EBYTE

Chengdu Ebyte Electronic Technology Co.,Ltd

Wireless Modem

User Manual

Distributed IO Expansion Module

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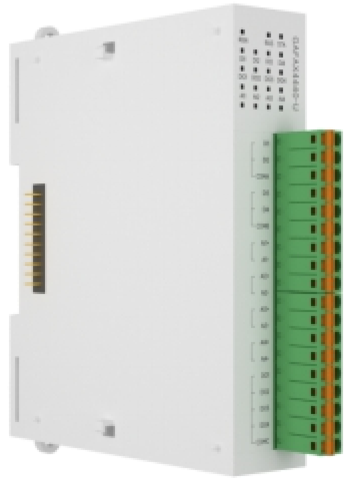
1 Product Overview

1.1Product Introduction

The distributed IO expansion module adopts an expandable design in structure and needs to be used with our U series distributed IO host.

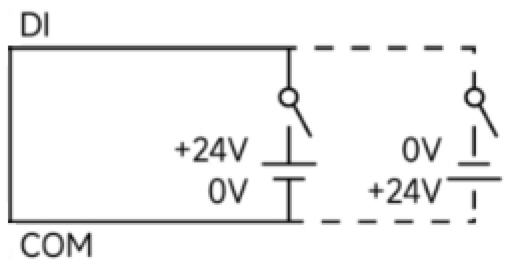


1.2Product Model List

Product Model	Product Specifications	Switch input DI	Switching output DO	Analog input AI	Analog output AO
GAFAX4440-U	4DI+4DO+4AI	4（NPN、PNP）	4 (Relay)	4 (Differential current)	—
GAXAX8080-U	8DI+8DO	8（NPN、PNP）	8 (Relay)	—	—

2 Wiring Diagram

2.2.1. DI Connection

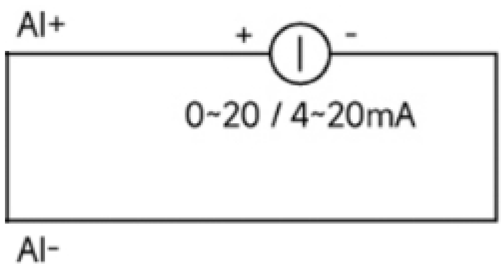


PNP input **NPN input**

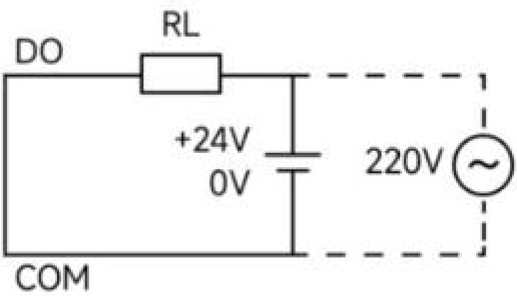
Note: DI is NPN or PNP active input, and the voltage range only supports 10V to 28V .

2.2.2. AI Connectivity

Differential analog current acquisition:



2.2.3. DO Connection



Note: 1. A single relay supports a maximum of 5A.

2. The maximum total current of each group (same COM common terminal) supports 8A.

3 Technical indicators

3.1 Specifications

Category	Name	Parameter
DI Input	Input Type	NPN, PNP
	Input range	DC 12~24V
	Isolation method	Each channel is optically isolated
	Input Impedance	7.2kΩ
	Collection frequency	1000 Hz
	Counting frequency	< 500 Hz
	Filter time	Default time 6ms
	Input Instructions	DI green LED indicator
AI Input	Acquisition characteristics	Differential input
	Input Type	Differential current: 0-20mA, 4-20mA, ±20mA
	AI Resolution	16 bits (differential)
	AI Precision	1‰(difference)
	Collection frequency	Differential max. 70 Hz
	Input Instructions	AI green LED indicator
DO Output	DO output type	Type A relay (normally open)
	DO output mode	Level output , pulse output
	Relay contact capacity	5A 30VDC, 5A 250VAC (the total current of the same COM common terminal supports a maximum of 8A)
	Output indication	DO green LED indicator
Other	Product size	110mm * 25mm * 100mm (length * width * height)
	Working temperature and humidity	-40~+85°C, 5%~95%RH (no condensation)
	Storage temperature and humidity	-40~+105°C, 5%~95%RH (no condensation)
	Installation	Positioning holes and guide rail installation

