Intelligent Digital Display Measurement Controller

T80 Series Dual Channel Controller

The digital display controller uses a microprocessor for high-precision operation control, linear to non-linear correction of the measured input signal, the controller integrates analog and digital instruments, and is suitable for the display of temperature, pressure, liquid level, and digital speed measurement signals. Control (high-brightness LED digital display) and relative analog display (column display) to make the measurement clearer and more intuitive.

■ Features

● Can input 22 type signals

RTD：Pt100, Cu50

Thermocouples: S/R/B/K/N/E/J/T with automatic cold junction temperature compensation。

Standard signals: 0-10mA/4-20mA/0-5V/1-5V

Linear non-standard signal: any signals within 0-100mV/0-400Ω, need set the range corresponding to input signal

● SCM intelligence

Can adjust the zero point and magnification manually, and there is no drift in linearity for long-term use

All parameters can be set freely as required

● Alarm control parameters can be set

Can set each relay's alarm value and hysteresis

Can set each relay's alarm type (Upper alarm or lower alarm)

● Has various output

Transmission output type: 0-10mA/4-20mA/0-5V/1-5V/0-20mA

Can adjust light beam individually

■ Technical parameter

Measuring range: -1999-9999

Accuracy: ±0.5% of full scale

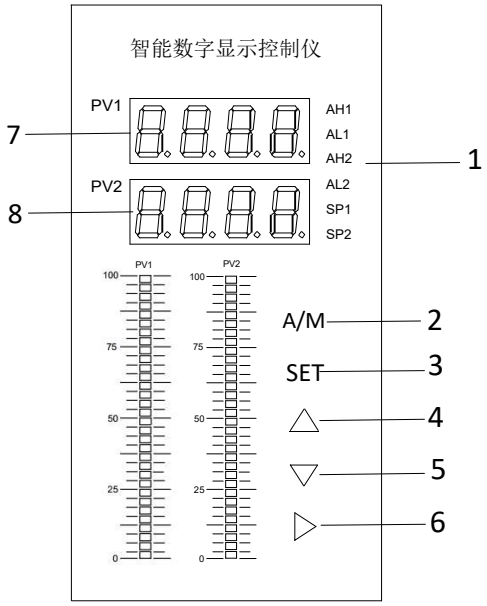
Supply voltage: AC0220(±10%); DC24V

Operating temperature：0-50℃

Operating humidity: 85% RH max, non-condensing

Power consumption: ≤5W

■ Panel description (Take 160*80 panel as an example)



1) Indicator light, AH1: Channel 1 upper limit alarm; AL1: Channel 1 lower limit alarm;

AH2: Channel 2 upper limit alarm; AL2: Channel 2 lower limit alarm;

2) Return key;

3) Setting key;

4) Add key;

5) Subtract key;

6) Shift key;

7) Channel 1 measurement and function menu display window;

8) Channel 2 measurement and function menu display window;

■ Model number legend

T — Temperature controller

80 — Design code

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- Alarms: 1: No alarm; 2: 2 alarms; 3: 3 alarms
- Communication: N: None; R: RS485
- Output type: N: None C420: 4-20mA C010: 0-10mA V15: 1-5V v05: 0-5V

■ Input type code (corresponding to parameter Sn)

Code	Input type and measured range	Code	Code	Input type and measured range	Code
00	S(0-1600℃)	08	Pt100(-200-850℃)	16	mV no standard signal (0-100mV)
01	R(0-1600℃)	09	Cu50(-50-150℃)	17	Resistance no standard signal (0-400Ω)
02	B(200-1800℃)	10	0-5V(-1999-9999)	18	Frequency no standard signal (0-3000Hz)
03	K(0-1300℃)	11	1-5V(-1999-9999)	19	$0\text{-}5V^2$(-1999-9999)
04	N(0-1300℃)	12	0-10V(-1999-9999)	20	$1\text{-}5V^2$(-1999-9999)
05	E(0-800℃)	13	0-10mA(-1999-9999)	21	$0\text{-}10mA^2$(-1999-9999)
06	J(0-650℃)	14	0-20mA(-1999-9999)	22	$4\text{-}20mA^2$(-1999-9999)
07	T(-200-400℃)	15	4-20mA(-1999-9999)	23	Multiple input

■ First-level parameters setting

Push down the SET key for 3 second, will enter the following menu: can select the next parameter by clicking the minus key, the parameters is changed cyclically. If you want set the current parameter, can click SET key to enter the detailed parameters, you can modify it by clicking shift key, add and minus key, when finished, can click the SET key to confirm. If you want return the measured interface, press A/M to quite.

