sisco

SRT6200S
User Manual

1.product description

The instrument adopts computer technology, in line with the national standard GB-T6062 and ISO, DIN, ANSI and JIS four standards, can be widely applied to the production site, can measure the surface roughness of a variety of machined parts, according to the selected conditions of the measurement of the calculation of the corresponding parameters, in the LCD display clearly shows all the measurement parameters. Measuring the surface roughness of the workpiece, the sensor is placed on the surface of the workpiece to be measured, the sensor is driven by the internal drive mechanism of the instrument along the surface to be measured to do the same speed sliding, the sensor through the built-in sharp stylus to feel the roughness of the surface to be measured, the roughness of the surface of the workpiece to be measured at this time caused by the stylus to produce a displacement of the displacement of the sensor inductance of the inductance of the sensor to change the output end of the phase-sensitive rectifier to produce a proportional to the roughness of the surface to be measured. The measured surface roughness proportional to the analog signal, the signal is amplified and level shifted into the data acquisition system, the DSP chip will collect the data for digital filtering and parameter calculations, the results of the measurements in the LCD display, and at the same time can be communicated with the PC to realize the data analysis statistics and printing.

* Multi-parameter measurement :Ra, Rz, Rq, Rt
* High precision inductance sensor; Four filtering modes: RC, PC-RC, GAUSS, D-P;
* Small size, light weight, easy to use; Built-in standard RS232 interface can communicate with PC;
* There are two shutdown methods for this table: one is manual shutdown, and the other is automatic shutdown after 5 minutes of keyboard operation.
* This table can remember 7 groups of measurement data and measurement conditions for next review or online processing.
* With imperial conversion function.

2.Specifications and parameters

Display: LCD

Measurement parameters:Ra, Rz, Rq , Rt

Measuring range: Ra： 0.025~10μm / 1.000~400.0μinch

Rq：0 .025~10μm/1.000~400.0μinch

Rz：0 .020~100μm/0.780~4000μinch

Rt：0 .020~100μm/0.780~4000μinch

Accuracy: not more than ±10%

Indicating value variability: not more than 6%

Sensor:

Angle: 90°

Radius: 10um

Force measurement: 16mN(1.6gf)

Material: Diamond

Measurement principle: inductive type

Longitudinal radius: 48mm

Maximum drive stroke: 17.5mm/0.7inch

Sampling length (optional) : 0.25mm/0.8mm/2.5mm

Actuating speed

When measuring:

When sampling length =0.25mm,Vt=0.135mm/s

When sampling length = 0.8mm,Vt=0.5mm/s

When sampling length = 2.5mm,Vt=1mm/s

Return:

Vt=1mm/s

Filter profile :(filter profile: RC/PC-RC/GAUSS)

(Unfiltered profile: D-P)

Resolution:

0.001μm When the measured value is <10μm

0.01μm When 10μm≤ measured value <100μm

0.1μm When the measurement value is ≥100μm

Evaluation Length Ln: 1~5L Optional

Working environment:

Temperature: 0~50℃ Humidity :< 80%RH

Power Supply: 4x1.5vAAA 7 battery

Size: Host: 149×67×29mm

Sensor: 185x56x47mm

Net weight: 485g (without battery)

Standard configuration

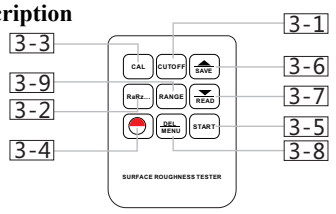
Host machine
screwdriver
Measuring base
Adjustable support
Standard sensor
Standard template
Sensor case
Instruction manual

Optional configuration

* Measuring bench
* Deep slot sensor
* Surface sensor
* USB data cable output
* RS-232C data line output
* Bluetooth Bluetooth™data output

3.Panel and component description

3.1 Key Description



3-1 Sampling length selection key
3-2 Parameter selection key
3-3 Calibration key
3-4 Power switch
3-5 Measurement keys
3-6 Up/Store key
3-7 Down/Browse key
3-8 Delete/Menu key
3-9 Measurement length selection key