3.2 Dimensions

3.3 Ports, buttons and LED indicators

3.3.1. GAFAX4440-U

GAFAX4440-U port and button description:		
Silkscreen	Name	Illustration
DI1	DI1 switch input	DI1 switch input interface, used with COM A
DI2	DI2 switch input	DI2 switch input interface, used with COM A
COM A	DI switch input common terminal	DI1-DI2 share COM A common terminal
DI3	DI3 switch input	DI3 switch input interface, used with COM B
DI4	DI4 switch input	DI4 switch input interface, used with COM B
COM B	DI switch input common terminal	DI3-DI4 share COM B common terminal
DO1	DO1 switch output	DO1 switch output interface, used with COMC
DO2	DO2 switch output	DO2 switch output interface, used with COMC
DO3	DO3 switch output	DO3 switch output interface, used with COMC
DO4	DO4 switch output	DO4 switch output interface, used with COMC
COM C	COM port of DO	DO1-DO 4 share COMC for use
AI1+	AI1 analog input +	AI1 analog input + interface, used with AI1-

AI1-	AI1 analog input -	AI1 analog input-interface, used with AI1+
AI2+	AI2 analog input +	AI2 analog input + interface, used with AI2-
AI2-	AI2 analog input -	AI2 analog input-interface, used with AI2+
AI3+	AI3 analog input +	AI3 analog input + interface, used with AI3-
AI3-	AI3 analog input -	AI3 analog input-interface, used with AI3+
AI4+	AI4 analog input +	AI4 analog input + interface, used with AI4-
AI4-	AI4 analog input -	AI4 analog input-interface, used with AI4+

GAFAX4440-U indicator light description:		
Silkscreen	Name	Illustration
RUN	Power indicator	Red LED light; on: system power supply is normal; off: system power supply is abnormal
BUS	Device bus status indicator	Yellow LED light; On: The internal bus of the device is running normally; Off: The internal bus of the device is running completely abnormally; Flashing: The device's internal bus may be operating abnormally.
STA	Bus communication indicator	Blue LED light; flashing: indicates that there is data exchange between the host and the expansion module; off: indicates that there is no data exchange between the host and the expansion module
DI1	DI1 input indicator	Green LED light; on: DI1 valid input; off: DI1 invalid input
DI2	DI2 input indicator	Green LED light; on: DI2 valid input; off: DI2 invalid input
DI3	DI3 input indicator	Green LED light; on: DI3 valid input; off: DI3 invalid input
DI4	DI4 input indicator	Green LED light; on: DI4 valid input; off: DI4 invalid input
DO1	DO1 output indicator	Green LED light; on: DO1 relay closed; off: DO1 relay open
DO2	DO2 output indicator	Green LED light; on: DO2 relay closed; off: DO2 relay open
DO3	DO3 output indicator	Green LED light; on: DO3 relay closed; off: DO3 relay disconnected
DO4	DO4 output indicator	Green LED light; on: DO4 relay closed; off: DO4 relay disconnected
AI1	AI1 input indicator	Green LED light; On: Normal input reaches 1% or more of the range; Off: No effective access; Fast flashing: Exceeds the range by 10%
AI2	AI2 input indicator	Green LED light; On: Normal input reaches 1% or more of the range; Off: No effective access; Fast flashing: Exceeds the range by 10%
AI3	AI3 input indicator	Green LED light; On: Normal input reaches 1% or more of the range; Off: No effective access; Fast flashing: Exceeds the range by 10%
AI4	AI4 input indicator	Green LED light; On: Normal input reaches 1% or more of the range; Off: No effective access; Fast flashing: Exceeds the range by 10%

