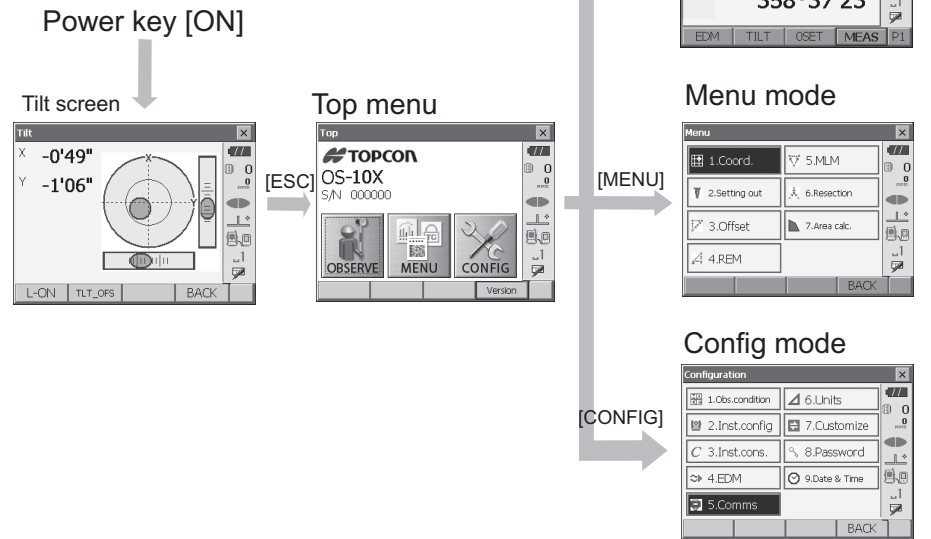
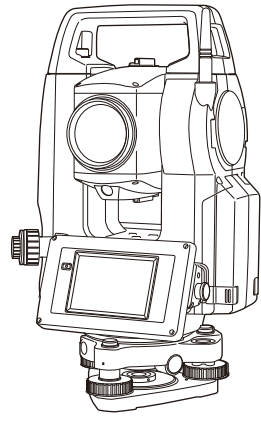




