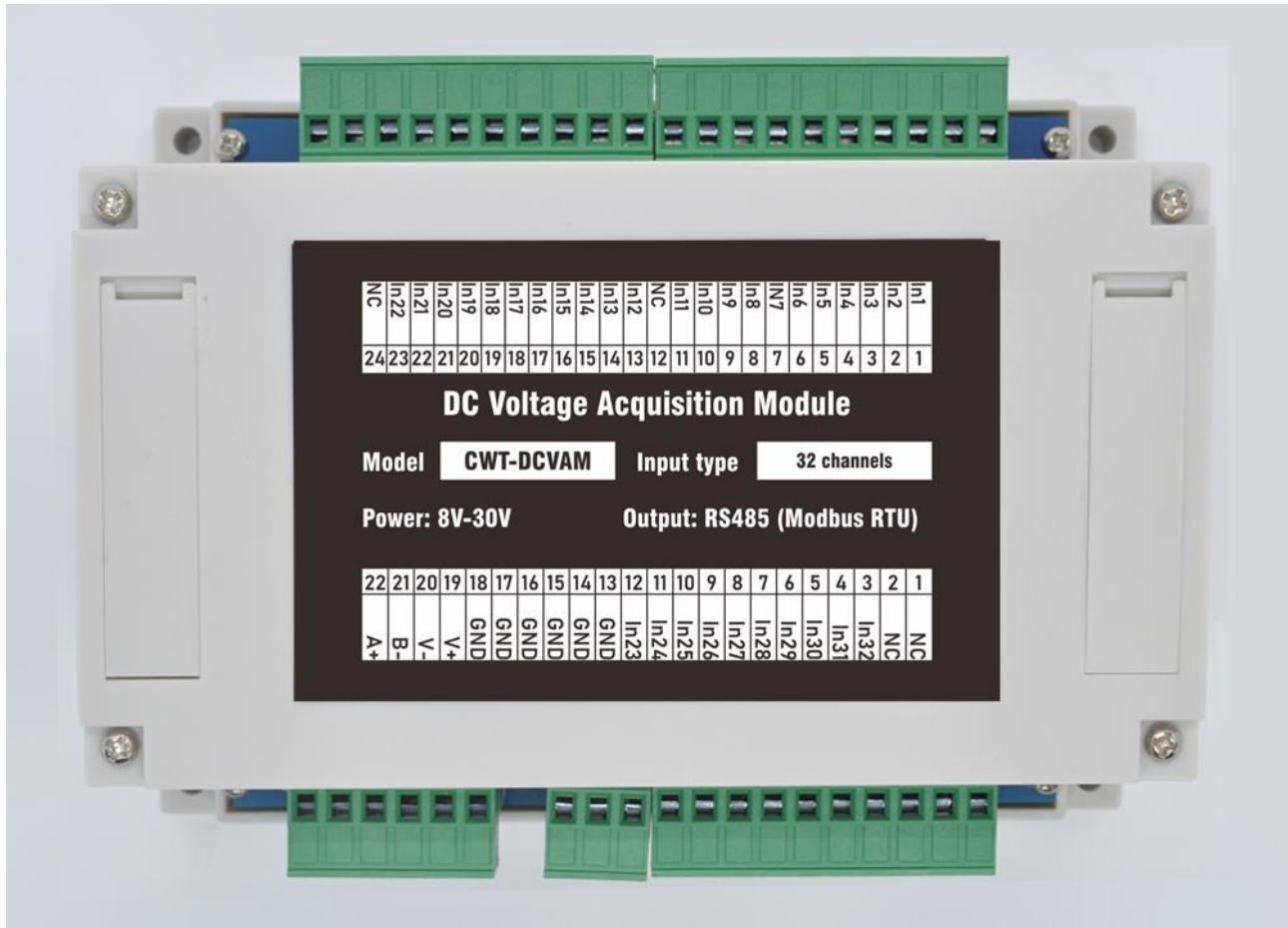


## 32-channel RS485 Modbus DC Voltage Acquisition Module



### Features

1. 32 channels DC voltage input, option: 0-5V/0-10V/0-30V/0-60V/0-160V/0-260V
2. AD conversion accuracy: 16-bit
3. Voltage sampling precision: 0.005V
4. Voltage sampling resolution: 0.001V
5. Voltage sampling frequency: 4 times/s
6. Isolated RS485 port, support Modbus RTU Protocol that can be compared with PLC、SCADA, text display, etc.
7. Wide operating voltage: DC8V-30V, reverse polarity protection
8. Working temperature : -35℃~+50℃。
9. Mount method: standard 35mm DIN-Rail Mounting
10. Size: 155(L)\*110(W)\*60(H)

