HW-D-C / HW-D-CP

Platform Scale Indicator

INSTRUCTION MANUAL

1WMPD4005548A

A&D Company, Ltd.

Warning Definition

The warnings described in this manual have the following meanings:

⚠**DANGER**	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
Note	Information or cautions to use the device correctly.
⚠	This is a safety alert symbol.

About This Manual

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Contents

1. Compliance

1.1. Compliance with FCC Rules

This device contains transmitter module FCC ID: 2A6NFEC2832
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation. (FCC = Federal Communications Commission in the U.S.A.)

FCC CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
The antenna used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
This product is certified as type of the portable device with FCC Rules. To maintain compliance with RF Exposure requirement, please use within specification of this product.

2. Introduction

Thank you for purchasing the HW-D-C/CP platform scale indicator from A&D. This instruction manual mainly describes how to install the HW-D-C/CP. Refer to it when connecting/installing the HW-D-C/CP to a weighing platform (load cell). The HW-D-C/CP has functionality comparable with the display of the HV-C/CP and HW-C/CP series of digital platform scales. Some functions and operations are described in this manual. Other information is found in the instruction manual indicated below.

[Instruction manual for the HV-C/CP and HW-C/CP series]
(https://aandd.jp/products/weighing/scale/platform/hvw-ccp.html)
Refer to the above manual in order to understand the HV-C/CP and HW-C/CP series of digital platform scales and how to use them properly. The manual can be downloaded from the A&D website https://www.aandd.jp.

3. Features

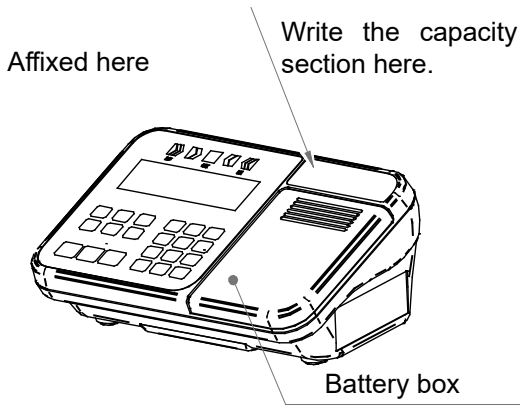
The HW-D-C / CP is an electronic indicator that is appropriate for composing a digital platform scale by connecting to a weighing platform (load cell), and it has the following features.

- ❑ Operating up to four 350 Ω load cells is available.
- ❑ Available range selection, for the display resolution, is 1/20 to 1/60,000.
- ❑ Minimum division can be selected from 1 g, 2 g and 5 g.
- ❑ The weighing capacity can be freely set between 100 and 300,000 (within 1/60,000 display resolution).
- ❑ Available weighing units are kg (kilogram), lb (pound), oz (ounce), and pcs (pieces for the counting mode).
- ❑ Functionality is comparable with the display of the HV-C / CP and HW-C / CP series.

4. Included Items

The product includes the following items.

<table>
<tr><th>HW-D-C</th><th>HW-D-CP (for built-in printer models)</th></tr>
<tr><td>
●Main Unit
Model label

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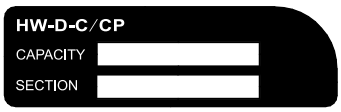
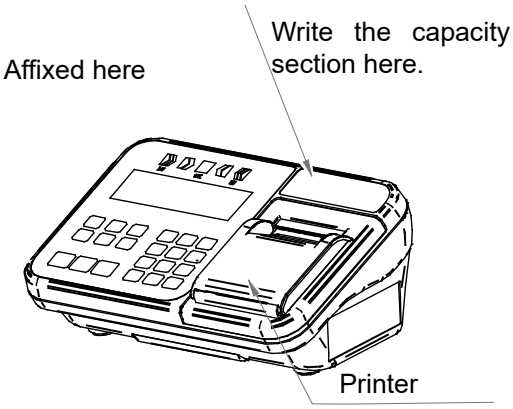
●Main Unit
Model label




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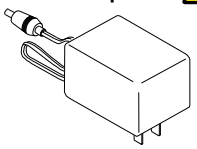
<tr><td>
●Quick Start Guide

●AC adapter ⚠

(may differ from actual item)
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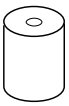
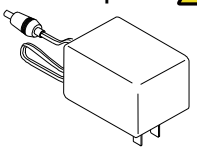
●Quick Start Guide ●Dedicated roll paper


●AC adapter ⚠

(may differ from actual item)
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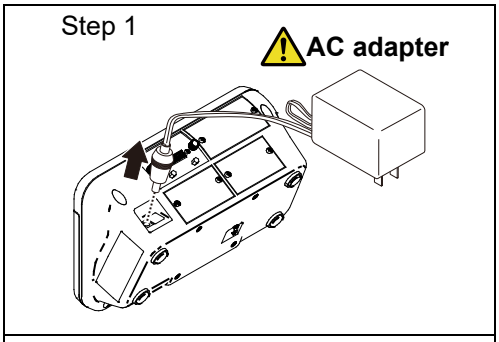
</table>

⚠	**AC Adapter** **Confirm that the AC adapter matches the voltage and plug type of your region. An AC adapter is not provided in some regions.**

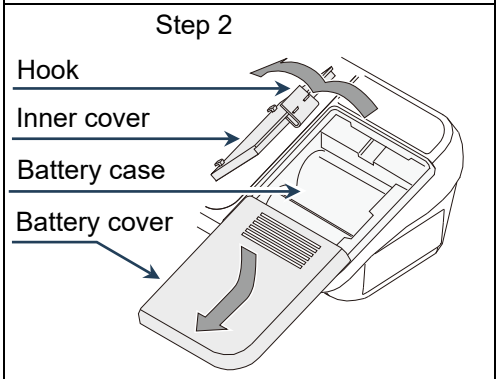
4.1. Installing the Batteries for Type C

Step 1 Turn off the display.
Remove the AC adapter.

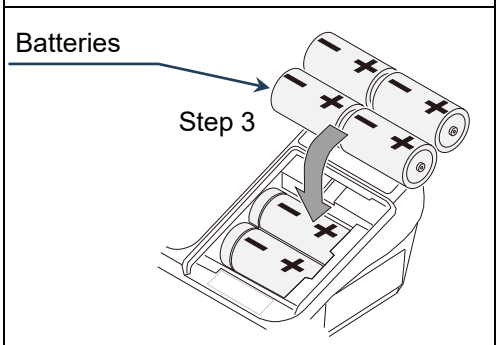
⚠AC adapter
Please confirm that the AC adapter type is correct for your local voltage and receptacle type. The AC adapter may not be provided for some areas.



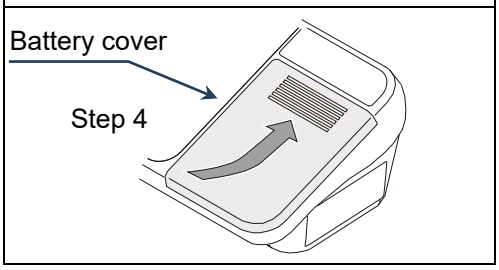
Step 2 Open the battery cover and inner cover in that order.
Push the battery cover and slide it.
Push the hook of the inner cover to the left and lift it.



Step 3 Insert four new batteries with proper polarity (+,−).
Batteries are type D, Mono, R20P , R20PU or LR20.



Step 4 Close the covers in the reverse of the order of step 2.



Caution

- ❑ **When batteries are consumed mostly, the battery mark is displayed.**
- ❑ **Replace batteries with four new ones, when Lb 0 is displayed.**
- ❑ **Do not mix used and new batteries. Do not use batteries of different type and manufacturer. Doing so may cause damage to the batteries and the scale.**
- ❑ **Check the battery direction. If the batteries are installed in the wrong direction, it may cause battery leakage. If the direction of just one battery is wrong, the scale may work temporarily.**
- ❑ **The battery life depends on the ambient temperature. It becomes shorter in low temperatures such as in winter.**
- ❑ **Remove the batteries from the display unit, when the scale is not to be used for a long time. Leaving them installed may result in leakage and cause damage.**
- ❑ **Damage due to battery leakage is not covered under warranty.**

5. Cautions

5.1. Precautions for Installing the Indicator

⚠DANGER

- ❑ **Do not install the product in a location exposed to corrosive gas or combustible gas.**

Consider the following installation conditions to ensure that the scale can operate properly.