3.2 Component Description

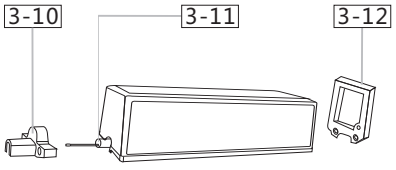


Figure 3-2

3-10 Probe protector 3-11 Measuring sensors 3-12 Adjustment rack

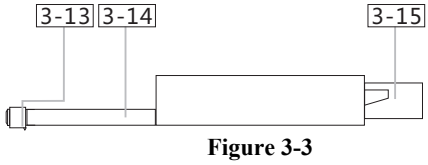


Figure 3-3

3-13 pins 3-14 Protective cover 3-15 Sensor socket

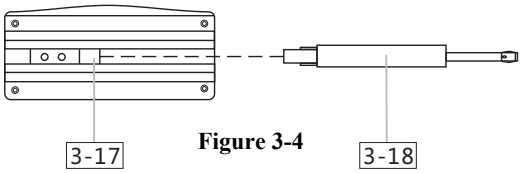


Figure 3-4

3-17 Connecting sleeves 3-18 Sensor

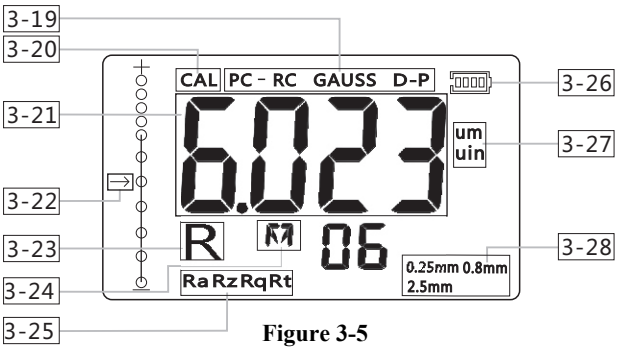


Figure 3-5

3-19 Filter indicator
3-20 Calibration indicator
3-21 Measurement value
3-22 Stylus position cursor
3-23 Browse status indicator
3-24 Memory status indicator
3-25 Measurement parameter indicator
3-26 Battery status indicator
3-27 Measurement unit indicator
3-28 Sampling length indicator

3.3 Sensor Loading and Unloading

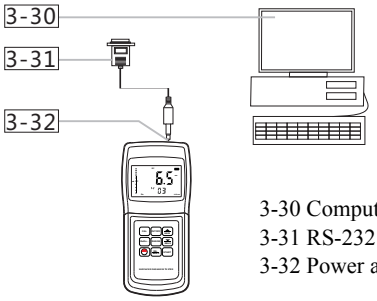
During installation, hold the main part of the sensor by hand, insert the sensor into the sensor connecting sleeve at the bottom of the instrument as shown in Figure 3-4, and then gently push it to the end. When disassembling, hold the main part of the sensor or the root of the protective sleeve by hand and slowly pull it out.

Note:

A. The sensor stylus is the key part of the instrument, should be given great attention.

B. In the process of loading and unloading sensors, special attention should be paid not to touch the stylus, so as not to cause damage and affect the measurement.

C. When installing the sensor, pay attention to the reliable connection. 3.4 Power Adapter and Battery charging When the battery voltage is too low, that is, when the battery symbol on the display shows that the voltage is too low, the instrument should be charged as soon as possible. When charging, plug the power adapter into the power socket of the instrument as shown in Figure 3-6, and then connect the power adapter to the 220V50Hz mains supply to start charging. The input voltage of the power adapter is 220 V AC, the output is 5~7 V DC, the charging current is about 300 MA, and the maximum charging time is about 5.0 hours. The instrument uses lithium-ion rechargeable battery, no memory effect, can be charged at any time, charging the instrument can work as usual.



3-30 Computer
3-31 RS-232
3-32 Power adapter

Figure 3-6

Note:

A. When measuring the workpiece in the charging state, attention should be paid to the placement of the cable

B. The meaning of low battery warning: the black part inside the battery can display the battery amount, indicates that the battery is too low, must be charged as soon as possible. indicates sufficient power for normal measurement. Weak measurement signal. The measurement operation is affected.

C. When the battery is charging, the relatively large power noise will affect the measurement, minus

D. The instrument can control the charging process, so that it is not necessary to shut down and charge. Even if the instrument is turned off. It will turn on automatically when charging.

4.Measurement steps

4.1 Preparations before measurement

A. Turn on the device to check whether the battery voltage is normal.

B. The instrument automatically restores the last measurement state after starting up. The second two-digit line on the display indicates the number of groups stored. Before making a measurement, you must do your homework.

C. Check whether the sampling length is selected correctly. If not, press the CUTOFF key to select. For sampling length selection, please refer to Table 10-7 recommendations on page 15.

D. Check whether the filter is selected correctly. If it is not correct, press the DEL MENU key until 'FILT' appears on the display. It takes about four seconds from pressing DEL MENU. Then press the READ key and SAVE key to select from the four filters. You can press the meaning key other than READ and SAVE to exit the setting MENU.

E. Check whether the measuring UNIT is set correctly. If not, press DEL MENU down until "Unit" appears on the display. Start by pressing the

following DEL MENU key for about 8 seconds,and then use the SAVE key to convert to READ. To exit the Settings, press any key other than SAVE and READ.

