38148-TE

JS-VSG-10 Voltage Signal Generator

User Manual

V202308

LINK To Chinese & English Manual: **http://www.sz-qhkj.com/bbs/showthread.php?tid=20**

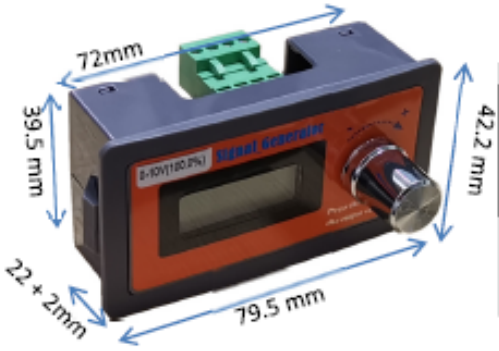
1 Features:

1.1 Adjustable output of 0-12.5V, and the output range can be set arbitrarily within 0-12.5 V;
1.2 -1999 to 9999, decimal point position can be set arbitrarily;
1.3 4-bit LCD (with backlight), digital encoder knob tuning (the number of turns can be set);
1.4 Manual tuning or programmable automatic output, can dynamically output continuous curve (set with encoder knob with key combination);
1.5 Can set fast switching coarse tuning and fine tuning mode, fixed startup value mode, fast return to zero and other modes;
1.6 The output can be calibrated and the error can be corrected linearly;
1.7 Output short circuit protection, power supply reverse connection protection, etc.;
1.8 Industrial grade circuit design, can work without power for a long time;

2 Technical Indicators:

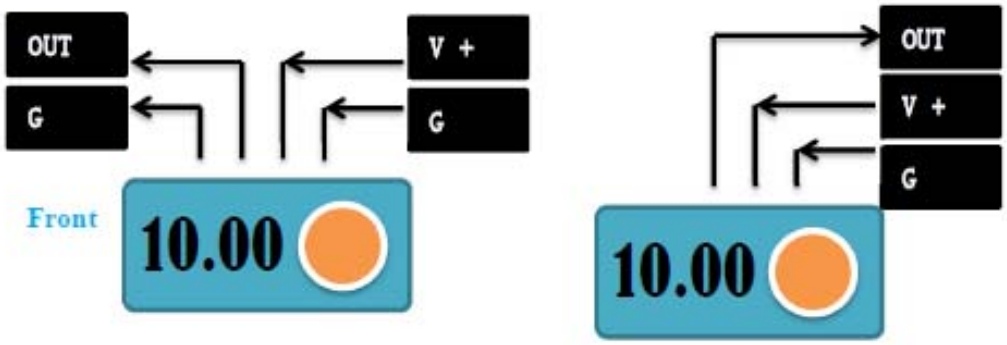
2.1 Power supply DC 8-28V/1W (note that power supply must be 2V larger than output, such as 0-10V, power supply must be greater than 12V);
2.2 Output range: 0-12.5V Maximum current: 20mA; Tuning display accuracy: 0.01 V error < 0.03 V
2.3 Encoder knob pulse number of 20, Segment LCD;
2.4 Working environment:-20-60℃, relative humidity < 80%;

3 Dimension Drawing:



Attention for the installation of cabinet/electric box:
The panel must be stuck to the ears on both sides to fix it, so the thickness of the panel must be greater than 1.4 mm, The opening size should consider the width of the ear, and should not be too small, otherwise it will not fit in. The recommended opening size is 77X40mm

4 Wiring Diagram:



G: Power ground
V +: Power positive (12-28VDC recommended)
OUT: Output positive
G: Output ground
Wherein the power supply ground
and the output ground are connected internally
Can only pick up one

5 Parameter Settings:

(Press the knob to confirm ("OK"), rotated clockwise is "+", and counterclockwise is "-"):

5.1 Press the knob for 2 seconds to enter the parameter setting state, "F001", then press the knob to set the value, and press again to save after modification;

5.2 For the parameters after F002, you need to enter the password. After entering the setting display F001, display 4 horizontal bars clockwise, and then enter:

5.3 To enter F002 …enter the password "+ - - +" first;

5.4 To enter F200 …enter the password "- + - +" (automatic curve output setting);

5.5 Rotate the knob directly to the last parameter number, press the "OK", and enter the normal operation screen after setting;

5.6 After the parameter setting screen has no operation for more than 10s, it exits the setting state and enter the normal operation screen;

5.7 F006/7/9/10、Ft01-9、FA01-9、Fb01-9 after entering the value setting of these parameters, one of the nixie tube will blink, press and hold the knob for 2 seconds to change the blinking position of the nixie tube, and you can switch the adjustment bit;

6 Parameter Table and Description:

No.	Description	Remarks	Default
F001	Coarse or fine tuning	0: Coarse tuning mode, "F002" to modify the addition and subtraction multiples 1: Fine tuning mode, "F003" to modify addition and subtraction multiples	0

