0802DA

4AI/4AO Analog MODBUS
AIN3 1
AGND 2
AIN2 3
AGND 4
AIN1 5
AGND 6
AIN0 7
CFG 8
24V 9
0V 10
Data Acquisition Module
PWR/DAT
AI : 4---20mA 0---10V
4ch
AO: 4---20mA 0---10V
4ch
Protocol:Modbus 485
BaudRate:300—115200bps
Power: 24V
1 DA3
2 AGND
3 DA2
4 AGND
5 DA1
6 AGND
7 DA0
8 485GND
9 485-
10 485+
PiSwords

Product introduction

1、Product features

Power supply with transformer isolation

The 485 magnetic coupling isolation has strong anti-interference

2、introduction of communication parameters

This product is an analog input and output module developed by our company, including 8 analog inputs and 2 analog outputs. The default communication baud rate is 9600bps, stop bit is 1 bit, even check (E), 8-bit data length.

This module integrates the standard Modbus RTU protocol and can be used for PLC, touch screen, configuration software and industrial control board.

The input or output of the module can be current or voltage (set by hardware at the factory)

--- 0 Ma, or 10 000 a for the module.

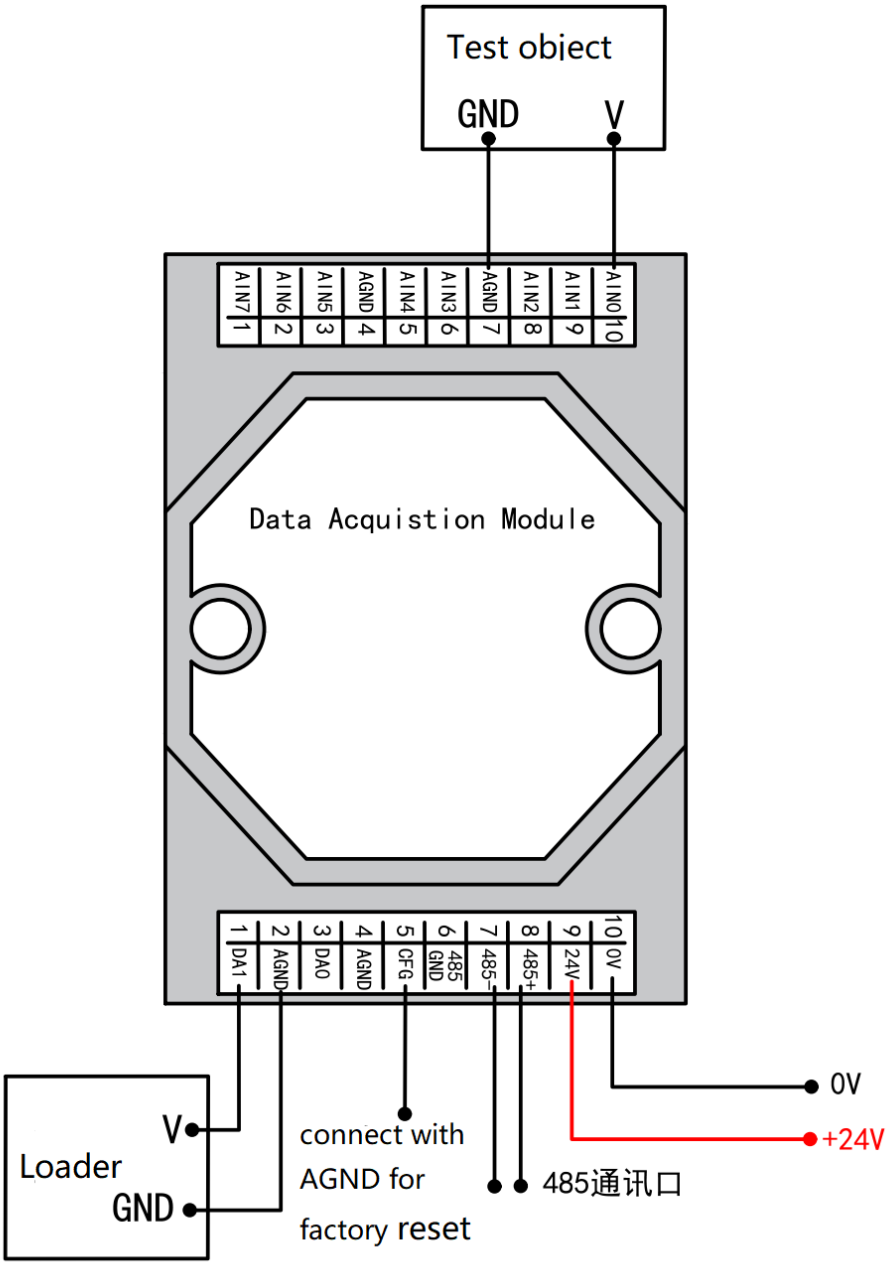
The analog acquisition range of the module is 0-10V, 0-20mA, and the corresponding sampling value range is 0-10000. For example, the common 4-20mA corresponding value range is 2000-10000

