version number ：V1.7(20181012)

SET500 series of DC transmitter

Description

SET500 series of single-channel DC transmitter is a device that converts the AC voltage or current into a linear analog output by isolation. 。The mode of analog output is voltage signal (default 0 ~ 5V) or current signal (default 4 ~ 20mA).At the same time, SET500 series of AC transmitter with RS485 communication output, have the ability of long-distance data transmission. They can be widely used in electrical devices, automatic control and scheduling system of electric power, petroleum, coal, metallurgy, electrical installations of railway and other departments.

Executive standard

GB/T 50063-2008 Code for design of electrical measuring instrument of electric installation
GB/T 17626.4-2008 Electrical fast transient impulse immunity test (level IV)
GB/T 17626.5-2008 Surge (impact) anti-interference test (level IV)
GB/T 14537 Measurement level and protection device impact and crash test specified in level I
GB/T 11287 Class I specified in the vibration test (sinusoidal)
GB/T 13850-1998 Electrical measuring transducer for converting AC power into analog or digital signals
GB/T 2423.18 Environmental test Part 2 Test Kb: salt spray, alternating (sodium chloride solution)
GB/T 13850-1998 Electrical measuring transmitter that AC power is converted to analog or digital signals

Naming Rules

Model	SET500	-A	1	-YA	-S	-II	G	-02

Product Series
SET500=Single-channel DC transmitter

Auxiliary power
A=85~265VAC(47~63Hz) or 88~370VDC；B=48VDC；C=24VDC

Shell type
1=MEMAX

Measurement type and range
Type：Y=Voltage；L=Current
Voltage range：A=100V；B=220V；C=450；D=75mV； E=5V；F=250V；G=300V；H=10V；I=60V
Current range：1=1A；2=5A；3=20mA；4=4~20mA；5=150mA；6=600mA

RS485 communication
S=Own the function of RS485，Blank= Without RS485

The type and range of analog output
I=AO1 is 4~20mA;II=AO1 and AO2 both are 4~20mA;U=AO1 is 0~5V;UU=AO1 and AO2 both are 0~5V;IU=AO1 is 4~20mA,AO2 is 0~5V;Blank=Without the function

Isolation between analog outputs (Only select AO1 and AO2 both)
G=Isolation between AO1 and AO2；Blank=Without isolation

Accuracy class
02=0.2 grade；05=0.5 grade

Parameters

Auxiliary power：85~265VAC (47~63Hz) or 88~370VDC、24VDC；48VDC

Load impedance：
When outputting analog voltage signal（as 0～5V），Load impedance≥10KΩ
When outputting analog current signal（as 4～20mA），Load impedance≤500Ω

Accuracy：0.5 grade（default）or 0.2 grade

Input type: DC voltage, DC current

Power protection ：Anti-surge, over-voltage protection

Power consumption：≤5VA

Insulation resistance：≥20MΩ

Overload capacity：Voltage 1.2 times sustained, current 1.2 times sustained

Insulation resistance：input , output and power supply circle ≥20MΩ ； on shell ≥ 100MΩ

Withstand voltage：
power supply with input or output≥AC 2KV，
input with out put≥AC 1KV

Working environment：-40℃~+70℃，≤95%RH without condensation

Storage environment：-40℃～+85℃，≤95% without condensation.

Elevation：≤4500m

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RS485 parameter description

Name	Parameter	Default
Address	001~247	001
Baud rate	1200, 2400, 4800, 9600, 19200	9600
Check method	E81(Even parity，8-bit data bits, 1-bit stop bit) O81(Odd parity，8-bit data bits, 1-bit stop bit) N82（No check，8-bit data bits, 2-bit stop bit）	N82

Note: ①AO1 and AO2 are respectively corresponding to 1 channel analog output. For the relationship between analog output and input, for example:
If AO is analog current output, and the range is 4 ~ 20mA, then 4mA corresponds to zero input, 20mA corresponds to the full scale input. Other output range, such as the current signal is 0 ~ 12mA, 4 ~ 12mA, the voltage signal is 0 ~ 10V, the same goes for -5V ~ 5V.

