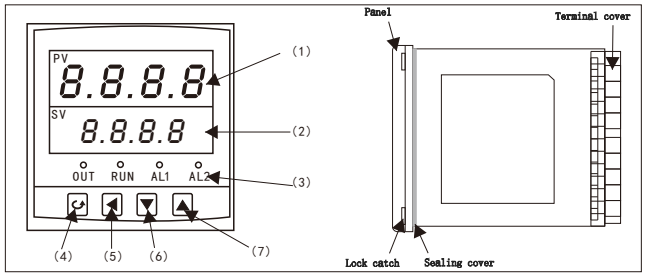
Ⅰ. Product Overview

It is a simple single-loop digital display controller with easy operation, 0.3-level measurement accuracy, and 7 types of external dimensions. It is equipped with dual four-digit LED displays and can support the input of thermocouples, thermal resistors, voltage (with square root calculation available), current (with square root calculation available), and transmitters. It is suitable for monitoring industrial process variables such as temperature, pressure, flow, and humidity. It supports 2-channel alarm functions, 1-channel transmission output, or an RS485 communication interface that adopts the standard MODBUS protocol. There is 1-channel DC24V feed output, and the input terminal, output terminal, and power terminal are photoelectrically isolated.

It is powered by a 100-240V AC/DC or 20-29V DC switching power supply, installed in a standard card-in manner, and operates in an environment with a temperature of 0-50 °C and a relative humidity of 5-85% RH without condensation.

Ⅱ. Structural Diagram of the Display Panel

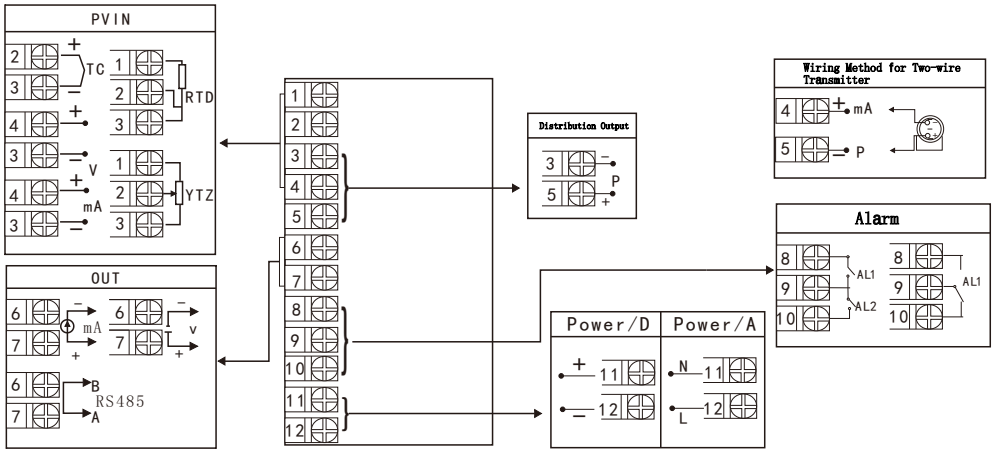
(1) PV display window (for measured value);
(2) SV display window (displays input type and other parameters in the measurement state, and displays the set value in the parameter setting state);
(3) Indicators for the first alarm (AL1), the second alarm (AL2), the run light (RUN), and the output light (OUT);
(4) Confirm key; (5) Shift key;
(6) Decrease key; (7) Increase key.



Ⅲ. Overall Dimensions and Mounting Hole Dimensions

Overall Dimensions/Code	Overall Dimensions/Code	Mounting Hole Dimensions
HWP-C903	96*96mm (Style)	92*92mm

Ⅳ. Terminal Wiring



HWP-C903

Note:In the above wiring diagram, if the same group of terminals is marked with different functions, only one function can be selected. For instance, the RS485 communication function and the transmission output function are on the same group of OUT wiring terminals, so only one of them can be chosen.Note:In the above wiring diagram, if the same group of terminals is marked with different functions, only one function can be selected. For instance, the RS485 communication function and the transmission output function are on the same group of OUT wiring terminals, so only one of them can be chosen.

After the instrument is powered on and self-checked, it automatically enters the working state. In the working state, press the key to perform parameter setting.

(1) Long press the key to advance automatically;
(2) In any other menu, long press the key for 5 seconds to return to the measurement screen;

★ Return to Working State

(1) Manual return: In the instrument parameter setting mode, press and hold the key for 5 seconds, and the instrument will automatically return to the real-time measurement state.
(2) Automatic return: In the instrument parameter setting mode, if no key is pressed, the instrument will automatically return to the real-time measurement state after 60 seconds.

