

BTW-E Weight Indicator

Quick Operation Guide

Warranty

(1)

During the warranty period (**one year from the date of purchase**), if the product fails under normal operating conditions, customers are entitled to **free repair service** provided by Excell or its authorized distributor.

(2)

The following situations are **not covered by the free warranty**. Charges for replacement parts and repair services may apply.

1. Damage caused by improper operation or misuse.
2. Damage caused by unauthorized modification or repair.
3. Damage resulting from maintenance performed by personnel not authorized by Excell.
4. Damage caused by natural disasters or force majeure.
5. Damage caused by poor operating environments, including insects, moisture, or excessive humidity.

(3)

The following services are subject to charges:

1. Products that are **out of warranty**.
2. On-site repair service may incur transportation and travel charges.

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Daily Maintenance Instructions

1. Do not use the indicator in locations exposed to **direct sunlight**, temperatures above **40°C**, or humidity exceeding **85% RH**.
2. After installation, keep the indicator clean at all times. Prevent insects, especially cockroaches, from entering the indicator housing.

3. The rechargeable battery is a consumable item with a **one-year warranty**. Its service life depends on proper maintenance. To maximize battery life, charge a new battery for **at least 8 hours** before first use.
4. If the indicator will not be used for an extended period:
 - Fully charge the battery before storage.
 - Clean the unit thoroughly.
 - Store it in a cool and dry place.
 - Recharge the battery at least once every **three months** to prevent excessive discharge, which may permanently damage the battery.

Warning: Never short-circuit the battery terminals to test the battery capacity. Doing so may reduce the battery life by approximately **one-third**.

LED Display Symbols & Indicator Lights

LED Indicators

Symbol	Description
	Charging Indicator
	Low Battery Warning
NET	Net Weight Indicator
M+	Accumulation Indicator
HI	Upper Limit Indicator
OK	Acceptable Range Indicator
LO	Lower Limit Indicator
STABLE	Stable Weight Indicator
→ 0 ←	Zero Indicator
kg/lb	Unit Indicator (LED OFF = kg, LED ON = lb)

Error Codes

Error Code	Description
E0	Parameter Read Error
E1	Load Cell Zero Point Too High
E2	Load Cell Zero Point Too Low
E4	Load Cell Signal Unstable
oF	Overflow (Exceeds Internal Resolution)
oL	Exceeds Preset Weighing Capacity
-oL	Negative Overload / Operation Beyond Negative Range

Quick Operation Guide

1. Installation

Connect the load cell of the weighing platform to the BTW-E weight indicator as shown in the wiring diagram.

2. Power Supply

Before connecting the power supply, make sure the AC outlet voltage matches the BTW-E indicator specification (**110 V**).

- **Red LED:** Battery charging.
- **Green LED:** Battery fully charged.

3. Warm-Up

After switching on the power, the indicator performs a self-test sequence (**9, 8, ... 3, 2, 1**).

When the self-test is complete, allow the indicator to warm up for **5–10 minutes** to ensure optimum weighing accuracy.

4. Level Adjustment

Adjust the platform feet and use the bubble level to ensure the platform is level.

Press the **ZERO** key.

5. Weighing

Place the object in the center of the weighing platform to begin weighing.

6. Net Weight (Tare)

Place the container or package on the platform.

When the **STABLE** indicator appears, press the **TARE** key.

The container weight will be deducted automatically, and the **NET** indicator will illuminate.

7. Gross / Net Display

Press the **F** key to switch between

- **Net Weight**

- **Gross Weight**

When the **NET** indicator is ON, Net Weight is displayed.

When the **NET** indicator is OFF, Gross Weight is displayed.

8. Five Basic Operating Modes

After power-on, the default mode is **Weighing Mode**.

Press the **F** key repeatedly to switch between:

- Weighing Mode
- PCS Counting Mode
- HI-LO Check Weighing Mode
- ACC Accumulation Mode
- HOLD Mode

Press **F** again to return to **Weighing Mode**.

9. Unit Selection

Press the **UNIT** key to switch between available weighing units.

