PW Series Intelligent Digital Controller
Introduction and Specification

Wuyue Sensor Co., LTD

Company Introduction

Wuyue Sensor Technology Co., Ltd.(WTTC) is a high-tech company and maker of sensors and related instruments. WTTC majors in researching, designing, making and selling sensors, transmitter and digital instrument. WTTC is of the capability to manufacture various kinds of sensors and relative products. Especially with the high temperature melting sensors, PW series products are widely used in plastic, rubber, petrol and chemistry lines. Actually, we are in the lead both at home and abroad. WTTC's products are sold all over our country and exported to Southeast Asia, and are highly remarked.

PW500 Introduction

PW500 is an intelligent digital pressure&temp. controller, which is widely used in measurement and control field. PW500's appearance is beautiful; key operation is simple; PW500 is capable of resisting interference.

PW500 is adopted with double-row structure with four digit bit in each row to show respectively measured value(PV) and set value(SV). Output available is: 4 ~ 20 mA or 0 ~ 10V. Systematic adjustment can automatically finish through keyboard operation, i.e., only pressing "◠" key to execute the adjustment. PW500 introduces photoelectric technology, watchdog, and special software to resist interference.

PW500 is generally connected with a high temp. melting sensor, and both of them form an excellent system to measure the pressure and temp. of the melting. Meanwhile, PW500 can be used to control the operation of motors, which are embedded in other equipments.

Main Technical Parameters

(1) Display Unit : double row structure with four LED digital bit, higher row for pressure and lower row for temp. .
(2) Inner Divided Ratio : 32000
(3) Outer Divided Ratio :
    i. Pressure : 0.01MPa, 0.02MPa and 0.05MPa;
    ii. Temp. : 1'C
(4) No linearity : 0.05%+/-1 bit
(5) Alarm Setting :
    i. high limit for pressure : 0 ~ 99.99MPa
    ii. high limit for temp. : 0 ~408'C
(6) Set Value of Relay : 250V AC
(7) Working Atmosphere : -10 ~ +50'C, 80%RH
(8) Power Supply : 120V ~ 250V AC
(9) Outer Dimension : 92-92-110 mm

Front Panel

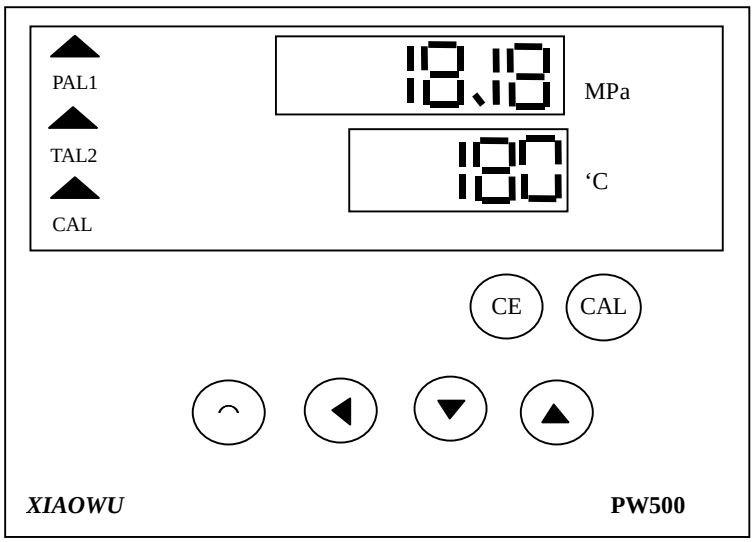

Figure 1-1, front panel

◆ Higher Display Unit : display the measured pressure value. When modifying

inner parameters, display parameter's symbol.

- Lower Display Unit : display the measured temp. Value. When modifying inner parameters, display parameter's value.

Keyboard

EC : Clear to zero
CAL : Calibration
◠ : Transfer
◀ : Shift digit bit
▼: Decrease
▲: Increase

LED

PAL1 : High limit alarm for pressure
TAL2 : High limit alarm for temp.
CAL : Self calibration

Mounting Dimension

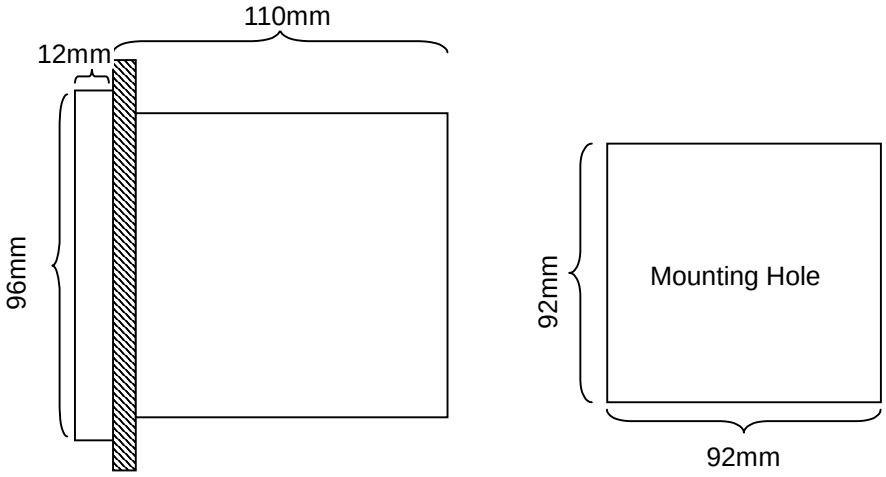

Figure 1-2, mounting dimension

Connection between PW500 and sensor

The terminals of connector are as follows: (numeric symbol for five pin cable, alphabetic symbol for six pin cable)