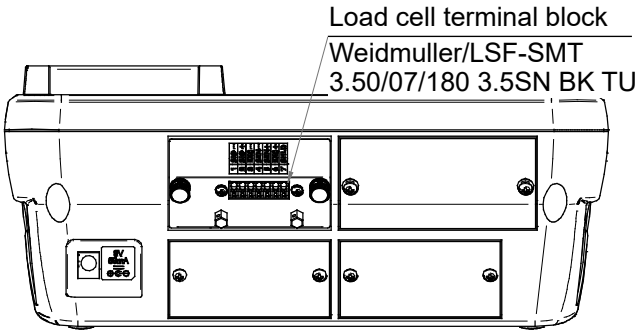
- ❑ The ideal installation environment has a stable temperature and humidity, a robust and flat floor surface, is not exposed to wind or subject to vibration, is an indoor location not exposed to direct sunlight, and has a stable power supply.
- ❑ Do not install the product on a soft floor or a location subject to vibration.
- ❑ Do not install the product in a location exposed to wind or subject to dramatic changes in temperature.
- ❑ Avoid locations exposed to direct sunlight.
- ❑ Do not install the product in a location subject to strong magnetism or strong electromagnetic waves.
- ❑ Do not install the product in a location prone to electrostatic. When the humidity is 45% RH or less, rubbing an insulating material such as plastic will easily build up an electrostatic charge.
- ❑ This product is not waterproof. Use the optional display cover or another item to ensure that the display does not get wet.
- ❑ When using an AC adapter, an unstable AC power supply may cause malfunction.
- ❑ 30 minutes before use, connect the power supply (AC adapter or batteries) and press the ON/OFF key to turn the display on.
- ❑ The scale is for indoor use only. If it is used outside, this product may receive a lightning surge that exceeds its discharge capacity. If that happens, this product may be damaged because it cannot withstand the energy of the lightning.

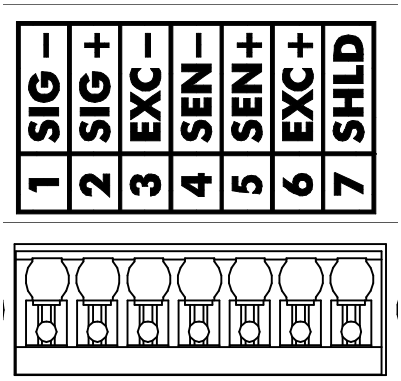
For other precautions, cautions regarding the assembled scale, storage, and cleaning, visit the A&D website https://www.aandd.jp to view [Instruction manual for the HV-C/CP and HW-C/CP series]
Read "Precautions" on (https://aandd.jp/products/weighing/scale/platform/hvw-ccp.html).

5.2. Load Cell Connection

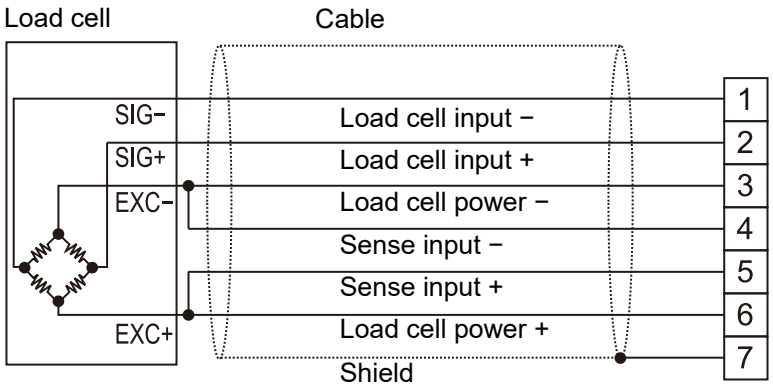
The load cell can be connected with a 6-wire or 4-wire connection.

We recommend connecting using the 6-wire configuration for optimum accuracy and stability.

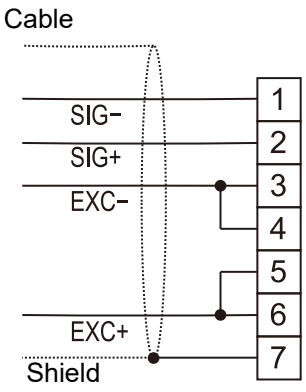




Terminal	Terminal Function	
1	SIG−	Load cell input −
2	SIG+	Load cell input +
3	EXC−	Load cell power −
4	SEN−	Sense input −
5	SEN+	Sense input +
6	EXC+	Load cell power +
7	SHIELD	Shield



(A) 6-wire load cell connection (recommended)



(B) 4-wire load cell connection

Method	Advantage	Disadvantage	Remark
6-wire configuration (recommended)	Less error even if the length of load cell cable is long or a thin load cell cable is used. Less error even if multiple load cells are used.	Slightly complicated to wire.	When using a summing box, it is strongly recommended wiring be done with the 6-wire configuration.
4-wire configuration	Easy to wire.	The accuracy of temperature counting is affected by resistance of the conductor wire for the load cell cable.	Using a long load cell cable or multiple load cells tends to cause error.

Precautions for connecting with the 4-wire configuration

Make sure to do the following when connecting with the 4-wire configuration.

- Short-circuit between EXC+ and SEN+, and between EXC− and SEN−.
- When using a long a load cell cable, use one with a cross-sectional area that is as large as possible. Also, use a cable that is as short as possible.

Ref.: Connection examples of connecting to the SCB series, Dust & Waterproof Precision Weighing Platform (with the 4-wire configuration)

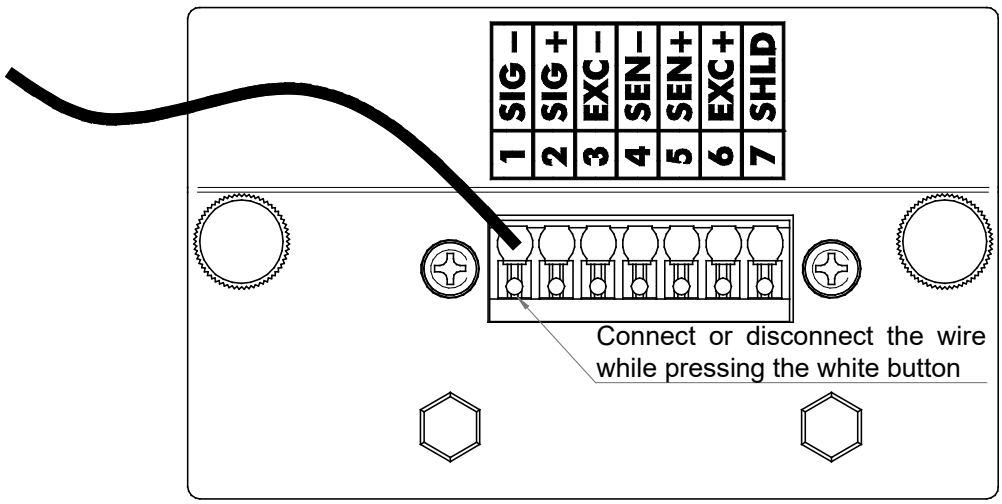
Load cell terminal number	Color of cable core for the SCB series	Function of terminals for SCB series
1	Blue	Signal − (Output terminal)
2	Green	Signal + (Output terminal)
3, 4	White	Excitation − (Input terminal)
5, 6	Red	Excitation + (Input terminal)
7	Yellow	Shield

5.3. How to Connect the Load Cell

1. Refer to “5.2. Load Cell Connection”, and connect the cable core to the terminal block of the load cell.
   - ❑ Hold down the white button on each terminal in the terminal block of the load cell when connecting or disconnecting the wire. (Additional tool is not required.)

Connect or disconnect the wire while pressing the white button

2. Once the load cell is connected, make sure that wiring has been done correctly.



5.4. Verifying Load Cell Output and Input Sensitivity

The input sensitivity is 0.1 μV/division or more.
When designing a weighing scale, the following calculation formula should be satisfied.

- The input sensitivity requires a change in output voltage, from the weighing device, to change the display value as a one digit step. In order to achieve a scale with stable performance, select the input sensitivity as large as possible.

