YUDIAN
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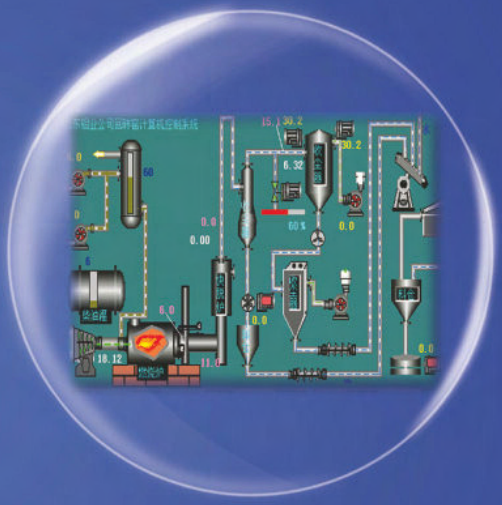


Product Catalogue

High Performance and Power Saving

Artificial Intelligence Temperature Controlling

Industrial Process Automation System

20 years professional experience

History

1990

YCC series single/4-channel high precision programmable temperature controllers were released and became popular in the academic laboratories due to its functions, reliability and affordability. It was the first self-developed controller with universal input and automatic tuning function in China.

1994

Artificial Intelligence (AI), a technology breakthrough in the Chinese instrument industry, was applied in AI- series Industrial Controllers. They were programmable with universal inputs, auto-tuning and self-learning artificial intelligence algorithm. They were of high quality, compact and very affordable.

1996

Yudian was the first company in the world to develop and release modular controllers with artificial intelligence, making a revolutionary breakthrough in global instrumentation.This made mass production possible, bringing great reduction in production cost and leadtime.

1997

Chinese first practical industrial communication protocol AIBUS was released. Its platform was open based on AIFCS on-site computer controlling system between Windows and AI instruments network. As the most valuable choice, accumulated customers are more than 10,000.

1998

Modern streamline manufacturing facilities were established. Among Chinese market, Yudian was the first to achieve ISO 9002-94 quality certification, assuring quality and reliability as equivalent as imported instruments. Later in 2001, Yudian achieved ISO 9001-2000 quality recognition.

2001

First to achieve CE certification in the China instrument industry. Higher standard CQC quality assurance was adopted before compulsory Chinese 3C certification. The safety and electromagnetic compatibility reached international standard. Ability in anti-interference was dramatically increased.

2004

First to achieve ISO 14000 certification in the China instrument industry. Be green to earth, international energy saving level was applied and use of environmental hazardous substances was avoided. Energy saving is always in the mind during designing.

2005

New generation instruments featuring high degree of resources sharing and high performance-price ratio were released. Yudian became the top Chinese instrument manufacturer having the largest market share and strongest competence in China.

2006

Multichannel temperature controller AI-7048 and DIN rail mounted D5 series were launched. AI-7048D5 is the world smallest 4-channel temperature controller. Modern factory facility with production capacity of 2 mil. in Xiamen Hi-tech industrial development zone was put in use.

2007

AI-5600 Handheld High Precision Thermometer, having the highest precision 0.02%FS (with Pt100) among the same kind in the world was proudly launched. The accuracy is 5-10 times higher than similar thermometer in the market.

2008

Leading in the industry, Yudian applied lead-free soldering and RoHS compliance, working hard to protect the environment. New generation AI V8.0 series were released, with worldwide used parameter table, more functions but more energy saving and higher precision.

2010

New industrial monitoring and controlling system, featuring true-colored HMI and conventional instruments was launched. It benefits from user-friendly touch screen interface and reliability and strong anti-interference of instruments.

2011

Ultra high precision Process controller AIJ is launched. With 24-bit A/D, 5-digit display, accuracy up to 0.05%FS, it is suitable for university research, metrology and precise temperature/process control.

Yudian -

an emerging automation instrument expert

Yudian Automation Technology Ltd. Co. has been devoting itself to the development and manufacturing of industrial process automation controller instruments since 1991. Through over 20 years of development, YUDIAN became the top one Chinese intelligent instrument manufacturer, claiming the biggest domestic market share. Our instruments are applied in industries spanning from chemical, petroleum, metallurgy, to pharmaceutical, food and beverage, and academic laboratories. Our products have established the statue of high quality and reliable instruments.

Based in Hong Kong, Yudian has established overseas market with subsidiary companies and branches in North America and Oceania. Now our products have been sold in all over the world, including Hong Kong, India, Australia, New Zealand, America, Southeast Asia and Europe, and are highly ranked by our customers.

Yudian has constructed a 10,000m² new-type factory building in the Xiamen Hi-tech industrial development zone. With advanced production and test equipments including full automatic computer placement machines, lead-free dual crest welders, infrared reflow welders, high-temperature and high-voltage aging room, electromagnetic compatibility testing, temperature and humidity environment testing, Yudian produces automation products at the highest quality with the highest precision and reliability.

Main products:

- AI Series of Intelligent Industrial / Temperature Controllers
- Multi-channel Indicating / Alarming Instruments
- Flow Totalizers
- Voltage/Current/Power Meter
- True-color HMI Touch Screen/Split Paperless Recorder
- Solid State Relay
- 3-Phase Thyristor Phase-shifting Trigger
- Artificial Intelligence Distributed Control System

High Quality - Our Pride

- Achieved certification of CE, IS09002, ISO 9001-2000, ISO 14001 and CQC. UL certification in process.
- Application of environment friendly lead-free welding technology since 2006, satisfying European RoHS Standard.
- Offers 36 months of product warranty.
- Achieved a stable overall product return ratio less than 0.5%.

