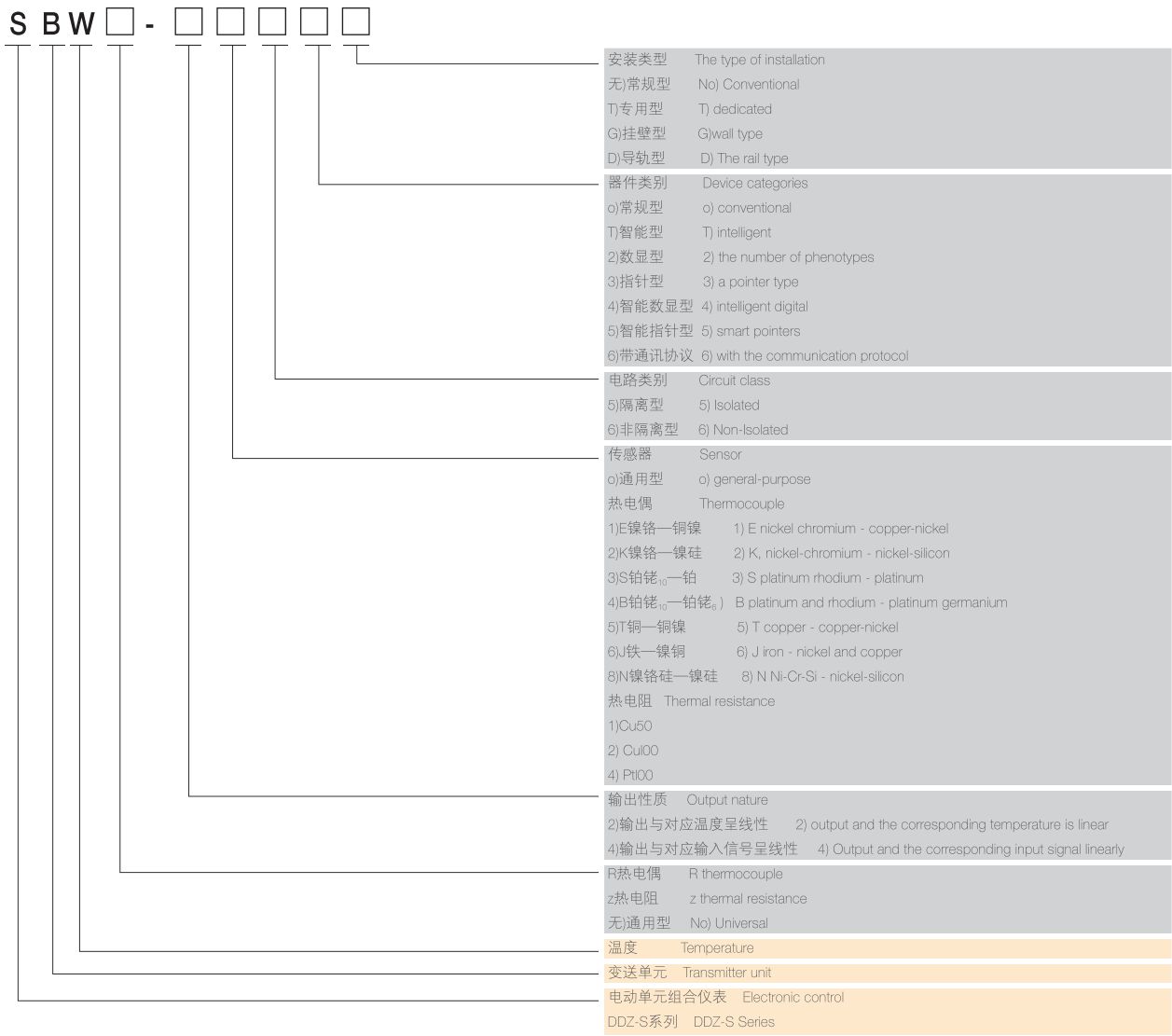
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传送方式: 二线制
显示方式: (数显型)LCD 四位显示, 热电偶开路时显示 E.....标志且输出入于 20mA。
工作电源: 变送器工作电源电压最低 12V, 最高 35V, 额定工作电压 24V。
负载: 极限负载电阻按下式计算: RL(max) = 50(Vmin-12) (即 24V 时, 负载电阻可在 0~600 Ω 范围内选择用) 额定负载 250 Ω
正常工作环境:
a) 环境温度 -25℃ ~80℃ (常规型) -20℃ ~70℃ (数显型)
b) 相对湿度 5%~95%
c) 机械振动 f≤50Hz, 振幅 <0.15mm
d) 周围空气中不含有对铬、镍镀层、有色金属及其它合金起腐蚀作用的介质。
环境温度影响: ≤0.05/1℃
注: “•” 用户有特殊需要, 可提供允许误差为 ± 0.2% 的协议产品。