Calculating formula:

$$0.2 \leq \frac{E \times B \times d}{A \times n}$$

A: Rated capacity of load cell
B: Rated output (mV/V)
d: Minimum division
E: Excitation voltage (mV) = 5000 mV
n: Number of load cells

Example of calculation:

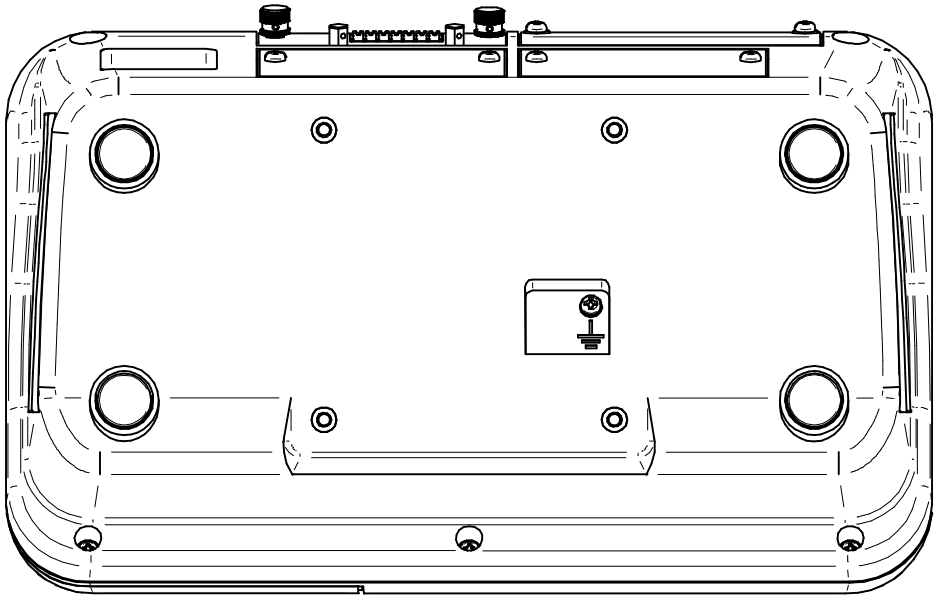
In the case of designing a scale with a capacity of 60 kg and minimum division of 0.005 kg, using one load cell with a rated capacity of 100 kg and rated output of 1 mV/V:

Rated capacity of Load cell:	***A*** = 100 kg
Rated output:	***B*** = 1 mV/V
Minimum division:	***d*** = 0.005 kg
Excitation voltage:	***E*** = 5000 mV
Number of load cells:	***n*** = 1

$$\frac{5000 \times 1 \times 0.005}{100 \times 1} = 0.25 > 0.2$$

The above indicates there is no problem with this design.

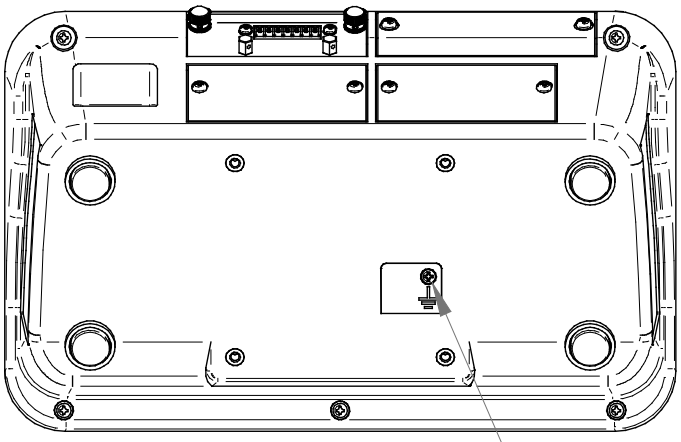
5.5. Setting Up the Indicator



Connect the included AC adapter to a power source.

❑ Make sure that the power source you are using is correct before connecting to it.
For HW-D-C, you can also use four D-cell batteries (R20P / R20PU / LR20).

⚠ **If you are using the unit in a location where static electricity is likely to occur, be sure to also fasten an earth wire to the earth terminal (M3 screw).**

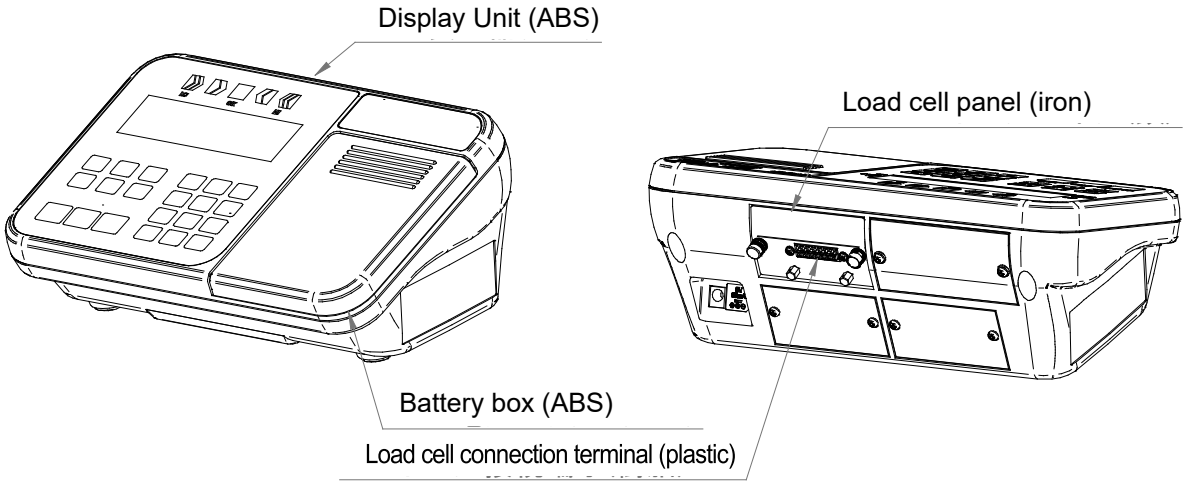


5.6. Sensitivity Adjustment and Parameter Settings

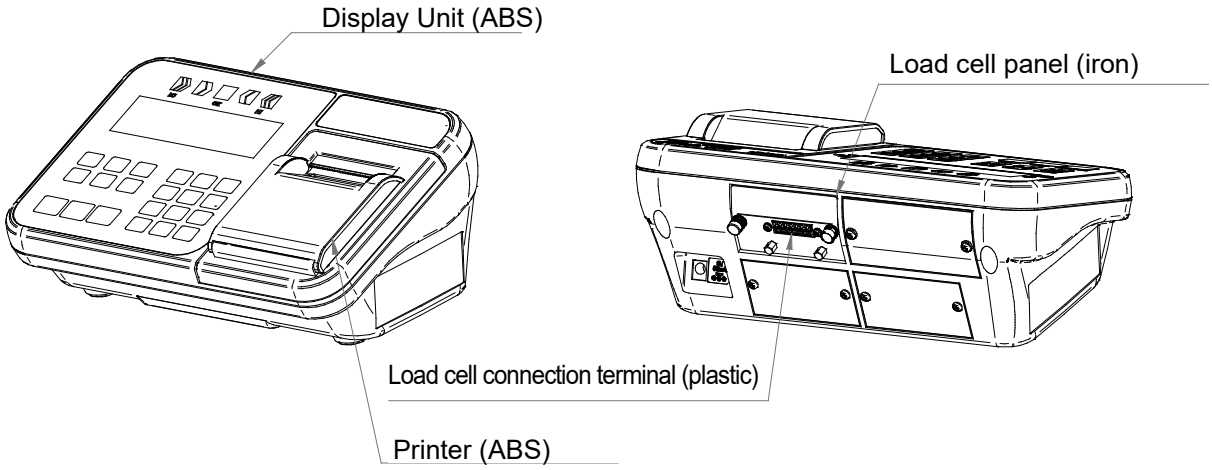
When connecting to a load cell (weighing platform), sensitivity adjustment needs to be performed.
For details, refer to "7. Sensitivity Adjustment".
As needed, configure the function settings. For details, refer to "8. Setting Functions".