3.3.2. GAXAX8080-U

GAXAX8080-U port and button description:		
Silkscreen	Name	Illustration
DO1	DI1 switch input	DI1 switch input interface, used with COMA
DI2	DI2 switch input	DI2 switch input interface, used with COMA
DI3	DI3 switch input	DI3 switch input interface, used with COMA
DI4	DI4 switch input	DI4 switch input interface, used with COMA
COMA	DI switch input common terminal	DI1-DI4 share COMA common terminal
DI5	DI5 switch input	DI5 switch input interface, used with COMB
DI6	DI6 switch input	DI6 switch input interface, used with COMB
DI7	DI7 switch input	DI7 switch input interface, used with COMB
DI8	DI8 switch input	DI8 switch input interface, used with COMB
COMB	DI switch input common terminal	DI5-DI8 share COMB common terminal
DO1	DO1 switch output	DO1 switch output interface, used with COMC
DO2	DO2 switch output	DO2 switch output interface, used with COMC
DO3	DO3 switch output	DO3 switch output interface, used with COMC
DO4	DO4 switch output	DO4 switch output interface, used with COMC
DO5	DO5 switch output	DO5 switch output interface, used with COMC
DO6	DO6 switch output	DO6 switch output interface, used with COMC
DO7	DO7 switch output	DO7 switch output interface, used with COMC
DO8	DO8 switch output	DO8 switch output interface, used with COMC
COMC	COM port of DO	DO1-DO8 share COMC for use

GAXAX8080-U indicator light description:		
Silkscreen	Name	Illustration
RUN	Power indicator	Red LED light; on: system power supply is normal; off: system power supply is abnormal
BUS	Device bus status indicator	Yellow LED light; On: The internal bus of the device is running normally; Off: The internal bus of the device is running completely abnormally; Flashing: The device's internal bus may be operating abnormally.
STA	Bus communication indicator	Blue LED light; flashing: indicates that there is data exchange between the host and the expansion module; always off: indicates that there is no data exchange between the host and the expansion module
DI1	DI1 input indicator	Green LED light; on: DI1 valid input; off: DI1 invalid input
DI2	DI2 input indicator	Green LED light; on: DI2 valid input; off: DI2 invalid input
DI3	DI3 input indicator	Green LED light; on: DI3 valid input; off: DI3 invalid input
DI4	DI4 input indicator	Green LED light; on: DI4 valid input; off: DI4 invalid input
DI5	DI5 input indicator	Green LED light; on: DI5 valid input; off: DI5 invalid input
DI6	DI6 input indicator	Green LED light; on: DI6 valid input; off: DI6 invalid input

DI7	DI7 input indicator	Green LED light; on: DI7 valid input; off: DI7 invalid input
DI8	DI8 input indicator	Green LED light; on: DI8 valid input; off: DI8 invalid input
DO1	DO1 output indicator	Green LED light; on: DO1 relay closed; off: DO1 relay open
DO2	DO2 output indicator	Green LED light; on: DO2 relay closed; off: DO2 relay open
DO3	DO3 output indicator	Green LED light; on: DO3 relay closed; off: DO3 relay disconnected
DO4	DO4 output indicator	Green LED light; on: DO4 relay closed; off: DO4 relay disconnected
DO5	DO5 output indicator	Green LED light; on: DO5 relay closed; off: DO5 relay open
DO6	DO6 output indicator	Green LED light; on: DO6 relay closed; off: DO6 relay open
DO7	DO7 output indicator	Green LED light; on: DO7 relay closed; off: DO7 relay open
DO8	DO8 output indicator	Green LED light; on: DO8 relay closed; off: DO8 relay disconnected