IN1-IN32: DC voltage inputs

(V+): Positive of DC power supply

(V-): Negative of DC power supply

(A+): RS485 Serial communication A

(B-): RS485 Serial communication B

## RS485 communication (Modbus RTU protocol)

Default parameters: 9600,n,8,1

Default device address is 1

Modbus register map

### 1. Parameter register map

Function code: 03H (read), 06H (write)

Address (hex)	Byte order	Meaning	Description	Property
10	LO	Communication parameters  initial value: 00	BIT<7:5> reserve BIT<4:3> 00=none 01=even 10=odd (11= odd) BIT<2:0> 000=9600 001=1200 010=2400 011=4800 100=9600 101=14400 110=19200	RW
	Hi	address initial value: 01	1-250	RW

### 2. Data register map

Function code: 03H (read)

Channel	Address (hex)	PLC address	Function code	Type	Scale	Number of bytes	Property
1	60H	40097	03	UINT16	0.01	2	R
2	61H	40098	03	UINT16	0.01	2	R
3	62H	40099	03	UINT16	0.01	2	R
4	63H	40100	03	UINT16	0.01	2	R
5	64H	40101	03	UINT16	0.01	2	R
6	65H	40102	03	UINT16	0.01	2	R
7	66H	40103	03	UINT16	0.01	2	R
8	67H	40104	03	UINT16	0.01	2	R
9	68H	40105	03	UINT16	0.01	2	R
10	69H	40106	03	UINT16	0.01	2	R
11	6AH	40107	03	UINT16	0.01	2	R
12	6BH	40108	03	UINT16	0.01	2	R
13	6CH	40109	03	UINT16	0.01	2	R
14	6DH	40110	03	UINT16	0.01	2	R
15	6EH	40111	03	UINT16	0.01	2	R
16	6FH	40112	03	UINT16	0.01	2	R
17	70H	40113	03	UINT16	0.01	2	R
18	71H	40114	03	UINT16	0.01	2	R
19	72H	40115	03	UINT16	0.01	2	R
20	73H	40116	03	UINT16	0.01	2	R

21	74H	40117	03	UINT16	0.01	2	R
22	75H	40118	03	UINT16	0.01	2	R
23	76H	40119	03	UINT16	0.01	2	R
24	77H	40120	03	UINT16	0.01	2	R
25	78H	40121	03	UINT16	0.01	2	R
26	79H	40122	03	UINT16	0.01	2	R
27	7AH	40123	03	UINT16	0.01	2	R
28	7BH	40124	03	UINT16	0.01	2	R
29	7CH	40125	03	UINT16	0.01	2	R
30	7DH	40126	03	UINT16	0.01	2	R
31	7EH	40127	03	UINT16	0.01	2	R
32	7FH	40128	03	UINT16	0.01	2	R

### Set slave ID

E.g., set slave ID=2, baud=9600, parity=none,

Master sends

Address	Function Code	Start Address (Hi)	Start Address (Lo)	ID	baud and parity	Error Check (Lo)	Error Check (Hi)
0x01	0x06	0x00	0x10	0x02	0x04	0x88	0xAC

ID=02 (HEX) = 2 (DEC)

Band and parity=0000 0100 (BIN) = 04 (HEX)

Sensor responds:

Address	Function Code	Start Address (Hi)	Start Address (Lo)	ID	baud and parity	Error Check (Lo)	Error Check (Hi)
0x01	0x06	0x00	0x10	0x02	0x04	0x88	0xAC