6. Part Names

<HW-D-C (battery-powered model)>

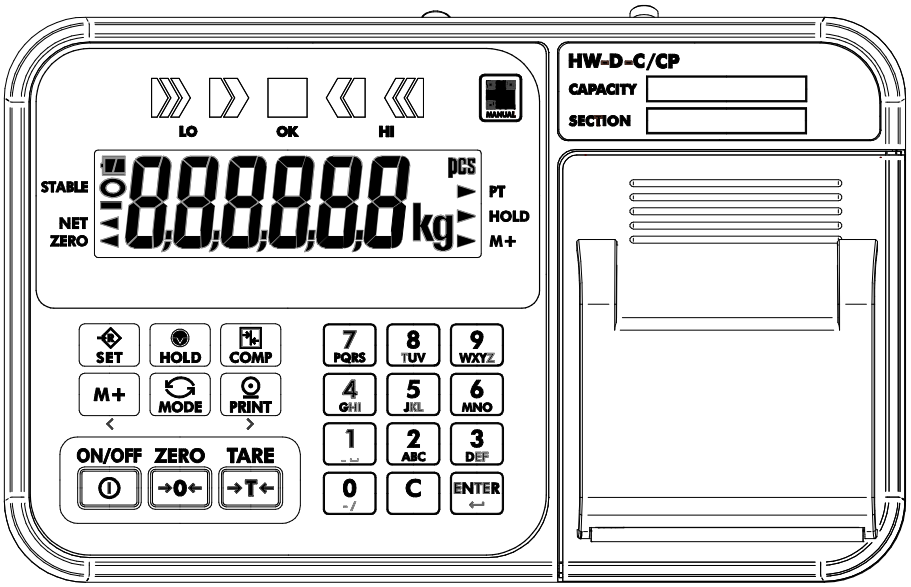


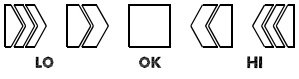
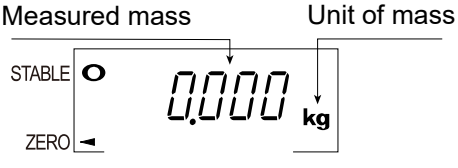
<HW-D-CP (for built-in printer models)>

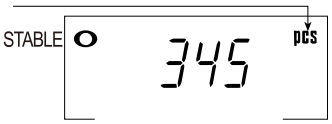
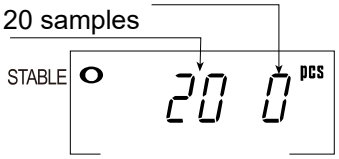
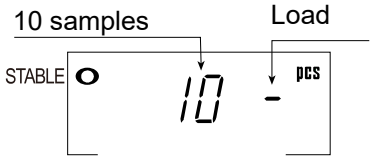


6.1. Display and Symbols

Display



Display/Symbol	Description
STABLE O	**Stable mark** Lit when the measured value is stable and in a state suitable for being read.
NET ZERO ◄	**Zero point mark** The zero point is the reference point for the scale. When the [ZERO] key is pressed with nothing on the weighing pan, zero (the zero point) is displayed as the measured value.
NET ◄ ZERO	**Tare deducted mark** Displayed when the [TARE] key is pressed to deduct the tare. Use this to deduct the weight of objects that will not be weighed, such as containers.
► PT	**Preset tare deduction mark** Flashes when a digitally input tare value is displayed.
► HOLD	**Hold mark** The display is being held.
► M+	**Total function mark** Displayed when using the total function.
	**C type battery level mark** Displayed when the voltage of the batteries has dropped. Replace the batteries with four new D size batteries.
	**Comparator function display** When using the comparator function, displays the result of comparing with the set upper limit value and lower limit value.
	**An example of the zero point (example scale reference point).** Displays the zero point mark. Displays the stable mark. Displayed by pressing the [ZERO] key with nothing on the weighing pan.

Display/Symbol	Description
Counting unit 	**An example of the counting mode display.** By registering a unit mass in advance, you can count the number of objects on the weighing pan.
No load 20 samples 	**An example of registering a unit mass for the counting mode.** 20 samples are used to register the unit mass. "No load" means that there are no countable objects on the weighing pan.
10 samples Load 	**An example of registering a unit mass for the counting mode.** 10 samples are used to register the unit mass. "-" means that there is something on the weighing pan.

❑ For details on operation and each function, please refer to [Instruction Manual: HV-C/CP, HW-C/CP Series] on the A&D website at https://www.aandd.jp.

6.2. Description of Keys

Key	Description
ON/OFF ⏻	❑ **Power key** Turns the power of the display ON or OFF. When the display is turned ON, the internal circuits are powered. When the display is turned OFF, only the minimum required power to have the scale in standby and the power consumed by the AC adapter connected to the power outlet are consumed.
ZERO →0←	❑ **Zero key** If you press the ZERO key with the measured value stabilized within ±2% of the zero point taken when the power was turned ON ("power on zero"), that point is set as the zero point, zero is displayed, and the zero point mark is lit. If a tare is being deducted, the tare is cleared. When displaying the total result, the total count and total value are cleared.
TARE →T←	**Tare deduction key** If you press the TARE key with a positive measured value stabilized, the mass on the weighing pan is deducted as the mass of the container (tare). Zero is displayed, and both the zero point mark and tare deducted mark are lit (tare deduction). If the container (tare) is removed from the weighing pan while the tare is being deducted to return to the zero point, both the zero point mark and tare deducted mark are lit. In this case, a negative tare value is displayed. **Note** ❑ **The measurement range is reduced by the tare mass.**

Key	Description
M+ <	Adds to the total.
SET	**SET key** Select +/− when setting the upper and lower limits.
SET pressed with TARE →T←	Enters the mode for setting the preset tare deduction.
SET pressed with PRINT >	Feeds the paper of the built-in printer.
SET pressed with M+ <	Displays the total result.
SET pressed with COMP	Sets the upper and lower limit values for the comparator.
SET pressed with ENTER ↵	Proceeds to the operation for registering a unit mass in the counting mode.
MODE	**MODE key** ❑ Switches the display mode (unit). Weight ⇔ Count ❑ When setting values, functions as the key for selecting the item to set.
HOLD	**HOLD key** Holds the display. Refer to the internal settings.
PRINT >	**PRINT key** Prints or outputs data for the displayed value. The operation depends on the internal settings.
Display OFF ↓ TARE →T← pressed with ON/OFF ⏻	Enters the internal settings.

7. Sensitivity Adjustment

- ❑ The description of sensitivity adjustment in this manual is different from that in the instruction manual for the HV-C / CP and HW-C / CP series. Please read the description below.

7.1. Sensitivity Adjustment Items

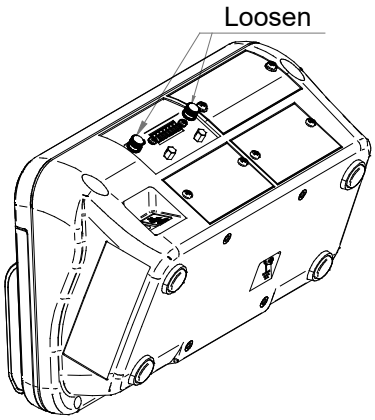
Sensitivity adjustment mode has the following three functions.

- ❑ Setting of the weighing capacity, minimum division, and decimal point position.
- ❑ Sensitivity adjustment using a weight
- ❑ Correcting for gravitational acceleration

Enter the sensitivity adjustment mode in the following way.