Basic Error: ± 0.5% FS
Wiring: 2 - wire system, 3 - wire system, 4- wire system
Display: 4 digits LCD of temperature on the spot, and displayed in in open circuit.
Power: The lowest voltage of transmitter is 12V, highest voltage is 35V, and the rated voltage is 24V.
Load: The limit load resistance is calculated as follows: R1 (max), 50 (Vmin-12) (24V when the load resistance in the range of 0~600 Ω choose to use) the rated load 250 Ω
Normal working conditions:
a) Ambient temperature -25 °C ~80 °C (conventional type) -20 °C ~70 °C (the phenotype)
b) Relative humidity 5%~95%
c) mechanical vibration f ≤ 50Hz, amplitude <0.15mm
d) the ambient air does not contain chromium, nickel plating, non-ferrous metals and other alloys from corrosion media.
Ambient temperature: ≤ 0.05 / 1 °C
Note: “•” users with special needs, provides the allowable error of ± 0.2% protocol products.

型号表示 Model representation



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型号规格 Norms

(常规型) 温度变送器规格表
(Conventional type) Temperature Transmitter Specification Table

型号 Model	分度号 Scale No	最大量程 范围 The maximum range (°C)	允许下限变 化范围 Allows the lower limit of range (°C)	允许上限变化 范围 Allows the upper limit range (°C)	规定最小量程 (上限下限之 差) The provisions of the minimum range(°C)
SBWR-2160	E	0~400 0~600			
SBWR-2260	K	0~400 0~600 0~800 0~1000			
SBWR-2360	S	600~1600			
SBWR-2860	N	0~400 0~600 0~800 0~1100 0~1200			
SBWR-4160	E	0~600	0~300	150~600	150
SBWR-4260	K	0~1100	0~300	400~1100	300
SBWR-4360	S	0~1600	0~800	1400~1600	600
SBWR-4460	B	0~1600	0~800	1400~1600	600
SBWR-4560	T	0~400	0~100	100~400	200
SBWR-4860	N	0~1200	0~300	400~1200	300
SBWZ-2160	Cu50	-50~150	-50~50	0~150	50
SBWZ-2260	Cu100	-50~150	-50~50	0~150	50
SBWZ-2460	Pt100	0~500	0~300	100~500	100
		-100~200	-100~0	0~200	100
SBWZ-4460	Pt100	-200~500	-200~300	50~500	50

(隔离型) 温度变送器规格表
T (Isolated) Temperature Transmitter Specification Table

型号 Model	分度号 Scale No	测量范围 Measuring range (°C)
SBWR-4150	E	0~300 0~400 0~500 0~600 100~400 100~500 200~500 200~600
SBWR-4250	K	0~400 0~600 0~800 0~1000 0~1100 0~1200 200~500 300~600 200~800
SBWZ-2450 -4450	Pt100	-50~50 -50~150 -50~200 -100~500 -100~200 -200~500 0~50 0~100 0~150 0~200 0~250 0~300 0~350 0~400 0~500 50~100 50~150 100~200 200~400

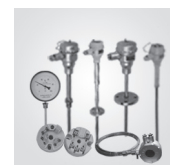
T (专用型) 温度变送器规格表
T (special type) Temperature Transmitter Specification Table