### Enquiry slave ID, baud and parity

Master sends

Address	Function Code	Start Address (Hi)	Start Address (Lo)	Number of Points (Hi)	Number of Points (Lo)	Error Check (Lo)	Error Check (Hi)
0x00	0x03	0x00	0x10	0x00	0x01	0x84	0x11

Sensor responds:

Address	Function Code	Number of Points	ID	baud and parity	Error Check (Lo)	Error Check (Hi)
0x01	0x03	0x02	0x01	0x0B	0xF8	0x13

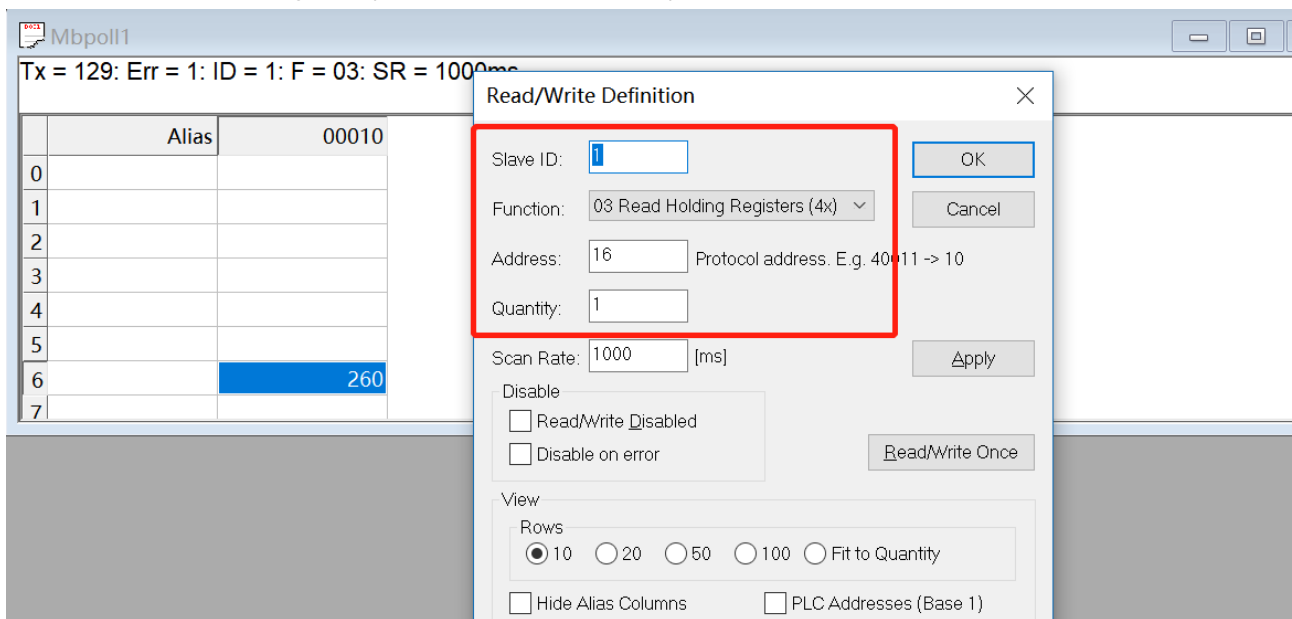
ID=01 (HEX) = 1 (DEC)

baud and parity =0B (HEX) = 0000 1011 (BIN)

