User's Manual

Bluetooth Digital Micrometer 0-30/30-66

型名 ：SSM-750/850

Features

➢Resolution：
➢Protection：IP67
➢Wireless Communication：Bluetooth

SSM-750(0-30mm)

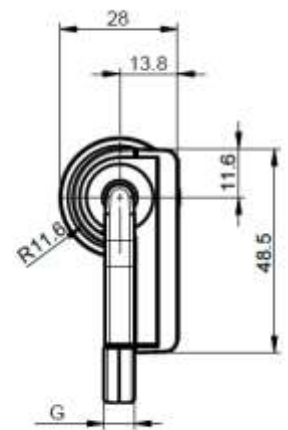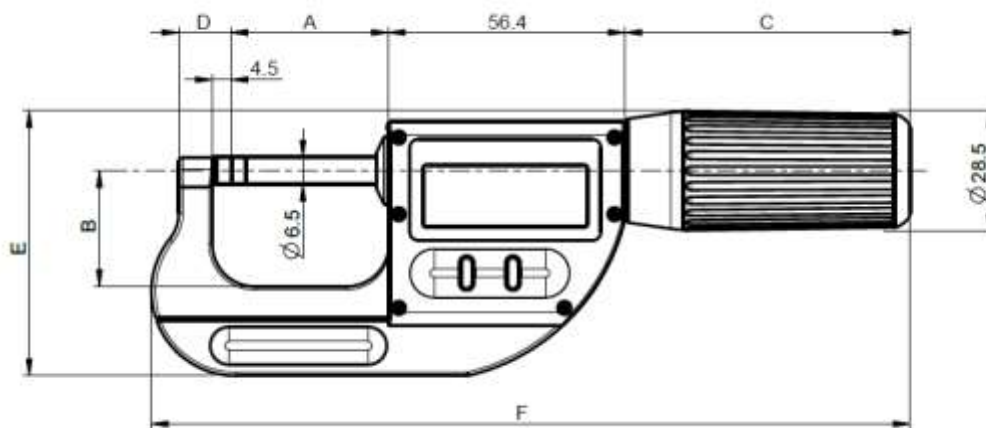SSM-850(30-66mm)

Q-140-1-E ver1.4

Description

1. Measuring spindle
2. Anvil
3. Isolation plate
4. MODE button
5. SET button
6. Rotating thimble
7.
8. Battery cover
9. Battery low Indicator
10. Hold indicator
11. Data send indicator
12. Locking indicator
13. Bluetooth® indicator

	SSM-750(0-30mm)	SSM-850(30-66mm)
A	37.3mm	73.3mm
B	27.5mm	43mm
C	68mm	74mm
D	12.5mm	13.5mm
E	63mm	86mm
F	181mm	230mm
G	7.2mm	9mm

★Installing and replacing the battery

The display of the symbol ≪B≫⑨ indicates the end of the battery life. However there remain still some working hours.

1. Open the battery cover ⑧ using the accessory(opener) provided
2. Change the Battery (Lithium CR2032 type)
3. Check the rubber protection position
4. Close the battery cover ⑧