F. Wipe the measured surface of the workpiece

G. Place the device according to Figure 4-1, 4-2, and ensure that cables are correctly and reliably connected.

H. Refer to Figure 3-8, the sliding trajectory of the sensor must be perpendicular to the direction of the processed texture of the measured surface of the workpiece.

I. Brackets and sensors

When the surface of the measured part of the object is smaller than the bottom surface of the instrument, the sensor sheath and bracket can be used to assist support for correct measurement. (As shown in Figure 4-3)

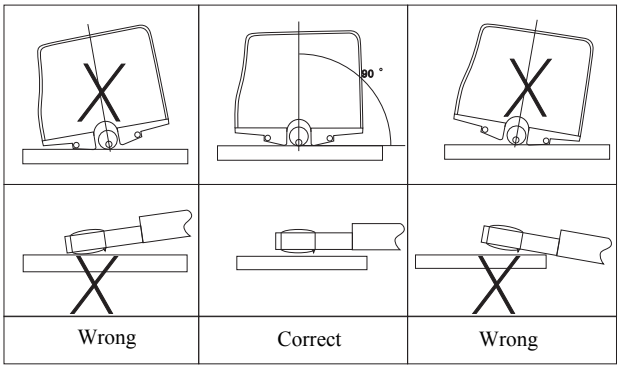


Figure 4-1

Figure 4-2

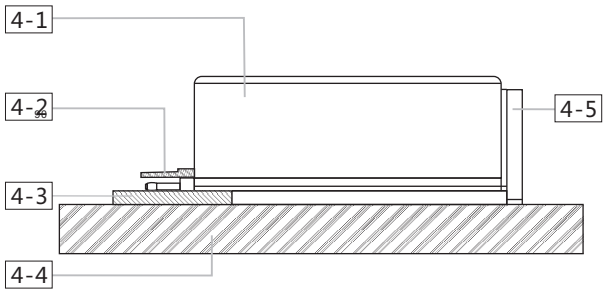


Figure 4-3

4-1 Roughness measuring sensor
4-2 Sensor jacket
4-3 Workpiece under test
4-4 Measurement platform
4-5 Adjustable brackets

4.2 Measurement

After the preparation work is done, if the measurement conditions do not need to be changed, press the power button to start the measurement, first on the display will see "---" at the same time, the sensor is sliding on the surface of the test, and then the sensor stops sliding, and then slides backward, until the sensor returns to the original position, the measurement value is displayed on the display.

① Save the measured value for later use
After measurement, you will see that the original "M" has changed into this state, you can press SAVE to save the Ra, Rz, Rq, Rt data and measurement conditions into the instrument, and the number of data sets will be automatically increased by 1. When stored, it will automatically become "M".

② How to browse the parameters
In the "M" state, different parameters can be browsed. Press the RaRz key to display the corresponding parameters and measurement conditions on the monitor.

③ Delete the measurement result
In the "M" state, delete the current set of measurement results by pressing the DEL MENU key, after which the "M̄" is automatically converted to「M」. In addition, by pressing the Start key in the "M" state, the new measurement result will replace the previous measurement result.

5. How to read stored values

Regardless of whether the instrument is in the "M" or "M" state, we can read the stored value by pressing the READ key. The display "R" indicates that it is in the reading state. When in the "R" state, we can browse different sets of values by pressing the SAVE and READ keys. The serial number of each group is displayed simultaneously on the monitor. For any of these groups, we can read the measured values under different parameters. When the READ key is pressed, the relevant parameters and their values will be displayed on the display.

6. How to calibrate the instrument

6.1 To enter the calibration state, simply hold down the DEL MENU key for about 12 seconds until "CAL "appears on the monitor. The calibration status is marked with "CAL ".

6.2 When measuring on a standard sheet, be sure to compare the measured value with the standard value on the same parameter.
6.3 Press SAVE or READ Adjust to the correct value.
6.4 Repeat 6-2 6-3 until the specified accuracy is reached. 6.5 Press any key other than the Start key to exit.
6.6 Before leaving the factory, the instrument has been fully adjusted, the error is less than 10%, the user should not often use the calibration function.

7. How do I restore the factory Settings

7.1 When to Restore Factory Settings
When the measurement value is too large or too small, it is necessary to restore the factory setting value.
7.2 How Can I Restore Factory Settings
Press the DEL MENU key and hold until "FAC" appears on the display (about 16 seconds). This state is also marked by "CAL", the display will appear after three seconds have been jumping numbers, press any key except the power button to exit.
7.3 After restoring the factory Settings, if the instrument measurement is still inaccurate, you can refer to the calibration section to calibrate the instrument. Sichuan middle flavor dala

8. Computer connection

According to the label on the battery case, the use of optional USB data line output, RS-232C data line output and Bluetooth Bluetooth™ data output, can communicate with the PC computer, to achieve data collection, processing, analysis and printing functions. For details, see the online instructions. Load the batteries correctly.