so, baud = 011 = 4800, parity = 01 = even

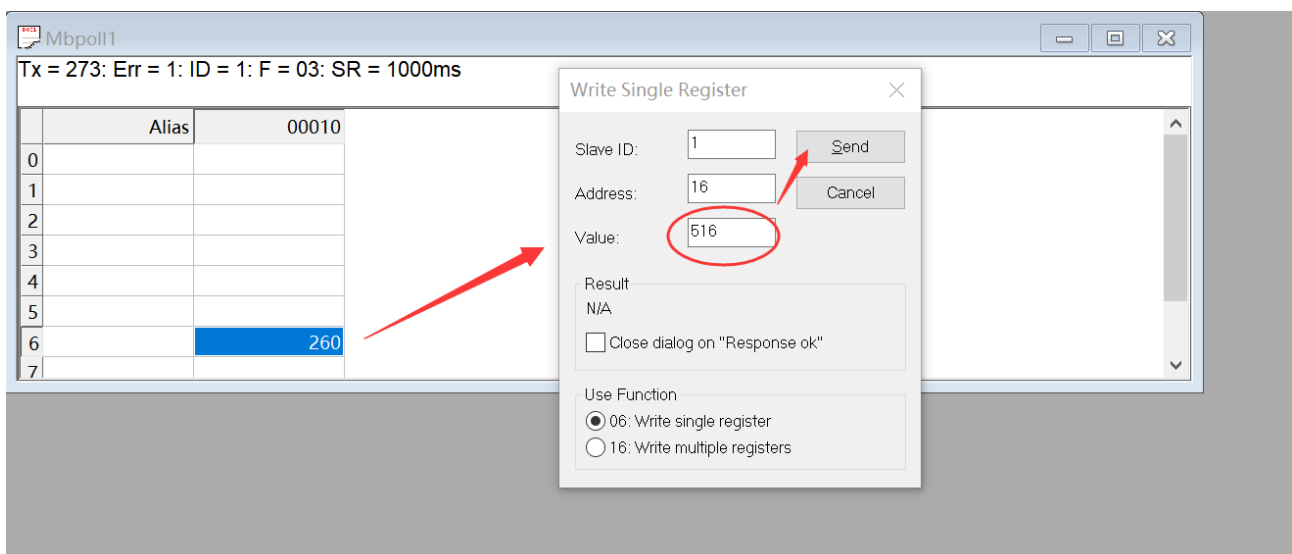
### Set id by Modbus poll

1. Read Parameter register (address = 10 Hex = 16 )



2. E.g., Set id=2, baud=9600, parity=none (corresponding value= 02 04 H = 516)

Double click register value, enter 516 and click send



E.g., read channel 1 - channel 32 in unit16

Master sends

Address	Function Code	Start Address (Hi)	Start Address (Lo)	Number of Points (Hi)	Number of Points (Lo)	Error Check (Lo)	Error Check (Hi)
0x01	0x03	0x00	0x60	0x00	0x20	0X44	0X0C

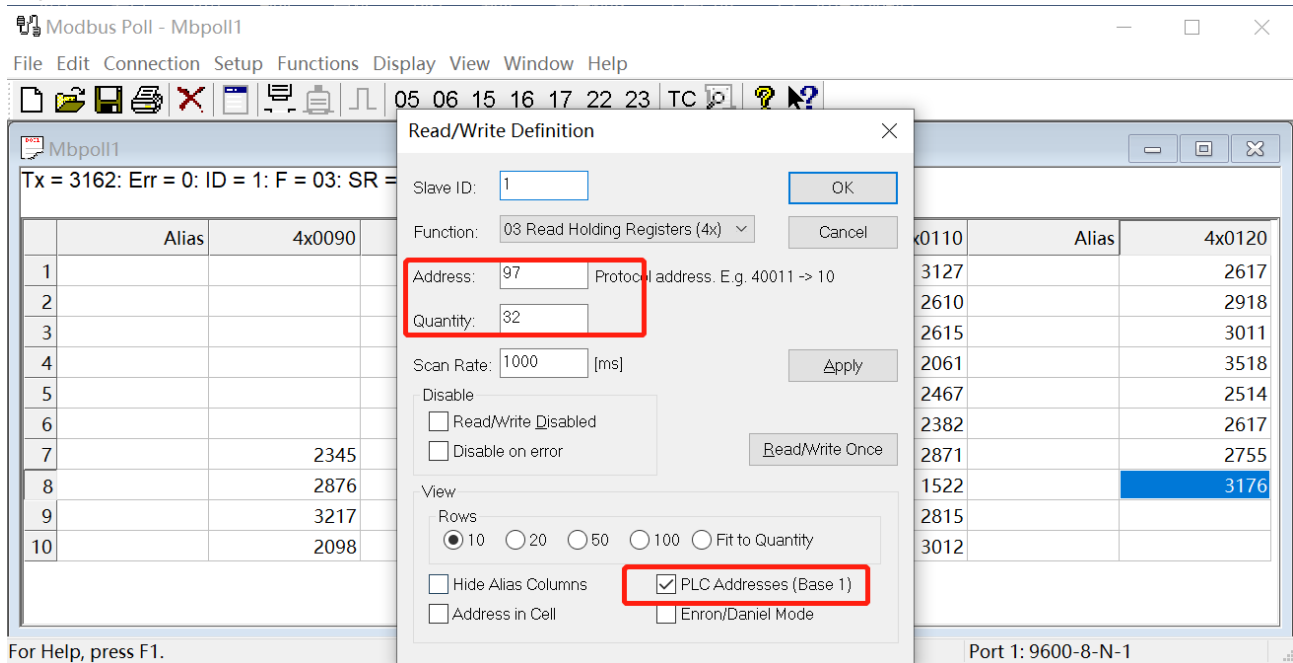
Sensor responds:

Address	Function Code	Number of byte	value	Error Check (Lo)	Error Check (Hi)
0x01	0x03	0x40	0x09 0x29 0x0B 0x3C 0x0C 0x91 0x08 0x32 0x09 0x8A 0x07 0xC6 0x0A 0x5F 0x0C 0xB9 0x0B 0x00 0x09 0x6A 0x0C 0xE5 0x0E 0xE3 0x0F 0xA1 0x09 0x72 0x0C 0x37 0x0A 0x32 0x0A 0x37 0x08 0x0D 0x09 0xA3 0x09 0x4E 0x0B 0x37 0x05 0xF2 0x0A 0xFF 0x0B 0xC4 0x0A 0x39 0x0B 0x66 0x0B 0xC3 0x0D 0xBE 0x09 0xD2 0x0A 0x39 0x0A 0xC3 0x0C 0x68	0x0E	0xC0

channel 1:=>929 H=2345 D=23.45  
 channel 2:=>B3C H= 2876 D=28.76  
 channel 3:=>C91 H= 3217 D=32.17  
 channel 4:=>832 H= 2098 D=20.98  
 channel 5:=>98A H= 2442 D=24.42  
 channel 6:=>7C6 H= 1990 D=19.90  
 channel 7:=>A5F H= 2655 D=26.55  
 channel 8:=>CB9 H= 3257 D=32.57  
 channel 9:=>B00 H= 2816 D=28.16  
 channel 10:=>96A H= 2410 D=24.10  
 channel 11:=>CE5 H= 3301 D=33.01  
 channel 12:=>EE3 H= 3811 D=38.11  
 channel 13:=>FA1 H= 4001 D=40.01  
 channel 14:=>972 H= 2418 D=24.18  
 channel 15:=>C37 H= 3127 D=31.27  
 channel 16:=>A32 H= 2610 D=26.10  
 channel 17:=>A37 H= 2615 D=26.15  
 channel 18:=>80D H= 2061 D=20.61  
 channel 19:=>9A3 H= 2467 D=24.67  
 channel 20:=>94E H= 2382 D=23.82  
 channel 21:=>B37 H= 2871 D=28.71  
 channel 22:=>5F2 H= 1522 D=15.22  
 channel 23:=>AFF H= 2815 D=28.15

channel 24:=>BC4 H= 3012 D=30.12  
 channel 25:=>A39 H= 2617 D=26.17  
 channel 26:=>B66 H= 2918 D=29.18  
 channel 27:=>BC3 H= 3011 D=30.11  
 channel 28:=>DBE H= 3518 D=35.18  
 channel 29:=>9D2 H= 2514 D=25.14  
 channel 30:=>A39 H= 2617 D=26.17  
 channel 31:=>AC3 H= 2755 D=27.55  
 channel 32:=>C68 H= 3176 D=31.76

E.g., read channel 1- channel 32 in UINT16



Modbus Poll - Mbpoll1

File Edit Connection Setup Functions Display View Window Help

05 06 15 16 17 22 23 TC ? ?