Available units include:

- kg
- lb
- Taiwanese Catty (台斤)

(depending on system configuration)

10. PCS Counting Mode

Press the **F** key until **PCS Counting Mode** is displayed.

Press the **ZERO** key to select the sample quantity.

Available sample sizes:

- 10 pcs
- 20 pcs
- 50 pcs
- 100 pcs

- 200 pcs
-

Counting Procedure

1. Place the selected number of sample pieces on the weighing platform.
 2. Press the **PRINT** key to confirm.
 3. Remove the samples.
 4. Place the items to be counted onto the platform.
 5. The indicator automatically displays the quantity.
-

Figure 1 – Counting Mode

1. Place the sample quantity on the platform.
 2. Press **PRINT**.
 3. Wait until the indicator becomes stable.
 4. Enter PCS counting mode.
 5. Display total quantity.
 6. Display unit weight.
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12. HI-LO Check Weighing

Press the **F** key until **HI-LO Mode** appears.

Press the **UNIT** key to enter the alarm settings.

Press the **TARE** key to select the buzzer mode.

Available alarm modes:

- **b1** – Silent
 - **b2** – Beep when the weight is within the acceptable range (OK)
 - **b3** – Beep when the weight is outside the acceptable range (NG)
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13. Upper Limit Setting

Press the **UNIT** key to enter the **Upper Limit Setting**.

Press the **TARE** key to move the cursor.

Press the **ZERO** key to change the flashing digit.

Press the **PRINT** key to save the upper limit value.

Figure 2 – HI-LO Check Weighing

1. Press the **PRINT** key.
2. Place a test weight greater than **10d** on the platform.
3. The indicator automatically switches between:
 - **HI**
 - **OK**
 - **LO**

14. Lower Limit Setting

Press the **UNIT** key to enter the **Lower Limit Setting**.

Press the **TARE** key to move the cursor to the desired digit.

Press the **ZERO** key to change the flashing digit.

Press the **PRINT** key to save the lower limit value.

15. HI-LO Check Weighing Function

After completing the upper and lower limit settings, the indicator enters the **HI-LO Check Weighing** mode.

The display operates as shown in **Figure 2**.

The corresponding indicator lights will show:

- **HI** – Weight exceeds the upper limit.
 - **OK** – Weight is within the preset limits.
 - **LO** – Weight is below the lower limit.
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16. ACC (Accumulation Mode)

Press the **F** key repeatedly until **ACC Mode** is displayed.

Press the **PRINT** key to enter the accumulation function.

Press the **TARE** key to select one of the following modes:

- **ACC1** – Manual Accumulation
- **ACC2** – Automatic Accumulation

ACC1 – Manual Accumulation

After each weighing operation, press the **PRINT** key to add the current weight to the accumulated total.

ACC2 – Automatic Accumulation

When the weight becomes stable, the indicator automatically accumulates the value after approximately **0.5 second**.

The operation is illustrated in **Figure 3**.

Figure 3 – Accumulation Mode

ACC1 (Manual)

1. Select **ACC1**.
 2. Press **PRINT**.
 3. Place the object on the platform.
 4. The current weight is displayed.
 5. Press **PRINT** to accumulate the weight.
 6. After approximately **0.5 second**, the accumulated count is displayed.
 7. The total accumulated weight is displayed.
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ACC2 (Automatic)

1. Select **ACC2**.
 2. Press **PRINT**.
 3. Place the object on the platform.
 4. The current weight is displayed.
 5. After approximately **0.5 second**, the weight is accumulated automatically.
 6. The accumulated count is displayed.
 7. The total accumulated weight is displayed.
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17. Viewing Accumulated Data

Press the **UNIT** key to display:

- Total accumulated count.
 - Total accumulated weight.
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18. Clearing Accumulated Data

With the weighing platform empty:

Press the **PRINT** key once to display the accumulated count.

Press the **PRINT** key again to clear all accumulated records.

The **M+** (**Accumulation**) indicator will turn off.

19. HOLD Function

Press the **F** key until **HOLD Mode** is displayed.

