



0~20mA/4~20mA 8 채널 입력

MODBUS RS485 변환모듈





1. Features

- RS485 MODBUS RTU standard communication with the PLC and SCADA
- 8-channel Single-Ended Analog input (DC 0-20mA/4-20mA)
- Communication circuit isolation, lightning protection, anti-jamming design
- Widely used in digital signal acquisition and control of industrial field devices

2. Specification

- Analog input channels 8-channel single-ended
- Analog Input Type DC type 0-20mA/4-20mA
- Digital resolution 12bit
- Operating Temperature Range -20~70℃
- External power supply DC 12V~24V/5W
- Isolation Protection 1500VDC
- Installation Standard DIN rail mounting
- Dimensions 125×73×35mm

3. Interface Definition

AVcc	Power(+)
AGnd	Power(-)
AI_1+	1st analog input (+) terminal
Gnd	1st input (-) terminal
AI_2+	2st analog input (+) terminal
Gnd	2st input (-) terminal
AI_3+	3st analog input (+) terminal
Gnd	3st input (-) terminal
AI_4+	4st analog input (+) terminal
Gnd	4st input (-) terminal
AI_5+	5st analog input (+) terminal
Gnd	5st input (-) terminal
AI_6+	6st analog input (+) terminal
Gnd	6st input (-) terminal
AI_7+	7st analog input (+) terminal
Gnd	7st input (-) terminal
AI_8+	8st analog input (+) terminal
Gnd	8st input (-) terminal
485A	RS485 signal A +
485B	RS485 signal B -



4. Communication Description

1. Serial Parameter: 9600, N, 8, 1

2. Analog input command signal acquisition

Send : 01 03 00 00 00 08 44 0C (Example / 16 hex)

Data	length	Data Description	Remark
01	1	Module address	Address range 01-FE
03	1	Function Code	03 - Read Register
0000	2	Register Address (4x type)	0000-Analog Input starting register address
0008	2	Read length	0008-Read the eight registers
440C	2	CRC Checksum	All the data in front of the CRC

Send : 01 03 10 0B D2 04 35 00 00 00 00 00 00 00 00 00 00 00 00 B9 02 (Example / 16 hex)

Data	length	Data Description	Remark
01	1	Module address	Address range 01-FE
03	1	Function Code	03 - Read Register
10	1	Byte count	10 - read 16 bytes in length
0BD2	16	Read data	0BD2-Read analog input channel 1 data
0435			0435-Read analog input channel 2 data
0000			0000-Read analog input channel 3 data
0000			0000-Read analog input channel 4 data
0000			0000-Read analog input channel 5 data
0000			0000-Read analog input channel 6 data
0000			0000-Read analog input channel 7 data
0000			0000-Read analog input channel 8 data
B902	2	CRC Checksum	All the data in front of the CRC

Receive Instructions analog input channel 1 current data "0BD2", converted into decimal number is 3026. Substituted into the formula: $I = (DATA * 20) / 4095 = (3026 * 20) / 4095 \approx 14.78mA$
 Analog input channel 2 current data is "0435", converted to decimal 1077. Substituted into the formula: $I = (DATA * 20) / 4095 = (1077 * 20) / 4095 \approx 5.26mA$, Other channel current data 0mA.

3. Module address setting command

Send : 00 06 00 00 00 01 49 DB (Example / 16 hex)

Data	length	Data Description	Remark
00	1	Module address	00-Message Address
06	1	Function Code	06-Write single register
0000	2	Register Address (4x type)	0000-Modify module address
0001	2	Write data	new setting module address range 0001-00FE
49DB	2	CRC Checksum	All the data in front of the CRC

Receive : 00 06 00 00 00 01 49 DB (Example / 16 hex)

This command indicates the command issued to a module, the module's new address is set to 01, this setting can save the loss of power; default address of the module is 01, when the need for



networking multiple modules, each module can be performed on the address of set individually, because of the use of mass address, so when the setting requires only one network module, when the module receives the correct command, under an order made by the appropriate action and response command sent back to the host, which means that communication is successful.

4. Baud rate setting command

Send : 01 06 01 00 00 02 09 F7 (Example / 16 hex)

Data	length	Data Description	Remark
01	1	Module address	Address Range 01-FE
06	1	Function Code	06-Write single register
0100	2	Register Address (4x type)	0100-Modify the communication baud rate
0002	2	Write data	0001-Set the baud rate 4800 0002-Set the baud rate 9600 0003-Set the baud rate 19200
09F7	2	CRC Checksum	All the data in front of the CRC

Receive : 01 06 01 00 00 02 09 F7 (Example / 16 hex)

This command indicates the command issued to a module, the module is set to 9600, the setting can save the loss of power; default baud rate of the module is 9600, when the new baud rate should be set up to select the correct communications settings baud rate, and restart the communications port, when the module receives the correct command, under an order made by the appropriate action and response command sent back to the host, which means that communication is successful