型号 Model	分度号 Scale No	测量范围 Measuring range (°C)	
SBWR-2160T -4160T	E	0~400 0~500 0~600	100~300 200~400 200~600
SBWR-2260T -4260T	K	0~400 0~600 0~800	200~500 400~800
SBWR-2460T -4460T	Pt100	-50~0 -50~50 -50~100 -100~100 -100~200	0~50 0~100 0~200 0~300 200~400 300~500

(智能型) 温度变送器规格表
(Intelligent type) Temperature Transmitter Specification Table

型号 Model	分度号 Scale No	测量 范围 maximum range (°C)	允许下限变化 范围 Allows the lower limit of range (°C)	允许上限变化 范围 Allows the upper limit range (°C)	最小量程 范围 The minimum range (°C)
SBWR-□16□	E	0~800	0~700	100~800	100
SBWR-□26□	K	0~1300	0~900	400~1300	400
SBWR-□36□	S	0~1600	0~1200	400~1600	400
SBWR-□46□	B	100~1800	100~1400	500~1800	400
SBWR-□56□	T	0~400	0~300	100~400	100
SBWR-□66□	J	0~600	0~500	100~600	100
SBWR-□86□	N	0~1300	0~900	400~1300	400
SBWZ-□16□	Cu50	-50~150	-50~100	0~150	50
SBWZ-□46□	Pt100	-220~700	-220~650	-150~700	50

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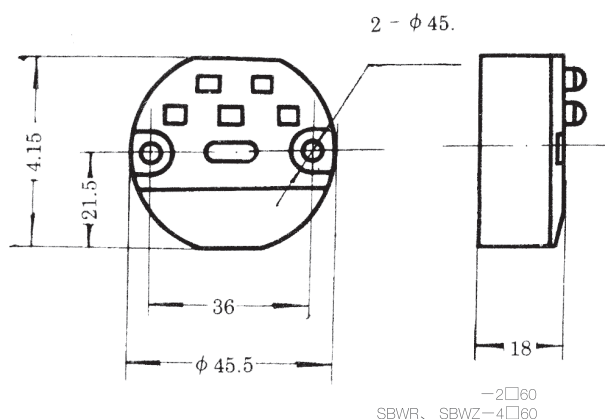


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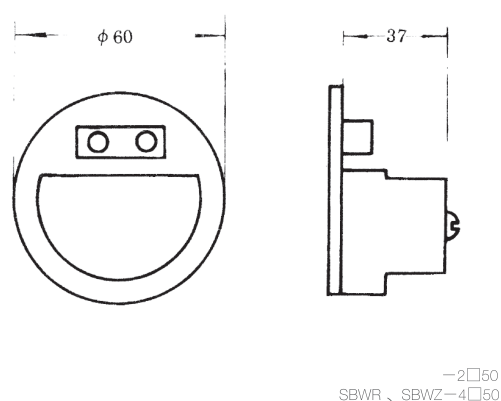
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外形及安装尺寸 Outline and installation size

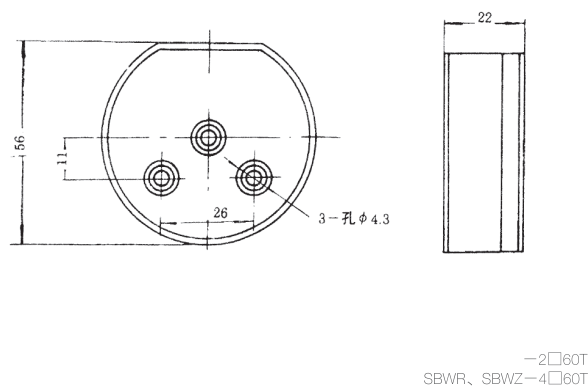
(常规型) 温度变送器 (单位: mm)
(Conventional type) Temperature Transmitter (Unit: mm)



(隔离型) 温度变送器 (单位: mm)
(Isolated) Temperature Transmitter (Unit: mm)