★Measuring force adjustment
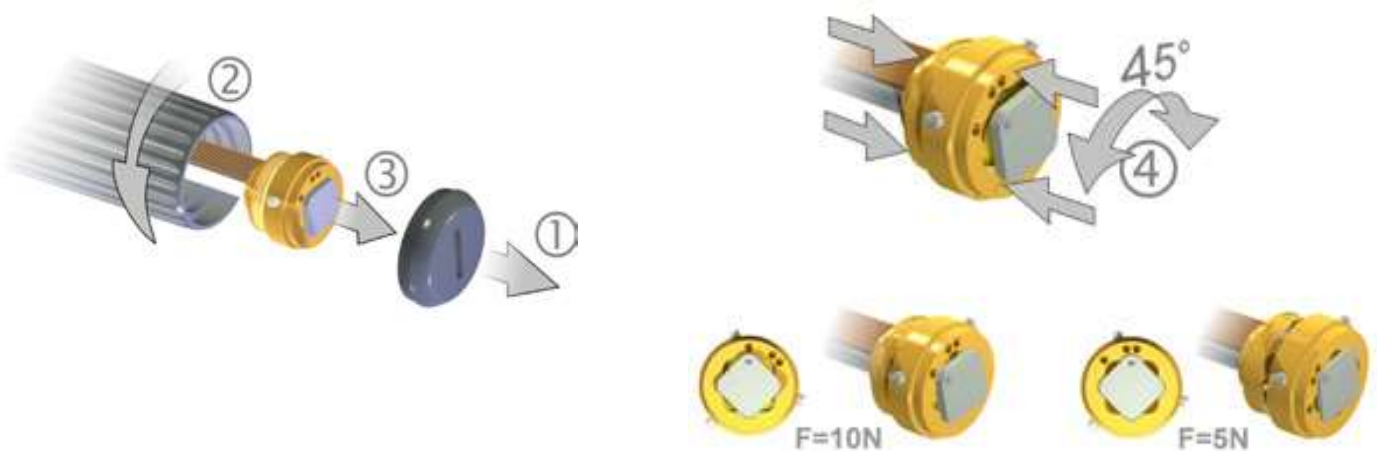
1. Operation

①Button (MODE)

  There are two functions, Basic one and Advanced one.

  In the case of setting, Data enter.

②Button (SET)

  Preset by long press. In the case of setting, Data change.

  In the case of measuring, Data transmission.

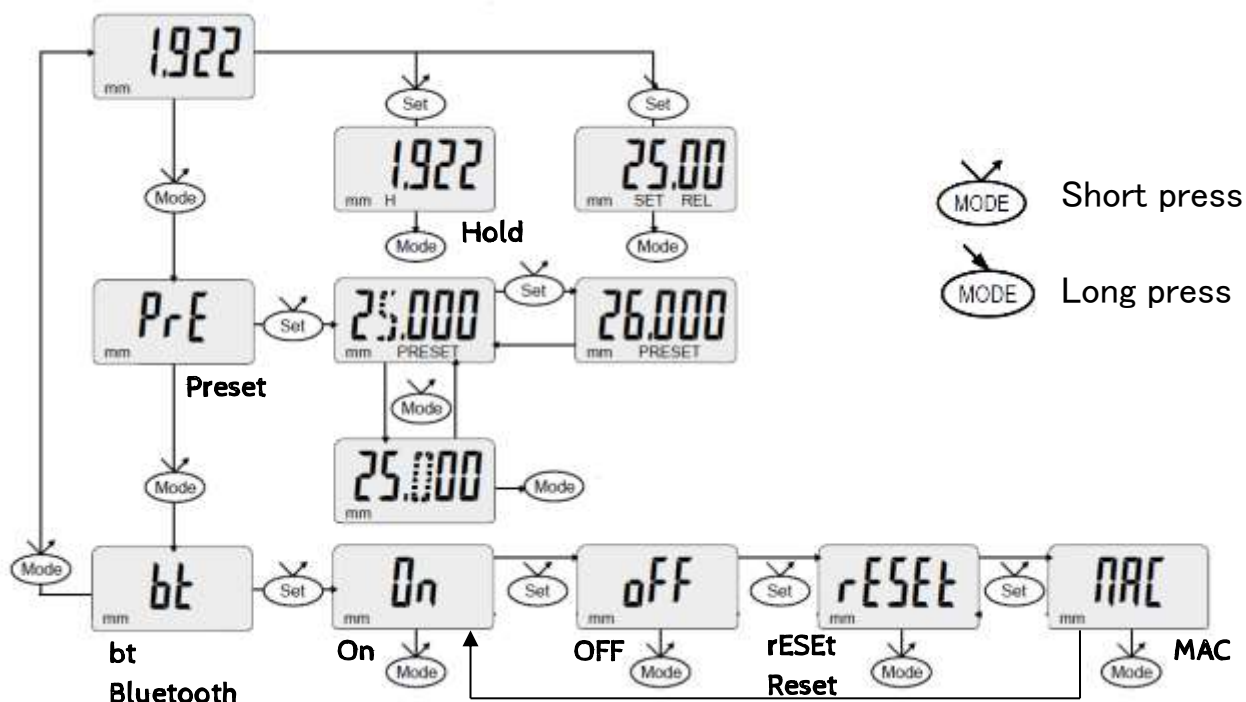③Serial communication(Bluetooth/RS232/USB)

