aobo

instrument

2024
PRODUCT
INTRODUCTION

Intelligence PID Regulator

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Company Profile

Weifang AOBO Instrument Technology Development Co., Ltd., founded in 2002, with registration capital of 10 million RMB, is a "High-Tech" and "Double-Software Certification" enterprise specialized in "flow measurement and intelligent measurement & control" industry, integrating R&D, production, sales and service.

The company has a core R&D team for computer software and technology, automatic intelligent control, HVAC engineering design and flow measurement. It has the ability to provide customers with specific solutions and complete sets of products according to their different needs, based on years of practical experience. Especially in the heating industry, by the customer's recognition, has a high reputation in the industry.

The products are mainly used in the measurement and control of "steam, liquid, gas, sewage and tap water"; and especially suitable for energy monitoring and energy-saving control in many industries, such as thermal power plants, thermal companies, residential heating, petroleum, chemical industry, papermaking, food, coating, printing & dyeing and HVAC.

Since its foundation, based on self-developed and leading technology, reliable quality, high-quality service and good reputation, our company has been warmly accepted by customers, and become a designated supplier for many central enterprises and listed companies.

Contact

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All of the catalogue and company information can be found at:

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I. Product Overview

Artificial intelligence temperature controller/adjuster adopts real artificia intelligence formula. When instrument starts self tuning function, it will automatically find optimal parameters according to the features of objects to realize a good control effect, and need no manual tuning parameters. The precision of temperature control is around ±0.1 ℃, without overshoot or undershoot. Temperature controller can reach up to international advanced level. It can work with all sorts of sensors and transmitters to realize the measured display of physical quantity like temperature, pressure, liquid level, capacity, power and etc, and possesses PID adjustment and control, alarm control, data collection and other functions on electric heating devices, solenoid valve and electric valves with the assistance of all sorts of actuators. It is suitable for industrial furnace, electric furnace, drying furnace, experiment devices, shoemaking machinery, injection molding machinery, packaging machinery, food machinery, printing machinery and other industries.

With many input types, an instrument can receive and use different input signals which greatly reduce the number of stand-by instruments. Single set PID control or double PID computing control is available for the instrument (for example, heating/cooling control system). PID control output: current, voltage, SSR, single-phase/ three-phase SCR zero-crossing trigger, valve positive inversion control and other methods are available. Position alarm control, analog transmitting output, RS485/232 communication and other functions are available to attach.

II. Technical Parameters

Input				
Input signal	Current	Voltage	Resistance	Couple
Input impedance	≤250Ω	≥500KΩ		

Limit of maximum input current	30mA			
Limit of maximum input voltage		＜6V		
Output				
Output signal	Current	Voltage	Relay	24V power distribution or feed
Load allowed upon output	≤500Ω	≥250KΩ (Note: Need to replace the module when a higher load capacity is necessary)	AC220V/0.5A(low) DC24V/0.5A(low) AC220V/2A(high) DC24V/2A(high) See notes	≤30mA
Regulation output				
Control output	Relay	Single phase SCR	Two-phase SCR	Solid state relay
Output load	AC220V/0.5A(low) DC24V/0.5A(low) AC220V/2A(high) DC24V/2A(high) See notes	AC660V/0.1A	AC600V/5A (In case of direct drive, this shall be indicated)	DC12V/30mA
Comprehensive parameters				
Measurement accuracy	0.2%FS±1 byte			
Setting method	Panel touching key number setting; parameter set value locked by password; set value is stored permanently after outage.			
Display mode	Red/green LED double row display or red/green LED double row display + 51 segments LED bar graphic display			
Operating environment	Ambient temperature: 0 to 50℃; relative humidity: ≤85%RH; away from strongly corrosive gases.			
Working power supply	AC 100 to 240 V (switching power supply) (50-60 HZ); DC 20 to 29 V (switching power supply)			
Power consumption	≤5W			
Structure	Standard snap-in			
Communication	Adopt standard MODBUS communication protocol, with RS-485 able to reach up to 1 km and RS-232 up to 15 m in terms of their communication distance. Note: When the instrument is equipped with the communication function, an active communication converter is recommended.			

Note: For Type D and E instruments, the load capacity allowed for relay output is AC 220 V/0.6 A or DC 24 V/0.6 A.

III. Instrument Panel and Display Functions

1) Outline dimensions and hole size of the instrument:

Outline Dimensions	Hole Size	Outline Dimensions	Hole Size
160*80mm (horizontal/bar graphic)	152*76mm	96*48mm (horizontal)	92*45mm
80*160mm (vertical/bar graphic)	76*152mm	48*96mm (vertical)	45*92mm
96*96mm (squared/bar graphic)	92*92mm	72*72mm (squared)	68*68mm
48*48mm (squared)	45*45mm		

2)Display Window

PV Display Window: display measured values; in case that the parameters are set, display parameter signs

SV Display Window: display PID calculation results in the manual status; display content in the automatic status can be defined via DISP in the secondary menu; in case that the parameters are set, display the parameter values set

3)Panel indicators

A/M: Automatic/manual switchindicator

EV1: Event alarm indicator

AL1: First alarm indicator AL2: Second alarm indicator

OP1: Output indicator (clockwise)

OP2: Output indicator (anticlockwise) OP3: Output indicator

OP4: Output indicator

4) Operation Keys

	Enter Key: confirm after number and parameter revision Page Turning Key: page down for parameter setting Setting Exit Key: return to the measurement page by pressing the key for two seconds Use together with can realize switch of automatic/manual control output
	Shift Key: move to the left by one byte upon one press Backspace Key: return to the parameter at a previous level by pressing the key for 2 seconds
	Decrease Key: decrease value Display time when with the print function In jog output, valve jog can be turned down
	Increase Key: increase value Be used for manual printing when with the print function In jog output, valve jog can be turned up

5)Instrument wiring

1)Outline dimensions and hole size of the instrument:

Attention is to be paid to the following matters upon site wiring of instruments: PV input (measurement input)

1.Reduce electrical interference by making the wiring between low voltage D.C. current signals and sensor input far away from strong current routing. Otherwise, use shielded conductor and get grounded at the same point.

2.Any device placed between the sensor and the terminal may affect measurement accuracy due to electric resistance or leakage current.

Thermocouple or pyrometer

input Use compensation wire corresponding with thermocouple as the extension line and it is better with shielding.

RTD input

The electric resistance of three conductors shall be the same, with the electric resistance of each conductor no more than 15 Ω; if conductors fail to meet any of the said requirements, it will lead to deviation in thermocouple measurement.

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