

DW-062型二线制温度变送器

DW - 062 Two Wire Temperature Transmitter

1. 工作原理

该变送器以铂热电阻Pt100为感温元件，并与其构成一体化结构。该变送模块包含了测温电桥、稳压电路、放大电路、线性补偿电路、电压电流转换电路以及电源极性反向保护电路。

铂热电阻随温度变化输出的信号经高稳定运算放大器放大的同时施以线性补偿，使输出电压与温度变化成线形关系，进而将该电压送入V-I转换电路得到4~20mA的线形恒流直流信号。

食品加工等领域的温度检测与控制。

2. 特点

由于变送器为固化全密封结构，且测温元件与变送器为一体化，输出直流恒流信号，因而具有以下优点：

- 按照实际需要选定量程后，便可直接使用，无需现场调试和维修；
- 输出信号幅度大、阻抗高、抗干扰能力强，可实现较远距离的传输，导线截面积可相对减少；
- 大大提高了耐振、耐温、耐湿性能，且为本质安全型结构，可满足危险场所的温度检测。
- 模块电路内设有电源极性反向保护电路，转换精度高，低造价、运行稳定、安装简单、小巧、轻便。

3. 应用范围

DBW-2型二线制温度变送器系采用IC技术，将变送电路部分用胶灌封而成的功能模块直接放于铂热电阻的接线盒内，且与感温元件形成一体化结构。模块外形与铂热电阻接线盒内接线板相近。变送器以二线传输方式。性能与国外同类产品相仿，可与国内DDZ-Ⅲ系列电动单元组合式仪表直接配用。广泛应用于石油、化工、轻工、纺织、食品加工等领域的温度检测与控制。



1. Working Principle:

Pt100 platinum thermal resistance is the sensing element of this transmitter, and together become integration structure. The transmitting module contains a temperature measuring bridge, regulating circuit, amplifying circuit, and linear compensation circuit, voltage current conversion circuit and the power supply reverse polarity protection circuit. Platinum thermal resistance output signal with the temperature change, amplified by highly stable operational amplifier with linear compensation at the same time, so that output voltage are linear with temperature change, and then convert the voltage to conversion circuit of V - I to get 4 ~ 20 ma linear constant current circuit dc signal.

2. Characteristic:

Because the transmitter is a fully sealed structure, and the temperature measuring element is integrated with the transmitter, the output DC constant current signal has the following advantages:

- According to the actual needs of the selected range, it can be used directly without on-site commissioning and maintenance;
- Because output signal amplitude is big, the impedance is high, the antijamming ability is strong, it realize the long-distance transmission and conductor cross-sectional area is reduced relatively;
- The resistance to vibration, heat resistance, moisture resistant are greatly improved and it is intrinsically safe structure, which can do temperature detection in dangerous sites;
- There is power supply reverse polarity protection circuit in the module circuit, so it is high conversion accuracy, low cost, stable running, simple installation, small, lightweight;

3. Application:

DBW - 2 two wire temperature transmitter use the IC technology, the transmitting circuit part is potting directly with glue and forming functional modules are put into the junction box of platinum thermal resistance, and become integrated structure with temperature-sensing element. Module shape is similar to wiring board inside terminal box of platinum thermal resistance. Transmission mode of transmitter is two wire. It has similar performance with the same products abroad, and it can be directly matched with a domestic DDZ- series electric unit combined instrument. It is widely used for temperature detection and control in petroleum, chemical industry, light industry, textile, food processing, etc.