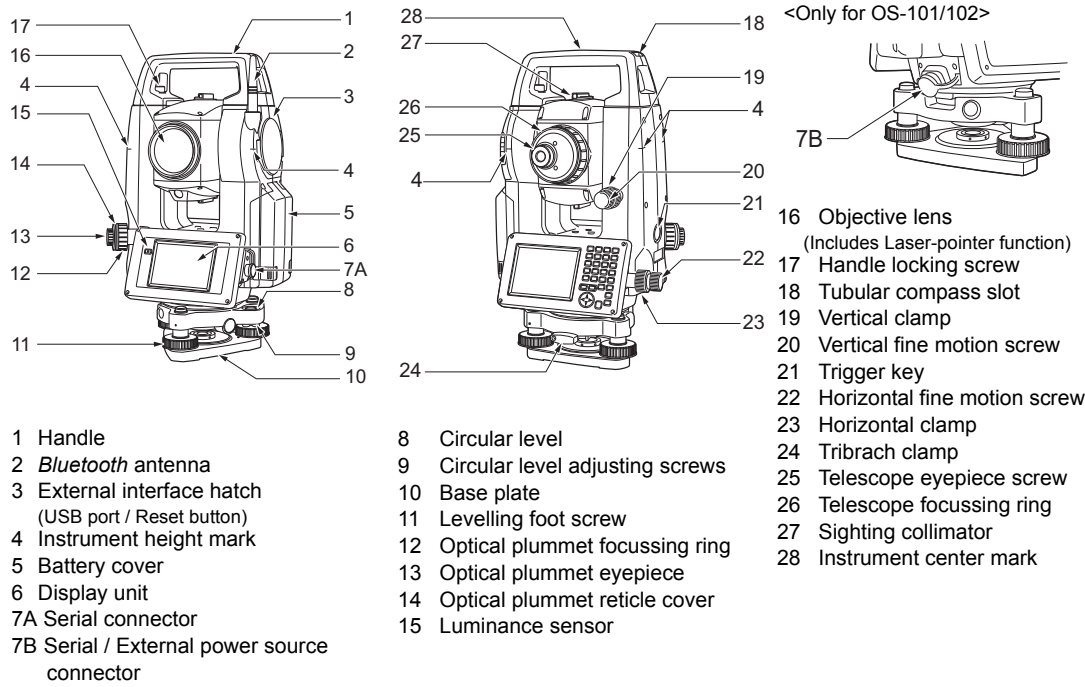
## Mode Structure

# Quick Manual OS series

21406 99041



## Nomenclature

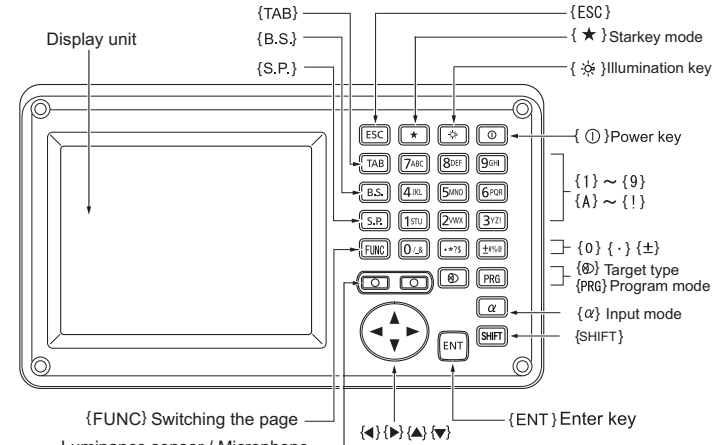


- 1 Handle
- 2 Bluetooth antenna
- 3 External interface hatch (USB port / Reset button)
- 4 Instrument height mark
- 5 Battery cover
- 6 Display unit
- 7A Serial connector
- 7B Serial / External power source connector

- 8 Circular level
- 9 Circular level adjusting screws
- 10 Base plate
- 11 Levelling foot screw
- 12 Optical plummet focussing ring
- 13 Optical plummet eyepiece
- 14 Optical plummet reticle cover
- 15 Luminance sensor

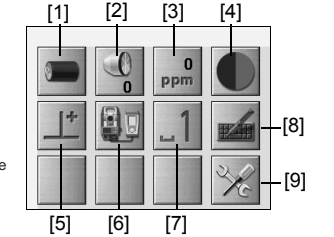
- <Only for OS-101/102>
- 16 Objective lens (Includes Laser-pointer function)
  - 17 Handle locking screw
  - 18 Tubular compass slot
  - 19 Vertical clamp
  - 20 Vertical fine motion screw
  - 21 Trigger key
  - 22 Horizontal fine motion screw
  - 23 Horizontal clamp
  - 24 Tribrach clamp
  - 25 Telescope eyepiece screw
  - 26 Telescope focussing ring
  - 27 Sighting collimator
  - 28 Instrument center mark

## Operation panel



## Starkey mode

Press the Starkey [★], and the Starkey mode is accessed. In the Starkey mode, it is possible to change the setting item that is frequently used during measurement.

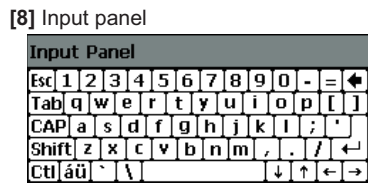
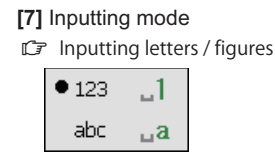
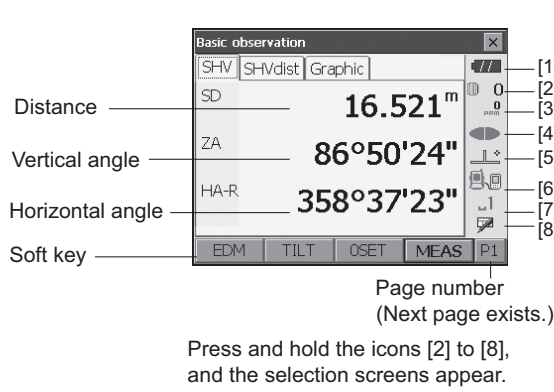