1 (A)……S+ Positive signal
2 (C)……E+ Positive bridge voltage
3 (B)……S - Negative signal
4 (D、E)……E - Negative bridge voltage
5 (F)……C Calibration

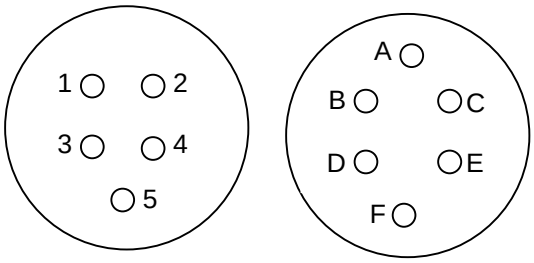

Figure 1-3, terminals of the connector

Rear Terminals

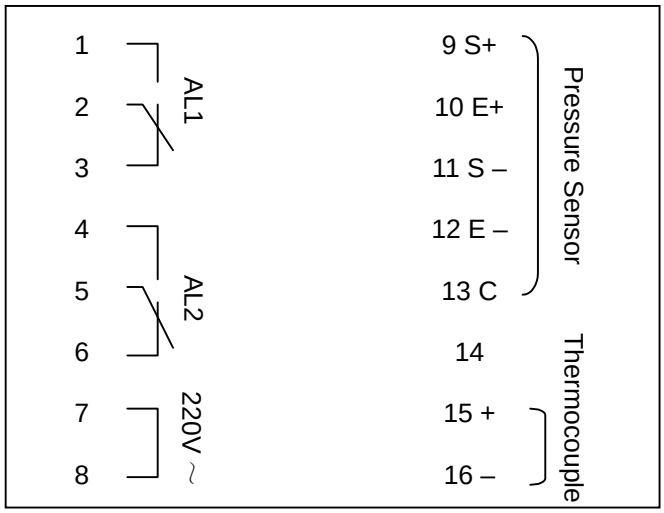

Figure 1-4, rear terminals

- 1, 2 Open terminals of AL1 relay
- 2, 3 Close terminals of AL1 relay
- 4, 5 Open terminals of AL2 relay
- 5, 6 Close terminals of AL2 relay
- 7, 8 Input voltage
- 9 S+ Positive signal from sensor (blue line)
- 10 E+ Positive voltage for sensor's power supply (red line)
- 11 S - Negative signal from sensor (black line)
- 12 E - Negative voltage for sensor's power supply (yellow line)
- 13 C Adjustment (green line)
- 14 shield
- 15 + positive signal from thermocouple
- 16 - negative signal from thermocouple

Power-on and running

After power-on, PW500 does self-check. At the same time, the above display unit shows the full scale of pressure, and the lower display unit shows the full scale of temperature. After about 2 seconds, the above display unit shows the divided value for pressure, and the lower display unit shows the thermocouple type and divided value for temperature. Finally, PW500 return to working status automatically.

In the working status, the above display unit shows the measured value of pressure, and the lower display unit shows the measured value of temperature.

Modify the inner parameters

- In working state, press the "◠" key for five seconds, and then the inner parameters can be modified.
- Pressing ◀ key, ▲ key and ▼ key to modify the parameter value.
- Pressing the "◠" key stores the modified parameter and transfer to the next parameter.
- If user presses "◠" for five seconds or if user doesn't press any key for one minute, PW500 will return automatically to working state.

Inner Parameter Table

Symbol	Name	Range	Description	Initial value before shipment

 r n	Span	10.00Mpa ~ 100.0Mpa	Range for pressure	Same as sensor's span
 d v	Divided value for pressure	0.01, 0.02, 0.05MPa	Recommendation 1	0.02MPa
 AL1	High limit for pressure	0.01 ~ 99.99MPa	Alarm for high limit of pressure	80% of span
 PLd	Loop differential of pressure alarm	0 ~ 2.00MPa	Setting loop differential of pressure alarm	0.08MPa
 AL2	High limit for temperature	0 ~ full scale value	Alarm for high limit of temperature	80% of span
 TLd	Loop differential of temperature alarm	0 ~ 20'C	Setting loop differential of temperature alarm	2'C
 LCk	Digital locker	0000:keyboard operation is valid, inner parameters can be modified. 0001:only pressing "◠" is acceptable, other keyboard operation is invalid	the digital locker is enable, user can lock panel keyboard operation and parameters	0000

Recommendation 1 :

Span	Divided value for pressure
0 ~ 20 MPa	0.01
20 ~ 50 MPa	0.02
50 ~ 100 MPa	0.05

Pressure Adjustment

Generally, PW500 is corresponded with a sensor, and after our company adjusts them both, user can use them. If PW500 is not corresponded with sensor, user has to adjust both of them. It must be ensured that sensor is loaded zero pressure.

When PW500 is in working state, user presses CAL key, PW500 starts to adjust automatically. At the same time, user presses "◠" key till adjustment is finished. PW500 will store the adjusted value. (CAL key and "◠" must be both pressed till adjustment is finished.)

Note : before adjustment, user has to open digital locker, that is to say, LCK is set to zero.