Technology - Our Cornerstone

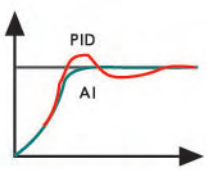
From the beginning, Yudian has been devoting itself to the development and innovation of intelligent industrial automation instruments. We have brought several technology breakthroughs in our industry. As the undisputed industry leader in China, Yudian contributed and will continue to contribute to the progress of the intelligent instrumentation industry.

Programmable Universal Input Technology

In 1991, Yudian was the first company in the world which developed programmable universal input technology for its instruments. Now, standard input like thermocouples, RTDs or voltages/currents can be user specified. Furthermore, users can choose to install the input type by entering their own calibration table, or alternatively, Yudian can download users' calibration table and install it for them. Therefore, almost all input requirements can be satisfied.

Artificial Intelligence Control Technology

Yudian artifical intelligence control technology, first released in 1991. Integrates PID control, self-learning and fuzzy logic control technology to achieve the functionality of auto-tuning along with high precision control without overshoot or undershoot. In 1994, this technology was improved to provide the auto tuning and control of pressure, flow and other physical quantities.



Fast Communication

In 1994, based on the RS485 communication interface, Yudian developed the AIBUS communication protocol, offering easy of use, highly efficiency and numerous functions. At the baud rate of 19200, it takes only 20ms on average to read three variables and one parameter. That is three to ten times of the speed achieved by other commonly used protocols such as MODBUS. In a FCS (Fieldbus Control System) built with our instruments that use our AIBUS protocol, desired refreshing rate can be obtained even when every serial port is connected to up to 50 instruments. FCS of small, middle, and large sizes can be easily customized by adding the right number of serial ports and connecting to a computer or a computer network. A flexible FCS like this is capable of achieving the same quality of control as a DCS (Distributed Control System), while most other brand products can only connect to less than 20 instruments, beyond of which may lead to slow refresh rate and poor display effect making them useful only in small systems.

Platformization Design

Yudian AI series instruments initiated the platformization in the design of its instruments. It featured a universal motherboard that contains I/O interfaces, module slots, display interface, A/D convert unit and power unit. By installing different software and components, we can build instruments with various functions, such as temperature/process controllers, complicate loop controllers, dual loop controllers, multiple channel indicating/alarming instruments, or flow totalizers.

Modularized Power Auto-Isolation Technology

Modularized power auto-isolation technology isolates signal groups of communication, current output and on-off signal input. the newly developed DC/DC converter, cooperating with opto-electric isolation technology, isolates multiple input/output signals. This technology guarantees that our instruments work reliably in complicated environments.

Multi-channel Control Technology

A new generation of multi-channel temperature control technology, high-precision measurement ability. Measurement accuracy up to FS 0.2%, Accurate measurement and stability control, which can improve product quality while reducing cost, because of lower temperature drift and effective energy conservation. Where AI-7048D5 is the current global the smallest 4 channel temperature controller, which size is 22.5mm mounting dimensions only. (DIN rail mounting).

Modularization

In 1997, Yudian developed the modularization technology in instruments that dramatically increase the variety of functions and options that a controller can offer. In addition to SSR, Relay, and 4-20mA current outputs offered by existing intelligent instruments, our AI series of controllers allow output choices like thyristor single-phase/three-phase zero crossing trigger output, thyristor single-phase phase-shifting trigger output and TRIAC no contact switch output. Modularization made batch production possible, thus enabling quick order fulfillment, quick product repair and easy maintenace by users and revolutionizing the industry of instrumentation.

User-Friendly Operating Interface

All our AI series instruments are compatible to each other and are the only instruments on the market that provide both European and Japanese way of modifying data editing, making installation and operation of our instruments extreme convenient.

"Burnt Proof" Technology

Yudian developed the "burnt proof" technology which integrates the technology of "strong trigger", and is the most advanced, reliable, simple and low cost thyristor trigger with the best performance.

Intelligent Light Bar Panel

Yudian intelligent light bar panel initiatively applied the brightness adjustment technology of LED tube and adopts the combination of length identification and brightness identification. This combination realizes the resolution of 1% while reduces the number of LED.

Linear Power Output

Yudian's AIJK3 intelligent three-phase phase-shifting trigger and K5 single-phase phase-shifting trigger module apply intelligent phase adjustment technology to makes our instrument's output proportional to the power of the execution element, improving control precision.AIJK3 also applies auto-synchronization technology and supports non-synchronized power supplies, thus making the wiring easy, reliable and fast.

380VAC/10Seconds Protection on Power Terminals

This function gives ten seconds of protection on the terminals when the instruments is connected to 380VAC power supply by mistake or when the voltage of instrument power raises suddenly due to short of neutral wire.

True-color HMI Touch Screen/Split Paperless Recorde

Newly launched true-color Human Machine Interface (HMI) Touch Screen/Split Paperless Recorder combines the high reliability of conventional digital measuring and controlling and the user-friendly interface. It leads to a new generation of panel installed instrument controlling system.