- [1] Battery icon
- [2] Target type icon
- [3] PPM setting icon
- [4] Laser-pointer/Guide light icon
- [5] Tilt angle compensation icon
- [6] Communication status with external devices icon
- [7] Inputting mode icon
- [8] Input panel icon
- [9] Config mode icon

- Disk usage icon
- Touch panel icon

## Display Functions

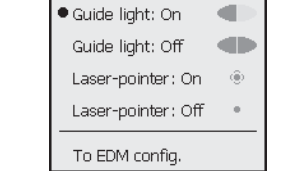
### Observation mode screen



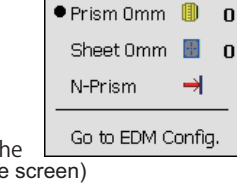
### [1] Remaining battery power

- Full power
- Plenty of power remains.
- Half or less power remains.
- Little power. Prepare a replacement battery. (Flashes red and black)
- No power. Stop operation and charge the battery. (Red display in the center of the screen)

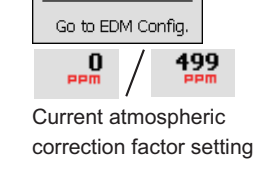
### [4] Laser-pointer/guide light



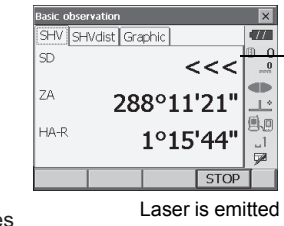
### [2] Target display



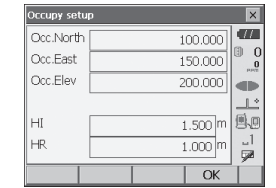
### [3] PPM Setting



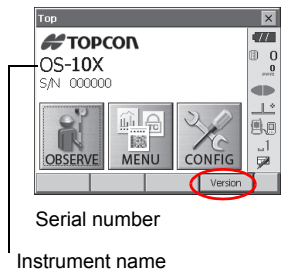
### Measuring screen



### Input screen



### Top menu



### Version information



## Basic Key Operation

### Power ON/OFF

{ [ON] }	Power On
{ [ON] } (Press and hold: About 1 second)	Power Off

### Lighting up the reticle/keys and selecting screen backlight brightness

{ [Illumination key] }	Switches the reticle illumination and key light On/Off (When Key light is On, backlight brightness goes down)
------------------------	---

### Switching to Starkey mode

{ [Starkey] }	Switches to Starkey mode / basic mode
---------------	---------------------------------------

### Switching to program mode

{ [PRG] }	Switches to program mode / basic mode
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### Switching target type

{ [Target type] }	Switches between target types Prism/Sheet/N-prism(reflectorless)
-------------------	--

Changes can also be made by tapping the icon on status bar or in Starkey mode.

### Switching page

{ [FUNC] }	Toggle between Observation mode screen pages
------------	--

### Inputting letters/figures

You can select the character input mode by pressing { [α] } or “\_1”.

{ [α] }	Switch between numerals and alphabetic characters
{ [SHIFT] } + { 1 } to { 9 }	In alphabetic characters mode, switch between lowercase characters and upper case characters each time
{ [SHIFT] } (Press and hold)	In alphabetic characters mode, switch between lowercase characters and upper case characters
{ [SHIFT] } + { [α] }	Display/Hide <Input Panel>
{ 0 } to { 9 }	Input numeral or symbol printed above the key (during numeric input mode)/Input alphabetic character in the order they are listed (in alphabetic input mode)
{ . }	Input a decimal point (during numeric input mode) Input code (in alphabetic input mode)
{ ± }	Input a plus or minus sign (during numeric input mode) Input code (in alphabetic input mode)
{ [ESC] }	Cancel the input data.
{ [TAB] }	Shift to the next item
{ [B.S.] }	Delete a character on the left.
{ [S.P.] }	Input a blank space (increments by 1 when setting the date and time)
{ [Left/Right] }	Right and left cursor/Select other option.
{ [Up/Down] }	Up and down cursor
{ [ENT] }	Select/accept input word/value.