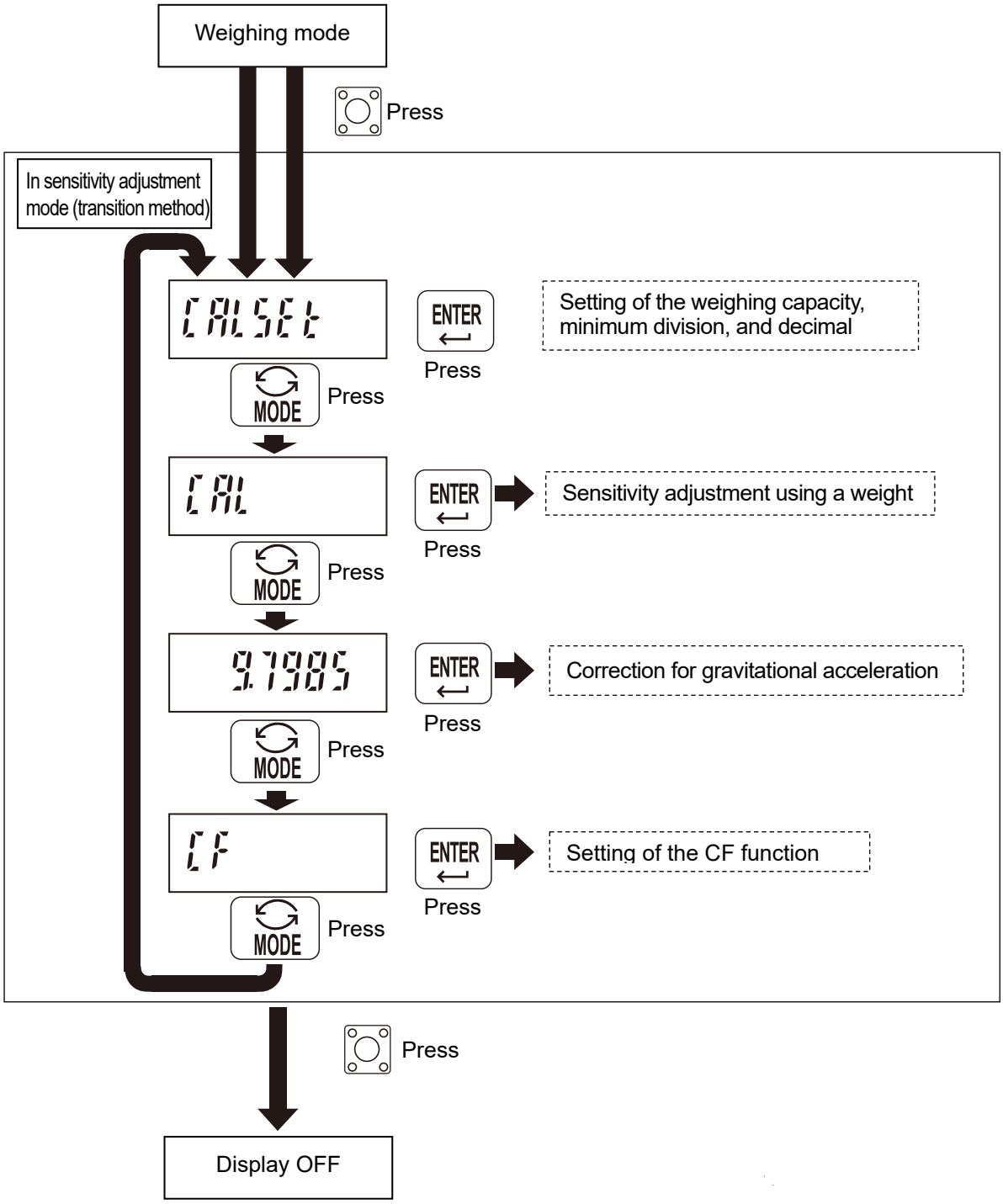
1. Confirm that the scale(indicator) is in weighing mode (display shows measurement unit).

2. Remove the protective cover from the four screws of the load cell panel on the rear of the display unit, and then loosen the four screws and open the load cell panel.



3. Press the CAL switch to display CALSEt (Then go to "7.2. Setting of the Weighing Capacity / Minimum Division / Decimal Point Position", "7.3. Sensitivity Adjustment Using a Weight", or "7.4. Correcting for Gravitational Acceleration")

❑ Relations between items in sensitivity adjustment mode and key operations are shown in the diagram below.



Note: Use the [MODE] key to select the item to execute, and then execute with the [TARE] key.
Note: To end sensitivity adjustment mode, press the [ZERO] key or CAL switch.
The display turns off. (You can also turn it off using the [ON/OFF] switches.)

7.2. Setting of the Weighing Capacity / Minimum Division / Decimal Point Position

Set the weighing capacity, minimum division, and decimal point position. Be sure to perform these setting first when connecting to a load cell (base unit). The indicator does not require setting each time, if nothing is to be changed.

1. Refer to "7.1. Sensitivity Adjustment Items" , to enter the calibration mode. The indicator displays [CALSET] .
2. Press the [ENTER] key to enter the setting mode of the weighing capacity, minimum division, and decimal point position.
3. The indicator displays the currently set minimum division and calibration unit.

   (Display example: [d - 1 kg])
   The blinking digit indicates the minimum division. Press the [SET] key to select 1, 2, 5.
   The unit indicates the sensitivity adjustment unit.
   Press the [MODE] key to select either "kg" or "lb".

   Press the [ENTER] key to store the currently set minimum division and calibration unit, and proceed to the next step.
4. After displaying , "CAP" the indicator displays the currently set weighing capacity and decimal point position.
   (Display example: "060.000 kg")

   Set the weighing capacity and decimal point position using the following keys:

   [Numeric keypad] Setting the weighing capacity.

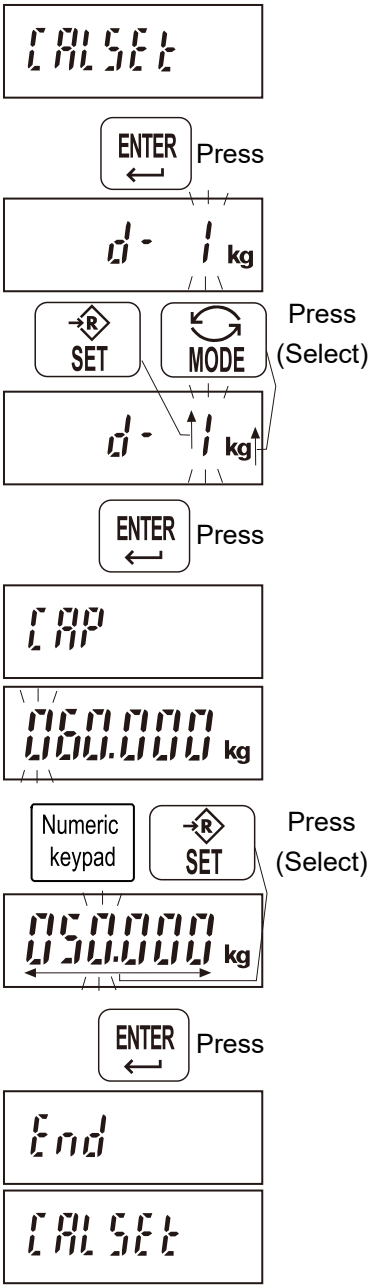
   [SET] Shift the decimal point position.

   Press the [ENTER] key to store the currently displayed weighing capacity and decimal point position, and proceed to the next step.

   Note: Press the C key to revert to the previous value.

   ❑ Available setting range of the resolution is 60,000 or less. The resolution is the value that divides the weighing capacity by the minimum division. (Decimal point position is ignored.)
5. After displaying [End], the indicator displays [CALSET] and the setting is complete.

   ❑ After setting the weighing capacity, minimum division, and decimal point position, be sure to perform "7.3. Sensitivity Adjustment Using a Weight".



7.3. Sensitivity Adjustment Using a Weight

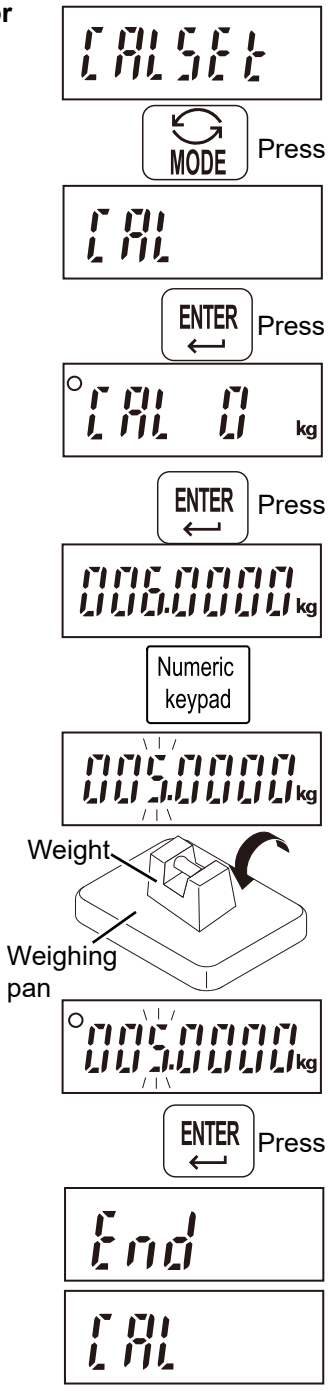
This function adjusts the scale (indicator) for accurate weighing.
Sensitivity adjustment must be done when the HW-D-C is initially connected to a load cell (base unit) or the combination is changed.
Sensitivity adjustment may also be required according the changes in the environment.