The High Performance Design

----Not only benefits our customers but also provides benefit to society and the environment

High Performance Hardware and Environment Friendly Design

Yudian has pioneered by applying the "High Friendly" concept to its AI series instruments:

- Replaced electronic capacitors with high performance tantalum or ceramic capacitors;
- Installed ultra bright LED displays to reduce power consumption;
- Used ultra low dropout diodes to improve efficiency;
- Used 1% accuracy resistors for better temperature measurement.

Yudian products offer superior quality and outstanding performance as highlighted below:

- Strong anti-interference ability: The power and I/O terminals withstand passing 4KV/5KHz burst pulses. CE standard for process controllers is2KV.
- Low power consumption: ≤5W
- Adaptability in wide range of environments: the instruments function properly in a wide range of environments, temperature of 100 ℃ and Humidity lower than 65%RH
- High speed CPU: Sampling rate is 12.5 times per second and minimum control period of 0.24 second.
  Replacement of EEPROM with FRAM: FRAM allows 1 billion times of data writing.

Long Service Life and Low Failure Rate, Less Electronic Garbage

AI series instruments and industrial control modules are designed with a service life of more than 10 years, with 3-year free repair within the warranty period. An easily replicable modular design and one billion times rewritable FRAM extends the service life of the products, effectively reducing the occurrence of electronic garbage, as well as the cost generated by replacing faulty and low performance instruments.

A series of protection functions such as surge protection at power up and 380VAC protection reduces the failure rates occurred. At present, annual return rate inclusive of user installation related issues are lower than 0.5%, reducing both the usage cost and waste due to the destruction of disabled instruments.

Precise Measurement and Control, Energy Saving for Customers

Yudian instruments are strictly controlled on temperature drift. The measurement temperature drift of AI-7/8 series high performance energy saving instrument Is less than 30ppm/℃, far lower than the market standard. Low temperature drift not only improves the product quality, but also reduces power consumption. For example, where one customer has a heating device that can normally operate under 200 -220℃, the use of low-precision instruments set at 210 ℃ with the drift of±10 is reluctant to satisfy the production specifications, while YUDIAN instrument can stabilize temperature interval under 201 ℃ with a drift of ±1 ℃, reducing the heating temperature from 210 ℃ to 220 ℃ resulting in power saving calculated to about 5% of the electric bill.

Using S thermocouple or Pt100 RTD, the measurement will be more stable rather than K or J-type thermocouple is used. Better insulating materials and lower set value (SV) as possible with consideration of manufacturing practice will also save energy effectively.

Power Consumption Reduction

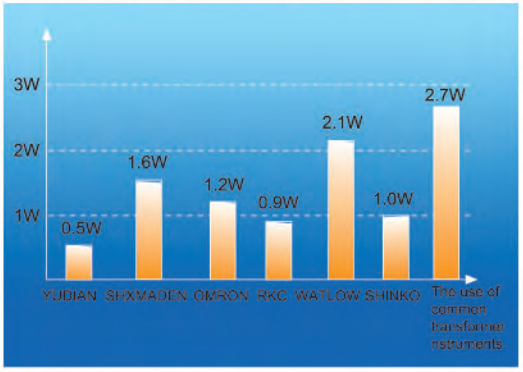
The use of high-efficiency switching mode power supply greatly reduces the power consumption, and adaptation of super-luminance LED display reduces power consumption by half. In zero output, the consumption is only around 0.5W, far below the competing products.

Energy saving relay module use high currents only at the beginning of the engaging action, compared with the engaged status being reduced to 50%. This smart technology enables the power consumption to be reduced from 0.2~0.4W to 0.1~0.2W.

Newly-designed G1 module uses 5V/30mA signal to drive SSR while standard G module uses 12V/30mA. G1 can reduce also with 0.1~0.2W the overall power consumption.

In integrated applications, AI instruments can decrease about 2W of power consumption in comparison with other similar products, not only saving energy but also reducing the temperature rise of instruments while increasing the maximum service temperature and reducing the measurement temperature drift. Calculated by service life of 10 years, each instrument can save 175 kilowatt-hour electricity. For a factory with 1000 sets, accumulative saving can be estimated to more than RMB 100,000.

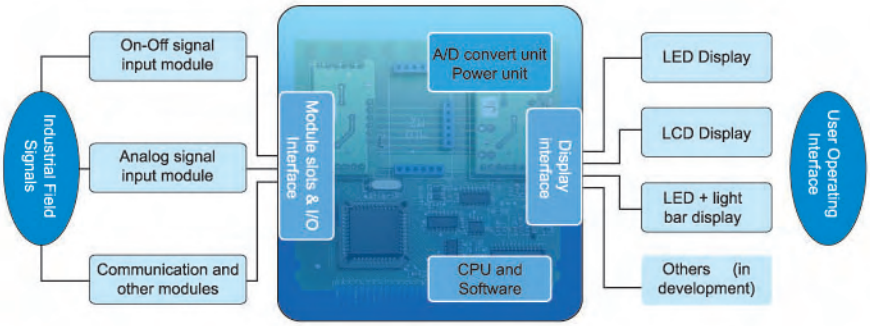
Instrument power consumption itself under no-load



Dimensions for all instruments: 48*48mm. other products from other manufacturers can be directly bought on the market.

High Resources Sharing, Low Cost and High Performance

Yudian AI series instruments initiated the platformization in the design of its instruments. It featured a universal motherboard that contains I/O interfaces, module slots, display interface, A/D convert unit and power unit. By installing different software and components. we can flexibly build instruments with various functions.