RS485 Communication protocol

1、Communication data structure

frame start	address field	function code	data domain	CRC check	Frame end

address field ： Slave address　　data domain：Data to be transmitted

function code：03H is reading data　　CRC check ： 16 bit CRC check

2、Data domain format

Information is transmitted in an asynchronous manner，and in bytes, the communication information is transmitted between the host and the machine is the 11 bit frame format.

Start bits	Data bits	Parity bits	Stop bits	Type
1	8	Odd	1	O81
1	8	Even	1	E81
1	8	None	2	N82

3、Information frame format

1）Read register data

Request from host：（Function is 03H）

Address	Function code	Start address		Register number		CRC check	
		High byte	lower byte	High byte	lower byte	lower byte	High byte
01～F7H	03H	00H	10H	00H	01H		
1byte	1byte	1byte	1byte	1byte	1byte	1byte	1byte

Answer from the slave computer：

Address	Function code	Number of data bytes	Data (High byte in front)	CRC check	
01～F7H	03H	02H	Register content	Lower byte	High byte
1byte	1byte	1byte	2byte	1byte	1byte

Note: the DC transmitter only has read function. because there is one parameters, the starting address is 0010H, and the number of register is 0001H, when the address is 01, the CRC calibration value is 85CF. when the slave computer`s answer data is hexadecimal number， it is, firstly, converted to a decimal number. The different inputs correspond to different ranges.

RS485 communication protocol

Input voltage ： 100V，220V，380V，75mV measuring product ,the coefficient is 100
Input current ： 1A measuring product，the coefficient is 10000
5A and 4~20mA measuring product，the coefficient is 1000
For example：The production is 5V. The data bit answered by the slave is 0D B8，that the decimal number is 3512. It divides the coefficient 1000 is 3.512. So the value of measuring product is 3.512V.

2）Returned error communication information from the slave computer

Device address	Function code	Error code	Check code	
01～F7H	83H/86H	01H/02H/05H	Lower byte	High byte
1byte	1byte	1byte	2bytes	

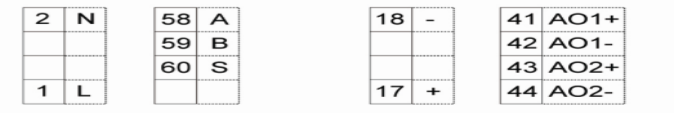
A）function code ： Host read error：83H

B）Error code meaning：01H ： Error in function code 02H ： Address or data length error 05H ： Checking data

3）CRC check way: check table method

4）Register address：0010H

Terminal definition diagram



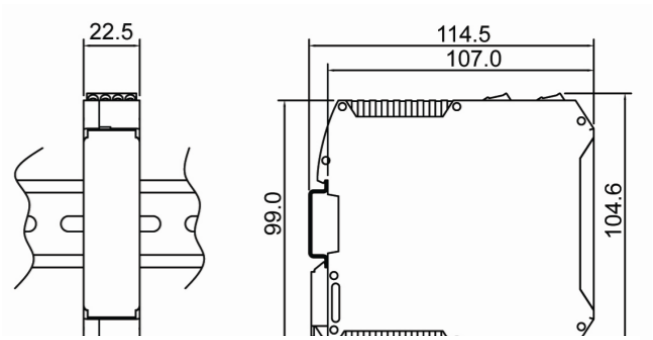
1,2 for auxiliary power wiring
58,59 for the RS485 communication line, 60 for the RS485 ground wire
17for the DC positive signal input, 18 for the DC negative signal input
41, 42 for the first analog signal output
43,44 for the second analog signal output

Note: RS485 is an optional item. When this function is not used, the corresponding 58, 59, and 60 positions are decorated by empty cover .

Typical models and ordering instructions

SET500-A1-YA-S-IIG-02：
SET500 series single DC transmitter. The auxiliary power has a wide range of input (88 ~ 370VDC or 85 ~ 265VAC). The shell is MEMAX , and it supports rail installation.
The measurement type is AC voltage and the voltage rating is 0 ~ 100VAC.
The output is 1 channel RS485 and 2 channels 4 ~ 20mA, and AO1 and AO2 are isolated from each other. 0.2 accuracy.

Installation size chart (unit: mm)



订货说明

Please specify when ordering: model, RS485 parameters (address, baud rate, the way of check) and the number and so on. For example:
SET500-A1-YA-S-IIG-02、RS485 (001~010、9600、N82)，10。