Mbpoll1

Tx = 3162: Err = 0: ID = 1: F = 03: SR =

	Alias	4x0090
1		
2		
3		
4		
5		
6		
7		2345
8		2876
9		3217
10		2098

Read/Write Definition

Slave ID: 1

Function: 03 Read Holding Registers (4x)

Address: 97 Protocol address. E.g. 40011 -> 10

Quantity: 32

Scan Rate: 1000 [ms]

Disable

☐ Read/Write Disabled

☐ Disable on error

Read/Write Once

View

Rows

☒ 10 ☐ 20 ☐ 50 ☐ 100 ☐ Fit to Quantity

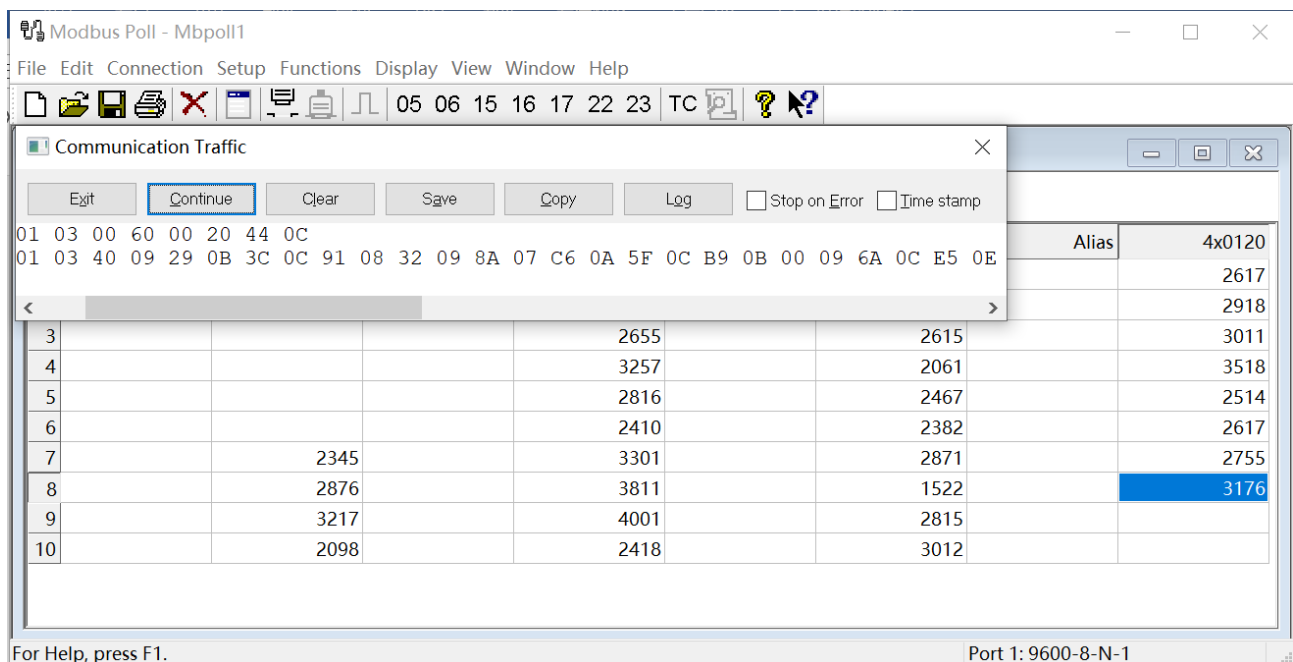
☐ Hide Alias Columns ☒ PLC Addresses (Base 1)

☐ Address in Cell ☐ Enron/Daniel Mode

OK Cancel Apply

For Help, press F1.

Port 1: 9600-8-N-1



Modbus Poll - Mbpoll1

File Edit Connection Setup Functions Display View Window Help

05 06 15 16 17 22 23 TC ? ?

Communication Traffic

Exit Continue Clear Save Copy Log ☐ Stop on Error ☐ Time stamp

01 03 00 60 00 20 44 0C

01 03 40 09 29 0B 3C 0C 91 08 32 09 8A 07 C6 0A 5F 0C B9 0B 00 09 6A 0C E5 0E

	Alias	4x0120
3		2617
4		2918
5		3011
6		3518
7		2514
8		2617
9		2755
10		3176

For Help, press F1.

Port 1: 9600-8-N-1