Freely installed internal module, "customizing" the instrument for your preference

YUDIAN provides modularized input/output for users to customize the instrument themselves. Modularization realizes mass production, quick delivery and provides higher performance/price ratio products for all users. Dozens of modules including various analogue and on-off signal input/output modules, communication and power modules are available for customers.

Analog signal output modules

X3 High precision photoelectric isolated linear current output module. (Use internal 12V DC instrument power supply)
X5 High precision photoelectric isolated linear current output module. (With its own isolated power supply)

Communication interface modules

S opto-electric isolated RS485 communication module (use instrument's internal 12V isolated power)
S4 opto-electric isolated RS485 communication module (with its own photoelectric isolated power)
R RS232 communication/printer interface

On-off signal output modules

L1 Big volume relay output (normal open + normal closed, capacity 250VAC/2A)
L2 Small volume relay output (normal open +normal closed, capacity 250VAC/1A)
L4 Small volume and long life relay output module (capacity 250VAC/2A, with capacitor resistor absorber)
L5 Dual relay output (normal open, capacity 250VAC/2A)
G SSR voltage output (DC 12V/30mA)
W1 "Burnt free" TRIAC no contact output (normal open, suitable for AC contactor below 80A, capacity 100-240VAC/0.2A)
W2 "Burnt free" TRIAC no contact output (normal closed, capacity 100-240VAC/0.2A)
W5 2 "Burnt free" TRIAC no contact outputs (normal closed, suitable for control of servo direct/reverse rotation)

Voltage output modules (for external transducers / low power equipments)

V5/V10/V12/V24 Isolated 5V, 10V, 12V, 24V DC output (use instrument's internal 24V isolated power)
U5 Non-isolated 5V DC output

Analog and discrete signal input modules

J0 1 three-wire RTD input or 1 thermocouple + 1 two-wire RTD inputs
J1 2 thermocouple inputs
J2 2 two-wire RTD inputs
J3 2 voltage inputs
J4 2 current inputs
J5 2 two-wire transmitter inputs (includes 24VDV power supply)
I2 Frequency / external on-off signal input (providing 12V power from instrument's internal isolated 24VDC power supply)
I3 1 0-5V / 1-5V voltage input interface (providing 24V power from instrument's internal isolated 24VDC power supply)
I4 1 0-2mA / 4-20mA current input interface (providing 24V power from instrument's isolated 24VDC power supply)
I5 2 on-off signal inputs (source - sink input)
I7 AC current input, measurement range 0-5A AC
I8 AC voltage input, measurement range 0-500V AC

Thyristor trigger output modul

K1 "Burnt free" single zero crossing trigger output (100-380VAC, can trigger thyristor of 5-500A)
K3 "Burnt free" triple zero crossing trigger outputs (100-380VAC, take OUTP and MIO slots)
K5 "Burnt free" single phase-shifting trigger output (200-240VAC)
K6 "Burnt free" single phase-shifting trigger output (340-415VAC)

Free selection of panels of multiple dimensions

Dimensions A \ A2 (with light Bar) \ A6 (with LCD)


Dimensions A
(Size:96*96mm)


Dimensions A2
(Size:96*96mm)

Dimensions A6
(Size:96*96mm)

Dimensions D \ D2\ F

Dimensions D
(Size:72*72mm)

Dimensions D2
(Size:48*48mm)

Dimensions F
(Size:96*48mm)

Dimensions E /E2/ E5 (DIN Track Mounting) , E8 (Hand-held display)

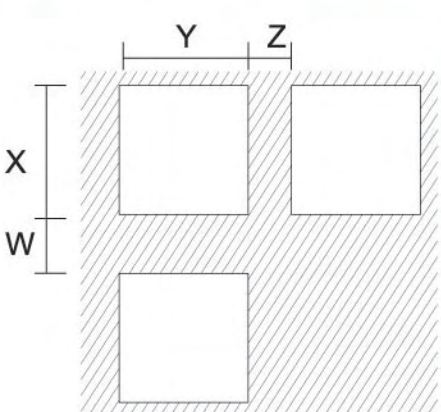
Dimensions E
(Size:48*96mm)

Dimensions E2
(Size:48*96mm)

Dimensions E5
(DIN Track Mounting)

Dimensions E8
(Hand-held display)

Cutout dimension（mm)



Instrument outline	Cutout dimension（mm)			
	X	Y	Z	W
A/A2/A6	$92^{+0.}$	$92^{+0.}$	⩾0	⩾30
D	$68^{+0.}$	$68^{+0.}$	⩾0	⩾30
D2	$45^{+0.}$	$45^{+0.}$	⩾0	⩾30
E/E2	$92^{+0.}$	$45^{+0.}$	⩾0	⩾30
F	$45^{+0.}$	$92^{+0.}$	⩾30	⩾8

AI-508/509 series economical temperature controllers

Economical, Efficient and Easy to Operate

- Ideal temperature control for the plastic industry, food manufacturing, packaging industry, ovens heating and environmental test equipment and etc.
- Support different thermocouples and RTDs input. Temperature control range is from -50 ℃ to +2300 ℃ with accuracy 0.3%FS.
- Modular output of SSR voltage, relay, single/3-phase thyristor trigger and TRIAC no contact trigger are selectable. Control period adjustable from 0.5-120 seconds.

