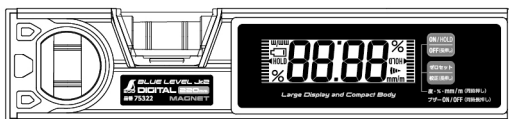


# Blue Level Jr.2 Digital Dust/Waterproof

180 mm (75319)/180 mm with Magnet (75321)

220 mm (75320)/220 mm with Magnet (75322)

## Instruction Manual



Thank you for purchasing Shinwa's Blue Level Jr. 2 Digital Dust/Waterproof. Before using the product, please read the instructions contained in this manual to ensure correct use. After having read this manual, always keep it with you or in a safe place.

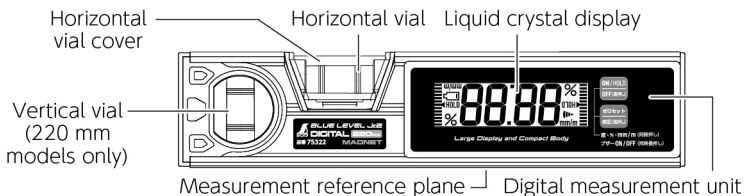
### ■Use

- For angle and gradient measurement with electrical equipment, piping, equipment and civil engineering, etc.

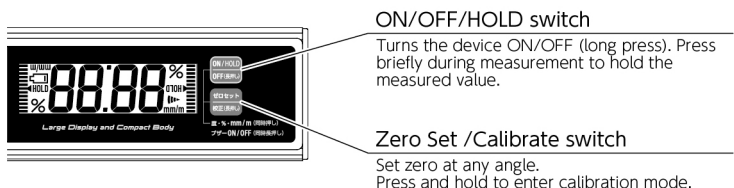
### ■Features

- Compact size with large LCD to easily see measured values
- Enables measurement with both digital module and vials
- 20 mm thickness for stable placement on a switchboard with little depth
- Two large buttons for easy operation
- Built-in rechargeable lithium-ion battery eliminates need for battery replacement
- IP65 dustproof/waterproof performance\* (digital measurement unit only)
  - \*Dustproof performance: Dust will not penetrate.
  - Waterproof performance: It will not be harmfully affected by water sprayed from any direction.
- With a cover to protect the horizontal vial. Cover can be removed and washed when dirty. (Vial is not waterproof)
- High-visibility vial with clear blue liquid and white line.
- Alarm function with 3 sounds depending on inclination when device is near 0° or 90° (● See Turning the Alarm ON/OFF) to easily make fine adjustments horizontally and vertically
- If the level body is used in reverse, the display automatically shows in reverse as well
- Digital unit can measure angle, gradient and rise
- Digital measurement unit functions include calibration, hold, relative measurement (zero set), backlight, auto power off, and battery consumption warning
- Pipe measurement is also possible using measurement reference side with V-shaped groove
- Handy for steel frame work thanks to powerful magnet with yoke

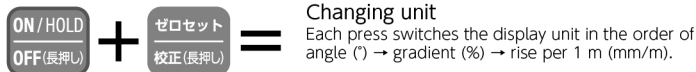
# **Part Names** \*The device illustrated in this instruction manual is Blue Level Jr.2 with Magnet Digital 220 mm Dust/Waterproof



## ●Digital measurement unit (Front)



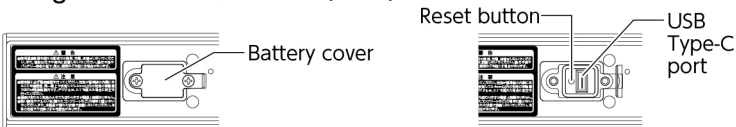
Push simultaneously



Press and hold simultaneously

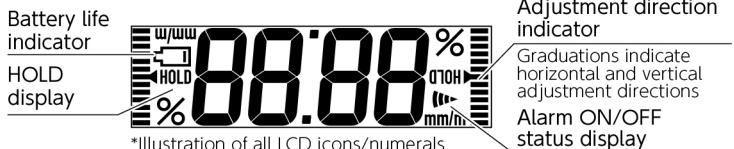


## ●Digital measurement unit (Back)




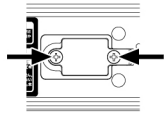
## ●Liquid crystal display

A protective sticker is attached to the display at the time of shipment. Peel off before using.