### Selecting options

{ [Up/Down] }	Move the cursor/selection item up/down
{ [Left/Right] }	Move the cursor/selection item left/right or select other option
{ [TAB] }	Shift to the next item
{ [S.P.] }	Display other options
{ [ENT] }	Select/accept the option

### Selecting tabs

{ [Up/Down] }	Move tab/cursor in tab up/down
{ [Left/Right] }	Display next tab at left/right

### Switching the Laser-pointer/Guide light ON/OFF

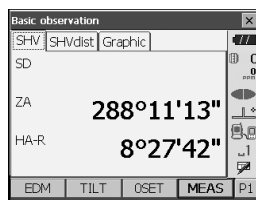
To turn the laser-pointer/guide light ON/OFF, press and hold until a beep sounds. Changes can also be made by tapping the icon on status bar or in Starkey mode.

### Others

{ [ESC] }	Return to the previous screen
-----------	-------------------------------

## Angular Measurement

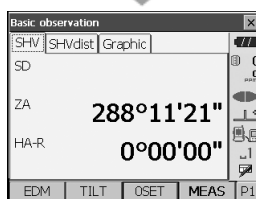
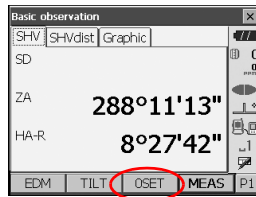
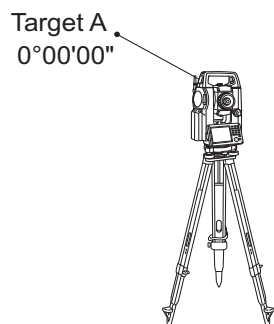
### 1. Collimate the first target "A".



### 2. Set the horizontal angle of target "A" to 0°00'00".

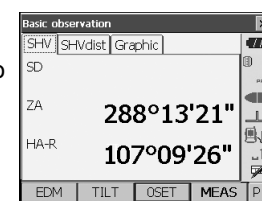
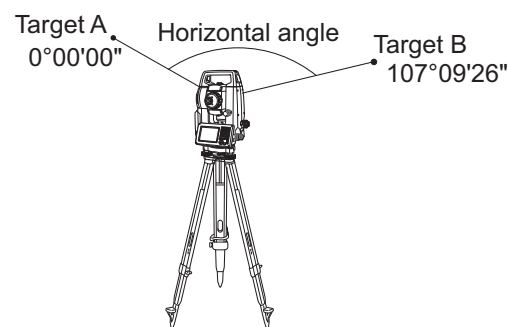
Press [0 SET], and it flashes.

Press [0 SET] again at once, and the horizontal angle of target "A" is set to 0°.



### 3. Collimate the second target "B".

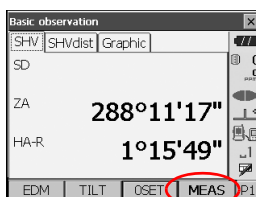
The horizontal angle and vertical angle of target "B", which you want to know, are displayed.



## Distance Measurement

### 1. Collimate the target center.

Make sure that setting is applicable to the measurement conditions.

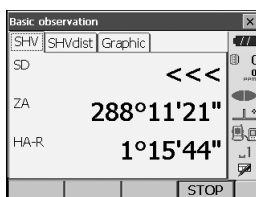
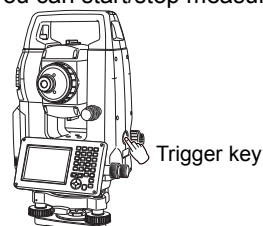


### 2. Press [MEAS].

Distance measurement starts.

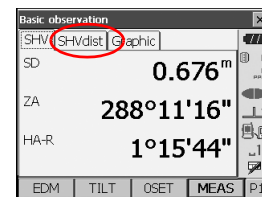
#### Note

- Press the trigger key when [MEAS] and [STOP] are indicated on the display unit. You can start/stop measurement.



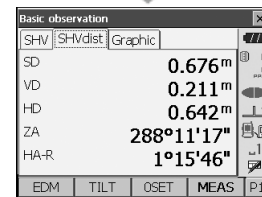
The results of the measurement are displayed.

Hereafter, the results are updated whenever measurement is performed.



#### Note

- Press "SHVdist" tab, and the displayed contents are changed. (Slope distance / Height difference / Horizontal distance / Vertical angle / Horizontal angle)



## Message List

The following is a list of the error messages displayed by the instrument and the meaning of each message. If the same error message is repeated or if any message not shown below appears, the instrument has malfunctioned. Contact your local dealer.