- Multiple programmable alarms including high/low limits, high/low deviation alarms
- Artificial intelligence control algorithm with auto-tuning function and self-learning avoids the overshoot problem of traditional PID algorithm achieving precise and stable control.
- Power Supply can choose 100-240VAC (50Hz/60Hz) or 24VDC
- Display resolution of AI-509 is 0.1 ℃ (selectable)
- Other features such as over range and sensor fail output off, input offset, etc.

AI-516/516P/518/518P/526/526P/519 series industrial / temperature controllers

Widely Applicable,with Higher Universality

- Support various thermocouples, RTDs, linear voltages / currents / resistances and radiation (infrared) thermometer,which accuracy is 0.3%FS.
- Modularization output supports SSR voltage, linear current / voltage, relay contact, TRIAC non-contact switch, single phase / three-phase thyristor zero-cross triggering, single-phase thyristor phase-shift triggering outputs, with control cycle 0.5~120 seconds adjustable.
- Multiple control algorithms as standard PID, AI PID or MPT with auto-tuning, self-learning are selectable, and perform excellent control with no over-shooting or under-shooting. ON/OFF control is also available,2 individual PID parameter,which can apply to heating and cooling in same proccess.

- Typical baud rate AIBUS or MODBUS (AI-526/526P) protocol, supporting RS485 or RS232 communication port, provides convenient data acquisition of small to large controller network via PC or AI True-color HMI Touch Screen/Split Paperless Recorder.
- Support multiple alarm functions of high limit, low limit, high deviation and low deviation, Providing alarm blocking at the power start-up to avoid false -alarm.
- Process value (PV) or Setpoint (SV) can be retransmitted into standard current signal with 14-bit high resolution, 0.2%FS output precision and better than 100ppm/* temperature drift.
- Intuitive programming logic and simple to operate. Any parameter can be promoted for operator access or password protected. Users can set their own passwords for further security.
- AI-516 has 0.3%FS measuring accuracy, support Modbus RTU.

- AI-519 is equipped with the functions of manual/automatic bumpless switch and manual/ automatic tuning functions.
- AI-526 has two groups of independent PID parameter, support heat/cooling dual output, and also support Modbus RTU.
- AI-516P/518P/526P has program control (10 segment program for AI-516P; 30 segment program for 518P/526P, and the program can be changed at any time. It provides programmable and operable commands such as jump (loop), run, pause, and stop, PV start-up function, preparatory function and five power-cut/starting event handling modes.

AI-708/708P/716/716P/733/733P/808/808P/719/719P series high performance industrial controllers

Accurate, Stable and Powerful

- Support various thermocouples, RTDs, linear voltages / currents / resistances and radiation (infrared) thermometer input, which accuracy is 0.2%FS or 0.1%FS.
- In addition to main input, the secondary input is used for remote setpoint or valve signal feedback, able to constitute complicated control system such as cascade or ratio control.
- Modularization output supports SSR voltage, linear current / voltage, relay contact switch, TRIAC non-contact switch, single phase / three-phase thyristor zero-cross triggering, single-phase thyristor phase-shift triggering outputs, with control cycle 0.24~60 seconds adjustable.
- Multiple control algorithms as standard PID, AI PID or MPT with auto-tuning, self-learning are selectable, and perform excellent control with no over-shooting or under-shooting, ON/OFF control is also available.

- Advanced AIBUS protocol, supporting RS485 or RS232 communication port, provides convenient data acquisition of small to large controller network via PC or AI True-color HMI Touch Screen/Split Paperless Recorder.
- Support multiple alarm functions of high limit, low limit, high deviation and low deviation, and customize 4 alarming output ports supporting multiple alarming signal output from the same position. Providing alarm blocking at the power start-up to avoid false -alarm.
- Process value (PV) or Setpoint (SV) can be retransmitted into standard current signal with 14-bit high resolution, 0.2%FS output precision and better than 100ppm/* temperature drift.

- Intuitive programming logic and simple to operate. Any parameter can be promoted for operator access or password protected. Users can set their own passwords for further security.
- AI-808/808P/719/719Ptype controllers are equipped with the functions of manual/automatic bumpless switch and manual/ automatic tuning functions.
- AI-708P/716P/733P/808P/719P controller has 30+20 segments program control, and the program can be changed at any time. Adopting Yudian artifical intelligent algorithms with custom control functions, it achieve smooth curve control. It provides programmable and operable commands such as jump (loop), run, pause, and stop, PV start-up function, preparatory function and five power-cut/starting event handling modes.

AI-5500 / 5600 Handheld High-Precision Thermometer

Master the Standard in Real Time

- Widely used for production, scientific researches and laboratories which require portable precise temperature measurement.
- Input type: Pt100, Pt1000, Cu50, Cu100, K, S, E, T, J, R, B, N, as well as Ω, mV and mA. For thermocouples there are 3 compensation modes, internal, external and manual.
- Measurement accuracy: up to 0.02% FS (AI-5600, Pt100), up to±0.5℃ (AI-5500, Pt100)Mathematical-statistical measurement: Process values, Relative value, Max. and Min. value, Average value, Peak-peak value, Standard deviation and Sampling number.
- Adjustable 6-bit digit display with resolution: Highest is 0.001℃ (RTD) or 0.01℃ (Thermocouple K/E/J/T/N).
- 4 display unit (Ωor mV, ℃, ℉ and K) for RTD and thermocouples
- Low power consumption: 3 AA batteries, typical over 1,500 working hours in no backlit usage.
- Electronic Temperature Characteristic Table is included with AI-5500: interactive search of 11 kinds of thermocouples.