Press the **TARE** key to cycle through the available HOLD modes.

Press the **PRINT** key to activate the selected HOLD mode.

When the displayed weight becomes stable, the reading is held and the buzzer sounds.

HOLD Modes

h1 – Auto Release

The held value is released automatically after the object is removed and the display returns to zero.

h2 – Dynamic Hold

The held value is released when the weight changes beyond the preset **d-value**.

(Default setting: **2–50 divisions**, factory default **5d**.)

h3 – Manual Hold

The held value remains displayed until:

- The platform returns to zero, or
 - The **ZERO** key is pressed to release HOLD and start a new weighing cycle.
-

Key Functions (Figure Notes)

Key	Function
TARE	Move cursor / Select option

Key	Function
PRINT	Confirm / Save
ZERO	Change value

20. General Settings

With the indicator in **Weighing Mode** and the display showing **Zero**, press and hold the **TARE** key for **1 second** to enter the **General Settings Menu**.

Press the **TARE** key repeatedly to select one of the following functions:

- **Display Brightness Setting**
- **Auto Zero Tracking Setting**
- **Local Gravity (G) Setting**
- **Power Saving Setting**

The operation is illustrated below.

20.1 Display Brightness

Three brightness levels are available:

- **Normal Brightness**
- **Low Brightness**
- **High Brightness**

Use the **ZERO** or **UNIT** key to change the setting.

Press **TARE** to confirm.

20.2 Auto Zero Tracking (Zero Return)

Set the automatic zero tracking value.

Adjustment Range: 0–9 divisions (d)

When the displayed weight changes within the selected range, the indicator automatically returns to zero.

Use the **ZERO** or **UNIT** key to change the value.

Press **TARE** to save.

20.3 Local Gravity (G) Setting

Enter the **Local Gravity Value (G)** for the installation site.

Example:

9.79880

Press **TARE** to confirm.

If the entered gravity value is valid, the indicator returns to the weighing mode automatically.

If the value is outside the allowable range, **ERROR** will be displayed.

Requirements for Local Gravity Setting

- The entered local gravity value must be within $\pm 10\%$ of the factory gravity value.
 - If **External Calibration** has already been performed, the **Local Gravity (CGr)** value cannot be modified.
 - To change the Local Gravity value again, move jumper **SWA1** to the **ADJ** position and perform **Internal Calibration (CAL01)** according to the Service Manual.
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20.4 Power Saving Mode

Set the automatic power-saving time.

Available settings:

1–9 minutes

When all of the following conditions are met:

- Weight is less than **10 divisions (10d)** or negative.
- No key has been pressed.
- The preset time has elapsed.

The indicator automatically enters **Power Saving Mode**.

Saving the Settings

Press **TARE** to save all settings.

Press **PRINT** to cancel and return to the previous menu or to Weighing Mode.

Numeric Input Keys

During numeric input, the keys function as follows:

Key	Function
ZERO	Increase the flashing digit (0 → 9)
UNIT	Decrease the flashing digit (9 → 0)
TARE	Move the cursor one position to the right
F	Move the cursor one position to the left

21. External Weight Calibration

With the indicator in **Weighing Mode** and the display showing **Zero**, press and hold the **UNIT** key for **3 seconds** to enter the calibration menu.

Enter the password by pressing the following keys in sequence:

PRINT → **TARE** → **ZERO**

The LCD displays the calibration weight value.

Use the **F** key to move the cursor.

Press the **F** key again to skip zero calibration if necessary.

With the platform empty, press the **TARE** key to perform **Zero Calibration**.

Place the specified calibration weight on the platform.

Wait approximately **2 seconds** until the reading becomes stable.

Press the **TARE** key to perform **Span Calibration (Full-Scale Calibration)**.

When calibration is completed successfully, the buzzer sounds **three times**.

Press **TARE** again to return to **Weighing Mode**.

22. External Weight Calibration

Enter the **External Calibration** mode according to **Section 21**.

The LCD displays the calibration weight value, and the rightmost digit of both the calibration value and the weighing unit flashes.