4 Product Features

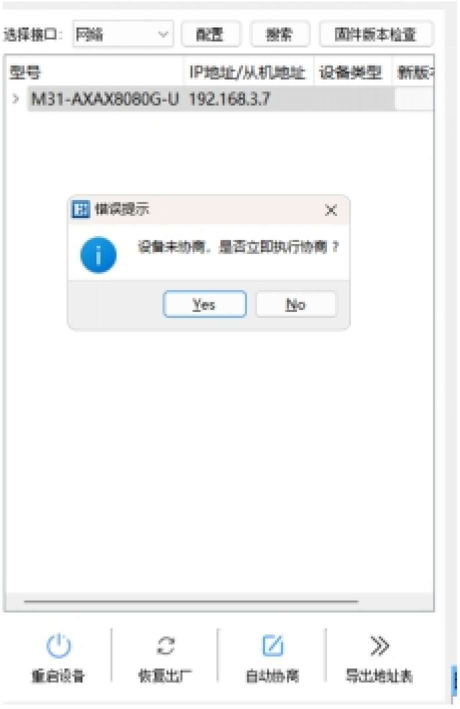
Note: When splicing equipment, do not operate with power on, otherwise it may cause damage to the equipment!

The M31-U series distributed IO host adopts an expandable structure design, in which the IO expansion module can be used for expansion with the M31-U series host. You only need to dock the IO expansion module with the host slot, and then slide the lock down to firmly connect the host and IO expansion module.

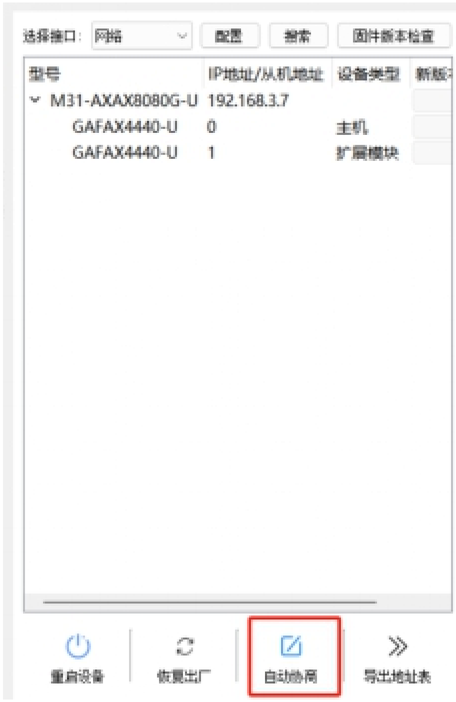
The specific operations are as follows:

- First, make sure the host is not powered on and the host slider is at UNLK. Then connect the IO expansion module to the host, as shown below:

- After the IO expansion module is connected, slide the host to the LOCK position, power on the host, and then insert the network cable. Use the auto-negotiation function through the host computer (or double-click the Reload button on the device within two seconds to automatically negotiate). After the negotiation is successful, the IO expansion module can be operated through the serial port or network port on the host. (When searching through the host computer, clicking the corresponding host will actively trigger the auto-negotiation to check whether the module splicing order has changed . If so, the customer will be prompted to negotiate. If there is no splicing or order change , there will be no prompt.)



Note: When adding a new IO expansion module or removing an already negotiated IO expansion module, the auto-negotiation function must be performed to ensure the order and status self-check of the overall device.



4.1 DI Input

4.1.1. Input filtering

(1) Input filter: When the switch input DI collects signals, it needs to maintain multiple sampling cycles

before confirmation. The filter parameter can be set in the range of 1 to 65535 (the default is 6 sampling cycles, 6*1kHz)

4.1.2. DI counting function

(1) DI counting function: The switch input DI counting mode has level signal or edge pulse signal (default 0- rising edge, 1- falling edge, 2- level) . The maximum count value is a 32-bit signed integer (negative maximum value after overflow and no longer changes). The clearing mode supports automatic clearing and manual clearing (default automatic clearing)

The byte transmission order of the channel count value is:
(Default value: 0)
0: AB-CD
1: BA-DC
2: CD-AB
3: DC-BA

(2) Count reset: default 0-auto reset, 1-manual reset.
Automatic clearing: After reading the count value, the current value will be automatically cleared.
Manual clear: Write 0 to this register to clear the count value.