		2: Automatic curve output (parameter F201 > 0 should be set first) (for burn-in test products)	
F002	Coarse tuning of addition and subtraction multiples	1-100 (x 10)	1
F003	Fine tuning of addition and subtraction multiples	1-100	1
F004	Press function	0: Manually store the output value (fixed startup value); 1. Quickly switch coarse tuning and fine tuning; 2: Output OFF/ON; 3. Quick return to zero (minimum value); (Function 1-3 is automatic storage of output value: 3 seconds after knob tuning)	0
F005	Output range(V)	0:0-10V 1:2-10V 2:0-5V 3:1-5V 4:0-3.3V 5:0-2.5V 6:0-1V 7:0V-12V -1: Custom	
F006	Custom output low end	0-12.50V	0
F007	Custom output high end	0-12.50V	10.00
F008	Display mode	0: Actual voltage 1: 0-100.0(%) 2:0-50.0(hz) 3:0-90 4:0-100 5:0-200 6:0-400 7:0-600 8:0-1000 9:0-1300 10:0-1500 11:0-2000 12:0-2500 -1: Custom	
F009	Custom display low end	-1999 to 9999. the decimal point set in F011	0
F010	Custom display high end	-1999 to 9999. the decimal point set in F011	1000
F011	Custom decimal point position	0-4 0/1: None 2: 999.9 3: 99.99 4: 9.999	3
F012-14	Standby	Standby	
F015	+ 10V calibration value	-999--+999 for internal reference only, please be careful when modifying	
F200	Automatic curve mode	0: automatic cycle 1: curve run once when power on, then output 0V, and then press the knob to run again 2:curve run once when power on, then output last curve value, and then press the knob to run again 3:=mode 1, but not run when power on 4: =mode 2, but not run when power on	0
F201	Curve number	0: Automatic curve output mode does not need; 1-9: number of sections	0
Ft01	Section 1 curve time	0-999 seconds Set as many values as there are sections of "F201"	
FA01	Section 1 starting voltage	0.00-12.50 V	

Fb01	Section 1 end voltage	0.00-12.50 V	
Ft02	Section 2 curve time	0-999 seconds	
…	…	…	
Fb09	Section 9 end voltage	0.00-12.50 V	

6.1 Examples of setting and calculation of knob turns:

Press the knob for 2 seconds, enter the setting, display F001, and then press it to set its value to 0 (coarse tuning) or 1 (fine tuning), which can quickly switch the tuning speed, and the multiples of coarse tuning and fine tuning are set in F002 and F003;

Examples of number of turns calculated: Knob encoder 20 grids per turn

Setting example	F001	F002	F003	Description
0-10V shows 0-10.00, and the knob is adjusted for 1 turn	0	5	x	Set coarse tuning 5, with a grid change of 0.5V
0-10V shows 0-10.00, and the knob is adjusted for 50 turns	1	x	1	Set fine tuning 1, with a grid change of 0.01V
0-5V shows 0-5.00, and the knob is adjusted for 5 turns	1	x	5	Set fine tuning 5, with a grid change of 0.05V

6.2 Save the power-on value when it is powered down. Press the knob to set other functions:

F004=0: After adjusting the knob, press the knob to save it, and save as much as you turn it on;

F004=1: Press the knob to switch the manual tuning speed, which is equal to setting F001=0 or 1;

F004=2: Short press knob, switch output, OFF state output is 0V;

F004=3: Press the knob, and the screen display value is directly adjusted to minimum display value;

6.3 Examples of output range and display scale settings:

Setting example	F005	F006	F007	F008	F009	F010	F011
0-10V show 0-10.00	0	x	x	0	x	x	x
0-10V show 0-100.0	0	x	x	1	x	x	x
0-10V show 0-50.0	0	x	x	2	x	x	x
0-10V show 0-5000	0	x	x	-1	0	5000	0
0-5V show 0-5.00	2	x	x	0	x	x	x
0-5V show 0-100.0	2	x	x	1	x	x	x
0-5V show 0-50.0	2	x	x	2	x	x	x
0-3.3V show 0-3.30	4	x	x	0	x	x	x
0-3.3V show 0-100.0	4	x	x	1	x	x	x
0-3.3V show 0-50.0	4	x	x	2	x	x	x
5-10V show 5.00-10.00	-1	5.00	10.00	-1	500	1000	3
3-5V show -80 to 1000	-1	3.00	5.00	-1	-80	1000	0
1-3V show 1.00-3.00	-1	1.00	3.00	-1	100	300	3
2-8V show 0-250	-1	2.00	8.00	-1	0	250	0
0-12V show 0-12.00	7	x	x	0	x	x	x
0-12.5V show 0-12.50	-1	0	12.50	0	x	x	x
0-2V show 0-2.000 (1mV)	-1	0.0	2.00	-1	0	2000	4
0-10V show 0-10.000 (1mV Adjust)	2	x	x	-1	0	A000	4

Note 1: "10.000" cannot be displayed with 4 nibbles, so "A000" is used instead

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6.4 Output error calibration method:

When there is an error between the meter display value and the multimeter measurement value, you can calibrate 10V and make the meter display consistent with the multimeter through linear correction;