- ❑ When the scale (indicator) is initially installed.
- ❑ When the scale (indicator) is moved to a location far away.
- ❑ When the ambient environment has greatly changed.
- ❑ In periodic sensitivity adjustment.

Note

- ❑ **Prepare a weight. (A weight equivalent to the weighing capacity of the scale to be adjusted is recommended. However, the value for the weight can be set (changed).)**

1. Turn on the scale and supply it with power for 30 minutes or longer.
   - ❑ Change the parameter for the internal settings item [PoFF] or place something on the weighing pan to keep the automatic power off function from activating.
2. Refer to "7.1. Sensitivity Adjustment Items". [CALSEt] is displayed when you enter sensitivity adjustment mode.
3. Press the [MODE] key to display [CAL] .
4. Press the [ENTER] key to display [CAL 0] .
   Make sure there is nothing on the weighing pan and wait for the stability indicator to light up.
5. Press the [ENTER] key to save the zero point on the scale and display the value for the weight.
   - ❑ The value for the weight is the same as the weighing capacity. (Initial state)
   - ❑ To adjust just the zero point, turn off the scale to end without performing step 6.
6. To adjust with a weight value different than the weighing capacity, change the value with the numeric keypad.
   * Press the C key to revert to the previous value.
   - ❑ A weight equivalent to the weighing capacity of the scale is ordinarily used. If using a different weight, it should be at least 2/3 the weighing capacity.
7. Place on the weighing pan a weight of the value displayed. Wait for the stability indicator to light up.
8. Press the [ENTER] key to end sensitivity adjustment. [End] will be displayed. After displaying [CAL] , the setting is complete.
9. To end setting, press the CAL key. The display turns off.



Note

- ❑ **If the scale (indicator) is moved to a distant location after sensitivity adjustment, adjust the gravitational acceleration value to that of the area where it will be adjusted next. Then adjust the scale. See the next chapter for setting gravitational acceleration.**

7.4. Correcting for Gravitational Acceleration

When relocating a scale (indicator), you need to perform sensitivity adjustment with a weight. If a weight is not available, you can adjust the scale (indicator) by correcting the gravitational acceleration. Refer to the acceleration map on the last page, and change the gravitational acceleration value recorded in the scale (indicator) to the one for appropriate location.

Note

- ❑ **If sensitivity adjustment is done using a weight at the place where the scale (indicator) is used, it does not need to be corrected for gravitational acceleration.**

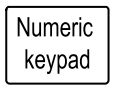
1. Refer to "7.1. Sensitivity Adjustment Items". [CALSEt] is displayed when you enter sensitivity adjustment mode.

2. Press the [MODE] key twice to display the gravitational acceleration parameter (Example: "9.7985").

3. Press the [ENTER] key to enter the gravitational acceleration setting mode.

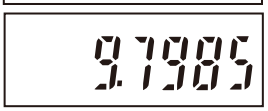
4. To adjust the gravitational acceleration value displayed, change the value with the numeric keypad.

   * Press the C key to revert to the previous value.



5. Press the [ENTER] key to display [End] and save the parameter. After displaying the gravitational acceleration parameter (Example: "9.7985"), the setting is complete.

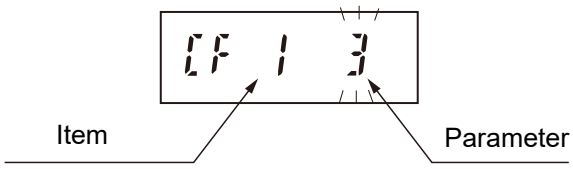
6. To adjust using a weight, return to step 2 of "7.3. Sensitivity Adjustment Using a Weight". To end setting, press the CAL key. The display turns off.



8. Setting Functions

The indicator has CF function settings to specify the indicator performance.
After installing the indicator, the indicator does not require resetting or changing of this CF function as far as it is used normally.

8.1. Setting of the CF Function



1. Refer to "7.1. Sensitivity Adjustment Items", to enter the sensitivity adjustment mode. The indicator displays [CALSET] .

2. Press the [MODE] key three times to display [CF] .

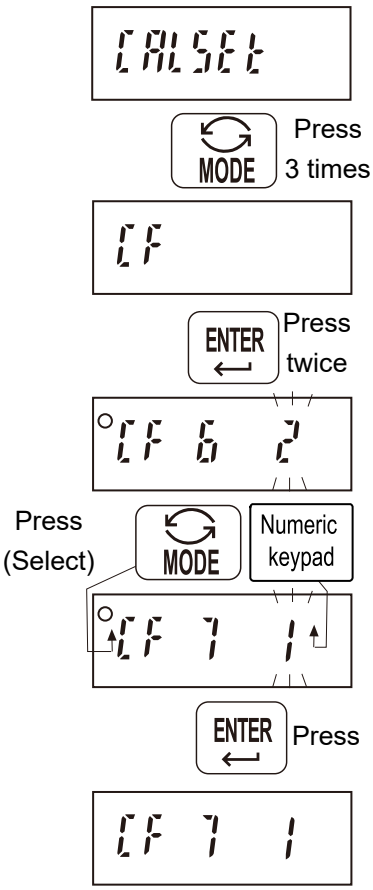
3. Press the [ENTER] key to display the setting item.
   Press the [ENTER] key again and the setting value will start blinking.

4. Select the setting item and parameter using the following keys:

[MODE]	Proceed to next setting item.
[Numeric keypad]	Change the blinking digit

5. Press the [ENTER] key to stop the blinking and record the setting.

6. If you want to adjust the sensitivity using a weight, proceed to step 2 of "7.3. Sensitivity Adjustment Using a Weight". To end the setup, press the [ZERO] key, and after [CF] is displayed, press the CAL key.
   The display turns off.



8.2. CF Function List

Item	Parameter	Description	
Used internally CF 1	-	Not available for setting change	
Used internally CF 2	-	Not available for setting change	
Used internally CF 3	-	Not available for setting change	
Used internally CF 4	-	Not available for setting change	
Used internally CF 5	-	Not available for setting change	
Zero tracking width / time CF 6	0	No zero tracking	Zero tracking: Function to track the zero point and keep the display at zero. When the setting value is 0, the internal settings trc (zero tracking), St-b (stability detection width), and St-t (stability detection time) cannot be changed and the setting items are not displayed.
	1	0.5 d/0.5 seconds	
	◆ 2	0.5 d/1.0 seconds	
	3	0.5 d/1.5 seconds	
Zero point mark when net weight is zero during taring CF 7	0	Not available	
	◆ 1	Available	
Push zero range CF 8	◆ 0	±2%	The percentage of the weighing capacity that can be set to zero when the ZERO key is pressed.
	1	Unlimited	
Power on zero range CF 9	0	0% (Do not power on to zero)	Percentage of the weighing capacity that can be set to zero when powered on.
	1	±10%	
	◆ 2	±50%	
	3	±100%	
	4	Unlimited	
Power on Tare CF 10	0	Not available	Taring is done when power is turned on. (power on zero takes priority)
	◆ 1	Available	
Clear tare by zero operation CF 11	0	Not available	
	◆ 1	Available	
Tare CF 12	0	Tare the weight at the indicated scale interval	
	◆ 1	Tare at the internal count	
Used internally CF 13	-	Not available for setting change	

Item	Parameter	Description	
Decimal point display selection CF 14	◆ 0	Select with internal settings Pnt	
	1	Dot	
	2	Comma	
Used internally CF 15	-	Not available for setting change	
Hold function CF 16	0	Not available	A function that freezes the weighing value when the HOLD key is pressed.
	◆ 1	Available	
Preset Tare CF 17	0	Not available	
	◆ 1	Available	
Used internally CF 18	-	Not available for setting change	
Used internally CF 19	-	Not available for setting change	
Used internally CF 20	-	Not available for setting change	
Used internally CF 21	-	Not available for setting change	
Used internally CF 22	-	Not available for setting change	
Used internally CF 23	-	Not available for setting change	
Zero tracking, response characteristics, and stability detection function display CF 24	0	Not available	When the setting value is 0 or 2, the internal settings trc (zero tracking), St-b (stability detection width), St-t (stability detection time), and Cond (response characteristics) cannot be changed and the setting items are not displayed.
	◆ 1	Available	
	2	Not available Center zero mark does not light up when total weight is zero after taring.	
Saving zero value and tare weight CF 25	◆ 0	Do not save	Zero and tare values are stored even when the power is turned off.
	1	Save	
Used internally CF 26	-	Not available for setting change	

◆: Factory settings d = minimum division

The settings are not changeable for CF 1 to 5, 13, 15, 18 to 22 or 26.