4.2 DO Output

4.2.1. DO working mode

The DO output working mode has two options: level mode and pulse output mode (default: 0).

0: Level mode

1: Pulse mode

In pulse output mode, the pulse output width can be set: Relay type setting range: 50-65535ms (default 1000ms) .

4.2.2. Communication fault DO output status setting

When communication between devices is abnormal, the status of DO output can be set.

Offline IO fault output function enable, default 0-disable, 1-enable. Offline time setting range is 1~65535, unit: 0.1 second (default 300*0.1 second).

When the offline IO fault output function is enabled, the IO module will process the output data in this way when it detects an internal bus abnormality and fails to communicate with the host and reaches the offline time. (Default value: 0)

0: Maintain the output status during a fault.
1: Low level output.
2: High level output.

DO power-on state is optional, default is 0-disconnected

0: Disconnect

1: Connect

4.3AI Input

4.3.1. AI Scope

Differential analog input AI measures current signal:
The acquisition range is 0～20mA or 4～20mA or ±20mA, the accuracy is 1‰, and the resolution is 16 bits. It uses differential input and the sampling frequency is 70 Hz.
Set the sampling range of all AI channels. Valid values are 0 to 2 (default is 2).
Configuration is 0: indicates 0～20mA
Configuration is 1: indicates 4~20mA
Configuration 2: indicates ±20mA

【Note】AI configuration instructions

（1） The AI sampling range of each channel can be set. When the AI channel sampling range is configured as 4-20mA sampling, if the current signal is lower than 3.85mA , it will be displayed as 0.

（2） The starting address of the AI channel sampling range parameter is 0x0DAC, the register type is a holding register, and the function code is 0x03 , 0x06, or 0x10. When writing the AI channel sampling range parameter, if the written parameter value is not within the specified range, it will not take effect, and Modbus will not return an error command.

4.3.2. AI input engineering quantity integer value, engineering quantity floating point value, process quantity

There are three ways to read the analog signal collected by the device:

（1） Read AI engineering value shaping value and directly convert it to input current or voltage. The starting address of AI engineering value shaping value register is 0x0000, the register type is input register, and the read function code is 0x04. The value returned by this method is one register representing one channel.
Single-ended current: The value read is 0 to 20000. The method for calculating the current size is 0 to 20000 corresponds to 0mA to 20mA.
That is: current = engineering value / 1000 (mA)

Differential current: The value read is -20000~20000. The method for calculating the current size is -20000~20000 corresponds to -20mA~20mA.
That is: current = engineering value / 1000 (mA)

The conversion relationship between engineering quantity and process quantity is: engineering quantity = process quantity × 25000 / 32768. It should be noted that the engineering quantity will be limited by the set engineering quantity range.

（2） Read the AI engineering quantity floating point value, use the IEE754 conversion tool to convert the hexadecimal data into floating point numbers to get the input current or voltage. The starting address of the AI engineering quantity shaping value register is 0x03E8, the register type is input register, and the read function code is 0x04. This method returns two registers to represent 1 channel.

（3） Read AI process quantity. The starting address of AI engineering quantity register is 0x0BB8, the register type is input register, and the read function code is 0x04. This method returns 1 register to represent 1 channel. The process quantity acquisition range is to convert the current signal of -25 mA ~25mA into digital quantity -32768~32767. Depending on the set engineering quantity range, the parameter range of the process quantity will change:

When the engineering quantity range is set to a positive range (i.e. 0~20mA, 4~20mA), the parameter range of the process quantity is 0~32767. When the engineering quantity range is set to a negative range (i.e. -20mA~20mA), the parameter range of the process quantity is the entire digital quantity range of -32768~32767.