Enter the parameter F015 setting, adjust its value, so that the multimeter measurement shows 10.00 V, press the knob to save, and the calibration is completed (the calibration value is an internal correction value regardless of the size);

6.5 Examples of automatic curve loop output setting steps: (For aging test products, enter the F200 password "- + - +")

Step 1. Set F200 curve run mode;

Step 2. Set F201 = number of sections, with a maximum of 9 sections, and automatically change the cycle output for aging TEST products. . ;

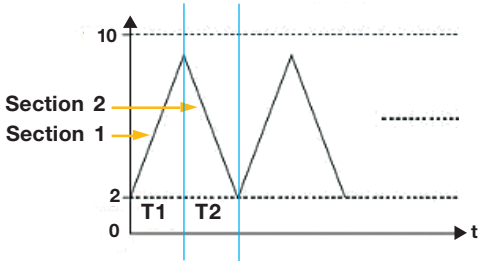
Step 3、setting each section: FtXX= time 1-999 sec/FAXX= start voltage/FbXX= end voltage;

Step 4、 finally setting F001=2, switching from manual tuning mode to automatic curve output mode;

Turn off automatic loop output mode: F001=0 or 1;

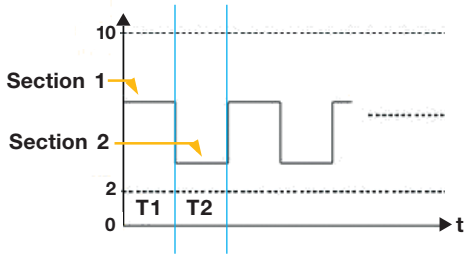
Example Waveform

TRIANGLE



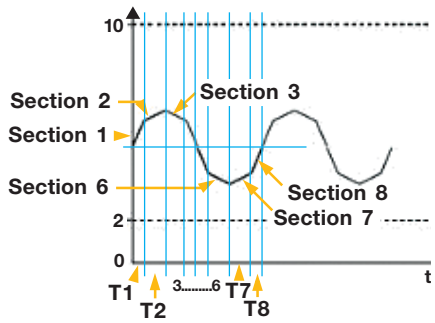
Mode	# Sections	Section 1	2
F200 = 0	F201=2	Ft01=10 (T1) FA01=2.00 Fb01=9.00	Ft02=10 (T2) FA02=9.00 Fb02=2.00

SQUARE



Mode	# Sections	Section 1	2
F200 = 0	F201=2	Ft01=10 (T1) FA01=6.00 Fb01=6.00	Ft02=10 (T2) FA02=3.00 Fb02=3.00

SINE



Mode	# Sections
F200 = 0	F201=8

Section 1	2	3	4	5	6	7	8
Ft01=2 (T1) FA01=4.00 Fb01=5.00	Ft02=3 (T2) FA02=5.00 Fb02=6.00	Ft03=3 (T3) FA03=5.00 Fb03=4.00	Ft04=2 (T4) FA04=5.00 Fb04=4.00	Ft05=2 (T5) FA05=4.00 Fb05=5.00	Ft06=3 (T6) FA06=5.00 Fb06=6.00	Ft07=3 (T7) FA07=6.00 Fb07=5.00	Ft08=2 (T8) FA08=5.00 Fb08=4.00

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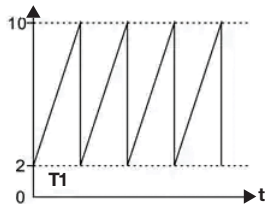
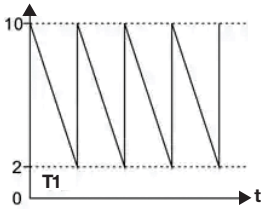
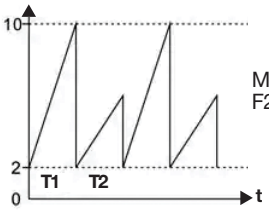
Misc. Waveform



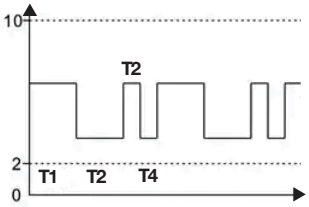
Mode F200 = 0 # Sections F201=1 Section 1 Ft01=10 (T1) FA01=2.00 Fb01=10.00



Mode F200 = 0 # Sections F201=1 Section 1 Ft01=10 (T1) FA01=10 Fb01=2



Mode F200 = 0 # Sections F201=2 Section 1 Ft01=10 (T1) FA01=2.00 Fb01=10 2 Ft02=10 (T2) FA02=2.00 Fb02=6.00



Mode F200 = 0 # Sections F201=4 Section 1 Ft01=10 (T1) FA01=6.00 Fb01=6 2 Ft02=10 (T2) FA02=3.00 Fb02=3.00 3 Ft03=5 (T3) FA03=6.00 Fb03=6.00 4 Ft04=5 (T4) FA04=3.00 Fb04=3.00

7 Attention

7.1 Turn off the power supply before wiring;

7.2 Exceeding the range shown in the technical index, it may cause the instrument to work abnormally or even be damaged;

Dim. in mm