



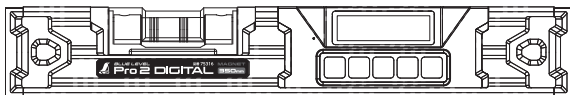
Blue Level Pro 2 Digital Dust/Waterproof

350 mm (75313)/350 mm with Magnet (75316)

450 mm (75314)/450 mm with Magnet (75317)

600 mm (75315)/600 mm with Magnet (75318)

Instruction Manual



Thank you for purchasing Shinwa's Blue Level Pro 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 piping, construction, equipment and civil engineering, etc.

■Features

- IP65 dustproof/waterproof performance *1 (digital measurement unit only)
- Alarm function with 3 sounds depending on inclination when device is near 0° or 90° (● See how to change the alarm sound during measurement) to easily make fine adjustments horizontally and vertically
- If the level body is used in reverse, the display automatically shows in reverse as well
- Large buttons that are easy to operate
- With a cover to protect the horizontal vial. Cover can be removed and washed when dirty. (Vial is not waterproof)
- Horizontal vial can be adjusted as required *2
- High-visibility vial with clear blue liquid and white line. Horizontal vial has three base lines on both sides to measure horizontal, 1/50 and 1/100 gradients.
- Digital unit can measure rise, angle and gradient
- 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

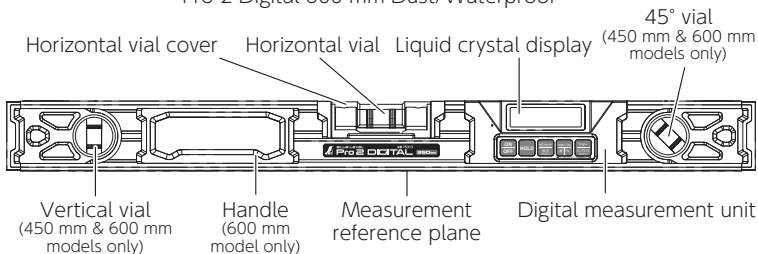
*1 Dustproof performance: Dust will not penetrate.

Waterproof performance: It will not be harmfully affected by water sprayed from any direction.

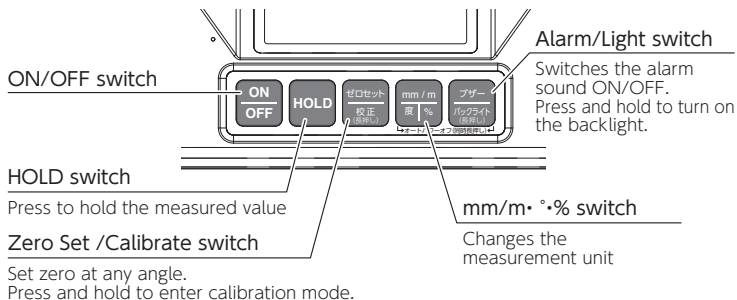
*2 If you remove the sealing sticker next to the horizontal vial and adjust the accuracy yourself, the accuracy we specified cannot be guaranteed.

The vertical vial and 45° vial cannot be adjusted.

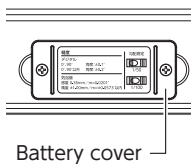
Part Names *The device illustrated in this instruction manual is Blue Level Pro 2 Digital 600 mm Dust/Waterproof



●Digital measurement unit (Front)

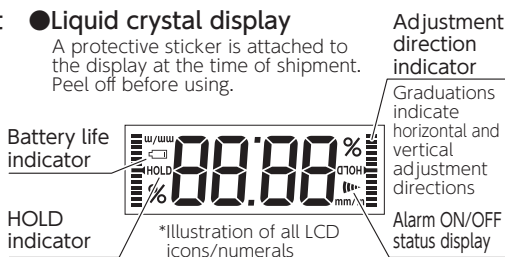


●Digital measurement unit (Back)




●Liquid crystal display

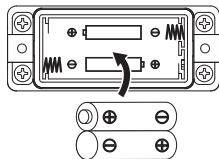
A protective sticker is attached to the display at the time of shipment. Peel off before using.



■ Replacing the Batteries

When the batteries are low, the  icon will flash, indicating that it is time to replace both batteries with new batteries.

1. Unscrew the two screws for the rear battery cover and open the cover.
2. Insert two AAA alkaline batteries, paying attention to + and - orientation.

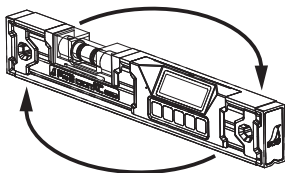


■ Checking Accuracy (Must be done before use)

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).

Calibration

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

- When the battery has been changed
- If the device is subjected to a strong impact such as from being dropped or bumped
- If the error exceeds 0.10° (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.



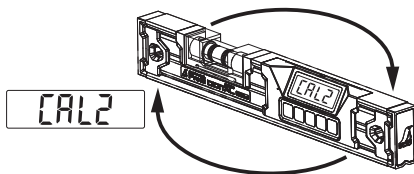
2. When "CAL1" is displayed, the device is in calibration mode.