4.1 Primary Parameter Setting

In the working state, press the key: the PV displays LOC, and the SV displays parameter characters; use the increase and decrease keys to perform setting. The primary parameters are as follows (the parameters in the table correspond to the functions of the ordered model; if there is no such function, the corresponding parameter will not be displayed).

Parameter	Symbol	Name	Setting Range (Word)	Description	Factory Preset
LoC	LoC	Set Parameter Lock	LoC=0 LoC≠0 or 132 LoC=132	No lock (primary parameter modification is valid) Locked (primary and secondary parameter modifications are invalid) No lock (primary and secondary parameter modifications are valid)	00
AL1	Al1	First Alarm Value	-1999～9999	Setting value for the first alarm	50 or 50.0
AL2	Al2	Second Alarm Value	-1999～9999	Setting value for the second alarm	50 or 50.0
AH1	Ah1	First Alarm Hysteresis	0～9999	Hysteresis value for the first alarm	02 or 2.0
AH2	Ah2	Second Alarm Hysteresis	0～9999	Hysteresis value for the second alarm	02 or 2.0
SdiS	SdiS	Display Content of SV Window in Measurement State	SdiS=0 ; SdiS=1 SdiS=2 ; SdiS=5 SdiS=6 ; SdiS=7	0: Display input signal value; 1: Display first alarm value 2: Display second alarm value; 5: Display pH unit 6: Display °C; 7: Not display	0

4.2 Secondary Parameter Setting：

In the working state, press the PV key displays LOC, and SV displays parameter characters; use the increase and decrease keys to perform setting. When LOC=132 and the key is long-pressed, enter the secondary parameters.
The secondary parameters are as follows (the parameters in the table correspond to the functions of the ordered model; if there is no such function, the corresponding parameter will not be displayed):

Parameter	Symbol	Name	Setting Range (Word)	Description	Factory Preset Value
Pn	PN	Input Division Number	0～35	Set input division number type (see Input Signal Type Table)	27
dP	DP	Decimal Point	dP=0; dP=1 dP=2; dP=3	0: No decimal point; 1: Decimal point at tens place (display XXXX.X); 2: Decimal point at hundreds place (display XX.XX); 3: Decimal point at thousands place (display X.XXX)	0
AL1	ALM1	First Alarm Mode	ALM1=0;ALM1=1 ALM1=2	0: No alarm; 1: First alarm is lower limit alarm (heating mode); 2: First alarm is upper limit alarm (cooling mode)	2
AL2	ALM2	Second Alarm Mode	ALM2=0;ALM2=1 ALM2=2	0: No alarm; 1: Second alarm is lower limit alarm (heating mode); 2: Second alarm is upper limit alarm (cooling mode)	1
FK	FK	Filter Coefficient	0～4	Set instrument filter coefficient to prevent display from jittering	0
Addr	ADDR	Device Number	0～250	Set device code of this instrument for communication	1
bAud	BAuD	Communication Baud Rate	1200; 2400 4800; 9600	Communication baud rate is 1200bps; Communication baud rate is 2400bps; Communication baud rate is 4800bps; Communication baud rate is 9600bps	9600

Parameter	Symbol	Name	Setting Range	Description	Factory Preset Value
Pb	Pb	Zero Shift of Display Input	Full Scale	Set the zero shift amount of display input	0
PK	PK	Range Ratio of Display Input	0~1.999 times	Set the magnification ratio of display input range	1.000
OuL	OuL	Upper Limit of Transmit Output Range	Full Scale	Set the upper limit range of transmit output	0
OuH	OuH	Lower Limit of Transmit Output Range	Full Scale	Set the lower limit range of transmit output	1000
PL	PL	Lower Limit of Measurement Range	Full Scale	Set the lower limit range of input signal measurement	0
PH	PH	Upper Limit of Measurement Range	Full Scale	Set the upper limit range of input signal measurement	1000
Cut	Cut	Small Signal Cutoff for Measurement	0.000-1.000	This function is only valid for voltage/current square - root signals. Formula: Input signal < (Input signal lower limit + (Input signal upper limit - Input signal lower limit) * set percentage), the instrument displays the lower limit of the measurement range	0.000
Out	Out	Transmission Output Type	Signal Type: 0-20mA / 0-10mA / 4-20mA	Parameter Symbol: 20mA / 10mA / 4-20	Signal Type: 0-5V / 1-5V / No Output; Parameter Symbol: 0-5A / 1-5A / 0mA; 4-20
T-Pb	T-Pb	Cold Junction Zero Correction	Full Scale	Set cold junction endpoint correction value	0
T-PK	T-Pk	Cold Junction Gain Correction	0~1.999 times	Set zero migration of transmission output	1.000
o-Pb	o-Pb	Zero Shift of Transmission Output	-1.999~2.000	Set amplification ratio of transmission output	0
o-PK	o-Pk	Amplification Ratio of Transmission Output	0~2.000	Power frequency is 50Hz	1.000
FSEL	FSEL	Power Frequency Selection	FSEL=0 FSEL=1	Power frequency is 60Hz	0
diSt	DISt	Sampling Filter	1~5	Set instrument sampling filter:The smaller the value, the faster the sampling speed;The larger the value, the slower the sampling speed	5