4.3.3. AI Filter Parameters

You can set the filter parameters of the AI channel. The valid value is 0 - 4 and the default value is 0 .

Filter parameter description:

(1) Filter parameters: The higher the parameter value, the more stable the output value and the slower the response.

(2) AI channel filter parameter address is 0x0DA2, register type is holding register, function code 0x06, 0x10.

4.4 Online monitoring

The device can monitor whether the device is abnormal through relevant registers:

Device abnormal code	0x7587	4-30087	Zone 4	1	Check the abnormal code of the current device. If it is 0, it means there is no abnormality. If it is 1, it means that the slave does not respond. If it is 2, it means that the expansion module sequence is wrong (this error will directly cause the device to not work properly).	R: 0x03
Extension module exception label	0x7588	4-30089	Zone 4	2	Check which expansion module has not responded. There are two 32-bit registers in total, representing the expansion modules in order. If the bit on the corresponding serial number is 1, it means that this expansion module is abnormal.	R: 0x03

4.5 Modbus parameter configuration

Note:

1. The DI, DO, AI, and AO registers are all continuous. For example, if an 8DI host is connected to an 8DI expansion module, the DI status register of the expansion module will continue from 0x0000-0x0007 of the host, that is, 0x0008-0x0010.
2. 0x_ represents hexadecimal.
3. DI, AI, and DO take the M31-AFAX4440G-U model as an example to show the continuity of registers after splicing.

4.5.1. DI register list

DI status register (each channel occupies 1 register) :

name	Access location	Register start address (hexadecimal)	Register start address (decimal)	Register area	Related function codes	Default state
DI1	Host	0x0000	1-0001	Zone 1	R: 0x02	0
DI2	Host	0x0001	1-0002	Zone 1	R: 0x02	0
DI3	Host	0x0002	1-0003	Zone 1	R: 0x02	0
DI4	Host	0x0003	1-0004	Zone 1	R: 0x02	0
DI5	IO expansion module	0x0004	1-0005	Zone 1	R: 0x02	0
......	IO expansion module	......	......	Zone 1	R: 0x02	0

DI filter register (each channel occupies 1 register) :

name	Register start address (hexadecimal)	Register start address (decimal)	Register Type	Data range/description	Related function codes	Default state
DI channel filter parameters	0x1388	4-5001	Holding Registers	Filter parameters for each DI channel, The filter parameters can be set in the range of 1~65535 (default 6 sampling cycles, 6*1kHz)	R: 0x03 W: 0x06, 0x10	6

DI clearing method (each channel occupies 1 register) :

name	Register start address (hexadecimal)	Register start address (decimal)	Register Type	Data range/description	Related function codes	Default state
DI clear mode	0x2710	4-10001	Holding Registers	0: Automatically clear (read count value cleared) 1: Manual clear	R: 0x03 W: 0x06, 0x10	0

DI count register (each channel occupies 2 registers separately, which is related to the count byte order, please refer to the count function section) :

name	Register address (hexadecimal)	Register address (decimal)	Register Type	Data range/description	Related function codes	Default state
DI count value	0x 2CEC	4-11501	Holding Registers	Count maximum value 32-bit signed integer (after overflow, it becomes the negative maximum value and does not change)	R: 0x03 W: 0x06, 0x10	0

DI counting mode register (each channel occupies 1 register):

name	Register start address (hexadecimal)	Register start address (decimal)	Register Type	Data range/description	Related function codes	Default state
DI counting method	0x 1F40	4-8001	Holding Registers	0: rising edge count 1: Falling edge count 2: Level counting (double edge)	R: 0x03 W: 0x06, 0x10	0