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



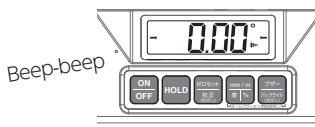
4. When "CAL2" is displayed, rotate the device horizontally 180°.



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" button to exit calibration mode.

■How to Use

●How to change the digital measurement unit

Pressing the "mm/m · ° · %" switch will change the measurement unit in the order of rise per 1 m (mm/m) → angle (°) → gradient (%) per 1 m.



●Turning the Alarm ON/OFF

Each time you press the "Alarm/Backlight" button, the alarm sound during measurement will switch ON/OFF. 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	Rise
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, Beeeeep	0.55 - 1.00°	89.00 - 89.45°	1.0 - 1.7%	10 - 17 mm/m

When alarm sounds are off, the  disappears from the LCD screen.

●HOLD function

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



●Relative measurement (zero set) function

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. In relative measurement mode, the angle set as the reference is 0° and the angle from that reference is displayed. The alarm does not sound during relative measurement mode, and relative measurement will not be canceled even if the device is turned off. Press the "Zero Set/Calibrate" button again to cancel and return to normal measurement.



Example display during relative measurement (angle)



●Backlight function

The backlight will switch ON/OFF each time you press and hold the "Alarm/Backlight" button for at least 2 seconds.



●Auto power off function

This function automatically turns off the device if there is no change in the value and approximately 10 minutes pass without operation. Auto power off can be activated/deactivated (activated when batteries are inserted). Press the "Change Unit" and "Alarm/Backlight" buttons simultaneously to show whether auto power off is currently activated.



Press and hold simultaneously

Display when activated



Display when deactivated

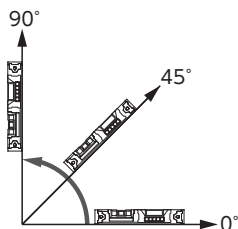


■ Specifications

Vial Sensitivity, Precision	Sensitivity 0.35 mm/m = 0.0201° Precision ± 1.0 mm/m = less than $\pm 0.0573^\circ$
Digital Display Precision	0°, 90°: $\pm 0.1^\circ$ Other Degrees: $\pm 0.2^\circ$
Minimum Unit for Digital Display	Angle: 0.05° Gradient: 0.1% Rise: 1 mm/m
Dust/water Proof	IP65 dustproof/waterproof performance* (digital measuring unit only)
Auto Power Off	Approx.10 minutes after operation
Power Source	2× AAA Alkaline batteries (Batteries included are for trial use only and may not last as long)
Use Temperature	-10 - 50°C
Material	Body, Digital Module: Aluminum, ABS resin, polycarbonate resin Vial: Acrylic resin Liquid: Petroleum liquid

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

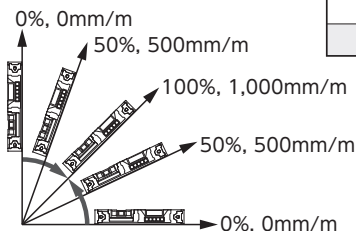
● Angle




■ 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	$1,000 \pm 7$

● Gradient, Rise



■ Troubleshooting

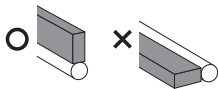
Symptoms	Solution
Nothing is displayed	• Replace the batteries, paying attention to the + and - orientation of each battery
Accuracy is poor	• Check for dust or protrusions on the measurement surface • Calibrate the device (See ■ Calibration Method)
Buttons do not work	• Remove the batteries, wait about 1 minute, then reinsert them
Alarm does not sound	• Check if  is displayed on the LCD screen. If not, press the "Alarm/Backlight" button and turn on the alarm sound. • Check if / is displayed at the bottom left of the number(s). If / is displayed, there is no sound due to relative measurement mode. • Check if HOLD is displayed at the bottom left of the number(s). If so, the alarm will not sound.
Display disappears during operation	• Disable the auto power off function (See ● Auto power off function)
Device does not turn off even after pressing ON/OFF button	• Press and hold the "ON/OFF" button for 2 seconds or longer
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 the 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.

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(s) and digital measurement are different, so measured values may not match.
- The accuracy of this product has been adjusted at the time of shipment. If you remove the sticker on the side of the horizontal vial and adjust the accuracy yourself, accuracy cannot be guaranteed.
- 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.
- Never disassemble the device. Removing the waterproof rubber gasket or fastener screws inside the battery cover may compromise accuracy and waterproof performance. Disassembly will void the warranty.
- Remove the battery before storing the device when not using for a long period.
- Do not mix batteries of different types or brands, or partially used batteries. This can cause malfunction or injury due to battery leakage.
- Take care to avoid electric shock as aluminum conducts electricity.
- Cannot measure outside of the measurement reference plane.
- Measurement cannot be performed by tilting the device back and forth.
- Do not use or store the product in an environment that exceeds the operating temperature range.
- Avoid prolonged exposure to direct sunlight, as this may cause fluid color loss or enlargement of the bubbles.
- Bubble size may vary with temperature.
- Do not store in places with high temperatures such as inside a vehicle as this may cause malfunction.
- 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.
- 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.



Shinwa Rules Co., Ltd.

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