AI-501/701 Indicating/Alarming Instrument

Suitable for indication, alarm and retransmission of temperature, pressure, flow, level humidity etc.

- Supports various thermocouples, RTDs, linear voltages / currents / resistances, AI-501 measurement accuracy is 0.3%FS,AI-701 measurement accuracy is 0.2%FS.
- Provides 4 programmable alarm output including upper limit, lower limit, upper deviation and lower deviation.
- Supports RS485 communication interface, enabling communication with supervisor computers.
- Dual display windows allow a convenient way to set parameters. Display scale and decimal point can be freely selectable.

AI-500/700 Indicating/Alarming Instrument

Suitable for indication, alarm and retransmission of temperature, pressure, flow, level humidity etc.

- Supports various thermocouples, RTDs, linear voltages / currents / resistances, AI-500 measurement accuracy is 0.3%FS,AI-700 measurement accuracy is 0.2%FS. Supports
- Provides 4 programmable alarm output including upper limit, lower limit, upper deviation and lower deviation.
- RS485 communication interface, enabling communication with supervisor computers.
- Single row display.

AI-702M/704M/706M Series Multi-Channel Indicating/Alarming Instrument

Multiple channel measurement with rich algorithms functions.

- Programmable and modular inputs. Multiple input types of thermocouples and RTDs, voltage/current inputs and two-wire transmitters are selectable.
- Every channel can have independent input specification. All channels are equipped with digital adjustment and digital filtering functions and each channel can set different digital adjustment and filtering parameters.
- Provides 1-2, 1-4, 1-6 channels of independent process indications, and are ideal for providing high accuracy and stability multi-channel analog data sampling to computer monitoring systems or PLC.
- The host computer can also input up to 7 channel on-off signals or execute on-off operation through an indicator.
- Providing extraction, multiplication, and addition operations on input signals. The result can be displayed, transmitted into a standard signal, or sent to a computer.
- With a built-in wet-and-dry bulb temperature algorithm; subject to the setting wind speed and atmospheric pressure constant to import dry-bulb and wet-bulb Pt100 signal for precisely measuring surrounding temperature and humidity, especially in high-humidity environments, it has higher precision and service life longer than capacitive ceramic hygrometer.
- Every channel has independent alarms (high limit and low limit). The alarms can be sent to any alarm output, and multiple alarms can also be sent to one alarm output.
- Multi-channel transmission. Can choose to transmit one channel or by rotating multiple channels (maximum two independent transmission output).
- High performance hardware design decreases the temperature shift and the interference between multiple channels, resulting in the multiple channel instruments having the same accuracy and anti-interference ability as those of the simple channel instruments.
- Support RS485 communication with PC or AI True-color HMI Touch Screen/Split Paperless Recorder.

AI-708H/808H Series Flow Totalizers

Accurate, Stable and reliable

- Provide accumulation of mass, volume and length.
- Batch control over the accumulation available, providing independent 4-digital accumulator for control and 12-digital accumulator for sum total and special display mode which is powerful and easy operated.
- Universal programmable inputs. Flow input signal can be set as frequency, 1-5V, 0-5V, 0-10mA, 4-20mA, or user defined input specifications. Temperature input signal can be set as Pt100, thermocouple or standard current signal. Pressure input signal can be set as standard voltage or current signal.
- Extensive functions are available. For example, transmission, high/low alarm of momentary flow, temperature and pressure, 12V/24V voltage output and communication with a supervisor computer Square root extractions are selectable, providing an 8-digit accumulation value and 4-digit momentary process value. Small signal cut-out can be set at any range.
- Advanced calculation algorithm, which ensures good flow accuracy even for low frequency signals.
- AI-808H is equipped with temperature and pressure compensation for general gas, saturated steam, overheated steam and liquid. The compensation calculation with a compensation table has a high accuracy in the steam measurement application. Special functions can be carried out by enhancing the compensation formula upon customers' demand.
- Support RS485 communication with PC or AI True-color HMI Touch Screen/Split Paperless Recorder.

AI-7028/7038/7048 Many-Channel PID Temperature Controller

- Provides four channels of programmable measurement input circuits, supporting multiple thermocouples such as K, S, E, J, B, N, T, WRe5-WRe26, Pt100 (two-wire input).
- High-performance design greatly reduces the temperature drift and the mutual interference among the four channels, making multi-channel measurement equivalent to mono-channel measuring instrument in precision and ant-interference performance.
- SSR voltage output with control cycle of 0.48 second.
- Advanced AI control with auto-tuning and self-learning, achieving stable and precise control.
- Support RS485 communication with PC or AI True-color HMI Touch Screen/Split Paperless Recorder.