4.5.2. DO Register List

D O status register (each channel occupies 1 register) :

name	Access location	Register Address (Hexadecimal)	Register Address (decimal)	Register area	Related function codes	Default state
DO1	Host	0x0000	0-0001	Zone 0	R: 0x01 W: 0x05, 0x0F	0

DO2	Host	0x0001	0-0002	Zone 0	R: 0x01 W: 0x05, 0x0F	0
DO3	Host	0x0002	0-0003	Zone 0	R: 0x01 W: 0x05, 0x0F	0
DO4	Host	0x0003	0-0004	Zone 0	R: 0x01 W: 0x05, 0x0F	0
DO5	IO expansion module	0x0004	0-0005	Zone 0	R: 0x01 W: 0x05, 0x0F	0
......	IO expansion module	......	......	Zone 0	R: 0x01 W: 0x05, 0x0F	0

DO fault output status register (each channel occupies 1 register):

name	Register start address (hexadecimal)	Register start address (decimal)	Register Type	Data range/description	Related function codes	Default state
D O Fault output status	0x1B58	4-7001	Holding Registers	0: Keep the fault status 1: Fault DO output OFF 2: Fault DO output ON	R: 0x03 W: 0x06, 0x10	0

DO power-on status (each channel occupies 1 register) :

name	Register start address (hexadecimal)	Register start address (decimal)	Register Type	Data range/description	Related function codes	Default state
DO power-on status	0x2904	4-10501	Holding Registers	DO power-on status 1 represents closed 0 means disconnected	R: 0x03 W: 0x06, 0x10	0

DO working mode (each channel occupies 1 register) :

name	Register start address (hexadecimal)	Register start address (decimal)	Register Type	Data range/description	Related function codes	Default state
DO working mode	0x32C8	4-13001	Holding Registers	0: Level mode 1: Pulse mode	R: 0x03 W: 0x06, 0x10	0

DO pulse output width (each channel occupies 1 register) :

name	Register start address (hexadecimal)	Register start address (decimal)	Register Type	Data range/description	Related function codes	Default state
DO pulse output width	0x30D4	4-12501	Holding Registers	Transistor setting range: 1-65535ms Relay setting range: 50-65535ms	R: 0x03 W: 0x06, 0x10	0

4.5.3. AI Register List

AI engineering quantity shaping value register (each channel occupies 1 register) :

name	Access location	Register start address (hexadecimal)	Register start address (decimal)	Register area	Data range/description (For differential, please refer to the AI input section)	Related function codes	Default state
AI1	Host	0x0000	3-0001	Zone 3	Engineering quantity 0-20000 represents 0-20ma 2-byte integer, unit (uA)	R: 0x04	0
AI2	Host	0x0001	3-0002	Zone 3	Engineering quantity 0-20000 represents 0-20ma 2-byte integer, unit (uA)	R: 0x04	0
AI3	Host	0x0002	3-0003	Zone 3	Engineering quantity 0-20000 represents 0-20ma 2-byte integer, unit (uA)	R: 0x04	0
AI4	Host	0x0003	3-0004	Zone 3	Engineering quantity 0-20000 represents 0-20ma 2-byte integer, unit (uA)	R: 0x04	0
AI5	IO expansion module	0x0004	3-0005	Zone 3	Engineering quantity 0-20000 represents 0-20ma 2-byte integer, unit (uA)	R: 0x04	0
......	IO expansion module	......	......	Zone 3	Engineering quantity 0-20000 represents 0-20ma 2-byte integer, unit (uA)	R: 0x04	0