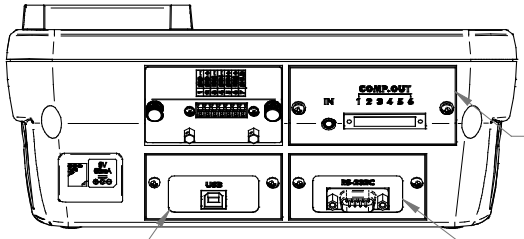
9. Options

9.1. Installing Options

Option name	Contents
HVW-02CB	USB interface
HVW-03C	RS-232C interface
HVW-04C	Comparator relay output/buzzer/contact input
HVW-27C	*Bluetooth*® interface
HVW-11C	Wall mounting bracket

Refer to the optional instruction manual for details.

Installation example
OP-ch1：HVW-03C
OP-ch2：HVW-02CB
OP-ch3：HVW-04C



OP-ch3
Example of HVW-04C

OP-ch2
Example of HVW-02CB

OP-ch1
Example of HVW-03C

10. Maintenance

- ❑ Refer to “5. Cautions” regarding use.
- ❑ Refer to “10.3. Error Code Table” and corresponding mode for displayed error code.
- ❑ Refer to “7. Sensitivity Adjustment” regarding precision weighing.
- ❑ Periodically check the accuracy of weighing. Adjust the scale (indicator), if it is moved to another location or the environment has changed.

10.1. Repair

Do not disassemble/assemble the product without an authorized service engineer. Doing so may cause an electric shock or damage to the product. In this case, repair is not covered under warranty. Contact your local A&D dealer if the product needs service or repair.

10.2. Error Display

In this situation	Confirm these items
Product does not turn on. Nothing displayed.	❑ Is the power turned ON properly? ❑ Are the batteries exhausted? ❑ Are you using the correct AC adapter?
The product does not display zero at first.	❑ Check whether something is touching the weighing pan. Remove any objects from the weighing pan. ❑ Perform zero point calibration for the scale.
[------] is displayed.	❑ This error is displayed if the measured value is unstable when the power is turned ON. Avoid wind and vibration. Check whether something is touching the weighing pan. ❑ Is the load cell cable correctly connected inside the display? ❑ This error is displayed if zero cannot be displayed when the display is turned ON. Remove any objects from the weighing pan. ❑ Perform zero point calibration for the scale.
[CAL E] is displayed.	❑ This error is displayed during sensitivity adjustment. Check whether the weighing pan is attached properly and whether the weight is too heavy, and try again.
[-CAL E] is displayed.	❑ This error is displayed during sensitivity adjustment. Check whether the weighing pan is attached properly and whether the weight is too light, and try again.
[E] is displayed.	❑ The load is too heavy. Remove objects from the weighing pan.
[-E] is displayed.	❑ The measured value is too low. Check whether the weighing pan is attached properly.
The displayed value does not change.	❑ Is the hold function enabled? Change [HoLd] in the internal settings. ❑ Turn the power OFF.
[Lb 0] is displayed.	❑ The voltage of the batteries is low. Replace the batteries with new batteries.
[Lb 1] is displayed.	❑ The output voltage of the AC adapter is low. Check whether you are using an AC adapter with the correct specifications.

10.3. Error Code Table

When any of the following errors are displayed, try turning the display off and on again.

Err 1 is displayed	❑ Mass sensor is failed.
Err 2 is displayed	❑ Temperature sensor is failed.
Err 3 is displayed	❑ Memory (circuit) is failed.

11. Specifications

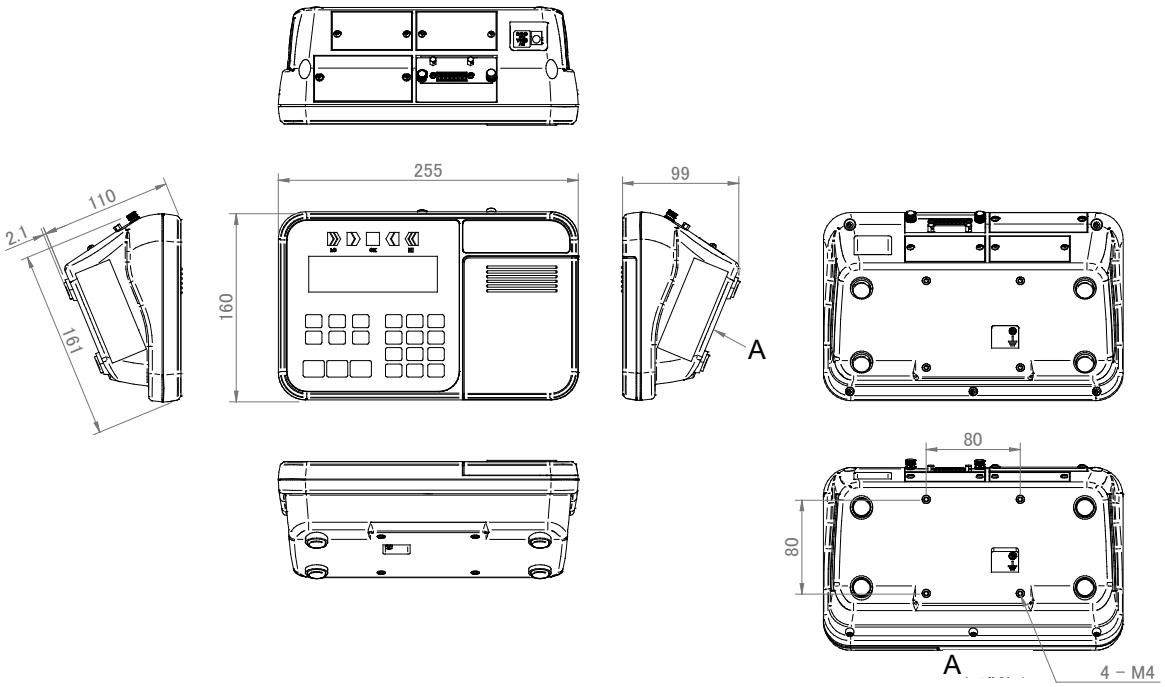
11.1. Specifications List

Specifications are subject to change without notice.