AIJ AI-Process Controller

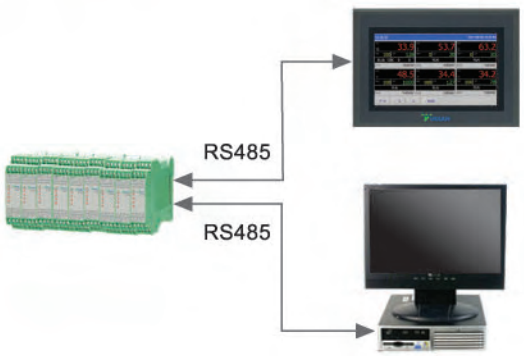
Suitable for university research, metrology and precise temperature/process contro

- High-precision process controller (24-bit A/D, five-digit display, FS0.05%), supports a variety of thermocouple, thermal resistance, linear voltage and linear current, resolution up to 0.01℃. (Linear signal up to 0.0001)
- Advance artificial intelligence PID algorithm in AIJ series, no overshoot and automatic self-tuning (AT) functionality.
- The use of advanced modular structure, provide a rich output specifications, broadly satisfy all sorts of applications need
- PV vs. Time Programmable function, up to 190 segments can be set.
- Support special process action, such as, power restarted handling, measurements start, measurements preparation start and curve fitting.

D5 and E5 Series Industrial Control Modules

Temperature control, data acquisition, signal transmission / cost-effective, feasible, easy installation

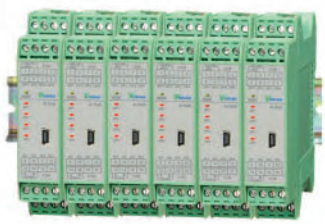
Establishing measurement and control system in combination with supervisory computer or touch screen system.



Work as complementary temperature controlling system for PLC.

All parameters, such as address or baud rate etc., can be set by E8 external display

D5 Size is only 100H*22.5W mm, greatly reduces the installation space.



AI-7021D5 Series : Dual-channel Temperature Transmitter/Signal Isolator

- Supporting multiple thermocouples, RTDs and voltage signal inputs such as K, S, E, J, B, N, T, WRe5-WRe26, Pt100, Cu50, 0~20mV, 0~100mV, 0~1V, 0.2~1V, and free setting of temperature transmission output scale. Both channels are equipped with digital filtering functions and each channel can set to a different digital filtering level.
- High-performance design greatly reduces the temperature drift and the mutual interferences between the two channels, making multi-channel measurement equivalent to single channel measurement instrument in precision and anti-interference performance.
- Provides two isolated standard current (4~20mA or 0~20mA) outputs.

AI-3011D5/ AI-3013D5 Series: Switching Value Signal Input/Relay Output Modules

- Provides ON/OFF signal input/output in computer control system, paperless recorder and touch screen.
- In addition to ON/OFF state input, four-channels of jump signal from off to on can be "captured" to respond to the input of push-button switch.
- RS485 communication interface
- AI-3011D5 provides 10 ON/OFF signal inputs while AI-3013D5 provides 8 relay outputs.

AI Series Paperless Recorder / Artificial Intelligence Distributed Control System



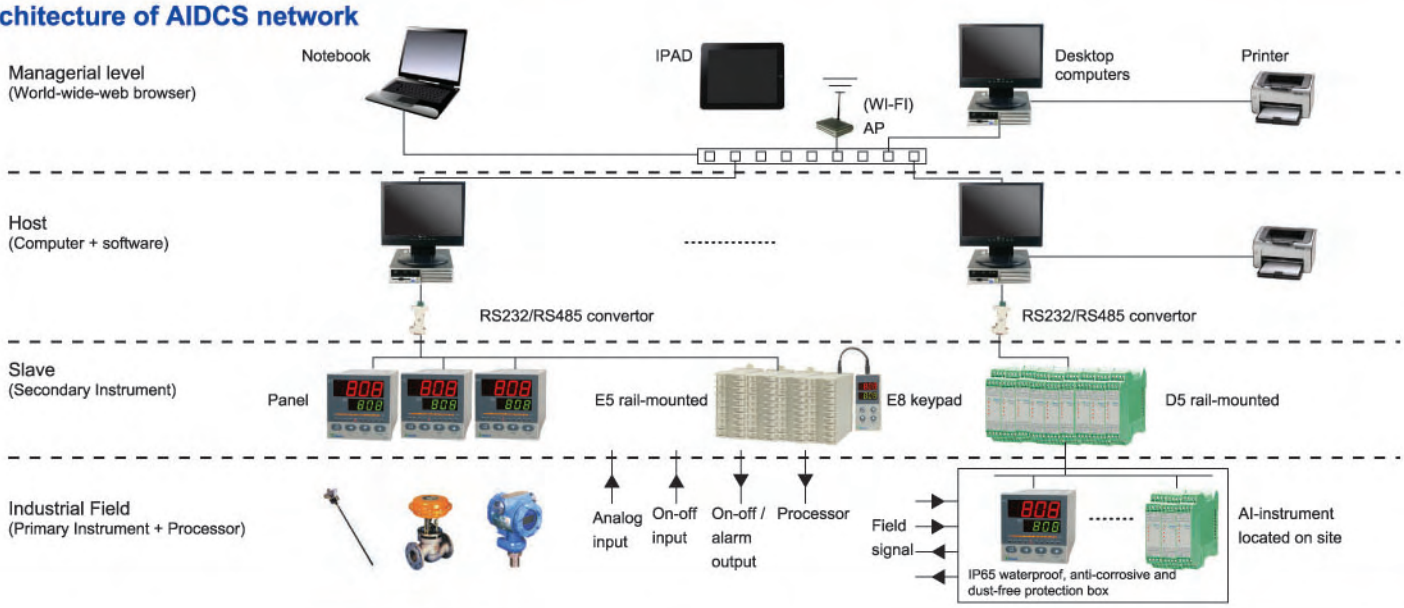
- Benefited from RS485 communication port and AI series instrument, D5/E5 series DIN rail mounting modules can be connected as a monitor and control system with color display.
- Several measuring modules are selectable, including all kinds of signal input, artificial intelligent PID control, multi-segment programmable control. Users can base on need to configure any combination.
- Support storing curves and data encryption, as well as showing flow chart, power meter and flow totalizer. It also can connect devices such as PLC and inverter.
- True-color TFT panel size option: 3.5", 4.3" 7" and 10.4"