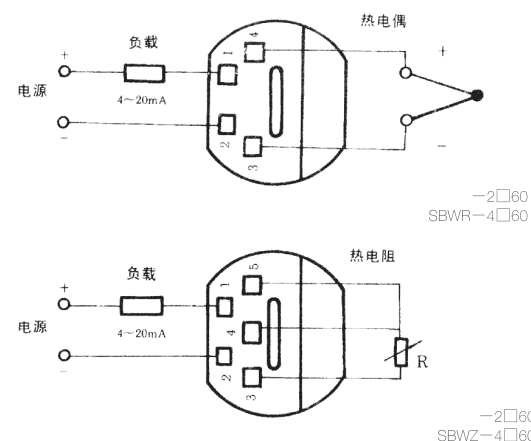


(专用型) 温度变送器 (单位: mm)
(special type) Temperature Transmitter (Unit: mm)

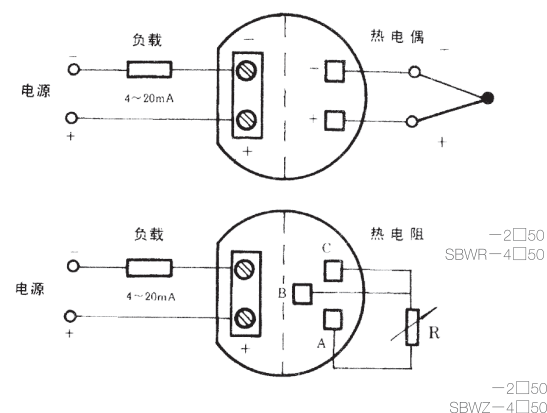


外部接线图 External wiring diagram

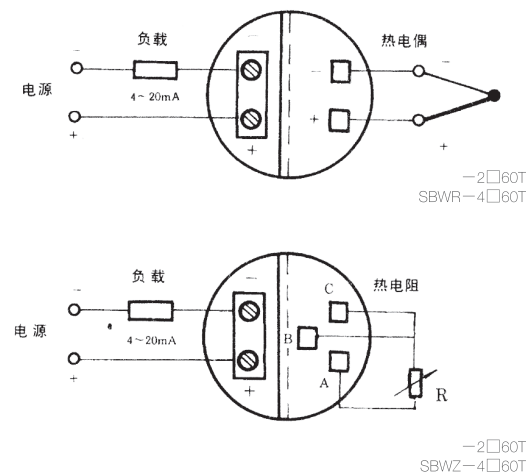
(常规型) 温度变送器
(Conventional type) Temperature Transmitter (Unit: mm)



(隔离型) 温度变送器 (单位: mm)
(Isolated) Temperature Transmitter (Unit: mm)



(专用型) 温度变送器 (单位: mm)
(special type) Temperature Transmitter (Unit: mm)





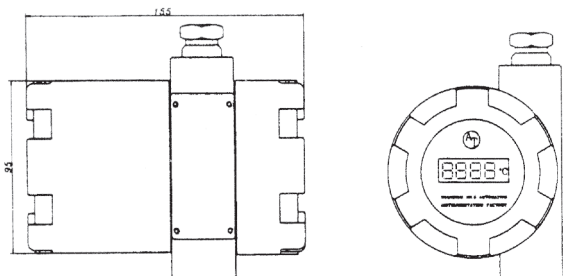
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结构、外形及安装尺寸 Structure, shape and installation dimensions

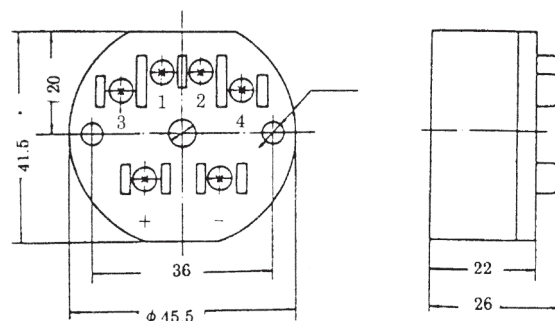
(智能型、智能数显型) 温度变送器 (单位: mm)
(Smart, intelligent digital temperature transmitter phenotype) (Unit: mm)

智能型变送器是由壳体, 电路组件壳盖等组成
Intelligent transmitter is made of shell, circuit element and shell cover, etc.