## ■Charging Measurement is not possible while charging.

When the battery is low, the  icon will flash, indicating the need to recharge.



1. Unscrew the two screws for the rear charging port cover and open the cover.
2. Plug the included AC adapter into an outlet and insert the USB Type-C connector into the port.
3. The charging status is displayed as a % on the LCD screen ("Lo" is displayed when the amount remaining is less than 20%).The time required to charge from a low battery is about 5 hours.
4. Remove the USB Type-C connector, close the charging port cover, and reattach the two screws.



Charging rate: 0-19%

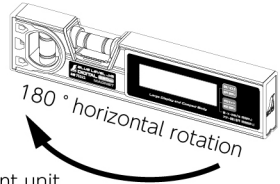
Charging complete

## ■Checking Accuracy (Must be done before use)

Make sure that there is neither debris nor protuberances due to scratches on the measurement reference side

### ●Check the accuracy of the horizontal vial

1. Place the device on a horizontal surface and check the position of the air bubble.
2. Turn the device around 180° on the same surface, and check that the position of the air bubble does not change.



### ●Check the accuracy of the digital measurement unit

1. Place the device on a horizontal place and then check the display value after about 10 seconds.
2. Rotate the device horizontally 180 ° on the same surface, and after about 10 seconds check that the difference between the displayed values is within 0.10 ° (0.2%, 2 mm/m).

## ■Specifications

Item Code	75319	75320	75321	75322
Vial Sensitivity, Precision	Sensitivity: 0.35 mm/m = 0.0201° Precision: ±1.0 mm/m = less than ±0.0573°			
Digital Display Precision	0°, 90°: ±0.1° Other Degrees: ±0.2°			
Minimum Unit for Digital Display	Angle: 0.05° Gradient: 0.1% Rise: 1 mm/m			
Dust/water Proof *1	IP65 dustproof/waterproof performance (digital measurement unit only)			
Auto Power Off	10 minutes after operation			
Power Source	Lithium-ion battery (built-in)			
Battery Capacity	300mAh			
Continuous Use*2	About 30 hours			
Use Temperature	-10 - 50°C			
Material	Body, Digital Measurement Unit: Aluminum, ABS resin, polycarbonate resin Vial: Acrylic resin Liquid: Petroleum liquid			
Body Size	180×50×20 mm	220×50×20 mm	180×50×20 mm	220×50×20 mm
Weight	155 g	175 g	175 g	195 g

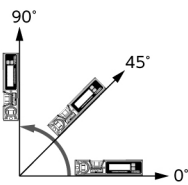
\*1 Dustproof performance: Dust will not penetrate. Waterproof performance: It will not be harmfully affected by water sprayed from any direction.

\*2 When used in an environment of 15 - 35°C. Varies with usage and number of charge cycles.

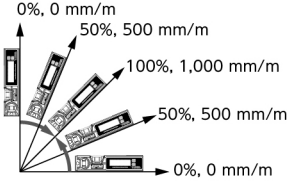
# ■Comparison Table

Angle (°)	Gradient (%) per 1 m	Rise per 1 m (mm/m)
0	0.0 ± 0.2	0 ± 2
5	8.7 ± 0.4	87 ± 4
10	17.6 ± 0.4	176 ± 4
15	26.8 ± 0.4	268 ± 4
20	36.4 ± 0.4	364 ± 4
25	46.6 ± 0.5	466 ± 5
30	57.7 ± 0.5	577 ± 5
35	70.0 ± 0.5	700 ± 5
40	83.9 ± 0.6	839 ± 6
45	100.0 ± 0.7	1,000 ± 7

# ●Angle



# ●Gradient, Rise



# ■Calibration Method

Be sure to calibrate the digital measurement unit in the following situations.