Input sensitivity		0.2 μV/d min. (d is the minimum scale interval)	
Input signal range		-16 mV to 16 mV	
Load cell excitation voltage		5 V ±10%	
Load cell drive capacity		350 Ω × 4 maximum	
Temperature coefficient zero		±0.02 μV/°C typ. ±0.1 μV/°C max.	
Temperature coefficient span		±3 ppm/°C typ. ±15 ppm/°C max.	
Linearity		±0.01% of full scale	
Maximum display resolution		60,000	
Display		Backlit seven segment LCD display with text height of 26 mm Three color five level comparator LED	
Display update		Approx. 10 times/sec.	
Power supply	HW-D-C	AC adapter	Confirm that the AC adapter matches the voltage and plug type of your region. An AC adapter is not provided in some regions. 50 Hz/60 Hz
		Batteries	Size D (R20P/R20PU/LR20) × 4
	HW-D-CP	AC adapter	Confirm that the AC adapter matches the voltage and plug type of your region. An AC adapter is not provided in some regions. 50 Hz/60 Hz
Battery life (HW-D-C)		Load cell × 1 (1 kΩ) Approx. 1,200 hours Load cell × 1 (350 Ω) Approx. 600 hours Load cell × 4 (350 Ω × 4) Approx. 200 hours	
Operating environment		-10°C to 40°C 85% RH or lower (without condensation)	
Dimensions	HW-D-C	255 mm (W) × 99 mm (D) × 160 mm (H)	
	HW-D-CP	255 mm (W) × 111 mm (D) × 160 mm (H)	
Weight (approximately)	HW-D-C	0.8 kg	
	HW-D-CP	1.0 kg	

11.2. Dimensions

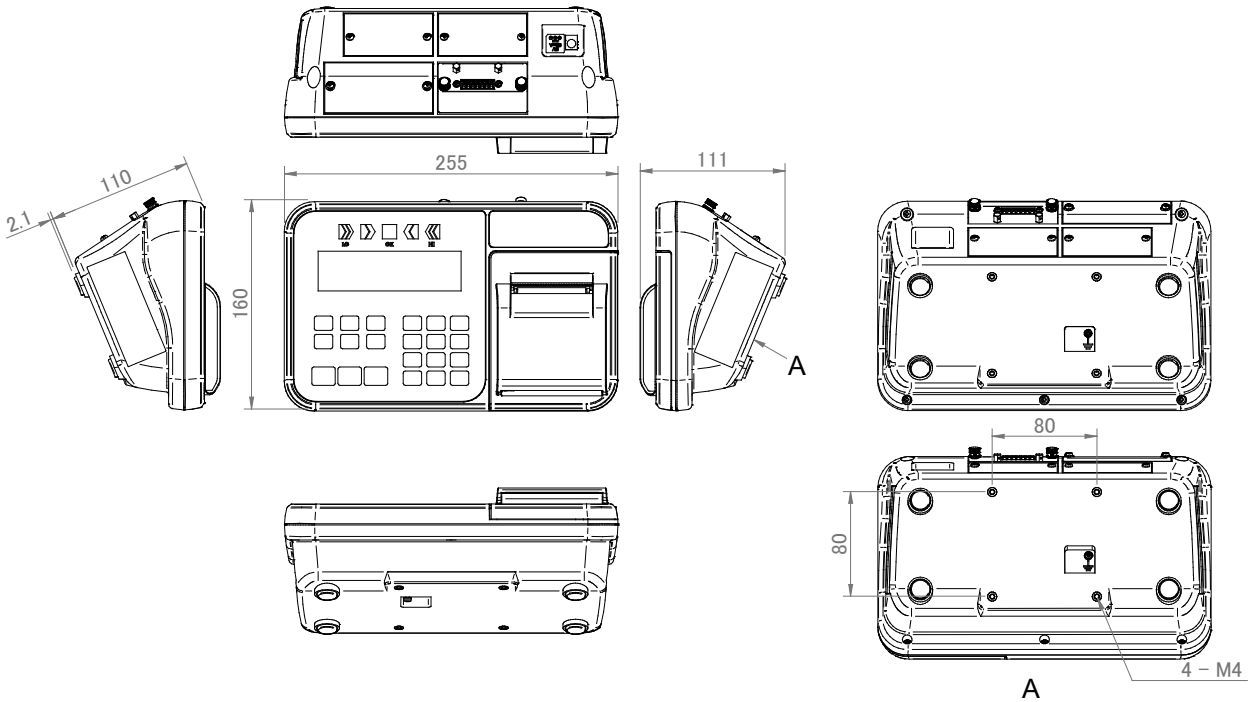
HW-D-C



Arrow diagram

Unit: mm

HW-D-CP

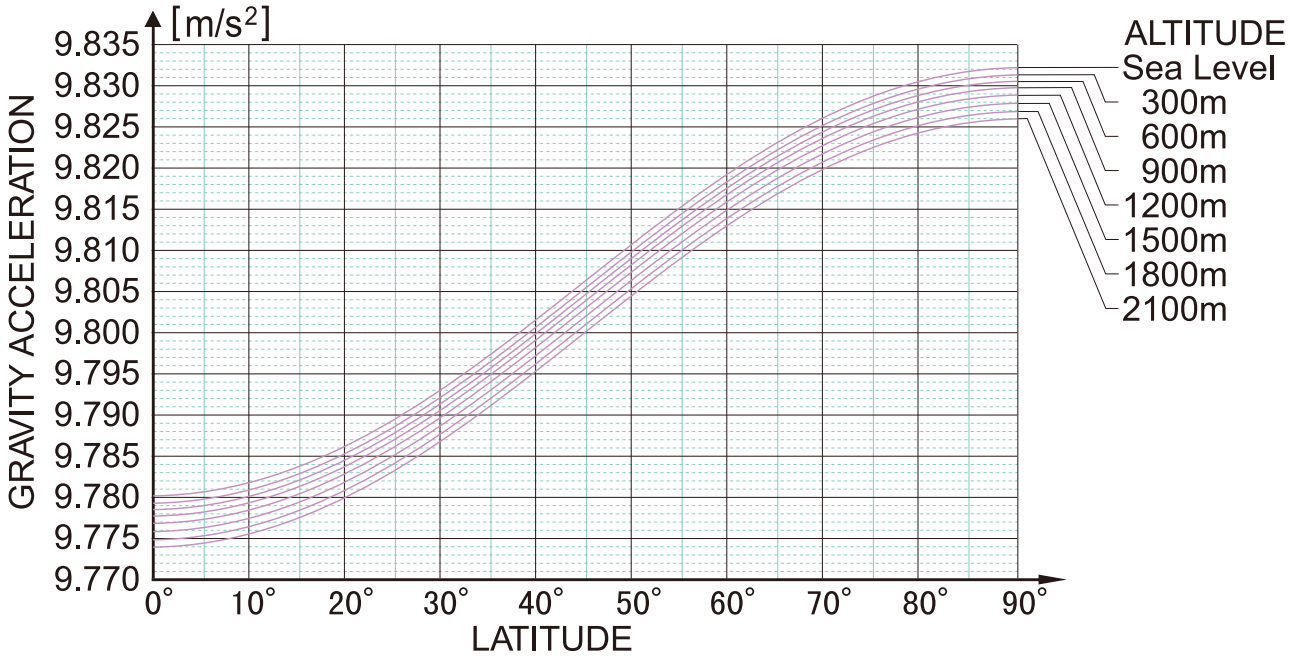


Arrow diagram

Unit: mm

11.3. Gravity Acceleration Map

Amsterdam	9.813	m/s^2	Manila	9.784	m/s^2
Athens	9.800	m/s^2	Melbourne	9.800	m/s^2
Auckland, NZ	9.799	m/s^2	Mexico	9.779	m/s^2
Bangkok	9.783	m/s^2	Milan	9.806	m/s^2
Birmingham	9.813	m/s^2	New York	9.802	m/s^2
Brussels	9.811	m/s^2	Oslo	9.819	m/s^2
Buenos Aires	9.797	m/s^2	Ottawa	9.806	m/s^2
Calcutta	9.788	m/s^2	Paris	9.809	m/s^2
Chicago	9.803	m/s^2	Rio de Janeiro	9.788	m/s^2
Copenhagen	9.815	m/s^2	Rome	9.803	m/s^2
Cyprus	9.797	m/s^2	San Francisco	9.800	m/s^2
Djakarta	9.781	m/s^2	Singapore	9.781	m/s^2
Frankfurt	9.810	m/s^2	Stockholm	9.818	m/s^2
Glasgow	9.816	m/s^2	Sydney	9.797	m/s^2
Havana	9.788	m/s^2	Tainan	9.788	m/s^2
Helsinki	9.819	m/s^2	Taipei	9.790	m/s^2
Kuwait	9.793	m/s^2	Tokyo	9.798	m/s^2
Lisbon	9.801	m/s^2	Vancouver, BC	9.809	m/s^2
London (Greenwich)	9.812	m/s^2	Washington, DC	9.801	m/s^2
Los Angeles	9.796	m/s^2	Wellington, NZ	9.803	m/s^2
Madrid	9.800	m/s^2	Zurich	9.807	m/s^2



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