  It is able to transmit the measuring data and set the mode data by serial communication.

  Transmission specification are 4800bps, 7 bits, even parity and 2 stop bits.

2. Start

  Push any button.

  Refer to Page15 about Bluetooth.

3. Basic functions : MODE button⇒Short press(< 1 sec)

MODE (short press)	Short press
MODE (long press)	Long press

Hold

Preset

Preset

bt
Bluetooth

On

OFF

rESEt
Reset

MAC

4. Advanced functions : Mode button Long press(> 1 sec)

Unit

MM

Inch

bt.CFG

SIMPLE

PAlr

HId

Hold

Loc
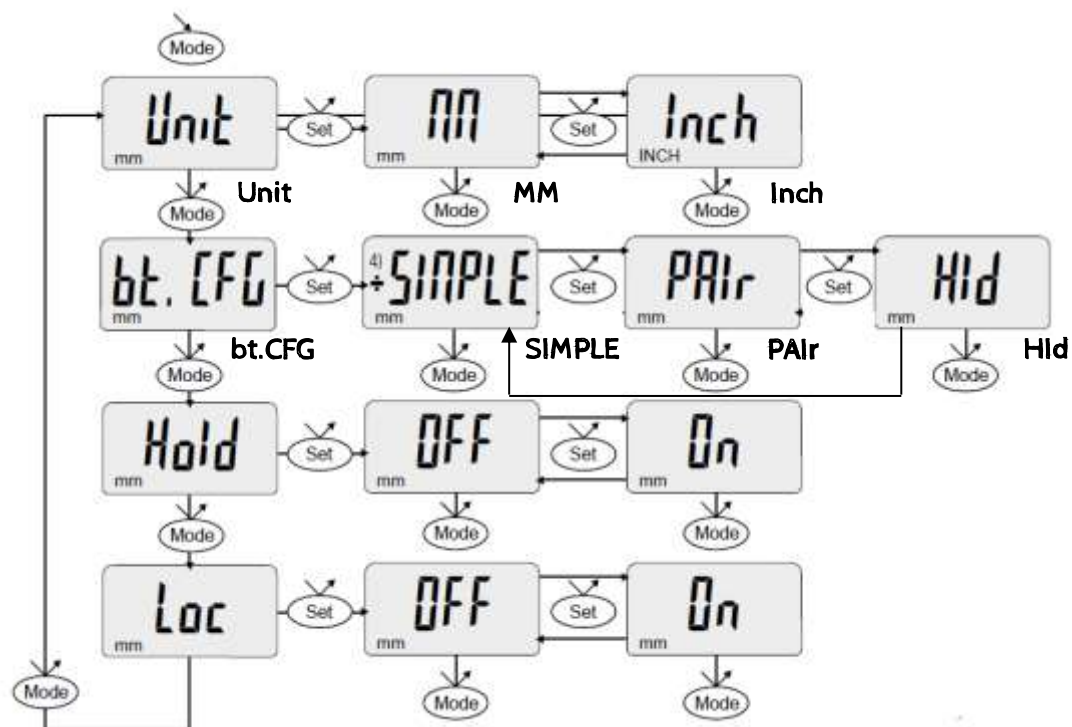
5. Maintenance

Keep the micrometer in a dry environment when not using it for a longer period of time to avoid rust formation of the metallic parts.