- When the battery has lost its charge
- If the device is subjected to a strong impact such as from being dropped or bumped
- If the error exceeds 0.1° (0.2%, 2 mm/m) when checking accuracy
- If the temperature changes significantly

When calibrating, place the measurement reference plane on a flat surface as level as possible.

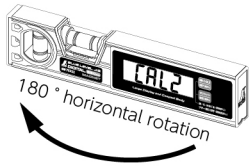
1. With the power on, press and hold the “Zero Set/Calibrate” button for at least 2 seconds.
2. When "CAL1" is displayed, the device is in calibration mode.



3. Press the “Zero Set/Calibrate” button, then "CAL1" blinks and calibration starts.



4. When "CAL2" is displayed, rotate the device 180 °horizontally.



5. Press the "Zero Set/Calibrate" button, then "CAL2" blinks and calibration starts again.
6. When a "beep-beep" sounds and the numerical display returns, calibration is complete.



- \*Do not touch, vibrate or shock device during calibration (while display is blinking). Calibration may not be performed correctly.
- \*To cancel calibration, press the "ON/OFF/HOLD" button.


## How to Use

### How to Change the Display Unit

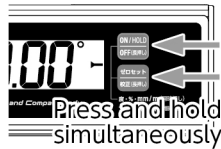
Pressing the "ON/OFF/HOLD" and "Zero Set/Calibrate" buttons will change the display unit in the order of rise per 1 m (mm/m) → angle (°) → gradient (%) per 1 m.




### Turning the Alarm ON/OFF

The measurement alarm sound turns ON/OFF each time you simultaneously press and hold the "ON/OFF/HOLD" and "Zero Set/Calibrate" buttons for at least 2 seconds. When the alarm sound is ON,  is displayed on the LCD screen.

See the table below for the alarm sounds that correspond to measured values.



Alarm Sound	Angle (°)		Gradient (%) per 1 m	Rise per 1 m (mm/m)
Beeeeep (continuous sound)	0.00°	90.00°	0.0%	0 mm/m
Beep-beep...	0.05 - 0.50°	89.50 - 89.95°	0.1 - 0.9 %	1 - 9 mm/m
Beeeeep, beeeeeep	0.55 - 1.00°	89.00 - 89.45°	1.0 - 1.7 %	10 - 17 mm/m

When the alarm sound is off,  disappears from the LCD display.

## ●HOLD Function ⚠ The alarm will not sound during the hold function.

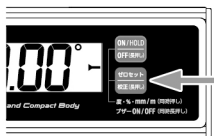
Pressing the "ON/OFF/HOLD" button holds the measured value, and **HOLD** is displayed on the LCD screen's left side. Press the "ON/OFF/HOLD" button again to cancel.



## ●Relative measurement (zero set) function

⚠ Relative measurement mode will not be canceled even if the device is turned off.

1. Press the "Zero Set/Calibrate" button at the angle you want to use as the reference (zero point). Relative measurement mode is now set, and **/** is displayed at the lower left of the LCD screen.
2. In relative measurement mode, the angle set as the reference is 0°, the angle from that reference is displayed and the alarm will sound.
3. Press the "Zero Set/Calibrate" button again to cancel and return to normal measurement.



## ●Backlight function

⚠ The backlight function cannot be deactivated.

- LCD screen lights up for easy reading even in the dark
- Backlight turns off if there is no change in the value and approximately 30 seconds pass without operation
- Backlight turns on again when a button is pressed or the device is tilted and the measured value changes

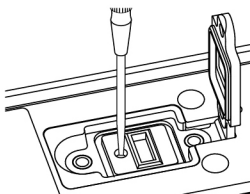
## ●Auto power off function

⚠ The auto power off function cannot be canceled.

This function automatically turns off the device if there is no change in the value and approximately 10 seconds pass without operation.


## ■How To Reset the Main Unit

1. Remove the two screws for the charging port cover on the back of the device to open it.
2. Press the reset button with an elongated object as shown on the right.
3. The device will return to factory settings.