Artificial Intelligence Distributed Control System

Comparison of common computer-aided process control system

Solution	Artificial Intelligent distributed control system	Distributed control system (DCS)	Fieldbus Control System (FCS)
Communication network	Open AIBUS protocol via RS485; Simple wiring; Long communication length ~ 1,200m; Maximum link to 60 instruments.	Protocol defined by manufacturer; Not open or partly open.	Protocol of FF, Profibus, CAN and industrial ethernet and etc are open; Network complexity high due to various server.
Integrated Operation	Windows platform; Powerful;History Query; Real-time graph; Animated flowchart; Data extractionShared in LAN and intranet.	Depending on technology of the manufacturer.	Powerful; History Query; Real-time graph; Animated flowchart; Data extraction.
Risk Scattering	Fine. Each instrument in the network works as an individual. Each instrument may be operated by its own panel.	Poor Each instrument fails to run without network; Complex network Backup system is a must.	Fair. Each instrument in the network works as an individual; Some control functions rely on communicationspeed and quality;Reliability doubted.
Open System	Fine. Third party hardware may be incorporated.	Poor. Hardware selection is limited to its own brand.	Fine. Third party hardware may be incorporated.
Summary	Real-time processes are done by instruments with master-slave RS485 network; Suitable for low real-time demand scenario; Price-performance ratio is high for instrument; Simple and clear network diagram; Extended support by Yudian OPC Server; Best industrial process control system.	Some DCS system fails to lower the cost of distributed control unit; Hidden security issue when the network is failed.	Aimed to improve the speed and cross-network issue in DCS system; Price is not competitive; High system and network complexity make the barrier.

Architecture of AIDCS network



AIJK Series Thyristor Three-Phase Phase-Shifting / Zero-Crossing Power Adjusting Trigger

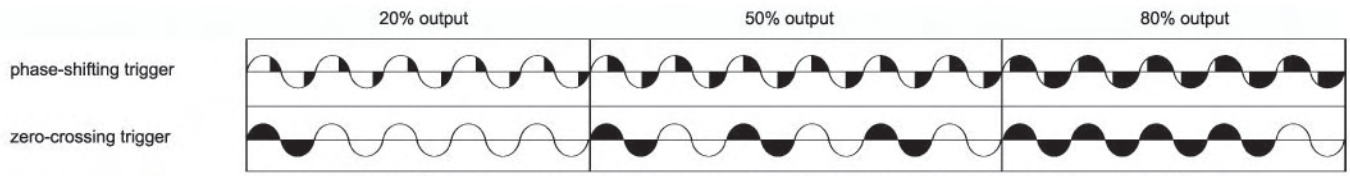
AIJK series are suitable for various industrial furnaces of resistance wires, silicon carbide heating elements, MoSi2 heating elements, and tungsten filaments, and can also be used as soft-starters for electric motors. The main features as below:

- 0-20mA (0-5V) / 4-20mA (1-5V) signal inputs are selectable.
- Linearized power is adjusted using computerized digital technology. When the load is resistive, its output power is proportional to the input signal.
- Phase failure and over-shoot checking and alarming. In addition, AIJK3 can check thyristor shoot-through and load open circuit.
- Automatic synchronization. It's not necessary to check the sequence of thyristor trigger phase. For AIJK3, even the electric polarity does not needed to be checked.
- Application of complete electric isolation and "burnt proof" technology. It is very reliable, and has negligible interference to input terminals.
- Soft-start / soft-stop function with current feedback and adjustable delay time. Suitable for MoSi2 heating elements, tungsten filaments, electrics motors, and inductive loads.
- Equipped with on-off power, which is directly supplied by 220VAC power, and can provide two groups of 5VDC and 24V DC outputs.

MODEL COMPARISON

AIJK series triggers includes2 models which have different functions and features as below:

Model	AIJK3	AIJK6
Load	Resistive	Resistive and inductive
Wiring	Three-phase four-wire, two-phase and single-phase	Three-phase three- wire
Failure check and alarm	Power phase failure, over-shoot, thyristor shoot through and load open circuit.	Power phase failure and over-shoot



The difference between phase-shifting trigger and zero-crossing trigger (The black part is the load current)

Solid-state Relay

FEATURES

- Low on-state resistance
- Low control current consumption
- Status indicate
- Low output leakage current
- Low conducted

MODEL:

MODEL	SSR20	SSR25	SSR40	SSR40H
The difference				
Load Current	20A	25A	40A	
Load Voltage	24-240VAC		24-240VAC	24-215VAC
Dimensions	(58L*42W*26H)mm			

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Yudian has established a complete Chinese service network, covering almost all main Chinese cities. In addition, Yudian, headquartered in Hong Kong, has also established global marketing and service network. This enables Yudian to provide quick and comprehensive for customers all over the world.

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