Note: Method for quickly switching the division number: Change the secondary parameter Pn, move the decimal point to the thousands or hundreds place, and press the increase or decrease key to switch the first and last division numbers; when the decimal point is in the tens place, switch division numbers at intervals of ten; when the decimal point is in the units place, switch division numbers in sequence.

5 Digital Communication

Digital communication allows the display instrument to communicate with a PC or computer network system. The communication protocol adopts the MODBUS RTU protocol. For detailed information about the protocol, please visit: www.modbus.org. It is not recommended to use non-isolated interface boards, as communication may be affected by interference or different ground potentials. Shielded twisted-pair wires should be used for the conductors.

★ For specific parameters, please refer to the 《Instrument Communication Manual》.

If the content of this instruction manual changes, we will not notify you separately.

Method for Removing the Movement from the Shell

The movement of the instrument can be pulled out from the shell. The method is to pull the latches on both sides of the front panel of the instrument outward, then grasp the front panel of the instrument and pull it outward, so that the movement can be separated from the shell. When reinstalling, be sure to push the movement tightly after inserting it into the shell, and lock the latches to ensure the protection standard.

Input Signal Type Table

Division Number Pn	Signal Type	Measurement Range	Division Number Pn	Signal Type	Measurement Range
0	Thermocouple Type B	400~1800℃	17	0~500Ω linear resistance	-1999~9999
1	Thermocouple Type S	0~1600℃	18	0~350Ω remote transmission resistance	-1999~9999
2	Thermocouple Type K	0~1300℃	19	30~350Ω remote transmission resistance	-1999~9999
3	Thermocouple Type E	0~1000℃	20	0~20mV	-1999~9999
4	Thermocouple Type T	-200.0~400.0℃	21	0~40mV	-1999~9999
5	Thermocouple Type J	0~1200℃	22	0~100mV	-1999~9999
6	Thermocouple Type R	0~1600℃	25	0~20mA	-1999~9999
7	Thermocouple Type N	0~1300℃	26	0~10mA	-1999~9999
8	Thermocouple Type F2	700~2000℃	27	4~20mA	-1999~9999
9	Thermocouple Wre3 - 25	0~2300℃	28	0~5V	-1999~9999
10	Thermocouple Wre5 - 26	0~2300℃	29	1~5V	-1999~9999
11	Thermal Resistance Cu50	-50.0~150.0℃	31	0~10V	-1999~9999
12	Thermal Resistance Cu53	-50.0~150.0℃	32	0~10mA square root	-1999~9999
13	Thermal Resistance Cu100	-50.0~150.0℃	33	4~20mA square root	-1999~9999
14	Thermal Resistance Pt100	-200.0~650.0℃	34	0~5V square root	-1999~9999
15	Thermal Resistance BA1	-200.0~600.0℃	35	1~5V square root	-1999~9999
16	Thermal Resistance BA2	-200.0~600.0℃			-1999~9999

产品合格证

符合标准: GB/T 13639

检 验 员: 检 01

出厂日期: 见产品或盒贴出厂编号

本产品经检验合格,准予出厂。

C-Lin 欣灵电气股份有限公司 XINLING ELECTRIC CO.,LTD

产品合格证

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RECYCLABLE

浙江省知名商号 国家高新技术企业

C-Lin 欣灵

使用说明书
Products Instructions

HWP-C903

Intelligent Single - Loop Digital Display and Control Instrument

Thank you very much for using C-Lin brand instruments. Please read the instruction manual before using the product!

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