Parameter	Function	Measured range	Default
AH1	Channel 1 upper alarm value	-1999-9999	400.0
dH1	Channel 1 upper alarm hysteresis	0-9999	1.0
AL1	Channel 1 lower alarm value	-1999-9999	200.0
dL1	Channel 1 lower alarm hysteresis	0-9999	1.0
AH2	Channel 2 upper alarm value	-1999-9999	400.0
dh2	Channel 2 upper alarm hysteresis	0-9999	1.0
AL2	Channel 2 lower alarm value	-1999-9999	200.0
dL2	Channel 2 lower alarm hysteresis	0-9999	1.0
CLK	Second-level menu password	PASS	0 (When input 132, enter the second-level menu)

■ Second-level parameters setting

When appear CLK parameter in the first-level menu, input password 132 in the PV2 window, then click SET key to enter the second-level menu, set parameter, save parameter and quite menu is same as the first-level parameters setting.

Parameter	Name	Set range	Description
Sn1	Channel 1 Input type	0-22	See input type table
dot1	Channel 1 Decimal point	dot=0 dot=1 dot=2 dot=3	Without decimal point Ten decimals (show XXX.X) Hundred decimals (show X.XX) Thousand decimals (showX.XXX)
PUL1	Channel 1 lower limit of measured range	-1999-9999	Set the input signal's lower limit measured value
PUH1	Channel 1 upper limit of measured range	-1900-9999	Set the input signal's upper limit measured value
OU-A1	Channel 1 transmitter output	1, 2	OU-R=1 0-10mA OU-R=2 4-20mA
Sn2	Channel 2 Input type	0-22	See input type table
dot2	Channel 2 Decimal point	dot=0 dot=1 dot=2 dot=3	Without decimal point Ten decimals (show XXX.X) Hundred decimals (show X.XX) Thousand decimals (showX.XXX)
PUL2	Channel 2 lower limit of measured range	-1999-9999	Set the input signal's lower limit measured value
PUH2	Channel 2 upper limit of measured range	-1999-9999	Set the input signal's upper limit measured value
OU-A2	Channel 2 transmitter output	1, 2	OU-R=1 0-10mA OU-R=2 4-20mA
PH1	Channel 1 upper limit alarm type	1, 2	Default is 1, 1 upward alarm 2 downward alarm
PL1	Channel 1 lower limit alarm type	Definition is the same as PH	Default is 2
PH2	Channel 2 upper limit alarm type	1, 2	Default is 1, 1 upward alarm 2 downward alarm
PL2	Channel 2 lower limit alarm type	Definition is the same as PH	Default is 2
Pb-1	Channel 1 Zero correction	Full range	Set zero point's shift value
Pb-2	Channel 2 Zero correction	Full range	Set zero point's shift value
FT-1	Channel 1 Filter coefficient	0.100-9.999	Filter coefficient is increased, the value is more stable, but the lag is increased
FT-2	Channel 2 Filter coefficient	0.100-9.999	Filter coefficient is increased, the value is more stable, but the lag is increased
InPH1	Channel 1 Non-standard signal input maximum	0~400	Default is 100.0 Used when Sn=16 or 17
InPL1	Channel 1 Non-standard signal input minimum	0~400	Default is 0.0 Used when Sn=16 or 17
InPH2	Channel 2 Non-standard signal input maximum	0~400	Default is 100.0 Used when Sn=16 or 17
InPL2	Channel 2 Non-standard signal input minimum	0~400	Default is 0.0 Used when Sn=16 or 17

Application description

The range selection of instrument and sensor: All sensor's range must be same as instrument's range, otherwise, the display will display wrong value. For example: Liquid level transmitter range is 0-5m（According to the sensor label）, output 4-20mA, can set the instrument as the following: 1). enter the second-level parameters menu. 2). Set the parameters as follow:

Parameter	Name	Set value	Description
Sn1	Input type	15	Must be same as the output signal
Dot1	Decimal point	2	According to the accuracy requirement
PuL1	Lower limit of measured range	0.00	The lowest range of the sensor
PuH1	Upper limit of measured range	5.00	The highest range of the sensor

Can see the following three examples, the transmitter is 0-5m

Example 1: Require instrument alarm when higher than 4m or lower than 1m. Push down the SET key for 3 second, enter the first-level parameters menu，the parameters are as follow:

Parameter	Name	Set value	Description
AH1	Upper alarm value	4.00	The relay output is upper alarm
dH1	Upper alarm hysteresis	0.05	Can be set freely
AL1	Lower alarm value	1.00	The relay output is lower alarm
dL1	Lower alarm hysteresis	0.05	Can be set freely

Example 2: Require start pump when lower than 1m, stop pump when higher than 4m. Push down the SET key for 3 second, enter the first-level parameters menu，the parameters are as follow:

Parameter	Name	Set value	Description
AL1	Lower alarm value	1.00	The relay output is lower alarm
dL1	Lower alarm hysteresis	3.00	

Example 3: Require start pump when higher than 4m, stop pump when lower than 1m. Push down the SET key for 3 second, enter the first-level parameters menu，the parameters are as follow:

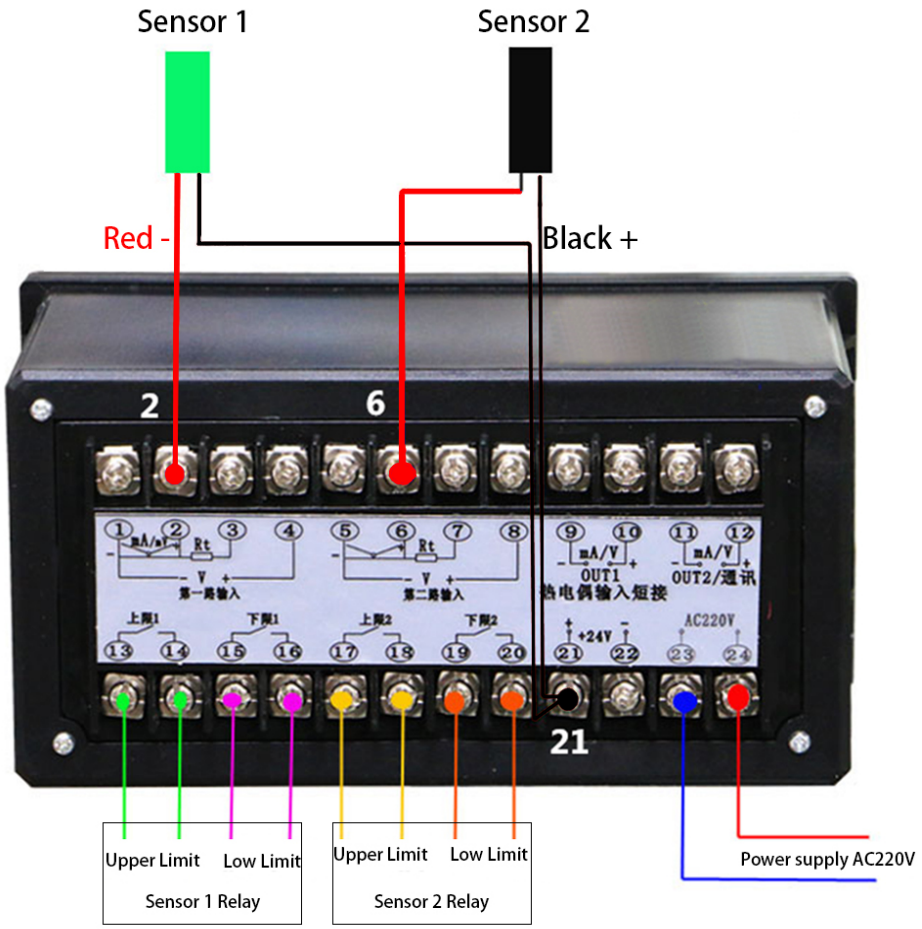
Parameter	Name	Set value	Description
AH1	Upper alarm value	4.00	The relay output is upper alarm
dH1	Upper alarm hysteresis	3.00	

Wiring

Before wiring, please confirm the corresponding relationship between the cable color and the positive and negative with the manufacturer of the sensor.

Example

T80 220V 4 Alarm and Relay, sensor 1: 4-20mA, Black +, Red -, Sensor 2: 4-20mA, Black +, Red -
The positive (+) terminal (21) of the instrument is connected to the black wire of the sensor.
The negative (-) terminal (2) of the instrument is connected to the red wire of the sensor 1.
The negative (-) terminal (6) of the instrument is connected to the red wire of the sensor 2.



Note: The external AC contactor or alarm is required if the current of the load exceeds 3A.

T80 220V Terminales