8.1 Insert the RS-232 cable into the appropriate hole of the instrument
8.2 Connect the instrument with the RS-232 on-line cable
8.3 Open the software on the operating platform and select the COM port in system Settings
8.4 Click the Data Collection button and then click the Start/Continue button.

8.5 Press the READ key to download the data in the instrument to the computer.

9. Maintenance and maintenance

Avoid collision, violent vibration, dust, moisture, oil, strong magnetic field, etc. The sensor is a precision part of the instrument and should be carefully protected. After each use, the sensor should be put back in the packaging box; The random standard template should be carefully protected to avoid calibration instrument errors after scratching.

10. Parameters

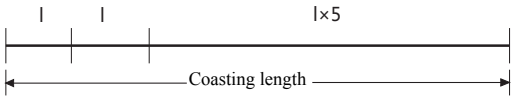
10.1 Filter

RC filter:	Traditional 2-order filter
PC-RC filter:	Phase corrected RC filter
GAUSS filter :	DIN4777
D-P direct contour:	Root-mean-square algorithm is adopted.

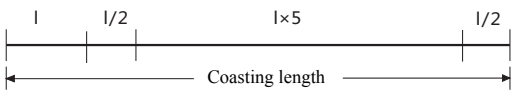
10.2 Center Line
This instrument adopts root-mean-square algorithm

10.3 Taxi Length

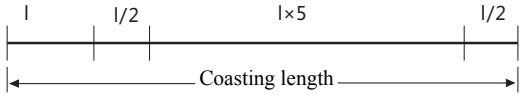
①RC filter



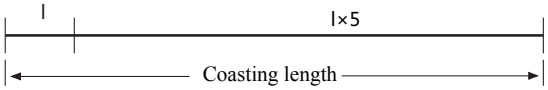
②PC-RC filter



③ GAUSS filter



④ D-P filter

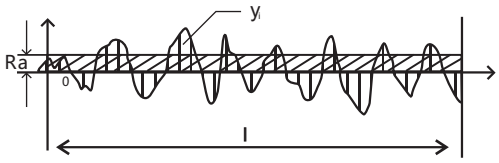


10.4 Definition of roughness parameters

① Ra contour arithmetic mean deviation

The arithmetic mean of the absolute value of the ordinate value over a sample length.

$$Ra = \frac{1}{n}\sum_{i=1}^{n}|y_i|$$



②Rz micro-unevenness, ten-point height value

The sum of the 5 largest profile peaks and the average of the 5 largest profile valleys within a sampling length.

$$Rz = \sum_{i=1}^{5}\frac{1}{2_i} + \sum_{i=1}^{5} y_v$$

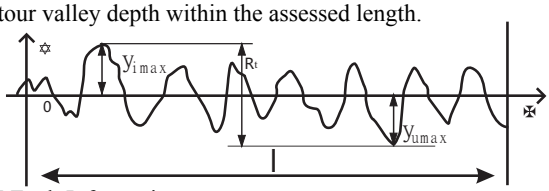
③ Rq contour root-mean-square deviation

The root-mean-square value of the ordinate value over a sample length.

$$Rq = \left(\frac{1}{n}\sum_{i=1}^{n} y_i^2\right)^{\frac{1}{2}}$$

④ Rt contour total height of peak and valley

The sum of maximum contour peak height and maximum contour valley depth within the assessed length.



10.5 Fault Information

Err1: No data can be viewed.
Err2: The contour arithmetic mean deviation value is too small to be calibrated.
Err3: The read value is too small and cannot be reduced.

10.6 Comply with the national code standard name

ISO4287	International standard
DIN4768	German standard
JIS B	Japanese industrial standard
ANSI46.1	American standard

10.7 Sampling Length Selection Recommendation Table

(see next page)

Ra (μm)	Rz (μm)	Sampling length (mm)
> 5~10 > 2.5~5	> 20~40 > 10~20	2.5
> 1.25~2.5	> 6.3~10	0.8
> 0.63~1.25	> 3.2~6.3	
> 0.32~0.63	> 1.6~3.2	
> 0.25~0.32	> 1.25~1.6	0.25
> 0.20~0.25 > 0.16~0.20	> 1.0~1.25 > 0.8~1.0	
> 0.125~0.16 > 0.1~0.125 > 0.08~0.1	> 0.63~0.8 > 0.5~0.63 > 0.4~0.5	
> 0.063~0.08 > 0.05~0.063 > 0.04~0.05	> 0.32~0.4 > 0.25~0.32 > 0.2~0.25	
> 0.032~0.04 > 0.025~0.032 > 0.02~0.025	> 0.16~0.2 > 0.125~0.16 > 0.1~0.125	