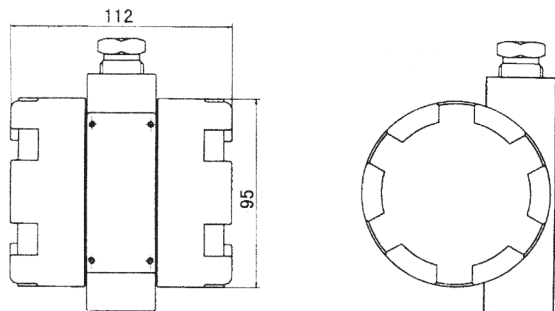
智能温度变送器外形尺寸图 (智能数显型)

The overall dimension of the smart transmitter



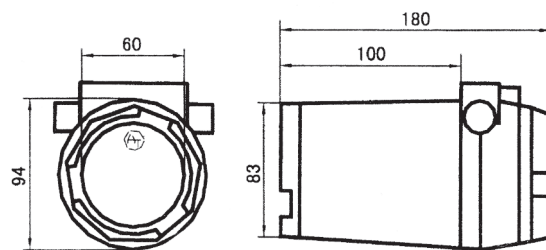
智能温度变送器外形尺寸图 (智能型)

The overall dimension of the smart transmitter



智能温度变送器外形尺寸图 (智能型)

The overall dimension of the smart transmitter

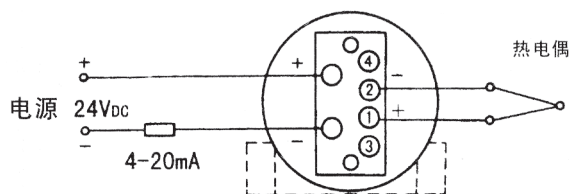


温度变送器外形尺寸图 (指针型)

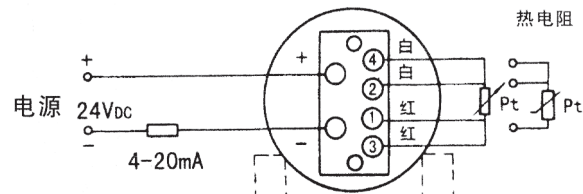
The overall dimension of the smart transmitter

外部接线图 External wiring diagram

(智能型、智能数显型) 温度变送器 (单位: mm)
(Smart, intelligent digital temperature transmitter phenotype) (Unit: mm)



-2 □□□
SBW □ -4 □□□



(四线制) (三线制) -2 □□□
SBW □ -4 □□□

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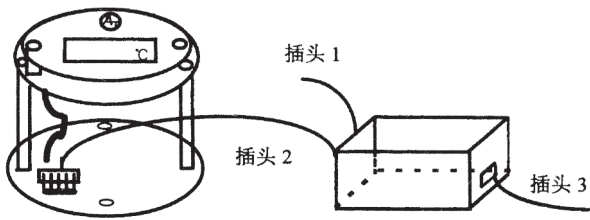
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变送器量程调整及通讯

该智能温度变送器根据实际需要可实现一机多型号化，即一台智能温度变送器可以分别输入不同型号、不同分度号的热电偶或热电阻，具体实现方法可以参照《ZBT 通讯器使用说明书》。其详细介绍了智能温度变送器的型号、分度号的设置以及量程调整方法和通讯步骤。智能温度变送器进行通讯时要旋开壳盖，下图为智能温度变送器和 ZBT 通讯器的通讯接线图：

The range adjustment and communications of transducer

The intelligent temperature transmitter is Multi-type oriented ,that means one intelligent temperature transmitter can input different models of different thermocouple or RTD,concrete operations consult "instruction for communication apparatus ZBT". It introduces the model of automatic temperature transmitter, the setting of graduation No., range adjustment way and communication steps. it needs to open the cover when automatic temperature transmitter communicates. wiring diagram of transmitter and communicator please refer to the right



变送器与通讯器接线图
wiring diagram of transmitter and communicator

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