AI floating point value registers (each channel occupies 2 registers) :

name	Access location	Register start address (hexadecimal)	Register start address (decimal)	Register area	Data range/description	Related function codes	Default state
AI1	Host	0x03E8	3-1001	Zone 3	Analog signal floating point value, 4-byte floating point number, unit (mA)	R: 0x04	0
AI2	Host	0x03EA	3-1003	Zone 3	Analog signal floating point value, 4-byte floating point number, unit (mA)	R: 0x04	0
AI3	Host	0x03EC	3-1005	Zone 3	Analog signal floating point value, 4-byte floating point number, unit (mA)	R: 0x04	0
AI4	Host	0x03EE	3-1007	Zone 3	Analog signal floating point value, 4-byte floating point number, unit (mA)	R: 0x04	0
AI5	IO expansion module	0x03F0	3-1009	Zone 3	Analog signal floating point value, 4-byte floating point number, unit (mA)	R: 0x04	0
......	IO expansion module	......	......	Zone 3	Analog signal floating point value, 4-byte floating point number, unit (mA)	R: 0x04	0

AI process quantity register (each channel occupies 1 register) :

name	Access location	Register start address (hexadecimal)	Register start address (decimal)	Register area	Data range/description	Related function codes	Default state
AI1	Host	0x0BB8	3-3001	Zone 3	Analog signal integer value, 2 bytes	R: 0x04	0
AI2	Host	0x0BB9	3-3002	Zone 3	Analog signal integer value, 2 bytes	R: 0x04	0
AI3	Host	0x0BBA	3-3003	Zone 3	Analog signal integer value, 2 bytes	R: 0x04	0
AI4	Host	0x0BBB	3-3004	Zone 3	Analog signal integer value, 2 bytes	R: 0x04	0
AI5	IO expansion module	0x0BBC	3-3005	Zone 3	Analog signal integer value, 2 bytes	R: 0x04	0

......	IO expansion module	......	......	Zone 3	Analog signal integer value, 2 bytes	R: 0x04	0

AI filter register (each channel occupies 1 register) :

name	Register start address (Hexadecimal)	Register start address (decimal)	Register area	Data range/description	Related function codes	Default state
AI channel filter parameters	0xFA0	4-4001	Zone 4	Filter parameters of each AI channel, Valid values: 0-4	R: 0x03 W: 0x06, 0x10	6

AI sampling range register (each channel occupies 1 register) :

name	Access location	Register start address (hexadecimal)	Register start address (decimal)	Register area	Data range/description	Related function codes	Default state
AI1 sampling range	Host	0x0DAC	4-3501	Zone 4	Valid values are 0 , 1 , 2 0 means 0-20mA 1 means 4-20mA 2 means ± 20mA	R: 0x03 W: 0x06, 0x10	0
AI2 sampling range	Host	0x0DAD	4-3502	Zone 4	Valid values are 0 , 1 , 2 0 means 0-20mA 1 means 4-20mA 2 means ± 20mA	R: 0x03 W: 0x06, 0x10	0
AI3 Sampling Range	Host	0x0DAE	4-3503	Zone 4	Valid values are 0 , 1 , 2 0 means 0-20mA 1 means 4-20mA 2 means ± 20mA	R: 0x03 W: 0x06, 0x10	0
AI4 sampling range	Host	0x0DAF	4-3504	Zone 4	Valid values are 0 , 1 , 2 0 means 0-20mA 1 means 4-20mA 2 means ± 20mA	R: 0x03 W: 0x06, 0x10	0
AI5 sampling range	IO expansion module	0x0DB0	4-3505	Zone 4	Valid values are 0 , 1 , 2 0 means 0-20mA 1 means 4-20mA 2 means ± 20mA	R: 0x03 W: 0x06, 0x10	0

......	IO expansion module	......	......	Zone 4	Valid values are 0 , 1 , 2 0 means 0-20mA 1 means 4-20mA 2 means ± 20mA	R: 0x03 W: 0x06, 0x10	0

5 Precautions

(1) Please do not splice the device while it is powered on, otherwise there is a risk of damage to the device.

(2) U series expansion modules can only be used with U series hosts.

The final right of interpretation belongs to Chengdu Yibite Electronic Technology Co., Ltd.

Revision History

Version	Revision Date	Revision Notes	Maintainer
1.0	2025-5-6	Initial release	LT

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