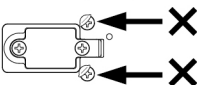
Reset if the LCD screen freezes, or if there is no response when you press a button.

## ■ Troubleshooting

Symptoms	Solution
Nothing is displayed	Charge the device.
Accuracy is poor	<ul style="list-style-type: none"> <li>● Check for dust or protrusions on the measurement surface</li> <li>● Calibrate the device (See ■ Calibration Method)</li> </ul>
Buttons do not work	Open the charging port cover and press the reset button (See ■ How to Reset the Main Unit)
Alarm does not sound	<ul style="list-style-type: none"> <li>● Check if  is displayed on the LCD screen. If it is not displayed, simultaneously press the "ON/OFF/HOLD" and "Zero Set/Calibrate" buttons for at least 2 seconds to turn on the alarm sound.</li> <li>● Check if <b>HOLD</b> is displayed at the bottom left of the number(s). If so, the alarm will not sound.</li> </ul>
Unable to charge	Make sure that the following 3 connections are secure <ol style="list-style-type: none"> <li>1.The port on the back of the device and the USB Type-C connector</li> <li>2.The AC adapter port and the USB cable connector</li> <li>3.The AC adapter plug and the power outlet</li> </ol>
Device does not turn off even after pressing ON/OFF button	Press and hold the "ON/OFF/HOLD" button for at least 2 seconds
Display is upside down	Calibrate the device. Calibrate with the measurement reference plane facing down (See ■ Calibration Method).
Bubble in vial is enlarged	Place device in an environment of about 20 °C, then wait and see what happens
Bubble moves when your body comes close	Remove static electricity from your body

## Warning

- If a vial is damaged and liquid leaks out...
  - If liquid gets in the eyes: Immediately rinse with clean water and seek treatment from an ophthalmologist
  - If liquid gets on the skin: Take off any affected clothing, then use soap and plenty of water to wash the affected area of the skin.
- Do not use, charge or store the product in an environment that exceeds the operating temperature range. Do not leave in direct sunlight or in a vehicle, as this may cause malfunction, shortened battery life, ignition, or explosion.
- Never disassemble the device. Removing the fastener screws and the waterproof rubber gasket under the charging cover may compromise accuracy and waterproof performance. Disassembly will void the warranty. The internal battery may also ignite or explode if damaged.



**Do not remove the screws underneath the stickers**

## Caution

- Do not use other than as intended.
- Be sure to check the accuracy before use (See ■ Checking Accuracy)
- The various accuracies of measuring instruments are predetermined. Please use this device for its intended purpose. See the ■ Specifications section for information about its accuracy.
- The accuracy of the vial and digital measurement are different, so measured values may not match.
- Do not drop or subject to strong impact as this may cause the device to operate incorrectly.
- Other than the digital measurement unit, this device is not dustproof or waterproof. It can be used in the rain, but avoid intentionally splashing or washing directly with water. If it gets wet, wipe it off with a dry cloth and let it dry.
- If the device becomes dirty, wipe away any grime with a soft cloth. Do not wipe the device with any alcohol or petroleum product such as thinner.
- Do not place in places with strong acidity or alkalinity (wet concrete, etc.). Do not leave the device wet as this may cause color fading or color migration.
- After storing the device without use for a long period, the battery level may decrease due to self-discharge.
- Take care to avoid electric shock as this product conducts electricity.
- Cannot measure outside of the measurement reference plane.
- Measurement cannot be performed by tilting the device back and forth.
- Avoid prolonged exposure to direct sunlight, as this may cause fluid color loss or enlargement of the bubble.
- Bubble size may change when the temperature changes.
- Keep out of the reach of children.
- Keep the magnet in this device away from computers, smartphones, watches, precision instruments, and directional compasses, etc. as it may cause malfunction (item codes 75321 and 75322).
- Magnet adsorption power may vary depending on the surface finish/thickness of the iron plate/material, etc. Use only after confirming that the device will not fall down (item codes 75321 and 75322).

**Shinwa Rules Co., Ltd.**

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