Do not close the measuring spindle with the anvil when not in use. Keep a distance of 1-2 mm.

Do not use aggressive products (alcohol, trichloroethylene or others) to clean the plastic parts. Do not keep the micrometer in places which are exposed to sun, heat or humidity.

Important : dry carefully all metal parts of the instrument after effect of moisture to guarantee a perfect mechanical functioning and to avoid rust formation.

6. Switching ON, initialization

After having pressed on a button, introduced the measuring unit, the instrument shows ≪SET≫ for the initialization of the reference point. Bring back the measuring spindle on the anvil (or on a Gauge block). Press then [SET]. The instrument is now ready (Check the Preset)

7. Standby

Mode of reduced consumption without loss the reference position. The standby mode is activated automatically

after 10 minutes of no use. It can also be activated by pressing the [SET] key until extinction of display. The instrument awakes automatically in case of movement detection on thimble, by a pressure on a button or when requesting Data.

8. Full Switch off

In order to fully switch off the instrument (minimum power consumption), press the [SET] button until the message ≪OFF≫ appears. At this state no data is maintained and therefore the Reference position is lost. The ≪SET≫ message will be displayed again during the next use (see "Switching ON").

9. Description of the menu system

The [MODE] key enables the selection of the different menus (each key stroke activates the following menu). The [SET] key enables the activation of a function assigned to the corresponding selected menu. To avoid a wrong action, each menu is active only during 5s. This period passed, the instrument switches automatically back to ≪Measuring Mode≫ as long as no action has been performed to the [MODE] or [SET] key.

10. Preset mode

Preset makes it possible to introduce a reference value different from zero.
Press many times the [MODE] button until menu ≪PRE≫ appears. Then press the [SET] button to activate the function Introduction of Preset. The display shows 00.000 or the last stored value of Preset. The first digit blinks.
Each push on the [SET] button modifies the value of the digit above the cursor (±, 0..9).
Each push on the [MODE] button moves the cursor to the right. A long press on the [MODE] button validates the value of Preset and leaves the Preset menu. The instrument automatically returns to ≪Measuring Mode≫ when there are no further actions regarding the buttons [MODE] or [SET] for a period of 15s.

11. Reset, recall of the preset

A push of 2s on the [SET] button assigns the Preset-value (or zero) to the current position of the measuring spindles.

12. Changing unit (mm/inch)

Repeatedly press the [MODE] button to display the [UNIT] menu. Preset then the [SET] button to change the unit ≪MM≫ or ≪INCH≫.

13. Locking of the instrument

Press [MODE] until the display shows ≪ LOC≫. Then press [SET] to lock the instrument.
If the instrument is locked, the function send data (button [SET]) only is active. A pressure of 5s on a button, unlocks the instrument.

14. HOLD Mode

Press many times the [MODE] key until the menu ≪HOLD≫ is displayed. Then press the [SET] key to switch ≪ON≫ or switch ≪OFF≫. Press [MODE] key to validate.
During measurement , press the [SET] key to freeze the value. A ≪H≫ appears in the display. A 2nd pression on the [SET] key reactivate the dynamic value on display.
This function is useful when the display is not clearly in the field of vision.

15. Operation via Bluetooth

15.1. HID mode(External Key board mode)

①Set HID mode by Advanced function.

②Set BT On mode by Advanced function.

③Reset Bluetooth mode by Basic function.

④Pairing connection the instrument to the PC.
(Instrument name：S_Mike PRO HID)

⑤Send the measured data by the (SET) button.

15.2. Pair mode

①Set Pair mode by Advanced function.

②Set BT On mode by Advanced function.

③Reset Bluetooth mode by Basic function.

④Pairing connection the instrument to the PC.

（Instrument name：SY276)

⑤Send the measured data by the (SET) button.