#### Please input an address consisting of 12 hexadecimal characters (0 to 9, A to F)

The Bluetooth address is not input correctly for Bluetooth communication. Input the Bluetooth address with 12 characters of 0 to 9 or A to F.

#### Out of range

During gradient % display, the display range (less than ± 1000%) has been exceeded.  
During REM measurement, either the vertical angle has exceeded horizontal ±89° or the measured distance is greater than 9999.999m.  
Install the instrument station far from the target.

The instrument station coordinates calculated during resection are too high. Perform the observation again.

During area calculation, results exceeded the display range.

#### Temp Range OUT

The instrument is outside useable temperature range and accurate measurement cannot be performed. Repeat measurement within the appropriate temperature range.

#### Calculation error

During resection measurement the same point is registered multiple times. Set another known point so that the known point coordinates do not coincide.

Coordinates identical to the known point coordinates observed during resection exist.

During surface area calculation, conditions necessary for calculations are not met. Check conditions and try again.

An error occurred during calculation.

#### Take BS reading

The origin measurement is not finished normally in missing line measurement. Collimate the origin accurately and measure it again.

#### Device list is full !!

No more Bluetooth devices can currently be registered. Delete unnecessary devices from the list and try again.

#### No data

When searching for or reading in coordinate data or searching for code data, the search stopped either because the item in question does not exist or the data volume is large.

#### Target not found !!

The prism cannot be found within the Search area range. Reset and sight the prism and perform measurement again.

#### Bad condition

The air is shimmering a lot, etc., measuring conditions are poor.

The center of the target cannot be sighted. Resight the target.

Unsuitable distance measurement conditions when reflectorless measurement is set. When reflectorless measurement is set, distance cannot be measured because the laser beam is striking at least two surfaces at the same time.  
Choose a single surface target for distance measurement.

#### Signal off

The reflected light is not observed when distance measurement begins. Or, during measurement, the reflected light has weakened or is blocked. Either sight the target again or, when using a reflective prism, increase the number of reflective prisms.

#### No solution

The calculation of the instrument station coordinates during resection does not converge.  
Access the results and if necessary, perform the observations again.

#### Time out !!

Measurement is not carried out in the allotted time. Reset and sight the prism and perform measurement again.

#### Tilt over range !!

The tilt angle exceeds the tilt angle compensation range of the sensor. Sight again within ±1'.

#### Input device name !!

Bluetooth device name not input. Input device name and complete device registration.

#### Backup battery dead. Clock display may no longer be correct.

The voltage supplied by the lithium battery either declines or is completely discharged. Ask your local dealer to replace the battery for you.

#### New password Diff.

During new password setting, the passwords input twice are different. Input new password twice correctly.

#### Incorrect password.

Input password does not match set password. Input correct password.

#### Input over 3 letters !

The input password consists of less than 3 characters. Input a password at least 3 characters in length.

#### Need base pt. obs

During REM measurement, the observation of the target was not completed normally.  
Reset and sight the prism and perform measurement again.

#### Incorrect password.

Input password does not match set password. Input correct password.

#### Error: Read Build Info.

#### Error: Read sysflg

#### Error: Self check

#### Error: Read OS Parameter

#### Error: Write sysflg

Press [OK] to cancel the message. If this error message appears frequently, contact your local dealer.

## Resolving Software Issues

If you are experiencing problems with the instrument and suspect a fault in the program, you should try a warm boot.

### 1. Power OFF the instrument.

### 2. Press {0} while pressing {ENT}.

The instrument is reset and powers ON as normal.

If the problem is not resolved with a warm boot the next step is to perform a cold boot.

For cold boot, refer to "Resolving Software Issues" of the manual (PDF).

## General Handling Precautions

Listen for the click to ensure that the battery cover and external interface hatch are properly closed.

To remove the handle, hold both sides of the handle and lift it straight above. If you hold the handle by one hand or incline it, the terminal attached on the handle may be damaged.



**SYNERGY**  
POSITIONING SYSTEMS

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All branches: Phone 0800 867 266 Email: [info@synergypositioning.co.nz](mailto:info@synergypositioning.co.nz)