When using the company's upper computer for communication, please confirm the serial port number first. Query method: right click the computer → management → device manager → port (COM port and LPT) to see the serial port number

3、Specification

Output	DC 0~5，0~10V　DC 0~20,4~20mA
Input	DC 0~5，0~10V　DC 0~20,4~20mA
Integrated accuracy range	±1%
Input response time	<10msec
Number of channels	8AD2DA　or　2DA
Input protection	Transient suppression diode
Powersupply	DC 24V
Communication port	485

三、Connectiong



When the module is not connected to the serial port or our host computer, the communication parameters may be wrong. If you forget the communication parameters, please restore the factory → short circuit the agnd of 4 pin and CFG of 5 pin for 5 seconds. When the PWR / dat lamp of the module starts to flash at the frequency of one second, it is deemed that the short circuit is successful. At this time, the factory can be successfully restored by power on again, and then the factory can be connected according to the factory parameters.

四、 ADDRESS DATA

1、Enable and gain offset control address

Address (decimal)	Function	Des
00	AIN0 INPUT	0：CLOSED 1：ENABLE
01	AIN1 INPUT	0：CLOSED 1：ENABLE
02	AIN2 INPUT	0：CLOSED 1：ENABLE
03	AIN3 INPUT	0：CLOSED 1：ENABLE
04	AIN4 INPUT	0：CLOSED 1：ENABLE
30	AIN0 OFFSET	1：Factory Reset and Offset
31	AIN1 OFFSET	1：Factory Reset and Offset
32	AIN2 OFFSET	1：Factory Reset and Offset
33	AIN3 OFFSET	1：Factory Reset and Offset
34	AIN4 OFFSET	1：Factory Reset and Offset
40	DA0 OFFSET	1；Factory Reset and Offset
50	DA1 OFFSET	1：Factory Reset and Offset
60	DA2 OFFSET	1：Factory Reset and Offset
70	DA3 OFFSET	1：Factory Reset and Offset

Read or write the corresponding address data source using read relay code 01 and write relay code 05

2、Data acquisition address

地址（十进制）	功能	功能描述
00、01	AIN0	The 32-bit signed integer represents the value of the first analog input. At present, the measurement range is 0-10000, so only the 0 address is used
02、03	AIN1	Same as AIN0
04、05	AIN2	Same as AIN0
06、07	AIN3	Same as AIN0
13、14	AIN7	Same as AIN0

20、21	DA0	The 32-bit signed integer represents the value of the first analog input. At present, the output range is 0-10000. Therefore, only the 20th address is used, and the corresponding current type 4-20mA output value is 2000-10000
22、23	DA1	The 32-bit signed integer represents the value of the second analog input. At present, the output range is 0-10000. Therefore, only the 22nd address is actually used. The corresponding current type 4-20mA output value is 2000-10000
24,25	DA2	The 32-bit signed integer represents the value of the second analog input. At present, the output range is 0-10000. Therefore, only the 24nd address is actually used. The corresponding current type 4-20mA output value is 2000-10000
26,27	DA3	The 32-bit signed integer represents the value of the second analog input. At present, the output range is 0-10000. Therefore, only the 26nd address is actually used. The corresponding current type 4-20mA output value is 2000-10000
135	Module communication parameter setting	默认为出厂参数，可通过上位机或串口工具修改参数若要通过串口工具需改方法见 YK 系列 PLC 使用说明-MODBUS 通讯说明小节

Read or write the corresponding address data source using read register code 03 and write register code 10