15.3. Bluetooth configuration

Display status	Operating mode
⚹ off	Bluetooth disconnected
⚹ blinking	Bluetooth advertising
⚹ on	Bluetooth connected
rESEt	reset : clear pairing information
ΠRC	MAC : display the MAC address
SIΠPLE	Simple : profile without pairing
PRir	Pair : paired and secured profile
HId	HID : virtual keyboard

15.4. Bluetooth Connection ：

1° Activate Bluetooth compatible software and hardware (Master: PC, Display Unit).

2° Start the instrument. By default the Bluetooth® module is active and the instrument is available for connection (advertising mode).

3° If no connection is established during the advertisement period reactivate the Bluetooth® module using the bt / On menu.

4° Instrument is ready to communicate (connected mode.)

15.5. Only with paired profile:

Pairing with master is automatically done at first connection.

To connect the instrument to a new master (new pairing), pairing information on the instrument must be cleared using the bt/rESEt menu.

15.6. Bluetooth Specifications:

Items	Specification
Frequency band	2.4GHz
Modulation	GFSK
Max output power	Class3(1mW)
Range	≦15m(open space)，1-5m(industrial environment)
Version	Bluetooth4.*

16. Error messages

In case of problems, the following error messages will be sent on the data connection and on the display :
- ERR0: Error of the reading sensor
- ERR1: Error of parity
- ERR2: Error in the received remote command
- ERR3: Overflow of the measuring range
- ERR8: Memory error
- ERR9: Critical error, the instrument must be revised
- No Data: Bluetooth® transmission error

The errors 0 and 3 must be confirmed by the button [MODE] or [SET], and then the instrument must be reinitialized.

The Error 'No Data' must be confirmed by button [MODE] or [SET]

17. Technical specifications

Items	Specification	
	SSM-750	SSM-850
Measuring range	0-30mm	30-66mm
Resolution	1μm	1μm
Measureing force	Ajustable 5N/10N	10N
Indication error	±2μm	±2μm
Repeatabirity	±1μm	±1μm
Probe/Anvil Flatness	0.6μm	0.6μm
Probe/Anvil Parallelism	2μm	2μm
Advance	10mm/rotation	10mm/rotation
Number of refreshments display	8 times/s	8 times/s
Data output	Bluetooth	Bluetooth
Data output parameter	4800bauds,7bits,parity,2stop bits	4800bauds,7bits,parity,2stop bits
Battery life	about 6 months(general using)	about 6 months(general using)
Working temperature	5～40℃	5～40℃
Storage temperature	-10～60℃	-10～60℃
Weight	270g	425g
IP specification	IP67	IP67
Battery	CR2032	CR2032

18. Description of Bluetooth® module

This module is based on Nordic Semiconductor nRF8001 μBlue Bluetooth Low Energy Platform. The nRF8001 is a single chip transceiver with an embedded baseband protocol engine, suitable for ultra-low power wireless applications conforming to the Bluetooth Low Energy Specification contained within v4.0 of the overall Bluetooth specification.

19.Certification

contains bluetooth module	ISP091201D
Region	**Certification**
USA	FCC ID : 2AAQS-ISP091201
Canada	IC : 11306A-ISP091201
Brazil	Anatel : 0516-14-4534
Korea South	MSIP-CRM-iNs-ISP091201
Mexico	IFT : RCPSYIS14-0655
Japan	R 001-A06167
Taiwan	CCAH18LP2040T6
EU	CE
India	WPC : ETA-1003/2-17-/RLO(WR)

CERTIFICATE OF CALIBRATION

We hereby certify that this product has been calibrated and found to be in accordance with the applicable NATIONAL STANDARDS and TECLOCK STANDARDS, Equipment used in this calibration has   traceable accuracy to the NATIONAL LENGTH and FORCE STANDARD.

⚠ Notice for use

Be sure to conduct a routine check for this product according to the purpose of use before use. This product is precision instrument, periodically considering frequency of use, environmental conditions and method of use.

It is not guaranteed for the performance of this product, which has been repaired or disassembled by other than TECLOCK.

For appearance and other design improvement, this products subject to change without advance notice.

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