Zero Calibration

1. Make sure there is **no load** on the weighing platform.
2. Press the **TARE** key to perform **Zero Calibration**.
3. Wait until the display becomes stable.

4. The LCD displays the preset calibration weight value.

Span Calibration (Full-Scale Calibration)

1. Place the specified **calibration weight** on the weighing platform.
2. Press the **TARE** key.
3. Wait until the reading becomes stable.
4. The buzzer will sound **three times**, indicating that the span calibration has been completed successfully.

The display will show:

C-PASS (Calibration Passed)

Press the **TARE** key once more to return to **Weighing Mode**.

Figure 4 – External Calibration Procedure

Weighing Mode

↓

Press and hold the **UNIT** key for **3 seconds**

↓

Enter the password by pressing:

PRINT → TARE → ZERO

↓

Display calibration weight value

↓

(Platform empty)

Press **TARE**

↓

Zero Calibration

↓

Z-PASS

↓

Place the specified calibration weight on the platform

↓

Press **TARE**

↓

Span Calibration

↓

C-PASS

↓

Press **TARE**

↓

Return to **Weighing Mode**

Conditions for External Weight Calibration

- The entered calibration weight must be **at least 100 divisions (100e)**.
 - The actual calibration weight must be within **±10%** of the entered calibration value.
 - If only **Span Calibration** is required, simply place the calibration weight on the platform. After the weight becomes stable, the indicator performs the calibration automatically.
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23. RS-232 Printer Communication Settings

1.

In **Weighing Mode**, press and hold the **PRINT** key for **1 second** to enter the **RS-232 Communication Settings**.

2.

Press the **ZERO** key to select one of the following transmission modes.

Mode	Function
rSP0	No Transmission
rSP1	Stable Transmission
rSP2	Continuous Transmission
rSP3	Simple Transmission
rSP4	Complete Transmission
rSP5	Stable Transmission (Accumulation Mode)

3.

Press the **PRINT** key to enter the **Baud Rate Setting**.

4.

Press the **ZERO** key to select one of the following baud rates:

- 1200 bps
 - 2400 bps
 - 4800 bps
 - 9600 bps
 - 19200 bps
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5.

Press the **PRINT** key to save the settings and return to **Weighing Mode**.

RS-232 Output Data Format

RSP1 & RSP2 Output Format

Status	Output Data Format
Gross Weight	ST, GS, +1234560z
Net Weight	ST, NT, +123.456kg
Positive Overload	OL, GS, +*****
Negative Overload	OL, GS, -*****
Unstable	US, GS, +1234.56lb

Status Code Description

Code	Description
ST	Stable Weight
US	Unstable Weight
OL	Overload
GS	Gross Weight
NT	Net Weight
+ / -	Weight Polarity
SP	Space Character
CR	Carriage Return
LF	Line Feed

RSP3 – Simple Transmission Mode (Accumulation Mode)

Print Example

S/N	WT
0001	2.500
0002	2.500
0003	2.500

0003	7.500

Operation

- Press the **PRINT** key once to print the current weighing record.
 - Press the **PRINT** key once again after each weighing to print the next record.
 - After all records have been accumulated, **quickly press the PRINT key twice** to print the accumulated summary.
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RSP4 – Complete Transmission Mode (Accumulation Mode)

Individual Ticket

TICKET NO.	0001
GS	2.500 kg
TR	0.000 kg
NT	2.500 kg

Press the **PRINT** key to print one weighing ticket.

Accumulation Summary

TOTAL NUMBER OF TICKETS	0003
TOTAL WEIGHT	
7.500 kg	

After all weighing records have been accumulated,

quickly press the PRINT key twice to print the accumulation summary.

RSP5 – Stable Transmission Mode

The output format is **identical to RSP2**, except that data is transmitted **only after the weight reading becomes stable**.

Terminology

Abbreviation	Meaning
GS	Gross Weight
NT	Net Weight
TR	Tare Weight
ST	Stable
US	Unstable
OL	Overload
WT	Weight
S/N	Serial Number
CR	Carriage Return
LF	Line Feed