3、Acquisition data read command code table

Des	Read code
AIN0Input	01 03 00 00 00 02 C4 0B
AIN1Input	01 03 00 02 00 02 65 CB
AIN2Input	01 03 00 04 00 02 85 CA
AIN3Input	01 03 00 06 00 02 24 0A
DA0 Output	01 03 00 14 00 02 84 0F
DA1 Output	01 03 00 16 00 02 25 CF
DA0~DA1Input	01 03 00 14 00 04 FF FF

命令码编写方法遵循 MODBUS 协议

Read command sample

2. read sample

```
send code      :01 03 00 00 00 10 44 06
     Return    :01 03 20 00 00 00 00 00 00 00 00 06 23 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 97 39
```

发送帧： send

01	03	00 00	00 10	44 06
模块地址 module address	命令码 commad code	地址 0 address	Read 16 registers, 32 bytes of data	CRC 校验

返回帧： return

01	03	20	00 00 00 00	00 00 00 00	06 23 00 00
模块地址	命令码	32 字节数据	AD0 数据	AD1 数据	AD2 数据 0x623=1571mv
00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00	97 39
AD3 数据	AD4 数据	AD5 数据	AD6 数据	AD7 数据	CRC 校验

Write command sample

3.DA 输出设置

```
DA输出发送:01 10 00 14 00 02 04 13 88 00 00 77 FE
DA输出接收:01 10 00 14 00 02 01 CC
```

01	10	00 14	00 02	04	13 88 00 00	77 FE
模块地址	命令码	操作地址，0x14=20，即 DA0 输出	操作 2 个寄存器，即 4 个字节	4 个字节数据	0x1388=5000，即 DA0 输出 5V	CRC 校验

5.Test software and communication parameter modification

1. Test software connection method

(note) the module test tool is a test and setup tool developed by our company.
Open the software and test the IO module. Please use the function shown in the blue box in Figure 1. Click to enter the test interface, as shown in Figure 1.1

analog acquisition module
模拟量输入输出模块
Digital acquisition module
数字量输入输出模块
Network cable
remote acquisition module
网线远程采集模块
Temperature module
温度模块
AC detection module
交流检测模块
Bus module
总线模块
GSM Module
GSM模块
GPRS Module
GPRS模块
Gateway Module
网关模块
PLC Configuration
PLC配置
Gateway Module Configuration
网关模式设置
4G/2G Module
4G/2G模块

模拟量输入输出配置工具
配置区 Configuration
Filter constant
滤波常数
波特率9600;偶校验;8位数据;1停止
module ID
模块ID
连接上模块8AD2DA,
8路模拟量输入2路模拟量输出
Connect module
连接模块
command
close module
关闭连接
通讯正常
Modification of module communication parameters
参数修改
采样频率设置
正常速度(15ms,
factory reset
恢复出厂设置
模块通讯参数修改
帮助
通道配置 Channel configuration
模拟量通道0输入开启
模拟量通道1输入开启
模拟量通道2输入开启
模拟量通道3输入开启
模拟量通道4输入开启
模拟量通道5输入开启
模拟量通道6输入开启
模拟量通道7输入开启
模拟量输出通道0开启
模拟量输出通道1开启
模拟量输出通道2开启
模拟量输出通道3开启
全选
不选
工作区
Analog input detection
模拟量输入检测
模拟量输入通道
测量输入数字值
模拟量输出 Analog output
模拟量输出通道
输出电压/电流值
操作记录
显示
清空记录
save configuration
保存配置
采样公式选择
模块默认采集值对应关系为:
电压型:0V-10V -> 0-10000
电流型:0ma-20ma -> 0-1000
(4ma-20ma -> 2000-10000)
自定义计算公式
增益偏移选择 Incremental offset setting
模拟量通道0使用增益偏移
模拟量通道1使用增益偏移
模拟量通道2使用增益偏移
模拟量通道3使用增益偏移
模拟量通道4使用增益偏移
模拟量通道5使用增益偏移
模拟量通道6使用增益偏移
模拟量通道7使用增益偏移
模拟量输出通道0使用增益偏移
模拟量输出通道1使用增益偏移
模拟量输出通道2使用增益偏移
模拟量输出通道3使用增益偏移
全选
不选
退出

注意：未连接上模块的时候无法修改通讯参数，一定要先连接上模块才能修改通讯参数

修改通讯参数则点击配置区“模块通讯参数设置”按钮，会弹出如图 2 所示界面